



A proposal to

State of West Virginia

Telecommunications Transport RFP

TECHNICAL PROPOSAL - ORIGINAL

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WV Purchasing Division

April 18, 2016



Verizon Enterprise Solutions
4700 Maccorkle Ave SE
Charleston, WV 25304

April 18, 2016

SWC-1600000003

Stephanie L. Gale
State of West Virginia
Department of Administration
Purchasing Division
2019 Washington St. E.

Dear Ms. Gale:

On behalf of Verizon, I am pleased to provide the enclosed document in response to the above referenced request. I am convinced that our unique combination of local capabilities, extraordinary global service and depth of subject matter expertise will address State of West Virginia's stated requirements.

State of West Virginia is under pressure to maintain, if not improve, the availability, security and performance of your applications and network in addition to controlling costs. Based on Multiprotocol Label Switching (MPLS) technology, Private IP gives State of West Virginia highly scalable connectivity options and a simple any-to-any network design that can grow with your business and consolidate your applications onto a single network infrastructure. With fast speeds and secure networking capabilities, Private IP offers world-class service for State of West Virginia's mission-critical applications.

Taking advantage of our Private IP Service, State of West Virginia can benefit from a secure, efficient, and flexible Wide Area Network (WAN) data infrastructure while providing a foundation for other advanced data services. Private IP provides an ideal foundation for flexible transport and secure access of your cloud services data and applications and can help meet State of West Virginia's business demands by offering:

- **Scalability** – Enables connection of multiple locations within your VPN via any-to-any configurations.
- **Cost Control** – Provides consolidation of data, voice, and video services through a single connection, helping improve productivity while helping control training, travel, and communications expenses.
- **Varying Classes of Service** – Uses six classes of service to prioritize all types of network traffic for low latency, low jitter, and high availability.
- **Flexible IP Routing** – Supports multiple encapsulation methods and routing protocols on the network.
- **Network Management Flexibility** – Provides multiple levels of control ranging from customer-managed to project-related professional services to full network management via Verizon Managed Network Services.



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- **Expansive Reach** – Empowers you to take your business further by enabling your users to access the network from diverse locations around the globe. **Exceptional Service** – Provides 24-hour customer service, advanced reporting capabilities, and competitive service level agreements (SLAs).

Our proposal presents a comprehensive, cost-efficient Private IP solution tailored to your needs and highlights the advantages of selecting Verizon as your strategic partner.

Sincerely,

A handwritten signature in cursive script that reads "Sandra K. Hawkins".

Sandra K. Hawkins
Senior Client Partner



A Proposal to

State of West Virginia

for

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TECHNICAL PROPOSAL

April 18, 2016

Presented by:

Sandra Hawkins
Sr Client Executive

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General Information

NATURE OF PROPOSAL

This RFP response is submitted to the West Virginia Purchasing Division on behalf of West Virginia Office of Technology (referred to herein as "Customer") by Verizon Business Network Services Inc. on behalf of its affiliate, MCI Communications Services, Inc. d/b/a Verizon Business Services (individually and collectively referred to herein as "Verizon"). Notwithstanding anything to the contrary contained in the RFP documents, Verizon does not consider this RFP response as legally binding to provide the Services described herein until all exceptions have been resolved, a mutual understanding is reached and a contract is executed. As permitted in the WV Purchasing Division's Procedures Handbook, Section 7.2.19, Verizon also submits additional terms and conditions reflected in Verizon's Service Agreement, which is incorporated and included in Verizon's response. Verizon has included a signed WV-96 and understands Verizon's terms and conditions shall not supersede the WV-96 terms and conditions where a conflict arises.

GENERAL DISCLAIMER

Verizon shall have no liability to Customer whatsoever for any failure to enter into such further discussions or contractual relations. The information provided in this document is based, among other things, upon certain information provided by Customer on which Verizon has made various assumptions. It is also based on certain further assumptions (which may not be expressly stated), which Verizon considers to be valid but the accuracy of which it is unable to assess prior to the conduct of a due diligence exercise. While Verizon has used its reasonable efforts to ensure that the information provided in this document is accurate and up to date, it does not warrant or represent its accuracy. Verizon shall have no liability whatsoever (whether in negligence or otherwise) to Customer or any other party relying on any such information in the event that it is shown to be inaccurate, misleading, out of date or otherwise incorrect.

SUBCONTRACTORS

If subcontractors are to be involved in the provision of services contemplated in this RFP response, this RFP response and any resulting agreement are dependent upon Verizon being able to negotiate commercially reasonable underlying agreements with such subcontractors.

Executive Summary

Verizon is confident that this response will provide the State of West Virginia with food-for-thought around how the Office of Technology will provide not only network services, but an enhanced shared services environment that allows the Office of Technology to provide multiple solutions from multiple service providers to its user agencies and to the citizens of West Virginia.

Our response is largely predicated on our knowledge of how the network has evolved over the last few decades. Using this knowledge, along with our global expertise, involvement in standards bodies, government and industry think tanks and our insight into the network itself (over 75% of the world's traffic moves across our backbone), we have looked to provide a balanced view of how networks are changing for Local and State Government.

As a global service provider it is necessary for Verizon to understand market trends and cutting edge technologies not only for our own needs, but to best support our customers as they look to expand and evolve their own business. In the face of new networking capabilities and advanced communications solutions, new business challenges are emerging for the State of West Virginia. We have become increasingly aware of the following trends in the extensive segment for Public Sector.

- **Multiple Suppliers** – supplier ecosystems are now vital, big and small have to work together for the customer;
- **Cross-functional Activities** – silo'd approaches are a thing of the past, the present and future involves multi-disciplinary teams;
- **Provisioning of Additional Services Already Used by the Client (e.g., Work Requests, IMACs)** – Being local, agile and qualified is key;
- **Keeping Pace with Technological Change in the Marketplace** – the pace of change has become impossible to keep up with – customers need to work with partners to selectively address change and trends;
- **Implementing Innovative Services and Models** – multi-layered and hybrid approaches will be winning ones. No one size fits all even within the same customer;
- **Supporting an Increasingly Mobile Workforce** – BYOD may be the future but it should be tackled with a data-centric approach in mind;
- **Cloud Services** – more is delivered through the cloud – but not everything!

We understand the criticality of the service that the Office of Technology provides to their client base and we would suggest that the opportunity exists for you to provide IT Service Management at an enhanced level. Verizon can support a shared services environment using our Best in Class, secure intelligent network allowing for the delivery of multiple services from many different providers.

Today and moving forward, the Internet of Things and Everything as a Service is and will be driven by the ever growing, ever changing requirements of your end users. In order to accommodate that demand, Verizon is able to support a consumption based model, using our Private IP core to deliver the services your customers need to fulfill their mission for the State of West Virginia. The Office of Technology will be able to focus on the different requirements of each agency, while still providing a highly robust, intelligent and secure core network.

It has been Verizon's legacy to be the leader in developing alternative competition with excellent customer service and pricing. Our recommended solution for the State of West Virginia includes the following elements:

- **Service/Support Infrastructure and Administration** – Verizon as the single source provider of services for ease of administration to the State and insuring business continuity:
 - Ordering (TCRs);
 - Provisioning;
 - Billing (single vendor billing).
- **Ethernet Access** – Using Ethernet Access allows Verizon to provide the State of West Virginia with a new product that allows lowest cost alternate access providers within the product offering. Verizon's Ethernet Access can provide pricing on a per site basis to better meet the agencies' business requirements:
 - **State-wide Network** – Verizon will provide state-wide access to facilities through the use of agreements with multiple vendors throughout the state providing the best cost access for each county based upon carrier availability and price.
- **PIP** – Verizon's world class Private IP network. Private IP (PIP) is Verizon's global MPLS-based IP VPN service that today reaches over 142+ countries and offers customers any-to-any IP connectivity with the privacy and quality of service (QoS) associated with Layer 2 services; Verizon's Private IP for the State of West Virginia includes Managed WAN Monitor and Notify Service.
- **Secure Cloud Interconnect** – Secure Cloud Interconnect uses the high-performing connections of our Private IP network to safely link you to a broad ecosystem of cloud service providers;
- **Verizon Wireless (Redundancy)** – Verizon Wireless 4G LTE will provide remote and backup to Private IP. The reliable Private IP wireless network with 4G LTE can help extend corporate applications to your mobile workforce.
- **Software-defined Networking (SDN)** – SDN can facilitate the enablement of new products and services while minimizing capital and operational expenses for you.

For additional information, please reference our Integrated Solutions Portfolio description provided in Appendix K of this proposal.

Verizon appreciates its strong partnership with the State of West Virginia and the importance of our successful teaming over the years. Verizon is committed to West Virginia, with more than 400 employees, 21 locations, 3500 retirees, and investment over \$100M in the last several years. In addition, Verizon partners with over 200 vendors and suppliers. We believe this commitment and our recommended solution will bring unparalleled value to the state. Organizations like the State of West Virginia are turning to Service Providers like Verizon to solve an ever-increasing need to drive cost efficiencies, identify and execute growth strategies, and transform to a more competitive business model. We know there is no “one-size-fits-all” approach however the starting point of any transition requires a detailed understanding of your current model and identifying where you want to be tomorrow. We appreciate the opportunity to share some of our best business practices with you.

Attachment A – Vendor Response Sheet

Attachment A: Vendor Response Sheet - Within the attached Vendor Response Sheet, provide the following: firm and staff qualifications and experience in completing similar projects; references, copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives were and how they were met.

QUALIFICATIONS AND EXPERIENCE

3.0 Provide a response regarding the following qualifications and experience:

Company Name	Verizon Business Network Services, Inc. on behalf of MCI Communications Services Inc. dba Verizon Business Services
Company Address	4700 Maccorkle Avenue SE Charleston, WV 25304
Sales Contact Name	Sandra Hawkins
Title	Sr Client Executive
Phone	(304) 356-3395
Fax	(304) 356-3590
Email Address	sandra.k.hawkins@verizon.com
Technical Contact Name	Lawrence Host
Title	Client Architect
Phone	(304) 381-3969
Fax	(304) 381-3970
Email Address	lawrence.host@verizon.com
E-Rate Contact Name	Sandra Hawkins
Title	Sr Client Executive
Phone	(304) 356-3395
Fax	(304) 356-3590
Email Address	sandra.k.hawkins@verizon.com

Additional E-Rate contacts include:

Richard Trenz	Director – Education Sales & Operations
Curt McClead	Manager – Education Operations
John Poutasse	Assistant General Counsel – Legal Compliance
Evonia Bennett	Finance Manager – Universal Service Fund
Gina Chatman	Manager – Regulatory Program Compliance
Amy Williams	Manager – Finance Governance
Robert Kannegieser	Supervisor – Billing Operations
Jeannine Tabb	Billing Operations

3.1 *Provide a brief history of your company, number of years in the telecommunications business, location of company headquarters and any offices in West Virginia.*

Verizon Response

Verizon Communications Inc., headquartered in New York, is a global leader in delivering broadband and other wireless and wireline communications services to consumer, business, and government and wholesale customers. Verizon Wireless operates America's most reliable wireless network, with nearly 108 million retail connections nationwide. Verizon also provides converged communications, information and entertainment services over America's most advanced fiber-optic network, and delivers integrated business solutions to customers in more than 150 countries. A Dow 30 company with more than \$127 billion in 2014 revenues, Verizon employs a diverse workforce of 178,500.

Verizon is comprised of two reportable business segments. Financial information and operating metrics are available for Wireline and Verizon Wireless.

Wireline

Verizon's Wireline segment provides voice, Internet access, broadband video and data, next generation Internet Protocol network services, network access, long distance and other services. These services are provided to consumers, carriers, businesses and government customers both in the United States and internationally in 150 countries.

Wireless

Operating as Verizon Wireless, Verizon's wireless products and services include wireless voice and data services and equipment sales delivered over one of the most extensive and reliable wireless networks in the world.

For a detailed history, including mergers and acquisitions, see <http://www22.verizon.com/investor/corporatehistory.htm>.

- 3.2 Describe the size (i.e., number of offices, employees, customer base, etc.) and organizational structure of your company.

Verizon Response

Verizon has 321 offices in 82 countries worldwide employing 178,500 employees. We have 71 offices located across EMEA employing over 3,500 people. We have 25 offices across 12 countries in Asia Pacific employing 8,200 people. We have around 440 employees in Latin America.

- 3.3 Describe any current legal actions against your company, in particular as it relates to the products and services you are proposing in response to this RFP, and provide the current status of any such actions. The Vendor should provide the company's Red Light status with the FCC.

Verizon Response

To the best of our knowledge, there is no material or significant past or pending claims or litigation against Verizon which would impact the provision of Verizon products and services.

For additional information, Verizon's Red Light Status has been provided in Appendix D of this proposal.

- 3.4 Vendor should provide verification that your company is an authorized dealer, in good standing, authorized to sell, and able to deliver all services proposed within its response to this RFP and within the timeframes required by the RFP. Verification should include a letter from any vendor from which you are buying services to resell to the State.

Verizon Response

Verizon has read, understands, and will comply. Please reference the Authorization to do Business Certificate provided in Appendix F of this proposal.

- 3.5 Vendor should provide verification that your company is fully licensed in and by the State of West Virginia and authorized to sell all proposed services in the State of West Virginia.

Verizon Response

Please reference the Authorization to do Business Certificate provided in Appendix F of this proposal.

- 3.6 Provide a minimum of three (3) references. If subcontractors are proposed, three (3) references should also be submitted for each subcontractor. The State reserves the right to contact the references submitted as well as any other references, which may attest to the Vendor's work experience as it relates to this RFP. References should meet the following criteria:
- 3.6.1 The references should be from entities with recent (within the last three (3) years) contract experience with the Vendor.
- 3.6.2 If the Vendor or its subcontractor has no recent contract experience, the references should be from organizations regarding work closely related.

- 3.6.3 *The contacts should be individuals who can directly attest to the Vendor's qualifications relevant to this RFP.*
- 3.6.4 *The reference should be limited to organizational recommendations, not personal recommendations.*
- 3.6.5 *The reference should not be from current State of West Virginia employees or programs.*
- 3.6.6 *The reference should have been contacted in advance so that they may be contacted by the State without further clearance or Vendor intercession.*
- 3.6.7 *The format for each reference should be as follows:*

<i>Customer Name</i>	
<i>Address</i>	
<i>Name of Contact</i>	
<i>Title</i>	
<i>E-Mail Address</i>	
<i>Telephone Number</i>	
<i>Contract or Service Period</i>	
<i>Types of Services Provided</i>	

Please briefly describe the scope of the services provided:

Verizon Response

Customer Name	MTA – New York City Transit
<i>Address</i>	2 Broadway, Room B12.81, New York, NY 10004
<i>Name of Contact</i>	John A. Scarpantonio
<i>Title</i>	Technology Infrastructure Engineering Specialist Level 7
<i>E-Mail Address</i>	John.scarpantonio@mtahq.org
<i>Telephone Number</i>	(646) 252-2204
<i>Contract or Service Period</i>	October 2013 – Ongoing
<i>Types of Services Provided</i>	Ethernet Private Line
<i>Please briefly describe the scope of the services provided:</i>	Project includes interconnection approximately 140 Remote sites to MTA 2 Major data centers. Fiber and Mux build out as necessary to support all sites and Project Management from Verizon.

Customer Name	PA House of Representatives, Democratic Information Technologies
<i>Address</i>	613 Main Capitol Building, Harrisburg, PA 17120
<i>Name of Contact</i>	Paul Cunningham
<i>Title</i>	CIO
<i>E-Mail Address</i>	PCunning@pahouse.net
<i>Telephone Number</i>	(717) 705-6430
<i>Contract or Service Period</i>	Commonwealth of PA Contract expires 10/29/16 with 3 one-year renewals.
<i>Types of Services Provided</i>	Ethernet Access, T-1 Access, Private IP, Managed Network Services
<i>Please briefly describe the scope of the services provided:</i>	Broadband backup to Private IP for approx. 119 District Offices across the Commonwealth.

Customer Name	State of Delaware
<i>Address</i>	801 Silver Lake Boulevard, Dover, DE 19901
<i>Name of Contact</i>	Kay Buck
<i>Title</i>	Telecom Team Lead
<i>E-Mail Address</i>	Kay.buck@state.de.us
<i>Telephone Number</i>	(302) 739-9649
<i>Contract or Service Period</i>	3 year contract was effective 10/01/14
<i>Types of Services Provided</i>	Verizon Transparent LAN/Ethernet services
<i>Please briefly describe the scope of the services provided:</i>	The State of Delaware utilizes Verizon Transparent LAN/Ethernet services to carry the traffic statewide and supports various State Agencies. The State has TLS service installed for over 10 years and continues to upgrade the bandwidth to support State Wide K-12 testing for the school districts in DE.

Project Goals and Objectives

- 4.0 *The Vendor should describe how they will meet the goals and objectives that follow:*
- 4.1 *General Requirements*
- 4.1.1 *WVOT will place orders and be the billed entity for all services provided to WVOT and its state agency customers. Other government and education entities that desire to use these contracts must request and receive waivers from the WVOT to be able to place orders and receive bills directly from the provider. The Vendor should acknowledge that they understand this process and describe their implementation for handling.*

Verizon Response

Verizon has read, understands, and will comply.

Verizon will only accept orders from WVOT authorized users accompanied by a TCR that has been approved by the WVOT. For accepted orders, weekly status at least will be provided by the dedicated Service Manager and/or Account Team with the associated and required information.

Verizon will process all such TCR orders within its ordering systems. Optionally, the WVOT will have available to it the use of the Verizon Enterprise Center (VEC) Orders application.

It is suggested that planning sessions include the planning for the ordering process and procedures that would include both the required TCR and perhaps the use of the VEC Orders application. Improving these procedures and the tools utilized could offer productive and timely processing of orders. Verizon's dedicated Service Manager and/or Account Team will be available for such planning as the WVOT desires.

- 4.1.2 *While WVOT is responsible for this contract and will serve as your only contact regarding contractual issues, the Department of Education and the Library Commission will be directly involved with ordering, billing, and support issues regarding this contract. Please acknowledge that you understand this situation and describe your implementation for handling.*

Verizon Response

Verizon has read, understands, and will comply. For additional information, please reference the response provided in section 4.1.1 above.

- 4.1.3 *The Vendor will be expected to partner with the State to bring its best resources to bear on behalf of the State in a manner that is consistent with the State's strategic plans, policies and procedures. In the event a conflict arises between the Vendor's business practices and the State's strategic plans, policies and procedures, both parties agree to meet and negotiate a reasonable and appropriate realignment of this partnership. Any failure to cure such a conflict shall be grounds for termination of any Agreement between the Vendor and the State. Please explain your position of such an instance and how you will meet this objective.*

Verizon Response

Verizon understands the WVOT enterprise vision, and the Verizon Team welcomes this opportunity to continue its strategic partnership with the State of West Virginia. Verizon will work

hand-in-hand with the State to increase state government efficiencies at a lower cost. Verizon has designed the State Wide MPLS solution that supports all users that require connectivity to the State of West Virginia. This flexibility will enable seamless and secure ubiquitous access for:

- All State Government employees;
- All Elected Agencies;
- All Constituents;
- Federal Agencies;
- Extranet Service Providers;
- Internet Service Providers;
- Mobile User's.

The goal of the Verizon's Next Generation IP/MPLS VPN network is to support the maximum number of applications on the greatest variety of end terminals regardless of mobility, location, and application requirements. To achieve this goal, Verizon will transform the State's current independent networks and point-to-point Frame Relay data communications environment into a single converged and consolidated network capable of supporting all of the State's applications on virtually any type of end terminal device. The Verizon Next Generation IP/MPLS VPN design goals are:

- **Continuity of Service** – Ensure a migration path that minimizes risk and disruption to the users;
- **Customer Focus** – Provide a set of management tools, services levels and customer care to ensure that WVOT and Agencies can focus on their primary role with confidence;
- **Convergence and Consolidation** – Enables the consolidations of the access circuits and services while ensuring agencies are able to maintain their own security;
- **Competition** – Supports alternate access technologies, increasing availability and choice.



4.1.4 *Procurements under this contract support basic business productivity, therefore Vendor performance reports will be filed with the State Purchasing Division should performance fall below the expectations and requirements outlined in this RFP. Please acknowledge that you understand this issue regarding vendor performance and its potential effect on the State's business productivity.*

Verizon Response

Verizon has read, understands, and will comply.

4.2 *Dedicated State Account Team*

4.2.1 *The Vendor should have a primary office location in the State of West Virginia. Provide the location and staffing at that location.*

Verizon Response

Verizon presents the local staffing and locations at the present time:

4700 MacCorkle Avenue SE., Charleston WV 25304	
Sales Manager	Sandra K. Hawkins
Client Channel Partner	Chip Merritt
Service Manager	Don Wilson
827 Fairmont Rd, Morgantown, WV USA 26505	
Solutions Architect	Lance Host
Solutions Architect	Rick Singieton

For additional information, please reference the Account Service Plan provided in Appendix J of this proposal.

4.2.2 *The Vendor account team will be expected to participate in meetings with the appropriate State staff as described below. Please describe your participation in these meetings.*

4.2.2.1 *The Vendor account team should participate in weekly status meetings to discuss order status, issues, and any other information regarding pending orders, expected orders, and the ordering process.*

4.2.2.1 *The Vendor account team will be expected to meet with the WVOT Billing team on an "as needed" basis to report on or reconcile contract, service, or billing issues.*

4.2.2.2 *The Vendor account team should participate in design/strategy/planning sessions as needed for major network upgrades or other special projects related to this contract. Prior to these planning sessions, the Vendor should provide a written implementation plan that outlines Vendor responsibilities, State responsibilities, timelines, and any risks associated with the project that may impact the implementation. A major network upgrade or change would be any change to the network that would impact multiple customers on the network.*

Verizon Response

Verizon has read, understands, and complies. The Account Manager will be the single point of contact for all matters with the State. Regardless of the nature, the Account Manager will be prepared to respond or to bring together the correct resources to meet the requirements of the State. For billing, service, and provisioning issues, the dedicated Service Manager will provide support to the State. The dedicated Service Manager will continue to meet monthly or on "as needed basis" for billing and service issues. The Project Manager will continue to meet weekly

with the State to discuss order status, issues, pending orders, expected orders and ordering process. For additional information, please reference the Account Service Plan provided in Appendix J of this proposal.

4.2.3 *The partnership between the State and the awarded Vendor is linked through the dedicated local account team. In order to minimize misunderstandings and maximize effective communications of the State's goals and objectives, all contact with governmental and educational entities regarding the services under this contract should be done through the dedicated local account team. Under no circumstances should an authorized reseller contact a governmental or educational entity as a representative under this agreement without prior consent from the dedicated account team and the State. The Vendor should describe how this partnership will function.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the response provided in 4.2.2 above. For additional information, please reference the Account Service Plan provided in Appendix J of this proposal.

4.2.4 *The Vendor should provide the requested information for the following team members with proposal submission. Please provide detailed resume information, including name, title, total years of service, years in current title, description of current duties, and information about special training and pertinent certifications, for each individual proposed by role.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the resumes in Appendix I and Account Service Plan provided in Appendix J of this proposal.

- 4.2.4.1 *Account Manager - Responsible for overall account management including account team coordination, acting as primary point of contact, and serves as the corporate liaison for State, Education and Library issues.*
- 4.2.4.2 *Network Engineer (as many as required to adequately support customer base) - Provides technical support for the network and assists with design and planning for special projects and/or changes in the network.*
- 4.2.4.3 *Service Manager - Serves as the primary escalation point for service and maintenance issues, communicates with the State regarding routine network maintenance that may affect the network, provides documentation for service and maintenance functions as well as critical or chronic problems in the network, and manages and reports on contract SLA's.*
- 4.2.4.4 *Project Manager - Provides overall management of implementation or upgrade projects including actively monitoring and reporting on progress and providing written documentation of the project. Oversees and maintains inventory database of services maintained for the State. Provides oversight to ensure service provider compliance with the State contract. Proactively monitors service provider-billing accuracy. Responsible for resolution of all billing issues for all services under this contract, responds to information requests regarding State services under contract, and coordinates with the service provider's subcontractors or partners to ensure seamless delivery of contracted services.*

- 4.2.4.5 *Service Consultant (as many as required to adequately support customer base) - Coordinates implementation activities and interfaces with other State business partners involved in these projects, and maintains the inventory database of services.*
- 4.2.4.6 *Services Representative (as many as required to adequately support customer base) - Coordinates routine service requests (adds/moves/changes) ,responds to billing inquiries.*
- 4.2.4.7 *E-Rate Representative -Acts as a point of contact for E-rate related issues and providing technical support relating to E-rate eligibility. The Vendor should provide the name, phone number, fax number and e-mail address of the person responsible for E-Rate within the Vendor's company. The Vendor should also commit to provide updated information should that contact information change within seven (7) days of the change.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the Account Service Plan provided in Appendix J of this proposal. E-rate contact is provided in 3.0.

Verizon is one of the largest telecommunication providers serving education today and can offer the State the following ongoing value.

Verizon is an authorized provider of E-Rate eligible products and services. Verizon participates in the Billed Entity Applicant Reimbursement (BEAR) and bill discount, whichever discount methodology the applicant selects to receive for assistance. Applicants can choose from Category One (Telecommunications Services and Internet Access) or Category Two (Internal Connections, Managed Internal Broadband Services, and Basic Maintenance). Additionally, Verizon has dedicated E-Rate advocates nationwide that can provide the following.

- An avenue for expediting questions and answers associated with discounting support for K-12 & Library customers in all aspects of the E-Rate program;
- Knowledge of E-Rate program processes, and product and service eligibility.

Verizon and its related legal entities fully participate in the E-Rate program and cooperate fully with the USAC and the FCC in administering the E-Rate program to assist applicants, to the extent permitted by law, with obtaining the benefits of the E-Rate funding for which they have applied. Verizon and its related legal entities fully participate and support the Schools and Libraries Division (SLD) application and funding processes.

Verizon provides support to clients throughout the life of the application, including Program Integrity Assurance, Selective Review (pre-audit), service substitution, technology migration, federal entitlement collection process, etc. for all Funding Request Numbers (FRN) associated with the filing of the application for the fiscal year.

Verizon can provide the State with the following:

- A stable state-of-the-art network or product implementation that will provide the quality, reliability, and scalability necessary to support advanced applications now and in the future;
- Expert on-going technical support and dedicated account management;

- Project management resources with experience in executing plans that provide a sound implementation of large-scale projects within the time frame required;
- Professional services available to provide expertise designed to address the special needs of your industry and aid in the integration of technology;
- Adheres to the USAC Guidelines pertaining to Lowest Corresponding Price to ensure that our customers provide a competitively priced solution.

A strategic relationship with Verizon offers the following advantages as clients implement technology tools into the classroom for students, faculty, and staff.

- Dedicated Verizon account team that understands the needs and drivers of the education market;
- Decades of service and product experience with telecommunication implementations and integrations within education;
- Expert on-going technical support;
- Maintenance for voice, data, and video platforms;
- A leader in Quality of Service standards;
- Tier 1 Internet Access provider;
- Emergency Management communications and IT disaster recovery capabilities.

Verizon K-12 Education Commitment and Experience

Verizon has compiled impressive credentials as a corporate leader on both a national and regional level as a strategic partner in implementation of educational applications and tools via either a Wireline or Wireless platform in education.

As one of the largest communications service providers to education (public and private) in the nation, Verizon takes pride in providing services to schools and libraries across the United States.

Verizon Education References

Verizon's policy is to provide a Verizon internal contact on bid requests for references. This contact will work with the requesting institution to facilitate the "one-on-one" contact with the referral organization in a timely fashion.

For additional information, please go to

http://www.verizonenterprise.com/industry/public_sector/education/erate/.

- 4.3 *Billing Specifications: The Vendor should provide the following billing elements, at a minimum, for WVOT billing and for each of the other entities eligible to use the resulting contract, but not currently supported through WVOT billing: billing month, billed entity name, customer name (if different from billed entity), service location, circuit identification, service period, cost for individual billing components, itemized cost for any one time or non-recurring charges, and total cost.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the Sample Invoice(s) provided in Appendix H of this proposal.

- 4.3.1 *Where the Vendor is issuing credits to a bill related to errors, missed service level objectives, etc. the Vendor should ensure that these credits are issued to the specific billed entity that was impacted. Please describe.*

Verizon Response

The customer's first point of reference for any billing discrepancies is the Account Team. Your Account Team will work internally with various Verizon departments to correct and ensure that all discrepancies are handled in a timely and efficient manner. Verizon is dedicated to providing customer support and ensuring all discrepancies will be handled to the satisfaction of our customers and Verizon. Verizon will use commercially reasonable efforts to address any billing inquiries in a timely manner. When Verizon determines that a billing error has been made, the Account Team should open a FACT or iCI ticket to have the billing adjustment issued. When the billing adjustment is approved by Finance, the resulting credit or debit will be entered against the account impacted, and should be applied on the next billed invoice.

Verizon has read, understands and complies with the proposed three (3) month back-bill limitation requirement. In addition, Verizon requires any billing disputes and/or refunds also be limited to ninety days consistent with §5A-7-4a(c) of the WV Code.

- 4.3.2 *The Vendor should identify a single point of contact for billing issues, disputes, or general questions and have an established process for resolving billing errors. If incorrect rates or quantities are discovered, they must be corrected immediately (prior to the next billing cycle) and must be credited back to the effective billing start date for that service. The customer shall reserve the right to withhold payment until corrections have been made and a corrected invoice is received. Please describe your dispute resolution process.*

Verizon Response

The customer's first point of reference for any billing discrepancies is the Account Team. Your Account Team will work internally with various Verizon departments to correct and ensure that all discrepancies are handled in a timely and efficient manner. Verizon is dedicated to providing customer support and ensuring all discrepancies will be handled to the satisfaction of our customers and Verizon. Verizon will use commercially reasonable efforts to address any billing inquiries in a timely manner.

- 4.3.3 *The Vendor should make billing adjustments within 30 days, when services are disconnected. The Vendor should agree that upon notification of disconnect the Vendor will provide email verification of receipt and provide verification of the date of disconnect. Please explain how you will handle this.*

Verizon Response

Verizon has read, understands and will comply. Once the TCR is received from the State of West Virginia, Verizon will place the disconnect order and the service will stop billing within the requested 30 days. All order details will be communicated to the State of West Virginia.

- 4.3.4 *The Vendor should provide credit or deduction to the customer for charges identified by the customer as incorrect on the Vendor's bill. These credits or deductions must be applied in the Vendor's next billing cycle after notification by the customer. Please explain how you will handle this.*

Verizon Response

Verizon will make every commercially reasonable effort to resolve the disputed amount within 60 days after receiving Customer's notice, but cannot guarantee that.

- 4.3.5 *The Vendor should provide billing in one of the following ways:*

- 4.3.5.1 *Direct email with attachment*
 4.3.5.2 *Direct download from a trusted website*
 4.3.5.3 *Via compact disk storage.*

Verizon Response

Verizon has read, understands, and will comply. Each month, Online Invoice customers receive an e-mail notification signaling that their latest invoice is available online. The e-mail contains the appropriate web address (or URL) in the body of the message, allowing users to access billing information with a single click.

- 4.3.6 *The State desires that back billing for services where the Vendor did not initiate billing in the appropriate timeframe should only be allowed for up to three {3} billing cycles. Additionally, where the State does not issue the appropriate disconnect notice when changing service at a given location, the Vendor should agree to credit the State for up to three (3) billing cycles after the new service was installed. Please explain how you will handle this.*

Verizon Response

Verizon has read, understands, and will comply. Verizon will place disconnect orders once the Telephone Change Request (TCR) from the State of West Virginia is received.

- 4.3.7 *The Vendor should describe how they will handle refunds/credits when E-rate is involved. This description should also address how credits will be issued to E-rate users when service level objectives are not met.*

Verizon Response

Customer may qualify for credits when Network performance fails to meet the stated thresholds established for a Service Level Standard. Verizon's Credit Structure information is provided within its standard Service Level Agreement(s) provided in Appendix G of this proposal. E-rate deals do not change this credit structure that is currently in place.

4.4 *Telecommunications Services*

- 4.4.1 *Point-to-Point Private Line Services. For the purposes of this RFP, P2P Private Line Services is defined as a dedicated end-to-end circuit from one State location to another State location, inclusive of any mileage component.*

Verizon Response

Verizon has read and will comply with this requirement.

- 4.4.1.1 *The Vendor should describe its procedures for termination of demarcation blocks and modular jacks.*

Verizon Response

A Demarc extension is the transmission path originating from the interface of the access provider's side of a telecommunications circuit Demarcation Point within a premise and ending at the termination point prior to the interface of the edge Customer Premises Equipment. Verizon will provide Demarc extension service including: 1) Plenum Rated Cat-6 cabling from Demarc to extension location with RJ-45 terminations at each end, and/or 2) Plenum Rated 1-1/4 Innerduct pathway placed to facilitate a pathway for the service provider fiber extension. Any required EMT conduit, floor or wall core drilling, cable tray, fire proofing, etc. will be an added cost as special construction.

- 4.4.1.2 *The Vendor should provide DS3 local access services using fiber-optic transmission media. Please describe.*

Verizon Response

Verizon's managed network services Level Definitions and Agreements providing local access via fiber-optic transmission media from local exchange carriers available throughout the State. Verizon over the years has aggressively added to its Ethernet coverage utilizing NNIs through regional partners. We have broad network coverage with considerable depth in most major economies. Verizon consistently expands our geographical reach Strategically Verizon has been able to close the gap with our larger competitors in weaker geographies by adding diverse private IP nodes and Ethernet NNI partners. We provide our Customers with a comprehensive portfolio of Private IP and Managed Services including WAN, LAN and Voice Services along with an Industry Leading Security portfolio.

- 4.4.1.3 *The Vendor should provide multipoint bridging capabilities for aggregating P2P digital data circuits. Please describe.*

Verizon Response

Verizon MPLS provides multipoint, point-to-point connectivity options at Layer 3 via VRF VPN forwarding configuration. Verizon EVPL service provides point-to-point and multipoint connectivity at Layer 2 via EVC configuration.

- 4.4.2 *Ethernet Dedicated and Multi-point Switched Services*

- 4.4.2.1 *The Federal guidelines for K12 schools for bandwidth per student will be increasing every year during this contract. Given this increasing demand, capacity above 10 Gbps may be required during the term of this contract. The Vendor should indicate their current capacity services available above 10 Gbps, but all costing information must be shown on the Cost Sheet, Attachment C.*

Verizon Response

Verizon over the years has aggressively added to its Ethernet coverage utilizing NNIs through regional partners. We have broad network coverage with considerable depth in most major economies. Verizon consistently expands our geographical reach including ever increasing bandwidth demands including capacities above 10 Gbps. Verizon utilizes the various access providers with high availability and diversity to provide the most competitive value to the State. Strategically Verizon has been able to close the gap with our larger competitors in weaker geographies by adding diverse private IP nodes and Ethernet NNI partners.

- 4.4.2.2 *The Vendor's proposed circuits should support Ethernet jumbo frames with .a data payload size of up to 9000 bytes. Please describe.*

Verizon Response

Jumbo frames are supported up to a 9000 Byte MTU on an individual case basis (ICB) only. Jumbo frames are supported on both TDM and Ethernet, but CPA will require additional ICB approval. Services utilizing copper facilities may be limited to 1,600 byte frames.

- 4.4.2.3 *The carrier network should support the transport of the following protocols and tools:*
- *All versions of Simple Network Management Protocol (SNMP) -the State currently uses versions 1,2c and 3*
 - *Windows Management Instrumentation (WMI)*
 - *Internet Control Message Protocol (ICMP)*
 - *Syslog*
 - *NetFlow*
 - *Web Services-Management (WS-Management)*

Verizon Response

Verizon has read, understands and complies with standard protocols.

- 4.4.2.4 *The carrier network should support all versions of Internet Protocol Security (IPsec), Transport Layer Security (TLS), Secure Socket Layer (SSL), & Secure Shell (SSH).*

Verizon Response

Verizon has read, understands and complies with standard protocols.

- 4.4.3 *Frame Relay and Asynchronous Transfer Mode Services*

- 4.4.3.1 *The ATM and Frame Relay services are being requested and are currently necessary to support State customers but it is the State's desire to migrate away from ATM and Frame Relay services and focus on P2P and Ethernet services moving forward although there will be situations where new Frame Relay and ATM connectivity will be required until the migration is complete. The Vendor should consider this long term goal in developing its response to these service requirements and describe their ideas on how this could be done.*

Verizon Response

Verizon is proposing MPLS as a migration technology which can be configured to use Ethernet, Frame, PPP encapsulation types. Frame relay encapsulation will be configured with a DLCI and a unique /30 addresses and a VRF/VPN unique to the state of West Virginia. Verizon's Private MPLS network compliant to RFC 4364. Verizon is proposing a private MPLS network utilizing Ethernet access to support existing SES, Frame Relay and ATM services. MPLS can be configured in a Point-to-Point, Any-to-Any, or Hub and Spoke configuration. Verizon has chosen this path versus providing support for legacy services due to vendor support and maintenance of Frame Relay and ATM services. Verizon is proposing using MPLS as that migration path for ongoing support and future technologies such as VoIP, VIDEO, Software defined networking, and Wireless backup. Our goal is to migrate the State to next generation services to improve costs, supportability, business continuity and disaster recovery. The Ethernet access services being proposed can meet or exceed existing network speed via Ethernet encapsulation (1Mb-1Gbps and 10Gbps access speeds), eliminating the need for specialized TDM or legacy optical equipment. We are proposing MPLS in interpretation of the response to Addendum 2 of SWC1600000003, question 3 and WVOT responses 3 a) and 3 b). These responses are in regards to migration plan of Frame Relay and ATM services.

- 4.4.3.2 *The Vendor should propose Frame Relay/ATM services that support open architecture industry standards. Please describe.*

Verizon Response

Verizon is proposing MPLS as an open standard that will provide a migration technology which can be configured to use Ethernet, Frame, PPP encapsulation types. Frame relay encapsulation will be configured with a DLCI and a unique /30 addresses and a VRF/VPN unique to the state of West Virginia. Verizon's Private MPLS network compliant to RFC 4364. The migration path of these legacy services includes Private IP. Private IP enables enterprises to leverage existing network infrastructure and resources to create a next generation network capable of utilizing the flexibility and scalability of IP routing. Private IP can be configured in various network topologies, but the ability to support any-to-any connectivity and QoS with 6 classes of service will assist customers in supporting new applications and network convergence. Private IP also

provides the same degree of security (in terms of separation and isolation) and reliability that Frame Relay and ATM customers have come to expect from their existing data networks and customer VPNs are not directly accessible from the Internet. Essentially, Private IP Service is a private network-based VPN that provides customers a network node and with no access to the Internet except through secure gateways and logical separation is always maintained.

Private IP is also a highly scalable design that enables customers to consolidate multiple local access circuits that have been dedicated to separate types of traffic (e.g., data, Internet, voice, and video) to a single port connection without comprising security or performance when IP QoS is utilized.

Key Private IP features include:

- Any-to-any connectivity;
- QoS to support vital applications such as VoIP and Audio/Video Conferencing;
- Private IP is more scalable and simpler than Frame Relay or ATM;
- Extensive Private IP Disaster Recovery solutions as well as Private IP Wireless Access and Satellite Access to Private IP;
- Remote Access via Secure Gateway - Mobile User and broadband connectivity using Secure Gateway - Retail and Remote Office;
- Multiple protocols supported (i.e., Frame Relay, ATM, Ethernet, Multilink, PPP, and HDLC);
- Extensive Reporting and monitoring options;
- Shared port option to provide easier migration.

4.4.4 *Multi-Protocol Label Switching (MPLS) Services*

4.4.4.1 *The Vendor's proposed network should support the forwarding of standard network monitoring protocols to allow customers to monitor their networks and end sites from centralized support locations on the network.*

Please describe.

Verizon Response

The MPLS Private IP (PIP) network is architected based on industry standards RFC 4364 and provides clear and uninterrupted transport of Network monitoring and security protocols within the customer Private VPN or Virtual Route Forwarding instance. Because MPLS/PIP has the capability to support QoS for applications traffic priority, the monitoring and security protocols can be further prioritized if needed.

- 4.4.4.2 *The Vendor's proposed network should support the forwarding of standard security protocols to allow customers to manage and secure their networks and end sites from centralized support locations on the network. Please describe.*

Verizon Response

Verizon MPLS, EVPL, and Private Line networks support authority of security protocol. We achieve this by allowing security protocols to be transparent to establish VRF VPN configurations for MPLS and EVC mapping per EVPL. Private Line networks are also transparent to security and management protocols.

- 4.4.4.3 *The Vendor's proposed solution should support multi-media applications such as Voice and Video over IP. The Vendor should describe how the proposed solution is built to handle these applications and describe any special features that this network may have to enhance support for these applications.*

Verizon Response

Private IP is a network-based virtual private network (VPN) enabling customers to effectively communicate over a secure network. It also provides the foundation for automating business processes between companies, including e-commerce, shared intranets, and extranets. Private IP:

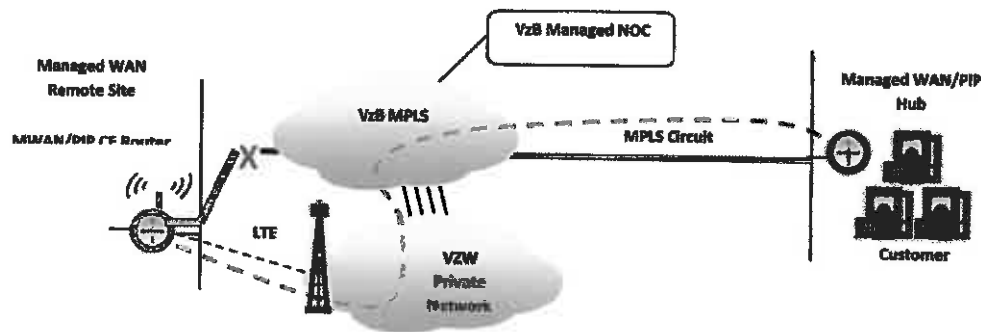
- Is based on Multiprotocol Label Switching (MPLS), which enables Private IP to separate customer traffic through a VPN, resulting in the security and Quality of Service (QoS) of Layer 2 switching with the scalability and any-to-any connectivity of IP;
- Is available as a non-managed transport or as a Managed Services solution. Non-managed transport customers can use the Remote Configuration feature to refer implementation to Verizon in specified markets;
- Standard service offers Internet Engineering Task Force (IETF) Differentiated Service (DiffServ) class of service. Private IP's Enhanced Traffic Management (ETM) enables customers to prioritize their traffic and assign classes of service distinguished by different levels of packet loss and jitter;
- Offers advanced network management, assessment, reporting, and packet marking tools, allowing customers to fine-tune their networks to optimize performance, gain visibility, and achieve new levels of cost-efficiencies;
- Verizon's Dynamic Network Manager, a component of our Software Defined networking (SDN) product strategy, is a feature of Private IP which enables you to virtually control your bandwidth speed in real time, schedule port changes, receive threshold alerts, and access management reports;
- Supports a full range of access types.

Verizon Wireless Access for Private IP Wireless

Overview

Wireless access options for Verizon managed network services (MNS) and unmanaged networks are available through the use of cellular connectivity, using LTE (and EVDO) technologies from Verizon Wireless. By adding cellular connectivity as a supported access method, customers can elect to add high-speed alternative access for remote sites or remote offices in case of a failure on the primary line, or for primary access as the only form of connectivity for a remote site (where customer's data applications support this type of connectivity).

Wireless Access for Managed WAN is a managed version of the Private IP Wireless Access solution (aka "EVDO-PIP" or "LTE-PIP") that provides customers with direct wireless access – either primary or backup - to the Verizon Private IP network. The solution utilizes the network to network interface ('NNI') built between the Verizon Wireless Private Network and Verizon MPLS network. This document refers to LTE, but in most cases statements also apply to EVDO as well.



How it Works – Network Components

Private IP Wireless Access (LTE-PIP) is a joint solution developed between Verizon and Verizon Wireless for secure wireless access. Multiple, dedicated network-to-network interconnects ('NNIs') act as a gateway to the Verizon Wireless Private Network and the Verizon MPLS network. This gateway is referred to as the Private IP Wireless Gateway or PWG.

The gateway is a shared infrastructure designed to support multiple customers. Multiple gateways connect the Verizon Wireless Private Network and Verizon MPLS networks. The gateways are categorized as either primary or secondary gateways. Primary gateways are located throughout the U.S. The primary gateways carry customer's "live" traffic. Customers can order ports for one or both of these gateways and traffic can be load balanced across multiple primary gateway ports.



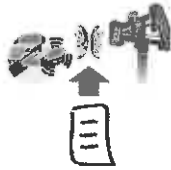


Secondary gateways are also located throughout the U.S., and are "paired" with their associated primary gateway in all cases. These gateways do not carry "live" traffic; they are "back-up" gateways that will only carry traffic in the event of a failure of the primary gateway.

Secondary gateways are always required, and must be ordered as part of the customer’s overall solution.

The Verizon Wireless Private Network solution creates a highly secure, end-to-end data pipe between the customer’s wireless device and their corporate network. When used with Private IP Wireless Access, a secure end-to-end data connection is created between the customer’s wireless device or Managed WAN router and the Private IP Wireless Gateway, segregating host devices as part of the private wireless network and assigning them to the customer-specific home agents. The data is then routed through the wireless network and to the gateway in one of two ways:

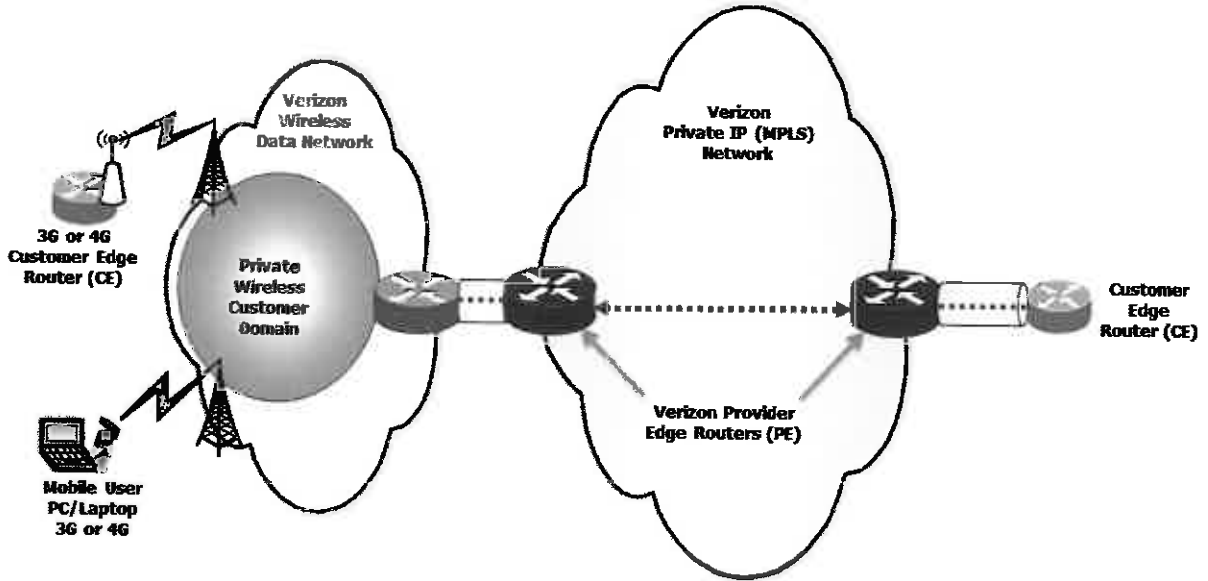
1. Standard IP traffic using Dynamic Mobile Network Routing (DMNR)
2. Tunneled traffic via an IP (or IPSec) tunnel

Additional design information regarding supported CPE, Managed and unmanaged capabilities and port sizing utilization based on solutions requirements and are developed as part of the over business continuity and application availability reference architecture.

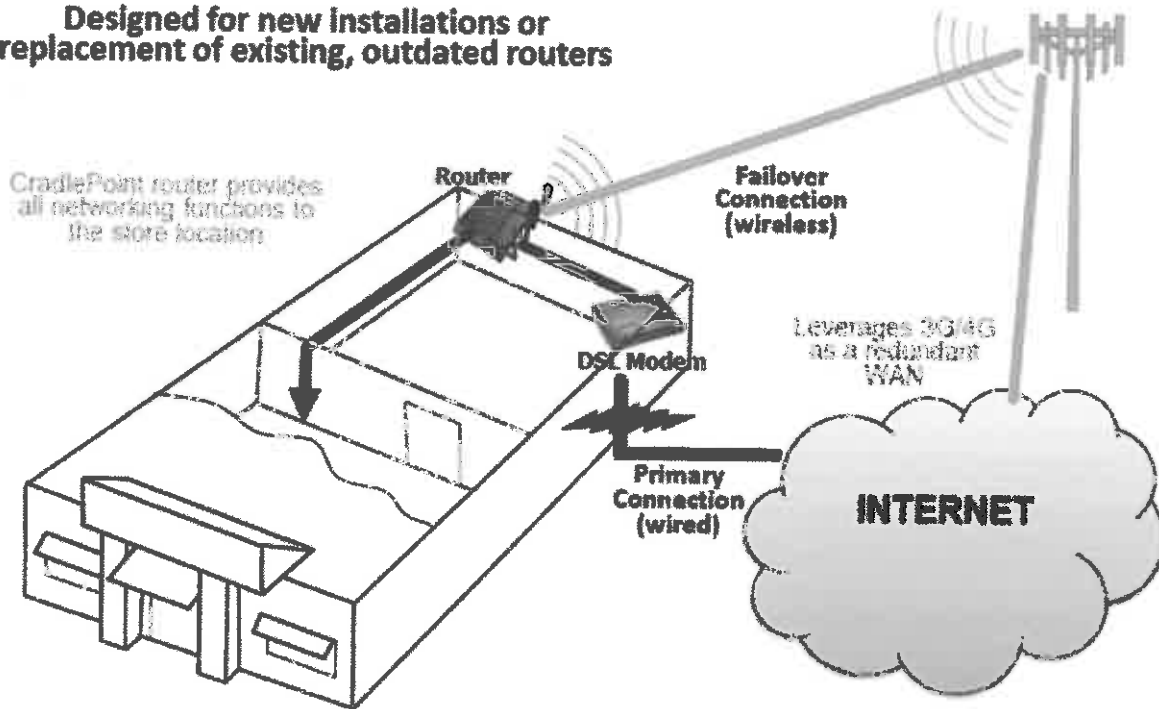
Secure Storage	Mutual Authentication	Root Key Length	Security Context	Integrity Protection	Encryption
		128 vs. 64			
Device with credential and secret data for secure access of the network	In LTE, both the device and the Network authenticate each other	Key length better secures User Plane and Signaling information	Keys to encrypt signaling and subscriber data created for each session	Additional algorithm to check the integrity of data transmitted	Signaling and/or subscriber data encryption

- **Mutual Authentication** – In 1X and EVDO, there is only one-way authentication (the device is authenticated to the network). In LTE, there is mutual authentication;
- **Root Key Length** – CAVE key (A-key) is 64 bits in length. EPS-AKA key (K) is 128 bits in length;
- **Integrity Protection** – 1X and LTE differ in their capability for integrity protection. CAVE (used in 1X) does not have a mechanism to provide integrity protection. EPS-AKA (used in LTE) provides integrity protection for the signaling channels (non-access stratum and RRC signaling);
- **Tying of Authentication to the Security Context** – EVDO and LTE differ. EVDO specifies a D-H key exchange to establish a security context. Since the D-H is unauthenticated, it is not tied to an authenticated identity. LTE generates keying material tied to access link security contexts;

- **Strength of Encryption** – LTE supports the AES algorithm. AES has undergone more public scrutiny than CAVE-based encryption. For example, AES was selected as the FIPS-197 standard by the U.S. NIST in a competitive selection process. Although 1X CAVE Revision A supports AES as well, it is not implemented on the Verizon network.



Designed for new installations or replacement of existing, outdated routers



Software-defined Networking

Given the business drivers, internal challenges, and competitive pressures that enterprises currently face, the evolution of disruptive technologies such as Software-defined Networking (SDN) can help address customer's business goals.

At Verizon, we see SDN as the next game changer in networking technology. SDN capabilities facilitate dynamic, application-aware behavior, and increased flexibility, and enable simplified service development that is independent of physical infrastructure. An SDN approach promises to significantly improve networking services to make them available in near real time through centralized management controls and with new flexibility and efficiencies. We think these improvements will be so significant that they will transform the way our customers conduct their day in and day out operations.

SDN coupled with Network Functions Virtualization (NFV) for services enables resource sharing and re-use on a time-of-day basis across geographic locations and applications. As a result, dynamic scaling of resources to meet demand and more efficient resiliency mechanisms can be more easily achieved. Consequently, we believe SDN enables the network to respond quickly to changing business requirements as required by our customers. There has been significant progress in the SDN space. Yet, just as cloud has transformed how we think about applications, SDN has the potential to transform how we think about connecting users to those applications.

Verizon is an industry leader and invests billions of dollars each year in network improvements. Verizon has been part of the SDN movement from the very beginning. Verizon is a founding member, and current board member, of the Open Networking Foundation (ONF) as well as an active participant in the following SDN workgroups and standards organizations:

- Open Networking Foundation (ONF);
- European Telecommunications Standards Institute - Network Functions Virtualization (ETSI NFV);
- Internet Engineering Task Force (IETF);
- Optical Internetworking Forum (OIF);
- 3rd Generation Partnership Project (3GPP SA5);
- Alliance for Telecommunications Industry Solutions (ATIS);
- Open Networking Research Center (ONRC);
- TM Forum (formerly TeleManagement Forum) – Zoom project;
- OpenCloud Connect (OCC);
- IEEE Software Defined Networks;
- Metro Ethernet Forum - The Third Network;
- Next Generation Mobile Networks (NGMN) Alliance;

- Open Networking User Group (ONUG).

Through our involvement with the various industry forums, including multi-vendor testing, we are focusing on our customers to help ensure that the standards and products that emerge fulfill business needs.

In this document, we discuss SDN and NFV approaches. While SDN and NFV are not necessarily interchangeable, they are complementary and very closely coupled since the goals of both are to reduce capital/operational expenditures, speed time to market and increase business agility. Verizon recognizes the value of orchestrating SDN and NFV in a combined effort.

Thus, from a Verizon perspective, SDN and NFV deliver:

- Common platforms that enable intelligent network forwarding at multiple layers;
- Standards-based interfaces;
- Programmatic control of the network and computational resources;
- Software functional entities or appliances to implement services;
- Automation of control, deployment, and business processes.

For additional information, please reference the Software-defined Networking Overview provided in Appendix M of this proposal.

4.4.4.4 *The Vendor should clearly label demarcation points with the site specific circuit identification information. Please describe.*

Verizon Response

Verizon has read, understands, and will comply. The demarcation point will be clearly labeled using a naming convention consistent with the State's network architecture.

4.4.4.5 *The Vendor should provide a facilities plan that indicates where the vendor's telecommunications services are currently available and a proposed roadmap and schedule for future expansion and enhancement.*

Verizon Response

Verizon has read, understands, and will comply. This information can be communicated with the State based on service areas and technologies available for each service area. Furthermore, it is our intension to continue to grow and develop solutions offerings best suited for the State in all areas of the States constituencies.

Verizon will work with the State to provide a Technical Road Map upon award.

- 4.4.4.6 *The Vendor should define its ability to provide additional network services in support of the State of West Virginia network. This should include services such as Domain Name Services (DNS), Firewall Services, and Content Filtering Services.*

Verizon Response

Domain Name Services (DNS) are available on our public internet products. DNS can also be configured for a customer within their private network by our Professional Services practice. Firewall services are available on our MPLS network as a gateway function. Additionally, Gateway services can be added to our gateway firewall within MPLS. DNS, Firewall, and Content Filtering Services can be setup as a custom alternative within a data center.

4.5 *Installation Services*

- 4.5.1 *The Vendor will be expected to work with the State to establish standard procedures for ordering and implementing these telecommunications services. The Vendor should describe their standard procedures for these services. The State will provide the following information as part of a service order:*

- 4.5.1.1 *Agency Department*
- 4.5.1.2 *Agency Name*
- 4.5.1.3 *Division Name*
- 4.5.1.4 *Agency Primary Contact*
- 4.5.1.5 *Phone #*
- 4.5.1.6 *Cell #*
- 4.5.1.7 *Agency Onsite Contact*
- 4.5.1.8 *Phone #*
- 4.5.1.9 *Cell #*
- 4.5.1.10 *Email Address*
- 4.5.1.11 *Agency Onsite Address (including County)*
- 4.5.1.12 *Hours of Operation*
- 4.5.1.13 *WVOT Onsite Technician*
- 4.5.1.14 *Phone #*
- 4.5.1.15 *Cell #*
- 4.5.1.16 *Email address*
- 4.5.1.17 *UBI – Unique Billing Identifier*
- 4.5.1.18 *Requested Date*
- 4.5.1.19 *Direct Bill? Yes or No*
- 4.5.1.20 *Requested Data Services*
- 4.5.1.21 *Agency Operation*
- 4.5.1.22 *TCR # (Telecommunications Change Request)*

- 4.5.1.23 *Demarcation Extension*
- 4.5.1.24 *Move from Address (old address, if office move)*
- 4.5.1.25 *Office Move*
- 4.5.1.26 *Additional Detail*

Verizon Response

Verizon has read, understands, and will comply; as a long standing vendor and partner of the State, Verizon understands the requirements of the State for ordering and implementing services.

4.5.2 *The Vendor should be able to receive service orders from the State electronically and provide confirmation of receipt and subsequent order detail electronically to the State. This detail must include, at a minimum, the following data elements. Please describe your process.*

- 4.5.2.1 *Date order received*
- 4.5.2.2 *Customer name*
- 4.5.2.3 *Customer onsite address*
- 4.5.2.4 *Projected due date*
- 4.5.2.5 *Circuit ID*
- 4.5.2.6 *Additional Order Detail*

Verizon Response

Verizon has read, understands, and will comply; as a long standing vendor and partner of the State, Verizon understands the requirements of the State. Verizon currently receives orders from the state by email and follows up with the requested data elements weekly. For additional information, please reference the Account Service Plan provided in Appendix J of this proposal.

4.5.3 *The Vendor should provide implementation coordination that includes, at minimum, scheduling the due date, addressing facility issues, capturing service information, and providing that information to the customer. It is highly desirable that the Vendor provide a web portal for placing and tracking orders for services. This portal should not require any programming costs and additional process requirements, other than those which are already established. Please describe your implementation coordination procedures.*

Verizon Response

A successful implementation of your new service requires your active involvement. We've provided the below steps to help you understand what to expect and how to prepare your facility in ample time for a smooth installation.

We will need access for service installation and help coordinating and addressing necessary preparations including power, space, and cabling paths.

Here is what you can expect for each installation:

1. A phone call from a Verizon representative shortly after submitting your order request to verify the following:
 - a. The Verizon services ordered.
 - b. Information for a knowledgeable local contact including name, address, phone number, and email. This person will need to provide access to the premises, telecommunications closets, and other network facilities at the location.
2. We will then perform a remote or a physical site survey of your premises.
 - a. If a physical site survey is NOT required, a Verizon order manager will contact you to discuss installation and service activation.
 - b. If a physical site survey IS required, a Verizon technical representative will schedule one with the local contact.
3. We will provide the local contact with your site responsibilities, including space, power, and cabling path requirements.
 - a. The local contact must verify receipt of these “room ready” requirements and provide Verizon a date on which they will be completed.
 - b. Verizon will respond with a committed delivery date based on the site readiness date.
4. The local contact will prepare the site for service installation. This responsibility includes:
 - a. Providing adequate, secure space for service equipment.
 - b. Providing power levels for the circuit and equipment as communicated by Verizon.
 - c. Providing a conduit and cabling path within the building to the designated installation space.
5. The local contact must notify Verizon when the site is ready, or if there are any delays in room preparation.
 - a. If the site is deemed not ready by Verizon, service installation and activation will be delayed.
6. Verizon will dispatch the installation team(s).
 - a. The local contact must ensure that technicians have access to all on-premises wiring and space locations.
7. Following the physical installation, please notify your Verizon order manager to complete service activation.

Online Portal and Reporting

The Verizon Enterprise Center located at <https://verizonenterprise.com> will be available once you have registered and set up entitlements (entitlements help safeguard your account information). Upon setting up entitlements, you will be able to:

- Get order status;
- Receive email notification when your invoice is ready so you can download or print;
- Sign up for paperless billing, submit a question or make an inquiry online;
- Create, view and status a repair ticket without making a phone call;
- Register for network tools to view performance data, create reports, inventory services and make changes;
- Access key functions from your mobile device or tablet.

For assistance navigate to live chat from the home page M-F 8am-8pm ET or call 1-(800) 569-8799.

Further information is provided below, pertaining to ordering through our Verizon Enterprise Center (VEC) tool "Orders."

The Orders tool enables the State to place, track and manage orders for products and services online via the Verizon Enterprise Center. Based on entitlements, you can create orders, view the status of a specific order, or view an overall summary of orders.

Order creation is supported by both product-specific forms - collecting all necessary order details - as well as "generic" order forms - collecting only a few key details about the order request. Regardless of the type of form required for the user's request, once they click "Submit Order," information about the order request is routed instantly to the customer service representative, center or implementation manager responsible for processing the request. In some cases, the order request can flow through directly without manual intervention.

4.5.4 *The Vendor should specify its standard installation intervals for each type of circuit proposed in the Cost Sheet (Attachment C) and should understand that installation intervals and related guarantees/SLOs will be considered during evaluation. Please provide your standard installation intervals.*

Verizon Response

Product	Access Speed	Facilities Available	Minor Build	Major Build
		Standard Interval	Standard Interval	Standard Interval
Ethernet Access - Out of Region Switched Ethernet (Type 4 & Standard)	1Mbps – 1G	30	65	65
Ethernet Access (EA) (Type 3)	1Mbps – 600Mbps	30	65	65
	700Mbps – 1G	30	65	65

4.5.5 *The State desires that the standard installation charges for the proposed telecommunications services be waived by the provider. If the standard installation charges are not waived they must be clearly identified on the Cost Sheet for each type of service proposed and include all applicable charges for the installation. Please explain your position on this.*

Verizon Response

Please reference Attachment C provided in the Cost Proposal as requested.

4.5.6 *The Vendor should notify the State of any problems that will prohibit the Vendor from meeting the proposed installation interval, within a maximum of fifteen (15) working days after the order has been placed. The Vendor should identify the problem(s) and provide an estimated time that the installation can be completed. Please describe your process in this instance.*

Verizon Response

Verizon has read, understands and will comply. The Verizon Order Management team along with Service Management and engineering will work together to quickly discover the cause of any installation delays and manage the corrective response with the carrier to bring the installation back on track.

- 4.5.7 *The demand for bandwidth and flexibility in transport services continues to grow as initiatives in West Virginia and at the national level continue to evolve. To facilitate this kind of growth in bandwidth and provide the flexibility needed to adapt to these changes, many of the proposed services must be built on fiber optic infrastructure. Please provide your position in this instance.*

Verizon Response

Verizon over the years has aggressively added to its Ethernet coverage utilizing NNIs through regional partners. We have broad network coverage with considerable depth in most major economies. Verizon consistently expands our geographical reach. Strategically Verizon has been able to close the gap with our larger competitors in weaker geographies by adding diverse private IP nodes and Ethernet NNI partners. We provide our Customers with a comprehensive portfolio of Private IP and Managed Services including WAN, LAN and Voice Services along with an Industry Leading Security portfolio.

- 4.5.8 *Network Buildout may be required in certain instances where fiber facilities do not exist to provide the requested services. The State prefers that any costs associated with network buildout be minimized and borne by the Vendor. In the event these costs are extremely burdensome to the Vendor, the Vendor will notify the State of the costs for this buildout and the State will evaluate if it is in the best interest of the State to solicit a separate contract for such buildout. Please provide your position in this instance.*

Verizon Response

Verizon utilizes the various Local Exchange Carriers throughout the State taking the best advantage of the strengths in each area. By not relying on one carrier's presence, Verizon can leverage the maximum coverage with minimal capitol payout from the State. Additional Special Construction charges are handled on an individual case basis. It is mutually agreeable that both parties would need to agree on final costs before proceeding.

- 4.6 *Support Services*

- 4.6.1 *The Vendor should provide a detailed description of its support center environment. The description should include, at a minimum, staffing numbers, staffing expertise, help desk software, and how trouble tickets are handled.*

Verizon Response

Today more than 9,000 employees staff 13 Verizon consumer multicultural sales and solution centers in various parts of the country, communicating with customers in their native languages. Also, many Verizon Plus stores are located in multicultural communities and staffed with multilingual employees to serve our customers.

We have five major global Network Operations Centers in the United States, Europe and Asia-Pacific. They are located in Ashburn, Virginia; Cary, North Carolina; Manila, Philippines; Amsterdam, The Netherlands; and Dortmund, Germany.

The State of West Virginia will be supported either through our Cary, North Carolina NOC as they are today or our Ashburn, Virginia NOC.

The Network Operations Center (NOC) is fully and professionally staffed 24 hours a day, 7 days a week which provides you proactive monitoring of the network around the clock. All dedicated connections are checked every five minutes to make sure they are performing properly. In the event of a problem, you will be promptly notified by a mutually agreed upon method. If you identify a problem on your own, the NOC is available 24x7 to troubleshoot the issues with you.

The initial triage of a fault is generally conducted thru automated systems that access devices in or out-of- band, as well as conduct testing of circuits. The results of the automation routines are presented to first-level engineers who review and follow established troubleshooting guidelines for further diagnostics. Whether a problem is software- or hardware-related, the first-level engineers are trained to resolve most network issues. However, if the first-level engineers need technical assistance beyond their scope and expertise, they are supported by second- and third-level teams who provide more advanced technical support. Once a ticket is generated, the NOC maintains end-to-end ownership and accountability of the fault resolution process. The NOC engineers would engage the necessary internal support groups, local-exchange or international carriers, and/or third-party vendors. Generally speaking, a single engineer is empowered with the knowledge, access, and training needed to drive a given issue to resolution.

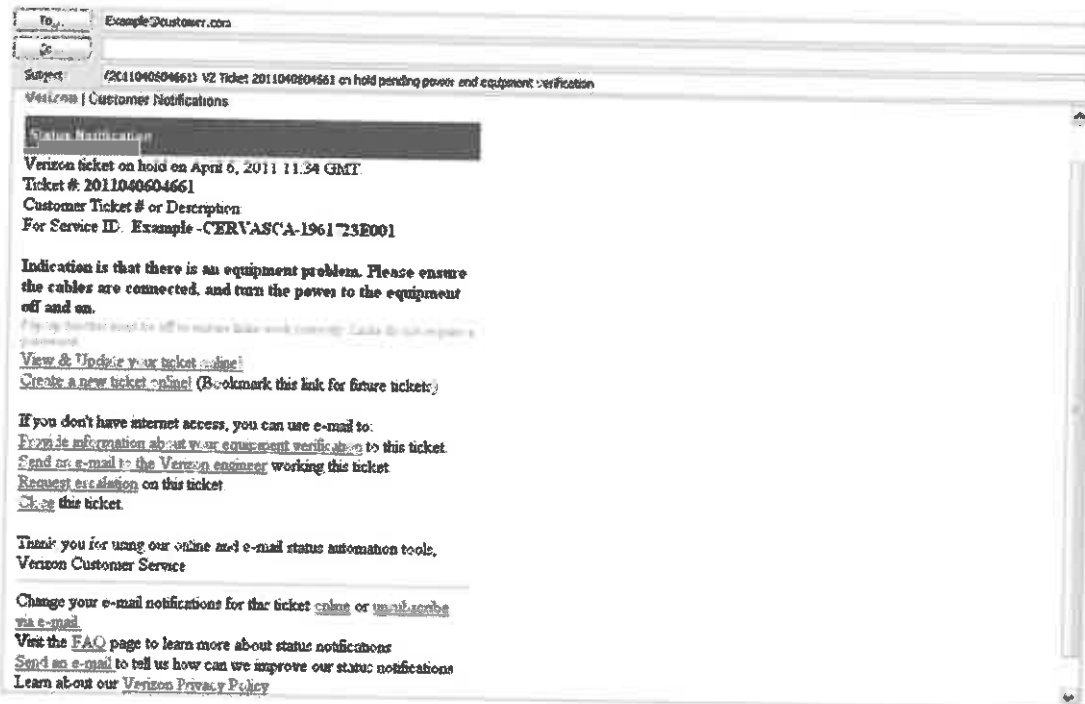
Not only are our facilities designed for survivability, but we also take physical security of our facilities very seriously. For the safety of employees, customers and visitors, Verizon facilities are staffed 24x7 with a security task team. The security task team is responsible for video surveillance of our parking facilities, entry, and exit points, and each floor within the facilities. In addition to having a security task team, each employee is issued a Verizon identification badge, which is specifically coded with levels-of-access information and a parking pass. Each employee must "badge into" the main access point and then badge in again when accessing specific floors. Record logs are kept, tracking employees' access into the facilities.

Trouble Ticketing

Once the fault has been logged in Verizon's global trouble ticketing system, Enterprise Ticket Management System (ETMS), the customer will be given a fault reference number referred to as the Trouble Ticket number. This is a 13-digit number with the following format "YYYYMMDD12345" which should be quoted in any subsequent communications with Verizon relating to the fault or its resolution.

Trouble Tickets are opened within 15 minutes of a performance-impacting network event and a pro-active Status Notification email will be issued to the customer stating the notice of the Trouble Ticket number and a preliminary diagnosis of the problem. Please see figure below for an example Status Notification email.

During the problem resolution process, the customer will receive periodic updates on the status of the problem. Depending on the symptoms of the problem, Verizon will assign a priority to the Trouble Ticket where specific target restoration times apply, according to priority.



Status Notification Email

Expertise

Verizon is committed to employee learning and development and recognizes that people are the cornerstone of successful customer service. Our training organization provides detailed educational courses on products, services, and tools to sales, service, and technical audiences. Courses are taught in a variety of formats, including Interactive Distance Learning (IDL), online self-paced modules, and leader-led training.

Our training organization trains both newly hired and tenured customer service representatives thru classroom curriculum, computer labs, and side by side on the main service floor. Specific training courses are outlined for newly hired customer service representatives and technical support representatives covering capabilities such as the following:

- **Accountability** – Taking responsibility for one's own actions, as well as for team members and for the organization. Taking ownership of individual goals and supporting others in meeting their goals for the overall good of Verizon;
- **Business Focus** – Demonstrating knowledge of the company strategy, competitive environment, business and financial drivers, performance measurements, and organizational structure;

- **Communicating** – Using formal and informal means to convey or receive information, concepts, strategies, and inspiration in a constructive manner which achieves the desired effect;
- **Customer Focus** – Demonstrating concern and taking appropriate action for exceeding expectations of one’s external and/or internal customers;
- **Fostering Teamwork** – Working cooperatively with others, and setting an example of collaboration and trust to create an environment which results in mutually productive relationships in order to satisfy customer needs and accomplish team and business objectives;
- **Process and Systems Knowledge** – Demonstrating a working knowledge of necessary processes and the associated systems, tools, and resources;
- **Products** – Exhibiting knowledge of Verizon products, services and technologies in order to meet customer needs.

Continuing education is also provided by our training organization to ensure that all representatives are prepared to handle customer calls.

Verizon Enterprise Center (VEC)

Verizon Enterprise Center can give the State access to critical information and resources on demand.

Do more with less. Manage costs. Work smarter. We’ve designed your customer portal, the Verizon Enterprise Center, with these goals in mind. The comprehensive management tool can help you make the solutions you use work more efficiently, save time, and control costs.

In addition to your network management tools and ability to view and pay bills, the Verizon Enterprise Center is packed with the information you need, including news and resources on the latest solutions and industry trends. With the Verizon Enterprise Center, you can stay one step ahead.

The State can conveniently manage your Verizon accounts from a smartphone or tablet to keep your business running at peak levels while on the go! You can create and view repair tickets; view order status and bill summaries; and suspend and resume wireless numbers – some functions don’t even need a login. The State can also manage your Verizon accounts on your own terms with the new My Verizon Enterprise mobile app*.

This app allows you to log in, check and manage account details from your mobile device. Simply visit Google Play or The App Store and search for the My Verizon Enterprise mobile app. Once found, you can download and open the app, which then launches a Quick Task or allows you to access the business portal for more management options. (*Limited to phones with IOS and Android operating systems in the U.S. only)+

+ Access to online functions will vary based on your assigned user role and customer type. Accessing the Verizon Enterprise Center from a mobile device or tablet will not provide the same options as the desktop version.



Verizon Enterprise Center

Account Management:

- Manage your existing lines and account.

Orders

- Place orders, Status orders, Make Service changes for your solutions;
- Order the latest devices and activate or upgrade, update user information, and change plans including suspend lost or stolen devices;
- Ability to do moves, adds, changes or deletes to your service.

Invoices

- Receive email notification when your invoice is ready;
- View, analyze, download, print and pay invoices online for current and past bills;
- Receive your online invoice sooner than your paper invoice and up to 7 years of historical invoices available online;
- Customize daily call records views to monitor, trend and analyze usage;
- Standard and custom reports to analyze usage and trends to help you control costs;

- Create and status a bill inquiry without signing in through Quick Functions on the home page or sign-in for more details;
- Choose to join other customers by going paperless and reduce your storage costs and keeps businesses organized by having information in one place. In fact, we are sending 73% less paper pages thanks to our customers choosing online billing.

Repairs

- Create, view and status tickets via desktop, email, smart phone or tablet;
- Run a circuit test or line test to quickly identify a problem;
- Review performance reports and set up ticket status notification.

Cloud and IT Solutions

- Learn how you can leverage our IT and cloud expertise to better manage your infrastructure, applications, and backup services.

Security

- Access to Verizon Enterprise Solutions experts and expertise around the globe.

Network Tools

- Make informed decisions about your network fast. Our comprehensive Verizon Enterprise Center Dashboard application offers access to performance statistics from the enterprise to the Permanent Virtual Circuit (PVC) level—enabling you to track managed service implementation, project and ticket status, inventory and worldwide service location topology, and order provisioning status across domestic and global networks. Managed WAN Optimization customers can utilize this portal to help increase performance, decrease latency and improve overall application efficiency.

Dashboard

- Service Management Dashboard (SMD) is a self-service network management tool in Verizon Enterprise Center that provides customers visibility into their near real-time Verizon inventory and its associated incident tickets, alarms, maintenance events as well as service and change requests.

4.6.2 *When the State customer contacts the support center, the Vendor's technical support staff should not place the caller on hold for more than fifteen (15) minutes. If unable to connect the caller to talk to an actual technical support person that can assist them with their problem(s) within the aforementioned 15 minute period, the technical staff should inform the caller that they'll need to call them back. Call back response should be within one hour. Please describe your process.*

Verizon Response

You will benefit from our veteran service professionals, who together with Verizon field service representatives, account teams, provisioning, engineering, technical support experts and others, comprise a powerful team totally dedicated to your satisfaction.

As part of our commitment, we hold ourselves to high standards in terms of the quality and timeliness of the service we provide. Following are some primary examples.

Service Function	Service Element	Service Standard Target
Call Handling	Average Answer Time	30 seconds
Billing Research	Completion of Request	12 business days
	Customer Notification	On completion of each research task
Trouble Management	Average Answer Time	30 seconds
	Average Time to Repair	4 hours

4.6.3 *If when contacting the customer to report progress or answer support center questions the technical support staff are unable to reach the customer by telephone, the technical support staff should make at least two additional attempts within the next business hour to respond to the support center inquiry/issue. The support center staff may leave a voice message for the caller but such message should indicate the support center staff person's name, time called, and description of how to return the call to obtain further assistance. Please describe your process.*

Verizon Response

Customer Service Centers

The Customer Service Centers are an integral part of the customer's support team. Located in regional centers in the Americas (U.S., Canada, Latin America), EMEA (The Netherlands), and Pacific Rim (Singapore), they serve as one entry point for customers to report maintenance problems, obtain updates on trouble tickets, or request escalations. English is the standard language used by Customer Service Center personnel. Proactive status updates will typically be provided by the MNSO team owning the resolution of the reported trouble, with periodic assistance from the regional Customer Service Center.

Region Number

Americas United States: 1 (800) 287-4205

The vast majority of managed network incidents are proactively detected and ticketed by the managed services NOCs. However, occasionally, customers may encounter latency or routing issues that aren't detected by the IMPACT platform. In those situations, customers will call a toll-free number to report service problems to Customer Service. Customer Service representatives will refer customer-initiated tickets to the NOCs by using circuit profiles built into the ticketing system. Once a ticket gets into the appropriate NOC's queue, it is handled the same way as a ticket opened by Verizon Business.

For additional information, please reference the response provided in section 4.6.2 above.

The Repairs application is found on the Verizon Enterprise Center under the Repairs tab. It is completely web-based, offering a simple yet robust electronic ticketing tool and a circuit testing tool that enables users to initiate their own circuit monitoring and loop-back testing. Subscribers can open, track, or update tickets for a broad range of products in the Verizon Wireline product set.

The Repairs application enhances our customers' visibility and control over the trouble process and other backend systems. Customers can use this application from their own desktops, smartphones, and tablets to manage the trouble process without calling into the Verizon repair centers. Customers may also set up notification rules to get emailed or paged, or receive a desktop alert pop-up, when certain ticket conditions have been met. For users interested in an online tool that does not require logging in, Quick Functions on the Verizon Enterprise Center login page provides users with the capability to create, status, and update tickets without logging in. Verizon customers can create a ticket online using Create Repair Ticket, enter their service identifier (phone number, circuit ID, etc) and the associated address or account number for verification. An email status notification is sent to the primary ticket contact with a link to Quick Status Ticket Details where they can add comments*, make online requests*, and modify the rules for their email notifications*.

The customer has two online options available for reporting your repair issue – Verizon Enterprise Center Repairs and Quick Functions, by desktop, laptop, Smartphone, or Tablet. Both tools enable you to create, status, and update repair tickets online. Email status notifications have links to these tools which provides the user flexibility to access the online tool when they want to read more of the activity log on the ticket, or communicate back to the technician working the ticket.

4.6.4 *If investigation and research is required by technical support center staff and the problem cannot be resolved or question answered immediately, then the technical support center staff should call back within two (2) hours to report progress on the problem resolution. Support center staff should continue, on a daily basis or other basis agreed upon between the customer and Vendor, to keep the customer staff informed on progress of the problem resolution. For wide scale, high severity impact outages, the Vendor should provide conference call capabilities for both Vendor and Customer technicians to address and resolve the issue. After action report and summary will be required for all Severity Level 1 incidents. After action report and summary are optional at customer's request for all Severity Level 2 and 3 level incidents. Please describe your process.*

Verizon Response

Tickets are assigned a severity level upon creation. This severity level indicates the extent of the event and the effect it has on the customer's service and is used to determine the resources allocated for resolving the ticket, time frames for resolution and escalation matrix. Please see below for Priority Level descriptions:

Priority	Description
Priority 1 (Service Outage)	<ul style="list-style-type: none"> ■ Complete loss of service; ■ Customer is unable to use the circuit; ■ The service is degraded to the extent where the customer is unable to use it and is prepared to release it for immediate and continuous testing.
Priority 2 (Degraded Service)	<ul style="list-style-type: none"> ■ The customer is able/still wants to use the circuit and is not prepared to release it for immediate testing; ■ All quality type issues like error rate, package/cell loss, and slow response times; ■ Calls to a specific area/and or number range fail (Indirect/Direct Voice); ■ Indirect Switched Voice – more than 50% of calls failing; ■ Destination faults.
Priority 3 (Minor Service)	Quality issues that threaten the performance of the service including Scheduled Maintenance. Voice services – Single number destination problem, all quality type issues such as 'one-way audio', noise or call cut-off.
Priority 4 (Assistance Request)	<ul style="list-style-type: none"> ■ Assistance request, customer requests – Access arrangements for Co-locate services, technical assistance when it is not directly incident related, tests on equipment or verification of connectivity; ■ Non-service affecting customer request for an 'Incident Report' on a Priority 1 incident that has been handled by the Customer Service Center; ■ Wholesale Standard Routing (WSR) ASR Issues.

Priority Level Descriptions

4.6.5 Provide details regarding your trouble ticketing system including customer access to the system, average response times, levels of trouble tickets and how those levels are determined, mean time to repair (MTTR), and any other relative statistics or functions.

Verizon Response

Please reference the responses provided in section 4.6.3 and 4.6.4 above for timelines and priority levels.

Service Level Standards

U.S. Region (Contiguous 48 United States and Hawaii)

Access	End-to-end Circuit Availability	Site Availability - Dual Port	TTR	US Network Delay	Packet Delay	Packet Delivery Ratio	MOS (9)	Jitter (1)	Service Installation	Port and CAR Moves, Adds or Changes ("MAC") (3)
Type 1	100%	100%	2 Hours	36 ms or less round trip	See Applicable Standard Below	See Applicable Standard Below	EF - 4.0 or higher	See Applicable Standard Below	45 Business Days	10 Business Days
Type 2, 3, or CPLL (8)	99.9%	100%	4 Hours	36 ms or less round trip	See Applicable Standard Below	See Applicable Standard Below	EF – 4.0 or higher	See Applicable Standard Below	45 Business Days	10 Business Days

Public data site <http://www.verizonbusiness.com/about/network/pip/> output below...

Private IP Network SLA Statistics

Verizon Enterprise Solutions is constantly measuring the performance metrics of its Private IP network utilizing a variety of tools. Following are the actual performance measurements for the past 12 months:

How is the Data Collected?

US Network Delay is calculated by measuring round trip transit delay between Verizon Enterprise Solutions-designated backbone network nodes across the contiguous U.S. PIP Network and averaging the results over a thirty-day period.

Network MOS is calculated by sampling performance scores for the EF traffic class, using the standards based E-model (ITU-T G.107), between Verizon Enterprise Solutions-designated backbone network nodes in each specific region and averaging the results over a thirty-day period.

What Are Our Targets?

The U.S. Network Delay Service Level Standard is 36ms roundtrip or less using 64-byte packets for measurement. The network monthly average MOS performance for EF traffic is a minimum of 4.0.

Private IP U.S. Network Latency (ms)												
2015												
	December	November	October	September	August	July	June	May	April	March	February	January
U.S. Network Delay	34.8	34.9	34.6	34.7	34.8	34.9	36.7	34.2	34.7	32.5	32.5	33.3

Private IP Network Mean Opinion Score ("MOS")												
2015												
	December	November	October	September	August	July	June	May	April	March	February	January
U.S. Network MOS	4.41	4.41	4.39	4.35	4.39	-	-	-	-	-	-	-

4.6.6 *Provide details regarding your escalation procedures or processes for all proposed services, when each escalation level is initiated, and provide the names, contact information, and escalation order for those individuals in the Vendor's escalation chain for support issues within the State of West Virginia. The Vendor should provide how the escalation levels are determined. The Vendor must be able to initiate this process on a 24 x 7 basis for all critical or emergency situations or outages.*

Verizon Response

Verizon has a full range of support options for our customers:

- Designated account teams for sales and service;

- 24/7/365 trouble handling and repair.

Incidents are escalated at customer request or internally by Verizon when the nature of the incident warrants escalation to the next level to bring additional or different resources to assist in resolution.

Verizon Trouble Resolution

- 1st Contact: Customer Care Center – 800-287-4205

Service Management Contacts

- Unmanaged - Service Desk – 877-331-4276:
 - 1st Level – Service Desk Personnel – 877-331-4276;
 - 2nd Level – Service Desk Lead – 877-331-4276;
 - 3rd Level – Shemeka Manning – 919-377-3810;
 - 4th Level – Associate Director, Jere Mckinley – 919-377-6113;
 - 5th Level – Director, Kevin Sergent – 919-377-5059.
- Managed Service – MNSO NOC – 800 293-5891 option 1:
 - 1st Level - Assigned Technician – 800-293-5891 option 1;
 - 2nd Level – MNSO Team Lead – 855-896-4911;
 - 3rd Level – Supervisor, William Demery – 919-377-6591;
 - 4th Level – Associate Director, Jere Mckinley – 919-377-6113;
 - 5th Level – Director, Kevin Sergent – 919-377-5059.

Dedicated Service Manager

- Contact: Don Wilson
Service Manager
Phone: 304-356-3379
Email Address: Donald.p.wilson@verizon.com
- Contact: Marcia Jones
Manager – Service/Program Management
Phone: 301-787-8973
Email Address: Marcia.m.jones@verizon.com

Incident Manager (IME)

- Handles escalated service issues when you are dissatisfied with business as usual processes including updates/escalations via the Service Desk;

- Manages conference bridges (as applicable) and manages an Action Plan to restore service;
- Escalates and manages repair teams, carriers/third parties for remedial solutions;
- Handles escalated service issues on Managed Security Services;
- Provides Incident (RFO) Reports if required.

Executive Incident Escalation Manager

- Supports all critical incidents for all Verizon products and services, independent of geographical location;
- Add special tags into Verizon's incident management system for your most critical sites to automatically assign and prioritize your incident to the next available engineer (jump incident queue);
- Provides support when automatically alerted that an incident ticket is opened for a critical site, or if the incident duration exceeds a certain threshold;
- Engages the executives within the Third Party carriers (Local Access Providers, Local Exchange Carriers or PTTs);
- Arranges direct communication when required with the relevant NOC, which may reduce the time to repair, especially in situations when your network requires reconfiguration;
- Provides written reports for all critical incidents within 3 days of incident closure. These will contain: Reason For Outage (Root Cause Analysis), Summarized chronology of the incident resolution and if applicable, recommendations to prevent re-occurrence or reduce downtime;
- Creates a Problem Ticket to prevent re-occurrence or to reduce downtime in case similar incidents re-occur, if required;
- Conducts regular audits with your enterprise and directly updates contact details in Verizon's contact information databases on your behalf;
- Attends service reviews via conference call, video conference or face to face meetings, if required.

For additional information, please reference the Account Service Plan provided in Appendix J of this proposal for escalation process.

4.6.7 *Provide details regarding your standard network change management procedures. These procedures should show the formal process used to track each network change and ensure that all changes to the network are introduced in a controlled and coordinated manner.*

Verizon Response

All planned maintenance (e.g., software upgrades, hardware introduction etc.) has varying levels of customer impact or no impact at all.

In cases where a customer impact will be experienced, by policy, all customers are to be notified via their account teams or directly that the maintenance event occur a minimum of 12 business days in advance. Approvals for all maintenance are conducted by the management of the requesting organization. We review all maintenance requests against the ongoing list of sensitive customer lists and ensure the request is in compliance with customer SLAs.

12 Business Days	48 Hours
<ul style="list-style-type: none"> ■ Minimum advanced lead time required for service-affecting maintenance activities greater than 50 milliseconds; ■ Allows for 2 days administrative processing time; ■ Allows for compliance to the 10-business day advanced notice to customers per SLAs. 	<ul style="list-style-type: none"> ■ Minimum advanced lead time required for non-service affecting maintenance activities; ■ Events causing an impact of less than or equal to 50 milliseconds.

For standard maintenance requests that may or may not affect customers, the standard notification process requires either a 12 business days or 48 hour customer notification depending on the potential impact to the network or a specific customer(s). Except under certain emergency situations, all maintenances are conducted during our standard maintenance window periods. In all cases, the execution of the maintenance requires the following:

- Maintenance notifications are published and receive appropriate approvals;
- Maintenance is restricted under most scenarios during the standard maintenance window periods noted above;
- The technician or engineer conducting the maintenance must have a Verizon engineering approved method of procedure with back out plan that has been lab tested.

- 4.6.8 *Provide details regarding your disaster preparedness and recovery plans for the infrastructure that will support the requested services. Indicate your ability to support the customer in seeking application for priority service restoration of critical services in the event of a disaster (i.e. Telecommunications Service Priority (TSP) System, Government Emergency Telecommunications Service (GETS)).*

Verizon Response

The Telecommunications Service Priority (TSP) Program was developed and implemented by the Federal Communications Commission (FCC) to identify and prioritize telecommunication services that support national security or emergency preparedness missions and protect critical infrastructure networks. FCC Report and Order 88-341 established the Telecommunications Service Priority (TSP) Program as the regulatory, administrative, and operational system authorizing and providing for priority treatment, i.e., provisioning and restoration, of National Security Emergency Preparedness (NSEP) telecommunication services. Additional charges may apply.

Valid TSP assignments are indicated by a 12-character TSP Authorization Code (e.g.; TSP01PW6H-23). TSP Authorization Code assignments may only be made by the Department of Homeland Security/Office of Emergency Communications TSP Program Office.

Verizon and other telecommunications service vendors are both authorized and required, when necessary, to provision and restore NSEP telecommunications services which suffer outage, or are reported as unusable or otherwise in need of restoration, before non-NSEP services, based on restoration priority level assignments. (Note: For broadband or multiple service facilities, restoration is permitted even though it might result in restoration of services assigned no or lower priority levels along with, or sometimes ahead of, some higher priority level services.) Restoration will require service vendors to restore NSEP services in order of restoration priority level assignment. Organizations must request TSP restoration priority designations on their circuits before a service outage.

Notes:

- National Security Emergency Preparedness (NSEP) telecommunications services, or "NSEP services," means telecommunication services which are used to maintain a state of readiness or to respond to and manage any event or crisis (local, national, or international), which causes or could cause injury or harm to the population, damage to or loss of property, or degrades or threatens the NSEP posture of the United States. These services fall into two specific categories, Emergency NSEP and Essential NSEP, and are assigned priority levels pursuant to section 9 of this appendix;
- Private NSEP telecommunications services include non-common carrier telecommunications services including private line, virtual private line, and private switched network services.

- 4.6.9 *Provide a contract phase-out and transition plan that documents the transition methodology and activities necessary and to be used to exercise its best efforts and cooperation to effect an orderly and efficient transition to a successor.*

Verizon Response

In the event that the Term of the contract or any portion of the Services is terminated by either Party, the phase-out process shall begin on the date that any Termination Notice is delivered, or, if no Termination Notice has yet been delivered, the phase-out process shall begin on the date that is nine (9) months prior to the expiration of the Term (as applicable, the "Phase-out Commencement Date") and, unless the Parties subsequently agree in writing to renew the term, Verizon shall continue to provide service, contingent upon appropriate compensation. Should the phase-out not be completed by the contract termination date, and negotiated extension or rates have not been agreed to in writing by Verizon and the State, then service rates will revert to tariff/guide rates or then current published rates. Verizon will work with the State on the details of any phase-out process.

4.7 *Security Services*

- 4.7.1 *Provide documentation of measures in place to prevent a security breach from happening as well as the documented processes and procedures in place to guide an effective response to a security breach that occurs via its access to the customer network infrastructure.*

Verizon Response

Private IP Security

Private IP meets or exceeds the security characteristics described below, which are typically associated with classical Layer 2-based Virtual Private Networks (VPNs):

- Addressing and routing separation;
- Internal structure of the backbone network hidden from the outside;
- Resistance to attacks.

Address Space

You need the flexibility of maintaining your own addressing plans and the freedom to use either public or private address space. Private IP enables the use of public or private addressing. This is possible by adding a 64-bit Route Distinguisher (RD) to each IPv4 route. This new route called a "VPN-IPv4 address" ensures that VPN-unique addresses are also unique in the MPLS core.

Routing Separation

Routing separation between business customers is also a necessity. MPLS provides route separation by having each PE router maintain a separate routing table for each connected VPN. This routing table, called a Virtual Routing and Forwarding instance (VRF), contains the routes from one VPN that were learned statically or through a dynamic routing protocol. These VRFs are separate from each other as well as from the global routing table. Individual VRFs are further secured from injecting non-customer routes by the use of Import and Export targets with MP-BGP. In addition, VRF tables are set up to only accept routes and pass user data from the sub-interface that is set up for the directly connected customer. Private IP has the same addressing and routing separation capabilities as comparable Layer 2 VPNs such as Frame Relay and ATM.

Hiding the MPLS Core Network

MPLS does not reveal additional unnecessary information even to customer VPNs. Since the interface to the VPNs is BGP, there is no need to reveal any information about the core. The only information that is required in the case of a routing protocol between the Provider Edge (PE) and Customer Edge (CE) is the address of the PE router. If this is not desired, static routing can be configured between the PE and CE. With this measure, the MPLS core can be kept completely hidden and addressed using a public or even private address. Using the traceroute utility, the Private IP cloud does not show up as a hop in the output.

Resistance to Attacks

With Private IP, it is impossible to gain access into other VPNs, unless this has been specifically configured (extranet configuration), and thus it is impossible to attack other VPNs from within a VPN. This makes Private IP as secure as its Frame Relay and ATM counterparts.

MPLS Label Spoofing

All interfaces into the Private IP core network only require IP packets, without labels. For security reasons, a PE router should never accept a packet with a label from a CE router. In Cisco routers, the implementation is such that labeled packets that arrive on any interface where label switching is not enabled will be dropped. Thus, fake labels cannot be inserted, since no labels will be accepted. It is impossible to insert a “spoofed” label into an MPLS network and thus gain access to another VPN or the MPLS core. In this capability, Private IP provides the same security as a Frame Relay- or ATM-based VPN. Private IP also provides the same level of privacy associated with Layer 2 Frame Relay- and ATM-based networks. You don’t have to add a connection-oriented overlay to the Verizon Private IP Service network to encrypt tunnels, which would be required if you are using Internet Protocol Security (IPsec).

CE-PE Authentication

This functionality is available within a BGP peer session between CE-PE using the built in authentication within BGP.

Integrated Firewall

By providing a simple low-cost and secure solution via a network-based gateway, Secure Gateway – Firewall empowers your Private IP customers by leveraging their existing network for end-user access and connectivity to the Internet.

Verizon Secure Gateway – Firewall (standard) provides a basic level of protection and centralized security management that gives enterprises a new weapon in the fight against external security threats to their internal networks.

In addition, Secure Gateway – Firewall helps to reduce overall network costs by providing an alternative to expensive and complex firewalls at multiple locations within your network.

CE Security

In our non-managed service offering, you will have full access into your CE routers to monitor your routing tables and traffic statistics. For Managed Services, Verizon will provide read-only access, via TACACS+ authentication, to you for the devices we manage, to ensure premium security and effective change management control. Of course, you will retain authority for approval of all data, system requests, or modem access. Our Managed Services organization will implement your communications access requests, maintain access rights lists, manage passwords, and provide variance reports as part of our network security services.

Backbone Topology

Our Private IP backbone topology has been engineered to enhance resiliency and reduce failover times. The P-core, currently deployed in the U.S., is a closed private MPLS backbone, i.e., no Internet connectivity that is dedicated solely to MPLS Label Switching and does not support any direct customer access connections. Using a dedicated P-core enhances network scalability by reducing OSPF adjacencies, reducing the number of routes through summarization, and provides a high-speed backbone for PE trunk aggregation.

In the USA, all PE routers are diversely trunked using dual uplinks into two diverse P-core routers. Dual Cisco GSR 12816 routers are deployed at each P-core site and diversely trunked using OC48 POS, OC-192 (Packet over SONET) or 10 Gig-E trunks. Every P-core router has at least two physically diverse SONET paths to other P-core sites to ensure a node will never be isolated.

All Global MPLS regions apply the same Verizon MPLS Engineering Trunking Architecture rules and design parameters. The only difference between the various global regions is the scale of the backbone that is required to provide the Private IP MPLS service. In the U.S., P-Core trunking is based on OC-48, OC-192 and 10 Gig-E bandwidths, while in Europe, the P-Core trunking will range from STM-1s(OC-3s) up to 10 Gig-E including OC-192 as well. Asia-Pac trunking is currently based on trunking from DS3/E3 up to OC-48 links with plans in place for 10 Gbps trunking in the very near future.

Verizon designs the Private IP Backbone to be able to reroute around trunk failures based on the number of trunks that exist out of any given location and the utilization associated with them. For example, when a trunk fails there must be enough capacity on the remaining link(s) to support all the bandwidth previously supported by the failed trunk. Example: Do not load a trunk more than 40% of its capacity if it is one of two trunks. (The two trunks could have load ratios of 60/20, 50/30 or 40/40 or share traffic in any ratio so that the aggregate of the total traffic does not exceed the node's ability to restore all traffic in the event of a single trunk failure.) The capacity is measured at peak demand.

Each P-core router has at least two physically diverse paths provisioned over diverse undersea cable systems for trans-oceanic connectivity into other P-core sites. This ensures a node will never be isolated due to a cable cut or equipment failure. Collocated PE routers are trunked into each of the diverse P-routers using STM4 or STM16 depending on local capacity requirements. Remote PE routers are trunked to diverse P-core routers using predominately STM16 and STM64 with DS3 used at a few low volume sites.

Both the PE and P-core trunks are QoS-enabled with a Layer 3 QoS scheme that utilizes Low Latency Queuing (LLQ) and Class-Based Weighted Fair Queuing (CBWFQ) to enable QoS on a per hop basis which delivers end-to-end QoS.

The Verizon PIP network can automatically detect and dynamically reroute around transmission path failures. The OSPF routing protocol is used within the PIP network to establish and maintain IP reachability. OSPF reroute times will vary depending on where the path fails (immediate for local physical failure and dead timer interval for remote failures) and the number of prefixes. Label Distribution Protocol (LDP) is used to dynamically establish Label Switched Paths (LSPs) between all PE and P routers and will automatically re-establish the LSP following an OSPF rerouting event.

Private IP Network Resiliency and Survivability

Our Private IP network implements numerous design rules and best engineering practices to protect against network anomalies that may affect the overall network and ensure network survivability, including the following:

- Redundancy is the most important tool for ensuring network survivability. Verizon has explicitly engineered the Private IP network infrastructure to eliminate any single point of failure beyond the customer's access connection. All Provider Edge (PE) and P routers are equipped with redundant processor cards and DC power supplies, and dual P routers are deployed at backbone node sites. Route Reflector (RR) redundancy is achieved by deploying dual RRs at each site. All network elements have backup battery power and standby electrical generators. All trunking connections are dual homed to diverse routers;
- Utilization of a dedicated P-core has enabled Verizon to optimize the OSPF routing design. OSPF neighbor adjacencies are targeted to only two per PE router as much as possible although exceptions do exist. This results in a very small OSPF table (currently < 500 routes) that grows linearly with the deployment of new PE routers. Verizon has also established a strict policy that no customer routes will ever be advertised into the OSPF used for the core network infrastructure. Consequently, due to the very small and tightly managed OSPF table size, the Private IP backbone can easily scale to hundreds of PE routers within a single OSPF area;

- Our Route Reflector (RR) architecture requires only 2 iBGP peering sessions per PE router, thus minimizing the peering load on the PE and the probability of iBGP reconvergence events. Dual RRs are deployed in each of four discrete geographic regions, and each PE router within a region maintains iBGP peering sessions with only the two RRs within its region. The two RRs within a region are each capable of supporting the full load so that a failure will be completely transparent;
- Verizon strictly limits the number of IP routes that a customer can advertise into the Private IP network based on the number of sites in the customer's network and the topology (any-to-any vs. hub-and-spoke). The default is four routes per customer site. Additionally, Verizon strongly encourages customers to follow the best practice of route summarization just as we do within the Private IP network infrastructure;
- In addition to employing the above engineering best practices, Verizon also utilizes extensive instrumentation and monitoring capabilities to closely monitor network resource consumption. The Private IP Network Daily Health report, along with various traffic utilization reports, is used by the Data Traffic Engineering (U.S.)/regional planning team (rest of world) and Global Data Network Operations groups to monitor and track all network resources on a daily basis and take immediate corrective action as soon as any negative trend is identified.

Network Utilization

Verizon carefully models each and every large customer before they are brought onto the network, using WANDL network modeling and optimization software. This helps ensure that the PIP backbone infrastructure is properly engineered to support large enterprise networks.

Daily monitoring is performed on the network to track actual network traffic and forecast accordingly. For physical trunk utilization, if the peak average reaches 50%, Verizon will augment the network. Based on this information the Data Traffic Engineering group proactively deploys additional switches/ports/trunks to ensure that customer traffic sent across the backbone is delivered within the guidelines set forth in the Service Level Agreement.

Additionally, Verizon monitors a host of other thresholds including, but not limited to CPU, memory, trunk, and port utilization.

4.7.2 *Provide details regarding any security related services available to customers via the proposed solution infrastructure. These details could include pro-active measures your company employs.*

Verizon Response

Please reference the response provided in section 4.7.1 above.

- 4.7.3 *Detail your process to ensure your employees have the appropriate clearance and training to have the required access, and include in the abovementioned documentation. This should include background checks and established screening criteria.*

Verizon Response

Background Investigations

Verizon is committed to hiring employees who meet the requirements and qualifications of the position for which they are applying. In support of this commitment, Verizon has established an employment background investigations process to verify information provided by applicants who are extended a conditional offer of employment. The results of these employment background investigations are utilized in the hiring and employment decisions made by Verizon.

Background investigations will be conducted for all new hires and/or when required for employees who work on U.S. Federal or State government contracts as well as specific customer contracts. For those applicants or employees who must receive a security clearance to perform their job duties, the receipt of such security clearance designation shall satisfy the requirements of this background investigation policy for such applicants or employees, except as otherwise required by Verizon or government contract. Verizon will conduct background investigations in compliance with applicable law and regulation, including, but not limited to, the Fair Credit Reporting Act.

Background investigation results are valid for one year from the date of the report's completion. Former Verizon employees who passed a background investigation during their employment and who are rehired more than one year following their termination date are required to undergo a new background investigation. Former Verizon employees who did not undergo a background investigation during their employment and who are rehired at any time following their termination date are required to undergo a background investigation.

The background investigation will be comprised of the following components, unless prohibited by law: criminal history, employment history, educational verification, and social security number verification (US only). Driver's license status and driving record are checked when candidates are required to drive a Company or personal vehicle in the regular performance of their duties.

Verizon considers the results of background investigations in making its hiring or rehiring decisions. Additionally, in those instances when an employee undergoes a background investigation pursuant to a government or customer contract requirement, Verizon may use the results to evaluate an employee's suitability for continued employment. To the extent that Verizon uses background investigation results as a basis for making an adverse employment decision (e.g., a no-hire or a termination decision), the Company shall provide any required legal notices to applicants or employees in connection with such decisions.

BI Components	BI Parameter	When Required
Criminal History	Felony and misdemeanor convictions within the country, state or county of residency, education and employment (including military service) for the previous seven (7) years. Current status of pending criminal charges and outstanding warrants. Status of current participation in a pretrial probation or alternative rehabilitative program.	Always
Driver's License Status and Driving Record	Validity and current status of driver's license. Driving offenses and moving traffic violations for the previous three (3) years.	When the job position requires driving a Company or personal vehicle in the regular performance of duties. Talent Management will request record search when required.
Employment History	Previous five (5) years of employment and military service are verified.	Always
Educational Verification	Verification made of the highest diploma or degree earned. When necessary, licenses and certifications are verified.	Always
Social Security Number (US) and Other National Identification Number Verification	Determine names to which Social Security Number (US) and Other National Identification Number is attributed.	Always (U.S. and some International)
International Search	Applicants relocating directly from one country to another country will be subject to background search in their country of residency.	When the applicant has resided in the country for less than one year

Employee Training

Verizon offers learning and development programs that emphasize leadership and management, sales, service, and technical training. The programs are available thru a variety of methods, including classroom and distance learning. Distance learning is a set of teaching and learning methods that allows employees to participate in educational programs without having to be present in a classroom with an instructor. Training is delivered using Internet- and telephone-based tools for live, pre-recorded, and self-paced instruction.

For new employees, Verizon offers new employee training programs. Verizon new employee orientation program, “Launch Your Success Story”, is designed to provide new employees with the information and tools necessary to launch a successful career at Verizon.

This six-month program engages new employees from the beginning of their employment by providing:

- Orientation Training to ensure familiarity with the company, the structure, products and services, pay and benefits information, and essential Human Resources policies and practices that guide day-to-day work.
- Compliance courses include:
 - Code of Conduct;
 - Records Management;
 - Keys to safeguarding Privacy and Confidential Information;
 - Health and Safety Induction Awareness training;
 - During the first 30 days.
- Line of Business Training that covers the necessary skills and knowledge to successfully accomplish the work that new employees were hired to perform;
- Job-Aids on Key Systems/Processes for navigating Verizon’s on-line systems and understanding the required processes for managing daily work activities.

4.7.4 *The Vendor should ensure the infrastructure providing transmission services to the customer has the capacity, redundancy, and secure monitoring and control capabilities to effectively protect against any action that causes the prevention of authorized access to system assets or services or the delay of time-critical operations. Please provide an outline of the protection policies implemented by your company.*

Verizon Response

Verizon facilities are staffed 24x7 with a security task team designed to ensure the safety of employees, customers and visitors. The security task team is responsible for video surveillance of our parking facilities, entry and exit points for the overall, and each floor with in the facilities.

All access to this network is limited through the Verizon internal private data networks; and, access is securely monitored and guarded so that only authorized personnel are able to access the internal Layer 3 network. A very limited number of trained technicians have access to the network provisioning system for initiating changes to configurations on the customer's behalf.

Below is an overview of some of the mechanisms Verizon uses to secure the Verizon MPLS network:

- Data Center employees are unable to access network equipment via console access. Other groups are responsible for equipment configuration;
- Two-factor authentication is necessary to access network devices;
- Each login must be traced back to an individual. No group logins;
- Security administration level passwords must be reset whenever administration responsibilities are transferred.

All interfaces into the Private IP Provider Edge routers only require IPv4 packets, without labels. For security reasons, a PE router should never accept a packet with a label from a CE router. In Cisco routers, the implementation is such that labeled packets that arrive on any interface where label switching is not enabled will be dropped. Also, automated filters are configured on the PE to ensure that the proper packets are received on the interface. Thus, it is not possible to insert fake labels, since no labels will be accepted. It is almost impossible to insert a 'spoofed' or mis-configured label into an MPLS network and thus gain access to another VPN or the MPLS core. The provisioning and router configuration tools automate the creation and configuration of customer connections to reduce the possibility of mis-configuration. In this capability, Private IP provides the same security as a Frame-Relay or ATM based VPN. Private IP provides the same level of privacy associated with Layer 2 Frame Relay & ATM based networks.

All of the Layer 3 functionality in the Private IP (PIP) network is located in the core of the network and there is absolutely no interconnectivity to public IP networks from this environment. Layer 3 MPLS provides route separation by having each PE router maintain a separate routing table for each connected VPN. This routing table, called a Virtual Routing and Forwarding Instance (VRF), contains the routes from one VPN that were learned statically or through a dynamic routing protocol. These VRFs are separate from each other as well as from the global routing table.

Access to Verizon network elements are via a dedicated private internal data network. The network has a multi-firewall edge and internal partitioning; continuous IP scanning; system logging, parsing, and analysis; intrusion detection/monitoring; and access authentication and logging via Cisco TACACS platform. Authentication is done using a two-factor authentication method. All elements are monitored through the Verizon Information Security Operations Center.

In order to consider Private IP to be as secure as Layer 2-based VPNs, the security characteristics described below must be met or exceeded:

- It is necessary to have addressing and routing separation;
- The internal structure of the backbone network must be hidden from the outside;
- The network must have resistance to attacks.

4.7.5 *The Vendor should have and provide documentation of measures in place to prevent a security breach from happening as well as the documented processes and procedures in place to guide an effective response to a security breach that occurs via its access to the customer network infrastructure. Please provide an outline of the measures in place for the prevention of a breach as well as the documented process to guide an effective response to a breach.*

Verizon Response

Operations staff provides monitoring and alert notification on a 24/7 basis. Operations staff reviews and monitors all activities for the Verizon Private IP network. Verizon has developed a formalized, published policy regarding third party scanning, testing and assessments. Verizon Private IP conducts their own internal assessments on an ongoing basis. In the event of a security incident, we will notify customer's designated security contact and provide them with available information needed to help stop the incident and correct the problem. Once the incident has been communicated to customer, Verizon will work with customer and its designated contacts to correct the problem. Formal reporting and incident response procedures are documented, implemented, and periodically tested. It is Verizon's policy that any security incidents on our internal network will be communicated to customer under the following guidelines:

- When their networks, data or overall IT security is at risk;
- When they have been directly impacted or breached based on the evidence obtained by Verizon.

Private IP meets or exceeds the security characteristics described below:

- Addressing and routing separation;
- Internal structure of the backbone network hidden from the outside;
- Resistance to attacks;
- Address Space – To provide the flexibility of maintaining your own addressing plans and the freedom to use either public or private address space, Private IP adds a 64-bit Route Distinguisher (RD) to each IPv4 route. This new route called a "VPN-IPv4 address" ensures that VPN-unique addresses are also unique in the MPLS core.
- Routing Separation – All of the Layer 3 functionality in the Private IP network is located in the core of the network and there is no interconnectivity to public IP networks from this core. Layer 3 MPLS provides route separation by having each Provider Edge (PE) router maintain a separate routing table for each connected VPN. This routing table, called a

Virtual Routing and Forwarding instance (VRF), contains the routes from one VPN that were learned statically or through a dynamic routing protocol. These VRFs are separate from each other as well as from the global routing table. Private IP has the same addressing and routing separation capabilities as comparable Layer-2 VPNs.

- Hiding the MPLS Core Network – MPLS does not reveal additional unnecessary information even to customer VPNs. Since the interface to the VPNs is BGP, there is no need to reveal any information about the core. The only information that is required in the case of a routing protocol between the PE and Customer Edge (CE) is the address of the PE router. If this is not desired, static routing can be configured between the PE and CE. With this measure, the MPLS core can be kept completely hidden and addressed using a public or even private address. Using the traceroute utility, the Private IP cloud does not show up as a hop in the output.
- Resistance to Attacks – With Private IP, it is impossible to gain access into other VPNs, unless this has been specifically configured (extranet configuration), and thus it is impossible to attack other VPNs from within a VPN. This makes Private IP as secure as its Frame Relay and ATM counterparts.
- MPLS Label Spoofing – All interfaces into the Private IP core network only require IP packets, without labels. For security reasons, a PE router should never accept a packet with a label from a CE router. In Cisco routers, the implementation is such that labeled packets that arrive on any interface where label switching is not enabled will be dropped. Thus, fake labels cannot be inserted, since no labels will be accepted. It is impossible to insert a “spoofed” label into an MPLS network and thus gain access to another VPN or the MPLS core. In this capability, Private IP provides the same security as a Frame Relay- or ATM-based VPN. Private IP also provides the same level of privacy associated with Layer 2 Frame Relay- and ATM-based networks. You don’t have to add a connection-oriented overlay to the Verizon Private IP Service network to encrypt tunnels, which would be required if you were using Internet Protocol Security (IPSec).
- CE-PE Authentication – This functionality is available within a Border Gateway Protocol (BGP) peer session between CE-PE using the built in authentication within BGP.
- Integrated Firewall – Verizon’s Secure Gateway - Firewall provides employees secure access to the Internet from your locations connected to a Verizon network service via a network-based firewall.
 - Secure Gateway – Firewall is available with Private IP worldwide.
 - Secure Gateway – Firewall bundles Internet access with a "stateful firewall" to help protect against a range of network security threats. The network-based firewall (FW) inspects and tracks all inbound and outbound data streams, enabling passage of only those packets that match a known and authorized state. Stateful firewalls improve on the security and performance of more traditional packet filters because they capture and hold attributes of each data stream for the entire length of the connection.

- Secure Gateway – Firewall is able to identify and help protect against Denial of Service (DoS) attacks that can overwhelm a server or network with illegitimate requests that may prevent users from accessing corporate resources.
- Secure Gateway – Firewall can also defend against IP spoofing, an attack that sends a system rogue packets that appear to originate from an authenticated source. These packets may induce a local host to execute commands that can compromise the security of an entire network or cause damage to valuable data resources.
- CE Security – In Verizon’s non-managed service offering, you will have full access into your CE routers to monitor your routing tables and traffic statistics. For Managed Services, Verizon will provide read-only access, via TACACS+ authentication, to you for the devices we manage, to ensure premium security and effective change management control. Of course, you will retain authority for approval of all data, system requests, or modem access. Our Managed Services organization will implement your communications access requests, maintain access rights lists, manage passwords, and provide variance reports as part of our network security services.
- Backbone Topology – The Private IP P-core is a closed private MPLS backbone, (i.e., no Internet connectivity) that only performs MPLS Label Switching and does not support any direct customer access connections. Using a separate P-core enhances network scalability by reducing OSPF adjacencies, reducing the number of routes through summarization, and provides a high-speed backbone for PE trunk aggregation. Every PE router is diversely trunked into two diverse P-core routers to ensure a node will never be isolated. Dual routers are deployed at each P-core site and diverse trunks. Every P-core router has at least two physically diverse SONET/SDH paths to other P-core sites to ensure a node will never be isolated. The P-core trunks are QoS-enabled with a Layer 3 QoS scheme that utilizes Low Latency Queuing (LLQ) and Class-Based Weighted Fair Queuing (CBWFQ) to enable QoS on a per hop basis instead of relying on over-provisioned trunks. Customer access connections and the uplink trunks between the PE routers and the P-Core routers utilize a similar but enhanced Layer 3 QoS scheme (e.g., LLQ and CBWFQ) which together with the core, provides end-to-end QoS support for Private IP customers. The Verizon Private IP network will automatically detect and dynamically re-route around transmission path failures. The OSPF routing protocol is used within the Private IP network to establish and maintain IP reachability. OSPF re-route times will vary depending on where the path fails (immediate for local physical failure and dead timer interval for remote failures). Label Distribution Protocol (LDP) is used to dynamically establish Label Switched Paths (LSPs) between all PE and P routers and will immediately re-establish the LSP following an OSPF rerouting event.
- Below are some of the mechanisms Verizon uses to secure the Verizon MPLS network
 - Data Center employees are unable to access network equipment via console access. Other groups are responsible for equipment configuration.
 - Two-factor authentication is necessary to access network devices.

- Each login must be traced back to an individual. No group logins.

4.8 Service Level Objectives (SLO) Services

Under no circumstances will the vendor provide pricing information as an example in response to these desirable requirements.

- 4.8.1 *The Vendor should provide monthly SLO reports detailing all pertinent SLO statistics including SLOs missed and the related remedies applied. The reports should be provided electronically via a portal or email. The Vendor should provide copies of sample SLO reports for review and evaluation by the State.*

Verizon Response

Verizon has included Service Level Agreement(s) for the following services:

- Switched Ethernet (EVPL is a point-to-point service for customers that have real-time data delivery requirements and corresponding SLAs);
- MPLS Ethernet Access (PIP SLAs Apply, See Appendix G).

Available Service Level Standards – The types of Service Level Standards offered are as follows:

- EVPL EVC Availability;
- Mean Time to Repair (“MTTR”);
- Round Trip Delay (“RTD”);
- Data Delivery Ratio (“DDR”);
- Frame Jitter (“FJ”).

- 4.8.2 *The Vendor should detail the granularity (e.g. each circuit or all circuits) and the averaging period (e.g. each instance, daily, weekly, monthly) that will be used to calculate the SLO performance metrics for the Service Level Objectives submitted by the Vendor in response to 4.8.5 below.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.3 *The Vendor should clearly define how the remedy credits or rebates associated with each SLO are applied should the objectives be missed. The preference is that the Vendor(s) automatically apply the credits when objectives are not met and inform the billed entity electronically that credits have been applied. The Vendor should discuss how E-rate customers' credits will be applied when the discounting of bills is involved.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.4 *The Vendor should understand that should one or more SLOs be missed two out of three reporting periods, and the Vendor does not provide adequate resolution in a timely manner, that this may be grounds for terminating the contract for non-performance.*

Verizon Response

Verizon has read and understands.

- 4.8.5 *Post award, the Vendor should provide, at a minimum, the following service level objectives (SLO) for every service they are proposing in response to this RFP.*
- 4.8.5.1 *Network Availability (NA) - the percentage of total hours or partial hours during a calendar month that the services are available to the customer. Services shall be deemed to be unavailable when an outage is officially recorded with the Vendor because the customer does not have the ability to transmit or receive packets by means of the Vendor's services. The total outage should be deemed to be the length of time during which the services are unavailable to the customer beginning with the official notification and ending upon restoration of the service and notification to the customer. Outage minutes will not apply to scheduled maintenance activities, problems caused by the customer, or for reasons of Force Majeure or other causes beyond the reasonable control of the provider. When service is interrupted for four hours or more, a credit should be calculated and should be issued to the State entity experiencing the outage as follows. A month is considered to have 720 hours (24 hours * 30 days). Credit should be calculated based on the monthly rate for the service multiplied by the ratio of the number of hours of interruption to 720 hours.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.5.2 *Time to Repair (MTIR) - the monthly average time over any calendar month it takes for the provider to resolve any outage problem. MTIR is calculated by dividing the total outage minutes by the total outage occurrences. The Minimum monthly target MTIR should be four (4) hours. This objective should be measured and reported monthly. If the monthly MTIR is greater than four hours over the calendar month, a credit equal to 50% of the monthly charge should be given for those circuits that were out of service for more than four hours and were reported by the State via a trouble ticket to the Vendor.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.5.3 *Installation Due Date - the actual date that the services are activated and accepted as functional by the State. Exceptions to this SLO include reasons of Force Majeure or other causes beyond the reasonable control of the provider and customer applications, equipment or facilities problems. If the provider does not meet the agreed upon installation due date, the customer should receive a credit equal to 100% of the proposed installation charges for those services.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.5.4 *Average Latency - the monthly average round-trip latency of designated portions of the provider's network. The provider should provide detail as to how they measure latency and provide diagrams that indicate where in its network they measure latency. The objective for Average Latency is to not be greater than 27 milliseconds. For any month in which the objective is not met, the customer should receive a credit equal to 10% of the monthly recurring charges for the services. Exceptions to this SLO include performance problems caused by the customer, for reasons of Force Majeure, circumstances beyond the control of the provider, or scheduled service maintenance.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

- 4.8.5.5 *Packet Loss - the monthly average round-trip packet loss of designated portions of the provider's network. The provider should provide detail as to how they measure packet loss and provide diagrams that indicate where in its network they measure packet loss. The objective for Average Packet Loss should not be greater than 0.5%. For any month in which the objective is not met, the customer should receive a credit equal to 1/30th of the monthly recurring charges for the provided services. Exceptions to this SLO include performance problems caused by the customer, for reasons of Force Majeure, circumstances beyond the control of the provider, or scheduled service maintenance.*

Verizon Response

See Global Private IP Service Level Agreement in Appendix G.

Attachment B – Mandatory Specification Checklist

5.1 E-Rate Requirements:

5.1.1 General E-Rate Requirements.

5.1.1.1 The Vendor must comply with the requirements of the Universal Service Fund (USF) program. E-Rate eligible entities utilizing the contract(s) resulting from this solicitation reserve the right to proceed with orders prior to receiving any funding commitments from the USF. They also reserve the right to proceed or not to proceed regardless of the outcome of USF funding commitments.

Verizon Response

Verizon has read, understands, and will comply.

5.1.1.2 All services and products requested within this sol citation will be made available to schools, RESAs, consortia, and libraries statewide and therefore must meet all E-Rate guidelines for eligible services and products, service providers, and contracts.

Verizon Response

Verizon has read, understands, and will comply.

5.1.1.3 The Vendor must prove eligibility for E-Rate by providing its Service Provider Identification Number (SPIN) (FCC Form 498). Vendor must provide the SPIN Number here _____

Verizon Response

The SPIN number is 143001197.

5.1.1.4 The Vendor must meet all required participation guidelines.

Verizon Response

Verizon has read, understands, and will comply.

5.1.1.5 The Vendor must provide eligible entities the "Lowest Corresponding Price" (LCP) for services (refer to FCC 47 CFR § 54.500(f) and 47 CFR § 54.511(b)).

Verizon Response

Verizon has read, understands, and will comply.

5.1.1.5.1. Service providers shall offer schools and libraries services at the lowest corresponding prices throughout its geographic service areas that include all non-residential customer offerings that are similarly situated to a school or library. The "geographic service area" shall be the area in which a service provider Vendor is seeking to serve customers with any of its E-Rate services.

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.1.5.2. *The FCC will only permit service providers to offer schools and libraries prices above prices charged to other similarly situated customers when those Vendors can show that they face demonstrably and significantly higher costs to serve the school or library seeking service. Factors that could affect the cost of service -volume,mileage from facility,and length of contract.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.1.5.3. *Vendor must operate within Rule 47 CFR § 54.SI (b),which states that the provider of eligible services shall not charge schools,school districts,libraries,library consortia, or consortia including any of these entitles a price above the lowest Corresponding Price (LCP) for supported services, unless the FCC,with respect to interstate services or the state commission with respect toIntrastate services,finds that the Lowest Corresponding Price is not compensatory.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.1.5.4. *The Vendor, regardless of the size of the company, must provide LCP for a school or library. A service provider's obligation to provide the LCP shall not be tied to a response to an FCC Form 470 or this solicitation and should carry over throughout the billing life of the contract, as well.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.2 *Vendor Requirements and Responsibilities for Participation*
- 5.1.2.1 *The Vendor must agree to abide by all E-Rate rules,regulations,and limitations as described by FCC,USAC,and SLD. For a complete program overview, the Vendor can visit the following link: [http://www . universal service . org/SL/default.aspx](http://www.universal-service.org/SL/default.aspx).*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.2.2 *Successful Vendor of telecommunication services must meet certain qualifications to be eligible to provide the services and receive USAC reimbursement.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.2.2.1 *Must contribute to the Universal Service Fund*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.2.2 *Must provide telecommunications services on a common carrier basis*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.2.3 *Must file an FCC Form 498, Service Provider Information Form and obtain a Service Provider Identification Number (SPIN), providing that number as part of this bid response, and an FCC Registration number tied to their IEN tax ID number*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.2.4 *Must file an FCC Form 473, Service Provider Annual Certification Form, on an annual basis*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.2.5 *Must file an FCC Form 499-A, Annual Telecommunications Reporting Worksheet, on an annual basis.*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.2.6 *Must complete the FCC Forms 949-AJQ (Annual and Quarterly Telecommunications Reporting Worksheets) and receive a Filer ID. The FCC Forms 499-A/Q Filer ID will be tied to your SPIN. Certain service providers are not required to file or complete all items on an FCC Forms 499-A/Q, either because the company has a de min/mis status or meets one of the exceptions noted in the "Filing Requirements and General Instructions" section of the instructions on the Contributors Forms page. You can refer to the Service Providers section or the Contributors section of the USAC website for more detailed information on these forms and instructions.*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.3 *The Vendor must work with the applicant to ensure that all services for which E-Rate discounts are being requested under the contracts resulting from this solicitation, are indeed eligible services as described in the Eligible Services list (ESL) which can be found at the link provided below: <http://www.universalservice.org/sl/applicants/beforeyoubegin/eligible-services-list.aspx>*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.4 *Prior to the contract award, the Vendor must specify the name, phone number, fax number, and e-mail address of the person responsible for E-Rate within the Vendor's company. The*

Vendor must provide updated information should that contact information change, and must do so within seven (7) days of the change.

Verizon Response

Verizon has read, understands, and will comply. Contact information provided in Attachment A, Section 3.0.

5.1.2.5 *The Red Light Rule states that the FCC shall withhold action on any request for benefits made by any applicant or service provider that is delinquent in its non-tax debts owed to the FCC. USAC shall dismiss any outstanding requests for funding if a service provider (or applicant) has not paid the outstanding debt, or made otherwise satisfactory arrangements, within 30 days of being notified*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.6 *The result of a Red Light could be that all payments are stopped on all Funding Request Numbers (FRN) for that service provider (or applicant) and no Invoices will be paid.*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.7 *The Vendor must agree to notify the State of West Virginia, WVDE and WVLC within 24 hours in the event the Vendor/Service Provider has been subjected to the "Red Light Rule".*

Verizon Response

Verizon has read, understands, and will comply.

5.1.2.8 *In the event of an E-Rate audit or Program Integrity Assurance (PIA) review, the Vendor must respond within 3 calendar days for 7 day deadline reviews and 7 calendar days for 15 day deadline reviews to any and all questions associated with its contracts, proposals, or processes.*

Verizon Response

Verizon has read, understands and will comply. Upon customer receipt of an E-Rate Audit or Program Integrity Assurance (PIA), the customer should contact the Verizon E-Rate contact to facilitate any review assistance to meet the required deadlines. Verizon will adhere to the defined response time noted within the notification from USAC or the PIA Reviewer.

- 5.1.2.9 *The Vendor must maintain all bids, quotes, records, correspondence, receipts, vouchers, delivery information, and other data relating to the Vendor's services to the eligible entities in the State of West Virginia. All such records must be retained for ten (10) years after last date of service or whatever retention period is required by the rules in effect at the time that services are delivered and shall be subject to inspection and audit by the customer.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.2.10 *The Vendor must have an internal audit process in place to ensure compliance with E-Rate program rules and regulations.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.3 *If requested by an applicant, service providers must use the Service Provider Invoice (SPI) method for invoicing the applicant. It is understood that should a provider extend this service to an applicant, that the applicant will be responsible for the discounted portion of those invoices should E-Rate funding be denied; however, applicants will not be responsible for any discounted portion that is the direct result of negligence or error in the SPI invoicing process on the part of the service provider.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.4 *The Vendor must commit to work with the E-rate eligible entities using the resulting contract regarding E-rate discounts and billing.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.2 *Dedicated State Account Team*
- 5.2.1 *The Vendor must provide a dedicated account team to form a partnership with the State, Education and Library customers. This dedicated team will support all West Virginia State government levels (State, County and Municipalities), Education and Library customers only.*

Verizon Response

Verizon has read, understands, and will comply. More information has been provided in Attachment A, section 4.2 of this proposal and Appendix J Account Service Plan.

5.3 Billing Specifications

- 5.3.1 *Prior to award, the Vendor must identify a single point of contact for billing issues, disputes, or general questions and have an established process for resolving billing errors.*
- 5.3.2 *If incorrect rates or quantities are discovered, these errors must be corrected prior to the next billing cycle, and must be credited back to the effective billing start date for that service. The customer shall reserve the right to withhold payment until corrections have been made and credit is received.*
- 5.3.3 *The Vendor cannot back-bill for a service beyond three (3) months.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.3.4 *The Vendor's bill must include, at minimum, the following data elements; billing month, billed entity name, customer name (if different from billed entity), service location, circuit identification, service period, cost for individual billing components, itemized cost for any one time or non-recurring charges, itemized cost for any surcharges and total cost. The cost identified in the bill must be the correct contract rates for the specified services. A uniform description of the circuit being billed that matches the description of circuits provided on the contract must also be included. The Vendor must provide a copy of its typical bill as part of this response.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the Sample Invoice provided in Appendix H of this proposal.

- 5.3.5 *The Vendor's bill must show E-rate discounts, per Funding Request Number (FRN), on the bill for E-rate eligible entities.*

Verizon Response

Verizon has read, understands, and will comply. The Private IP E-Rate eligible entities included in this proposal will provide one FRN on the bill per Billing Account Number.

- 5.3.6 *The Vendor must provide the billing information, at a minimum, provided in Attachment F (Billing Example). WVOT recommends that you use this format/layout when submitting monthly billing.*

Verizon Response

Verizon has read, understands, and will comply. Verizon will deliver the Basic Invoicing Package, both electronically, in .pdf format and via mail. Optional reporting is offered, in MS Excel format, via the Verizon Enterprise Center (VEC) portal. If there currently is not a report available, similar to Attachment F, a customer report will need to be created.

5.3.7 *The monthly bill provided to the State shall be an electronic version for the purposes of rebilling by the State. The following are the minimum requirements for this data.*

5.3.7.1 *The customer must be able to extract the data to specific file format (MS Excel and/or csv).*

Verizon Response

Verizon has read, understands, and will comply. Please reference the response provided in section 5.3.6 above.

5.3.7.2 *The Vendor's electronic bill must be received by the State within ten (10) business days of the end of the previous billing cycle. It should be understood that timely receipt of the Vendor's bill is directly correlated to timely payment of the Vendor's bill.*

Verizon Response

Verizon has read, understands, and will comply.

5.3.7.3 *The Vendor must state any system requirements to operate the Vendor's billing software, if applicable.*

Verizon Response

Verizon has read, understands, and will comply.

5.3.8 *The Vendor's billing cycle must be on a monthly billing cycle and must be consistent across all services. Services installed or disconnected for a partial month must be prorated based on the date the service is turned up or down relative to that monthly billing cycle.*

Verizon Response

Verizon has read, understands, and will comply. Verizon will require a TCR disconnect request/order to be processed before invoicing on the old service will discontinue. Billing on the old service will stop on the Disconnect Effective Date. Exceptions will be made where a speed upgrade is being requested. All new services will be billed on the service installation and acceptance date.

5.3.9 *Services cannot be billed until they have been accepted as functional by the State.*

Verizon Response

Verizon has read and understands. In connection with any new Service installation Verizon will perform appropriate tests to verify that the implementation was performed correctly and that the Service and associated Service components are operating normally and consistent with expected performance parameters. If Verizon's test results under this Section establish that a newly-installed Service or Service component is operating properly and in conformance with applicable performance parameters, and Customer fails to report otherwise within the acceptable "Acceptance Period", the newly installed, Service or Service component will be deemed to be accepted by Customer. Verizon will invoice Customer as of the time at which Verizon released the newly installed Service or Service component to Customer. If Verizon's

tests establish that a newly-installed, Service or Service component does not perform properly or in accordance with applicable performance parameters, or Customer reports to Verizon within the Acceptance Period via a trouble ticket that such newly installed, Service or Service component is not performing in accordance therewith, Verizon shall promptly commence and diligently pursue efforts to address such performance issue(s) and bring the affected Service or Service component into compliance with the applicable performance parameters. Upon completion of such efforts, Verizon shall release the affected Service or Service component to Customer, and it shall again be subject to the acceptance procedures set forth in this Section. If a Service or Service component is not accepted by Customer, a credit shall be issued for any monthly recurring charges billed by Verizon for the affected Service or Service component during the period commencing upon Verizon's release of the Service or Service component to Customer and ending upon Customer's rejection of the Service or Service component. The Acceptance Period for a newly-installed Service or Service Component shall be three (3) business days, after the later of Customer's receipt of Verizon notice aforesaid or release of the Service or Service component to Customer for testing and/or use.

5.3.10 *Services must be disconnected by the Due Date on TCRs submitted for disconnection. No billing can occur after this date.*

Verizon Response

Verizon has read, understands and will comply. Once the TCR is received from the State of West Virginia, Verizon will place the disconnect order and the service will stop billing within the requested 30 days. All order details will be communicated to the State of West Virginia.

5.3.11 *If the Vendor has multiple contracts with the State of West Virginia, the Vendor must provide separate billing for each contract.*

Verizon Response

Verizon has read, understands, and will comply.

5.4 *Telecommunication Services*

5.4.1 *The Vendor must provide transport services that terminate into customer owned equipment - this may include an extension from the entrance of the building to another area in the building, to be specified by the State.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.2 *The Vendor must support services that provide a transport solution for the customer where the Vendor is responsible for any network issues associated with the telecommunications services from the termination at the customer site to the Vendor core equipment in its network. The Vendor must be able to test and troubleshoot the circuit continuity and integrity end-to-end.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3 *Point-to-Point Private Line Services*

5.4.3.1 *For the purposes of this RFP, P2P Private Line Services is defined as a dedicated end-to-end circuit from one State location to another State location, inclusive of any associated mileage component necessary for the entire connection.*

Verizon Response

Verizon is proposing an MPLS network for all services, which can be configured as hub and spoke, any-to-any, and point-to-point.

5.4.3.2 *The Vendor must propose point-to-point (P2P) private line digital data circuits for DSO, DS1 and DS3 access.*

Verizon Response

Verizon is proposing an MPLS network for all services, which can be configured as hub and spoke, any-to-any, and point-to-point.

5.4.3.3 *The Vendor must provide proper termination of demarcation blocks and modular jacks.*

Verizon Response

Verizon has read, understands, and will comply as requested on the TCR.

5.4.3.4 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.5 *The Vendor must acknowledge termination location will be specified by the customer.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.6 *The Vendor must provide DS3 local access services using fiber-optic transmission media.*

Verizon Response

Verizon is proposing an Ethernet based MPLS network for all services, which can be configured as hub and spoke, any-to-any, and point-to-point. Verizon's design is to match or exceed existing TDM speeds.

- 5.4.3.7 *The Vendor must provide multipoint bridging capabilities for aggregating P2P digital data circuits.*

Verizon Response

Verizon is proposing an Ethernet based MPLS network for all services, which can be configured as hub and spoke, any-to-any, and point-to-point.

- 5.4.4 *Ethernet Dedicated and Multi-point Switched Services*

- 5.4.4.1 *The Vendor must propose high-speed packet transport that is based on Ethernet transmission parameters that meet current IEEE standards. Vendor must propose options for 1 Mbps, 3Mbps, 5Mbps, 10Mbps, 20Mbps, 25Mbps, 50Mbps, 75Mbps, 100Mbps, 150Mbps, 200Mbps, 250Mbps, 300Mbps, 350Mbps, 400Mbps, 450Mbps, 500Mbps, and 1Gbps to 10Gbps services in 1Gbps increments. When forthcoming County Contracts for Ethernet services are awarded, Ethernet services will be transitioned to those contracts, with the exception of E-rate eligible entities whose service will remain on this contract until the expiration of the current E-Rate program funding year. Change Orders will be executed to the awarded contract disallowing the ordering of Ethernet services once a County Contract is in place for that county, with the exception of the above E-rate allowance for the remainder of the funding year.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.2 *The Vendor must provide multipoint bridging capabilities for aggregating Ethernet digital data circuits.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.3 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.4 *The Vendor must provide circuits capable of supporting Q-in-Q Tunneling, VLAN Translation, and both tagged and untagged VLANs.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.5 *Frame Relay and Asynchronous Transfer Mode Services*

- 5.4.5.1 *The Vendor must provide ATM and Frame Relay services ,for the existing network and new locations, including DSO, Fractional DSI, DSI, Multilink Bonded TIs (2 - 6 TIs), Fractional DS3,*

DS3, OC3, OC12, and OC48 access, as well as support for Frame Relay to ATM Interworking (FRF.8).

Verizon Response

Verizon is proposing a private MPLS network utilizing Ethernet access to support existing SES, Frame Relay and ATM services. MPLS can be configured in a Point-to-Point, Any-to-Any, or Hub and Spoke configuration. Verizon has chosen this path versus providing support for legacy services due to vendor support and maintenance of Frame Relay and ATM services. We are proposing MPLS in interpretation of the response to addendum 2 of SWC1600000003, question 3 and WVOT responses 3 a) and 3 b). These responses are in regards to migration plan of Frame Relay and ATM services. Verizon is proposing using MPLS as that migration path for ongoing support and future technologies such as VoIP, VIDEO, Software defined networking, and Wireless backup. Our goal is to migrate the State to next generation services to improve costs, supportability, business continuity and disaster recovery. The Ethernet access services being proposed can meet or exceed existing network speed via Ethernet encapsulation (1Mb-1Gbps and 10Gbps access speeds), eliminating the need for specialized TDM or legacy optical equipment.

5.4.5.2 *The Vendor must provide ATM services that include UBR (Unspecified Bit Rate), CBR (Constant Bit Rate), VBR-RT (Variable Bit Rate -Real Time), and VBR-NRT (Variable Bit Rate-Non-Real Time) capabilities.*

Verizon Response

Verizon is proposing MPLS as a migration technology and enabler of QoS and Differentiated services that can provide up to 6 classes of services including real-time services for Voice & Video. We are proposing MPLS in interpretation of the response to addendum 2 of SWC1600000003, question 3 and WVOT responses 3 a) and 3 b). These responses are in regards to migration plan of Frame Relay and ATM services.

5.4.5.3 *The Vendor must provide the Data Link Control Identifier (DLCI) numbers for all Permanent Virtual Circuits (PVC) for Frame circuits, and VPI/VCI information for all ATM circuits.*

Verizon Response

Verizon is proposing MPLS as a migration technology which can be configured to use Ethernet, Frame, PPP encapsulation types. Frame Relay encapsulation will be configured with a DLCI and a unique /30 addresses and a VRF/VPN unique to the state of West Virginia. Verizon's Private MPLS network compliant to RFC 4364. We are proposing MPLS in interpretation of the response to addendum 2 of SWC1600000003, question 3 and WVOT responses 3 a) and 3 b). These responses are in regards to migration plan of Frame Relay and ATM services.

- 5.4.5.4 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6 *MPLS*

- 5.4.6.1 *The Vendor must provide MPLS based services with options for connectivity that include Ethernet, P2P, ATM, Frame Relay, DSL, Wireless Access, and VPN Access.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6.2 *The Vendor must propose speed options from 1.5 Mbps to 10 Gbps.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6.3 *The Vendor's proposed MPLS network must support address and routing separation by Virtual Route Forwarding (VRF). The network must provide the ability for a single state entity to participate in multiple VRF arrangements.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6.4 *The Vendor must support Quality of Service/Class of Service (QoS/CoS) levels within its proposed network. This still needs to be addressed.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6.5 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.7 *The proposed telecommunications services must support the transport of the existing applications and related data currently being utilized by the State of West Virginia. The Vendor's proposed solutions(s) must allow the existing applications to function normally and perform properly. Existing applications include:*

5.4.7.1 *H.323 video*

5.4.7.2 *VOIP*

- 5.4.7.3 *Internet access*
- 5.4.7.4 *Internet 2*
- 5.4.7.5 *High Volume Database transmissions*
- 5.4.7.6 *Desktop Virtualization*
- 5.4.7.7 *Server Synchronization*
- 5.4.7.8 *Network Monitoring*
- 5.4.7.9 *Security Monitoring*
- 5.4.7.10 *Content Filtering*
- 5.4.7.11 *Virtual Private Networking*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.8 *The Vendor must propose telecommunications services that are capable of supporting Border Gateway Protocol (BGP) and sharing routes between autonomous systems (AS) on provider networks as well as other public and private networks.*

Verizon Response

Verizon has read, understands and complies with standard protocols.

- 5.5 *Installation Requirements:*

- 5.5.1 *Termination points will be specified by the State. The Vendor must be capable of extending the circuit to the desired location behind the minimum point of entry. The additional cost for this service must be provided in the Pricing Section (Attachment C) along with the identification of whether the Vendor or a subcontractor will be providing this extension.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.5.2 *The Vendor's installation services must include all required products and services needed to install a functional service. This includes planning/engineering, termination, cross-connects, splices, terminating hardware setup, programming, mounting, and related documentation.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.5.3 *The Vendor must comply with all applicable codes, licenses, certifications, and standards in the State of West Virginia as it relates to the proposed installation services.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.5.4 *The Vendor must perform adequate testing after installation services are performed to ensure services are operating properly when turned up for the customer. The Vendor may be required to provide documentation of test results if so requested.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.5.5 *The Vendor must define the process for expediting standard installation services where installation is required in a shorter timeframe than the standard intervals provided in response to this RFP. The Vendor must clearly identify any cost associated with expediting standard installation services on the Cost Sheet {Attachment C}.*

Verizon Response

The Verizon Order Manager will be responsible for discussing standard product intervals, expedites, and firm date requests with the customer during the order verification call and processing these requests. Once the date has been set, if it is shorter than standard interval an expedite charge will be added. The pricing for expedite fees are included in the Attachment C pricing sheet, which has been provided in separate Cost Proposal as requested.

5.6 *Support Requirements:*

- 5.6.1 *The Vendor must provide a telephone support center(s) that is available 24 hours a day and 7 days a week and accessible via a toll free number. The support center must 1) provide advanced technical expertise, 2) be staffed with resources that are proficient in spoken and written English, and 3) maintain and take responsibility for trouble tickets reported by the State of West Virginia customers until those troubles are resolved.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.6.

- 5.6.2 *The Vendor must provide telephone response to customer problems in one {1} hour or less and provide onsite support (when required) in twenty-four (24) hours or less.*

Verizon Response

Verizon has read, understands, and will comply. Verizon's proposal includes a dedicated Service Manager for the State. Please reference the response provided in Attachment A, under section 4.6.2 of this proposal.

5.6.3 The severity of the issue/support problem shall determine the average problem resolution response time under the contract as follows:

5.6.3.1 Severity Level 1 shall be defined as an urgent situation, where the customer's services are out of service and the customer is unable to use/access the network. The Vendor shall resolve Severity Level 1 problems as quickly as possible, which on average shall not exceed two (2) business hours. If repair inside the 2 hour window is not feasible, then regular 2-hour updates are required.

Verizon Response

Tickets are assigned a severity level upon creation. This severity level indicates the extent of the event and the effect it has on the customer's service and is used to determine the resources allocated for resolving the ticket, time frames for resolution and escalation matrix. Please see below for Priority Level descriptions:

Priority	Description
Priority 1 (Service Outage)	<ul style="list-style-type: none"> ▪ Complete loss of service; ▪ Customer is unable to use the circuit; ▪ The service is degraded to the extent where the customer is unable to use it and is prepared to release it for immediate and continuous testing.
Priority 2 (Degraded Service)	<ul style="list-style-type: none"> ▪ The customer is able/still wants to use the circuit and is not prepared to release it for immediate testing; ▪ All quality type issues like error rate, package/cell loss, and slow response times; ▪ Calls to a specific area/and or number range fail (Indirect/Direct Voice); ▪ Indirect Switched Voice – more than 50% of calls failing; ▪ Destination faults.
Priority 3 (Minor Service)	Quality issues that threaten the performance of the service including Scheduled Maintenance. Voice services – Single number destination problem, all quality type issues such as 'one-way audio', noise or call cut-off.
Priority 4 (Assistance Request)	<p>Assistance request, customer requests – Access arrangements for Co-locate services, technical assistance when it is not directly incident related, tests on equipment or verification of connectivity</p> <p>Non-service affecting customer request for an 'Incident Report' on a Priority 1 incident that has been handled by the Customer Service Center</p> <p>Wholesale Standard Routing (WSR) ASR Issues</p>

Priority Level Descriptions

5.6.3.2 *Severity Level 2 shall be defined as significant outages and/or repeated failures resulting in limited effective use by the customer. The service may operate but is severely restricted (i.e. slow response, intermittent but repeated inaccessibility, etc.). The Vendor shall resolve Severity Level 2 problems as quickly as possible, which on average shall not exceed four (4) business hours. If repair inside the 4-hour window is not feasible, then regular 4-hour updates are required.*

Verizon Response

Please reference the response provided in section 5.6.3.1 above.

5.6.3.3 *Severity Level 3 shall be defined as a minor problem that exists with the service but the majority of the functions are still usable and some circumvention may be required to provide service. The Vendor shall resolve Severity Level 3 problems as quickly as possible, which on average shall not exceed ten (10) business hours. If repair inside the 10-hour window is not feasible, then updates are required at the start of the next business day and every day thereafter until repairs are complete.*

Verizon Response

Please reference the response provided in section 5.6.3.1 above.

5.6.4 *The Vendor must contact the State, Education and Library engineering points of contact by phone within 30 minutes of a network outage that affects multiple circuits on the State's network. This verbal notification must be followed with a written report that provides an explanation of the problem, the cause of the problem, the solution to the problem, the estimated time for recovery, and the steps taken or to be taken to attempt to prevent a reoccurrence.*

Verizon Response

Verizon has read, understands, and will comply.

5.6.5 *The Vendor must provide both verbal and written notification a minimum of ten (10) days in advance of any planned upgrades, modifications, etc. that may affect the State customers to all State, Education and Library engineering points of contact.*

Verizon Response

Verizon has read, understands, and will comply. See Attachment A, section 4.6.7 of this proposal.

5.6.6 *The Vendor will be required to participate in regular customer status meetings with the State, Education and Library engineering contacts during the implementation and migration phases of the resulting contracts as well as ongoing contract management meetings to review new service issues, plan and coordinate network upgrades, and report on progress related to active network issues.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.6.7 *The Vendor shall coordinate with and assist the Customer and its follow-on Vendor(s) in establishing the most cost-effective method for transitioning from the currently provided services to replacement services without degrading existing service.*

Verizon Response

Verizon has read, understands, and will comply.

5.7 Security Requirements

- 5.7.1 *The Vendor shall be responsible for the physical and cyber security of the network infrastructure that provides transmission services to the customer.*

Verizon Response

The Verizon Private IP and network components comply with best practice security that correlates to applicable security requirements. These measures are further described in previous sections 4.7.4 and 4.7.5. These security measures apply to the network environment and components within Verizon's management. Verizon cannot protect network elements (customer-owned and operated) outside of our management control.

Please reference the responses provided in Attachment A, under Section 4.7 of this proposal.

- 5.7.2 *The Vendor shall be responsible for resolving all security vulnerabilities that may affect equipment or transmission services provided to the customer.*

Verizon Response

The Verizon Private IP and network components comply with best practice security that correlates to applicable security requirements. These measures are further described in previous sections 4.7.4 and 4.7.5. These security measures apply to the network environment and components within Verizon's management. Verizon cannot protect network elements (customer-owned and operated) outside of our management control.

Please reference the responses provided in Attachment A, under Section 4.7 of this proposal.

- 5.7.3 *The Vendor's policies, services, processes, or employees cannot create conflicts with the customer's standard security policy requirements. In the event of a standard security policy conflict, the customer's policy will be upheld. (Policies available at <http://www.technology.wv.gov>)*

Verizon Response

Please reference the responses provided in Attachment A, under Section 4.7 of this proposal.

- 5.7.4 *The Vendor shall support customer evaluation of security incidents and compliance verification evaluations, as deemed necessary by the customer.*

Verizon Response

Please reference the responses provided in Attachment A, under Section 4.7 of this proposal.

5.7.5 *The Vendor must have an established and documented policy governing personnel security to include the validation of employee trustworthiness.*

Verizon Response

Background Investigations

Verizon is committed to hiring employees who meet the requirements and qualifications of the position for which they are applying. In support of this commitment, Verizon has established an employment background investigations process to verify information provided by applicants who are extended a conditional offer of employment. The results of these employment background investigations are utilized in the hiring and employment decisions made by Verizon.

Background investigations will be conducted for all new hires and/or when required for employees who work on U.S. Federal or State government contracts as well as specific customer contracts. For those applicants or employees who must receive a security clearance to perform their job duties, the receipt of such security clearance designation shall satisfy the requirements of this background investigation policy for such applicants or employees, except as otherwise required by Verizon or government contract. Verizon will conduct background investigations in compliance with applicable law and regulation, including, but not limited to, the Fair Credit Reporting Act.

Background investigation results are valid for one year from the date of the report's completion. Former Verizon employees who passed a background investigation during their employment and who are rehired more than one year following their termination date are required to undergo a new background investigation. Former Verizon employees who did not undergo a background investigation during their employment and who are rehired at any time following their termination date are required to undergo a background investigation.

The background investigation will be comprised of the following components, unless prohibited by law: criminal history, employment history, educational verification, and social security number verification (US only). Driver's license status and driving record are checked when candidates are required to drive a Company or personal vehicle in the regular performance of their duties.

Verizon considers the results of background investigations in making its hiring or rehiring decisions. Additionally, in those instances when an employee undergoes a background investigation pursuant to a government or customer contract requirement, Verizon may use the results to evaluate an employee's suitability for continued employment. To the extent that Verizon uses background investigation results as a basis for making an adverse employment decision (e.g., a no-hire or a termination decision), the Company shall provide any required legal notices to applicants or employees in connection with such decisions.

BI Components	BI Parameter	When Required
Criminal History	Felony and misdemeanor convictions within the country, state or county of residency, education and employment (including military service) for the previous seven (7) years. Current status of pending criminal charges and outstanding warrants. Status of current participation in a pretrial probation or alternative rehabilitative program.	Always
Driver's License Status and Driving Record	Validity and current status of driver's license. Driving offenses and moving traffic violations for the previous three (3) years.	When the job position requires driving a Company or personal vehicle in the regular performance of duties. Talent Management will request record search when required.
Employment History	Previous five (5) years of employment and military service are verified.	Always
Educational Verification	Verification made of the highest diploma or degree earned. When necessary, licenses and certifications are verified.	Always
Social Security Number (US) and Other National Identification Number Verification	Determine names to which Social Security Number (US) and Other National Identification Number is attributed.	Always (US and some International)
International Search	Applicants relocating directly from one country to another country will be subject to background search in their country of residency.	When the applicant has resided in the country for less than one year

5.8 *Pricing Requirements*

- 5.8.1 *Since this solicitation is for statewide telecommunications services to be provided by a single Vendor, the Vendor must provide costs for all services identified on the Cost Sheet (Attachment C). Failure to complete the Costs Sheet in its entirety will result in the Vendor's bid being disqualified.*
- 5.8.2 *Any non-recurring costs must be clearly identified and defined on the Cost Sheet. Failure on the part of the Vendor to include this information will result in the State denying any charges that exceed the monthly recurring costs for the specified services.*

Verizon Response

Verizon has read, understands, and will comply. Please review Attachment C, which is included within the Cost proposal.

By signing below, I certify that I have reviewed this Request for Proposal in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this proposal for review and consideration that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that, to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Verizon Business Network Services, Inc. on behalf of MCI
Communications Services Inc. dba Verizon Business Services
(Company)

Marsha K. Harrell, Senior Consultant - Pricing/Contract
Management
(Representative Name, Title)



Marsha K Harrell
Senior Consultant
Contract Management

Phone: (304) 356-3395 / Fax: (304) 356-3590
(Contact Phone/Fax Number)

March 28, 2016
(Date)

Corporate Policy Statement

Policy No.: CPS-103

Issued: December 6, 2010

Subject: Authority to Approve Transactions



APPENDIX 4
VERIZON BUSINESS
CPS-103 LETTER OF DELEGATION OF AUTHORITY
FORM 101

Within the authority granted to me in CPS-103, "Authority to Approve Transactions," I delegate

*Patricia L Myers, Manager, Pricing & Contract Management (VZ ID: [redacted])
Marsha K Harrell, Senior Consultant, Pricing & Contract Management (VZ ID: [redacted]) and
Jacqualynn A Whiting, Director, Pricing & Contract Management (VZ ID: [redacted])*

the authority to perform the following function:

Execute and deliver Verizon Business Customer Contracts and Proposals requiring "wet ink" signatures, including any and all ancillary documents and amendments related thereto, that are duly approved in accordance with then-applicable Verizon Business corporate policies, including the use of stamp bearing facsimile of my signature in accordance with *Security Procedure for Anthony Recine, SVP & CMO, Blue Ink Stamp Policy.*

This will be effective beginning on July 1, 2015 and ending on June 30, 2016 or before if rescinded by me.

(Annual delegations must be completed by July 1st of each respective year and may not exceed one year from their effective date. Delegations with a start date other than July 1st should also include an end date of the subsequent June 30 or earlier.)

Distribution:

- The person delegated authority must retain a copy of Form 101 delegation, either electronic or hard copy, for one (1) year after expiration date.
- The person granting the delegation must retain the Form 101 delegation, either electronic or hard copy, for one (1) year after expiration date; send a copy to the delegate, the group Chief Financial Officer, and Corporate Finance Compliance at [redacted]; and ensure the delegation is entered into the Accounts Payable system when appropriate.

Approved By:

Anthony Recine 4/12/15
Signature _____ Date

Anthony Recine _____
Name VZ ID

SVP & CMO _____

[redacted] _____
Responsibility Code or Cost Center Code

Jacqualynn A Whiting 4/12/15
Delegate's Signature - Jacqualynn A Whiting

Patricia L Myers 4/12/15
Delegate's Signature - Patricia L Myers

Marsha K Harrell 6/11/2015
Delegate's Signature - Marsha K Harrell

Appendix A – Additional RFP Information

Section One: General Information

1. *Purpose: The West Virginia Department of Administration, Purchasing Division (hereinafter referred to as the "Purchasing Division") is soliciting proposals pursuant to West Virginia Code §SA-3-10b for the West Virginia Office of Technology (hereinafter referred to as the "Agency") to provide Legacy Telecommunications Transport Services.*
2. *By signing and submitting its proposal, the successful Vendor agrees to be bound by all the terms contained in this Request for Proposal ("RFP").*
 - 2.1. *An RFP is generally used for the procurement of services in situations where price is not the sole determining factor and the award will be based on a combination of cost and technical factors (Best Value). Through its proposal, the bidder offers a solution to the objectives, problem, or need specified in the RFP, and defines how it intends to meet (or exceed) the RFP requirements.*
3. *Schedule of Events:*
 - 3.1. *Vendor's Written Questions Submission Deadline03/23/16*
 - 3.2. *Mandatory Pre-bid Conference03/21/16, 1:30 PM*
 - 3.3. *Addendum Issued TBD*
 - 3.4. *Bid Opening Date04/04/16*
 - 3.5. *Oral Presentation (Agency Option)..... TBD*

Verizon Response

Verizon has read, understands, and will comply.

Section Two: Instructions to Vendors Submitting Bids

Section Three: General Terms and Conditions

1. *DEFINITIONS and ACRONYMS: The terms and abbreviations listed below shall have the meanings assigned to them below.*
 - 1.1. *"Contract Item" or "Contract Items" means the telecommunications transport services defined in Section Four.*
 - 1.2. *"Force Majeure" means an extraordinary event or circumstance beyond the control of the parties involved.*
 - 1.3. *"LAN" means a Local Area Network (LAN) that connects network devices over a relatively short distance. A networked office building, school, or home usually contains a single LAN, though sometimes one building will contain a few small LANs (perhaps one per room). Occasionally a LAN will span a group of nearby buildings. In addition to operating in a limited space, LANs are also typically owned, controlled, and managed by a single person or organization. They also tend to use certain connectivity technologies, primarily Ethernet and Token Ring.*

- 1.4. *"MAN" means a Metropolitan Area Network (MAN) that spans a physical area larger than a LAN but smaller than a WAN, such as a city. A MAN is typically owned and operated by a single entity such as a school district, government body or large corporation.*
- 1.5. *"Mbps" means megabits per second or one million bits per second.*
- 1.6. *"Network Buildout" means when there are no existing telecommunications facilities to fulfill the need for a new circuit installation to a physical location and new physical network facilities will need to be built to accommodate the new services requested or to accommodate new service requirements.*
- 1.7. *"Non-Recurring" means one-time or installation costs for service, requested in the Attachment C (Pricing Section).*
- 1.8. *"Point-to-Point (P2P) Private Line Services" means a dedicated end-to-end circuit from one State location to another State location, including any associated mileage component necessary for the entire connection.*
- 1.9. *"Point of Presence (PoP)" means a point of presence that is an access point to a carrier's network. It is a physical location that houses servers, routers and other technical equipment. It may be housed either in the facilities of a telecommunications provider or a location separate from the telecommunications provider*
- 1.11. *"Postalized" means rates or prices that are structured so that they are not distance or location sensitive but are dependent on other factors such as type of service, speed of service, etc.*
- 1.12. *"Pricing Section" means the pricing evaluation sheets where the types and quantities of circuits are identified. The Vendor should provide pricing per type of transport. Attachment C is the Pricing Section to be completed for each type of transport that the Vendor is proposing.*
- 1.13. *"Recurring" means monthly recurring costs for solicited services, requested per the Attachment C (Pricing Section).*
- 1.14. *"Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.*
- 1.15. *"Vendor Response Sheet" means the information sheet where the Vendor provides details about its company and provides references that match the services being proposed within this solicitation.*
- 1.16. *"WAN" means a Wide Area Network (WAN) or a network that spans a large physical distance. It is a geographically- dispersed collection of LANs. Routers connect LANs to a WAN. A WAN differs from a LAN in several important ways. Most WANs (like the Internet) are not owned by any one organization but rather exist under collective or distributed ownership and management. WANs tend to use technology like MPLS, DWDM, ATM, and Frame Relay for connectivity over the longer distances.*
- 1.17. *AS - Autonomous System*
- 1.18. *ASN -Autonomous System Number*
- 1.19. *ATM -Asynchronous Transfer Mode*
- 1.20. *BGP - Border Gateway Protocol*
- 1.21. *DHCP - Dynamic Host Configuration Protocol*
- 1.22. *DSL - Digital Subscriber Line*

- 1.23 *DNS- Domain Name Services*
- 1.24 *ESL - Eligible Services List*
- 1.25 *ETP - Eligible Telecommunications Provider*
- 1.26 *FCC - Federal Communications Commission*
- 1.27 *FCDL - Funding Commitment Decision Letter*
- 1.28 *FRN - Funding Request Number*
- 1.29 *GETS- Government Emergency Telecommunications Service*
- 1.30 *IEEE - Institute of Electrical and Electronic Engineers*
- 1.31 *ILEC - Incumbent Local Exchange Carrier*
- 1.32 *IPv4 - Internet Protocol Version 4*
- 1.33 *Pv6 - Internet Protocol Version 6*
- 1.34 *LCP - Lowest Corresponding Price*
- 1.35 *MTTR -Mean Time To Repair*
- 1.36 *NAT - Network Address Translation*
- 1.37 *PIA - Program Integrity Assurance*
- 1.38 *P2P - Point to Point*
- 1.39 *SLD - Schools and Libraries Division*
- 1.40 *SLO - Service Level Objective*
- 1.41 *SPIN - Service Provider Identification Number*
- 1.42 *TSP -Telecommunications Service Priority*
- 1.43 *USAC - Universal Service Administrative Company*
- 1.44 *USF - Universal Service Fund*
- 1.45 *VLAN - Virtual Local Area Network*
- 1.46 *VOiP -Voice Over Internet Protocol*
- 1.47 *VPN - Virtual Private Network*
- 1.48 *WVOT -West Virginia Office of Technology*
- 1.49 *WVDA - West Virginia Department of Administration*
- 1.50 *WVDE - West Virginia Department of Education*
- 1.51 *WVLC - West Virginia Library Commission*

Verizon Response

Verizon has read, understands, and will comply.

Section Four: Project Specifications

1. Location: West Virginia Office of Technology
 Building 5, 10th Floor
 1900 Kanawha Blvd., E
 Charleston, WV 25305

Verizon Response

Verizon has read, understands, and will comply.

2. *Background and Current Operating Environment:*
 - 2.1. *The State of West Virginia operates and maintains statewide networks for data, video and voice transmission that are shared between government and education entities including state agencies, higher education, K-12 schools, libraries, and county/municipal units of government. There are over 1700 local access and aggregation circuits statewide under existing telecommunications contracts. The winning Vendor will be expected to provide services to these existing sites (see Attachments D, DI, 02, 03 - Current Network Inventory) as well as to new or expanded sites in the network during the contract term. Today these circuits are backhauled to state backbones for transport and access to core systems and services. The State of West Virginia is seeking to establish a contract to extend existing services, allow for convergence of the existing voice, data, and video networks, and to improve Intranet/Extranet applications and services. This solicitation will be for telecommunication services to be provided by a single provider statewide. The Vendor awarded the contract will be required to connect their network services to the state backbone networks at one of the points of presence identified in Attachment E (Current State Network Points of Presence). For Ethernet Services, this contract will serve as a transitional contract as the state begins migration to an Ethernet based wide area network with multiple providers awarded contracts by county, hereafter referred to as 'County Contracts'. The Vendor will be required to work with other provider(s) where necessary, regarding transition from services under this contract to services under the County Contracts.*

The statewide contract resulting from this RFP is intended to provide a procurement vehicle for the listed requirements and telecommunications transport services, and to be awarded to a single vendor through the best means available. It is acceptable for vendors to partner for an overall solution for the State.

Verizon Response

Verizon has read and understands. Verizon has experience and resources in the planning, design and migration of large State and Federal Government networks.

- 2.2. *The following is a list of many of the applications and services utilized by state customers on the existing networks that must continue to be supported by any network services proposed by the Vendor.*

Applications:

- 2.2.1. LAN/WAN Interconnection
- 2.2.2. High Speed Image Transfer
- 2.2.3. Host-to-Host Data Transfers

- 2.2.4. *Virtual servers and virtual desktops*
- 2.2.5. *Mainframe Applications*
- 2.2.6. *Enterprise Communications (E-mail, Voicemail, Chat)*
- 2.2.7. *Supercomputing Access*
- 2.2.8. *Remote Systems Management*
- 2.2.9. *Intranet Web-based Applications*
- 2.2.10. *Internet Access, Services, and Web-based Applications*
- 2.2.11. *Internet2*
- 2.2.12. *Multimedia Applications (Voice, Video, and Data)*

Services:

- 2.2.13. *TCP/IP Communications and Addresses*
- 2.2.14. *Virtual Private Networks*
- 2.2.15. *Internet Caching Engines*
- 2.2.16. *Domain Name Services (DNS)*
- 2.2.17. *Webserver Resources (WWW)*
- 2.2.18. *Communications Server Resources*
- 2.2.19. *Intranet/Internet Security (Firewall)*
- 2.2.20. *Private-to-Public Address Translation*
- 2.2.21. *Intrusion Detection/Prevention Systems*
- 2.2.22. *Security Management and Reporting*
- 2.2.23. *Network Monitoring, Management, and Reporting*
- 2.2.24. *Internet Access and Related Services*

Verizon Response

Verizon has read, understands and complies.

3. *Qualifications and Experience: Vendors should provide in Attachment A (Vendor Response Sheet) information regarding its firm, such as staff qualifications and experience in completing similar projects; references; copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives were and how they were met.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, Section 3.0.

4. *Project Goals and Objectives: Attachment A (Vendor Response Sheet) contains specifics under each of these Project Goals and Objectives that should be answered.*
- 4.1 *General Requirements -The Vendor should bring its best resources to bear on behalf of the State in a manner that is consistent with the State's strategic plans, policies and procedures.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.1.

- 4.2 *Dedicated State Account Team -The partnership between the State and the awarded Vendor is linked through the dedicated local account team. The dedicated team will support West Virginia State government, Education, and Library customers only.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.2.

- 4.3 *Billing Specifications - As the billing entity for the State, WVOT must receive the Vendor's invoices in a timely manner and in a manner that can be easily divided among the State agencies using the contract. Billing for E-rate eligible Education and Libraries customers is exempted and they receive separate billing due to E-rate requirements.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.3.

- 4.4 *Telecommunications Services -The Vendor should provide efficient and cost effective transport services to approximately 1700 local access and aggregation circuits statewide by connecting their network services to the state backbone networks at one of the current State Network Points of Presence.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.4.

- 4.5 *Installation Services - The Vendor's installation services should include all required products and services needed to install and implement a functional service statewide.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.5.

- 4.6 *Support Services - Because of the dependency on the network, the Vendor's support center should provide timely telephone and on-site support to State agencies, schools, and libraries statewide.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.6.

- 4.7 *Security Services - Because of the State's dependency on the network, sufficient security is critical. The State engages in sharing data electronically and requires a secure environment.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.7.

- 4.8 *Service Level Objective Services -How the network performs is of utmost importance for the daily operations of State government. The partnership between the Vendor and the State will rely on network performance.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the information provided in Attachment A, section 4.8.

5. *Mandatory Requirements: The following mandatory requirements must be met by the Vendor as a part of the submitted proposal. Failure on the part of the Vendor to meet any of the mandatory specifications shall result in the disqualification of the proposal. The terms "must", "will", "shall", "minimum", "maximum", or "is/are required" identify a mandatory item or factor. Vendors are instructed to restate all requirements from this section along with their appropriate responses -either by providing the requested data or a statement of Vendor acknowledgement and agreement of/compliance with the requirement. Decisions regarding compliance with any mandatory requirements shall be at the sole discretion of the Purchasing Division.*

Verizon Response

Please reference the information provided in Attachment B, section 5.0.

- 5.1 *E-Rate Requirements: The Universal Service Fund (USF) was established as the result of the Telecommunications Act of 1996, when Congress directed the Federal Communications Commission (FCC) to "establish competitively neutral rules to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunication and information services for all public and non-profit elementary and secondary school classrooms and libraries." The FCC then empowered the Universal Service Administrative Company (USAC) to administer the program. A division within USAC, later to become known as the Schools and Libraries Division (SLD), now administers the approximate \$4.9 billion (annual) program known as E-Rate. Schools and libraries must apply for eligible services from eligible service providers every year. The eligible services fall into the following categories:*

- *Category 1: Telecommunications, Telecommunications Services & Internet Access*
- *Category 2: LAN and WLAN Internal Connections & Basic Maintenance of Internal Connections*

Verizon Response

Please reference the information provided in Attachment B, Section 5.1.

5.1.1 General E-Rate Requirements

- 5.1.1.1 *The Vendor must comply with the requirements of the Universal Service Fund (USF) program. E-Rate eligible entities utilizing the contract(s) resulting from this solicitation reserve the right to proceed with orders prior to receiving any funding commitments from the USF. They also reserve the right to proceed or not to proceed regardless of the outcome of USF funding commitments.*
- 5.1.1.2 *All services and products requested within this solicitation will be made available to schools, RESAs, consortia, and libraries statewide and therefore must meet all E-Rate guidelines for eligible services and products, service providers, and contracts.*
- 5.1.1.3 *The Vendor must prove eligibility for E-Rate by providing its Service Provider Identification Number (SPIN) in the appropriate field on Attachment B (Mandatory Specification Checklist).*
- 5.1.1.4 *The Vendor must meet all required participation guidelines.*
- 5.1.1.5 *The Vendor must provide eligible entities the "Lowest Corresponding Price" (LCP) for services (refer to FCC 47 CFR § 54.500(f) and 47 CFR §54.51 (b)).*
 - 5.1.1.5.1. *Service providers shall offer schools and libraries services at the lowest corresponding prices throughout its geographic service areas that include all non-residential customer offerings that are similarly situated to a school or library. The "geographic service area" shall be the area in which a service provider Vendor is seeking to serve customers with any of its E-Rate services.*
 - 5.1.1.5.2. *The FCC will only permit service providers to offer schools and libraries prices above prices charged to other similarly situated customers when those Vendors can show that they face demonstrably and significantly higher costs to serve the school or library seeking service. Factors that could affect the cost of service include volume, mileage from facility, and length of contract.*
 - 5.1.1.5.3. *Vendor must operate within Rule 47 CFR § 54.51 (b) which states that the provider of eligible services shall not charge schools, school districts, libraries, library consortia, or consortia including any of these entities a price above the Lowest Corresponding Price (LCP) for supported services, unless the FCC, with respect to interstate services or the state commission with respect to intrastate services, finds that the Lowest Corresponding Price is not compensatory.*
 - 5.1.1.5.4. *The Vendor, regardless of the size of the company, must provide LCP for a school or library. A service provider's obligation to provide the LCP shall not be tied to a response to an FCC Form 470 or this solicitation and should carry over throughout the billing life of the contract, as well.*

Verizon Response

Please reference the information provided in Attachment B, Section 5.1.1.

- 5.1.2 *Vendor Requirements and Responsibilities for Participation*
- 5.1.2.1 *The Vendor must agree to abide by all E-Rate rules, regulations, and limitations as described by FCC, USAC, and SLD. For a complete program overview, the Vendor can visit the following link: <http://www.universalservice.org/SL/default.aspx>.*
- 5.1.2.2 *Successful Vendor of telecommunication services must meet certain qualifications to be eligible to provide the services and receive USAC reimbursement.*
- 5.1.2.2.1 *Must contribute to the Universal Service Fund*
- 5.1.2.2.2 *Must provide telecommunications services on a common carrier basis*
- 5.1.2.2.3 *Must file an FCC Form 498, Service Provider Information Form and obtain a Service Provider Identification Number (SPIN), providing that number as part of this bid response, and an FCC Registration number tied to their IEN tax ID number*
- 5.1.2.2.4 *Must file an FCC Form 473, Service Provider Annual Certification Form, on an annual basis*
- 5.1.2.2.5 *Must file an FCC Form 499-A, Annual Telecommunications Reporting Worksheet, on an annual basis.*
- 5.1.2.2.6 *Must complete the FCC Forms 949-A,/Q (Annual and Quarterly Telecommunications Reporting Worksheets) and receive a Filer ID. The FCC Forms 499-A/Q Filer ID will be tied to your SPIN. Certain service providers are not required to file or complete all items on an FCC Forms 499-A/Q, either because the company has a de minimis status or meets one of the exceptions noted in the "Filing Requirements and General Instructions" section of the USAC website for more detailed information on these forms and instructions.*
- 5.1.2.3 *The Vendor must work with the applicant to ensure that all services for which E-Rate discounts are being requested under the contracts resulting from this solicitation, are indeed eligible services as described in the Eligible Services List (ESL) which can be found at the link provided below: <http://www.universalservice.org/sl/applicants/beforeyoubegin/eligible-services-list.aspx>*
- 5.1.2.4 *Prior to the contract award, the Vendor must specify the name, phone number, fax number, and e-mail address of the person responsible for E-Rate within the Vendor's company. The Vendor must provide updated information should that contact information change, and must do so within 7 days of the change.*
- 5.1.2.5 *The Red Light Rule states that the FCC shall withhold action on any request for benefits made by any applicant or service provider that is delinquent in its non-tax debts owed to the FCC. USAC shall dismiss any outstanding requests for funding if a service provider (or applicant) has not paid the outstanding debt, or made otherwise satisfactory arrangements, within 30 days of being notified.*
- 5.1.2.6 *The result of a Red Light could be that all payments are stopped on all Funding Request Numbers (FRN) for that service provider (or applicant) and no invoices will be paid.*
- 5.1.2.7 *The Vendor must agree to notify the State of West Virginia, WVDE and WVLC within 24 hours in the event the Vendor/Service Provider has been subjected to the "Red Light Rule".*
- 5.1.2.8 *In the event of an E-Rate audit or Program Integrity Assurance (PIA) review, the Vendor must respond within 3 calendar days for 7 day deadline reviews and 7 calendar days for 15 day deadline reviews to any and all questions associated with its contracts, proposals, or processes.*

- 5.1.2.9 *The Vendor must maintain all bids, quotes, records, correspondence, receipts, vouchers, delivery information, and other data relating to the Vendor's services to the eligible entities in the State of West Virginia. All such records must be retained for ten (10) years after last date of service or whatever retention period is required by the rules in effect at the time that services are delivered and shall be subject to inspection and audit by the customer.*
- 5.1.2.10 *The Vendor must have an internal audit process in place to ensure compliance with E-Rate program rules and regulations.*

Verizon Response

Please reference the information provided in Attachment B, Section 5.1.2.

- 5.1.3 *If requested by an applicant, service providers must use the Service Provider Invoice (SPI) method for invoicing the applicant. It is understood that should a provider extend this service to an applicant, that the applicant will be responsible for the discounted portion of those invoices should E-Rate funding be denied; however, applicants will not be responsible for any discounted portion that is the direct result of negligence or error in the SPI invoicing process on the part of the service provider.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.1.4 *The Vendor must commit to work with the E-rate eligible entities using the resulting contract regarding E-rate discounts and billing.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.2 *Dedicated State Account Team*
- 5.2.1 *The Vendor must provide a dedicated account team to form a partnership with the State, Education and Library customers. This dedicated team will support all West Virginia State government levels (State, County and Municipalities), Education and Library customers only.*

Verizon Response

Please reference the information provided in Attachment B, Section 5.2.

- 5.3 *Billing Specifications*
- 5.3.1 *Prior to award, the Vendor must identify a single point of contact for billing issues, disputes, or general questions and have an established process for resolving billing errors.*
- 5.3.2 *If incorrect rates or quantities are discovered, these errors must be corrected prior to the next billing cycle, and must be credited back to the effective billing start date for that service. The customer shall reserve the right to withhold payment until corrections have been made and a credit is received.*
- 5.3.3 *The Vendor cannot back-bill for a service beyond three (3) months.*
- 5.3.4 *The Vendor's bill must include, at minimum, the following data elements; billing month, billed entity name, customer name (if different from billed entity), service location, circuit*

- identification, service period, cost for individual billing components, itemized cost for any one time or non-recurring charges, itemized cost for any surcharges and total cost. The cost identified in the bill must be the correct contract rates for the specified services. A uniform description of the circuit being billed that matches the description of circuits provided on the contract must also be included. The Vendor must provide a copy of its typical bill as part of its response.*
- 5.3.5 *The Vendor's bill must show E-rate discounts per Funding Request Number (FRN) on the bill for E-rate eligible entities.*
- 5.3.6 *The Vendor must provide the billing information, at a minimum, provided in Attachment F (Billing Example). WVOT recommends that you use this format/layout when submitting monthly billing.*
- 5.3.7 *The monthly bill provided to the State shall be an electronic version for the purposes of rebilling by the State. The following are the minimum requirements for this data.*
- 5.3.7.1 *The customer must be able to extract the data to specific file format (MS Excel and/or csv).*
- 5.3.7.2 *The Vendor's electronic bill must be received by the State within ten (10) business days of the end of the previous billing cycle. It should be understood that timely receipt of the Vendor's bill is directly correlated to timely payment of the Vendor's bill.*
- 5.3.7.3 *The Vendor must state any system requirements to operate the Vendor's billing software, if applicable.*
- 5.3.8 *The Vendor's billing cycle must be on a monthly billing cycle and must be consistent across all services. Services installed or disconnected for a partial month must be prorated based on the date the service is turned up or down relative to that monthly billing cycle.*
- 5.3.9 *Services cannot be billed until they have been accepted as functional by the State.*
- 5.3.10 *Services must be disconnected by the Due Date on TCRs submitted for disconnection. No billing can occur after this date.*
- 5.3.11 *If the Vendor has multiple contracts with the State of West Virginia, the Vendor must provide separate billing for each contract.*

Verizon Response

Please reference the information provided in Attachment B, Section 5.3.

- 5.4 *Telecommunication Services*
- 5.4.1 *The Vendor must provide transport services that terminate into customer owned equipment - this may include an extension from the entrance of the building to another area in the building, to be specified by the State.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.2 *The Vendor must provide a transport solution for the customer where the Vendor is responsible for any network issues associated with the telecommunications services from the termination at the customer site to the Vendor's core equipment in its network. The Vendor must be able to test and troubleshoot the circuit continuity and integrity end-to-end.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3 *Point-to-Point Private Line Services*

5.4.3.1 *For the purposes of this RFP, P2P Private Line Services is defined as a dedicated end-to-end circuit from one State location to another State location, inclusive of any associated mileage component necessary for the entire connection.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.2 *The Vendor must propose point-to-point (P2P) private line digital data circuits for DSO, DSI and DS3 access.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.3 *The Vendor must provide proper termination of demarcation blocks and modular jacks.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.4 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.5 *The Vendor must acknowledge termination location will be specified by the customer.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.3.6 *The Vendor must provide DS3 local access services using fiber-optic transmission media.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.3.7 *The Vendor must provide multipoint bridging capabilities for aggregating P2P digital data circuits.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4 *Ethernet Dedicated and Multi-point Switched Services*
- 5.4.4.1 *The Vendor must propose high-speed packet transport that is based on Ethernet transmission parameters that meet current IEEE standards. Vendor must propose options for 1 Mbps, 3Mbps, 5Mbps, 10Mbps, 20Mbps, 25Mbps, 50Mbps, 75Mbps, 100Mbps, 150Mbps, 200Mbps, 250Mbps, 300Mbps, 350Mbps, 400Mbps, 450Mbps, 500Mbps, and 1Gbps to 10Gbps services in 1Gbps increments. When forthcoming County Contracts for Ethernet services are awarded, Ethernet services will be transitioned to those contracts, with the exception of E-rate eligible entities whose service will remain on this contract until the expiration of the current E-Rate program funding year. Change Orders will be executed to the awarded contract disallowing the ordering of Ethernet services once a County Contract is in place for that county, with the exception of the above E-rate allowance for the remainder of the funding year.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.2 *The Vendor must provide multipoint bridging capabilities for aggregating Ethernet digital data circuits.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.3 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.4.4 *The Vendor must provide circuits capable of supporting Q-in-Q Tunneling, VLAN Translation, and both tagged and untagged VLANs.*

Verizon Response

Verizon has read, understands, and will comply.

5.4.5 *Frame Relay and Asynchronous Transfer Mode Services*

- 5.4.5.1. *The Vendor must provide ATM and Frame Relay services ,for the existing network and new locations, including DSO, Fractional DSI, DSI,Multilink Bonded TIs (2 - 6 TIs), Fractional DS3, DS3, OC3, OC12, and OC48 access, as well as support for Frame Relay to ATM Interworking (FRF.8).*

Verizon Response

Verizon is proposing a private MPLS network utilizing Ethernet access to support existing SES, Frame Relay and ATM services. MPLS can be configured in a Point-to-Point, Any-to-Any, or Hub and Spoke configuration. Verizon has chosen this path versus providing support for legacy services due to vendor support and maintenance of Frame Relay and ATM services. We are proposing MPLS in interpretation of the response to addendum 2 of SWC1600000003, question 3 and WVOT responses 3 a) and 3 b). These responses are in regards to migration plan of Frame Relay and ATM services. Verizon is proposing using MPLS as that migration path for ongoing support and future technologies such as VoIP, VIDEO, Software defined networking, and Wireless backup. Our goal is to migrate the State to next generation services to improve costs, supportability, business continuity and disaster recovery. The Ethernet access services being proposed can meet or exceed existing network speed via Ethernet encapsulation (1Mb-1Gbps and 10Gbps access speeds), eliminating the need for specialized TDM or legacy optical equipment."

- 5.4.5.2 *The Vendor must provide ATM services that include UBR (Unspecified Bit Rate), CBR (Constant Bit Rate), VBR-RT (Variable Bit Rate -Real Time), and VBR-NRT (Variable Bit Rate-Non-Real Time) capabilities.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.5.3 *The Vendor must provide the Data Link Control Identifier (DLCI) numbers for all Permanent Virtual Circuits (PVC) for Frame circuits, and VPI/VCI information for all ATM circuits.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.5.4 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.6 *MPLS*
- 5.4.6.1 *The Vendor must provide MPLS based services with options for connectivity that include Ethernet, P2P,ATM,Frame Relay,DSL,Wireless Access,and VPN Access.*
- 5.4.6.2 *The Vendor must propose speed options from 1.5 Mbps to 10 Gbps.*
- 5.4.6.3 *The Vendor's proposed MPLS network must support address and routing separation by Virtual Route Forwarding (VRF).The network must provide the ability for a single state entity to participate in multiple VRF arrangements.*
- 5.4.6.4 *The Vendor must support Quality of Service/Class of Service (QoS/CoS) levels within its proposed network.*
- 5.4.6.4 *The Vendor must clearly label demarcation points with the site specific circuit identification information, including demarcation extensions to the location of customer equipment where applicable.*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.7 *The proposed telecommunications services must support the transport of the existing applications and related data currently being utilized by the State of West Virginia. The Vendor's proposed solutions(s) must allow the existing applications to function normally and perform properly. Existing applications include:*
- 5.4.7.1 *H.323 video*
- 5.4.7.2 *VOiP*
- 5.4.7.3 *Internet access*
- 5.4.7.4 *Internet 2*
- 5.4.7.5 *High Volume Database transmissions*
- 5.4.7.6 *Desktop Virtualization*
- 5.4.7.7 *Server Synchronization*
- 5.4.7.8 *Network Monitoring*
- 5.4.7.9 *Security Monitoring*
- 5.4.7.10 *Content Filtering*
- 5.4.7.11 *Virtual Private Networking*

Verizon Response

Verizon has read, understands, and will comply.

- 5.4.8 *The Vendor must propose telecommunications services that are capable of supporting Border Gateway Protocol (BGP) and sharing routes between autonomous systems (AS) on provider networks as well as other public and private networks.*

Verizon Response

Verizon has read, understands and complies with standard protocols.

- 5.5 *Installation Requirements:*
- 5.5.1 *Termination points will be specified by the State. The Vendor must be capable of extending the circuit to the desired location behind the minimum point of entry. The additional cost for this service must be provided in the Pricing Section (Attachment C) along with the identification of whether the Vendor or a subcontractor will be providing this extension.*
- 5.5.2 *The Vendor's installation services must include all required products and services needed to install a functional service. This includes planning/engineering, termination, cross-connects, splices, terminating hardware setup, programming, mounting, and related documentation.*
- 5.5.3 *The Vendor must comply with all applicable codes, licenses, certifications, and standards in the State of West Virginia as it relates to the proposed installation services.*
- 5.5.4 *The Vendor must perform adequate testing after installation services are performed to ensure services are operating properly when turned up for the customer. The Vendor may be required to provide documentation of test results if so requested.*
- 5.5.5 *The Vendor must define the process for expediting standard installation services where installation is required in a shorter timeframe than the standard intervals provided in response to this RFP. The Vendor must clearly identify any cost associated with expediting standard installation services on the Cost Sheet (Attachment C).*

Verizon Response

Please reference the information provided in Attachment B, Section 5.5.

- 5.6 *Support Requirements*
- 5.6.1 *The Vendor must provide a telephone support center(s) that is available 24 hours a day and 7 days a week and accessible via a toll free number. The support center must 1) provide advanced technical expertise, 2) be staffed with resources that are proficient in spoken and written English, and 3) maintain and take responsibility for trouble tickets reported by the State of West Virginia customers until those troubles are resolved.*
- 5.6.2 *The Vendor must provide telephone response to customer problems in one (1) hour or less and provide onsite support (when required) in twenty-four (24) hours or less.*
- 5.6.3 *The severity of the issue/support problem shall determine the average problem resolution response time under the contract as follows:*
- 5.6.3.1 *Severity Level 1 shall be defined as an urgent situation, where the customer's services are out of service and the customer is unable to use/access the network. The Vendor shall resolve Severity Level 1 problems as quickly as possible, which on average shall not exceed two (2) business hours. If repair inside the 2 hour window is not feasible, then regular 2-hour updates are required.*
- 5.6.3.2 *Severity Level 2 shall be defined as significant outages and/or repeated failures resulting in limited effective use by the customer. The service may operate but is severely restricted (i.e. slow response, intermittent but repeated inaccessibility, etc.). The Vendor shall resolve Severity level 2 problems as quickly as possible, which on average shall not exceed four (4) business hours. If repair inside the 4-hour window is not feasible, then regular 4-hour updates are required.*

- 5.6.3.3 *Severity level 3 shall be defined as a minor problem that exists with the service but the majority of the functions are still usable and some circumvention may be required to provide service. The Vendor shall resolve Severity Level 3 problems as quickly as possible, which on average shall not exceed ten (10) business hours. If repair inside the 10-hour window is not feasible, then updates are required at the start of the next business day and every day thereafter until repairs are complete.*
- 5.6.4 *The Vendor must contact the State, Education and Library engineering points of contact by phone within 30 minutes of a network outage that affects multiple circuits on the State's network. This verbal notification must be followed with a written report that provides an explanation of the problem, the cause of the problem, the solution to the problem, the estimated time for recovery, and the steps taken or to be taken to attempt to prevent a reoccurrence.*
- 5.6.5 *The Vendor must provide both verbal and written notification a minimum of ten (10) days in advance of any planned upgrades, modifications, etc. that may affect the State customers to all State, Education and Library engineering points of contact*
- 5.6.6 *The Vendor will be required to participate in regular customer status meetings with the State, Education and library engineering contacts during the implementation and migration phases of the resulting contracts as well as ongoing contract management meetings to review new service issues, plan and coordinate network upgrades, and report on progress related to active network issues.*
- 5.6.7 *The Vendor shall coordinate with and assist the Customer and its follow-on Vendor(s) in establishing the most cost-effective method for transitioning from the currently provided services to replacement services without degrading existing service.*

Verizon Response

Please reference the information provided in Attachment B, section 5.6.

- 5.7 *Security Requirements*
- 5.7.1 *The Vendor shall be responsible for the physical and cyber security of the network infrastructure that provides transmission services to the customer.*
- 5.7.2 *The Vendor shall be responsible for resolving all security vulnerabilities that may affect equipment or transmission services provided to the customer.*
- 5.7.3 *The Vendor's policies, services, processes, or employees cannot create conflicts with the customer's standard security policy requirements. In the event of a standard security policy conflict, the customer's policy will be upheld. (Policies available at <http://www.technology.wv.gov>)*
- 5.7.4 *The Vendor shall support customer evaluation of security incidents and also compliance verification evaluations, as deemed necessary by the customer.*
- 5.7.5 *The Vendor must have an established and documented policy governing personnel security to include the validation of employee trustworthiness.*

Verizon Response

Please reference the information provided in Attachment B, section 5.7.

- 5.8 *Pricing Requirements*
- 5.8.1 *Since this solicitation is for statewide telecommunications services to be provided by a single Vendor, the Vendor must provide costs for all services identified on the Cost Sheet (Attachment C). Failure to complete the Costs Sheet in its entirety will result in the Vendor's bid being disqualified.*
- 5.8.2 *Any non-recurring costs must be clearly identified and defined on the Cost Sheet. Failure on the part of the Vendor to include this information will result in the State denying any charges that exceed the monthly recurring costs for the specified services.*

Verizon Response

Please reference the information provided in Attachment B, section 5.8.

Section Five: Vendor Proposal

1. *Economy of Preparation: Proposals should be prepared simply and economically providing a straightforward, concise description of the Vendor's abilities to satisfy the requirements of the RFP. Emphasis should be placed on completeness and clarity of the content.*

Verizon Response

Verizon has read, understands, and will comply.

2. *Incurring Cost: Neither the State nor any of its employees or officers shall be held liable for any expenses incurred by any Vendor responding to this RFP, including but not limited to preparation, delivery, or travel.*

Verizon Response

Verizon has read, understands, and will comply.

3. *Proposal Format: Vendors should provide responses in the format listed below:*

Title Page: State the RFP subject, number, Vendor's name, business address, telephone number, fax number, name of contact person, e-mail address, and Vendor signature and date.

Table of Contents: Clearly identify the material by section and page number.

Attachment A: Vendor Response Sheet - Within the attached Vendor Response Sheet, provide the following: firm and staff qualifications and experience in completing similar projects; references, copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives were and how they were met.

The Vendor Response Sheet also expands on the goals and objectives describing the State's expectations, and allowing the Vendor to explain his approach and methodology proposed for this project, as well as how each of the goals and objectives listed is to be met.

Attachment B: Mandatory Specification Checklist - Complete Attachment B: Mandatory Specification Checklist. By signing and dating this attachment, the Vendor acknowledges that they meet or exceed each of these specifications. The State reserves the right to require documentation detailing how each is met at its discretion.

Attachment C: Cost Sheet - Complete Attachment C: Cost Sheet included in this RFP and submit it in a separate sealed envelope. Cost should be clearly marked.

Oral Presentations: All Vendors participating in this RFP will be required to provide an oral presentation, based on the criteria set in Sections 3 and 4, Qualifications and Experience and Project Goals and Objectives, respectively.

During oral presentations, Vendors may not alter or add to their submitted proposal, but only to clarify information. Vendors should also be prepared to answer Technical Questions regarding their responses.

Verizon Response

Verizon has read, understands, and will comply.

4. *Proposal Submission: Proposals must be received in two distinct parts: technical and cost.*
 - *Technical proposals must not contain any cost information relating to the project.*
 - *Cost proposal shall be sealed in a separate envelope and will not be opened initially.*

All proposals must be submitted to the Purchasing Division prior to the date and time stipulated in the RFP as the opening date. All bids will be dated and time stamped to verify official time and date of receipt. All submissions must be in accordance with the provisions listed below and in Section Two: Instructions to Bidders Submitting Bids above.

Verizon Response

Verizon has read, understands, and will comply.

5. *Technical Bid Opening: The Purchasing Division will open and announce only the technical proposals received prior to the date and time specified in the Request for Proposal. The technical proposals shall then be provided to the Agency evaluation committee.*

Verizon Response

Verizon has read, understands, and will comply.

6. *Cost Bid Opening: The Purchasing Division shall schedule a date and time to publicly open and announce cost proposals when the Purchasing Division has approved the technical recommendation of the evaluation committee. All cost bids for qualifying proposals will be opened. Cost bids for non-qualifying proposals will also be opened but shall not be considered. A proposal may be deemed non-qualifying for a number of reasons including, but not limited to, the bidder's technical proposal failing to meet the minimum acceptable score and the bidder's technical proposal failing to meet a mandatory requirement of the contract. Certain information, such as technical scores and reasons for disqualification, will not be available until after the contract award, pursuant to West Virginia Code §SA- 3-11(h) and West Virginia Code of State Rules §148-1-6.2.5.*

Verizon Response

Verizon has read, understands, and will comply.

Section Six: Evaluation and Award

- 1 *Evaluation Process: Proposals will be evaluated by a committee of three (3) or more individuals against the established criteria with points deducted for deficiencies. The Vendor who demonstrates that they meet all of the mandatory specifications required; and has appropriately presented within its written response and/or during the oral demonstration (if applicable) its understanding in meeting the goals and objectives of the project; and attains the highest overall point score of all Vendors shall be awarded the contract. The selection of the successful Vendor will be made by a consensus of the evaluation committee.*
- 2 *Evaluation Criteria: All evaluation criteria is defined in the specifications section and based on a 100 point total score. Cost shall represent a minimum of 30 of the 100 total points.*

The following are the evaluation factors and maximum points possible for technical point scores:

• Qualifications and experience	20 Points Possible
• Approach and methodology	
General Requirements (4.1)	5 Points Possible
Dedicated State Account Team (4.2)	5 Points Possible
Billing Specifications (4.3)	5 Points Possible
Telecommunications Services (4.4)	5 Points Possible
Installation Requirements (4.5)	5 Points Possible
Support Requirements (4.6)	5 Points Possible
Security Requirements (4.7)	5 Points Possible
Service Level Objective Requirements (4.8)	5 Points Possible
• Oral interview	10 Points Possible
• Cost	<u>30 Points Possible</u>
Total	100 Points Possible

Each cost proposal cost will be scored by use of the following formula for all Vendors who attained the minimum acceptable score:

Lowest price of all proposals

----- X 30 = Price Score

Price of Proposal being evaluated

- 2.1 *Technical Evaluation: The Agency evaluation committee will review the technical proposals, deduct points where appropriate, and make a final written recommendation to the Purchasing Division.*
- 2.2 *Minimum Acceptable Score: Vendors must score a minimum of 70% (49 points) of the total technical points possible. All Vendors not attaining the minimum acceptable score (MAS) shall be considered as non-qualifying. A proposal may be deemed non-qualifying for a number of reasons including, but not limited to, the bidder's technical proposal failing to meet the minimum acceptable score and the bidder's technical proposal failing to meet a mandatory requirement of the contract. Cost bids for non-qualifying proposals will also be opened but shall not be considered. Certain information, such as technical scores and reasons for disqualification, will not be available until after the contract award, pursuant to West Virginia Code §SA-3-II(h) and West Virginia Code of State Rules §148-1-6.2.S.*
- 2.3 *Cost Evaluation: The Agency evaluation committee will review the cost proposals, assign appropriate points, and make a final recommendation to the Purchasing Division.*

Verizon Response

Verizon has read, understands, and will comply.

Section Seven: Contract Terms and Requirements

- 1. *The Vendor must understand that the resulting contract(s) from this RFP will be awarded to a single Vendor for all services statewide. The State of West Virginia will evaluate the proposed alternatives and determine the solution that provides the best combination of services and price that meet the stated requirements.*

Verizon Response

Verizon has read, understands, and will comply.

- 2. *Vendor must propose its services to address all the requirements described in the RFP. There are no guarantees of volume associated with this RFP, however the Vendor must aggressively pursue this opportunity with its best service offerings and best pricing to be considered to participate as a partner with the State of West Virginia.*

Verizon Response

Verizon has read, understands, and will comply.

3. *The Vendor must understand that any procurement of services exercised under the contract negotiated under this RFP is cancelable in the event the funding authority does not award or appropriate funds. If funds are not allocated for continued use of the negotiated contract, the Vendor will be notified within thirty (30) days or less of the non-award or non-appropriation of funds.*

Verizon Response

Verizon has read, understands, and will comply.

4. *The State intends to obtain for the duration of this contract, services that reflect the industry's latest technology. The State recognizes that there will be technological modifications and improvements that will become available during the life of this contract that will be unavailable on the date of contract award. Vendor(s) may make upgrades consistent with the contract; however, all items offered under this contract must remain within the scope of the contract in discount and functionality and be determined to be in the best interest of the State. Furthermore, the Vendor must agree to abide by the service substitution guidelines as defined by the Schools and Libraries Division of the Universal Service Administrative Company in evaluating new or emerging services or products. The Vendor must agree to expedite the process to add those services to this contract. Any such changes or additions to the contract will be done so with mutual agreement by both the Vendor and the State of West Virginia.*

Verizon Response

Verizon realizes the need that the State of West Virginia may have to upgrade services based on new requirements, such as voice and multimedia, during the contract term. The Private IP MPLS VPN design provides the necessary foundation to allow the State of West Virginia to upgrade user end sites to support future service requirements. Verizon's Private IP design meets State of West Virginia's requirement for "future proofing", while also meeting the need for an economically viable offering for today.

The Verizon technology refresh will span across all applicable State of West Virginia MPLS VPN core network components. This approach will keep the State of West Virginia's Private IP MPLS VPN in compliance with a state of the art next generation network. Throughout the life of this contract, Verizon will execute a process that continually evaluates and makes recommendations to keep the core network equipment current. This process includes not only the hardware but software, security and service upgrades.

6. *The State intends to solicit Ethernet Services by County (County Contracts). As contracts for Ethernet Services are awarded, it is understood that those circuits will be migrated from this Statewide Contract; circuits for E-rate eligible sites will not be migrated until the expiration of the current E-rate program funding year. If the resulting solicitation for a County results in prices that create overall costs for the County greater than the equivalent service on this contract, this contract will prevail and said County solicitation will be null and void.*

Verizon Response

Verizon has read, understands, and will comply.

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

- 1 **REVIEW DOCUMENTS THOROUGHLY:** *The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.*

Verizon Response

Verizon has read, understands, and will comply.

2. **MANDATORY TERMS:** *The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.*

Verizon Response

Verizon has read, understands, and will comply.

3. **PREBID MEETING:** *The item identified below shall apply to this Solicitation.*

- A pre-bid meeting will not be held prior to bid opening*
- A NON-MANDATORY PRE-BID meeting will be held at the following place and time:*
- A MANDATORY PRE-BID meeting will be held at the following place and time:*

*March 21, 2016 @ 1:30pm
WVOT
1900 Kanawha Boulevard East
Building 5, 10th Floor
Charleston, WV 25302*

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

Verizon Response

Verizon has read, understands, and will comply.

4. *VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.*

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: March 23, 2016

Submit Questions to: Stephanie Gale

2019 Washington Street, East

Charleston, WV 25305

Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)

Email: Stephanie.L.Gale@ wv.gov

Verizon Response

Verizon has read, understands, and will comply.

5. *VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.*

Verizon Response

Verizon has read, understands, and will comply.

- 6. *BID SUBMISSION: All bids must be submitted electronically through the wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.*

The bid delivery address is:

*Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130*

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID:

BUYER:

SOLICITATION NO.:

BID OPENING DATE:

BID OPENING TIME:

FAX NUMBER:

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical, and one original cost proposal plus 6 convenience copies of each to the Purchasing Division at the address shown above. Submission of a response to a request for proposal is not permitted in wvOASIS. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)

Technical

Cost

Verizon Response

Verizon has read, understands, and will comply.

7. *BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).*

Bid Opening Date and Time: Tuesday February 9, 2016 @ 1:30pm

Bid Opening Location: Department of Administration, Purchasing Division

2019 Washington Street East

Charleston, WV 25305-0130

Verizon Response

Verizon has read, understands, and will comply.

8. *ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.*

Verizon Response

Verizon has read, understands, and will comply.

9. *BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.*

Verizon Response

Verizon has read, understands, and will comply.

10. *ALTERNATES: Any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid or should include manufacturer's specifications industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.*

Verizon Response

Verizon has read, understands, and will comply.

11. **EXCEPTIONS AND CLARIFICATIONS:** *The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.*

Verizon Response

Verizon has read, understands, and will comply.

12. **COMMUNICATION LIMITATIONS:** *In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.*

Verizon Response

Verizon has read, understands, and will comply.

13. **REGISTRATION:** *Prior Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.*

Verizon Response

Verizon has read, understands, and will comply.

Registration Fee Details

[Click here to renew vendor registration fees](#)

Fee Exempt : No

Registration Application Date : 08/19/2015

Registration Effective Date : 08/19/2015

Registration Expiration Date : 08/18/2016

14. **UNIT PRICE:** *Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.*

Verizon Response

Verizon has read, understands, and will comply.

15. *PREFERENCE: Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Vendor Preference Certificate form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Vendor Preference Certificate form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the Vendor Preference Certificate Form provided in Appendix C of this proposal.

16. *SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. VA. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied accordance with W. Va. CSR § 148-22-9.*

Verizon Response

Verizon has read, understands, and will comply.

17. *WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.*

Verizon Response

Verizon has read, understands, and will comply.

18. *ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately opened and/or viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening if those documents are required with the bid.*

Verizon Response

Verizon has read, understands, and will comply.

19. *NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W.Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.*

Verizon Response

Verizon has read, understands, and will comply.

20. *ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5 and § 148-1-6.4.b.”*

Verizon Response

Verizon has read, understands, and will comply.

21. *YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of information Act of West Virginia Code §§ 29B-1-1 et seq.*

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

Verizon Response

Verizon has read, understands, and will comply.

GENERAL TERMS AND CONDITIONS:

1. **CONTRACTUAL AGREEMENT:** *Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.*

Verizon Response

Notwithstanding anything to the contrary contained in the RFP documents, Verizon does not consider this RFP response as legally binding to provide the Services described herein until all exceptions have been resolved, a mutual understanding is reached and a contract is executed.

2. **DEFINITIONS:** *As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.*
 - 2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
 - 2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.
 - 2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.
 - 2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.
 - 2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.
 - 2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.
 - 2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
 - 2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
 - 2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

Verizon Response

Verizon has read, understands, and will comply.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

Term Contract

Initial Contract Term: This Contract becomes effective on upon award and extends for a period of three year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to three successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed thirty-six months in total. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more Fully described in the attached specifications must be completed within _____ days.

Upon completion, the vendor agrees that maintenance, monitoring, or warranty services will be provided for one year thereafter with an additional _____ successive one year renewal periods or multiple renewal periods of less than one year provided that the multiple renewal periods do not exceed _____ months in total. Automatic renewal of this Contract is prohibited.

One Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

Other: See attached.

Verizon Response

Verizon has read, understands, and will comply.

4. *NOTICE TO PROCEED: Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.*

Verizon Response

Verizon has read, understands, and will comply.

5. *QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.*
- Open End Contract: Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.*
 - Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.*
 - Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.*
 - One Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.*

Verizon Response

Verizon has read, understands, and will comply.

6. *PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.*

Verizon Response

Verizon has provided pricing in the Cost Proposal as requested.

7. **EMERGENCY PURCHASES:** *The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under One Time Purchase contract.*

Verizon Response

Verizon has read, understands, and will comply.

8. **REQUIRED DOCUMENTS:** *All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.*
- BID BOND:** *All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.*
 - PERFORMANCE BOND:** *The apparent successful Vendor shall provide a performance bond in the amount of _____. The performance bond must be received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.*
 - LABOR/MATERIAL PAYMENT BOND:** *The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award. In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.*
 - MAINTENANCE BOND:** *The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.*
 - INSURANCE:** *The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award and shall list the state as a certificate holder:*
 - Commercial General Liability Insurance:** *In the amount of _____ or more.*
 - Builders Risk Insurance:** *In amount equal to 100% of the amount of the Contract.*
- The apparent successful Vendor shall also furnish proof of any additional insurance requirement contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.*

- LICENSE(S)/CERTIFICATIONS/PERMITS: In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Purchasing Division.*

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

Verizon Response

Verizon has read, understands, and will comply.

- 9. *WORKERS' COMPENSATION INSURANCE: The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.*

Verizon Response

Verizon has read, understands, and will comply.

- 10. *LITIGATION BOND: The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and help by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.*

Verizon Response

Verizon has read, understands, and will comply.

- 11. *LIQUIDATED DAMAGES: Vendor shall pay liquidated damages in the amount of _____ for _____*

This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other availability remedy.

Verizon Response

Verizon has read, understands, and will comply.

12. *ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.*

Verizon Response

Verizon has read, understands, and will comply.

13. *FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.*

Verizon Response

Verizon has read, understands, and will comply.

14. *PAYMENT: Payment in advance is prohibited under this contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.*

Verizon Response

The billing start date, for any product or service, will be the day service has been tested and accepted by Verizon and the customer. Certain services such as Local Access, do bill one month in advance. This requirement should be offset by the state requirement of 60 day payment terms. Any services billed in advance will not be deemed late if they are held to pay in arrears.

15. *TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.*

Verizon Response

Verizon has read, understands, and will comply.

16. *CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules §§ 148-1-6.1.e.*

Verizon Response

Verizon has read, understands, and will comply.

17. *TIME: Time is of the essence with regard to all matters of time and performance in this Contract.*

Verizon Response

Verizon has read, understands, and will comply.

18. *APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.*

Verizon Response

Verizon has read, understands, and will comply.

19. *COMPLIANCE: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.*

Verizon Response

Verizon has read, understands, and will comply.

20. *PREVAILING WAGE: Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage requirements are applicable.*

Verizon Response

Verizon has read, understands, and will comply.

21. *ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.*

Verizon Response

Verizon has read, understands, and will comply.

22. *MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.*

Verizon Response

Verizon has read, understands, and will comply.

23. *WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.*

Verizon Response

Verizon has read, understands, and will comply.

24. *SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.*

Verizon Response

Verizon has read, understands, and will comply.

25. *ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.*

Verizon Response

Verizon clarifies that notwithstanding the above, either party may assign this Contract or any of its rights thereunder to an affiliate or successor upon notice to the other party. All other assignments without prior written consent are void and any written request for assignment will not be unreasonably withheld.

26. **WARRANTY:** *The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.*

Verizon Response

Verizon has read, understands, and will comply.

27. **STATE EMPLOYEES:** *State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.*

Verizon Response

Verizon has read, understands, and will comply.

28. **BANKRUPTCY:** *In the event the Vendor files for bankruptcy protections, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.*

Verizon Response

Verizon has read, understands, and will comply.

29. **PRIVACY, SECURITY, AND CONFIDENTIALITY:** *The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/default.html>.*

Verizon Response

Verizon has read, understands, and will comply.

30. **YOUR SUBMISSION IS A PUBLIC DOCUMENT:** *Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.*

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential", "proprietary," "trade secret", "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

Verizon Response

Verizon has read, understands, and will comply.

31. *LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.*

Verizon Response

Verizon has read, understands, and will comply.

32. *ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the united Staes and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.*

Verizon Response

Verizon has read, understands, and will comply.

33. *VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was ,made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity sunmitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.*

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his and her knowledge, the Vendor has properly registered with any State agency that may require registration.

Verizon Response

Verizon has read, understands, and will comply.

34. *PURCHASING CARD ACCEPTANCE: The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract unless the box below is checked.*

Vendor is not required to accept the State of West Virginia's Purchasing Card as payment for all goods and services.

35. *VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms and returns pertinent to all of the foregoing.*

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

Verizon Response

Verizon has read, understands, and will comply.

36. *INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.*

Verizon Response

Verizon takes exception to the above Indemnification requirements but is open to negotiating mutually agreeable indemnity provisions in the final Agreement similar to the following. Verizon will indemnify the Customer, its agents and employees, against any claim, loss, liability, fines, damages costs or expense for injury to or death of any persons and any loss or damage to any real or tangible property (collectively, 'Claim(s)') resulting from the negligent or other tortious acts or omissions of Verizon, its agents, representatives, employees or subcontractors, in the performance of work under this Agreement, except that Verizon, to the fullest extent permitted by applicable law, will not have any liability or responsibility to indemnify any person or entity for any such Claim(s), to the extent the same was caused by any negligent or other tortious act or omission of such person or entity. The person or entity seeking indemnity hereunder must provide Verizon with: (i) prompt written notice of any such Claim, and Verizon shall have the full right and opportunity to conduct the defense of all such Claims; and (ii) full information and all reasonable cooperation in support of such defense, and shall have the right to participate in such defense, but no costs or expenses shall be incurred for either party by the other party without such other party's prior written consent.

37. *PURCHASING AFFIDAVIT: In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.*

Verizon Response

Verizon has read, understands, and will comply. Please reference the Purchasing Affidavit provided in Appendix C of this proposal.

38. **ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** *This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia, county, municipal, and other local government bodies; and school districts ("Other Government Entities"). Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.*

Verizon Response

Verizon has read, understands, and will comply.

39. **CONFLICT OF INTEREST:** *Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.*

Verizon Response

Verizon has read, understands, and will comply.

40. **REPORTS:** *Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:*
- Such reports as the Agency and/or Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.*
 - Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov*

Verizon Response

Verizon has read, understands, and will comply. The Verizon Enterprise Center (VEC) portal contains many different reporting options. If a report is not available to fit the customer's needs, possibly a custom VEC report can be developed. For additional information pertaining to Verizon VEC, please reference section 4.6.1 of this proposal.

41. **BACKGROUND CHECK:** *In accordance with W.Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.*

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a critical background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

Verizon Response

Verizon has read, understands, and will comply.

42. **PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** *Except when authorized by the Director of the Purchasing Division pursuant to W. VA. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:*
- a. *"State Contract Project" means any erection or construction of, or any addition to alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.*
 - b. *"Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnance, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:*
 - c. *The cost for each contract items use does not exceed one tenth of one percent (.1%) of the total contract cost or two thosand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or*
 - d. *The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sifficient quantity or otherwise are not reasonably available to meet contract requirments.*

Verizon Response

Verizon has read, understands, and will comply.

43. *PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) That domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.*

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass, or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

Verizon Response

Verizon has read, understands, and will comply.

Certification and Signature Page



Certification and
Signature Page.pdf

Verizon Response

Please reference the signed Certification and Signature Page provided on the following page(s).

CERTIFICATION AND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Verizon Business Network Services, Inc. on behalf of MCI Communications Services Inc. dba

Verizon Business Services

(Company)

/ Marsha K. Harrell, Senior Consultant -

Pricing/Contract Management

Marsha K. Harrell
(Authorized Signature) (Representative Name, Title)

Phone: (304) 356-3395/Fax: (304) 356-3590/March 28, 2016
(Phone Number) (Fax Number) (Date)

Appendix B – Addenda Acknowledgement(s)

Please reference the Addenda Acknowledgement(s) provided on the following pages.



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Proposal
 35 -- Telecomm

Proc Folder: 198422

Doc Description: Addendum #1 Telecommunications Transport RFP

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2016-03-14	2016-04-04 13:30:00	CRFP 0212 SWC1600000003	2

BID RECEIVING LOCATION

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON

WV 25305

US

VENDOR

Vendor Name, Address and Telephone Number:

MCI Communications Services, Inc. d/b/a Verizon Business Services

Sandra Hawkins, Sr. Client Executive

4700 Maccorkle Avenue SE, Charleston, WV 25304

Phone: (304) 356-3395

FOR INFORMATION CONTACT THE BUYER

Stephanie L Gale

(304) 558-8801

stephanie.l.gale@wv.gov

Signature X

Marsha K. Harrell

FEIN # 47-0751768

DATE March 28, 2016

offers subject to all terms and conditions contained in this solicitation

Marsha K Harrell
 Senior Consultant
 Contract Management

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: SWC1600000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|----------------------------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

MCI Communications Services, Inc. d/b/a Verizon
Business Services

Company



Authorized Sign

Marsha K Harrell
Senior Consultant
Contract Management

March 28, 2016

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Proposal
 35 - Telecomm

Proc Folder: 198422

Doc Description: Addendum #2 Telecommunications Transport RFP

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2016-03-29	2016-04-18 13:30:00	CRFP 0212 SWC1600000003	3

BID RECEIVING LOCATION

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON

WV 25305

US

VENDOR

Vendor Name, Address and Telephone Number:

MCI Communications Services, Inc. d/b/a Verizon Business Services

Sandra Hawkins, Sr. Client Executive

4700 Maccorkle Avenue SE, Charleston, WV 25304

Phone: (304) 356-3395

FOR INFORMATION CONTACT THE BUYER

Stephanie L Gale

(304) 558-8801

stephanie.l.gale@wv.gov

Signature X

Marsha K. Harrell

FEIN # 47-0751768

DATE April 11, 2016

Offers subject to all terms and conditions contained in this solicitation

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: SWC00000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|----------------------------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

MCI Communications Services, Inc. d/b/a Verizon
Business Services

Company



Authorized Signature

April 11, 2016

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Revised 6/8/2012

Appendix C – Additional Signature Forms

Please reference the Additional Signature Forms provided on the following pages.



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Proposal
 35 - Telecomm

Proc Folder: 198422

Doc Description: Telecommunications Transport RFP

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2016-03-11	2016-04-04 13:30:00	CRFP 0212 SWC1600000003	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 MCI Communications Services, Inc. d/b/a Verizon Business Services
 Sandra Hawkins, Sr. Client Executive
 4700 Maccorkle Avenue SE, Charleston, WV 25304
 Phone: (304) 356-3395

FOR INFORMATION CONTACT THE BUYER

Stephanie L Gale
 (304) 558-8801
 stephanie.l.gale@wv.gov

Signature X *Marsha K. Harrell* FEIN # 47-0751768

DATE March 28, 2016

All offers subject to all terms and conditions contained in this solicitation

Marsha K Harrell
 Senior Consultant
 Contract Management

ADDITIONAL INFORMATION:

The State of West Virginia is seeking to establish a contract to extend existing services, allow for convergence of the existing voice, data, and video networks, and to improve Intranet/Extranet applications and services. This solicitation will be for telecommunication services to be provided by a single provider statewide.

INVOICE TO		SHIP TO	
VARIOUS AGENCY LOCATIONS AS INDICATED BY ORDER		STATE OF WEST VIRGINIA VARIOUS LOCATIONS AS INDICATED BY ORDER	
No City	WV99999	No City	WV 99999
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Telecommunications Data Transport services	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81161700			

Extended Description :

Telecommunications Data Transport services

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Mandatory Pre Bid Meeting	2016-03-21
2	Technical Questions Due	2016-03-23

SWC1600000003	Document Phase Final	Document Description Telecommunications Transport R FP	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Proposal
 35 - Telecomm

Proc Folder: 198422

Doc Description: Addendum #1 Telecommunications Transport RFP

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2016-03-14	2016-04-04 13:30:00	CRFP 0212 SWC1600000003	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:
 MCI Communications Services, Inc. d/b/a Verizon Business Services
 Sandra Hawkins, Sr. Client Executive
 4700 Maccorkle Avenue SE, Charleston, WV 25304
 Phone: (304) 356-3395

FOR INFORMATION CONTACT THE BUYER

Stephanie L Gale
 (304) 558-8801
 stephanie.l.gale@wv.gov

Signature X

Marsha K. Harrell

FEIN # 47-0751768

DATE March 28, 2016

All offers subject to all terms and conditions contained in this solicitation

Marsha K Harrell
 Senior Consultant
 Contract Management

ADDITIONAL INFORMATION:

Addendum #1 issued to:

Provide the following attachments:

- 2: Billing Example
- G: Sample TCR
- Terms and Conditions

2. To include an electronic copy of Attachment A for Vendor responses.

End of Addendum #1

INVOICE TO		SHIP TO	
VARIOUS AGENCY LOCATIONS AS INDICATED BY ORDER		STATE OF WEST VIRGINIA VARIOUS LOCATIONS AS INDICATED BY ORDER	
No City	WV99999	No City	WV 99999
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Telecommunications Data Transport services	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81161700			

Extended Description :

Telecommunications Data Transport services

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Mandatory Pre Bid Meeting	2016-03-21
2	Technical Questions Due	2016-03-23

SWC160000003	Document Phase Final	Document Description Addendum #1 Telecommunications Transport RFP	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Proposal
 35 — Telecomm

Proc Folder: 198422

Doc Description: Addendum #2 Telecommunications Transport RFP

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2016-03-29	2016-04-18 13:30:00	CRFP 0212 SWC1600000003	3

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

MCI Communications Services, Inc. d/b/a Verizon Business Services
 Sandra Hawkins, Sr. Client Executive
 4700 Maccorkle Avenue SE, Charleston, WV 25304
 Phone: (304) 356-3395

FOR INFORMATION CONTACT THE BUYER

Stephanie L. Gale
 (304) 558-8801
 stephanie.l.gale@wv.gov

Signature X *Mark K. Harrell* FEIN # 47-0751768

DATE April 11, 2016

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum #2 issued to:

- 1. Change bid opening date and time to April 18, 2016 @ 1:30pm
- 2. Provide responses to technical questions.
- 3. Provide a copy of the pre-bid sign in sheet.
- 4. Provide information regarding the disentanglement language in the current contract (note located at the top of the first page of responses to technical questions).
- 4. Provide page 42 of the original solicitation document, which was missing in the initial posting.

End of Addendum #2.

INVOICE TO		SHIP TO	
VARIOUS AGENCY LOCATIONS AS INDICATED BY ORDER		STATE OF WEST VIRGINIA VARIOUS LOCATIONS AS INDICATED BY ORDER	
No City	WV99999	No City	WV 99999
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Telecommunications Data Transport services	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
81161700			

Extended Description :

Telecommunications Data Transport services

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Mandatory Pre Bid Meeting	2016-03-21
2	Technical Questions Due	2016-03-23

SWC1600000003	Document Phase Final	Document Description Addendum #2 Telecommunications Transport RFP	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Corporate Policy Statement

Policy No.: CPS-103
Issued: December 6, 2010
Subject: Authority to Approve Transactions



APPENDIX 4
VERIZON BUSINESS
CPS-103 LETTER OF DELEGATION OF AUTHORITY
FORM 101

Within the authority granted to me in CPS-103, "Authority to Approve Transactions," I delegate

Patricia L Myers, Manager, Pricing & Contract Management (VZ ID [redacted]);
Marsha K Harrell, Senior Consultant, Pricing & Contract Management (VZ ID [redacted]); and
Jacqualynn A Whiting, Director, Pricing & Contract Management (VZ ID [redacted])

the authority to perform the following function:

Execute and deliver Verizon Business Customer Contracts and Proposals requiring "wet ink" signatures, including any and all ancillary documents and amendments related thereto, that are duly approved in accordance with then-applicable Verizon Business corporate policies, including the use of stamp bearing facsimile of my signature in accordance with *Security Procedure for Anthony Recine, SVP & CMO, Blue Ink Stamp Policy.*

This will be effective beginning on July 1, 2015 and ending on June 30, 2016 or before if rescinded by me.

(Annual delegations must be completed by July 1st of each respective year and may not exceed one year from their effective date. Delegations with a start date other than July 1st should also include an end date of the subsequent June 30 or earlier.)

Distribution:

- The person delegated authority must retain a copy of Form 101 delegation, either electronic or hard copy, for one (1) year after expiration date.
- The person granting the delegation must retain the Form 101 delegation, either electronic or hard copy, for one (1) year after expiration date; send a copy to the delegate, the group Chief Financial Officer, and Corporate Finance Compliance at [redacted]; and ensure the delegation is entered into the Accounts Payable system when appropriate.

Approved By:

Anthony Recine 6/11/15
Signature Date

Anthony Recine [redacted]
Name VZ ID

SVP & CMO [redacted]
Responsibility Code or Cost Center Code

Jacqualynn A Whiting 6/12/15
Delegate's Signature - Jacqualynn A Whiting

Patricia L Myers 6/17/15
Delegate's Signature - Patricia L Myers

Marsha K Harrell 6/16/2015
Delegate's Signature - Marsha K Harrell

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Verizon Business Network Services, Inc. on behalf of MCI Communications Services Inc. dba Verizon Business Services

Authorized Signature: Marsha K. Harrell Date: March 28, 2016

Marsha K Harrell
Senior Consultant
Contract Management

State of Mississippi

County of Ninds, to-wit:

Taken, subscribed, and sworn to before me this 28th day of March, 2016.

My Commission expires 4/30/18, 20 .

AFFIX SEAL HERE



NOTARY PUBLIC Lynne Myers

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1. **Application is made for 2.5% vendor preference for the reason checked:**
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification;
 Bidder is a resident vendor partnership, association, or corporation with at least eighty percent of ownership interest of bidder held by another entity that meets the applicable four year residency requirement; **or**,
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,
2. **Application is made for 2.5% vendor preference for the reason checked:**
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
3. **Application is made for 2.5% vendor preference for the reason checked:**
 Bidder is a nonresident vendor that employs a minimum of one hundred state residents, or a nonresident vendor which has an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia and employs a minimum of one hundred state residents, and for purposes of producing or distributing the commodities or completing the project which is the subject of the bidder's bid and continuously over the entire term of the project, on average at least seventy-five percent of the bidder's employees or the bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years and the vendor's bid; **or**,
4. **Application is made for 5% vendor preference for the reason checked:**
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,
5. **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,
6. **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
7. **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.**
 Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) rescind the contract or purchase order; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Verizon Business Network Services, Inc. on behalf of MCI Communications Services Inc. dba Verizon Business

Signed: Masha K. Harneel

Date: March 28, 2016

Title: Senior Consultant - Pricing/Contract Management

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

AGREEMENT ADDENDUM

In the event of conflict between this addendum and the agreement, this addendum shall control:

1. **DISPUTES** – Any references in the agreement to arbitration or to the jurisdiction of any court are hereby deleted. Disputes arising out of the agreement shall be presented to the West Virginia Court of Claims.
2. **HOLD HARMLESS** – Any clause requiring the Agency to indemnify or hold harmless any party is hereby deleted in its entirety.
3. **GOVERNING LAW** – The agreement shall be governed by the laws of the State of West Virginia. This provision replaces any references to any other State's governing law.
4. **TAXES** – Provisions in the agreement requiring the Agency to pay taxes are deleted. As a State entity, the Agency is exempt from Federal, State, and local taxes and will not pay taxes for any Vendor including individuals, nor will the Agency file any tax returns or reports on behalf of Vendor or any other party.
5. **PAYMENT** – Any reference to prepayment are deleted. Payment will be in arrears.
6. **INTEREST** – Any provision for interest or charges on late payments is deleted. The Agency has no statutory authority to pay interest or late fees.
7. **NO WAIVER** – Any language in the agreement requiring the Agency to waive any rights, claims or defenses is hereby deleted.
8. **FISCAL YEAR FUNDING** – Service performed under the agreement may be continued in succeeding fiscal years for the term of the agreement, contingent upon funds being appropriated by the Legislature or otherwise being available for this service. In the event funds are not appropriated or otherwise available for this service, the agreement shall terminate without penalty on June 30. After that date, the agreement becomes of no effect and is null and void. However, the Agency agrees to use its best efforts to have the amounts contemplated under the agreement included in its budget. Non-appropriation or non-funding shall not be considered an event of default.
9. **STATUS OF LIMITATIONS** – Any clauses limiting the time in which the Agency may bring suit against the Vendor, lessor, individual, or any other party are deleted.
10. **SIMILAR SERVICES** – Any provisions limiting the Agency's right to obtain similar services or equipment in the event of default or non-funding during the term of the agreement are hereby deleted.
11. **FEES OR COSTS** – The Agency recognizes an obligation to pay attorney's fees or costs only when assessed by a court of competent jurisdiction. Any other provision is invalid and considered null and void.
12. **ASSIGNMENT** – Notwithstanding any clause to the contrary, the Agency reserves the right to assign the agreement to another State of West Virginia agency, board or commission upon thirty (30) days written notice to the Vendor and Vendor shall obtain the written consent of Agency prior to assigning the agreement.
13. **LIMITATION OF LIABILITY** – The Agency, as a State entity, cannot agree to assume the potential liability of a Vendor. Accordingly, any provision limiting the Vendor's liability for direct damages to a certain dollar amount or to the amount of the agreement is hereby deleted. Limitations on special, incidental or consequential damages are acceptable. In addition, any limitation is null and void to the extent that it precludes any action for injury to persons or for damages to personal property.
14. **RIGHT TO TERMINATE** – Agency shall have the right to terminate the agreement upon thirty (30) days written notice to Vendor. Agency agrees to pay Vendor for services rendered or goods received prior to the effective date of termination.
15. **TERMINATION CHARGES** – Any provision requiring the Agency to pay a fixed amount or liquidated damages upon termination of the agreement is hereby deleted. The Agency may only agree to reimburse a Vendor for actual costs incurred or losses sustained during the current fiscal year due to wrongful termination by the Agency prior to the end of any current agreement term.
16. **RENEWAL** – Any references to automatic renewal is hereby deleted. The agreement may be renewed only upon mutual written agreement of the parties.
17. **INSURANCE** – Any provision requiring the Agency to purchase insurance for Vendor's property is deleted. The State of West Virginia is insured through the Board of Risk and Insurance Management, and will provide a certificate of property insurance upon request.
18. **RIGHT TO NOTICE** – Any provision for repossession of equipment without notice is hereby deleted. However, the Agency does recognize a right of repossession with notice.
19. **ACCELERATION** – Any reference to acceleration of payments in the event of default or non-funding is hereby deleted.
20. **CONFIDENTIALITY** – Any provision regarding confidentiality of the terms and conditions of the agreement is hereby deleted. State contracts are public records under the West Virginia Freedom of Information Act.
21. **AMENDMENTS** – All amendments, modifications, alterations or changes to the agreement shall be in writing and signed by both parties. No amendment, modification, alteration or change may be made to this addendum without the express written approval of the Purchasing Division and the Attorney General.

ACCEPTED BY:

State of West Virginia

Spending Unit: _____

signed: _____

Title: _____

Date: _____

**Verizon Business Network Services Inc. on behalf of
MCI Communications Services, Inc. d/b/a Verizon Business Services**

Company Name: _____

Signed: Marsha K. Hancee

Title: Senior Consultant - Pricing/Contract Management

Date: March 28, 2016

Appendix D – Red Light Status

Please refer to our attached icon(s) below, pertaining to Verizon's Red Light Status. For hardcopy purposes, please review the following page(s).



Verizon Business
Global LLC 01 11 2016



Red Light Display System

[FCC](#) | [Fees](#) | [Red Light Display System](#)

Logged in as: Verizon Business Global LLC dba Verizon Business (FRN: 0010856284) [[Log Out](#)]

[Print](#) | [Help](#)

1/11/2016 2:34 PM

Current Status of FRN

0010856284

STATUS: Green

You have no delinquent bills which would restrict you from doing business with the FCC.

The Red Light Display System checks all FRNs associated with the same Taxpayer Identification Number (TIN). A green light means that there are no outstanding delinquent non-tax debts owed to the Commission by any FRN associated with the requestor's TIN. The Red Light Display System was last updated on 01/11/2016 at 6:37 AM; it is updated once each business day at about 7 a.m., ET.

Customer Service

[Red Light Help](#)

[FCC Debt Collection](#)

[FCC Fees](#)

[Web Policies /
Privacy Policy](#)

Red Light Display System Help Line: (877) 480-3201, option 4, 4; TTY (202) 414-1255 (Mon.-Fri. 8 a.m.-6:00 p.m. ET)

Red Light Display System has a dedicated staff of customer service representatives standing by to answer your questions or concerns. You can email us at arinquies@fcc.gov or fax us at (202) 418-7869.

Appendix E – Verizon Service Agreement and Attachments

Please refer to our attached icon(s) below, pertaining to Verizon's Service Attachments. For hardcopy purposes, please review the following page(s).



Verizon Service Agreement 10-8-15.c



U.S. PRIVATE LINE



Verizon E-rate



Verizon



Verizon

Funding Service AttaiEthernet_Svc_AttachNetwork_Access_Ser



Verizon Private IP Service Attachment V

VERIZON BUSINESS SERVICE AGREEMENT

Verizon Business Network Services Inc.

State of West Virginia

One Verizon Way

Basking Ridge, NJ 07920

By: Marsha K. Harrell

By: _____

Name: Marsha K. Harrell

Name: _____

Title: Senior Consultant - Pricing/Contract

Title: _____

Management

Date: _____

Date: March 28, 2016

TERMS AND CONDITIONS

This Verizon Business Service Agreement ("Agreement") is made by and between "Verizon," which refers to Verizon Business Network Services Inc., on behalf of MCI Communications Services, Inc. d/b/a Verizon Business Services and any other Verizon affiliates identified in applicable service attachments or the Guide (individually and collectively), and Customer. This Agreement is binding upon execution by the parties named above. The pricing in this Agreement is effective the first day of the second full billing cycle following execution and delivery of this Agreement by Customer to Verizon,] except where a Service Attachment indicates otherwise for a particular service ("Effective Date"). Pricing and/or promotional benefits in this Agreement may not be available if it is signed and delivered to Verizon after the dates, if any, set forth in attachments or exhibits to this Agreement.

Customer Consent to Use of CPNI (Not Applicable to Arizona Customers). In order to better serve Customer by offering additional products and services, Verizon, Verizon Wireless and their affiliates (the "Verizon Companies") may need to use and share certain Customer information as described herein. The Federal Communications Commission ("FCC") and various states require the Verizon Companies to protect information relating to the quantity, technical configuration, type, destination, location, and amount of use of their customers' telecommunications and interconnected VoIP services purchased from the Verizon Companies, and related local and toll billing information ("CPNI"). The Verizon Companies acknowledge that, under law, they have a duty to protect, and Customer has a right to protection of, the confidentiality of CPNI. By signing this Agreement, Customer grants the Verizon Companies permission to use, to permit access to, and to disclose Customer's CPNI and other Confidential Information among the Verizon Companies and to their agents, contractors and partners, solely so they can offer Customer their current and future products and services. Customer represents that it has the authority to consent, and does consent, on behalf of its current and future affiliates that receive services and products from the Verizon Companies, that the Verizon Companies may use, disclose, and permit access to CPNI and Confidential Information as stated above; and may disclose CPNI and Confidential Information of any affiliate participating hereunder to Customer upon Customer's request. Customer may withdraw or limit its consent at any time via email at cpni-notices@verizon.com. This is the only way to withdraw consent for the Verizon Companies' use and sharing of Customer's CPNI and Confidential Information, as described above, and all other notices and elections for consenting or withdrawing consent are superseded by this notice and consent. Customer's consent will remain valid until Verizon receives a notice withdrawing consent. Withdrawal or limitation of consent will not affect the provision of services to Customer.

ILECS and Verizon Wireless. The Terms and Conditions below do not apply to Services provided by Verizon incumbent local exchange carriers ("ILECs") or by Celco Partnership and its affiliates d/b/a Verizon Wireless ("Verizon Wireless"), which are governed solely by the Service Attachments for such Services and, in the case of ILEC Services, applicable Tariffs (defined below). A Verizon Wireless Service Attachment becomes a part of this Agreement only once it is executed by Verizon Wireless and the Customer.

1. **Services.** Verizon will provide the products and services ("Services") in the Service Attachments. Each Verizon entity contracting under this Agreement is only responsible for the performance of its Services as set

forth in this Agreement and the relevant Service Attachment(s), and is not responsible for performance of any other entity's obligations thereunder.

2. **Term and Survival.** The "Initial Term" begins on the Effective Date and ends upon the completion of thirty-six (36) consecutive months but may be extended upon mutual agreement of the parties for three successive one year Extended Terms not to exceed 36 months. The terms of this Agreement will continue to apply during any service-specific commitments that extend beyond the Term. "Term" means the Initial Term and Extended Term.

3. **Tariff and Guide.** Verizon's provision of Services to Customer will be governed by Verizon's international, interstate and state tariffs ("Tariff(s)"), its "Service Publication and Price Guide" ("Guide") at www.verizonbusiness.com/guide, and this Agreement. This Agreement incorporates by reference the terms of each Tariff and the Guide. Verizon may modify the Guide from time to time, and any modification will be binding upon Customer, as provided in the Guide. Customer may enroll to receive email notifications of Guide changes at <http://www.verizonbusiness.com/guide/subscriptions>. If a conflict arises, the order of precedence is: (i) Tariffs to the extent applicable (ii) this Agreement (excluding the Guide and Tariffs), and (iii) the Guide. Among the provisions of the Agreement, the order of precedence is: (i) Service Attachments, and (ii) these Terms and Conditions. If Verizon makes any changes to the Guide (other than to Governmental Charges) that affect Customer in a material and adverse manner, Customer may discontinue the affected Service without liability by providing Verizon with written notice of discontinuance within 60 days of the date the change is posted on the above website, unless within 60 days of receiving Customer's discontinuance notice, Verizon agrees to remove the material adverse effect on Customer. If a Service is discontinued, Customer's AVC (defined below), will be reduced, as appropriate, to accommodate the discontinuance.

4. **Rates and Charges; Governmental Charges; Taxes.** Customer agrees to pay the rates and charges specified in this Agreement. If Customer purchases any services after the expiration of the Term, Customer shall pay Verizon's standard rates for those services, as set forth in the Guide or Tariffs. "Standard" rates and charges means the Verizon Business Services III pricing plan ("VBS III"), where applicable. Except where expressly stated otherwise for a particular service, (a) all rates and charges are subject to change and "fixed" rates may be decreased at any time, (b) Customer will not be eligible to receive any other additional discounts, promotions and/or credits (Tariffed or otherwise), and (c) the rates and charges set forth in this Agreement do not include (without limitation) charges for all possible non-recurring charges, access service, local exchange service, charges imposed by a third party other than Verizon, on-site installation, Governmental Charges (defined below), network application fees, customer premises equipment or extended wiring to or at Customer premises. Verizon may give Customer notice of such changes in rates or charges by posting them on the Guide, by invoice message, or by other reasonable means. Verizon may add or adjust rates and charges in order to recover amounts it is required or permitted by governmental or quasi-governmental authorities to collect from or pay to others in support of statutory or regulatory programs ("Governmental Charges"). All charges are exclusive of applicable Taxes (as defined in the Guide).

5. **Annual Volume Commitment.** Customer agrees to pay Verizon no less than N/A Dollars (\$0.00) in Total Service Charges (defined below) in each twelve-month period during the Initial Term ("Contract Year"), which is the annual volume commitment ("AVC"). "Total Service Charges" means all charges, after application of all discounts and credits, incurred by Customer for Services provided under this Agreement, excluding Taxes, Governmental Charges, equipment, Verizon ILEC, Verizon Wireless, non-recurring, goods and services acquired by Verizon as Customer's agent, international access that is passed-through (Type 3/PTT) or provided by Verizon (Type 1) and other charges expressly excluded by this Agreement.

6. **Underutilization and Early Termination Charges.** If Customer's Total Service Charges do not reach the AVC in any Contract Year during the Term, Customer shall pay an "Underutilization Charge" equal to 0% of the unmet AVC. If: (a) Customer terminates this Agreement before the end of the Term for reasons other than Cause; or (b) Verizon terminates this Agreement for Cause pursuant to the Section entitled "Termination; Disconnection Notice," then Customer will pay, within thirty (30) days after such termination: (i) an amount equal to 0% of the unsatisfied AVC remaining during the year of termination, and for each subsequent Contract Year remaining in the Term plus (ii) a pro rata portion of any and all credits received by Customer.

7. **Payment.** Customer will pay all Verizon charges (except Disputed amounts) within 30 days of invoice date. If Customer's account(s) reflect a credit balance, Customer must designate, in writing, within such 30 days the account(s) and charges to which such credit balances are to be applied; Verizon may elect to apply any undesignated credit balance(s) to the account(s) with the oldest unpaid charges. For the avoidance of doubt, the foregoing credit balances will only be applied to accounts for the same Customer entity. A "Disputed" amount is one for which Customer has given Verizon written notice, adequately supported by bona fide explanation and documentation. Any invoiced amount not Disputed within 6 months of the invoice date is deemed correct and binding on Customer. Customer is liable for all fees and expenses, including attorney's fees, reasonably incurred by Verizon in attempting to collect any charges owed under this Agreement.

8. **Termination; Disconnection Notice.** Either party may terminate this Agreement for Cause (excluding Verizon ILEC or Verizon Wireless Services, which are governed by the applicable Service Attachments). "Cause" means (a) Customer's failure to pay any invoice (excluding Disputed amounts) within 10 days of receiving notice that payment is overdue, or (b) for all other matters, breach by a party of a material provision of this Agreement that the breaching party has not cured within 30 days of receiving notice from the non-breaching party. Verizon may interrupt Service without notice if necessary to prevent or protect against fraud or otherwise protect Verizon's personnel, facilities or services. Customer must provide prior written notice for the disconnection of Service, as specified in the Guide. Notwithstanding such notice, Customer remains liable for any applicable early termination charges in this Agreement.

9. **Confidential Information.** Except as required by law or regulation, each party promises that during the Term and for three years after, it will use the other party's Confidential Information only for purposes of this Agreement, not disclose it to third parties except as provided below, and protect it from disclosure using the same degree of care it uses for its own similar Confidential Information (but no less than a reasonable degree of care). Such a party may disclose the other party's Confidential Information only to its employees, agents and subcontractors (including professional advisors and auditors), and to those of its Affiliates, who have a need to know for purposes of this Agreement, and who are bound to protect it from unauthorized use and disclosure under the terms of a written agreement at least as protective of the other party's Confidential Information as the related terms of this Agreement. In any case, a party is responsible for the treatment of Confidential Information by any third party to whom it discloses it under the preceding sentence. "Confidential Information" means information (in whatever form) (i) designated as confidential; (ii) relating to this Agreement or potential changes to it; (iii) relating to the other party's business affairs, customers, products, developments, trade secrets, know-how or personnel; or (iv) received or discovered at any time that this Agreement is in effect, or otherwise in connection with this Agreement, by a party (including through an affiliate or other agent), which information should reasonably have been understood as Confidential Information of the party (or one of its affiliates or subcontractors), either because of legends or other markings, the circumstances of disclosure or the nature of the information itself. Confidential Information does not include information that: (a) is in the possession of the receiving party free of any obligation of confidentiality at the time of its disclosure; (b) is or becomes publicly known other than by a breach of this provision; (c) is received without restriction from a non-party free to disclose it; or (d) is developed independently by the receiving party without reference to the Confidential Information. In addition, information, whether or not Confidential Information, may be disclosed by a receiving party as may be required or authorized by applicable law, rule, regulation, or lawful process provided that the receiving party, to the extent practicable and permitted by applicable law, rule, regulation, or lawful process, first notifies the disclosing party in order to permit the disclosing party to seek reasonable protective arrangements. Verizon may share Confidential Information for the purposes described in the paragraph entitled "Customer Consent to Use of CPNI" above. Confidential Information (excluding CPNI that is also Confidential Information) remains the property of the disclosing party and, upon request of the disclosing party, must be returned or destroyed at the end of this Agreement or the applicable Contract. If there is a breach or threatened breach of this confidentiality provision, the disclosing party will be entitled to seek specific performance and injunctive or other equitable relief as a non-exclusive remedy. This clause does not prevent a party from announcing the existence of the terms of this Agreement or the applicable Contract internally (e.g., to its employees and Affiliates). Verizon shall not be deemed to have received, obtained, discovered, processed, stored, maintained, been given or required access to Customer Confidential Information or Customer sensitive personal data, solely by virtue of the fact that (i) Customer receives, transmits, obtains or otherwise exchanges such information through its use of the Services (including without limitation any of Verizon's voice, data, and/or

Internet services included in the Services) or (ii) Verizon's Services to Customer may involve the hosting, collocation, transport or other similar handling of such information. Customer is responsible for taking steps to protect the confidentiality and integrity of information, including without limitation Customer Confidential Information or Customer sensitive personal data, that it receives, transmits, obtains or otherwise exchanges with third parties through its use of the Services, by using, for example, encryption or other security measures for its network transmissions.

10. Protection of Customer CPNI and Provision of Customer CPNI to Authorized Customer Representatives.

10.1 Verizon will protect the confidentiality of Customer CPNI in accordance with applicable laws, rules and regulations. Verizon may access, use, and disclose Customer CPNI as permitted or required by applicable laws, rules, and regulations or this Agreement.

10.2 Provided that Customer is served by at least one dedicated Verizon representative under the Service Agreements (that can be reached by Customer by means other than calling through a call center) and as permitted or required by applicable law, Verizon may provide Customer CPNI (including, without restriction, call detail) to representatives authorized by Customer ("Authorized Customer Representatives" as defined below) in accordance with the following.

10.3 Verizon may provide Customer CPNI to Authorized Customer Representatives via any means authorized by Verizon that is not prohibited by applicable laws, rules, or regulations, including, without restriction: to the Customer's email address(es) of record (if any) or other email addresses furnished by Authorized Customer Representatives, to the Customer's telephone number(s) of record or other telephone numbers provided by Authorized Customer Representatives, to the Customer's postal (US Mail) address(es) of record or to other postal addresses furnished by Authorized Customer Representatives, or via Verizon's on-line customer portal or other on-line communication mechanism.

10.4 Authorized Customer Representatives include Customer employees, Customer agents, or Customer contractors, other than Verizon, who have existing relationships on behalf of Customer with Verizon customer service, account, or other Verizon representatives and all other persons authorized in written notice(s) (including email) from Customer to Verizon. Authorized Customer Representatives shall remain such until Customer notifies Verizon in writing that they are no longer Authorized Customer Representatives as described below. Customer agrees, and will cause Authorized Customer Representatives, to abide by reasonable authentication and password procedures developed by Verizon in connection with disclosure of Customer CPNI to Authorized Customer Representatives.

10.5 Customer's notices of authorization or deauthorization must be sent to your service or account manager, and must contain the following information:

- the name, title, postal address, email address, and telephone number of the person authorized or deauthorized
- that the person is being authorized, or is no longer authorized, (as applicable) to access CPNI
- the full corporate name of the Customer whose CPNI (and whose affiliates' CPNI) the person can access (or can no longer access, if applicable)

10.6 During the Service Agreements, Customer will at all times have designated, below, in an attachment containing the same data elements listed below, or in a separate writing sent to the service manager or account manager, up to three representatives ("CPNI Authorizers") with the power to authorize Customer representatives to access CPNI under this Agreement. Additions or removals of CPNI Authorizers will be effective within a reasonable period after Verizon has received a signed writing of the change, including the affected person(s)' name, title, postal address, email address and telephone number.

Name	Title	Tel. No.	Email	Postal Address

11. DISCLAIMER OF WARRANTIES. EXCEPT AS SPECIFICALLY SET FORTH IN THIS AGREEMENT, VERIZON MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AS TO ANY VERIZON SERVICES, SOFTWARE OR DOCUMENTATION. VERIZON SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NONINFRINGEMENT OF THIRD-

PARTY RIGHTS, OR ANY WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE.

12. Disclaimer of Certain Damages/Limitation of Liability.

12.1 Disclaimer of Certain Damages. No party to this Agreement is liable to any other for any indirect, consequential, exemplary, special, incidental or punitive damages, or for loss of use or lost business, revenue, profits, savings, or goodwill, arising in connection with this Agreement, the Services, related products, or documentation, even if the party has been advised, knew or should have known of the possibility of such damages.

12.2 Limitation of Liability. The total liability of Verizon to Customer in connection with this Agreement, for any and all causes of actions and claims, including without limitation breach of contract, breach of warranty, negligence, strict liability, misrepresentation and other torts, is limited to the direct damages proven by customer. Nothing in this section limits Verizon's liability: (a) in tort for its willful or intentional misconduct; or (b) for bodily injury or death proximately caused by Verizon's negligence; or (c) loss of damage to real property or tangible personal property proximately caused by Verizon's negligence.

12.3 Exclusions. The Limitation of Liability sub-section above does not limit (A) any party's liability: (i) in tort for damages proximately caused by its willful or intentional misconduct, or by its gross negligence, or (ii) where mandatory local law does not allow the limitation, (B) Customer payment obligations under this Agreement, (C) Verizon obligations to provide credits and waivers under this Agreement or (D) any party's indemnification obligations under this Agreement. The liability restrictions in this section apply whether liability is asserted in contract, warranty, tort or otherwise (including negligence, strict liability, misrepresentation, and breach of statutory duty). The liability restrictions in this section, and the disclaimer of warranties in the preceding section, apply equally to Verizon's suppliers and contractors as they do to Verizon.

13. Assignment. Either party may assign this Agreement or any of its rights hereunder to an affiliate or successor upon notice to the other party. A Customer affiliate or successor must meet Verizon's creditworthiness standards for the assignment to become effective. All other assignments without prior written consent are void.

14. Service Marks, Trademarks and Name. Neither Verizon nor Customer may: (a) use any service mark or trademark of the other party; or (b) refer to the other party in connection with any advertising, promotion, press release or publication unless it obtains the other party's prior written approval.

15. Compliance with Law; Governing Law; Dispute Resolution. Each party represents and warrants that it will comply with all federal, state, and local laws applicable to the provision or performance of the Services under this Agreement. This Agreement is governed by the laws of the State of West Virginia without regard to its choice of law principles. The parties agree that all Disputes must be pursued on an individual basis in accordance with the above, and waive any rights to pursue any Dispute on a class basis, even if applicable law permits class actions.

16. Notice. Except as otherwise set forth in any other clause of this Agreement, any notice required to be given under this Agreement will be in writing, and transmitted via any of email, overnight courier, hand delivery, a class of certified or registered mail, that includes return of proof of receipt, to Customer at the address set out in page 1 of the Agreement, and to Verizon at the addresses below. Notice sent in accordance with this clause will be deemed effective when received, except for email notice which will be deemed effective the day after being sent. A party may from time to time designate another address or addresses by written notice to the other party in compliance with this clause.

Verizon Business Services
6415-6455 Business Center Drive

Verizon Business Services
500 Summit Lake Drive - Office 4-04

Highlands Ranch, CO 80130
Attn: Customer Service

Valhalla, NY 10595
Attn: Vice President, Legal

Email: notice@verizon.com with a subject of 'OFFICIAL LEGAL NOTICE'

17. **Acceptable Use.** Use of Verizon's Internet Services and related equipment and facilities must comply with the then-current version of the Verizon Acceptable Use Policy ("Policy") (see www.verizonbusiness.com/terms). Verizon reserves the right to suspend or terminate Internet Services effective upon notice for a violation of the Policy.

18. **Service Migration.** Verizon is in the process of decommissioning certain services that Customer may be purchasing from Verizon, including, without limitation, one or more of the following services (the "Affected Services"):

Frame Relay, ATM, Flexible T1, VoIP IP Flexible T1, IP VPN

Verizon will discontinue the commercial availability of the Affected Services at future dates, subject to applicable law. Verizon will provide Customer with written notice of such date for each Affected Service that is being purchased by Customer. In recognition of this pending service decommissioning, Customer agrees that, within six (6) months of the date that this Agreement is fully executed, it will: (i) place orders to fully and completely migrate from the Affected Services to replacement Verizon services; or (ii) discontinue use of the Affected Services. If Customer chooses option (i) above, then Verizon will continue to provide Customer with the Affected Services until the date that Customer's migration is complete. If Customer does not choose either option (i) or option (ii) above within such six (6) month period, then Verizon reserves the right to discontinue the Affected Services as set forth above. Notwithstanding the foregoing, if Verizon will discontinue the commercial availability of the Affected Services in less than six (6) months from the date that this Agreement is fully executed, then Customer must fully and completely migrate from the Affected Services to replacement Verizon services or discontinue use of the Affected Services by the date that Verizon discontinues the commercial availability of the Affected Services.

19. **Entire Agreement.** This Agreement (including Service Attachments and Exhibits referenced herein, and other documents incorporated by reference) constitutes the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all other prior or contemporaneous representations, understandings or agreements. Except as otherwise expressly stated herein, no amendment to this Agreement is valid unless in writing and signed by both parties.

**U.S. PRIVATE LINE SERVICE
SERVICE ATTACHMENT
9-10-15**

1. Rates and Charges.

1.1 **U.S. Private Line Services (, Fractional DS1, DS1, DS3 Private Line, SONET)** – U.S. Private Line (“USPL”) services are provided on an intrastate and interstate basis. Customer will pay the monthly recurring charges (“MRC”) and non-recurring charges, including installation and administrative charges, as set forth in the Guide provisions relating to US Private Line for Verizon Business Services III (“VBSIII”) and in applicable state tariff provisions relating to intrastate private line services. Interstate USPL SONET is provided on a private carriage basis.

2. Special Pricing.

2.1 **Interstate Private Line Service (Option <Text Token>)** – In lieu of all other discounts and promotions, Customer will receive the following discount off the MRC listed above for Interstate Private Line Service. Access is not eligible for this discount and is additional. Customer certifies that any private line circuit will carry more than 10% interstate traffic.

Service Type	Discount off MRC
<Text>	

2.2 **Intrastate Private Line Service (Option <Text Token>)** – In lieu of all other discounts and promotions, Customer will receive the following discount off the MRC listed above for Intrastate Private Line Service. Access is not eligible for this discount and is additional. The rates set forth will be effective, with respect to each state individually, on the first day of the second billing cycle following the effective date of this Service Attachment, or the first day of the first billing cycle following the completion of all necessary regulatory filings and receipt of all necessary regulatory approvals, whichever is later.

Service Type	State	Discount off MRC
<Text>		

2.3 **Interstate <Text Token> Private Line Service (Option <Text Token>)** – in lieu of all other rates, discounts and promotions, Customer will pay the following MRC per circuit and per mile charges for Interstate <Text Token> Private Line Service, based on mileage: Customer certifies that any private line circuit will carry more than 10% interstate traffic.

Mileage	Rate
<Text>	

Mileage	Rate
<Text>	

2.4 **Intrastate <Text Token> Private Line Service (Option <Text Token>)** – In lieu of all other rates, discounts and promotions, Customer will pay the following MRC per circuit and per mile charges for Intrastate <Text Token> Private Line Service, based on mileage: The rates set forth will be effective, with respect to each state individually, on the first day of the second billing cycle following the effective date of this Service Attachment, or the first day of the first billing cycle following the completion of all necessary regulatory filings and receipt of all necessary regulatory approvals, whichever is later.

Mileage	State	Rate
<Text>		
<Text>		

3. Terms and Conditions.

- 3.1 **Local Access Service** – Local access service is required for USPL and is not included.
- 3.2 **Service Term Commitment** – Customer commits to a 12-month minimum period for each circuit of USPL SONET.
- 3.3 **Early Termination Charge** – If Customer terminates any USPL SONET circuit ordered under this service attachment before its 12-month commitment has expired, except for Customer’s termination for Cause, such termination shall not be effective until 30 days after Verizon receives written notice of termination (“Termination Date”). Where Customer terminates for reasons other than Cause or Verizon terminates for Cause, in addition to paying all accrued but unpaid charges for the service incurred through the Termination Date, for each circuit terminated Customer may be required to pay, in accordance with the Payment provisions in the Agreement: (a) an amount equal 75 percent of the MRCs for the terminated circuit remaining in the 12-month commitment, if any; plus (b) all fees or early termination fees imposed by the access line provider, if any; plus (c) a pro rata portion of any and all credits received by Customer.

E-RATE FUNDING RELATED TERMS AND CONDITIONS SERVICE ATTACHMENT

1. General.

- 1.1 **Applicability.** The terms and conditions of this Service Attachment apply with respect to any Services (which term includes equipment) for which Customer seeks E-rate funding ("E-rate Services") under the federal Universal Service Fund from the Schools and Libraries Division of the Universal Service Administrative Company or USAC ("E-rate Program"). In the event of a conflict, the Terms and Conditions of a specific promotion Service Attachment will take precedence over Terms and Conditions in the E-rate Funding Related Terms and Conditions Service Attachment.
- 1.2 **Delayed Implementation.** Upon written request, Verizon will delay the start of any work or activities related to installation or provision of the E-rate Services until such time as Customer notifies Verizon in writing (a) of USAC's approval of E-rate funding, or (b) to proceed to provide such E-rate Services (regardless of whether E-rate funding is or has been approved). In all such cases, Customer shall be responsible for payment as set out in Sections 4 and 5 below. However, if within twelve (12) months after the Agreement is signed by either party, Customer has neither notified Verizon in writing that it has received such USAC approval of E-rate funding for E-rate Services nor notified Verizon to proceed to provide such E-rate Services, then Verizon reserves the right to terminate this Agreement with respect to such E-rate Services upon written notice to Customer.
- 1.3 **Term and Survival.** Notwithstanding any other provisions to the contrary set forth in the Agreement, the Initial Term and Effective Date for E-rate Services will be as noted below.

Provided that Customer has signed and delivered this Agreement to Verizon no later than the last day to submit an FCC Form 471 funding request during the applicable E-rate application filing window, the "Initial Term" for the E-rate Services will be scheduled as follows:

- For installed services (aka renewal of existing circuits), service date will become effective **July 1 of the applicable E-rate application year** or at the end of the Customers contract term, whichever is later ("Effective Date").
- For new installations, the service date will become effective as soon thereafter as such E-rate Services are installed ("Effective Date"). Verizon will hold the order and associated pricing until **September 30 of the applicable E-rate application year** or until the Customer; (a) notifies Verizon to place the order, or (b) invokes Section 1.2 Delayed Implementation section of this Service Attachment. This provision must be invoked prior to **September 30 of the applicable E-rate application year**.

If Verizon has not received the signed Agreement from Customer by the last day to submit an FCC Form 471 funding request during the applicable E-rate application filing window, the Initial Term for the E-rate Services will be scheduled to commence on the 1st day of the 2nd billing cycle following Verizon's receipt of the signed Agreement from Customer, or as soon as such E-rate Services are installed if not previously installed, but in no event earlier than **July 1 of the applicable E-rate application year**. The Initial Term shall end upon completion of the number of months specified as the Initial Term in the Agreement following the commencement of the Initial Term.

Unless otherwise agreed, the Initial Term for new or additional E-rate Services installed after the Initial Term begins will be co-terminus with the Initial Term applicable to the other E-rate Services.

At the end of the Initial Term, the Agreement for these E-rate Services may be subject to extension or continuation to the extent so provided in the provisions of the Agreement applicable to these E-rate Services. In the event the E-rate Services are provided to, and used by, Customer after the signature of this Agreement but prior to **July 1 of the applicable E-rate application year**, then Customer shall pay the rates set forth in this Agreement unless a prior written agreement is in effect and applicable to such pre-July 1 time period.

2. **Representations.**

- 2.1 Customer and Verizon each represent and warrant that it has complied and will comply with all laws, rules and regulations applicable to the E-rate Program.
- 2.2 Customer represents that it will seek E-rate funding under the Federal Universal Service Fund from the USAC with respect to the E-rate Services to be provided pursuant to this Agreement.
- 2.3 Verizon makes no representation or warranty whatsoever with respect to the eligibility of any particular E-rate Services for E-rate funding, as such determination rests solely with the Schools and Libraries Division of USAC in its capacity as administrator of the E-rate Program. Any reference in the Agreement to E-rate eligibility or ineligibility is not determinative, but is for ease of reference only.

3. **E-rate Funding Method.** Please designate the intended funding method by checking the appropriate box below:

- Billed Entity Applicant Reimbursement Form ("BEAR") – FCC Form 472
- Service Provider Invoice Form ("SPIF") – FCC Form 474

4. **Customer Responsibilities.**

- 4.1 Customer is solely responsible for applying for and securing any E-rate funding, and for ensuring the accuracy and integrity of all data and information submitted in connection with such application. Verizon has no liability arising from any assistance it provides Customer in connection with such application and Customer shall hold Verizon harmless with respect to any such assistance or information provided to Customer.
- 4.2 If for any reason Customer fails to qualify for or secure E-rate funding or otherwise becomes ineligible for such funding in whole or in part, or if such funding is withdrawn or canceled in whole or in part, or if payment of any Verizon charges is denied by USAC in whole or in part, Customer is nevertheless obligated to pay one-hundred percent (100%) of the charges associated with the E-rate Services provided under the Agreement that are not paid to Verizon from E-rate funding, including if applicable reimbursing to Verizon any funds which Verizon is obliged to return to USAC on account of Customer in connection with the Agreement. Notwithstanding any other provisions set forth in the Agreement, a lack of E-rate funding, in whole or in part, shall not be treated nor deemed as a non-appropriation of funds under any "non-appropriations of funds" (or similar) law, regulation or provision set forth or incorporated in this Agreement.
- 4.3 Upon request, Customer will provide Verizon with copies of any E-rate-related materials (including all attachments) reasonably requested by Verizon, including without limitation: (i) Form 471 and Item 21 Attachments, (ii) Form 500, (iii) Service Substitution Request, and (iv) approved SLD FCC 486 Service Certification Form.

5. **Payment.**

- 5.1 **Standard Invoicing.** Except as provided below, Verizon will invoice Customer in full for all E-rate Services, including those for which Customer's E-rate funding request has been approved. Customer will pay all invoices as provided in the Agreement. With respect to Services for which E-rate funding has been approved, Customer will file FCC Form 472 (Billed Entity Applicant Reimbursement Form or BEAR) and certify that it has paid for those Services in full. (Note that Verizon must receive an approved SLD Funding Commitment Decision Letter and approved SLD FCC Form 486 Service Certification Form before Verizon will sign Customer's FCC Form 472 (BEAR).) Within twenty (20) business days after receipt of payment from USAC, Verizon will remit the approved discounted portion to Customer.

ETHERNET SERVICES

1. **Rates and Charges.** Customer will pay the monthly recurring charges ("MRC"), which are fixed for the Term of the Agreement and non-recurring charges ("NRC") for Ethernet Virtual Private Line-CPA Based and Ethernet Private Line (collectively "Ethernet Services") indicated below or in the Guide for Verizon Business Services III ("VBS III").
 - 1.1 **Ethernet Virtual Private Line ("EVPL") Converged Packet Architecture ("CPA") Based.** For the three types of EVPL CPA Based services identified below, MRCs will begin accruing on the applicable EVPL CPA Based Service Activation Date, except that if Customer has not provided Verizon with all information reasonably requested by Verizon for the provisioning of the applicable EVPL CPA Based service, MRCs may begin accruing on the 30th day following the date that Customer places an order.
 - 1.1.1 **EVPL-Metro.**
 - 1.1.1.1 For each EVPL-Metro Ethernet Virtual Circuit ("EVC"), Customer will pay the MRC and NRC in effect on the date the quote was provided to Customer by Verizon ("Quote Date") (provided that Customer places the order within 45 days after the Quote Date), as set forth in the Guide. If there is a discrepancy between a quoted rate and the rate published in the Guide for the same time period, the published Guide rate will prevail. If no quote is provided, or if Customer places its order more than 45 days after the Quote Date, the order will be priced at the rate in effect at the time of the order.
 - 1.1.2 **EVPL-National.**
 - 1.1.2.1 **MRCs.** For EVPL-National EVCs, Customer will pay per EVC and per mile MRCs, which are based on EVC speed (also known as "Bandwidth") as indicated in the Guide for VBS III.
 - 1.1.2.2 **NRCs.** Customer also will pay NRCs indicated in the Guide.
 - 1.1.3 **EVPL-International.**
 - 1.1.3.1 **MRCs.** For each EVPL- International EVC, Customer will pay Verizon's standard rates and charges in effect on the date the EVC is installed less any applicable discount. Standard rates are available in the Guide. The MRC for each EVC varies according to its speed and route, and is fixed for the Term.
 - 1.1.3.2 **NRCs.** Customer also will pay NRCs indicated in the Guide.
 - 1.2 **Ethernet Private Line ("EPL") Services.** For EPL services as individually identified below, MRCs will begin accruing on the applicable EPL Service Activation Date, except that if Customer has not provided Verizon with all information reasonably requested by Verizon for the provisioning of the applicable EPL service, MRCs may begin accruing on the 30th day following the date that Customer places an order.
 - 1.2.1 **EPL-Metro.** Customer will pay the per circuit MRCs and NRCs in effect on the date the quote was provided to Customer by Verizon ("Quote Date"), (provided that Customer places the order within 45 days after the Quote Date), as set forth in the Guide. If there is a discrepancy between a quoted rate and the rate published in the Guide for the same time period, the published Guide rate will prevail. If no quote is

provided, or if Customer places its order more than 45 days after the Quote Date, the order will be priced at the rate in effect at the time of the order.

1.2.2 **EPL-National.**

1.2.2.1 **MRCs.** For EPL-National circuits Customer will pay per circuit and per mile MRCs, which are based on circuit speed and mileage as indicated in the Guide for VBS III.

1.2.2.2 **NRCs.** Customer also will pay NRCs indicated in the Guide.

1.3 **Media Access Control ("MAC") Address Block MRCs.** Customer will pay an MRC of \$1,000 for each optional block of MAC addresses per Customer Domain that is in addition to the block(s) provided by Verizon, based on the number of customer sites in a given Customer Domain. An NRC for installation, set forth below, also applies.

Charge Type	Charge
MAC Block Address (1) Installation	\$50

1.4 **U.S. Domestic and International Access Required.** Ethernet Access Services is required for EVPL service and is subject to the terms and conditions of the Network Services Local Access Service Attachment and the Guide terms for Ethernet Services.

2. **Special Pricing.** See applicable pricing in RFP SWC160000002 Attachment C – Cost Sheet.

3. **Terms and Conditions.**

3.1 **Minimum Term Commitment for EVPL and EPL.** Customer commits to keep each EVPL EVC and EPL circuit in service for at least one year.

3.2 **Early Termination Charge for EVPL and EPL.** If Customer terminates any EVPL EVC or EPL circuit ordered under this service attachment before its 12-month commitment has expired, except for termination for Cause, such termination shall not be effective until 30 days (or 60 days in the case of EVPL- International) after Verizon receives written notice of termination ("Termination Date"). In addition to paying all accrued but unpaid charges for the service incurred through the Termination Date, for each terminated EVPL EVC or EPL circuit Customer may be required to pay, within 30 days (or 60 days in the case of EVPL- International) after such Termination Date: (a) an amount equal zero percent of the MRCs for the EVPL EVC or EPL circuit remaining in the 12-month commitment, if any; plus (b) all fees or early termination fees imposed by the access line provider, if any; plus (c) a pro rata portion of any and all credits received by Customer.

3.3 **End Users.** Customer is solely responsible for interacting with end users regarding any administration, processes, and/or issues arising from any use of Ethernet Services by end users.

3.4 **Customer Responsibilities.** Customer is responsible for any and all damage to (i) Customer Terminating Equipment (CTE) not directly caused by Verizon's negligence or willful misconduct and (ii) the malfunction or failure of any equipment, facilities or systems provided by Customer.

3.5 **Interstate Service for EVPL-National and EPL-National.** EVPL-National and EPL-National are offered only on a jurisdictionally interstate basis. With respect to its use of EVPL-National and EPL-National service. Customer agrees that more than 10% of Customer's per EVC traffic crosses state line boundaries.

3.6 **Service Level Agreements.** The Service Level Agreements applicable to EPL and EVPL are located in the Guide and set forth Customer's sole remedies for any claim relating to EPL and EVPL, including any failure to meet the conditions set forth in the Service Level Agreements.

NETWORK ACCESS SERVICES

1. **Rates and Charges.** Customer will pay the monthly recurring charges ("MRC") and one-time charges related to Verizon Business Services III ("VBS III") network access services as follows:

1.1 **Network Services Local Access Services.** Analog Local Access, DSO (Hubless) Access, T-1 (DS1) Digital Access, DS3 Local Access and SONET Access (collectively known as "Time Division Multiplexor ("TDM")-based access services") are provided pursuant to the Guide provisions relating to Network Services Local Access Services, VBS III. SONET Access is provided on a private carriage basis.

1.2 **Ethernet Services.** Ethernet Access and Ethernet Private Line ("EPL") Access (collectively known as "Ethernet Access Services") are provided pursuant to the Guide provisions relating to Ethernet Services. Ethernet Access Services are provided on a private carriage basis.

2. **Special Pricing.** See applicable pricing in RFP SWC160000002 Attachment C – Cost Sheet.

2.1 **Ethernet Access Service.** In lieu of all other rates, discounts and promotions, Customer will receive the following discounts for Ethernet Access Service based upon the facility type (i.e., Type 1, Type 2, Type 3 or Type 4).

Facility Type	Discount
<FacilityTypeToken>	<DiscountToken>
<FacilityTypeToken>	<DiscountToken>

2.2 **Network Services Local Access Services.** In lieu of all other rates, discounts and promotions, Customer will pay the following local loop MRCs for TDM-based Network Services Local Access Services, which are fixed for the Term, based upon the circuit type (i.e., Analog, DSO, T1/DS1, and DS3) and CLLI code.

Access Circuit Type	CLLI Code	Local Loop MRC
<AccessCircuitTypeToken>	<ToCLLIToken>	<RateToken>
<AccessCircuitTypeToken>	<ToCLLIToken>	<RateToken>

2.3 **Network Services Local Access Services.** In lieu of all other rates, discounts and promotions, Customer will pay the following local loop MRCs for Network Services Local Access Services, which are fixed for the term, based on the circuit type (i.e., Analog, DSO, T1/DS1, and DS3) and facility type if applicable.

Access Circuit Type (and Facility Type if applicable)	Local Loop MRC
<AccessCircuitTypeToken>	<RateToken>
<AccessCircuitTypeToken>	<RateToken>
<AccessCircuitTypeToken>	<RateToken>

2.7 **Network Service Local Access Services Network Connection Charges.** In lieu of all other rates, discounts, or promotions, Verizon will waive Customer's Network Connection Charges for Network Access Local Access Service.

2.9 **Network Service Local Access Services AC/COC Charges.** Verizon will waive the applicable Access Coordination ("AC") and Central Office Connection ("COC") charges for Network Access Local Access Service under this Agreement.

3. **Terms and Conditions.** Customer commits to pay the applicable circuit MRC for any Network Services Local Access Service circuit of DS3 or larger for a minimum of 12 months (except if a longer commitment is specified), which Customer must pay even if the circuit is terminated sooner (unless terminated by Customer for Cause).

Private IP Service Service Attachment VBSIII

1. Rates and Charges.

1.1 **U.S. Private IP.** Customer will pay Verizon's VBS III standard U.S. monthly recurring charges ("MRC") and non-recurring charges ("NRC") as specified in the Guide.

1.2 International Service.

1.2.1 **International Private IP.** MRC and NRC for International Private IP are specified in the Guide.

1.2.2 MVIC Service.

1.2.2.1 **General.** In addition to the U.S. and International Private IP service locations where Verizon maintains Provider Edge equipment, Private IP service is available in select locations through arrangements with third party MPLS service providers ("MPLS Partners") using MPLS VPN Interprovider Connection ("MVIC"). MVIC connects the Verizon Private IP network to an MPLS Partner's MPLS networks. Customer will receive all invoices and customer support services only from Verizon (in countries where Verizon is working with an MPLS Partner, in-country provision of any of these services by Verizon is as authorized agent for the MPLS Partner or as a reseller). MVIC service for each MPLS Partner has unique pricing, and other specifications including, but not limited to, rules pertaining to the amount of AF traffic that is allowed, or the number of Classes of Service available, which is available through Customer's Verizon account representative upon request. The MVIC "Interconnect" rate applies to the MVIC connecting the Verizon Private IP network to the MPLS Partner's network (where applicable). The "Partner" rate applies to the MPLS service on the MPLS Partner's network. MVIC MRCs and NRCs are specified in the Guide.

2. Special Pricing.

2.1 **U.S Private IP Service (<Option Token>).** See applicable pricing in RFP SWC160000002 Attachment C – Cost Sheet.

3. Additional Terms and Conditions.

3.1 **Service Level Agreement.** The Service Level Agreement ("SLA") sets forth Customer's sole remedies for any claim relating to PIP Service, including any failure to meet the conditions set forth in the SLA and is set forth in the Guide.

3.2 **Private IP Service Options.** Customer must choose from Standard or Enhanced Traffic Management Private IP Service options.

3.3 **WAN Analysis.** Customer's use of WAN Analysis is subject to the terms and conditions of the third party end user license agreement. Customer must choose one of four levels of reporting detail via the Verizon Customer Center software which collects system information from Customer premise equipment. Customer agrees that such reports are Company confidential information.

- 3.4 **Dynamic Bandwidth.** Customer's access circuits must be un-channelized. Dynamic changes to CAR values may be made not more than once per day. Dynamic changes to CAR values are set to occur based on the Greenwich Meridian Time Zone and not Customer's local time zone.
- 3.5 **Country-Specific Monitoring.**
- 3.5.1 **Restriction on Selling Encryption Services in India.** Customer understands in accordance with the licenses and with statutory guidelines which govern the provisions of the Private IP Service by Verizon Business in India, Customer is not allowed to employ encryption on any equipment which is connected to the network of Verizon Business in India (including CPE and Customer equipment) which is directly or indirectly connected to the Network in India without the required approvals. Customer must ensure that any encryption equipment connected to the Network for specific requirements has the prior evaluation approval of the Department of Telecommunications or authorities specially designated for the purpose.
- 3.5.1.1 **Breach and Indemnity.** Customer hereby indemnifies and holds harmless Verizon from and against any claims, suits, judgments, settlements, losses, damages, expenses (Including reasonable attorneys' fees and expenses), and costs (including allocable costs of in-house counsel) asserted against or incurred by Verizon arising out of such failure to comply by Customer.
- 3.5.1.2 **India Ports.** This clause applies if: (a) Customer is not an entity duly incorporated under Indian law, as amended from time to time; and (b) the Private IP Service contains Ports in India. Customer will procure the signing by its Indian Affiliate/user receiving the Private IP Service in India for the Customer Indian Affiliate/user Undertakings form available in the Guide terms for Private IP.
- 3.5.2 **Monitoring – Pakistan.** Customer acknowledges that Private IP traffic terminating into and originating from Pakistan is monitored by the telecommunication Authority of Pakistan to detect illegal VOIP traffic.
- 3.6 **No Resale.** The Service is provided only to Customer. Resale or use by another organization is prohibited.

Appendix F – Authorization to do Business Certificate

Please refer to our attached icon(s) below, pertaining to the Authorization to do Business Certificate. For hardcopy purposes, please review the following page(s).



VzB Certificate.pdf

State of West Virginia



Certificate

*I, Natalie E. Tennant, Secretary of State of the
State of West Virginia, hereby certify that*

VERIZON BUSINESS NETWORK SERVICES INC.

a corporation formed under the laws of Delaware filed an application to be registered as a foreign corporation authorizing it to transact business in West Virginia. The application was found to conform to law and a "Certificate of Authority" was issued by the West Virginia Secretary of State on July 12, 1973.

I further certify that the corporation has not been revoked by the State of West Virginia nor has a Certificate of Withdrawal been issued to the corporation by the West Virginia Secretary of State.

Accordingly, I hereby issue this

CERTIFICATE OF AUTHORIZATION

Validation ID:7WV0Q_3X39Y



*Given under my hand and the
Great Seal of the State of
West Virginia on this day of
January 19, 2016*

Natalie E. Tennant

Secretary of State

Appendix G – Service Level Agreement(s)

Please refer to our attached icon(s) below, pertaining to the Service Level Agreement(s). For hardcopy purposes, please review the following page(s).



PIP SLA.pdf

Global Private IP Service Level Agreement

Version 2015-05

1. Service Level Agreement Summary. The Private IP Service Level Agreement (“PIP SLA”) covers Global Private IP Layer 3 and Private IP Layer 2 Services (collectively, the “Service” or “Private IP Service”). The PIP SLA consists of several service level standards (“Service Level Standards”). Customer may qualify for credits when the Verizon PIP Network performance fails to meet the stated thresholds established for a Service Level Standard.

The PIP SLA may also cover the transport components (not the CPE components) of the Managed Private IP Service product if offered as a part of a Managed Private IP solution. The managed service components of a Managed Private IP solution may be covered in a separate Managed Services, Service Level Agreement.

2. Definitions of Terms. Terms used in this document are defined in the Terms and Definitions section at the end of this document.

3. Service Level Standard Performance Measures. The PIP SLA Service Level Standards are:

Parameter	Access Type	Scope	U.S.	Global Tier A	Global Tier B	Global Tier C	Global Tier D
Availability	On-Net	End-to-End	100%	100%	100%	NA	NA
	Off-Net Premium	End-to-End	99.9%	99.9%	99.9%	99.5%	98.5%
	Off-Net Standard	End-to-End	99.5%	99.5%	99.5%	99.0%	NA
	Off-Net Basic	End-to-End	97.0%	97.0%	97.0%	97.0%	NA
Time To Repair (TTR)	On-net	End-to-End	2 Hours	4 Hours	4 Hours	NA	NA
	Off-Net Premium	End-to-End	4 Hours	5 Hours	8 Hours	8 Hours	8 Hours
	Off-Net Standard	End-to-End	4 Hours	8 Hours	8 Hours	8 Hours	NA
	Off-Net Basic	End-to-End	24 Hours	24 Hours	24 Hours	24 Hours	NA
Service Installation	On-Net, Off-Net	End-to-End	≤ 1.5M 30 Business Days ≤ 45M 45 Business Days Others 100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date
Moves, Adds or Changes (MAC)	On-Net, Off-Net	End-to-End	10 Business Days (Excluding Local Access Requests)	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date	100% by Customer's Due Date

Core Network Transit Delay (C-NTD) *	On-Net, Off-Net	P-Core	≤ 36 ms	NA	NA	NA	NA
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* Core Network Transit Delay (C-NTD) is only applicable to the US P-Core Network. Measurements between distinct PE pairs are given by the Packet Transit Delay (PTD) Service Level Standard in the table below.

Parameter	Access Type	Scope	EF	AF4x	AF3x	AF2x	AF1x	BE
Packet Delivery Ratio (PDR)	On-Net, Off-Net	PE-to-PE	≥ 99.995%	≥ 99.99%	≥ 99.99%	≥ 99.99%	≥ 99.99%	≥ 99.5%
Packet Transit Delay (PTD)	On-Net, Off-Net	PE-to-PE	See Applicable Standard Below					
Jitter	On-Net, Off-Net	PE-to-PE	< 5 ms	< 15 ms	NA	NA	NA	NA
Mean Opinion Score (MOS) *	On-Net, Off-Net	P-Core	≥ 4.0	NA	NA	NA	NA	NA

* Mean Opinion Score (MOS) is only applicable to the US, EMEA and APAC regions.

The PIP SLA Performance Measures and exclusions are defined in detail below.

4. Coverage Categories. Service Level Standards vary by:

- Class of Service
- Access type
- Outage type
- Geographic location

These Service Level Standards are defined below.

4.1. Class of Service. The PIP SLA for Class of Service delivery methodology and traffic priority Class of Service are identified as follows:

Private IP Layer 3 Queue	Naming
EF *	Real Time / Voice
AF4 AF41, AF42/43	Video / Priority Data
AF3 AF31, AF32/33	Mission Critical Data
AF2 AF21, AF 22/23	Transactional Data

AF1 AF11, AF12/13	General Data
BE	General Business - Default

* The EF queues are not designed for packets larger than 300 bytes or Bursty Traffic.

4.2. Access Types. The PIP SLA covers the following access types: On-Net and Off-Net Access. The PIP SLA does not apply to the CPLL portion of Off-Net Access. Off-Net Levels are offered in three levels of performance classifications:

- Premium (Types 2*, 3, 4 and 5 network configurations)
 - Standard (Standard network configuration)
 - Basic (DSL Services)
- * Not Available for EMEA/ASIA PAC Sold Customers

4.3. Outage Type. The PIP SLA defines Service disruptions as:

- Hard Outage
- Service Issue

The Service restoration priority determines the ranking of the repair actions against other Service Issues.

Priority Level	Criteria
Priority 1	Total loss of Service or degraded Service to the extent that it is unusable by Customer and Customer is prepared to release its Service for immediate testing
Priority 2	Degraded Service, however Customer is able to use the Service and is not prepared to release its Service for immediate testing
Priority 3	A problem with the Service that does not impact the functionality of the Service; including a single non-circuit specific quality of Service inquiry.
Priority 4	Non Service affecting requests (e.g. a Customer request for an incident report) and all other queries not covered by Priority 1 – 3 above. Scheduled maintenance falls into this category.

A Hard Outage has Priority 1 Service restoration priority with the exception of Hard Outages for Off-Net Basic which is handled as a Priority 2 ticket. Availability and TTR apply to Hard Outages.

A Service Issue has Priority 2 Service restoration priority. PTD, PDR and Jitter apply to Service Issues.

Priority 3 and Priority 4 issues will be addressed by Verizon. However, Priority 3 and Priority 4 issues are not eligible for SLA credits.

4.4. Geographical Location. The PIP SLA covers Service in all countries where PIP Service is offered, except as specified in the exclusions and limitations stated below.

The PIP SLA is divided into geographic regions because Service Levels available from local access providers around the world differ between countries. The location and access method of a Customer Site will determine the applicable Service Levels.

The countries covered under this SLA are divided into the following categories:

- **U.S. Region:** Contiguous 48 United States, Hawaii, and Alaska
- **APAC Region:** Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand.

- **EMEA Region:** Austria, Belgium, Czech Republic, Denmark, France, Finland, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Luxemburg, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovenia, Slovakia, Spain, Sweden, Switzerland, United Kingdom, Ukraine.
- **Global Tier A:** Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Singapore, South Korea, Spain, Sweden, Switzerland, United Kingdom.
- **Global Tier B:** Argentina, Australia, Brazil, Bermuda, Bulgaria, Chile, China, Colombia, Costa Rica, Czech Republic, Dominican Republic, Greece, Hungary, Iceland, India, Indonesia, Israel, Kuwait, Latvia, Malaysia, Mexico, Morocco, New Zealand, Panama, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, Serbia, Slovakia, Taiwan, Thailand, Turkey, Ukraine, United Arab Emirates (UAE), Uruguay, Venezuela, Alaska MVIC (via GCI), Argentina MVIC (via Claro or Telmex), Brazil MVIC (via Embratel or Level 3), Chile MVIC (via Telmex), Columbia MVIC (via Telmex), Italy MVIC (via Fastweb), and Mexico MVIC (via MetroRed or Telmex), Peru MVIC (via Telmex).
- **Global Tier C:** Anguilla MVIC (via Columbus), Antigua MVIC (via Columbus), Bahamas MVC (via Columbus), Bahrain, Barbados MVIC (via Columbus), Bermuda MVIC(via Columbus), BVI (British Virgin Islands) MVIC (via Columbus) Canada MVIC (via Telus), Cayman Islands MVIC (via Columbus), China MVIC (via ChinaUnicom or China Telecom), Colombia MVIC (via Columbus), Costa Rica MVIC (via Columbus), Costa Rica MVIC (via Tigo), Curacao MVIC (via Columbus), Dominica MVIC (via Columbus), Dominican Republic MVIC (via Columbus), Egypt, Egypt MVIC (via TE Data), El Salvador MVIC (via Columbus), El Salvador MVIC (via Tigo), Grenada MVIC (via Columbus), Guatemala MVIC (via Columbus), Guatemala MVIC (via Tigo), Haiti MVIC (via Columbus), Honduras MVIC (via Columbus), Honduras MVIC (via Tigo), India MVIC (via Bharti or Reliance), Jamaica MVIC (via Columbus), Japan MVIC (via Softbank), Nicaragua MVIC (via Tigo), Pakistan, Panama MVIC (via Columbus), Panama MVIC (via Tigo), Puerto Rico MVIC (via Columbus), Qatar, Russia MVIC (via Beeline), Saudi Arabia MVIC (via STC), Slovenia, South Africa, St. Kitts and Nevis MVIC (via Columbus), Saint Maarten MVIC (via Columbus), Saint Martin MVIC (via Columbus), St. Vincent MVIC (via Columbus), Suriname MVIC (via Columbus), Trinidad MVIC (via Columbus), Turkey (via Turknet), Turks and Caicos MVIC (via Columbus), U.S. Virgin Islands (via Columbus) and Vietnam.
- **Global Tier D:** Croatia, Ecuador, Estonia, Guam, Jordan, Kazakhstan, Lithuania, Serbia, Sri Lanka.

Service in Croatia, Estonia, Lithuania, Kazakhstan and Serbia is provided via a backhaul to the nearest Verizon Provider Edge. Service in Ecuador is provided via a backhaul to the Verizon Colombia Provider Edge, service in Guam is provided via a backhaul to the Verizon Tokyo, Japan Provider Edge, Service in Sri Lanka is provided via a backhaul to the Verizon Singapore Provider Edge. The Packet Transit Delay (PTD), Packet Delivery Ratio (PDR), and Jitter Service Level Standards for these locations are based on measurements at Verizon's Provider Edge device. Additional information on the locations of the Verizon Provider Edge is available through Customer's account team or on the Verizon Looking Glass portal for Private IP.

As a result of continuing expansion of the Verizon PIP network the listing of the Global Tier countries is dynamic and changes periodically as new countries are added. At the Customer's request Verizon will confirm country status and/or provide a listing of countries that fall into these categories.

Private IP Layer 2 service is not available for all countries listed above. Please refer to the Private IP Layer 2 exclusions in the General Exclusion Section below.

5. Service Level Standards Defined.

5.1. Availability.

5.1.1. Definition. End-to-end Circuit up-time.

5.1.2. Standard. See Service Level Standard table above for Performance Measurements.

Availability includes the local access from the Customer Edge (CE) to the Verizon PIP Provider Edge (PE) and the PIP Network. Availability excludes CPLL and the Customer CPE.

5.1.3. Calculation. Availability is determined by computing the total number of Eligible Hard Outage Minutes per Priority 1 trouble tickets in a calendar month for a specific Customer Circuit divided by the total number of minutes based on a 30-day calendar month.

Availability is calculated after a trouble ticket is opened with Verizon and represents the percentage of time that the Circuit is available within a given calendar month.

$$\text{Availability (\%)} = \left(1 - \left(\frac{\text{Total Eligible Hard Outage Minutes per Circuit per month}}{30 \text{ days} * 24 \text{ hours/day} * 60 \text{ minutes/hour}} \right) \right) \times 100$$

5.1.4. Credit Structure. The credit is based on the number of Eligible Hard Outage Minutes.

Availability applies only in those cases in which a PIP trouble ticket is opened with Verizon and the Customer subsequently allows the necessary physical or logical access to its premises and facilities for testing if required by Verizon.

Availability credit table:

Availability				Credits as a percent of MRC				
PIP Network Down Time		% of Up Time		All Global Tiers and US	U.S. and Global Tier A	Global Tier B	Global Tier C	Global Tier D
From (Mins)	To (Mins)	From %	To %	On-Net	Off-Net (Premium, Standard or Basic)	Off-Net (Premium, Standard or Basic)	Off-Net (Premium, Standard or Basic)	Off-Net (Premium, Standard or Basic)
1	43	< 100%	≥ 99.9%	5%	NA	NA	NA	NA
44	86	< 99.9%	≥ 99.8%	10%	10%	5%	NA	NA
87	216	< 99.8%	≥ 99.5%	15%	10%	5%	NA	NA
217	432	< 99.5%	≥ 99.0%	25%	15%	10%	5%	NA
433	648	< 99.0%	≥ 98.5%	30%	15%	10%	10%	NA
649	864	< 98.5%	≥ 98.0%	40%	20%	10%	10%	5%
> 864		< 98.0%		50%	20%	10%	10%	10%

5.1.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, Availability Service Level Standard measurements do not include the following:

- Any act or omission on the part of any third party other than a local access provider over which Verizon exercises control.
- Periods of Service degradation, such as slow data transmission, where a Priority 1 trouble ticket has not been opened with Verizon and Customer has not released its Service for immediate testing.
- Customer inquiry for circuit monitoring purposes only.
- Availability Service Level Standards for MVIC services are only applicable for MVIC locations where local access is provided by one of the corresponding MVIC partners identified above.
- Off-Net Basic hard outage to be handled as a Priority 2 ticket

5.2. Time To Repair (TTR).

5.2.1. Definition. Time taken to restore end-to-end Services during a Hard Outage on a specific Circuit.

5.2.2. Standard. See Service Level Standard table above for Performance Measurements.

TTR includes the On-Net and Off-Net local access from the Customer Edge (CE) to the Verizon PIP Provider Edge (PE) and the PIP Network. TTR excludes CPLL and the Customer CPE.

5.2.3. Calculation. TTR is determined by computing the time taken to repair each Eligible Hard Outage Priority 1 trouble ticket in a calendar month for a specific Customer Circuit with the exception of Hard Outages for Off-Net Basic which is handled as a Priority 2 ticket.

The duration of each Hard Outage on a specific Circuit is calculated after a trouble ticket is opened with Verizon.

TTR (Hrs) = Time taken to repair a specific Circuit experiencing an Eligible Hard Outage Priority 1 trouble.

Off-Net Basic hard outage to be handled as a Priority 2 ticket.

5.2.4. Credit Structure. The credit is based on the number of Eligible Hard Outage Minutes.

TTR applies only in those cases in which a PIP Hard Outage Priority 1 trouble ticket is opened with Verizon and the Customer subsequently allows the necessary physical or logical access to its premises and facilities for testing if required by Verizon.

Off-Net Basic hard outage to be handled as a Priority 2 ticket.

Circuits may qualify for the TTR Service Level Standard in addition to the Availability Service Level Standard.

TTR credit table:

TTR		Credit as a Percent of MRC					
PIP Network Outage Time		U.S.	Global Tiers A & B	U.S.	Global Tier A	Global Tier B	Global Tiers C & D
From Hr:Min:Sec	To Hr:Min:Sec	On-Net	On-Net	Off-Net	Off-Net (Premium, Standard or Basic)	Off-Net (Premium, Standard or Basic)	Off-Net (Premium, Standard or Basic)
2:00:00	3:59:59	4%	NA	NA	NA	NA	NA
4:00:00	4:59:59	4%	4%	2%	NA	NA	NA
5:00:00	7:59:59	10%	10%	4%	4%	NA	NA
8:00:00	11:59:59	10%	10%	4%	4%	4%	4%
≥ 12:00:00		10%	10%	4%	4%	4%	4%

5.2.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, TTR Service Level Standard measurements do not include the following:

- Any act or omission on the part of any third party, other than a local access provider over which Verizon exercises control.
- Periods of Service degradation, such as slow data transmission, where a Priority 1 trouble ticket has not been opened with Verizon and Customer has not released its Service for immediate testing.
- Customer inquiry for circuit monitoring purposes only.

- TTR Service Level Standards for MVIC services are only applicable for MVIC locations where local access is provided by one of the corresponding MVIC partners identified above.
- Off-Net Basic hard outage to be handled as a Priority 2 ticket.

5.3. Core Network Transit Delay (C-NTD).

5.3.1. Definition. Core Network round trip delay average between Verizon-designated core backbone network nodes across a specific region.

5.3.2. Standard. See Service Level Standard table above for Performance Measurements.

5.3.3. Calculation. Verizon calculates the C-NTD by using 64-byte packets for measuring round trip transit delay in milliseconds between Verizon-designated backbone network nodes across a specific region and averaging the results over a thirty day period. The measurements exclude any traffic that is re-routed as a result of a network outage or scheduled maintenance.

The monthly measurements are available at the following link:
<http://www.verizonbusiness.com/about/network/pip/>

5.3.4. Credit Structure. To receive a credit, Customer must submit their request within 30 business days after the month in which the C-NTD Service Level Standard was not met. Such credit will equal the pro-rated charges for one day of the MRC for the Customer's Connections within the specific region during the calendar month in which the C-NTD Service Level Standard was not met.

C-NTD credit table:

For Standard not met	Credit
Core Network Transit Delay (C-NTD)	The pro-rated charges equal to one day's MRC for the Customer's Connections

5.3.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, C-NTD Service Level Standard measurements do not include the following:

- All Customer data traffic that is marked EF by Customer and is not compliant with the subscribed EF Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- Core Network Transit Delay (C-NTD) is only applicable to the US P-Core Network

5.4. Packet Transit Delay (PTD).

5.4.1. Definition. Round trip data packets delay between origination and destination ports.

5.4.2. Standard.

- PE PTD is the provider edge PE-to-PE monthly average round trip transit delay in milliseconds between respective Provider Edge device pairs on the Verizon PIP Network.

The PE PTD Service Level Standard is applicable for the following traffic priority classes:

- Standard PIP Service
- Enhanced Traffic Management (ETM) option

5.4.2.1. PE PTD Service Level Standard Performance Measurements for international and US locations are stated in the PIP PTD Matrix located in the Verizon Secure Guide portal at:
http://www.verizonbusiness.com/us/publications/service_guide/secure/cp_pip_sla_intro.htm

5.4.3. Calculation. PTD is determined by using 64-byte packets for measuring transit delay in milliseconds across the Verizon PIP Network and averaging the results over a thirty day period.

PTD calculation is as follows:

$$PTD = T2 - T1$$

Where:

T1 is the time in milliseconds when an IP packet leaves the Ingress Reference Point (i.e., Packet exit event) and T2 is the time in milliseconds when an IP packet arrives back at the Ingress Reference Point (i.e. Packet return event)

- **PE PTD** is measured between the respective origination and destination infrastructure ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, local access issues, are excluded from the measurement.

5.4.4. Credit Structure. If the PTD Service Level Standard is not met, it is a Service Issue and is considered a Service Restoration Priority 2.

If the PTD metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit.

To obtain a credit, a trouble ticket must be opened with Verizon when a PTD Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a PTD issue exists and repair the problem(s), as applicable. Once Verizon confirms that the PTD Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the PTD Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the PTD Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of PTD prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

PTD credit table:

For Standard not met	Credit as % of MRC
Packet Transit Delay (PTD)	20%

Service Issues occur between pair ports of the PIP Network. Consequently, two Customer Connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.4.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, PTD Service Level Standard measurements do not include the following:

- All Customer data traffic that is marked EF by Customer and is not compliant with the subscribed EF Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.

- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- PTD Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.

5.5. Packet Delivery Ratio (PDR).

5.5.1. Definition. Effectiveness in transporting and delivering Customer packets across the PIP Network

5.5.2. Standard.

- **PE PDR** is the PE-to-PE monthly average Packet Delivery Ratio.

The PE PDR Service Level Standard is applicable for the following traffic priority classes:

- Standard PIP Service
- Enhanced Traffic Management (ETM) option

5.5.2.1. PE PDR Service Level Standard is:

- For the EF traffic priority class: 99.995%
- For the AF traffic priority class: 99.99%
- For the BE traffic priority class: 99.5%

5.5.3. Calculation. PDR is determined by using 64-byte packets for measuring the number of packets within a specified traffic priority class that are successfully delivered divided by the total number of packets sent within the specified traffic priority class during a calendar month.

For data consisting of packets within the specified traffic priority class, the PDR is as follows:

$$\text{PDR (\%)} = \frac{\text{Packets Delivered}}{\text{Packets Offered}} \times 100$$

- **PE PDR** is measured between the respective origination and destination infrastructure ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, local access issues, are excluded from the measurement.

5.5.4. Credit Structure. If the PDR Service Level Standard is not met, it is a Service Issue and is considered Service Restoration Priority 2.

If the PDR metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit.

To obtain a credit, a trouble ticket must be opened with Verizon when a PDR Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a PDR issue exists and repair the problem(s), as applicable. Once Verizon confirms that the PDR Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the PDR Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the PDR Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of PDR prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

PDR credit table:

For Standard not met	Credit as % of MRC
Packet Delivery Ratio (PDR)	20%

Service Issues occur between pair ports of the PIP Network. Consequently, two Customer Connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.5.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, PDR Service Level Standard measurements do not include any of the following:

- Packets that are not delivered due in whole or in part to factors unrelated to Verizon's PIP/PIPL2 Network.
- Packets dropped at infrastructure ingress or egress due to improper Customer port speed specifications of Customer port speeds
- All Customer data traffic that is marked EF by Customer and is not compliant with the subscribed EF Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon PIP Network.
- PDR Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.

5.6. Jitter.

5.6.1. Definition. Displacement of data packets from their ideal sequence or position in time.

5.6.2. Standard.

- **PE Jitter** is the monthly average mean deviation of the difference in packet arrival time at the receiver compared to the sender for a pair of packets one-way between respective Provider Edge Devices.

The Jitter Service Level Standard is applicable for the following traffic priority classes:

- Enhanced Traffic Management (ETM) option:
 - ♦ PE Jitter is applicable to data packets marked EF by Customer and compliant with the subscribed EF Real Time CAR.
 - ♦ PE Jitter is applicable to data packets in the AF4 traffic class and compliant with the AF4 forwarding priority.
 - ♦ Other traffic classes are not available for PE Jitter Service Level Standards

5.6.2.1. PE Jitter Service Level Standard provides that the maximum delay variance between Verizon Private IP PE devices is less than 5 ms one-way for the EF traffic class and less than 15 ms one-way for the AF4 traffic class.

If a Jitter issue is identified, packet fragmentation technologies or similar capability may be required to remedy the issue.

5.6.3. Calculation. Jitter is determined by using 64-byte packets for measuring the mean deviation of the difference in packet spacing at the receiver compared to the sender for a pair of packets. The mean is determined by sampling the PIP Network frequently and averaging the results over a thirty day period.

The calculation for Jitter (Ji) for two consecutive packets i and i+1 is as follows:

$$\text{Jitter (Ji)} = \Delta T_i - \Delta T_i'$$

Where:

T_i = time 1st byte of packet i is received by the source port (ingress time)

T_{i+1} = time 1st byte of packet $i+1$ is received by the source port (ingress time)

T_i' = time 1st byte of packet i is received at the destination port (egress time)

T_{i+1}' = time 1st byte of packet $i+1$ is received at the destination port (egress time)

And:

$\Delta T_i = T_{i+1} - T_i$ (ΔT_i is the time interval between packets at ingress)

$\Delta T_i' = T_{i+1}' - T_i'$ ($\Delta T_i'$ is the time interval between packets at egress)

The Average Jitter (J-avg) is calculated as follows:

$$\text{Average Jitter (J-avg)} = \sum |J_i| / (N-1)$$

Where:

N is the number of sample packets over 30 day period

- **PE Jitter** is measured between the respective origination and destination infrastructure ports, i.e. between the points where the packet enters and exits Verizon's PIP Network, regardless of the mode of access to Verizon's PIP Network. External factors, including, but not limited to, local access issues, are excluded from the measurement.

5.6.4. Credit Structure. If the Jitter Service Level Standard is not met it is a Service Issue and is considered Service Restoration Priority 2.

If the Jitter metric for a pair of Customer Connections or Customer Sites is not being met, Customer may be eligible for a credit.

To obtain a credit, a trouble ticket must be opened with Verizon when a Jitter Service Level Standard is not being met or if a Service Issue is identified. Verizon will work with Customer to confirm that a Jitter issue exists and repair the problem(s), as applicable. Once Verizon confirms that the Jitter Service Level Standard is not being met, Verizon will have 30 calendar days to repair the Service to meet the Jitter Service Level Standard and close the applicable trouble ticket, and in such an event, Customer will not be eligible for a credit. If, after 30 calendar days of opening the trouble ticket, the Jitter Service Level Standard continues to not be met, Customer will qualify for a credit. Customer's measurement of Jitter prior to opening a trouble ticket may be considered by Verizon in determining the need to repair the Service.

Jitter credit table:

For Standard not met	Credit as % of MRC
Jitter	20%

Service Issues occur between pair ports of the PIP Network. Consequently, two Customer Connections will be impacted by each Service Issue. For Service Issue Service Level Standard credit purposes, the MRC will be defined as the average of the MRCs for each of the two impacted Customer Connections.

5.6.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, Jitter Service Level Standard measurements do not include any of the following:

- PE Jitter applicable to the AF4 traffic class is available only for Video traffic that uses either AF41 or CS4 classification when the AF4 queue facilitating such Video traffic is not mixed with any other type of traffic.

- All Customer data traffic that is marked EF by Customer and is not compliant with the subscribed EF Real Time CAR or any other data traffic that is not compliant with the applicable subscribed CAR.
- All Customer data traffic that is marked by Customer using IP Precedence/DSCP settings not supported by the Verizon Private IP Network.
- Jitter Service Level Standards for MVIC locations are based on measurements at the Verizon owned Provider Edge devices and not the MVIC partner location.
- Jitter Service Level Standard is not applicable to Private IP Layer 2 services

5.7. Service Installation.

5.7.1. Definition. Period of time beginning on the Order Acceptance date and ending on the date Verizon completes installation of the Service and the Service is up and billable.

Customer’s Due Date is defined as the date to which Verizon commits to deliver the Service.

5.7.2. Standard. See Service Level Standard table above for Performance Measurements.

5.7.3. Calculation. The Service Installation Service Level Standard is calculated by computing the period of time beginning on the Order Acceptance date and ending on the date Verizon completes installation of the Service and the Service is up and billable.

5.7.4. Credit Structure. To obtain a credit, Customer must report the delay in Service installation to the Verizon account team as described in the Credit Section of the SLA.

Service Installation credit table:

For Standard not met	U.S.	Global Tier A	Global Tier B	Global Tier C & D
Service Installation	50% of the first month’s MRC on the applicable Connection	50% of the first month’s MRC on the applicable Connection	50% of the first month’s MRC on the applicable Connection	50% of the first month’s MRC on the applicable Connection

5.7.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, the Service Installation Service Level Standard does not include any minutes associated with the following:

- Delays in installation related to Customer actions, moves or scheduling difficulties.
- Delays resulting from changes to a previously accepted order for Service from Customer, its agents or vendors.
- Any delays resulting from unavailability of Customer’s premises, equipment, or facilities required to install the Service.
- Delays attributed to extending the local access demarcation point.
- Delays resulting from inaccurate or incorrect order information from Customer.
- Delays resulting from an order suspension due to credit issues involving Customer.

Any periods of delay attributable to the reasons above will be deducted from the Service Installation time period.

5.8. Moves, Adds or Changes (MAC).

5.8.1. Definition. The MAC interval is the period of time beginning on the Order Acceptance date and ending on the date Verizon completes the Order for the Service.

Customer's Due Date is defined as the date to which Verizon commits to deliver the Service.

5.8.2. Standard. See Service Level Standard tables above for Performance Measurements.

5.8.3. Calculation. The MAC Service Level Standard is calculated by computing the period of time beginning on the Order Acceptance date and ending on the date Verizon completes the order for the Service.

5.8.4. Credit Structure. To obtain a credit, Customer must report the delay in Service order completion to the Verizon account team as described in the Credit Section of the SLA.

MAC credit table:

For Standard not met	U.S.	Global Tier A	Global Tier B	Global Tier C & D
MAC	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection	50% of MRC on the applicable Connection

5.8.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, the MAC Service Level Standard does not include any minutes associated with the following:

- Delays in installation related to Customer actions, moves or scheduling difficulties.
- Delays resulting from changes to a previously accepted order for Service from Customer, its agents or vendors.
- Any delays resulting from unavailability of Customer's premises, equipment, or facilities required to install the Service.
- Delays attributed to extending the local access demarcation point.
- Delays resulting from inaccurate or incorrect order information from Customer.
- Delays resulting from an order suspension due to credit issues involving Customer.
- MAC problems for services provided pursuant to any promotional Move, Add or Change offerings might not be eligible for credit refunds.

Any periods of delay attributable to the reasons above will be deducted from the MAC installation time period.

5.9. Mean Opinion Score (MOS).

5.9.1. Definition. Quality level of the audio fidelity and clarity of a voice call.

5.9.2. Standard. See Service Level Standard table above for Performance Measurements.

5.9.3. Calculation. Verizon calculates MOS by sampling performance scores for the EF traffic class, using the standards based ITU-T G.107 (E-model) and assuming a G.711 codec, between Verizon-designated core backbone network nodes and averaging the results over a thirty day period.

The monthly measurements are available at the following link:

<http://www.verizonbusiness.com/about/network/pip/>

5.9.4. Credit Structure. To receive a credit, Customer must submit their request within 30 business days after the month in which the MOS Service Level Standard was not met. Such credit will equal the pro-rated charges for one day of the MRC for the Customer's Connections within the

specific region during the calendar month in which the MOS Service Level Standard was not met.

MOS credit table:

For Standard not met	Credit
Mean Opinion Score (MOS)	The pro-rated charges equal to one day's MRC for the Customer's Connections

5.9.5. Exclusions. In addition to the General Exclusions, as set out in the General Exclusion Section below, MOS Service Level Standard measurements do not include the following:

- The MOS Service Level Standard applies only to data packets marked EF by Customer and compliant with the Customer's subscribed EF Real Time CAR.
- The MOS Service Level Standard applies only to the US, EMEA and APAC regions.
- The MOS Service Level Standard is not applicable to the Private IP Layer 2 services

6. Credit Requests and Application Process.

6.1. Service Level Agreement Credit Application Structure. For any calendar month in which Verizon fails to meet any of the Service Level Standards stated in this document the credit structure for the Service Level Standards listed above will be applied to the corresponding net billing MRC for the specific Connection(s) affected by a PIP Network Hard Outage(s) or Service Issue(s).

The total of all credits within any one month is limited to a maximum of 100% of the MRC for the specific Connection or Site, as applicable, which was impacted by any non-compliance with the Service Level Standard(s). Credits are not cumulative month to month.

Credits for Hard Outages are determined based on Eligible Hard Outage Minutes and Customer may claim the TTR Service Level Standard credit in addition to the Availability Service Level Standard credit in a given calendar month. Customer may claim only one credit within a particular Service Issue Service Level Standard category during a given month. Customer cannot claim credits from both the Hard Outage and Service Issue categories for the same event. Customer can request to have compliance checked for all of the standard Service Level Standard commitments when requesting credits in any given month.

To receive a credit, a trouble ticket must be opened with Verizon and Customer must submit their credit request no later than the stipulated time allowed to claim the specific Service Level Standard credit. The appropriate refund amount will be credited to the Customer's account at the billing account number (BAN) level in one lump sum, as opposed to each individual circuit or all circuits under multiple BANs. The appropriate refund amount will be appearing as a line item on a bill delivered within 90 calendar days following Verizon's confirmation of non-compliance with the Service Level Standard.

Credits do not apply to local access or backhaul charges.

6.2. Process for Customer to Apply for Service Level Agreement Credits. The process to apply for SLA credits is provided below for each of the Service Level Standards.

6.2.1. Opening a Trouble Ticket. In the case that a trouble ticket is required to document an outage or service event for credit compliance, this can be done either through the Customer Service Center or through the web-based Verizon Enterprise Center. The number for the assigned Customer Service Center is printed on Customer's invoice. Access to the Verizon

Enterprise Center can be requested at the first use by registering at the Verizon Enterprise Center portal <https://enterprisecenter.verizon.com/>

6.2.2. Submitting a Service Level Agreement Credit Request. The request for a SLA credit is submitted in writing from Customer to the account team. The timing and content of the request varies by Service Level Standard. This communication can be through email or by fax.

6.2.3. Trouble Ticket and Credit Request by Service Level Agreement.

6.2.3.1. Availability and Time To Repair (TTR). In order for the outage to qualify for an SLA credit Customer must do the following:

6.2.3.1.1. A trouble ticket is opened with Verizon within 72 hours of the time the outage.

6.2.3.1.2. Customer submits SLA credit request to their Verizon account team in writing within 15 days of opening the trouble ticket.

The written request must contain the following information:

- The date the outage occurred.
- The time the outage began and ended.
- The circuit ID(s) for each circuit(s) that was impacted.

6.2.3.2. Packet Transit Delay (PTD), Packet Delivery Ratio (PDR) and Jitter. In order for the outage to qualify for an SLA credit Customer must do the following:

6.2.3.2.1. A trouble ticket is opened with Verizon within 72 hours of the time the Service Issue arose.

6.2.3.2.2. Customer submits SLA credit request to the Account Team in writing within 15 days of the end of the repair period.

The written request must contain the following information:

- The date the Service Issue occurred.
- The time the Service Issue began and ended.
- The circuit ID(s) for each circuit(s) that was impacted.

6.2.3.3. Core Network Transit Delay (C-NTD) and Mean Opinion Score (MOS). To receive a credit, Customer must make a credit request in writing (e-mail or fax) to the Verizon account team within 30 business days after the month in which the C-NTD or MOS Service Level Standard was not met.

6.2.3.4. Service Installation and Moves, Adds, or Changes (MAC). Customer must report the delay in Service installation or MAC to the appropriate Customer Service Center when the target date is missed. Customer must make a credit request in writing (e-mail or fax) to Verizon account team within 15 days of the date that Verizon completes the installation of the circuit.

Customer must document the following information when requesting the credit:

- The date on which the Service Installation Period or MAC interval began.
- The date specified for Service Installation or Service order completion in the Customer's order.
- The date installation or Service order was completed.
- The port and access circuit ID numbers for the installed Service or the related Service order.

6.3. Service Level Agreement Credit Time Limitation. Service Credits made by Verizon to Customer under this Service Level Agreement are the sole and exclusive remedy available to Customer in respect of any failure to meet a Service Level Standard. Notwithstanding, Customer has options regarding the Service after three consecutive months of non-compliance on the part of Verizon PIP SLA:

6.3.1. Customer may elect to continue the Service for the affected connection inclusive of the credit. Customer can only receive a maximum of 6 months of credits for any individual Service Level Standard within a 12-month period regardless of the number of Connections.

6.3.2. Customer may elect to discontinue all PIP Service for an affected Connection without liability except for charges incurred prior to discontinuation of the Service. To cancel the Service for a Connection, Customer must submit a written disconnect notice to its Verizon account team within 30 days following the end of either the third or subsequent consecutive month of Verizon's failure to meet the Service Level Standard.

7. General Exclusions. The following exclusions apply to all Service Level Standards contained in this document:

7.1. Service Level Standards are limited to measurements taken at and service events occurring at or within the Provider Edge for Private IP services delivered when using the following access methods to Private IP:

- ILEC Fast Packet Service
- Frame Relay Extension (FRE)
- Network to network interface (NNI) partner
- Satellite
- DSL
- Wireless
- ISDN
- Customer Provided Local Loops (CPLL)
- Cross Border Lease Line(CBLL)
- International Private Line(IPL)

7.2. No Service Level Standards are provided for the following nor will any Service Level Standard not met be considered for:

- Service installations prior to acceptances by Customer.
- Packets marked EF by Customers that are larger than 300 bytes.
- Bursty Traffic in the EF queue.

7.3. Private IP Layer 2 Specific Exclusions:

- Private IP Layer 2 excludes Mean Opinion Score (MOS) and Jitter Service Level Standards.
- Private IP Layer 2 Coverage Exclusions:
 - All MVIC locations.
 - All Frame Relay Extension ("FRE") network to network interface ("NNI") partner networks

7.4. Service Level Standard measurements do not include periods of PIP Network outage resulting in whole or in part from one or more of the following causes:

- Any Hard Outage minutes associated with failure of CPLL.
- CPE associated with the PIP Service.
- Any act or omission on the part of the Customer, its contractors or vendors, or any other entity over which the Customer exercises control or has the right to exercise control.
- Any scheduled maintenance on the part of Customer, Customer contractors or Customer vendors.
- Any scheduled maintenance on the part of Verizon or Verizon Service partners which are within Verizon's maintenance windows.
- Any scheduled maintenance on the part of Verizon's Service partners, including without limitations, MVICs.
- Any Force Majeure Events as defined in Customer's Agreement for Service.

8. Terms and Definitions.

Terms and Definitions	Definition
Assured Forwarding (AF)	A set of priority Class of Service types intended to support data prioritization and precedence
Best Effort (BE)	A Class of Service type intended to support General Business transactions
Billing Account Number (BAN)	The account number to which all the Service charges are linked.
Bursty Traffic	Traffic where the minimum packet arrival gap in ms is the same or less than $[(\text{the largest expected voice packet sizes in bytes}) * 8000 / (\text{link speed in bits/sec})]$
Circuit	A circuit is a Connection, port, CAR and local access.
Class of Service (COS)	Priority classes that enable the network to differentiate data packages and assign routing precedence based on the customer data networking settings
Committed Access Rate (CAR)	Committed Access Rate (CAR) is the amount of bandwidth to which Customer subscribes on a logical port by logical port basis. CAR can be equal to or less than the logical port speed.
Connection	Connection is a port on Customer's virtual private network (VPN) connected to the Verizon PIP Network. Customer subscribes to a CAR for each Connection.
Core Network	The Core Network, also referred as the Provider Core or P-Core Network, is a dedicated and redundant backbone network with a resilient topology engineered to optimized network routes, maximize stability and minimize fallover times. The Core Network has been designed to provide quality of service excellence and to enable intelligent adaptability to new generation technologies. The Core Network is a secure, reliable and fast backbone network platform dedicated solely to Private MPLS network traffic. The Core Network supports Private MPLS network traffic but does not support direct customer access connections.
CPE	Customer Premise Equipment. Telecommunications equipment located at the Customer Site.
Cross Border Lease Line(CBLL)	A lease line that crosses a border.
Customer Due Date (CDD)	The date to which Verizon commits to deliver the Service.
Customer Edge (CE)	Routers and CPE connected to the local access loop.
CE-to-CE	Customer Edge to Customer Edge. The network segment to and from the customer demarcation point that includes the local loop and the PIP network but excludes the customer CPE.
Customer Provided Local Loop (CPLL)	Customer remits payment for local access directly to their local access provider and Verizon does not invoice Customer for local access charges.
Customer Service Center	Verizon locations where Customer reports Service issues.
Eligible Hard Outage Minutes	Total number of Connection Hard Outage minutes less any Outage minutes attributed to events excluded by the PIP SLA
End-to-End	The network segment in which Verizon Business has control. It includes the Local Loops if it is furnish or ordered by Verizon Business or a Verizon Affiliate from a third party carrier, and where Verizon Business invoices the Local Access cost to Customer. It excludes the CPE.
Enhanced Traffic Management Service (ETM)	Service that provides priority traffic routing with Class of Service features
Expedited Forwarding (EF)	A priority Class of Service type intended to support applications that require real time traffic flows
Frame Relay Extension (FRE)	Frame relay services through sites where the Verizon partners with another regional provider. The Verizon does not own these geographic points of presence.

Hard Outage	Complete loss of Service where Customer can not use the Service and is prepared to release it for immediate testing.
Indirect Access	Access into the PIP/PIP2 network that utilizes Frame Relay or ATM as the access method instead of directly connecting via a PIP Provider Edge device.
International Private Line(IPL)	Provides dedicated connections (point-to-point or point-to-multipoint circuits) between customer sites in numerous countries around the globe.
IP	Internet Protocol
Layer 2	The Data Link Layer of the OSI Model.
Layer 3	The Network Layer of the OSI Model.
Local Access	On-Net, Off-Net or Customer Provided connection from the Provider Edge to the Customer Edge.
Managed Services	A Verizon Service designed to provide customers with a range of management options, from the proactive monitoring to complete outsourcing, of the Customer's data or voice networks.
MCI Legacy Company	An affiliate of Verizon that was an affiliate of MCI, Inc. prior to the acquisition of MCI, Inc. by Verizon Communications, Inc., including one or more of the following entities (without limitation): MCI Communications Services, Inc. d/b/a Verizon Business Services; MCImetro Access Transmission Services LLC d/b/a Verizon Access Transmission Services; MCImetro Access Transmission Services of Virginia, Inc. d/b/a Verizon Access Transmission Services of Virginia; and MCImetro Access Transmission Services of Massachusetts, Inc. d/b/a Verizon Access Transmission Services of Massachusetts, and applicable affiliated operating companies outside the United States.
MPLS	Multi-Protocol Label Switching. An IETF standard.
MRC	Monthly Recurring Charge. MRC includes net port and CAR charge, less any applicable discounts, and does not include local access charges.
MVIC	Private IP MPLS VPN Interconnect Services provided through a partner network and interconnected with Verizon through the MVIC
Network	Verizon MPLS VPN Service, known as PIP. A network-based IP VPN service that utilizes IP-over-MPLS (Multi-Protocol Label Switching) technology to deliver IP VPN services to its customers in a secure, reliable and fast manner.
Network Outage	A Network Outage is defined as an unscheduled period in which the Service is interrupted and unavailable for use by Customer for 60 or more Unavailable Seconds (UAS). UAS is the American National Standards Institute standard (ANSI) T1.231.
NNI	Network to Network Interface (NNI) which provides an efficient interface between two data networks.
Off-Net	A location that is interconnected to Verizon Business using Local Access Circuits not wholly furnished via facilities owned or operated by Verizon Business or a Verizon Affiliate but ordered by Verizon Business or a Verizon Affiliate from a third party carrier. Off-net is offered at three levels of performance: Premium, Standard and Basic.
On-Net	A location that is interconnected to Verizon Business using Local Access Circuits wholly furnished via facilities owned or operated by Verizon Business or a Verizon Business Affiliate.
Order Acceptance	When Customer has provided all information required by Verizon, Customer has successfully passed a credit check (if required), and Verizon's ordering systems has processed the Customer's information and have accepted the order as ready for provisioning.
OSI Model	Open Systems Interconnection Reference Model. A standard description for how data should be transmitted between any two points in a telecommunication network. Its main purpose is to define the networking framework for the consistent delivery of products and services over a telecommunications network. The reference model defines seven layers of functions that take place at each end of a telecommunication network: Application (Layer 7), Presentation (Layer 6), Session (Layer 5), Transport (Layer 4), Network (Layer 3), Data-Link (Layer 2) and Physical (Layer 1).
P-Core	Provider Core. Dedicated and redundant backbone network with a resilient topology engineered to optimized network routes, maximize stability and minimize failover times. The P-Core has been designed to provide quality of service excellence and to enable intelligent adaptability to new generation technologies. The P-Core is a secure, reliable and fast backbone network platform dedicated solely to Private MPLS network traffic. The P-Core supports Private MPLS network traffic but does

	not support direct customer access connections.
PIP	Private IP Service
PIP Network	The Verizon Private IP Network consisting of the devices and transport making up the MPLS cloud.
Port	An entrance to and/or exit from a network.
Provider Edge (PE)	The edge of the Verizon PIP Network. It is the point in which customer traffic enters or exits the Verizon PIP Network.
PE-to-PE	Provider Edge to Provider Edge. The network segment consisting of the PIP Network but excluding the Local Loops and the customer CPE
Private IP Layer 2	Private IP Layer 2 is a technology using Virtual Private Wire Services (VPWS) to provide point-to-point routing and to allow Customers to retain control of routing, architectural and topology changes.
Private IP Layer 3	Private IP Layer 3 is a Network-Based IP VPN service using IP-over-MPLS technology to deliver high-performance IP VPN solutions to customers in a secure, reliable and fast manner.
Service or PIP Service	Service or Private IP Service is defined as Customer port and CAR and Local Accesses.
SLA	Service Level Agreement.
Service Restoration Priorities	Process by which Service disruptions are ranked by the Customer Service Center. A "Priority 1" is a total loss of Service, or degraded Service to the extent that it is unusable by Customer and Customer is prepared to release its Service for immediate testing. A "Priority 2" is degraded Service, however Customer is able to use the Service and is not prepared to release its Service for immediate testing.
Site	A site is Customer's Service location which includes CPE and a Connection.
Service Issue	A degradation of Service where Customer is able to use the Service and is not prepared to release the Service for immediate testing. Service Issues are a Priority 2 restoration priority.
Trouble Ticket	A trouble ticket is defined as the official method used to document a perceived problem with the Service or non-compliance with a Service Level Standard.
Virtual Private Network (VPN)	A virtual network that provides the equivalent of a dedicated private network service over a shared data telecommunications infrastructure. A VPN maintains privacy through security network protocols. A VPN uses a logical connection to route traffic between network sites. One of the key attributes of a VPN is that it can provide the same capabilities of a Private Network but usually at a much lower cost.

Appendix H – Sample Invoice(s)

Please refer to our attached icon(s) below, pertaining to Sample Invoice(s). For hardcopy purposes, please review the following page(s).



Verizon Sample
Invoice - IBRS.pdf



Attn: xxxContact Namexxx
 Corporate ID: VN12345678
 Bill Payer ID: Y2345678
 Invoice Number: 12345678
 Invoice Date: mm/dd/yyyy
 R Location: XXX

Node/Service Level Namexxxxxxxxxxxx(40)
 Mailing Address Line1xxxxxxxxxxxx(40)
 Mailing Address Line2xxxxxxxxxxxx(40)
 Mailing Address Line3xxxxxxxxxxxx(40)
 Mailing Address Line4xxxxxxxxxxxx(40)
 Cityxxxxxxxxxxxx(23), State(2) Zipxx(15)

Statement Summary (PX0095AA)

Current Usage Charges	\$\$\$,\$\$\$,\$\$9.99CR
Current Monthly Recurring Charges	\$\$\$,\$\$\$,\$\$9.99CR
Current Non-Recurring Charges	\$\$\$,\$\$\$,\$\$9.99CR
Late Payment Fee	\$\$\$,\$\$\$,\$\$9.99CR
Discounts and Promotions Applied	\$\$\$,\$\$\$,\$\$9.99CR
Subtotal Current Charges	\$\$\$,\$\$\$,\$\$9.99CR
Federal Excise Tax	\$\$\$,\$\$\$,\$\$9.99CR
State and Local Taxes	\$\$\$,\$\$\$,\$\$9.99CR
Federal, State, & Local Surcharges	\$\$\$,\$\$\$,\$\$9.99CR
Federal Universal Service Fee (FUSF)	\$\$\$,\$\$\$,\$\$9.99CR
Total Taxes/Surcharges	\$\$\$,\$\$\$,\$\$9.99CR
Total Current Charges	\$\$\$,\$\$\$,\$\$9.99CR
Total Past Due	\$\$\$,\$\$\$,\$\$9.99CR
Total Amount Due	\$\$\$,\$\$\$,\$\$9.99CR



**Sign Up for
 Online Billing
 and Go Paperless!
 See reverse side
 for details.**

Contact us online at <https://enterprisecenter.verizon.com> or call <8XX-XXX-XXXX>. See reverse side for additional contact and payment information.

If payment is not received within your contractual payment terms, a late payment fee of 1.5% or as described in your contract will be assessed. This invoice includes a late payment fee of <\$99,999,999.99>, calculated as <99.99%> of <\$99,999,999.99>.

*INFORMATIONAL INVOICE * Please pay this invoice online as provided in your Global Consolidated Payment enrollment form.



Remittance Statement

Bill Payer ID: Y2345678
 Node/Service Location Name XXXXXXXXX(40)
 Invoice Number: 12345678
 Invoice Date: mm/dd/yyyy

If Paying By Mail, Return This Form With Payment
 Payment is Due Upon Receipt (in 30 Days)

Total Amount Due \$ZZZ,ZZZ,ZZ9.99CR
 Amount Enclosed \$ _____

109908 09090900000208002 000002062 9999999999 03/10/96

109908090909000002080020000020629999999999

Verizon Business (22)
 P. O. BOX C-32654 (32)
 RICHMOND, VA 23292-2654 (32)



If You Have a Question about Your Invoice

Verizon Enterprise Center, our online account management tool, is available at <https://enterprisecenter.verizon.com>. As a user, you can view your invoice online, open an inquiry about your invoice, and pay electronically using our optional Online Payment feature. If you are not yet a registered user, see the self-enrollment instructions at the bottom of this page.

How to Pay Your Invoice

Paying Online. Select Payments from the Verizon Enterprise Center Invoices section to pay by Electronic Fund Transfer (EFT), Visa, Master Card, American Express, or Discover Card.

Paying by Mail. Detach the payment slip at the bottom of the reverse side of this sheet, enter the amount paid, and return it in the envelope provided, enclosing a check or money order made payable to "Verizon Business."

Paying by Phone. Call Verizon Business Financial Services at 1-800-806-8470 to authorize a one-time payment using a checking account or Visa, Master Card, American Express, or Discover Card (Payment by Credit Card is not available for wholesale customers). For the recurring payment option, please use Verizon Enterprise Center Online Payment (see "Paying Online" above).

Paying by ACH or Wire Transfer: E-mail ACH-WIRE.Requests@one.verizon.com for bank account information and instructions.

Paying by Check. Your check may be processed as an Electronic Funds Transfer. When you provide a check as payment, you authorize Verizon either to use information from your check to make a one-time electronic funds transfer from your account or to process the payment as a check transaction.

Bankruptcy: If you are or were in bankruptcy, this statement may include amounts for pre-bankruptcy service. You should not pay pre-bankruptcy amounts; they are for your information only. Mail bankruptcy-related correspondence to 500 Technology Drive, Suite 550, Weldon Spring, MO 63304.



Manage Your Account Online

1. Go to <http://www.verizonenterprise.com> and select Register.
2. Enter your invitation code **QNSSEKJJ51** and complete the simple registration process.
3. Upon signing into Verizon Enterprise Center you will have immediate access to your Billing account.

* The Invitation Code provided expires on 04/18/2010 and provides access to your billing information, including Customer Proprietary Network Information as defined by the FCC and the CPNI statute at 47 U.S.C. sec. 222(h) (1). Any person who enters the Invitation Code online will be understood by Verizon to be your authorized and authenticated representative. Protect this Invitation Code as you would any password.

Appendix I – Resumes

Please refer to our attached icon(s) below, pertaining to Resumes. For hardcopy purposes, please review the following page(s).



Kimberly A. Kusmira,
PMP.pdf



Lawrence W.
Host.pdf



Christopher G.
Layfield.pdf



Sandra K.
Hawkins.pdf



Donald P. Wilson,
P.E..doc.pdf



Rick L. Singleton.pdf



5670 Diann Drive
Pittsburgh, PA 15236
Phone 412 835-3261
kkusmira@verizon.net

Kimberly A. Kusmira, PMP

Experienced project, program and transition management professional

Professional Experience

2014 – Present

Senior Project Lead, Verizon Enterprise Solutions – Project Management

- Managed a series of projects for multiple customers simultaneously consisting of varied services including managed Private IP, MPLS, Dedicated and Bonded T1s, Ethernet and VoIP;
- Leading organizational initiatives for Early Project Completion and Voice of the Employee;
- Multiple Spotlight Awards received for project results and achievements.

Management

2013 – 2014

Senior Project Manager, Verizon Enterprise Solutions – Project:

- Successfully led overall project team consisting of 5 individual towers to deliver a security solution for Juniper Networks with overall accountability for the successful execution of the project; served as the single point of contact to the customer and Verizon project teams both in the United States and internationally.
- Security solution consisted of ATIMS (Advanced Threat Intelligence and Monitoring), MSS (Managed Security Solutions), SMP (Security Management Program), Baseline Assessment and (RR) Rapid Response Retainer – Incident Management with a contract value of over \$34M.
- Coordinated all aspects of solution from equipment ordering, design, installation and testing of services, communication plans, schedules, lessons learned and deliverables through meetings and detailed reports to customers, stakeholders, sponsors and project teams.



2011 – 2013

Senior Project Manager, Verizon Enterprise Solutions – Project Management:

- Transition Tower Lead for the Enterprise Internet and Security Solution transitioning Commonwealth of Pennsylvania's current Security Services from Level 3 Communications to Verizon;
- Transitioned Commonwealth of Pennsylvania's current Security Services to Verizon's fully managed Security Support Services, including, 24x7x365 Monitoring and event response/support for firewalls, IPSs, Web Content Filtering, load balancers, and Remote Access;
- Established a series of Process and Procedural Manuals including Incident Management and Change Management;
- Communicated directly with all state agencies to develop internet rules and transition schedules;
- Developed executive level reporting on a weekly basis for both CoPA and Verizon;
- Created disposition plans for decommissioning of all tower services (Voice, Data, Enterprise Internet and Security);
- Led the CoPA Firefly team which was created to provide transition clean up and incident management support which included a help desk after Level 3 services were terminated;
- Successfully completed all transition activities within timeframe that was provided to avoid financial penalties to Verizon.

2011

Senior Consultant, Verizon Enterprise Solutions -Global Client Services:

- In this newly created position as an Integrated Solutions Project Manager, my role is to provide consultative support to the regional CSPM Project Management team throughout the duration of a project that has a minimum value of \$5M in new revenue, involves third party vendors or partners, and has an end-to-end solution that integrates multiple products and services;
- Awarded Project Team of the Year 2010 (Sirius XM) for the successful implementation of an inbound dual carrier toll free open hosted speech recognition based application with Nuance and Verizon Business Hosted Intelligent Call Routing solution to route



calls intelligently to more than 2,500 Sirius XM Agent desk tops supporting both Sirius and XM toll free traffic.

2005 – 2010

Senior Consultant, Verizon Enterprise Solutions - Complex Solutions Project Management:

- As a Senior Project Manager, my role was to provide project management expertise in the coordination and implementation activity for very large, complex projects spanning multiple services and products; responsibilities include serving as single point of contact to the customer, contract administration, SLA management, partner with vendors and contractors, quality control and reporting management, governance, billing assurance, and customer .
- Chaired the complete management and successful delivery of 50+ projects over the course of 5 years, achieving an on-time completion rate of 95%+.
- Repeatedly assigned the most challenging/complex projects and customers; always juggling multiple projects at one time.

2000-2005

Specialist, Verizon Enterprise Project Management – U.S. Enterprise Customer Service:

- Spearhead all aspects of complex projects for a full slate of Verizon products; create detailed project schedules and define project scope; actively work to identify and resolve all potential and actual issues, risks, and conflicts to ensure continual achievement of project time lines, scope and quality standards;
- Served as Program Manager for VIS (Verizon Internet Services) and had the responsibility of overseeing projects being managed by 5 project managers, serving as single point of contact to the customer and established the Verizon DIAS and DSL backbones across the country;
- Received the prestigious Verizon Excellence Award for the success on the Commonwealth of Pennsylvania OAG (Office of the Attorney General) voice conversion project.

1987 – 2000

Customer Service Administrator, Major Project Implementer – Bell Atlantic, PA, Bell of Pennsylvania:

- Various positions held during this timeframe supporting residential, wholesale and large business customers;
- Chosen to participate on trial team to combining roles and responsibilities and establish new job titles for the new CATC (Carrier Access Team) center;
- First person to achieve new title of customer service administrator in new CATC.

Education

- 2005 George Washington University
Washington, DC
Master's Certificate, Project Management
- 2000 International Institute of Learning
Pittsburgh, PA
Kerzner's Project Management Certificate Program
- 1995 Community College of Allegheny County
Pittsburgh, PA
Associate's Degree, Computer Information Systems
- 1984 ICM School of Business
Pittsburgh, PA
Certificate, Word Processing/Office Automation

Accreditations

- 2015 ITIL® Intermediate Service, Offerings and Agreements;
- 2014 ITIL® Intermediate Release, Control and Validation;
- 2013 ITIL® Intermediate Continual Service Improvement;
- 2010 ITIL® Foundation v3;
- 2006 Leading Complex Projects, George Washington University;
- 2005 Project Management Professional (PMP), PMI;
- 2004 Choosing to Lead Program, Verizon;



- 2003 Leadership Development Program, Verizon;
- 1994 How to Build and Implement Self-Directed Work Teams;
- 1993 Zenger-Miller Frontline Leadership.



827 Fairmont Road
Morgantown, West Virginia 26505

Phone: (304) 381-3969
Cell: (304) 904-8900
FAX: (304) 381-3970
Email: lawrence.host@verizon.com

Lawrence W. Host, RCDD/OSP/RTPM, PMP, ITILv3

Client Architect

Work Experience:

**(2001-Present) Verizon – Morgantown, West Virginia
Client Architect**

Primary responsibilities are in the field of Site Services including:

Client Architect: (Current duties):

- Subject Matter Experts in areas of Network Design for all Verizon Products;
- Client Advocate for Network Design and Lifecycle Evolution;
- Day-to-Day Technical Lead:
 - Partner to Sales/SA/ETC/Wireless teams for Verizon contracted solutions for client infrastructure augmentations.
- High Level Designs:
 - Mapping to client requirements and objectives. Team with SA and Account Manager in SDI process for new solutions.
- Infrastructure Governance:
 - Ensure designs are operationally viable across Verizon's pillars initially and ongoing, through planning and optimization.
- Process Improvements:
 - Identify and drive opportunities to improve internal and client facing processes.
- Technical solutions for clients including:
 - Infrastructure Design;
 - Business Continuity;

- Network Optimization;
- Updates on New Verizon Solutions and Features;
- CPE Design Consulting.

Structured Cabling: (Current duties):

- 22+ years experience in Telecommunications Industry;
- Voice CPE Sales Engineer, primarily sales focus of Nortel Networks;
- Registered Communications Distribution Designer (RCDD)
Demonstrate expertise in the design, implementation, and integration of telecommunications and data communications transport systems and related infrastructure. 22+ years structured cabling experience.
- BICSI Outside Plant Specialist (OSP)
Design and implementation of Outside Plant Cabling Systems. Address the installation of fiber and copper cabling installed in MAN/WAN and campus backbones and utilize Aerial Plant, Underground Facilities and Direct Buried applications. 18+ years Outside Plant cabling and design experience.

Professional Services: (Current duties):

- Quality Assurance;
- Network Assessments:
 - Network architecture;
 - Infrastructure;
 - VoIP.
- Wireless LAN Survey and Design;
- Project Management (PMP).

Voice Sale Engineering: (2003 – 2010)

- Design, pricing, and contract development of voice systems including
 - Nortel/Avaya - TDM, VoIP and hybrid phone systems;
 - Siemens - TDM, VoIP and hybrid phone systems;
 - NEC - TDM, VoIP and hybrid phone systems.

E911 Sales Engineering (2009-2010)

- Design, pricing, and contract development of 911 premise equipment serving the various PSAPs within the State of West Virginia.

- 1994-2001 Bell Atlantic Network Integration, Inc. (BANI)
Field Engineer, RCDD
- 1994 Bell Atlantic of West Virginia
Field Technician
- 1990 – 1994 US Air Force
Aircraft Hydraulics Specialist

Education

- Bachelor of Science Degrees in Organizational Leadership;
Mountain State University, Beckley, West Virginia (2005-2007);
Fairmont State University, Fairmont, West Virginia (1995);
Community College of the Air Force, Omaha, Nebraska (1990-1993).

Certifications/Training

- BICSI Certified;
Registered Communications Distribution Designer (RCDD);
Outside Plant Specialist, (OSP);
Registered Telecommunications Project Manager (RTPM).
- Project Management Institute (PMI);
Project Management Professional (PMP).
- ITIL
ITIL v3 Foundation Certification in IT Service Management.
- Cabling Manufacture Certified;
Siemens Company Certified Designer;
SYSTIMAX SCS Design and Engineering Certification;
SYSTIMAX 360 Solutions Certification;
SYSTIMAX / CommScope Prestige Business Partner.
- Other:
Auto CAD;
Proficient in Microsoft Office Suite software.



Chris Layfield
Managing Partner SA
Governments & Education

7406 Fullerton St, 02 Floor Room 204
Jacksonville, FL 32256

O 904.469.0179 | M 813.957.1267
Chris.Layfield@Verizon.com

Christopher G. Layfield, CISSP, ITILv3, TOGAF9.1, CCSK

Managing Client Partner – SA

Work Experience

(2010-Present) Verizon – Jacksonville, FL

Managing Client Partner – Government and Education:

- Responsible Government and education Vertical within Verizon;
- Resource management of dispersed teams and technical resources;
- Design of Network, Cloud, Security and Voice Products;
- Client Advocate for Network Design (SDI) and Lifecycle Management;
- Employee development and professional growth;
- President of ISSA Northeast Florida.

(2006-2010) Verizon – Jacksonville, FL

Solutions Engineering Manager – Enterprise & GovEd.:

- Responsible for Enterprise and GovEd markets within Verizon Business;
- Resource management of dispersed teams and technical resources;
- Design of Network, Voice Products;
- Client Advocate for Pre and Post sales Network Design;
- Employee development and professional growth.

(2003-2006) Verizon – Dallas, TX

Tier2 Manager – Global Enterprise Services:

- Responsible for tier 2 engineering Enterprise and Global within Verizon Business;

- Managed virtual teams, Technology groups, and centralized support;
- Design of Public and Private Network Products;
- Design specializing in MPLS, Internet, and High Speed;
- Liaison between pre-sales and product engineering.

(2000-2003) MCI/Verizon – Atlanta, GA

Tier 2 Sr. Architect – Global Enterprise Services

- Tier 2 Internet engineering for Enterprise and Global within Verizon Business;
- Developed Technology groups, and support FAQs;
- Design of Public, remote access, and security products;
- Design specializing in Internet, and High Speed;
- Primary resource in southeast for Internet design.

(1998-2000) UUNET/Worldcom – Atlanta, GA

Regional Mgr. – Southeast Region

- Responsible for Florida and Georgia regional markets;
- Resource management of technical resources in region;
- Design of Internet, Security, and remote access products;
- Sales training and support of Internet products.

(1996-1998) CompuServe/UUNET – Atlanta, GA

Network Systems Engineer – US Engineering CNS & UUNET

- Pre & Post Sales of CompuServe Network Services products;
- Design implementation and testing of Remote access and Frame Relay networks;
- Troubleshooting and remediation.

(1992-1996) PNC Mortgage – Atlanta, GA

ENVOY Technical Specialist

- Pre & Post-Sales support of PNC network and end users;
- Development of troubleshooting processes;
- Hardware configuration and helpdesk on-call;
- Troubleshooting and remediation;

- Technology training programs.

Education:

- 1991 Northeast Louisiana University – B.S.
- 1988 Indian River SC – A.A.

Certifications:

- CISSP;
- ITIL v3 Foundation & Intermediate RCV;
- TOGAF 9.1;
- CCSK 3.0.



4700 MacCorkle AV SE
Charleston, WV 25304
(304) 356-3395

sandra.k.hawkins@verizon.com

Sandra K. Hawkins – Senior Client Partner

Work Experience

(2004-Present) Verizon Business-Charleston, West Virginia
Senior Client Account Manager

- Manages an assigned revenue plan;
- Directs the activities of account team of sales, service and technical support to ensure optimum customer satisfaction with Verizon Business products and services;
- Develops strategic plans based on industry trending and customer analysis;
- Participates in contract negotiations and bid responses;
- Develop applications and service recommendations that match needs for overall best solution for the State of WV.

(2003-2004) Verizon Information Services-Charleston, West Virginia
Premise Sales Representative

- Develop solutions by creating and designing directory advertising print (SuperPages) and electronic (SuperPages.com) to Virginia and West Virginia business customers;
- Meet and exceed revenue and strategic product growth goals;
- Meet all publishing deadlines, ensured excellent quality of work, and handled customer inquiries.

(2002-2003) Ntelos-Charleston, West Virginia
Account Executive

- Sale of wire line telephone services (voice, DSL, long distance, frame relay, DS1/DS3, Internet Services, ISDN-BRI & PRI).

(1982-2001) Verizon (former Bell Atlantic Network Services, Inc)-Charleston, WV

Implementation Specialist, Customer Service Coordinator,
Communication Consultant, Call Center Team Leader, Consultant
Billing & Collections

- Implemented data and voice services for Small Business Customers;

- Trained customers on use of company products and services geared toward minimizing customer complaints;
- Handled billing inquiries with 100% resolution;
- Coordinated multiple departments, verified order accuracy and managed all technical implementations;
- Analyzed customer complaint data and developed coaching and training initiatives for 200+ consultants, exceeding the company objective by more than 1%;
- Developed and managed a call-out program to insure Small Business customers understood and benefited from their services, resulting in a one month improvement of 50%;
- Facilitated monthly multi-department continuous improvement meetings with supervisors;
- Negotiated with Small Business customers to market telecommunication voice and data services for Virginia, Maryland, DC, & West Virginia (ISDN BRI/PRI, DDS, DS1, DS3, Frame Relay, CustoSak, CustoFlex, PBX, voice messaging services, Auto Attendant);
- Organized trade shows for Cavalcade of Trade and Small Business Expo;
- Effectively led and managed a team of 13 associates, eliminating the need for offices in MD and VA, and significantly reducing overhead expenses;
- Regionalized change of service requests for Small Business customers, (WV, VA, DC, and MD) managing six associates, achieving 24-hour turnaround time;
- Collected delinquent accounts for Small Business customers in WV, VA, DC, and MD.

Education

University of Charleston, Charleston, WV

- Bachelor of Science in Business Management;
- Executive Master of Business (EMBA).

Certifications/Training

- eRate Compliance;
- Antitrust & Competition Law;
- Exports, Sanctions & Embargoes;
- Keys for Safeguarding Privacy & Confidential Information;
- Building Shareholder Value;
- Phase I & II Technology & Sales Skills;

- Voice, Data & Video Network Training;
- Cisco Sales Expert & Technology Training;
- Managed Network Services Positioning;
- Conferencing Training;
- Private IP, Architecture, and Network Design Training;
- Verizon Security Solution Training;
- VoIP Training;
- IT/Cloud Certification;
- Security Services Certification;
- Value Focused Selling;
- Machine to Machine, Network Fleet, Enterprise Mobility as a Service eMaas Training
- Sales Force (SFDC) Training;
- Private IP Wireless Back-up Training;
- Mobility Strategy & Design Workshop;
- Connected Machines M2M Essentials Training;
- Dynamic Cloud Solutions;
- Intelligent Networking Connected Locations & Remote Access & Backup;
- Intelligent Networking Contact Center Solutions.

Other

- Notary Public;
- Computer Proficiencies: Microsoft Office Suite.



Donald P. Wilson, P.E.
2729 Lakeview Drive, St. Albans, WV 25177
(304) 722-5477, mobile (304) 964-5062
email: donalddp.wilson@yahoo.com

Donald P. Wilson, P.E.

Provide leadership and work with diverse work groups at all levels internal and external. Strong technical background with excellent overall knowledge, experience, and perspective on current telecommunications industry issues (voice, broadband, internet protocol, landlines, cable, wireless, cost analysis) and the associated regulatory and political environments. Problem solving and project management skills. Excellent computer skills (spreadsheet, databases, flowcharting, word processing, etc.).

April 2011 – Present Verizon

April 2011 – Present Service Program Manager

- Responsible for life cycle relationship, governance, and support of contractual commitments for State of West Virginia voice over IP and data contracts. Oversees the operational health of Verizon services from delivery through lifecycle support;
- Ensures and manages internal & external resources to deliver services to maintain compliance with contractual commitments;
- Governs reporting and financial management relative to contractual commitments and Service Level Agreements, including billing account strategy, setup and optimization;
- Responsible to coordinate the establishment of customer specific Service Plans with strategic focus on Continual Service Improvement;
- Acts as escalation point of contact to State of West Virginia for all Service related matters;
- Leads efforts to escalate across internal and external functional groups to resolve Service or State of West Virginia business impacting issues.

August 2010 – March 2011

Public Service Commission of West Virginia

August 2010 – March 2011

Telecommunications and Cable TV Section

- Led a team of five analysts in managing all aspects of the regulated telecommunications and cable TV industry in West Virginia;
- Monitor telecommunications industry to ensure compliance with WV law, Commission rules and tariffs;

- Make recommendations to the Commission on various issues (911, Cell Tower funding, broadband deployment, change of control and mergers/acquisition filings, analysis of cost studies to support tariff filings, network infrastructure objectives and funding, universal service funding commitments, complaints resolution).

April 1979 – June 2010 Verizon (formerly Bell Atlantic)

October 2003 – June 2010 Manager – Public Policy

Provided public policy and regulatory functions for Verizon WV including working with WV Public Service Commission Staff, Consumer Advocate Division, and Competitive Local Exchange Carrier (CLEC) community. Functions included reviewing annual financial report filings for accuracy and consistency, developing data to validate and support rate deregulating business services in WV, assisting in resolving MCI Communications Billing practices complaint and migrating those customers to Verizon WV, providing interpretations of interconnection agreements, tariffs, PSC rules, and FCC filings, resolving consumer and wholesale customer complaints, obtaining regulatory approval for wholesale carrier to carrier guidelines and performance assurance plans, and working with engineering and operations groups on infrastructure deployment issues.

May 1996 – September 2003 Service Manager - Major Customer Services

- Represented Verizon to major customers in WV (State of WV, Lottery, Charleston Area Medical Center, etc.) on operations, service, and other issues. Responsibilities included resolving all issues to the satisfaction of both the customer and Verizon.
- Proactively and reactively managed network operations issues (voice, data, video, Frame Relay, Asynchronous Transfer Mode, Digital Data, etc.) for major customers in WV (Over \$20 million in annual revenue to Verizon). Managed customers' perception of Verizon to ensure high level of customer satisfaction. Quickly resolved any operations issues to the customers' satisfaction. Identify and develop process improvements that benefit both Verizon and the customer.

October 1994 - May 1996 Specialist - Customer Network Engineering

- Interfaced with customers and Line of Business marketing organizations on sales proposals.
- Developed integrated technology (voice, data, and video) solutions to meet large telecommunications customers' connectivity requirements (both cost and functionality) including network costing and margin calculations. Provided network designs and support for the State of West Virginia's integrated voice and data network (lottery circuits, frame relay, etc.).
- Provided overall network knowledge concerning network survivability, SONET ring deployments, etc.

July 1987 - September 1994 Specialist - Integrated Network Planning

- Developed telephone plant network modernization plans for central office switches, Interoffice Facilities, and Distribution feeder facilities. These plans included switch replacement studies, Interoffice facility fiber and electronic deployment studies, and wire center fiber and electronics deployment plans and associated economic and Net Present Value cost analyses and payback period analyses.
- Provided technology, sizing and timing, and prioritization support for \$100 million annual capital budget.

April 1979 - June 1987 Depreciation Engineer

- - Generate depreciation and plant life studies to develop depreciation rates by estimating the service life and future salvage values of all categories of telephone plant (Central Office switches, Interoffice transmission facilities, electronic equipment, copper cable, etc.)

**June 1975 - March 1979 Moore Engineering, Inc. & Cook Engineering,
Consulting Engineers**

- Designed electrical power and lighting systems for commercial buildings

Education

- West Virginia University
Morgantown, West Virginia
Bachelor of Science Degree - Electrical Engineering May 1975
Member of Electrical Engineering Honor Society
- Advanced Technology Innovation Program, Carnegie Mellon University, April 1994

Professional and Other

- Registered Professional Engineer since 1981
- Information Technology Infrastructure Library (ITIL) Ver. 3 Certification 2011
- Certificate of Cloud Security Knowledge 2015



Rick L. Singleton
827 Fairmont Road, Suite 204
Morgantown, West Virginia 26501
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(304) 381-3968 (o)

Rick L. Singleton

Summary

Results – oriented, productive Solutions Architect who can solve business problems using advanced communication solutions. Over nineteen years of experience in information technology sales. Strengths include:

- Technical Skills;
- Customer Relations;
- Problem Solving;
- Written Communications;
- Self-Motivation;
- High Performance Teaming.

Wide range of product knowledge in both the telecommunications and information technology industries. Currently specializing in Advanced Communications solutions.

Experience

March 1997-Present

Verizon Enterprise Solutions, Morgantown, WV

Solutions Architect

Tier 2 Solutions Architect specializing in IP Telephony and Unified Communications and Collaboration solutions. Support customers and account teams by developing solutions, providing technical guidance, and recommending products and services to meet customer business requirements in these areas.

Previously served as a voice & data Solutions Architect/Systems Engineer supporting multiple customers in the mid-Atlantic region. Specific knowledge included data network services, routed and switched networks, wide and local area network integration, and IP and TDM voice communications.

Education/Certifications

- Bachelor of Science in Electrical Engineering
West Virginia University, Morgantown, WV

Certifications/Training

- Cisco Certified Network Associate – Routing and Switching;
- Cisco Certified Design Associate;
- SIP School Certified Associate;
- TOGAF 9;
- ITIL v3 Foundation.

Appendix J – Account Service Plan

As the Verizon Account Team for State of West Virginia we have a highly experienced workforce of consultants, engineers, and specialists focused on helping you recognize technology's opportunities—empowering you to perform, execute, and grow in new and better ways.

Your Verizon Account Team is available to answer any service or industry related questions and investigate the right mix of new and converging technologies. We want to understand your business and operation objectives to help fully satisfy your expectations.

The following information includes an account relationship plan to provide timely and effective reporting as well as an outline of account team roles and responsibilities, trouble reporting, and escalation procedures.

Account Management Plan

Verizon is a service company, and we believe all organizations within the company, whether they interface directly with customers or simply provide support to those organizations that do, should be dedicated to providing the best customer experience.

We are continually focused on simplifying key areas of our business to serve you even better, including:

- Customer satisfaction;
- Sales effectiveness;
- Operating efficiency.

We will engage with you strategically in order to understand your business and build a mutually beneficial, long-term relationship.

To achieve this goal, we continue to refine operations so they run efficiently and at high performance levels to deliver excellent service. Because company resources are aligned with our sales and customer support organizations, we're better able to serve you.

We also understand that the way to deliver an exceptional support experience to State of West Virginia is to empower our sales and service personnel with the resources and tools they need to help you make the best decisions for your business. Today's emerging solutions require unique skills, capabilities, and support structures that we've built into our support organizations.

We are focused on developing stronger solutions sales capabilities. Our sights are set on being the world's leading platform-based solutions provider, and your ultimate partner to navigate the technology landscape and drive your business.

Verizon Client Service Team

The chart illustrates the functional organization chart of the Verizon Global Operations Organization. Details of the resources and roles and responsibilities are provided below.



Verizon Functional Organization Chart

Roles and Responsibilities

Account Manager (AM)

- Provides solutions from the Verizon product range to help enable the achievement of your business outcomes;
- Serves as the primary sales team interface working in partnership with CSM to grow the partnership and overall relationship between you & Verizon.

Client Service Manager (CSM)/Client Service Specialist

- Monitors Verizon contractual key performance indicators (“KPIs”), service levels, and operating level agreements (“OLAs”) as determined with State of West Virginia at engagement planning and kick off;
- Manages the Verizon portfolio of services for change management processes, planning future services demands, and oversight of contract financial compliance between Verizon and State of West Virginia;
- Proactively develops and maintains relationships with executives as well as building new relationships within State of West Virginia;
- Provides management and direction for State of West Virginia and Verizon service and project teams for execution of the Governance Plan as defined below. Conducts reviews to monitor Governance Plan progress and executes remediation as required;
- Reviews your contract performance for compliance with the master agreement terms, including monitoring of all minimum volume commitment thresholds and executing changes as needed. Reports results in the Governance Plan review;
- Develops risk mitigation strategies for customer services as determined with you at engagement planning and kick off;

- Develops solutions for complex business and challenges and provides complex problem solving;
- Provides recommendations during contract negotiations for supportable and executable terms included in this agreement, amendments and SOW's;
- Facilitates communication between State of West Virginia and Verizon executives including escalation and resolution of Verizon or performance issues as required;
- Oversees the initiation and resolution of performance issues requiring escalation and works with State of West Virginia and Verizon technical teams to define overall remediation plans;
- Facilitates beneficial enablement by identifying and executing strategies to increase self-service utilization and expand self-service. Drives online and electronic media tool enablement and adoption;
- Understands your service requirements to facilitate Verizon's integrated solutions ability to meet such requirements;
- Accelerates billing and accounts payable issue resolution by engagement of appropriate State of West Virginia and Verizon resources;
- Financial Management – oversees the identification and resolution of issues negatively affecting State of West Virginia and Verizon financial relationship, such as revenue trends, contractual commitments, accounts payable, etc.;
- SLA Performance Management. Identifies SLAs not being met and liaises with involved departments to execute corrective action. Identification and corrective trends would be represented in a Service Improvement Plan;
- Develops, executes and maintains the Continual Service Improvement Plan;
- Identifies opportunities for service improvement and risk mitigation and engages appropriate State of West Virginia and Verizon resources to execute associated plans;
- Change Management – Identifies and executes improvements in methods, processes and procedures used to institute service and other changes in the overall State of West Virginia/Verizon relationship.

Technical Program Manager (TPM)/Client Service Specialist

- Maintains and enhances the performance of global customer networks;
- Serves as a consultant to drive improvement, stability and durability of your network while working closely with the appropriate Verizon internal organizations to provide you with World Class Customer Service;
- Develops and manages network and service plans;

- Performs pro-active network improvement reviews including network diversity planning and network hardening on installed services, presenting you with all options and consulting you;
- Maintains your diversity requirements and business continuity plans including back-up and disaster recovery plans;
- Coordinates and manages performance and SLA compliance of your existing network including availability, time to repair (TTR), customer outage time and chronic issues and recommends appropriate changes;
- Manages individual complex technical incidents and problems impacting your service availability and escalate as appropriate;
- Develops and delivers detailed root cause analysis reports and service improvement plans in response to complex customer outages or catastrophic network issues. As part of the Risk Assessment process highlights all technical risks and make sure a risk mitigation strategy is put in place where applicable.

Billing Program Manager (BPM)/Financial Service Manager (FSM)

- Supports your billing operations to provide efficient and timely communication;
- Monitors and supports the resolution of all billing related inquiries and the communication with you on progress and conclusion;
- Proactive review of your invoices to pre-empt any billing issues.

Incident Manager (IME)

- Handles escalated service issues when you are dissatisfied with business as usual processes including updates/escalations via the Service Desk;
- Manages conference bridges (as applicable) and manages an Action Plan to restore service;
- Escalates and manages repair teams, carriers/third parties for remedial solutions;
- Handles escalated service issues on Managed Security Services;
- Provides Incident (RFO) Reports if required.

Project Manager (PM)

- Responsible for delivering the services agreed at the outset using resources and budget as defined in the Project Initiation Document (PID) and Statement of Works (SOW), aligned with your contracted deliverables;
- Oversees all aspects of project delivery and ensures progress and status is communicated and reviewed in accordance with the business expectations;

- Seeks your approval if any changes are identified in contractual/agreed approaches;
- Acts as your primary contact for all project activities;
- Delivers regular project dashboards and reports to stakeholders as defined in the communications plan;
- The Project Manager leads all Verizon activities in support of the project and is responsible for the final result. On completion of the project, the Project Manager hands off the project to the Service Program Manager who maintain the lifecycle support thereafter.

Lifecycle Engineer (LCE)

- The Lifecycle Engineer will be your technical expert/architect and provides on-going technical engineering support as your network moves from the implementation into the operational maintenance phase;
- Verizon assigns a lead engineer (or additional engineers depending on the scope, network size and your requirements) to provide overall engineering oversight of your network, as well as perform engineering activities that are outside the scope of Standard Change Management activities;
- Lifecycle Engineering services can be purchased in conjunction with Verizon's Managed Services for WAN, LAN, WLAN, WOS, IPT, etc. and will provide a service for the same length of time as the contract term;
- Assesses the technology including benefit evaluation of new vendor releases to verify network compatibility;
- Monitors, plans and recommends end of life remediation for network equipment;
- Recommends the network requirements, network design topology architecture and technology upgrades;
- Plans and manages the scalability, logical addressing, redundancy and capacity (logical and physical);
- Reviews the performance of the network and evaluates its efficiency (routing and topology);
- Provides engineering support for proof of concept prototyping and testing;
- Works with you to provide risk mitigation strategy, network impact analysis and proof of concepts for major changes;
- Develops network backup/contingency plans;
- Maintains Customer Network Design Documentation;

- Works with you to define requirements, designs, documents and implement changes;
- Provides IOS vulnerability checks, recommends and coordinates upgrades.

Executive Incident Escalation Manager

- Supports all critical incidents for all Verizon products and services, independent of geographical location;
- Add special tags into Verizon's incident management system for your most critical sites to automatically assign and prioritize your incident to the next available engineer (jump incident queue);
- Provides support when automatically alerted that an incident ticket is opened for a critical site, or if the incident duration exceeds a certain threshold;
- Engages the executives within the Third Party carriers (Local Access Providers, Local Exchange Carriers or PTTs);
- Arranges direct communication when required with the relevant NOC, which may reduce the time to repair, especially in situations when your network requires reconfiguration;
- Provides written reports for all critical incidents within 3 days of incident closure. These will contain: Reason For Outage (Root Cause Analysis), Summarized chronology of the incident resolution and if applicable, recommendations to prevent re-occurrence or reduce downtime;
- Creates a Problem Ticket to prevent re-occurrence or to reduce downtime in case similar incidents re-occur, if required;
- Conducts regular audits with your enterprise and directly updates contact details in Verizon's contact information databases on your behalf;
- Attends service reviews via conference call, video conference or face to face meetings, if required.

Designated NOC Engineer

- An experienced Senior Engineer within the Verizon NOC will be assigned and can be directly called to discuss an incident or a technical issue;
- Provides additional Incident Management and Change Management technical support;
- Monitors and reviews ongoing incident tickets and proactively intervenes whenever required;
- Technically assists with your projects; for example assisting you with internal projects affecting configurations;

- Assists with submitting Change Requests in the Verizon Change Management portal and expediting;
- Assists in reviewing the operational feasibility of your Business Contingency plans and may participate in your scheduled tests;
- Proactively reviews chronic performance issues and repeat failures;
- Provides ticket analysis and post mortems in order to identify root causes and implement corrective actions;
- Participates in conducting an inventory of your network to ensure that your network works as originally designed, including back-up solutions;
- Runs regular reports to validate the integrity of the information across the Verizon internal global systems. This includes documented work instructions and arrangements specific to your network;
- Provides an overview of the Verizon internal workflow processes, systems and procedures;
- Provides information on the network architecture and complex products;
- Provides a monthly NOC report that details the most significant events, current network performance and pending actions can be provided when required.

Account Relationship Management

The following is a description of our suggested plan to provide direct, effective contact between State of West Virginia and Verizon:

- Our Executive Management team will meet with your senior executives to discuss our long-term positioning with respect to your key strategic worldwide accounts. Strategic discussions will provide you with insights into potential business strategies and models that may benefit your worldwide businesses;
- On a mutually agreed-upon basis, our Area Vice President will meet with senior-level executives at State of West Virginia to validate the ongoing business relationship between the organizations and evaluate resource requirements and planning;
- Verizon Sales Management will hold quarterly, monthly, or weekly meetings with your management team to manage ongoing initiatives, projects, and resource requirements between the two organizations;
- Executive Visits – State of West Virginia personnel will be invited to attend ongoing executive briefings to discuss new Verizon products and services, determine network goals and strategies, and review the past year's performance;

- Verizon Manager – Service/Program Management and the Service Manager will meet on a mutually agreed upon basis with you to ensure your Service Manager has the authority and resources required to drive the service levels expected by you;
- On a daily basis, the Account Manager will be your point of contact for Verizon and for any of our strategic providers.

Contact List

Sales

- 1st Contact: Sandra Hawkins
Account Manager/Client Partner
Phone: 304-356-3395
Email Address: Sandra.k.hawkins@verizon.com
- 2nd Contact: Joann Fake
Sales Manager/Managing Client Partner
Phone: 717-777-8680
Email Address: joann.m.fake@verizon.com
- 3rd Contact: Margaret Hallbach
Area Sales Vice President
Phone: 703-886-3321
Email Address: Margaret.hallbach@verizon.com
- 4th Contact: Lance Host
Solutions Architect
Phone: 304-381-3969
Email Address: Lawrence.host@verizon.com
- 5th Contact: Robert Perrone
Solutions Architect
Phone: 813-978-7310
Email Address: Robert.perrone@verizon.com
- 6th Contact: Chris Layfield
Managing Partner Solutions Architect
Phone: 703-886-3321
Email Address: chris.layfield@verizon.com

Verizon Trouble Resolution

- 1st Contact: Customer Care Center
800-287-4205

Service Management Contacts

- Unmanaged – Service Desk – 877-331-4276:
 - 1st Level – Service Desk Personnel – 877-331-4276;
 - 2nd Level – Service Desk Lead – 877-331-4276;
 - 3rd Level – Shemeka Manning – 919-377-3810;
 - 4th Level – Associate Director, Jere Mckinley – 919-377-6113;
 - 5th Level – Director, Kevin Sergent – 919-377-5059.
- Managed Service – MNSO NOC – 800 293-5891 option 1:
 - 1st Level - Assigned Technician – 800-293-5891 option 1;
 - 2nd Level – MNSO Team Lead – 855-896-4911;
 - 3rd Level – Supervisor, William Demery – 919-377-6591;
 - 4th Level – Associate Director, Jere Mckinley – 919-377-6113;
 - 5th Level – Director, Kevin Sergent – 919-377-5059.

Dedicated Service Manager

- Contact: Don Wilson
Service Manager
Phone: 304-356-3379
Email Address: Donald.p.wilson@verizon.com
- Contact: Marcia Jones
Manager – Service/Program Management
Phone: 301-787-8973
Email Address: Marcia.m.jones@verizon.com

Service Delivery

Manages Orders & Implementation

- 1st Contact: Kim Kusmira
Implementation Manager
Phone: 412-260-1656
Email Address: Kimberly.a.kusmira@verizon.com
- 2nd Contact: Justin Dudley
Service Delivery Manager
Phone: 540-982-5065
Email Address: Justin.k.dudley@verizon.com

We constantly strive to develop new products, enhance our current product offerings, and improve service. The measure of our effectiveness is your satisfaction; therefore, your Verizon Account Team needs your feedback.

Any questions, concerns, or opinions regarding Verizon products or services are welcome. We use this feedback to evaluate and adjust account management activities to improve service to State of West Virginia.

If your comments are product related, your Verizon Account Team can request product modifications or upgrades to better support your requirements.

Service Level Management

Service Level Management is the process to define the Service Level Agreement (SLA) for State of WV and to monitor service levels to verify contract compliancy. As part of the process, Verizon monitors, measures and reports on the service performance to verify service level targets are attained.

On a quarterly basis, Verizon will host Service Review meetings with key operational staff and business managers from State of West Virginia and Verizon. The main objective of the Service Review meeting is to:

- Manage the service and operational performance;
- Raise and resolve service lifecycle issues;
- Initiate delivery, SLA and contract changes;
- Monitor the quality of delivery and processes.

During the Service Review meetings, Verizon will present a Governance Dashboard with a series of KPI's against the service level targets. The data is presented on a 12 month rolling basis. The dashboard allows further drill down to a service or geographical location level, to perform detailed analysis and provide historical trending.

Governance Meetings

It is expected that most issues raised by either party can be resolved at an operational level and regular meetings will be established in order to ensure appropriate alignment between Verizon and State of West Virginia. For any governance meetings either party may invite additional representatives, if and when required.

The types of meetings are as follows:

Governance Meeting	Verizon Attendees	Forum Objective	Frequency
Executive Review Meeting	<ul style="list-style-type: none"> ■ Executive Sponsor; ■ Client Partner; ■ Sales AVP; ■ Director of Service; 	<ul style="list-style-type: none"> ■ Develop long-term value-add strategic global relationship; ■ Review state of relationship, financial, operation and strategic direction; 	Annual
Contract & Commercial Meeting	<ul style="list-style-type: none"> ■ Account Director; ■ CSM; ■ Sales Manager; ■ CSM Manager. 	<ul style="list-style-type: none"> ■ Manage on-going commercial relationship between the parties; ■ Continual Service Improvement. 	6 Monthly
Service & Operations Meeting	<ul style="list-style-type: none"> ■ CSM; ■ TPM; ■ PM. 	Review service performance against SLA and provide meaningful improvement recommendations, where appropriate.	Monthly
Transition Meeting	<ul style="list-style-type: none"> ■ PM 	Review of program, dependencies, issues, risks and change requirements.	Weekly during the Transition Period. You may request additional meetings on an ad hoc basis as and when required.

Risk Management

Verizon will develop a risk mitigation strategy for you, to limit any business disruption and to maintain service quality and performance levels. The Verizon Service Program Manager (CSM) is responsible for identifying and recording the service risks from the outset of the service agreement.

The CSM will apply Risk Management in the following areas:

- Service exposure: analyze each service individually and identify the risks related to the service:
 - Contract exposure: review the service agreement between State of West Virginia and Verizon, and identify any contractual, partnership or strategic risks.

If the assessment indicates a number of high levels of risk to the services or the agreement, the Verizon CSM will propose a range of mitigation initiatives to counter these risks.

Verizon will maintain a Risk Register that will be reviewed with you. The Risk Register contains the following details:

- Description of risk;
- Impact of risk on service, cost or quality;
- Likelihood the risk would occur;
- Owner of the risk;
- Risk mitigation initiative.

Verizon Voice of the Customer Program

The Verizon Voice of the Customer Program is one way to engage State of West Virginia to learn about their experience with Verizon. The program includes:

- Studying the interactions with, and the perceptions from, State of West Virginia at various points thru the customer lifecycle;
- Providing feedback from State of West Virginia to sales leadership, product, service and support organizations regarding the Verizon processes;
- Developing a cohesive action plan to improve the business results and the service experience from State of West Virginia.

Verizon conducts two types of surveys throughout the year.

	Relationship Survey	Transactional Survey
Overview	Captures high-level perspectives about the relationship with State of West Virginia and its loyalty to Verizon.	Collects feedback from State of West Virginia following a specific interaction (implementation, repair, etc.) with Verizon.
Objective	Provides an indication of State of West Virginia overall satisfaction and loyalty.	Determine potential service gaps and business process improvement initiatives.
Frequency	Conducted twice a year.	Ongoing throughout the year.
Methodology	<ul style="list-style-type: none"> ■ Web survey toward specific State of West Virginia respondents; ■ Administered by a leading third-party vendor; ■ Multiple contacts strategy to obtain feedback from decision makers, influencers and key operational staff within the State of West Virginia organization. 	

Continual Service Improvement

At Verizon, we use Continual Service Improvement in order to learn from past successes and failures. The CSI process implements a closed-loop feedback system as a means to continually improve the effectiveness and efficiency of services and processes.

To ensure any improvements are embedded, we use the survey results to document a Continual Service Improvement Plan achieving a higher quality of service by developing and implementing service management processes and continual re-evaluation.

Customer Care

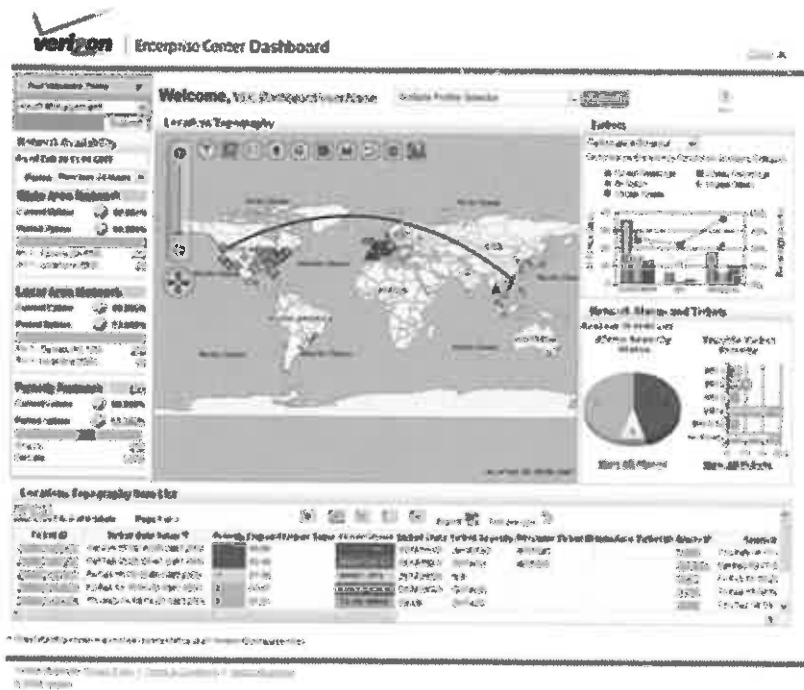
At Verizon, we have a process to manage standardized non-technical Billing Inquiries, different from Service Incidents which are handled thru the Incident Management process.

In addition to the Billing Program Manager we can address the Billing Inquiries from State of West Virginia with standardized and automated procedures. Billing Inquiries can be raised by State of West Virginia thru the Verizon Enterprise Center portal. For guidance on how to open an inquiry please visit the online demo <https://www.verizonenterprise.com/us/Support/billing/>

Once the Billing Inquiry is raised, State of West Virginia will receive an auto-response advising of the Inquiry number. The Customer Care Team will then work on resolving your inquiry.

If you are not a Verizon Enterprise Center user, to raise a non-technical Billing Inquiry, send an email to the relevant address below.

Country	Email Address
U.S.	customercare@verizon.com



Verizon Enterprise Center Dashboard

The complete Verizon Enterprise Center Overview per region, including the different Verizon Enterprise Center User and Reference guides, are available on the Verizon Commercial Training site at <https://customertraining.verizon.com>. If you need assistance please contact us at 1-800-264-1000.

We seek to create the connections that advance global businesses and enrich lives. We're passionate about technologies that enable people to focus on their strengths, to bring their talents to the market, to create freely, and to connect with others without fear of hindrance. We drive technology forward.

Please refer to our attached icon(s) below, pertaining to Project, Order, and Billing/Services Management. For hardcopy purposes, please review the following page(s).



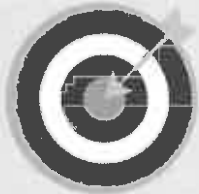
Project Management Service Program Verizon_Enterprise_S Overview State of WManagement slides.polutions_S rev 4_021'

We deliver the connected world. Simply. Reliably. Securely.

Better experiences.

Better business results.

Better peace of mind.



Simple



Global



Secure



Value



Reliable



Managed

Technology partner attributes

Speed and quality: what it takes.

Simple structure



- Easy to navigate
- Clear ownership

Common platform



- Built for scale
- Easy to integrate

Efficient processes



- Accountability
- Accuracy / quality

Quality metrics



- Voice of customer
- Deliver the promise

Innovation



- Iteration
- Crowdsourcing

Project Management

Customer Challenges

- Maintain Business Growth
- Cost Containment
- On-time Delivery of Projects
- Limited Resources
- Rapid Transition to New Technology
- Vendor Satisfaction
- Manage Risk and Reliability

Project Management Capabilities

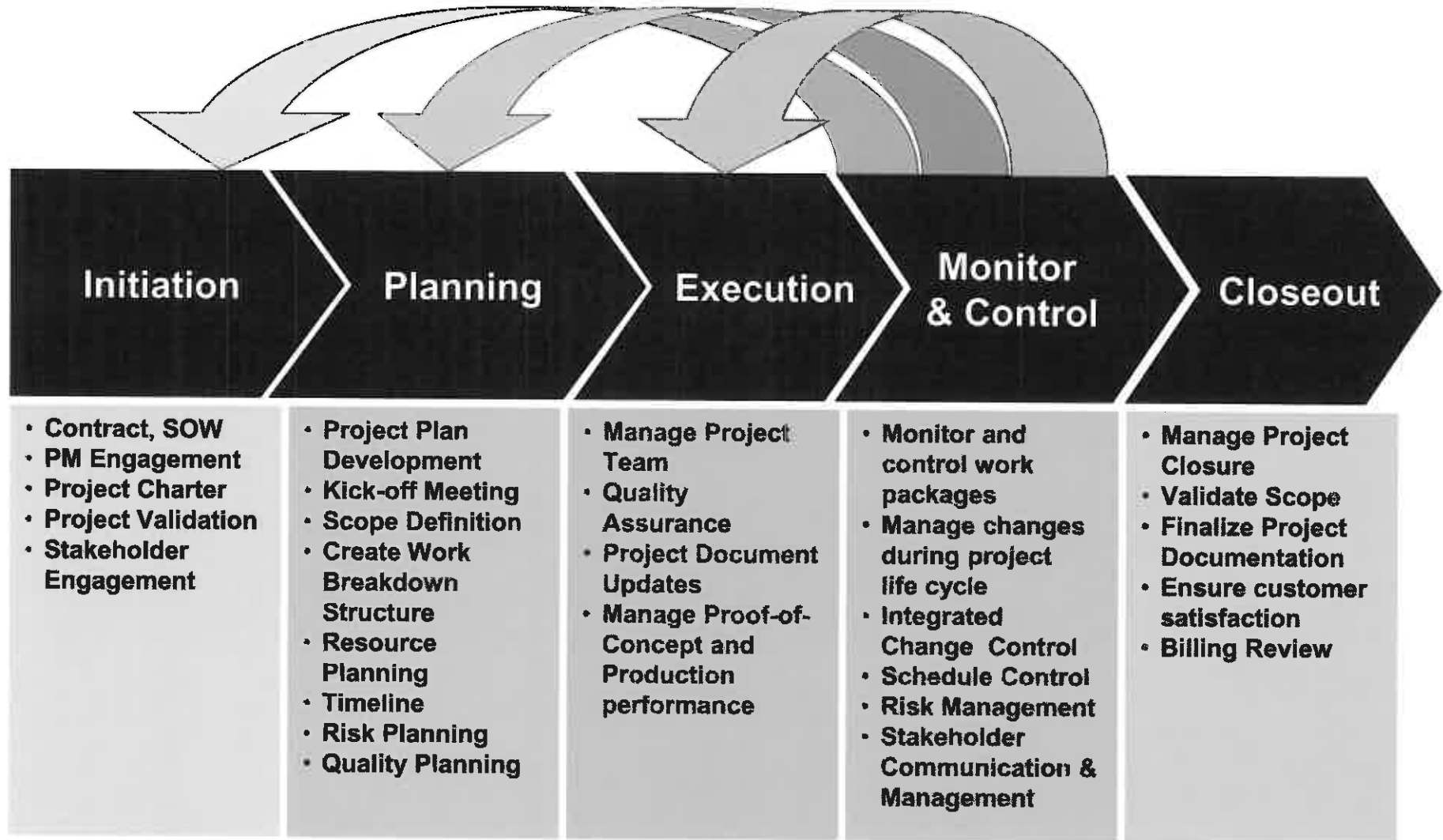
- Scope Management
- Project Governance
- Schedule Management
- Human Resources Management
- Solution Management
- Quality Management
- Risk Management



Proven Expertise

- **Delivery management** for enterprise client networks of various levels complexity
- **Solution integration** in network, technology, and application areas that bring clients value
- Built on widely accepted **PMI framework** used across multiple industries

Project Management Process Groups



Project Management Value

- ✓ Customer requirements are clearly defined, understood, and accepted among all stakeholders
- ✓ Critical project activities are identified, scheduled, monitored, and controlled, including continued alignment to project objectives
- ✓ Customers and other constituents are kept up-to-date with full visibility of project status
- ✓ Project risks are identified, monitored, and mitigated during the project life cycle
- ✓ The quality of project deliverables is controlled and monitored to meet the project objectives
- ✓ Sufficient resources and attention are given to meet the project timeline

Project Management Enterprise Benefits

Experienced

- VES has over 20 years of experience providing project management on varying scales and complexity to enterprise customers world wide, and to the state, local, and U.S. Federal Government

Meaningful

- VES delivers project management in the global networking technology and applications areas that customers need most, and where they are less likely to have the desire or expertise to perform services themselves

Qualified

- VES Project Management is an extension of Verizon's Professional Services built on the Project Management Institute's (PMI) best practice framework, providing customers expertise and complete solutions based on their unique needs

Skilled

- VES offers expertise at key stages throughout the project lifecycle, ensuring continuity from planning to implementation enabling end-to-end complete solutions

Project Management Customer Testimonies

“Excellent synergy and collaboration with the whole Verizon Team starting from the Project Manager all the way down [to the] technicians. Project well done.”

“This has been a multi year project that has seen its up and downs from vendors and customer perspective. **The one steady and reliable role of the project has been the Project Manager.** She has always presented herself as a professional and has gone above and beyond to keep all parties up-to-date on status and pending items. Due to her commitment and passion around her role we have been able to... move forward with reliable information and next steps.”

“Jody is a tremendous project manager. **Always organized and takes command of the calls/project.** Highly recommend Jody for any future project.”

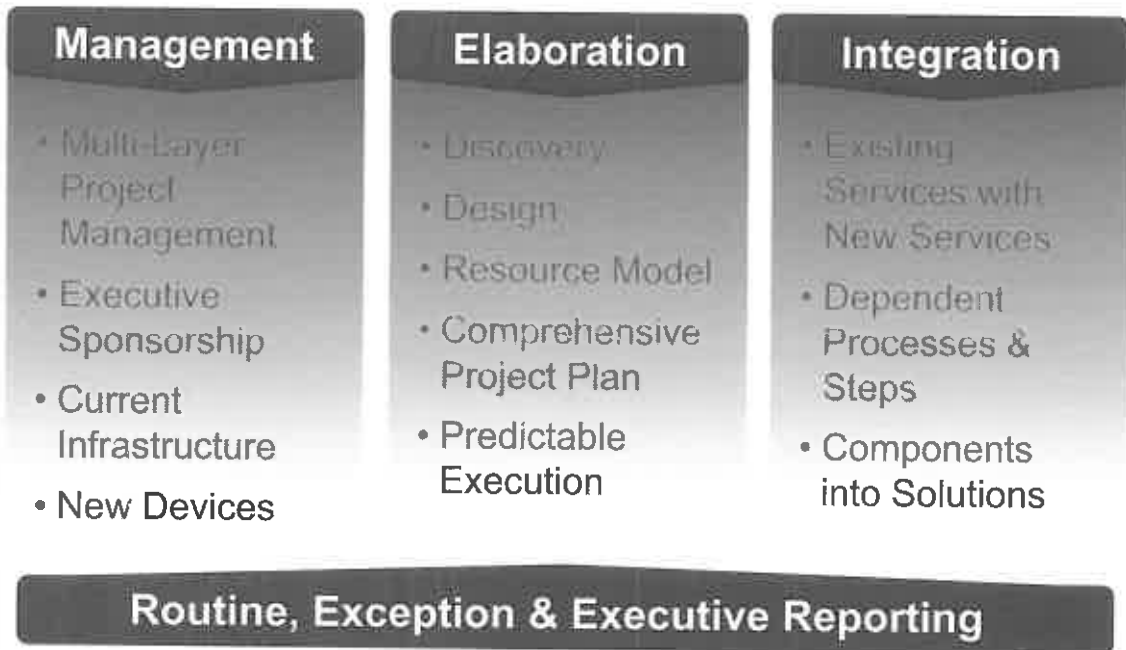
“The Verizon team supporting [the project] were outstanding. Very professional and focused on quality in delivery. Ann (PM) performed a key role in the success of delivery and issue resolution. She has tremendous experience and works well with every team member, regardless of level or company. There were multiple Telco vendors involved and the Verizon team raised expectations for all. **The...program would not have been successful with out a true partnership with Verizon. Great work!**”

Project Management Transition Migration

TODAY

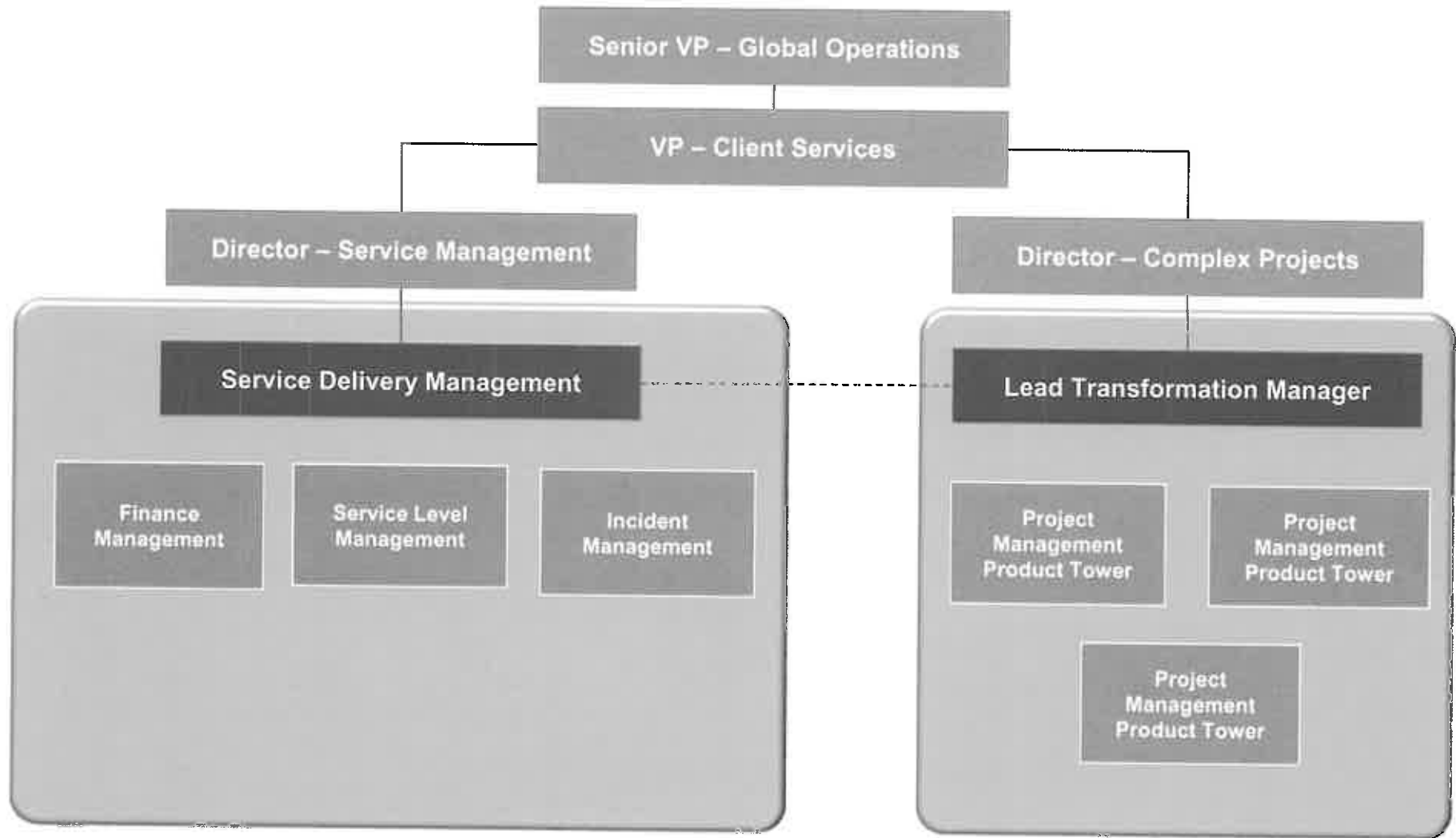
- Multiple Vendors
- Disparate Services
- Delivery Process Silos
- Commoditized Deployment
- Shared Resources
- Manual Inventory & Reporting

TOMORROW

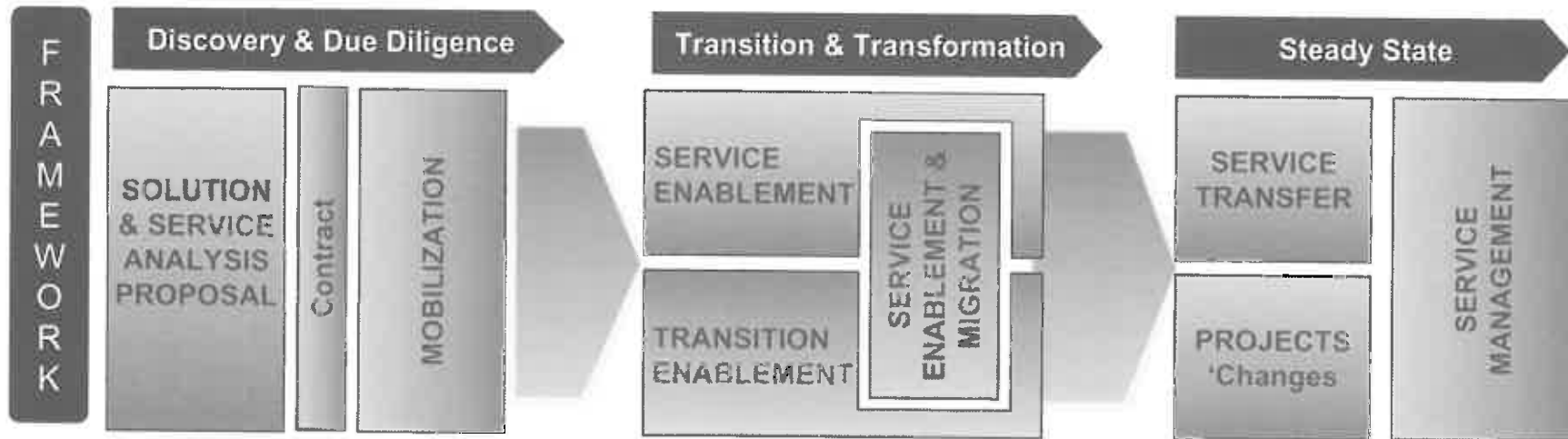


Shift to an All-Inclusive Approach to Transition Services

Project Management Transformation Service Structure Example



Project Management High Level Transition Approach



Understanding / Knowledge Sharing

- Initial solution and proposal level of diligence
- Portfolio discovery & reconciliation
- Interviews and work instruction collection
- Milestone schedule and project planning
- Manpower planning

Build the Platforms for Transition

- Process mapping, inputs / outputs, RACI matrices
- Detailed project plan
- Risk management plan
- Create runbooks / knowledge sharing & transfer

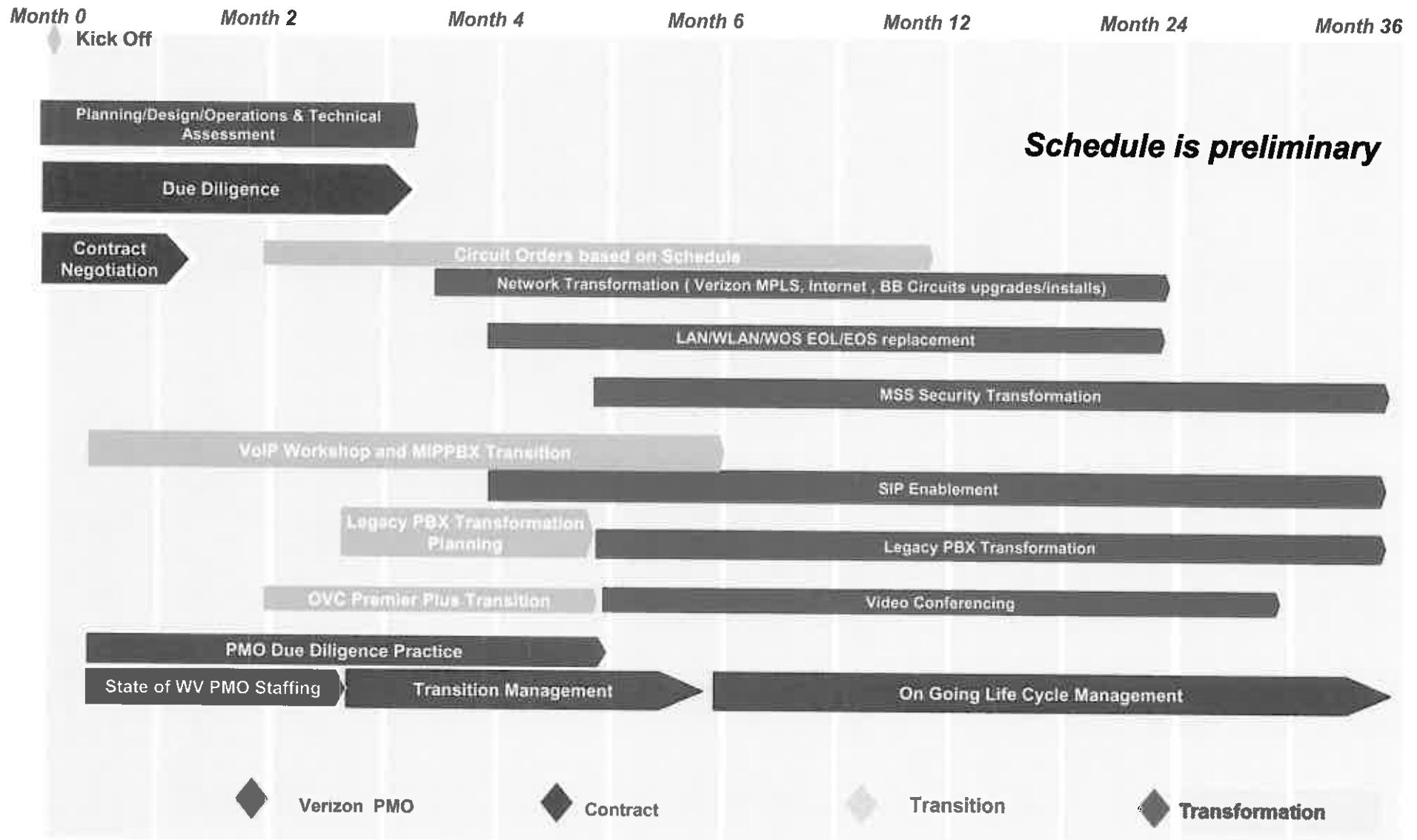
Readiness Gate for Steady State

- Acceptance testing of process functionality
- Agreement reached on disposition of "in-flight" projects
- Schedule / agree "GO LIVE" date

Project Management Due Diligence Phase

Reasons for conducting a comprehensive Due Diligence Phase:	
Customer Requirements Validation	Identify, verify, and align expectations to ensure the proposed scope of the services complies with customer requirements Analyze the operational implications and financial ramifications of potential contract-based relationships
Operating Environment Validation	Validate current Service Operating Environments for supplier capability and integration planning in preparation to migrate support
Third-Party Validation	Qualify any Third-Party service responsibilities that are in-scope and may require further service integration preparation
Risk Mitigation	Identify, validate, and mitigate joint contractual Risk(s) to all stakeholders, and reduce on-going financial and operating risk
Assumption Validation	Drive toward “ zero-based ” Assumptions Award and delivery plan
Service Transition Planning	Prepare and provide for a timely and effective Service Transition for the State of West Virginia. Enhance customer transition performance and satisfaction.

Project Management Transition & Transformation Example Schedule



Service Program Management Enterprise Benefits

Experienced

- VES has over 20 years of experience providing Service Management on varying scales and complexity to enterprise customers world wide, and to the state, local, and U.S. Federal Government

Qualified

- VES provides Service Program Managers with knowledge and expertise in State and Local Government customer networks and Verizon services and products. Continuous training and certifications are a Verizon requirement.

*Dedication
to the State*

- VES Service Program Management is dedicated to the State of WV and partners with the State of WV on service, billing, Verizon portal engagement and other support services.



Service Program Management For State of WV



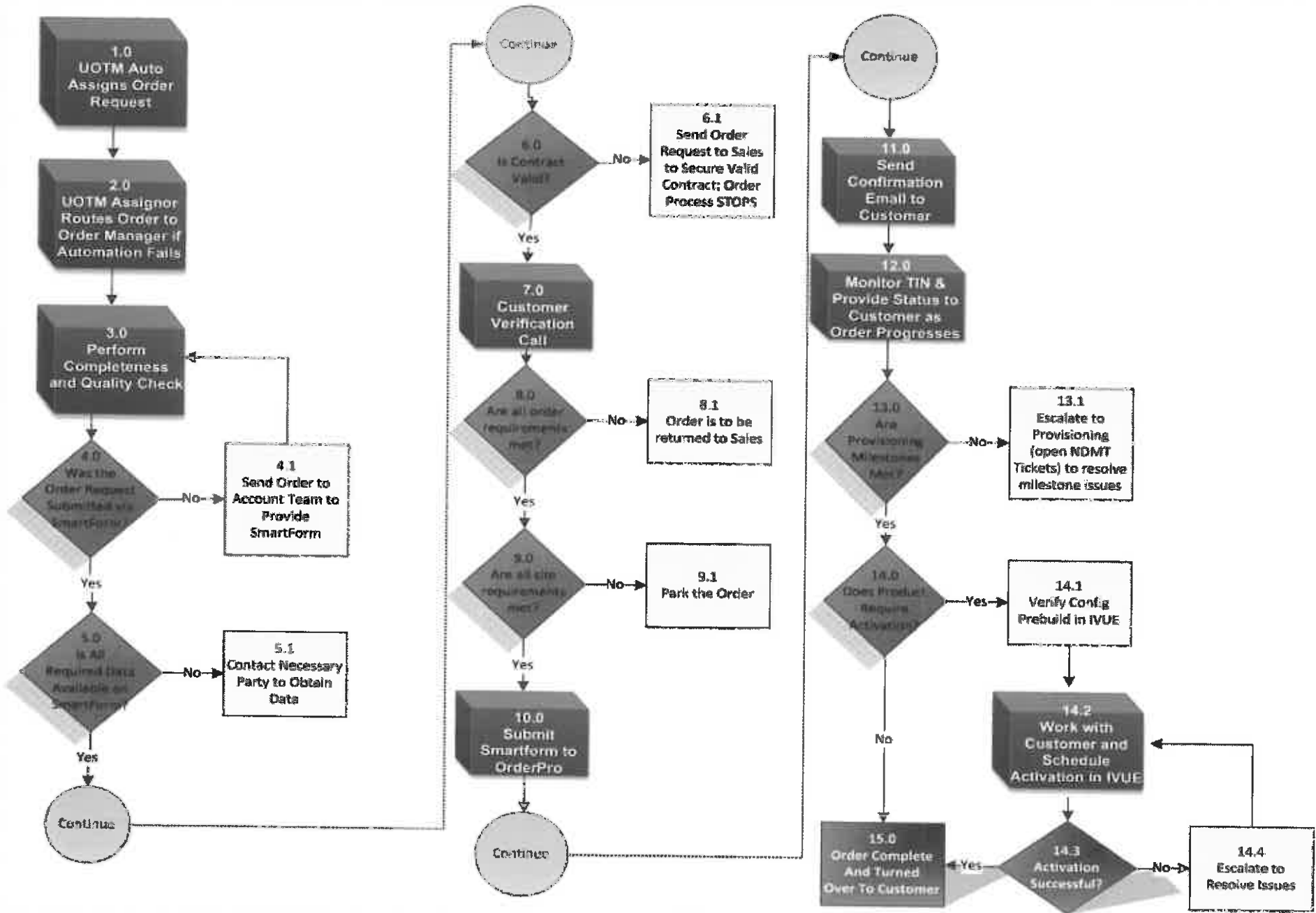
- Supports your billing operations to provide efficient and timely communication
- Monitors and supports resolution of all billing related inquiries
- Provides billing reports as required
- Meet on an as needed basis to resolve disputes in a timely manner to keep charges, payments, credits as current as possible.
- Participate in order status meetings to ensure billing matches the service
- Assist in accessing invoices and reports through the Verizon portal

Service Program Management For State of WV



- Monitors, measures, and reports on service performance
- Host service and governance review meetings to identify and resolve any service and or process issues
- Manages individual complex technical incidents and problems impacting service availability and escalate as appropriate
- Manages conference bridges as necessary and manages action plan to restore service
- Reviews the performance of the network/network optimization
- Interfaces with Verizon support centers and third party carrier centers as required
- Provides Verizon portal support to State of WV
- Identifies opportunities for service improvement. Provides root cause analysis reports as needed.

Government/Education Order Manager Procedure



Order Management - Benefit to State of WV

*Assigned
Order
Manager*

State of WV will be assigned an Order Manager that will handle your order requests from cradle to grave.

*Timely
Status
Update*

State of WV will receive weekly spreadsheets upon their request and hold weekly calls as well.

*Experienced
Installation*

State of WV orders will be tracked from Sales submission through order entry, provisioning, Install and activation if that applies.

*Dedication
to the State*

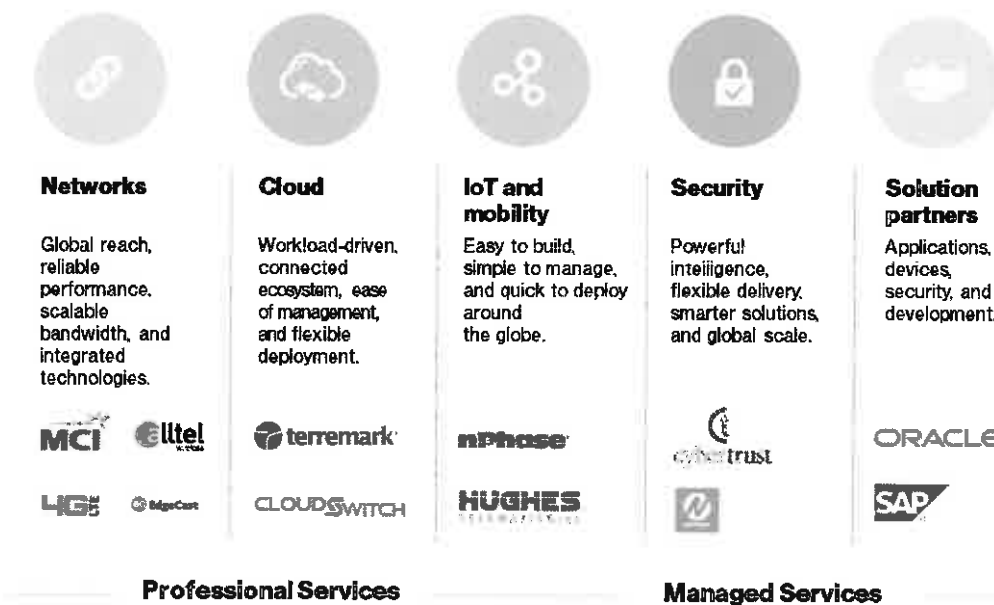
The account will be hand held and whatever is needed will be provided to them on an individual case basis.

Appendix K – Integrated Solutions Portfolio

Our vision for technology in the enterprise is ambitious—and we continue to invest in that vision.

Our solutions are built for innovation, formed by a series of acquisitions and technology investments over the past several years in capabilities that help your enterprise innovate and transform to be more productive, competitive, and efficient. By adding these capabilities and assets to our own, we continue to grow and meet the changing needs of your enterprise, offering more comprehensive solutions across all of our solution categories.

Our enterprise technology strategy.

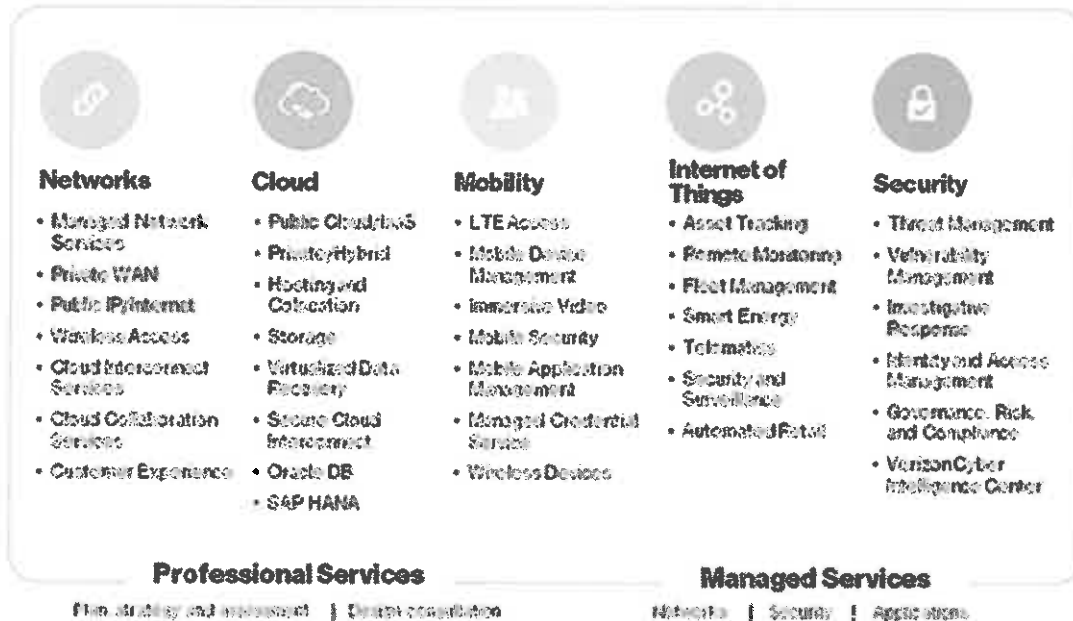


The investments we've made let us deliver innovative technologies that help make you successful—and your success speaks for itself.

We leverage five key solution areas to better benefit business.

Our portfolio of end-to-end and integrated technologies helps your enterprise across each aspect of your organizations offering a comprehensive approach to solving specific challenges. We also offer a suite of consultative services that help you integrate our technologies into your operations so you can focus your attention on running your businesses instead of your technology.

Our technologies.



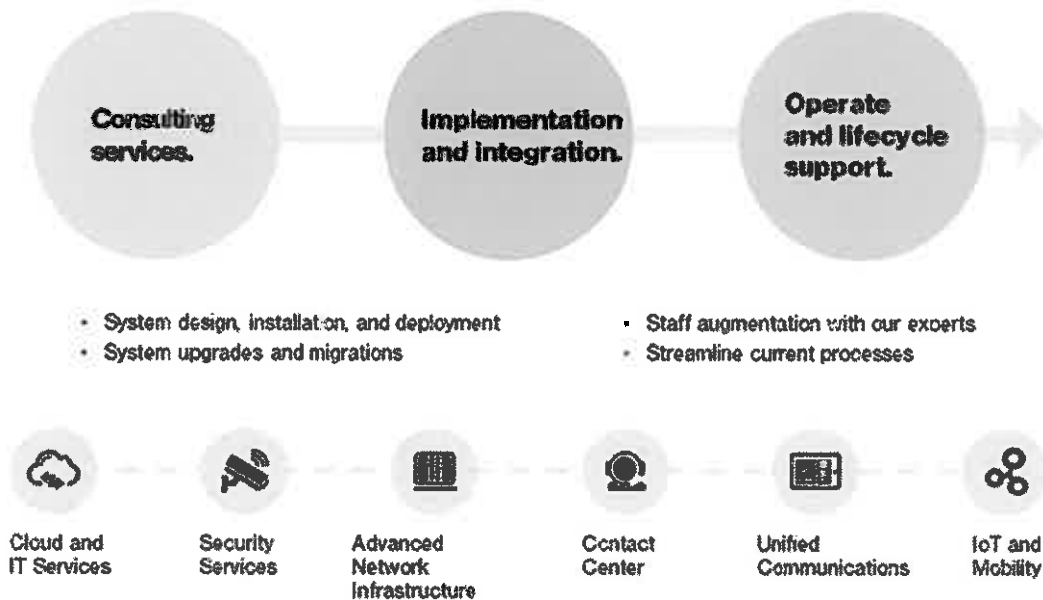
We bring together the technologies so you can stay focused on your business objectives.

Verizon’s Solution Categories:

- **Intelligent Networking** – Our networking solutions go far beyond connecting technology. We help your people, your customers, and every aspect of your business stay in constant communication;
- **Cloud** – Our cloud solutions are built specifically for the needs of the enterprise, providing flexibility and compatibility with other cloud technologies to deliver a safe, secure cloud environment;
- **Mobility** – Our mobility solution helps keep your workforce securely connected to the people and resources you need to do your jobs effectively;
- **Internet of Things** – Our M2M solutions make it easier for your enterprise to build, deploy, manage, and secure an M2M fleet of devices to enable the Internet of Things;
- **Security** – Our security solutions provide you with specific solutions that help you meet your security compliance needs—without impacting worker productivity.

Our consultative Professional Services help you design, implement, and manage solutions that are right for your organization, while Managed Services puts technology management in Verizon’s hands.

Professional Services.



Our team of professional services experts partner with you to explore and create opportunities.

With extensive industry experience, product knowledge, and process know-how to identify and clarify business requirements in an optimal manner, and implement those definite needs. Your enterprise is backed by a team of professionals with both vertical and general industry subject matter. We assist with requirements analysis, architecture, design, and implementation of complex professional services solutions.

Our Professional Services life cycle services consists of three phases:

- Consulting;
- Implementation and integration;
- Operate and life cycle support.

Consulting

On-going Partnership

- We connect you with highly skilled and experienced professionals who work with you to solve business challenges through the use of technology. Through collaboration we lead the effort in identifying and prioritizing your business requirements and provide recommendations that may have not been explored or thought possible before.

- Our partnership has no end as we move into the implementation phase. Our relationship continues to grow and evolve as we learn even more about your organization, and you rely on us as your trusted advisor.

Implementation

In the implementation and integration stage, the services vary; however, we have solutions for all. Our Professional Services implementation and integration services provide a complete end-to-end implementation methodology, starting with the establishment of project governance all the way to planning, back-office integration, and roll-out of the production system. The outcome is a properly functioning, well-designed solution.

Leveraging our years of experience and industry knowledge, we can:

- Shorten the implementation phase;
- Move the solution quickly and cost effectively;
- Provide a smooth integration by leveraging someone who has done it before;
- Utilize a single organization for project implementation.

Operation and Lifecycle Support

Our professional consultants have proven expertise managing complex applications and infrastructure.

Tying It All Together: Managed Services

Our integrated solutions portfolio will enable you to focus on your business, not your network. Your wide area network (WAN) is a critical component of your IT and business operations. It takes dedicated resources, hardware, software, and the latest applications to properly manage it.

Our portfolio of Managed Services speeds your digital transformation and your ability to deliver innovation. Using advanced analytics engines and virtualization technologies, we are delivering new services that drive business outcomes and free our customers from the burdens of day-to-day management.

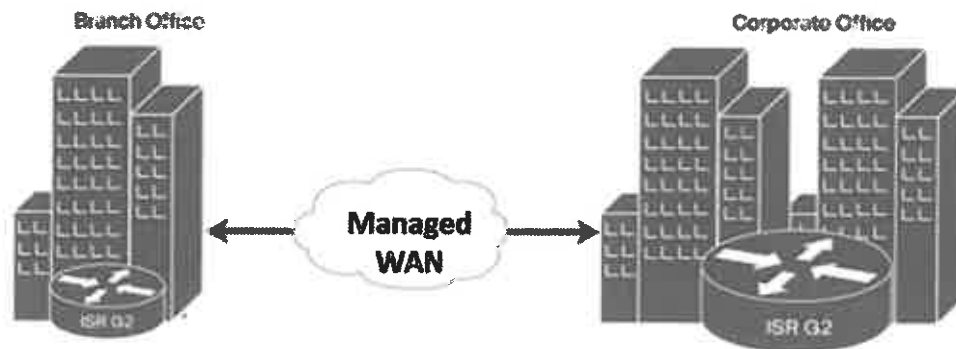
Our Managed WAN services are supported by strong service level agreements (SLAs) and range from simple monitoring and reporting to complete outsourcing of your corporate network and data center—so you can concentrate on growing your business rather than day-to-day network operations.

Appendix L – Managed WAN Overview

If customer is seeking to manage Total Cost of Ownership (TCO), outsource your IT departments, or obtain effective, global 24x7 support of your network, you can benefit from Managed WAN. For those customers lacking technical expertise or dissatisfied with the performance of their current managed services provider, Managed WAN can be implemented as part of a comprehensive networking solution that addresses those issues and acts as a vital link in an end-to-end solution.

Managed WAN Service is a network management solution available in the U.S. and Canada, as well as countries in the Asia-Pacific, EMEA (Europe, Middle East and Africa) and Latin American regions. Customers must also subscribe to Private IP, E-Line (formerly known as Ethernet Private Line (EPL) or Ethernet Virtual Private Line (EVPL)), E-LAN (formerly known as Virtual Private LAN Service (VPLS)), or Private Line services. Please note that Managed WAN for Internet Dedicated is also available in Asia-Pacific and the U.S.

The following diagram provides an example of a Managed WAN solution.



Using Verizon's Managed WAN Service, you can leverage our technical expertise in design, planning, implementation, and network management. Three service levels are available with Managed WAN:

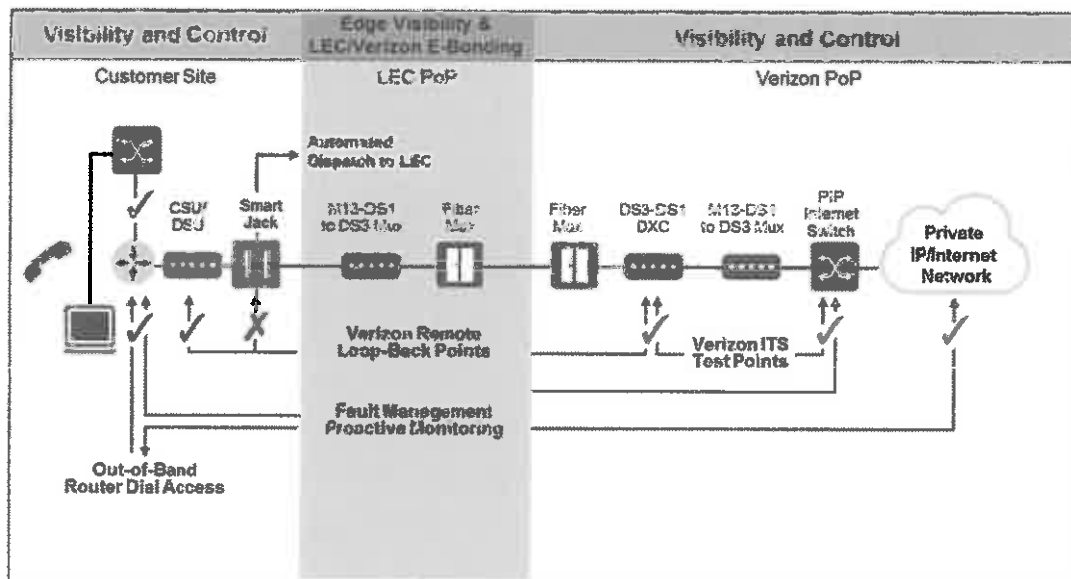
- Monitor and Notify;
- Physical Management;
- Full Management.

Customer's need to rely on more than one vendor to monitor your IT infrastructure components can be eliminated when we are managing your network. We take a comprehensive approach to fault management. Our Managed Network Solutions Operations team operates the network end to end.

We have the following end-to-end fault visibility and restoration advantages that you can leverage:

- We can initiate test points at the network core, the local loop, as well as the equipment on site;
- We have Rapid Fault Isolation, which means testing of these points is initiated automatically;
- Our network management system is called IMPACT, and it enables correlation of fault alarms, automated scripts that in parallel test the circuit test points and provide the engineer with a report of the results;
- In the U.S., a ticket can be automatically generated with the local exchange carrier (LEC) without human intervention if the point of failure lies with the LEC – this is known as Verizon e-bonding with the LEC.

The following graphic illustrates our end-to-end fault visibility.



*LEC Automated Dispatch is limited to U.S. locations only

End-to-End Fault Visibility

This automation and our operational model can save an average of 30-60 minutes per outage. In addition, customer will be automatically updated at the change of status based upon your preferred method of communication.

Though Verizon manages the network solution for you, Managed WAN also empowers you to monitor your performance by viewing WAN Analysis Reporting reports powered by CA Technologies eHealth. Customer can view critical metrics such as latency, volume, congestion, and discarded frames. We also provide the Verizon Enterprise Center and its Managed

Services area (i.e., customer portal) as a standard feature to enable near real-time tracking of the managed-service implementation process, project status, inventory tracking, contacts, and change management requests.

Features and Benefits for Customer

Features	Description	Benefit to Customer
Multiple transport options available	Customer has the ability to utilize Managed WAN Services with Private IP, E-Line (EPL, EVPL), E-LAN (VPLS), Internet, and/or U.S. Private Line transport options.	You have the flexibility to choose the most appropriate network architecture based on your business requirements.
Variety of Customer Premise Equipment (CPE) vendors supported	Managed WAN Services supports industry-leading CPE vendors, including Cisco, Juniper Networks, and ADTRAN. Note: Juniper Networks and ADTRAN are available for U.S.-sold Managed WAN only.	You are enabled to select the most appropriate equipment vendor for your needs.
Multiple management options available: Full, Physical, Monitor and Notify	We provide three levels of management to meet customer needs: <ul style="list-style-type: none"> ■ Monitor and Notify: "Tell Me What's Happening;" ■ Physical: "Help Me Manage It;" ■ Full: "Manage It For Me." 	Depending upon your management needs, you have the opportunity to select the most appropriate management level.
Integrated Services Router (ISR) Support	Managed WAN customers can utilize the latest routers that combine many networking functions into a single box, such as the popular Cisco ISR series of routers. Verizon will manage these integrated services features: <ul style="list-style-type: none"> ■ Zone-based Firewall; ■ Ethernet LAN; ■ Content Filtering; ■ IOS-based Intrusion Prevention Service; ■ Encryption (GET VPN); ■ Integration with our Managed WAN Optimization Services (Cisco WAAS modules). ISR features are only available for Managed WAN customers at the Full	Customer can benefit from the multiple services available on one device. You would not be required to purchase additional devices for each networking function required.

Features	Description	Benefit to Customer
	and Custom Levels of Service.	
<p>Support for Third-Party Transport</p>	<p>Managed WAN Services are available on third-party transport provided that customer has at least two managed sites on the Verizon network.</p> <p>Note: Customer will be responsible to order:</p> <ul style="list-style-type: none"> ■ Out-of-band modem line (if required); ■ Transport service from third party; ■ CPE maintenance if not provided via Verizon. 	<p>You have the ability to utilize our Managed WAN Services with other transport vendors, facilitating greater vendor flexibility and redundancy options.</p>
<p>Network Design</p>	<p>The process of defining network architecture and the associated data communications flows to support each individual customer's business operation. During the design phase, the Design Engineer documents the network solution in the form of a Customer Design Document (CDD) that reflects the Statement of Requirements (SOR) as agreed to by Verizon and customer.</p> <p>Note: Network Design is not included with the Monitor & Notify service level.</p>	<p>You can take advantage of our highly skilled and certified design team to create the managed network that meets your near and long-term performance and growth requirements.</p>
<p>Project Management</p>	<p>A project manager (PM) is assigned to each customer account after the contract is signed. The PM will act as the primary point of escalation for customer implementation issues. In addition, the PM will secure appropriate Verizon resources to support implementation of service, coordinate kick off calls with the account team and the customer, coordinate the acceptance plan and test criteria with the customer, establish customer service dates, and confirm project milestones are met.</p>	<p>Customer will have a single point of contact during the implementation cycle to provide a timely, consistent, and smooth implementation of service.</p>
<p>IMPACT (Integrated Management Platform for Advanced Communications)</p>	<p>A state-of-the-art monitoring and control system used with all Verizon Managed Network Solutions. IMPACT provides network fault and</p>	<p>Network outages and CPE failures can quickly be identified and resolved.</p>

Features	Description	Benefit to Customer
Technologies) Platform	performance data collection, fault correlation/filtering/reduction, alarm presentation, and trouble-ticket integration.	
End-to-End Fault Visibility and Restoration/Rapid Fault Isolation	Network Management provides for the detection, isolation, and restoration of Wide Area Network faults. The architecture provides a complete view from the POP to the customer premises and has the ability to test (using our Integrated Test System (ITS)) the switches in the POPs and cross-connects, and monitor the performance events along the backbone, while our remote loop-back capabilities can test additional devices. Once a fault has been identified, trouble tickets are created automatically using our e-bonding capabilities with other transport providers.	You benefit from fast, efficient fault identification and automatic trouble ticket creation. You can potentially save between 15 - 30 minutes in the identification of faults and opening a trouble ticket when compared to in-house network management.
Proactive Outage Notification Interval SLA (Terms, conditions and restrictions apply. See your Verizon account manager for details.)	We will proactively notify customer within 15 minutes of opening the trouble ticket. Initial notification will include ticket number and an initial status based on preliminary troubleshooting conducted following the outage.	You will be notified automatically if there is an outage or trouble ticket opened on your behalf.
Performance Reporting	Thru an agreement with CA Technologies, we offer an advanced reporting tool, WAN Analysis Reporting. This tool uses the CA eHealth product, which provides both our network operations and customers with automated reporting and analysis tools. Key metrics reported via eHealth include latency, volume congestion, and discarded packets.	The WAN Analysis Reporting package provides customer with daily reports that help you make appropriate modifications to the network as needed.
Verizon Enterprise Center's Managed Services area	From the Verizon Enterprise Center's Managed Services area, our customers can view their managed network (LAN and WAN) by: <ul style="list-style-type: none"> ■ Summary of sites; 	The Verizon Enterprise Center and its Managed Services area can provide customer with: <ul style="list-style-type: none"> ■ An easy to navigate, web-

Features	Description	Benefit to Customer
	<ul style="list-style-type: none"> ■ Implementation activities (if applicable); ■ Active install and upgrade projects (if applicable); ■ Geography. <p>Customers can also submit standard change management requests, track equipment and circuit inventory by site, and view/update their account contacts by function, name, and location.</p>	<p>based tool;</p> <ul style="list-style-type: none"> ■ Secure views into your managed network services; ■ Methods to track circuit and CPE inventory; ■ Greater degree of self-reliance; ■ A tool that is available to you at no additional cost.
Security Management	<p>We provide additional functions and activities to help secure both your network and CPE. Some examples include security privileges for the managed router, TACACS (Terminal Access Controller Access Control System), IOS bug fix updates, and password administration.</p>	<p>Helps reduce the risk of unauthorized users accessing your operations thru the router.</p>
Wireless Access for Primary or Backup Access	<p>Wireless access thru Verizon Wireless (LTE and EVDO) is available as an access option that can be supported as part of the Managed WAN solution. It can be used to provide redundancy as a backup to a site's wireline access. It can also be used as an alternative, high speed access method.</p> <p>There are a number of options available empowering customer to implement a solution that best meets your requirements.</p> <ul style="list-style-type: none"> ■ Private network solutions use the network-to-network interconnect (NNI) between the Verizon MPLS network and Verizon Wireless Private Network as part of the Private IP Wireless Access solution. ■ Public network solutions include Internet-based solutions such as one router with Private IP + VPN backup or one router with Private IP + Secure Gateway (SG) backup <p>Note: Wireless Access for Primary or</p>	<p>Wireless backup can help increase employee productivity by reducing downtime associated with outages at the customer's remote site.</p> <p>As a primary access method, wireless can be a cost effective solution for remote sites where wire line services are not available or are cost prohibitive.</p>

Features	Description	Benefit to Customer
	<p>Backup Access with Managed WAN is available for Full and Custom levels of service in the U.S. only.</p>	
<p>Secure Gateway Backup Services</p>	<p>The Secure Gateway Backup solutions can help customer maintain network connectivity in the event of a Private IP primary circuit failure. We offer several options for Secure Gateway services including single router and dual router designs.</p> <p>Note: Secure Gateway backup service for Managed WAN is available for Full and Custom Management levels of service in the U.S. only.</p>	
<p>Standard Change Management</p>	<p>As part of the Managed WAN Services offering, Change Management takes responsibility for all router software and hardware changes and covers the following change management services by default:</p> <ul style="list-style-type: none"> ■ Covers the most commonly requested operational changes; ■ Configuration management (changes can only be made by Verizon personnel). <p>Only available with Full Management service level.</p>	<p>Standard changes are implemented accurately to help reduce the impact to the operation of the network.</p>
<p>Optional Change Management</p>	<p>Optional Change Management provides additional change management support for items customers aren't likely to encounter on a daily basis. Optional Change Management provides low pricing on a per-change basis for advanced configuration management, and convenient ordering thru the managed services portal. (Online ordering is available for U.S.-sold customers only.)</p> <p>Note: For Network Engineering customers, Optional Change Management will be provided by their primary Network Engineering team.</p>	<p>Optional Change Management provides a standardized way to meet customer's needs for additional changes on your network.</p>

Features	Description	Benefit to Customer
<p>Customer Premises Equipment (CPE) Monthly Recurring Plan, Install, and Maintenance</p> <p>Note: CPE Monthly Recurring Plan, Install, and Maintenance are not included in the management fee for Managed WAN Services.</p>	<p>CPE is a required element of Managed WAN Services and describes the physical equipment customer will be using with your managed network. We provide lease, purchase, and a Monthly Recurring Plan for CPE which supports Managed WAN Services. If you choose to provide your own CPE, a maintenance agreement must be completed as part of the contract so that the CPE can be supported by the SLA.</p>	<p>Routers are available around the globe on a rental basis to enable consistent enterprise-wide deployment. Customer can take advantage of these technology enhancements.</p> <p>You have the option, depending on region, of our Monthly Recurring Plan, leasing, purchasing CPE or providing your own CPE.</p>
<p>Service Level Agreements (SLAs)</p>	<p>For Managed WAN customers with the full management service level, Verizon offers SLAs for availability, Time to Repair, installation (contiguous U.S. and Alaska), and proactive outage notification.</p>	<p>Verizon’s comprehensive SLAs should instill you with a high degree of confidence for the Verizon services you are purchasing.</p>

Value-Added Services and Product Combinations

Feature	Description	Benefit to Customer
<p>Network Engineering</p>	<p>Network Engineering is an optional service available for customers that need dedicated support for network design and implementation of their network for the life of the contract.</p> <p>Capabilities may vary based on CPE vendor and technology.</p>	<p>Network Engineering can provide customer with a single point of contact for your ongoing network lifecycle needs.</p>
<p>Network Analysis</p>	<p>The Analysis Professional (AP) can provide you with network performance analysis and follow-up recommendations relating to key areas of network improvement throughout the contract duration.</p>	<p>You can utilize our expertise to provide guidance on improvement plans for the network.</p>
<p>WAN Analysis Reporting</p>	<p>Customer can select additional enhanced reporting options including:</p> <ul style="list-style-type: none"> ■ WAN Analysis Reporting: Standard Select, Enhanced Traffic Management (ETM)* ,ETM Select*, or ETM Select with NetFlow* provided by CA; 	<p>You have the opportunity to select multiple reporting methods depending upon your current business requirements.</p> <p>Note: Technical limitations may apply depending upon vendor support. For example, IP SLA</p>

Feature	Description	Benefit to Customer
	<ul style="list-style-type: none"> ■ Provider Edge Stats provided by CA; ■ Asset Assurance* provided by CA; ■ Threshold Monitoring* provided by CA. <p>*These services are optional and have additional Non Recurring Charges (NRC) and Monthly Recurring Charges (MRC) charge. See your Verizon account manager for details.</p>	technology is only available on Cisco devices.
VoIP Interface Support	Add-on feature to implement and maintain VoIP-related configurations (e.g., dial peer information maintenance) within the Managed WAN router.	For Managed WAN customers using Verizon's IP Integrated Access or IP Trunking services, establishes and maintains connection paths between our VoIP service and the customer's premises.

Reporting

Verizon Enterprise Center

The Verizon Enterprise Center is a one-stop portal for accessing critical information and resources on-demand. Customer can access both Verizon and Verizon Wireless details, providing a single location for key data, voice, and wireless information. This enables you to manage your Verizon services, streamline business processes, and control critical business functions. Supported by a host of powerful, comprehensive electronic self-service capabilities, the portal is available 24 hours a day, seven days a week. The Verizon Enterprise Center can provide you with the ability to track and customize your Verizon products to make them work for your business. Customer can also control costs and simplify business management by leveraging these self-service tools.

Managed Network Services (MNS) customers can also access MNS-specific information. From the Verizon Enterprise Center, users can simply click on the link on the Network Tools tab titled "Access Managed Services." (Customers may also pull information from the "Account Explorer" tab.)

Customer can see both a macro and micro view of your network by reviewing inventory, circuits, and contacts across the network. You can do this either from the customer level or manage each location's hardware, and change management at a site level. This functionality helps you manage your network more effectively, identify cross-location trouble spots, and leverage information from one location to the other.

The Verizon Enterprise Center and its Managed Services area can provide customer with:

- An easy to navigate, web-based tool;
- Secure views into your managed network services;
- Methods to track circuit and CPE inventory;
- A way to track the status of an install or upgrade in progress;
- A tool that is available to you at no additional cost.

Features

Thru the use of the Verizon Enterprise Center and Managed Services information, customer can:

- View your managed network (WAN, LAN, IP PBX) by:
 - Location;
 - Projects (Active install and/or upgrade);
 - Customer level.
- Review alarms on an account or site-level basis;
- Submit Change Management (Standard and/or Optional) requests;
- Review managed services alarms across the network and identify appropriate ticket numbers;
- View Device/CPE Feature capabilities. This functionality can enable customer to see features available on each device under management. The Feature Details page includes a "managed" indicator as well as a new management and product section;
- Access your trouble tickets from the "Repairs" tab:
 - As part of the standard Verizon Enterprise Center applications, "Desktop Alerts" can be set up for automatic notification of ticket status. If this feature is enabled, you will receive two notifications of a ticket. You can "opt" out of one notification in order not to receive duplicate notifications.
- View Verizon and customer contacts available by function, name, and location;
- View Network Analysis (NA) reports from the "Reports" tab if included in your contract.

WAN Analysis Reporting

WAN Analysis Reporting is a comprehensive network and service monitoring and reporting tool that enables customer to view and analyze data collected on your Verizon transport and managed services. WAN Analysis Reporting is offered as Software-as-a-Service, with the data and software securely hosted within the Verizon network. Data is collected directly from existing customer premises equipment (CPE). You will access your WAN Analysis Reporting via a Web portal, which is accessed via the "Network Tools" tab of the Verizon Enterprise Center. WAN Analysis Reporting is part of the Application Aware Networking network monitoring and reporting toolset.

WAN Analysis Reporting is powered by CA eHealth, CA Report Analyzer and CA Performance Center software which is provided and managed on behalf of Verizon by CA. CA is a Fortune 500 company and one of the larger independent global software corporations. CA eHealth, CA Report Analyzer, and CA Performance Center are part of CA's portfolio of infrastructure management services, which also includes CA Spectrum Infrastructure Manager.

WAN Analysis Reporting uses the Simple Network Management Protocol (SNMP) to periodically query the management information base (MIB) of customer premises equipment (CPE). The data collected is related to device configuration and device component performance. The process of periodically querying the MIB of a device is referred to as "polling." Polling reduces the load (such as bandwidth utilization) on customer networks but the trade-off is that performance information is slightly delayed due to the interval between individual polls.

In addition, the WAN Analysis Reporting ETM Select with NetFlow reporting tier uses data obtained from implementations of the Internet Protocol Flow Information Export (IPFIX) standard. IPFIX implementations measure and record data about the traffic that passes thru a customer edge device, such as a customer Wide Area Network (WAN) router. This data can be exported to an external collector, such as the WAN Analysis Reporting NetFlow collector located in the Verizon network. IPFIX was designed around Cisco's proprietary protocol, Cisco IOS NetFlow.

Available Reporting Tiers

WAN Analysis Reporting offers multiple levels of reporting with different features. Reporting levels build upon one another to give customer the flexibility to choose the right level of features to meet your reporting needs.

- Provider Edge (PE) Statistics is the basic reporting package that is provided at no additional charge to all Verizon Private IP Layer 3 customers. It is based on data collected from devices within our Private IP Network and provides for performance reporting without SNMP access to customer edge devices.

- Standard Select reporting is the basic reporting package that is provided at no additional charge to all eligible Verizon Managed Services customers. It is based on SNMP access to customer device data. This tier provides automated “Health” reports of a customer network and the ability for users to run customized reports on basic networking technologies such as a WAN interface.
- ETM reporting is an uplift tier which is offered at an additional monthly charge. This tier builds on Standard Select functionality and adds the ability to report on the Quality of Service (QoS) policy mechanism of Customer Edge (CE) devices and on CE-CE path performance (for Latency, Jitter, MOS scoring). Customers with Cisco CPE will also be able to use the Cisco Network-Based Application Recognition (NBAR) for protocol discovery.
- ETM Select is another uplift tier which is offered at an additional monthly charge. This tier builds on ETM functionality to provide users with a near real-time traffic viewer for rapid problem diagnosis and the ability for users to view and receive notification of comprehensive performance alarms.
- ETM Select with NetFlow is another uplift tier which is offered at an additional monthly charge. This tier builds on ETM Select functionality to provide users with the ability to see which hosts, protocols, and conversations are using bandwidth on which network interfaces, and at what times.
- Threshold Proactive Performance Monitoring (PPM) is an add-on service specifically for Managed Network Solutions WAN/LAN customers. This feature will enable the WAN Analysis Reporting system to proactively send alarms for performance-degrading conditions to the Verizon NOC for analysis.

Please contact your Verizon Account Manager for additional WAN Analysis Reporting details.

Service Level Agreement (SLA)

For Managed WAN customers with the Full Management service level, we offer the following SLAs:

- Availability;
- Time to Repair (TTR);
- Installation (contiguous U.S. and Alaska);
- Proactive Outage Notification.

The Managed WAN service objective is:

- Change Management

Terms and conditions apply. Upon request, your Verizon Account Team will provide you with detailed SLA information.

Appendix M – Software-defined Networking Overview

Given the business drivers, internal challenges, and competitive pressures that enterprises currently face, the evolution of disruptive technologies such as Software-defined Networking (SDN) can help address customer's business goals.

At Verizon, we see SDN as the next game changer in networking technology. SDN capabilities facilitate dynamic, application-aware behavior, and increased flexibility, and enable simplified service development that is independent of physical infrastructure. An SDN approach promises to significantly improve networking services to make them available in near real time through centralized management controls and with new flexibility and efficiencies. We think these improvements will be so significant that they will transform the way our customers conduct their day in and day out operations.

SDN coupled with Network Functions Virtualization (NFV) for services enables resource sharing and re-use on a time-of-day basis across geographic locations and applications. As a result, dynamic scaling of resources to meet demand and more efficient resiliency mechanisms can be more easily achieved. Consequently, we believe SDN enables the network to respond quickly to changing business requirements as required by our customers. There has been significant progress in the SDN space. Yet, just as cloud has transformed how we think about applications, SDN has the potential to transform how we think about connecting users to those applications.

Verizon is an industry leader and invests billions of dollars each year in network improvements. Verizon has been part of the SDN movement from the very beginning. Verizon is a founding member, and current board member, of the Open Networking Foundation (ONF) as well as an active participant in the following SDN workgroups and standards organizations:

- Open Networking Foundation (ONF);
- European Telecommunications Standards Institute - Network Functions Virtualization (ETSI NFV);
- Internet Engineering Task Force (IETF);
- Optical Internetworking Forum (OIF);
- 3rd Generation Partnership Project (3GPP SA5);
- Alliance for Telecommunications Industry Solutions (ATIS);
- Open Networking Research Center (ONRC);
- TM Forum (formerly TeleManagement Forum) – Zoom project;
- OpenCloud Connect (OCC);
- IEEE Software Defined Networks;

- Metro Ethernet Forum – The Third Network;
- Next Generation Mobile Networks (NGMN) Alliance;
- Open Networking User Group (ONUG).

Through our involvement with the various industry forums, including multi-vendor testing, we are focusing on our customers to help ensure that the standards and products that emerge fulfill business needs.

In this document, we discuss SDN and NFV approaches. While SDN and NFV are not necessarily interchangeable, they are complementary and very closely coupled since the goals of both are to reduce capital/operational expenditures, speed time to market and increase business agility. Verizon recognizes the value of orchestrating SDN and NFV in a combined effort.

Thus, from a Verizon perspective, SDN and NFV deliver:

- Common platforms that enable intelligent network forwarding at multiple layers;
- Standards-based interfaces;
- Programmatic control of the network and computational resources;
- Software functional entities or appliances to implement services;
- Automation of control, deployment, and business processes.

Benefits

The benefits of SDN and NFV, as used in a broader sense, can be described as facilitating the enablement of new products and services while minimizing capital and operational expenses for customer.

- **Flexibility** – Network virtualization can enable the dynamic deployment and removal of architectural functions onto general purpose virtualized computing hardware rather than requiring dedicated physical hardware installations. This may allow customer to scale and modify their services as needed.
- **Agility** – The loading of a software virtual appliance happens much more dynamically than hardware deployments. Moving to a virtualized network infrastructure allows for more agile application deployments, increasing the speed to market. Further, virtualized network functions can be dynamically scaled to meet fluctuations in demand without the need to build for “peak demand.”
- **Improved Network Lifecycle Management:** The ability to repurpose an existing platform quickly also facilitates improved network service lifecycle management. A network service that has reached end-of-life can be decommissioned and a new service quickly deployed.

- **Cost Savings** – Like the reduction of capital and operational expenses that have driven savings in the compute (server) environment found in a cloud enabled data center, SDN and NFV promise similar cost benefits for customer due to the elastic resource utilization, process mobility, and common infrastructure management in the virtualized network segment.
- **Innovation and New Product Enablement** – With a focus on improving agility, SDN and NFV capabilities can empower customer with more dynamic network capabilities facilitating business processes and development and test resources, resulting in faster business innovation. The ability to dynamically control network elements will eventually enable customer to manage multiple discrete on-demand services (firewalls, load balancers, etc.) chained together and optimized to form sophisticated and flexible intelligent WANs.
- **Control** – Verizon’s SDN architecture will enable network programmability via an Application Programming Interface (API). Customer will be able to control its network through this API that will provide rules/policies to be implemented for the service flows by the forwarding devices.

Why Verizon

We offer customer an expansive array of networking and communication solutions to meet your varying needs. Whether you are looking to control network costs, move away from capital expenditure spending, improve centralized control of network resources, or foster innovative new products and services, Verizon has the unique ability to offer a solution to help you achieve your business objectives. Our comprehensive assets, history of technological leadership, dedication to innovation, and network management experience can help you:

- **Better Experiences** – improve customer experience:
 - Verizon’s complete set of assets and partnerships help customer gain access to the technology and global network services needed by today’s enterprise customers;
 - Verizon’s premium networking performance and industry leading SLAs give your lines of business the confidence to forecast and deliver.
- **Better Business Results** – drive growth and business performance:
 - Verizon has the industry expertise and innovative solutions to help you deploy secure and efficient applications;
 - Verizon’s comprehensive set of network assets and resources enable cost savings and bolster profitability and productivity.
- **Better Peace of Mind** – manage risk:

- Verizon has secure solutions, expert resources, and industry knowledge to help your business reduce security and performance threats impacting your customers;
- Verizon's business assets and global experience allow customer's business to grow with the latest technology while managing risk with confidence.

Our Commitment

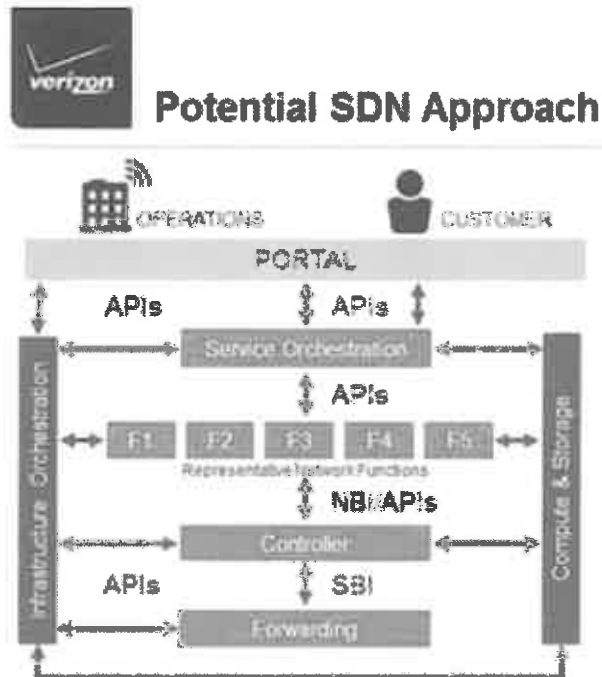
Software-defined Networking and Network Functions Virtualization support our commitment to customer to implement new, innovative technologies and deliver the best value-added e-business solutions available. Our SDN approach promises to transform the way customer conducts your day in and day out operations, enabling a more dynamic network that can accelerate with the changing business environment.

Our goal is to provide you with the right combination of quality, service, and price for your unique networking and communications requirements. Due to our vast capabilities, you will experience the services of a technology provider that can adjust to your changing needs.

Whether customer is looking to expand into new markets, quickly deploy new applications for use in the business, or adjust to sudden shifts in consumer behavior, Software-defined Networking and Network Functions Virtualization technologies will provide the flexibility of on-demand capabilities, agility of virtual resources, along with cost savings and centralized control that can translate to a true competitive advantage for your overall business.

Regardless of the business challenges customer faces, Verizon is dedicated to providing you with the best combination of quality, service, and value. We possess the track record, commitment, expertise, and technical leadership necessary to support your needs – now and in the future.

How It Works



Illustrative Network Architecture (Overall Service Orchestration)

SDN/NFV technology is under development with targeted deployment in the Verizon network. Areas of deployment are based on product roadmaps, immediate market opportunities, and low risk domains to assess and benchmark performance. The benefits of SDN can be realized by deploying currently available and emerging technology, but it should be recognized that the SDN technology arena is evolving, and there is still some amount of development and integration required.

Verizon's SDN architecture is following the principles of standards and partnering with vendors to develop solutions that will meet customer's needs. This architecture will ultimately enable network programmability via an API allowing customer to control its network with rules/policies for the service flows by the forwarding devices. This architecture will have logical controllers for a variety of aspects within the network, allowing customer to manage its various applications running across its SDN-enabled network.

Verizon is leveraging open systems and collaboration with multiple platforms to extend rich features and flexibility to our customers. Building on Verizon's experience in the industry, knowledge through lab prototypes and trials, and driving requirements through standards bodies, Verizon is well positioned to adopt and leverage the benefits associated with SDN. No one vendor has the entire solution, and the nature of the technology invites collaboration and development within an ecosystem. The overall Verizon SDN strategy includes collaborative development across Verizon, our customers and vendors.

Verizon is currently leveraging and developing SDN solutions to enable current and future network products that will support customer self-service, and usage based, programmable network features. This effort may evolve the current enterprise network features found in the Verizon Enterprise Center (VEC) portal. The overall strategic approach will support a service-enabled network edge leveraging a centralized SDN control plane, overall service orchestration, and virtualized network functions.

Potential Use Cases

As SDN capabilities are in the process of evolving, Verizon's strategy is to continue to develop existing products and services, as it makes sense, to leverage and align with SDN/NFV techniques while also developing future SDN-enabled solutions. Although there is a wide range of use cases for SDN, Verizon is focused on three priorities as identified by our customers:

Software-defined wide area network requirements:

- Rapid provisioning of WAN bandwidth and the ability to adjust capacity as necessary;
- Ease of orchestration and management, automated rapid detection, and workarounds for circuit and traffic issues;
- Optimized resources for Software-defined area network;
- Secure connectivity leveraging the flexibility of both private and public networking elements.

Verizon is working with partners and is in the process of testing various services to develop SDN/NFV capabilities, such as global orchestration platform and service chaining, in order to develop a robust Software-defined wide area networking offer for our customers. While progress is being made to define and cultivate these capabilities for end-user consumption, Verizon is already offering services, such as Secure Cloud Interconnect and Dynamic Network Manager, that leverage SDN/NFV techniques to provide flexible, on-demand end-user experiences. In addition, Verizon is also launching Managed WAN - Application Aware Routing (SD-WAN) later this year. This service will be ideal for customers who are interested in exploring SD-WAN capabilities, but who may not have the expertise in house to implement and fine tune the service. This offering joins solutions from key partners along with Verizon's experienced managed network operations staff to provide a holistic managed service offering that will enable application aware routing as well as hybrid networking capabilities.

Virtual networks/overlays for data center requirements:

- Ease of virtual machine (VM) provisioning via automated networking configuration;
- Traffic isolation for multi-tenancy;
- Micro-segmentation of the network and facilitating a zero trust security model;

- Physical network independence—the ability to choose cost-effective Ethernet switches, and decoupling virtual end-to-end network connectivity configuration for physical networking;
- Greater control of compute adjacency.

Today Verizon's Secure Cloud Interconnect service provides on-demand, consumption-based access to Cloud Partners, and plans are in development to take these capabilities to the next level by integrating Cloud Bursting/Workload Resource Movement and orchestration to develop virtual network overlays.

Network Services Virtualization Requirements

- Virtualized appliances to control high CAPEX and centralize configuration management;
- Performance at scale without the need for proprietary hardware appliances;
- Orchestration and management support that integrates well with other open networking elements;
- Fully open and well-documented APIs that enable programmatic control and ease of automation and integration;
- Ability to accept policy from higher-layer orchestrators, plus policy managers for translation into device-specific configuration;
- Central point of management and control for all instances of a given service to simplify management.

Verizon has begun prototype and testing efforts with various vendors and expects that future developments in this area will include appliances such as virtual routers, virtual firewalls, and virtual load balancers that will enable our customers with greater flexibility to deploy and update devices from a central management console and eventually utilize service chaining techniques to coordinate multiple services within a wide area network topology.

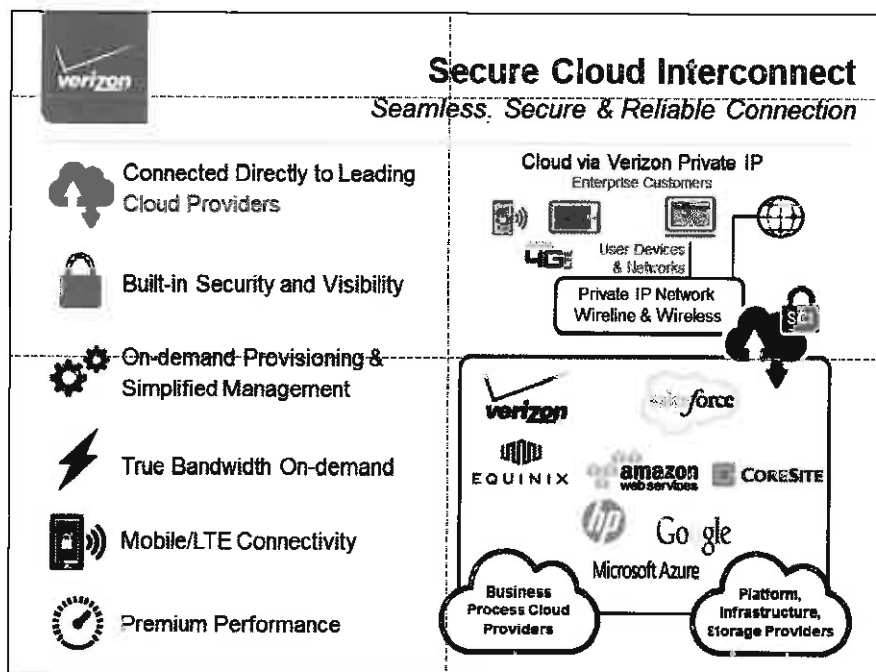
Following are some of the products that are in various stages of development or ideation that may incorporate SDN or NFV techniques for Verizon enterprise customers. (Note: the following list is not a confirmed roadmap, may be subject to certain availability restrictions, and should not be construed as a promise to provide services described herein.)

Currently, Verizon is exploiting SDN and NFV techniques to deliver more automated and centralized solutions like, Secure Cloud Interconnect, Dynamic Network Manager, and Wi-Fi for Business to address immediate areas of opportunity. We will continue to expand and formalize our SDN and NFV solutions over time, including the development of our next generation Secure Gateway service and the launch of SD-WAN. In addition, we plan to continue to develop our SDN/NFV longer-term capabilities as outlined in the following solutions.

Current SDN/NFV Solutions:

Verizon Secure Cloud Interconnect

Secure Cloud Interconnect (SCI) is available today and consists of MPLS VPN and Ethernet E-LAN interconnection services to a growing list of cloud service partners to address the evolving needs of the cloud ecosystem. SCI service includes secure, virtual, consumption-based private network bandwidth leveraging pre-provisioned access to cloud resources. This allows customer to have true bandwidth on demand with true usage-based pricing, leveraging an SCI portal and open APIs that provide the visibility and control you would expect from a Software-defined Networking solution. The SCI portal allows you to view key attributes, including interface configurations, cloud service provider details, and utilization statistics, as well as the ability to add/delete VPNs and establish connections to key cloud service providers.



Secure Cloud Interconnect

Verizon Dedicated E-Line

Verizon has enhanced its E-Line services to offer an SDN-based E-Line that enables customer to select a dedicated network path and bandwidth. Dedicated paths are critical when customer requires a path with deterministic latency to support algorithmic trading or data replication features that cannot tolerate latency changes. Dedicated E-Line also provides customer the ability to select primary and secondary paths thru the Verizon network, providing the assurance those paths will stay diverse. Enabling diversity control with SDN provides customer with assurance that you are controlling your data without involving a second carrier and the guessing if your diverse paths for critical data could be impacted by a single network event.

Verizon Dynamic Network Manager (Bandwidth on Demand)

Verizon has a rich history of providing customer-enablement tools that empower our customers with flexible resource management. To this end, Verizon is leveraging our current Dynamic Network Manager capability, available to many Private IP and Ethernet Switched E-Line customers, and is integrating it with Verizon's SDN strategy. Dynamic Network Manager drives the flexibility and cost-management of bandwidth consumption, which is consistent with our SDN strategy of providing customer with improved levels of automation and control over network resources. With Verizon Dynamic Network Manager, you can change your bandwidth speed to meet current business needs or schedule adjustments for up to one year in advance. You also have the ability to change your bandwidth online, right from your desktop, so customer's network needs can keep pace with the needs of the overall business. As a key component and building block of Verizon's SDN strategy, we have continued to make improvements to the customer management portal that provides visibility and key controls into Dynamic Network Manager adjustments and other network attributes.

Verizon Wi-Fi for Business

Consistent with our SDN/NFV strategy, Verizon's Wi-Fi for Business solution integrates infrastructure deployment, monitoring, and management into a centralized, unified NFV-based service. This solution provides a simple, plug and play Wi-Fi LAN service that is easy to use and deploy from "the Cloud," giving small Enterprise and Medium Business customers a comprehensive set of capabilities. The solution includes customer premise equipment as well as Verizon Management portal capabilities and access to Verizon's Wi-Fi for Business Service Desk support. The Verizon Management portal provides you with unified visibility and control to allow you to view applications used over your Wi-Fi service, statistics on capture rate (clients passing by versus visitors spending time), engagement (time spent within hotspot by visitors), appeal (new vs. repeat visitors), as well as many other capabilities. The Verizon Wi-Fi for Business Service Desk provides setup and on-boarding in the portal, device monitoring and proactive outage notification, level 1 and 2 support for IT administrators, as well as warranty/replacement management.

Verizon Secure Gateway

The next generation of our Secure Gateway service leverages an NFV-based architecture to deliver consumption-based network bandwidth on a virtualized platform. This solution provides the use of wireless access and broadband Internet for rapid deployments of hybrid networks leveraging Private IP on a virtual appliance-based platform. This next generation service is more flexible and scalable, with faster deployments than traditional networking services, and features usage-based billing capabilities that allow customer to pay for only those services that they use. This next generation service provides more centralized controls, better utilizes total capacity, and fine-tunes devices by routing traffic to available capacity in near real time.

Verizon Managed SD-WAN

Managed SD-WAN services extends our managed services offering to be able to deliver Software-defined WAN capabilities leveraging key partners. These solutions enable application aware routing as well as hybrid networking capabilities.

This service is a building block in Verizon's SDN strategy, and an extension of traditional managed WAN. It transforms the managed WAN into an optimized hybrid transport platform to support growth in traffic from cloud and mobile services, resulting in more efficient WAN that is optimized to and from the origination and destination of the user transactions. Enterprise IT can leverage this transformation as a first step toward aligning IT with the business and improving the visibility and speed to support growing cloud workloads and unpredictable user demand originating from inside and outside the corporate network.

A key feature of SD-WAN is centralized administration of WAN routing, security and optimization. It enables you to shift your IT focus from traditional network and IP centric skillsets toward enhancing application and end user experience, shrinking the overhead necessary to deliver and support the underlying infrastructure, while improving the speed at which customer can turn up new services.

SDN/NFV Solutions Under Development

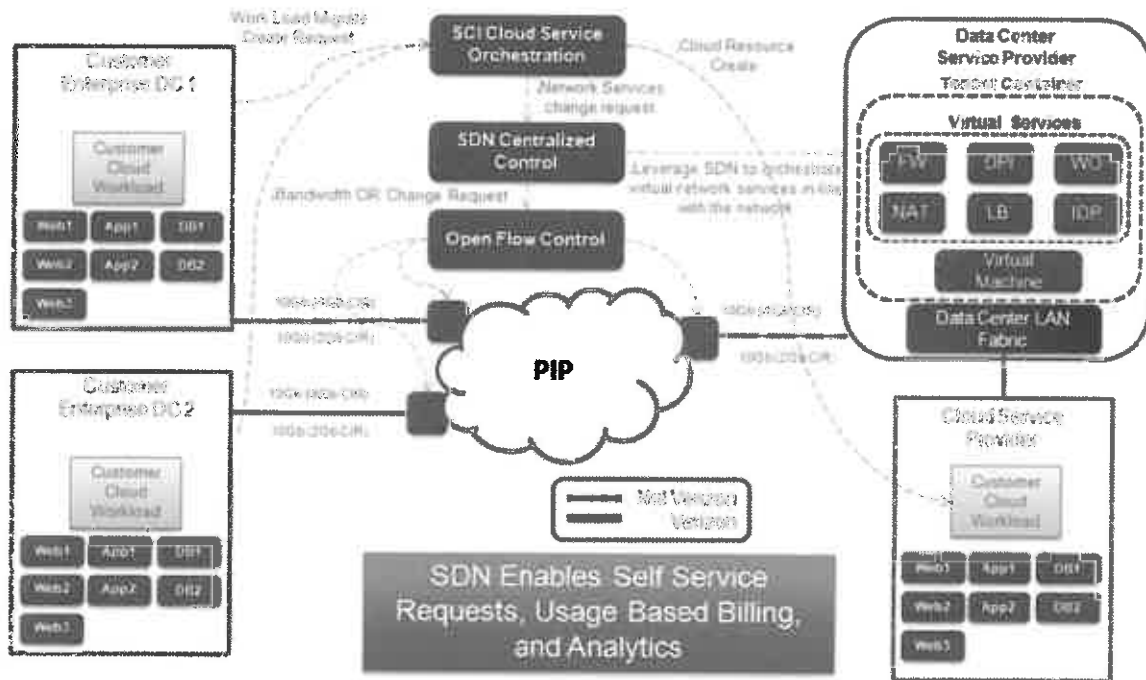
Virtual Networking Services

Verizon plans to use SDN and NFV to improve deployment and management of a variety of traditional hardware appliances through the development of a virtual networking services platform that will eventually include offerings such as virtual security services, virtual WAN optimization, virtual load-balancer, virtual routers, etc. Planned offerings include both an on-premise whitebox solution (vCPE) and hosted platforms built on a custom cloud architecture optimized for running virtualized applications, simplifying deployment and operations for customers and Verizon.

Today, customers typically deploy at least two CPE devices – a network demarcation device for a Layer 2 connection, and a network demarcation device for a Layer 3 domain. These devices typically serve minimal function other than to provide a demarcation point for different network segments. In the future, through SDN and network virtualization technologies, the Layer 3 device's functionality is expected to be virtualized and delivered from the service provider data center, which means that the customer will only need to deploy one device on premise.

Cloud Bursting/Workload Resource Movement

Moving applications between different data centers is a challenge. Utilizing multiple accounts within a single cloud provider for the same enterprise creates connection management challenges. Latency, bandwidth, consistency and security issues are additional concerns for IT teams to manage.



Software-defined Networking Connections

Verizon is seeking to unfold new ways that mitigate the cloud problems of today by utilizing global orchestration and SDN-enabled technology, which will give customer the ability to manage complex global systems behind simple REST APIs (see Figure 3). This will allow customer to manage network connectivity, data flow, and workload resources based on application and analytic programmability within the network. These innovations require a change in the way data is collected, analyzed and the volume rate in which the data is collaborated into meaningful results.

Global Orchestration Platform Model

Verizon’s future deployment strategy is based on a logically centralized platform that customers will use to manage and control private network to public cloud connections and resources. This platform will provide a robust feature set that enables customers to use any cloud/network function available and automatically provision connectivity back to their various branch offices and corporate data centers as needed.

SDN and NFV Enhancements for Service Chaining

Verizon has performed internal proof of concept testing and has started discussions with potential vendors regarding SDN- and/or NFV-based methods to implement service chaining that may become part of internal Verizon infrastructure and/or future offered services (e.g., SCI, Cloudbursting).

Support for service chaining using underlay methods was demonstrated at the Open Network Summit where OpenFlow-controlled switches directed traffic between service functions in the chain. This included cases where the service chain topology can be dynamically modified by the customer. Investigations into approaches where service chaining is done in an overlay method were tested in proof of concept as well as in standards bodies.

Furthermore, proof of concept testing and continuing development for detecting changes in load and scaling the capacity of service functions in response to load, as well as adjusting load balancing and other resources, has also been performed. These technologies may be applied to Cloudbursting customer workload management products in the future.