
JRM TEC, INC.



304-216-1111
rmiller@jrmtec.com
PO BOX 211
Mount Morris PA 15349

September 18, 2017

09/19/17 10:50:05
WV Purchasing Division

PROJECT LOCATION:
West Virginia Veterans Nursing Facility
1 Freedom Way
Clarksburg WV 26301

West Virginia Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

Solicitation Number : CRFQ 0613 VNF1800000003

This proposal provides all labor, material and supervision as required for the installation of a CCTV System. This proposal includes installation of 86 Indigo Vision IP Security Cameras. This proposal is based on the specified RFQ and is a complete turnkey Indigo Vision CCTV System. This proposal includes all programming and labor. Extreme Network POE (Power Over Ethernet) are also induced in this proposal. All Cat6 plenum rated network cable and micron multi-mode fiber optic cable is included.

JRM TEC, INC. is a Indigo Vision Certified Installer

JRM TEC, INC. also is will supervised by a BICSI RCDD (Registered Certified Distribution Designer) on staff.

JRM TEC, INC. has BICSI Certified LEVEL 2 Copper/Fiber Installer on staff.

General Notes:

- All cable placed in the ceiling cavity will be properly supported by J Hooks placed by JRM TEC, Inc.
 - All cable runs will be placed in a workmanlike manner. Cables will be bundled as required with Velcro of the appropriate rating for the installed environment. Plastic cables ties will not be permitted on this project.
 - All labels will be machine generated.
 - Each category 6 cable will be tested..
 - The installation methods employed will be as recommended in the BICSI TDM Methods Manual.
 - All work will be completed by qualified technicians working under the direction of a BICSI Registered Communications Distribution Designer (RCDD).
-

Veterans Nursing Facility CCTV Pricing
Solicitation Number : CRFQ 0613 VNF1800000003

Pricing

Cost of the Proposal

Total Project Cost = \$ \$288,378.48

Ryan Miller – RCDD
Vice President



----- Date: 9/18/2017

Exhibit A - FOR SECURITY CAMERA

Revision Date: 09072017

Item #	Specs	Description	Unit of Measure	Unit Cost	Quantity	Extended Cost
1	13.1.1	Dome Camera Indigo Vision or Equal/Internal (to include installation hardware, fiber cable, mounts)	each	\$2,568.42	29	\$74,484.24
2	13.1.1	Dome Camera Indigo Vision or Equal/External (to include installation hardware, fiber cable, mounts)	each	\$2,662.39	6	\$15,974.34
3	13.1.2	Dome Camera Indigo Vision or Equal/Internal (to include installation hardware, fiber cable, mounts)	each	\$2,661.50	18	\$47,906.91
4	13.1.2	Dome Camera Indigo Vision or Equal/External (to include installation hardware, fiber cable, mounts)	each	\$2,755.46	2	\$5,510.93
5	13.1.3	Dome Camera Indigo Vision or Equal/External (to include installation hardware, fiber cable, mounts)	each	\$3,593.16	12	\$43,117.91
6	13.1.4	360 degree Fish Eye Cameras/Internal (to include installation hardware, fiber cable, mounts)	each	\$2,847.65	3	\$8,542.96
7	13.1.4	360 degree Fish eye Cameras/External (to include installation hardware, fiber cable, mounts)	each	\$2,895.09	4	\$11,580.34
8	13.1.5	Dome Camera Indigo Vision or Equal/External (to include installation hardware, fiber cable, mounts)	each	\$2,755.46	8	\$22,043.71
9	13.1.6	PTZ Dome Camera Indigo Vision or Equal/Ext (to include installation hardware, fiber cable, mounts)	each	\$3,214.74	1	\$3,214.74
10	13.1.7	Network Video Recorders	each	\$44,093.24	2	\$22,046.62
11	13.1.9	Video Management System	each	\$11,909.15	1	\$11,909.15

Total Bid Amount: \$288,378.48

Company: JRM TEC, Inc.

Salesperson: James Ryan Miller

Address: PO BOX 211 102 Peach Alley Mount Morris PA 15349

Phone: 304-216-1111

Email: Rmiller@jrmtec.com

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 §81-5-3) 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: JRM TEC, Inc.

Authorized Signature: *[Signature]* Date: 9/19/2017

State of West Virginia

County of Harrison to-wit:

Taken, subscribed, and sworn to before me this 19th day of September, 2017.

My Commission expires Aug 17, 2021.

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature]
Purchasing Affidavit (Revised 07/01/2012)



West Virginia Ethics Commission



Disclosure of Interested Parties to Contracts

Pursuant to W. Va. Code § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of \$100,000 or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation.

"Interested party" or "Interested parties" means:

- (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
- (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
- (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education; Provided, that for purposes of W. Va. Code § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: www.ethics.wv.gov.

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

Contracting business entity: JRM TEC, Inc.

Address: PO BOX 211 102 Peach Alley Mount Morris, PA 15349

Contracting business entity's authorized agent: James Ryan Miller

Address: PO BOX 211 102 Peach Alley Mount Morris, PA 15349

Number or title of contract: CRFQ 0613 VNF1800000003

Type or description of contract: Closed Circuit Television System CCTV

Governmental agency awarding contract: West Virginia Purchasing Division

Names of each Interested Party to the contract known or reasonably anticipated by the contracting business entity (attach additional pages if necessary):

JRM TEC, Inc.

Tara Rene Miller - President

James Ryan Miller - Vice President

Signature: [Handwritten Signature] Date Signed: 9/19/2017

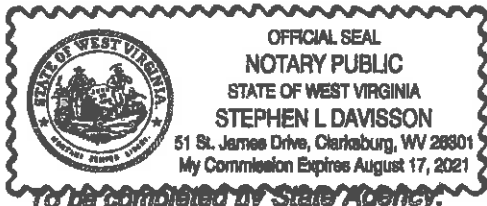
Check here if this is a Supplemental Disclosure.

Verification

State of West Virginia, County of Harrison

I, [Handwritten Signature], the authorized agent of the contracting business entity listed above, being duly sworn, acknowledges that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 19th day of September, 2017



[Handwritten Signature] Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency:

Date submitted to Ethics Commission:

Governmental agency submitting Disclosure:

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. CONTRACTOR'S LICENSE: West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor. West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. If an apparent low bidder fails to submit a license number in accordance with this section, the Purchasing Division will promptly request by telephone and electronic mail that the low bidder and the second low bidder provide the license number within one business day of the request. Failure of the bidder to provide the license number within one business day of receiving the request shall result in disqualification of the bid. Vendors should include a contractor's license number in the space provided below.

Contractor's Name: JRM TEC, Inc.

Contractor's License No.: WV- WV052830

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a contract award document.

2. DRUG-FREE WORKPLACE AFFIDAVIT: W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit an affidavit that the Vendor has a written plan for a drug-free workplace policy. If the affidavit is not submitted with the bid submission, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the affidavit within one business day of the request. Failure to submit the affidavit within one business day of receiving the request shall result in disqualification of the bid. To comply with this law, Vendor should complete the enclosed drug-free workplace affidavit and submit the same with its bid. Failure to submit the signed and notarized drugfree workplace affidavit or a similar affidavit that fully complies with the requirements of the applicable code, within one business day of being requested to do so shall result in disqualification of Vendor's bid. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

2.1. DRUG-FREE WORKPLACE POLICY: Pursuant to W. Va. Code § 21-1D-4, Vendor and its subcontractors must implement and maintain a written drug-free workplace policy that complies with said article. The awarding public authority shall cancel this contract if: (1) Vendor fails to implement and maintain a written drug-free workplace policy described in the preceding paragraph, (2) Vendor fails to provide information regarding implementation of its drug-free workplace policy at the request of the public authority; or (3) Vendor provides to the public authority false information regarding the contractor's drug-free workplace policy.

Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

Subcontractor List Submission (Construction Contracts Only)

Bidder's Name: JRM TEC, Inc.




Check this box if no subcontractors will perform more than \$25,000.00 of work to complete the project.

Subcontractor Name	License Number if Required by W. Va. Code § 21-11-1 et. seq.

Attach additional pages if necessary

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

James Ryan Miller - Vice President 
(Name, Title)
James Ryan Miller - Vice President
(Printed Name and Title)
PO BOX 211 102 Peach Alley Mount Morris PA 15349
(Address)
Phone: 304-216-1111 / Fax: 681 214 1025
(Phone Number) / (Fax Number)
RMILLER@JRMTEC.COM
(email address)

CERTIFICATION AND SIGNATURE: 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.

JRM TEC, INC.

(Company)

James Ryan Miller - Vice President 
(Authorized Signature) (Representative Name, Title)

James Ryan Miller - Vice President
(Printed Name and Title of Authorized Representative)

9/18/17
(Date)

Phone: 304-216-1111 / Fax: 681 214 1025
(Phone Number) (Fax Number)



Western Surety Company

BID BOND
(Percentage)

Bond Number: 63351170

KNOW ALL PERSONS BY THESE PRESENTS, That we JRM Tec Inc. of
PO Box 211, 102 Peach Alley, Mount Morris, PA 15349, hereinafter
referred to as the Principal, and Western Surety Company,
as Surety, are held and firmly bound unto West Virginia Purchasing Division
of 2019 Washington E., Charleston, WV 25305,
hereinafter referred to as the Obligee, in the sum of Ten (10 %) percent of the greatest
amount bid, for the payment of which we bind ourselves, our legal representatives, successors and assigns,
jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted or is about to submit a proposal to Obligee on a contract for
West Virginia Veterans Nursing Facility Closed Circuit Television System CRFO
0613 VIN1800000003

NOW, THEREFORE, if the said contract be awarded to Principal and Principal shall, within such time as may be
specified, enter into the contract in writing and give such bond or bonds as may be specified in the bidding or
contract documents with surety acceptable to Obligee; or if Principal shall fail to do so, pay to Obligee the
damages which Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this
obligation shall be void; otherwise to remain in full force and effect.

SIGNED, SEALED AND DATED this 19th day of October, 2017



JRM Tec Inc.
(Principal)

By _____ (Seal)

Western Surety Company
(Surety)

By Heather Marie Mc Coy (Seal)
Heather Marie Mc Coy Attorney-in-Fact

Western Surety Company

POWER OF ATTORNEY - CERTIFIED COPY

Bond No. 63351170

Know All Men By These Presents, that WESTERN SURETY COMPANY, a corporation duly organized and existing under the laws of the State of South Dakota, and having its principal office in Sioux Falls, South Dakota (the "Company"), does by these presents make, constitute and appoint Heather Marie Mc Coy

its true and lawful attorney(s)-in-fact, with full power and authority hereby conferred, to execute, acknowledge and deliver for and on its behalf as Surety, bonds for:

Principal: Jrm Tec Inc.

Obligee: West Virginia Purchasing Division

Amount: \$1,000,000.00

and to bind the Company thereby as fully and to the same extent as if such bonds were signed by the Senior Vice President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said attorney(s)-in-fact may do within the above stated limitations. Said appointment is made under and by authority of the following bylaw of Western Surety Company which remains in full force and effect.

"Section 7. All bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

All authority hereby conferred shall expire and terminate, without notice, unless used before midnight of January 17th, 2018, but until such time shall be irrevocable and in full force and effect.

In Witness Whereof, Western Surety Company has caused these presents to be signed by its Vice President, Paul T. Bruflat, and its corporate seal to be affixed this 19th day of October, 2017.

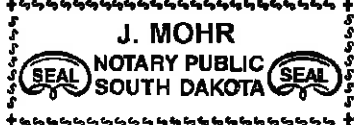


WESTERN SURETY COMPANY

Paul T. Bruflat

Paul T. Bruflat, Vice President

On this 19th day of October, in the year 2017, before me, a notary public, personally appeared Paul T. Bruflat, who being to me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of WESTERN SURETY COMPANY and acknowledged said instrument to be the voluntary act and deed of said corporation.



My Commission Expires June 23, 2021

I the undersigned officer of Western Surety Company, a stock corporation of the State of South Dakota, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable, and furthermore, that Section 7 of the bylaws of the Company as set forth in the Power of Attorney is now in force.

In testimony whereof, I have hereunto set my hand and seal of Western Surety Company this 19th day of October, 2017.

WESTERN SURETY COMPANY

Paul T. Bruflat

Paul T. Bruflat, Vice President

To validate bond authenticity, go to www.cnasurety.com > Owner/Obligee Services > Validate Bond Coverage.



State of West Virginia
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT
West Virginia Code §21-1D-5

STATE OF WEST VIRGINIA,
COUNTY OF MONONGALIA, TO-WIT:

I, James Ryan Miller, after being first duly sworn, depose and state as follows:

- I am an employee of JRM TEC, Inc.; and,
(Company Name)
- I do hereby attest that JRM TEC, Inc.
(Company Name)

maintains a written plan for a drug-free workplace policy and that such plan and policy are in compliance with **West Virginia Code §21-1D**.

The above statements are sworn to under the penalty of perjury.

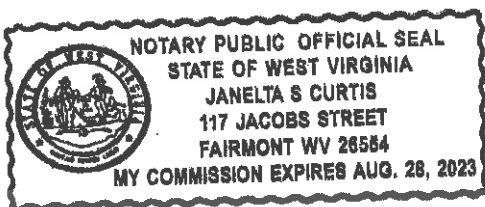
Printed Name: James Ryan Miller
 Signature: [Handwritten Signature]
 Title: Vice President
 Company Name: JRM TEC, INC.
 Date: 9/18/2017

Taken, subscribed and sworn to before me this 18 day of September, 2017.

By Commission expires 8-28-23

(Seal)

[Handwritten Signature]
 (Notary Public)



ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: VNF1800000003

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.

JRM TEC, Inc.

Company



Authorized Signature

9/18/2017

Date

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

Revised 6/8/2012

REQUEST FOR QUOTATION
CRFQ VNF1800000003
Closed Circuit Television System

11. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

11.1 Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

11.2 Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

11.3 Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

11.4 Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

11.5 Vendor shall inform all staff of Agency's security protocol and procedures.

12. MISCELLANEOUS:

12.1 Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: James Ryan Miller

Telephone Number: 304-216-1111

Fax Number: 681-214-1025

Email Address: RMILLER@JRMTEC.COM

CONTRACTOR LICENSE

Authorized by the

West Virginia Contractor Licensing Board

Number: WV052830

Classification:

LOW VOLTAGE SYSTEMS
COMMUNICATION & SOUND

JRM TEC INC
DBA JRM TEC INC
PO BOX 211
MT MORRIS, PA 15349


Date Issued

Expiration Date

OCTOBER 03, 2016

OCTOBER 03, 2017


Authorized Company Signature


Chair, West Virginia Contractor
Licensing Board

**WEST VIRGINIA
CONTRACTOR
LICENSING
BOARD**

This license, or a copy thereof, must be posted in a conspicuous place at every construction site where work is being performed. This license number must appear in all advertisements, on all bid submissions and on all fully executed and binding contracts. This license cannot be assigned or transferred by licensee. Issued under provisions of West Virginia Code, Chapter 21, Article 11.

Building Industry Consulting Service International

THE PROFESSIONAL DESIGNATION OF

**REGISTERED COMMUNICATIONS
DISTRIBUTION DESIGNER®**

IS AWARDED TO

James R Miller

by BICSI in recognition of having successfully completed BICSI's registration and examination requirements.

Designation Number: [REDACTED]

Registration Start Date: 1/1/2016

Registration End Date: 12/31/2018



Bicsi
RCDD
Since

5/10/2009

Chair, Registrations & Credentials Supervision Committee

Director of Credentialing



IndigoVision

BX RANGE

30x
Optical



4MP PTZ Dome Camera

High-end: performance, not price tag.

With BX 4MP PTZ Dome Cameras you get supreme connectivity and flexibility, combined with great video and audio. You also get maximum reliability, and the other significant benefits of IndigoVision's Distributed Network Architecture. BX 4MP PTZ Dome Cameras deliver a different dimension of safety when combined with IndigoVision's Control Center.

Key Features

SENSOR



COMPRESSION



INTELLIGENCE



OTHER



PHYSICAL

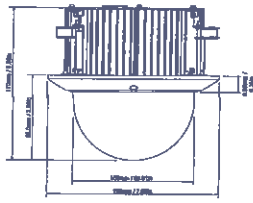


Product Codes

BX520 4MP PTZ Dome Camera	Camera
In-Ceiling 4MP PTZ Dome	611500
Environmental Pendant 4MP PTZ Dome	611560

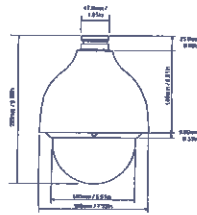
Product Code 68xxxx also available to order consisting of 61xxxx Product Code plus Enhanced Management Software License.

Dimensions - In-Ceiling PTZ Dome



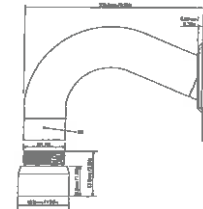
View on Side Face

Dimensions - Environmental Pendant PTZ Dome

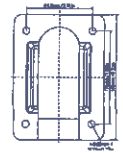


View on Side Face

Dimensions - Wall Mount



View on Side Face



View on Front Face

Specification

Camera Features	
Sensor	1/2.8" Progressive CMOS
Active Pixels (h x v)	4MP (2560 x 1440)
Horizontal Resolution	> 900 TVL
Minimum Sensitivity	Day: 0.05 Lux (colour) Night: 0.01 Lux (mono) 30 IRE, F1.6, 1/10s shutter
Dynamic Range	WDR 100dB Max
Gain Control	Auto/Manual setting
Back Light Compensation	On/Off
White Balance Mode	Auto/Manual
Day/Night	True Day/Night with Mechanical IR Cut Filter
Video Resolution	2560 x 1440 pixels (4MP); 1920x1080 pixels (1080p); 1280x720 pixels (720p); 720x576 pixels (D1); 352x288 pixels (SIF)
Signal/Noise Level	> 50dB
Lens Options	4.3mm - 129mm Horizontal view angle 66.5°(W) 3 25° (T), F1.6 to F4.4, Auto focus with manual override
Zoom	30x optical + 10x digital
Iris Control	Auto with manual override
Shutter	Rolling; Auto from 1 - 1/10000 sec
Exposure Control	Auto/Manual/Slow AE/Shutter-priority/Iris-priority
Video Compression	Full frame rate, full colour: H.264/MJPEG ; up to 60fps (ISO 14496-10)
Video Bit Rate	User-configurable bit rates from 64Kbps up to 8Mbps
Video Multi-Streaming	Up to 32Mbps total video output; Unlimited multicast connections. Up to four 8Mbps unicast connections; Up to sixteen 1Mbps unicast connections
Video Multi-Encoder	Up to three simultaneous resolutions including: 4MP (30fps), 1080p (60fps), 720p (30fps), D1 (30fps), SIF (30fps)
Video Analytics	Motion Detection, Hooded, Tripwire, Intrusion
Audio Compression	G 711
Audio Bit Rate	32Kbps per channel
Audio Resolution	Full Duplex 8KHz sample rate. Mono Input, Mono Output
Audio Input	Line in
Audio Output	Line out
Binary Input/Output	2 Pull up inputs for non powered contacts; 1 solid state opto-isolated relay output, Max 24V, 500mA
Network Interface	IEEE802.3 and IETF standards: 10/100 Base-T Ethernet, TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, QoS, DHCP
Network Security	HTTPS / IP Filter / IEEE 802.1x
Time	Embedded real-time clock, NTP client
SD Storage	microSDHC 128GB support (card not included)*
Regulatory	EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, FCC Part 15 Subpart B Class A, EN 50130-4, UL 60950-1, UL 60950-22, AS/NZS CISPR 24, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11
IndigoVision Software Requirements	Control Center v13.2 or later
ONVIF	Profile S

PTZ Control			
Presets	300	Pan Range	360° Continuous Rotation
Presets Tours	8	Tilt Range	180°
Pattern/Mimic Tours	5	Pan/Tilt Speed	Pan Speed - 0.5-350°/s. Tilt Speed - 0.5-250°/s
Privacy Zones	24 User Defined	Pan/Tilt Warranty	Moving part warranty limited to 2 million Pan and Tilt Operations

Camera Features	In-Ceiling	Environmental Pendant
Dimensions/Weight	198mm (dia) x 170mm (h) and 2.2Kg / 7.80in (dia) x 6.69in (h) and 4.850lb	186mm (dia) x 253mm (h) and 2.5Kg / 7.32in (dia) x 9.25in (h) and 5.512lb
Housing	Vandal resistant aluminium alloy and Polycarbonate/ABS housing and clear polycarbonate dome including 400mm cable bundle	Vandal resistant aluminium alloy housing and clear polycarbonate dome including 500mm cable bundle
Protection Rating	IK10 (IEC62262)	IP67/IK10 (IEC 62262)
Electrical	PoE+ (802.3at Class 4) or 24V AC, 13W. Power supply ordered separately (Product code: 130176)	Camera Only: PoE+ (802.3at Class 4) or 24V AC, 13W. Power supply ordered separately (Product code: 130176) Camera with Heater: PoE+ (802.3at Class 4) or 24V AC, 23W. Power supply ordered separately (Product code: 130176)
Operating Temperature	-10°C to 60°C (14°F to 140°F)	-20°C to 60°C (-4°F to 140°F) (PoE+ Power); -40°C to 60°C (-40°F to 140°F) (24V AC Power)
Cold Start	-10°C (14°F)	-20°C (-4°F)
Supplied Accessories	N/A	Wall Mount bracket

*SDCard Storage independent of IndigoVision's NVRs.



IndigoVision



Ultra 2K Fixed Dome Camera

Capture every detail with ultra-high resolution

With best in class performance, the IndigoVision Ultra 2K Fixed Dome Camera delivers rich, Full HD video and image clarity, in all lighting conditions. IndigoVision's SMART.core technology gives highly optimised H.264 compression and ACF+, reducing storage costs by up to 95%.

Key Features

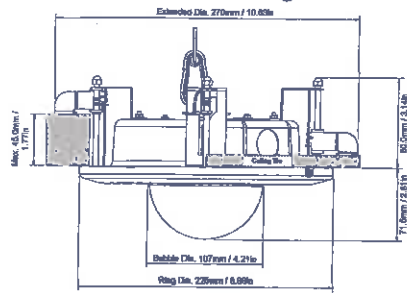
SENSOR	ULTRA 2K	Day/Night	Low Light	WDR			
	COMPRESSION	H.264	GUARANTEED 30fps	FPGA	AAC		
		INTELLIGENCE	ACF	ACF+	Analytics	Motion Detection	
			OTHER	DNA	PoE	Firewall	Onvif
PHYSICAL				Outdoor	IK10	Low Temp	High Temp

Product Codes

Ultra 2K Fixed Dome Camera (NTSC)	Camera
Ultra 2K In-Ceiling Fixed Dome, 3-9mm Lens	512426
Ultra 2K In-Ceiling Fixed Dome, 10-23mm Lens	512428
Ultra 2K Internal Fixed Dome, 3-9mm Lens	512416
Ultra 2K Internal Fixed Dome, 10-23mm Lens	512418
Ultra 2K Environmental Vandal Resistant Fixed Dome, 3-9mm Lens	512446
Ultra 2K Environmental Vandal Resistant Fixed Dome, 10-23mm Lens	512448

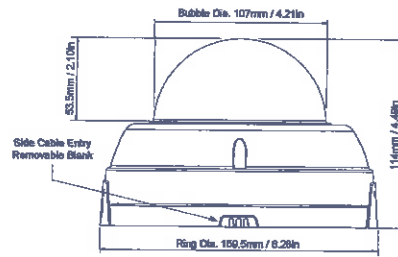
Product Code 512448 also available to order consisting of 512448 Product Code plus Enhanced Management Software License.

Dimensions: In-Ceiling



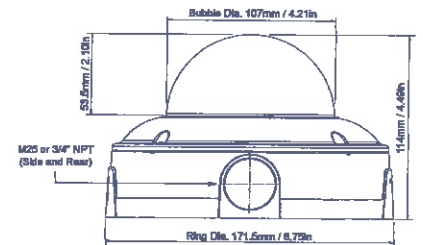
View on Side Face

Dimensions: Internal



View on Side Face

Dimensions: Environmental Vandal Resistant



View on Side Face

Specification

Camera Features	
Sensor	1/3" Progressive CMOS
Active Pixels (HxV)	2MP (1920 x 1080)
Horizontal Resolution	> 850 TVL
Minimum Sensitivity	Day: 0.05 lux (color). Night: 0.005 lux (mono). 30 IRE, F1.2, 1/15s shutter Day: 0.3 lux (color). Night: 0.03 lux (mono). 50 IRE, F1.2, 1/30s shutter
Dynamic Range	WDR 120dB Max
Gain Control	Auto setting across a 42dB range
Back Light Compensation	On/Off
White Balance Mode	Auto/Indoor/Outdoor/Manual/Auto One Push
Day/Night	True Day/Night with Mechanical IR Cut Filter
Video Resolution	HD 1080p: 1920 x 1080 pixels, 720p: 1280 x 720 pixels, SD: 960 x 540 pixels, 640 x 360 pixels; 16:9 ratio
Signal/Noise Level	> 39dB
Lens Options	Standard 3 to 9mm, Horizontal view angle 108.6° (W) 34.8° (T), F1.2, P-iris, Remote Zoom/Focus Telephoto 10-23mm Horizontal view angle 30.8° (W) 13.6° (T), F1.6, P-iris, Remote Zoom/Focus
Zoom	3x optical standard; 2.3x optical telephoto
Iris Control	Automatic P-Iris with Manual override
Shutter	Rolling; Auto from 1/1 to 1/50,000 sec
Exposure Control	Auto Iris/Auto Shutter/Slow AE
Gimbal Adjustment	3 axis adjustment
Video Compression	Full frame rate, full color: H.264 (ISO 14496-10), 30fps guaranteed
Video Bit Rate	User-configurable from 32Kbps up to 8Mbps
Video Multi-Streaming	Up to 32Mbps total video output, Unlimited multicast connections. Up to seven 4Mbps unicast connections, Up to sixteen 1Mbps unicast connections
Video Multi-Encoder	Up to two simultaneous resolutions with guaranteed frame rate including: 1080p (30fps), SD (30fps)
Video Analytics	Standard: ACF, ACF+, Motion Detection, Hooded Advanced: Dual Tripwire, Congestion, Counterflow, Museum*
Audio Compression	AAC-LC (ISO 14496-3)
Audio Bit Rate	User-configurable bit rates from 32Kbps to 160Kbps per channel
Audio Protocol	RTP (RFC 3640)
Audio Dual Encoder	Encoder A: 1 Stream Configuration plus Encoder B: 1 Stream Configuration
Audio Resolution	Full Duplex 16kHz, 16 Bit Mono/Stereo Input, Mono Output
Audio Input	Stereo / Mono line in terminal block connector. Nominal voltage: 1V p-p, Mic 30mV p-p. Mic type: dynamic or electret
Audio Output	Mono line out terminal block connector. 1V p-p, Minimum load impedance: 16 Ohms
Binary Input/Output	2 Pull up inputs for non powered contacts, 1 solid state opto-isolated relay output @500mA, LED output @20mA
Data Input/Output	1 Console port: RS232 up to 115.2 Kbps*
Privacy Zones	8 User Defined
Network Interface	IEEE802.3 and IETF standards: 10/100 Base-T Ethernet, TCP, UDP, RTP, ICMP, IGMP, SNMP, DHCP, NTP, DNS, HTTP, HTTPS, SSH
Network Security	HTTPS / Embedded Linux Firewall / Salted passwords, with MD5 encryption / IEEE 802.1x
Time	Embedded real-time clock, NTP client with battery backup
Regulatory	EN 55022 - Class A, EN 55024, EN 60068-2-29, EN 60068-2-1 & 2, EN 60068-2-30, EN 60068-2-6 & 64, CFR47 Part 15 subpart B -Class A, UL60950-1*, UL2043**, UL60950-22***, UL2802
IndigoVision Software Requirements	Control Center v11.0 or later
ONVIF	Profile S**

Camera Features	In-Ceiling	Internal	Environmental Vandal Resistant
Dimension/Weight	225mm (ring dia.) x 151.5mm (h) (71.5mm below ceiling) and 1.1Kg / 8.85in (dia.) x 5.96in (h) (2.82in below ceiling) and 2.425lb	159.5mm (dia.) x 114mm (h) and 0.85Kg / 6.28in (dia.) x 4.49in (h) and 1.873lb	171.5mm (dia.) x 114mm (h) and 1.1Kg / 6.75in (dia.) x 4.49in (h) and 2.425lb
Housing	Aluminium with polycarbonate dome	Polycarbonate/ABS with polycarbonate dome	Diecast aluminium alloy with polycarbonate dome
Protection Rating	N/A	N/A	IP66, IK10 (IEC 62262), NEMA 250 4X
Electrical	PoE (802.3af Class 0) or 24V AC/DC @ 0.4A, 9.6W max. Power supply ordered separately (Product code: 110004, 110061, 110062)	PoE (802.3af Class 0) or 24V AC/DC @ 0.4A, 9.6W max. Power supply ordered separately (Product code: 110004, 110061, 110062)	Camera only: PoE (802.3af Class 0) or 24V AC/DC @ 0.4A, 9.6W. Camera including heater: 24V AC/DC @ 1.33A, 32W. Power supply ordered separately (Product code: 110060)
Operating Temperature	-10°C to 50°C (14°F to 122°F)	-10°C to 50°C (14°F to 122°F)	PoE powered: -10°C to 55°C (14°F to 131°F) External PSU: -40°C to 55°C (-40°F to 131°F)
Cold Start	0°C (32°F)	0°C (32°F)	-30°C (-22°F)

* Internal and In-Ceiling Dome only. ** In-Ceiling Dome only. *** Environmental Vandal Resistant Dome only. * Advanced Video Analytics require a license. ** Firmware upgrade is required for ONVIF Conformance.



IndigoVision

PTZ Camera Mount & Accessory Matrix

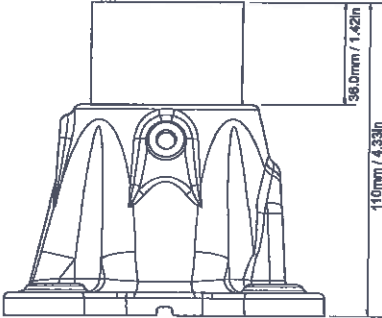
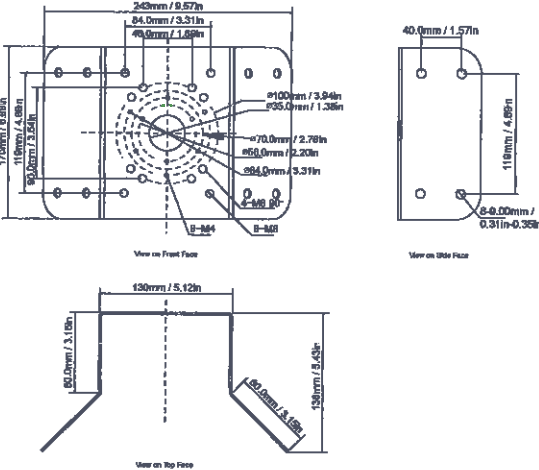
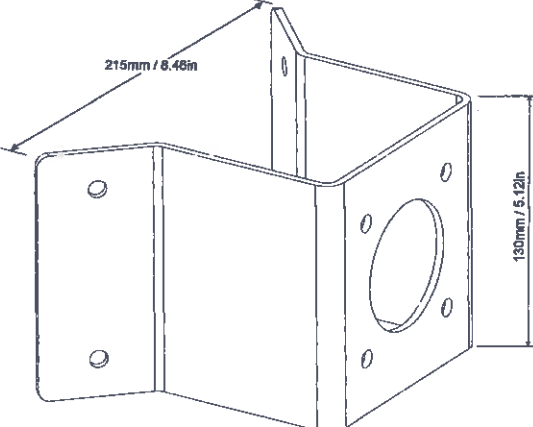
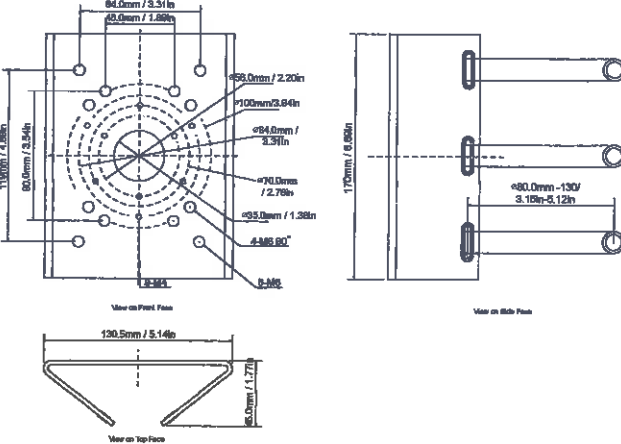
Mount/Accessory	BX Range, BX510 HD PTZ Dome		BX Range, BX520 HD Adaptive IR PTZ Dome		BX Range, BX520 4MP PTZ Dome		Ultra Range, Ultra 2K PTZ Dome	
	Internal	External	Standard	In-Ceiling	Pendant	In-Ceiling	Pendant	
In-Ceiling Mount	110245	-	-	-	-	-	-	
Wall Mount	-	110084	130181*	-	130173	-	110084	
Pendant Swan-Neck Mount	-	110085	-	-	-	-	110085	
Vertical Pole Mount	-	110086	130182	-	130174	-	110086	
1.5" NPT Adaptor (Male)	-	110087	130175	-	130185	-	110087	
1.5" NPT Adaptor (Female)	-	110088	-	-	-	-	110088	
Corner Mount Adaptor [†]	-	110082	130184	-	130184	-	110082	
Pole Mount Adaptor [†]	-	110096 (Black) ^{AA} 110196 (Grey) ^{AA}	130183	-	130183	-	110096 (Black) ^{AA} 110196 (Grey) ^{AA}	
Junction Box	-	-	130171	-	130171	-	-	
Power Junction Box	-	-	130172	-	130172	-	-	
Power Supplies	120006; 130176	120006; 130176	130176	130176	130176	110060; 130176	110060; 130176	
Cables	-	0.6m - 110172 3m - 110173 9m - 110174	-	-	-	-	0.6m - 110172 3m - 110173 9m - 110174	

* Included with camera purchase. † Adaptors are compatible with the Wall Mount. AA The Pole Mount Adaptor can take a 0.6m strap.

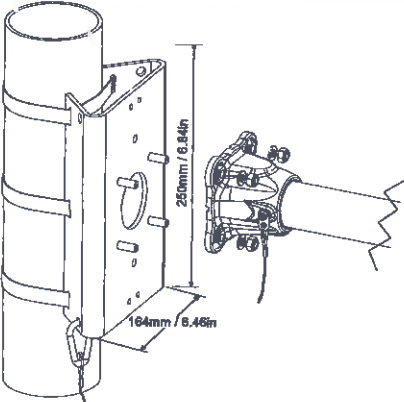
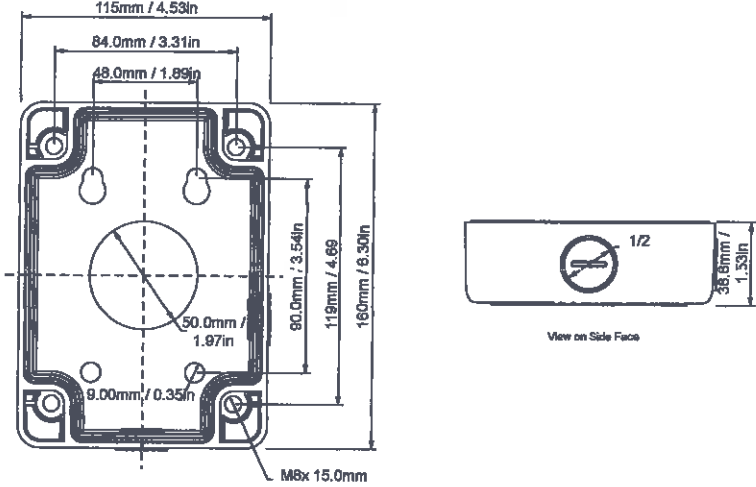
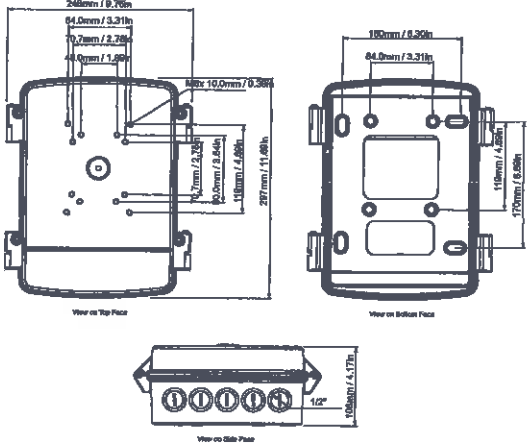
IndigoVision PTZ Camera Mount & Accessory Matrix Appendix - Page 1

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Wall Mount	BX Range		BX Range BX520 Std - 130181
Wall Mount	BX Range		BX Range BX520 Pen - 130173
Pendant Wall Mount	Ultra Range BX Range		Ultra Range Pen - 110084 BX Range BX510 Ext - 11084
Pendant Swan-Neck Mount	Ultra Range BX Range		Ultra Range Pen - 110085 BX Range BX510 Ext - 110085

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pendant Vertical Pole Mount	BX Range		<p>BX Range BX520 Std - 130182 Pen - 130174</p>
Pendant Vertical Pole Mount	Ultra Range BX Range		<p>Ultra Range Pen - 110086 BX Range BX510 Ext - 110086</p>
1.5" NPT Adaptor (Male)	BX Range		<p>BX Range BX520 Std - 130175</p>
1.5" NPT Adaptor (Male)	BX Range		<p>BX Range BX520 Pen - 130185</p>
1.5" NPT Adaptor (Male)	Ultra Range BX Range		<p>Ultra Range Pen - 110087 BX Range BX510 Ext - 110087</p>

Mount Name	Camera Range	Dimensional Drawing	Product Codes
1.5" NPT Adaptor (Female)	Ultra Range BX Range		<p>Ultra Range Pen - 110088</p> <p>BX Range BX510 Ext - 110088</p>
Corner Mount Adaptor	BX Range		<p>BX Range BX520 Std - 130184 Pen - 130184</p>
Corner Mount Adaptor	Ultra Range BX Range		<p>Ultra Range Pen - 110082</p> <p>BX Range BX510 Ext - 110082</p>
Pole Mount Adaptor	BX Range		<p>BX Range BX520 Std - 130183 Pen - 130183</p>

IndigoVision PTZ Camera Mount & Accessory Matrix Appendix - Page 4

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pole Mount Adaptor	Ultra Range BX Range		<p>Ultra Range Pen - 110096 (Black) Pen - 110196 (Grey)</p> <p>BX Range BX510 Ext - 110096 (Black) Ext - 110196 (Grey)</p>
Junction Box	BX Range		<p>BX Range BX520 Std - 130171 Pen - 130171</p>
Power Junction Box	BX Range		<p>BX Range BX520 Std - 130172 Pen - 130172</p>

Power Supplies

Product Code	Input Voltage	Input Current (Max)	Input Connector	Output Voltage	Output Current (Max)	Output Connector	Operating Temperature Range	Dimensions (D x W x H)
110060	100-240VAC	1.9A	IEC320-C14	24V DC	3.33A	Bare Wires	32°F to 122°F	168mm x 78.0mm x 45.0mm / 6.61in x 3.07in x 1.77in
130176	100-240VAC	2.0A	IEC320-C14	56V DC	0.67A	RJ45 Female Connector	-4°F to 104°F	168mm x 80.0mm x 44.0mm / 6.54in x 3.15in x 1.73in
120006	100-240VAC	2.0A	IEC320-C14	30V DC	4.0A	Bare Wires	32°F to 104°F	148mm x 59mm x 32mm

Cables

Camera Range	Product Code	Description
Ultra Range + BX510	110172	Cable assembly and gland (0.6m)
	110173	Cable assembly and gland (3m)
	110174	Cable assembly and gland (9m)



IndigoVision

Fisheye Camera Mount & Accessory Matrix

BX Range, 6MP/12MP Fisheye



Mount/Accessory	Standard
Wall Mount	130081
Vertical Pole Mount	130082
Corner Mount Adaptor	130184
Pole Mount Adaptor	130083
Junction Box	130071
Power Supply	110064; 130176

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Wall Mount	BX Range	<p>134mm / 5.28in 187.5mm / 7.38in 46.0mm / 1.89in 151mm / 5.94in 131mm / 5.16in 3-M4 120° 37.0mm / 1.46in G1 1/2</p> <p>View on Front Face View on Side Face View on Back Face View on Bottom Face View on Side Face</p>	130081
Vertical Pole Mount	BX Range	<p>133.5mm / 5.26in 100mm / 3.94in 4-10.0mm / 0.16in-0.39in 151mm / 5.94in 131mm / 5.16in 3-M4 120° 235.0mm / 9.27in 37.0mm / 1.46in 18.0mm / 0.71in G1 1/2</p> <p>View on Top Face View on Bottom Face View on Side Face</p>	130082
Corner Mount Adaptor	BX Range	<p>243mm / 9.57in 84.0mm / 3.31in 46.0mm / 1.89in 170mm / 6.69in 119mm / 4.69in 90.0mm / 3.54in 100mm / 3.94in 93.0mm / 3.69in 70.0mm / 2.76in 66.0mm / 2.60in 84.0mm / 3.31in 4-M8 80° 8-M4 8-M8 40.0mm / 1.57in 119mm / 4.69in 8-9.00mm / 0.31in-0.35in 130mm / 5.12in 80.0mm / 3.15in 138mm / 5.43in</p> <p>View on Front Face View on Side Face View on Top Face</p>	130184

IndigoVision Fisheye Camera Mount & Accessory Matrix Appendix - Page 2

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pole Mount Adaptor	BX Range	<p>67.0mm / 3.43in 76.0mm / 2.99in 48.0mm / 1.89in 80.0mm / 1.18in 28.0mm / 1.02in 90.0mm / 3.54in 117.5mm / 4.63in 4-M4 4-M6-8H</p> <p>View on Front Face</p> <p>View on Side Face</p> <p>View on Top Face</p>	130083
Junction Box	BX Range	<p>155mm / 6.10in 130.0mm / 5.11in 119.5mm / 4.70in 118.2mm / 4.70in 155mm / 6.10in 3-M4 3/4" Thread (Side & Rear)</p> <p>View on Top Face</p> <p>View on Side Face</p> <p>View on Bottom Face</p> <p>36.0mm / 1.5in 48.0mm / 1.89in 98.0mm / 3.89in 4-M4</p>	130071


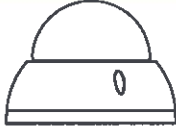
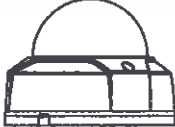

Power Supplies

Product Code	Input Voltage	Input Current (Max)	Input Connector	Output Voltage	Output Current (Max)	Output Connector	Operating Temperature Range	Dimensions (D x W x H)
110064	100-240VAC	0.8A	IEC320-C14	12V DC	2.50A	2 Pin Female Connector	0°C to 50°C / 32°F to 122°F	118mm x 52.0mm x 35.0mm / 4.65in x 2.05in x 1.38in
130176	100-240VAC	2.0A	IEC320-C14	56V DC	0.67A	RJ45 Female Connector	-20°C to 40°C / -4°F to 104°F	166mm x 80.0mm x 44.0mm / 6.54in x 3.15in x 1.73in

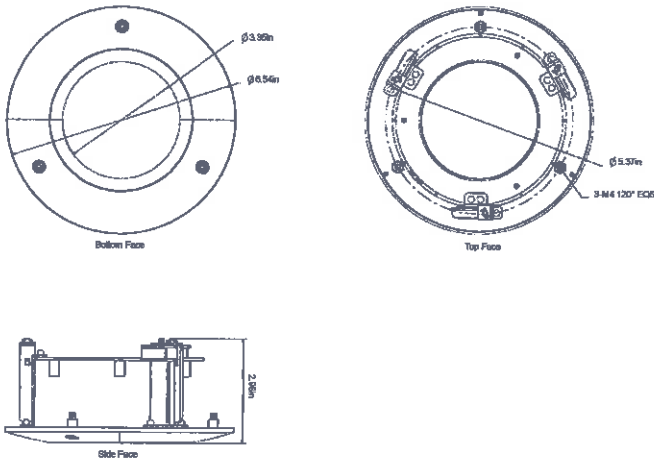
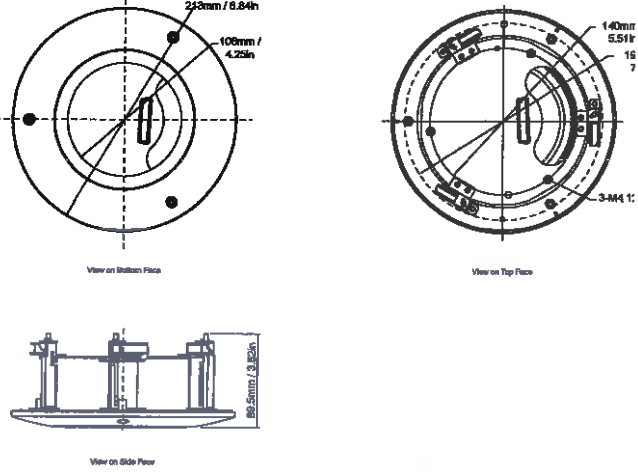
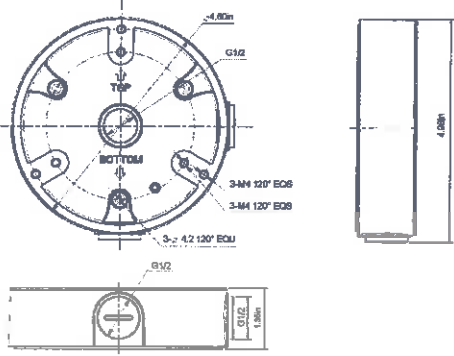
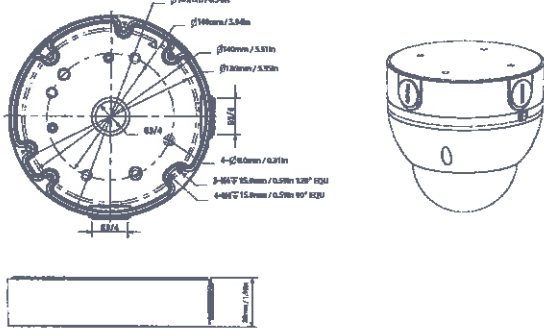


IndigoVision

Dome Camera Mount & Accessory Matrix

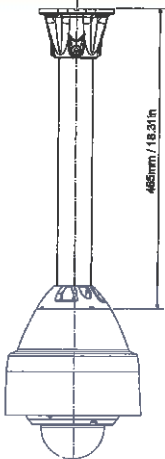
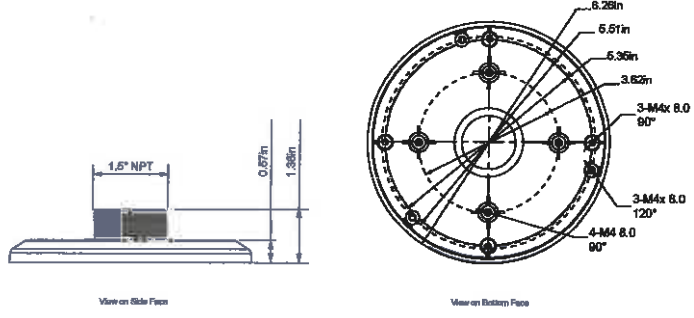
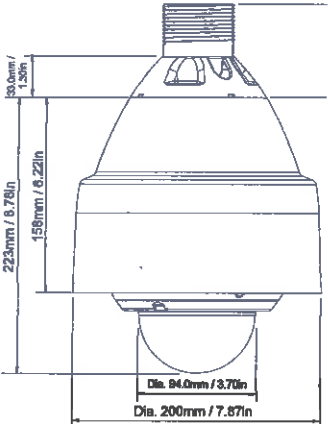
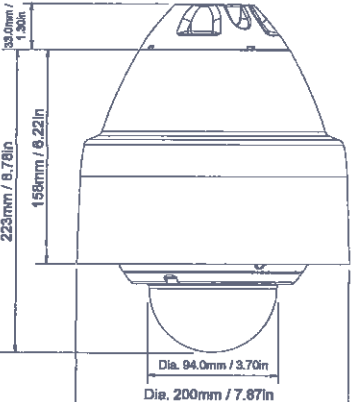
	GX Range, GX420 HD Minidome	GX Range, GX420 HD Pan/Tilt Minidome	BX Range, BX420 Minidome Cameras	Ultra Range, Ultra 2K Fixed Dome		
						
Mount/Accessory	Vandal Resistant	Vandal Resistant	Vandal Resistant	Environmental Vandal Resistant	Internal	Vandal Resistant
In-Ceiling	130013	130013	130180, 130074			
Exit Collar	130011	130011	130072			
Wall Mount	130012	130018	-			
Bracket Wall Mount						110160
Pendant Wall Mount*						110020
Pendant Swan-Neck Mount*						110022
Pendant Vertical Pole Mount*			130073			110024
1.5" NPT Pendant Mount (Male)*			130075			110027
1.5" NPT Pendant Mount (Female)*						110028
Corner Mount Adaptor**	130184	130184	130184			110082
Pole Mount Adaptor*	130083, 130183	130083, 130183	130083, 130183			110096 (Black) [^] 110196 (Grey) [^]
Power Supply	110064; 130176	110064, 130176	110064, 130176		110004, 110062, 130176	110060
Cable						6m - 110171

* Adaptors are compatible with the Pendant Wall Mount + All Dome Pendant Mounts include a Pendant Sun Shroud as standard ^ The Pole Mount Adaptor can take a 0.5in strap
 ** Multiple poles can be connected to create lengths in multiples of 250mm

Mount Name	Camera Range	Dimensional Drawing	Product Codes
In-Ceiling Mount	GX Range	 <p>Bottom Face</p> <p>Top Face</p> <p>Side Face</p> <p>Dimensions: $\phi 3.95in$, $\phi 6.94in$, $\phi 5.37in$, 3-M4 120° ECG, 2.98in</p>	GX Range GX420 V.R - 130013
In-Ceiling Mount	BX Range	 <p>View on Bottom Face</p> <p>View on Top Face</p> <p>View on Side Face</p> <p>Dimensions: 242mm / 9.54in, 109mm / 4.29in, 140mm / 5.51in, 19, 7, 3-M4 1°, 89.5mm / 3.52in</p>	BX Range BX420 V.R - 130180 E.V.R - 130074
Exit Collar	GX Range	 <p>TOP</p> <p>BOTTOM</p> <p>Side View</p> <p>Dimensions: 4.82in, G1/2, 3-M4 120° ECG, 3- 4.2 120° ECG, G1/2, 1.58in</p>	GX Range GX420 V.R - 130011
Exit Collar	BX Range	 <p>TOP</p> <p>Side View</p> <p>Dimensions: $\phi 163mm / 6.38in$, $\phi 116mm / 4.54in$, $\phi 106mm / 4.17in$, $\phi 102mm / 3.97in$, 8.54in, 4-$\phi 40mm / 1.57in$, 3-M4 120° ECG / 0.39in 120° ECG, 4-M4 120° ECG / 0.39in 120° ECG, 1.58in</p>	BX Range BX420 V.R - 130072 E.V.R - 130072

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Wall Mount	GX Range		GX Range GX420 Minidome V.R - 130012
Wall Mount	GX Range		GX Range GX420 Pan/Tilt Minidome V.R - 130018
Wall Mount	BX Range		BX Range BX420 V.R - 130072 E.V.R - 130072
Bracket Wall Mount	Ultra Range		Ultra Range (Ultra 2K) V.R - 110160

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pendant Wall Mount	Ultra Range		Ultra Range (Ultra 2K) V.R - 110020
Pendant Swan-Neck Mount	Ultra Range		Ultra Range (Ultra 2K) V.R - 110022
Pendant Vertical Pole Mount	BX Range		BX Range BX420 V.R - 130073 E.V.R - 130073

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pendant Vertical Pole Mount	Ultra Range		Ultra Range (Ultra 2K) V.R - 110024
1.5" NPT Pendant Mount (Male)	BX Range		BX Range BX420 V.R - 130075 E.V.R - 130075
1.5" NPT Pendant Mount (Male)	Ultra Range		Ultra Range (Ultra 2K) V.R - 110027
1.5" NPT Pendant Mount (Female)	Ultra Range		Ultra Range (Ultra 2K) V.R - 110028

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Corner Mount Adaptor	GX Range, BX Range	<p>243mm / 9.57in 84.0mm / 3.31in 48.0mm / 1.89in 170mm / 6.69in 118mm / 4.68in 96.5mm / 3.84in 40.0mm / 1.57in 118mm / 4.68in 8-8.00mm / 0.31in-0.35in 100mm / 3.94in 65.0mm / 2.56in 70.0mm / 2.76in 58.0mm / 2.28in 84.0mm / 3.31in 4-M8-90° 8-M8 130mm / 5.12in 80.0mm / 3.15in 80.0mm / 3.15in 138mm / 5.43in View on Front Face View on Side Face View on Top Face</p>	<p>GX Range GX420 V.R - 130184</p> <p>BX Range BX420 V.R - 130184 E.V.R - 130184</p>
Corner Mount Adaptor	Ultra Range	<p>215mm / 8.46in 150mm / 5.91in</p>	<p>Ultra Range (Ultra 2K) V.R - 110082</p>
Pole Mount Adaptor	GX Range, BX Range	<p>87.0mm / 3.43in 78.0mm / 3.07in 48.0mm / 1.89in 80.0mm / 3.15in 117.5mm / 4.63in 15.0mm / 0.59in 42.0mm / 1.65in 1.02in 80.0mm / 3.15in 4-M8-90° 4-M8-6H 48.0mm / 1.89in View on Front Face View on Side Face View on Top Face</p>	<p>GX Range GX420 V.R - 130083</p> <p>BX Range BX420 V.R - 130083 E.V.R - 130083</p>

Mount Name	Camera Range	Dimensional Drawing	Product Codes
Pole Mount Adaptor	GX Range		GX Range GX420 V.R - 130183
Pole Mount Adaptor	Ultra Range		Ultra Range (Ultra 2K) E.V.R - 110096 (Black) E.V.R - 110196 (Grey)

Power Supplies

Product Code	Input Voltage	Input Current (Max)	Input Connector	Output Voltage	Output Current (Max)	Output Connector	Operating Temperature Range	Dimensions (D x W x H)
110004	100-240VAC	0.5A	IEC320-C14	24V DC	0.625A	Bare Wires	0°C to 50°C	100mm x 59.0mm x 33.0mm
110060	100-240VAC	1.9A	IEC320-C14	24V DC	3.33A	Bare Wires	0°C to 50°C	168mm x 78.0mm x 45.0mm
110062	100-240VAC	0.4A	IEC320-C14	24V DC	0.62A	Bare Wires	-30°C to 65°C	91.0mm x 38.0mm x 36.0mm
110064	100-240VAC	0.8A	IEC320-C14	12V DC	2.50A	2 Pin Female Connector	0°C to 50°C	118mm x 52.0mm x 35.0mm
130176	100-240VAC	2.0A	IEC320-C14	56V DC	0.67A	RJ45 Female Connector	-20°C to 40°C	166mm x 80.0mm x 44.0mm

Cables

Camera Range	Product Code	Description
Ultra Range (Ultra 2K)	110171	Cable assembly and gland (6m)



IndigoVision



Enterprise NVR-AS

Enterprise Recording. Intelligently Designed.

With double the performance of the nearest alternative, the IndigoVision Enterprise NVR-AS can record up to 200 cameras, has data throughput of 2 Gbps and up to 112TB usable storage. Guaranteed tamper free evidence, automatic failover and integrated backup. Available with Windows or Linux, the Enterprise NVR-AS can also integrate other security systems for complete alarm management and has recording support for multiple camera manufacturers.

Key Features

COMPRESSION	H.264	H.264	JPEG 2000	MJPEG	MPEG-4
	GUARANTEED 30fps	AAC	G.711		
OTHER	DNA	Firewall	W	Windows	Linux
	1U Height	2U Height	19" Rack		
STORAGE	RAID5	RAID6	SATA		

Product Codes

100 Channel	Windows	Linux
Enterprise NVR-AS RA6TB	980455	980555
Enterprise NVR-AS RA12TB	980456	980556
Enterprise NVR-AS RA24TB	980458	980558
200 Channel	Windows	Linux
Enterprise NVR-AS RA40TB	980450	N/A
Enterprise NVR-AS RA80TB	980451	980578
Enterprise NVR-AS RA112TB	980453	980553

Specification

General Specification		100 Channel			200 Channel		
Form Factor		1U	1U	1U	2U	2U	2U
Disk Space (TB)		6	12	24	40	60	112
Recording Hard Drive Bays		4 (Hot-swappable)			12 (Hot-swappable)		16 (Hot-swappable)**
Operating System Hard Drive Bays		On recording hard drives			Dual redundant separate mirrored drives configured as RAID1		
RAID Controller		Hardware RAID Controller configured as RAID5			Hardware RAID Controller with Flash Backed Cache configured as RAID6		
Performance (Streams)		100 Recording plus simultaneous playback of 25 streams*			200 Recording plus simultaneous playback of 25 streams*		
Performance (Throughput)		128 Mbps in; 200 Mbps out; 328 Mbps total*			100/1000 Mbps Ethernet: 500 Mbps in; 200 Mbps out; 700 Mbps total* 10 Gbps Ethernet: 1.6 Gbps in; 400 Mbps out; 2.0 Gbps total*		
Network interface		Dual Port Redundant 100/1000 BaseT RJ-45 Connections, configured as an 802.1ax LACP aggregated group			Windows: Dual Port Redundant 10Gb DA/SFP+ and Dual Port Redundant 100/1000 BaseT RJ-45 Connections, configured as an 802.1ax LACP aggregated group Linux: Quad Port Redundant 100/1000 BaseT RJ-45 configured as an 802.1ax LACP aggregated group		
Dimensions/Weight		497mm (d) x 434mm (w) x 43.0mm (h) and 9.51Kg / 19.57in (d) x 17.09in (w) x 1.69in (h) and 20.966lb			719.5mm (d) x 444mm (w) x 87.5mm (h) and 36.5Kg / 28.33in (d) x 17.48in (w) x 3.44in (h) and 80.469lb		
Electrical		250W, 100-240VAC, 50/60 Hz, Auto Switching, Single PSU, Secondary Dual-Redundant Hot Swap PSU not supported			750W, 100-240VAC, 50/60 Hz, Auto Switching, Single Hot Swappable PSU, Secondary Dual-Redundant Hot Swap PSU support		
Processor					100 Channel - Intel Xeon E3 200 Channel - Intel Xeon E5		
		Windows			Linux		
Operating System		Windows Server® 2012 R2 for Embedded Systems Essentials			IndigoVision NVR Appliance Operating System		
System Management					100 Channel - iDRAC8 Basic 200 Channel - iDRAC8 Express		
Memory		Windows 100 Channel - 8GB RAM DDR4, 200 Channel - 16GB RAM DDR4			8GB RAM DDR4		
Automatic Storage Management		Policy based management options for automatic deletion or protection of old footage					
Recording Hard Drive		3.5in Nearline SATA					
Network Security		Enhanced Windows Server 2012 Firewall, Network Access Protection (NAP)			SSH, SFTP, Embedded Linux Firewall		
Regulatory		EN 60950-1, IEC 60950-1, EN 55022, CISPR 22, EN 61000-3-2, EN 55024, IEC 61000-3-2 (Class D), EN 61000-3-3, IEC 61000-3-3, CISPR 24					
Housing		Mild Steel Chassis and Fascia					
Operating Temperature		10°C to 35°C (50°F to 95°F)					
Supplied Accessories		Rack Mount Kit (brackets, static rails and mounting hardware), removable lockable fascia, PDU power cord and USB restore media***					
Onboard Diagnostics		Fault alarm notification within Control Center for RAID degradation, fans, redundant power supplies and redundant network faults. Additionally, embedded monitoring tools provide detailed fault diagnosis for RAID arrays, controllers, enclosures and temperature faults.					
Control Center Licensed Features		Features which are licensed by the Control Center software product the NVR is connected to*					
Licensing		IndigoVision NVR appliances do not need a separate license. Video from any connected camera or encoder to the system can be recorded					
Video		Simultaneously record and playback full frame rate, full resolution video streams from any connected IndigoVision IP Camera or Encoder. Record and playback from other devices including ONVIF Profile S conformant cameras and encoders as well as devices integrated via Camera Gateway™					
Audio		Recording and playback of AAC and G.711 audio*					
Thumbnails		Indexed recordings for rapid display of time-based, alarm-based or motion-based thumbnails					
Alarms		Recording and logging of alarms and events					
Bookmarks		Recording and logging of bookmarks in association with recordings					
Integrated Data		Recording and logging of millions of data records from LPR, EPOS and other integrations					
Analytics		Recording and playback of motion analysis data from cameras*					
Redundancy and Failover		Full DNA support, sophisticated failover and mirroring strategies amongst multiple NVRs for increased resilience and redundancy					
Digital Watermarking		Digital signing at point of recording and at export					

* Features may vary based on capabilities of camera model. ** Please check the Control Center datasheets for more information. * With or without Digital Watermarking enabled.

** 16 Bay Chassis has 12 Hard Drive Bays accessible from front of chassis and 4 Internal Hard Drive Bays accessible from the top panel of chassis.

*** 16 Bay Chassis Rack Mount Kit includes sliding rail system with cable management.

Accessories

Accessories	Product Code
Enterprise NVR-AS 2TB SATA Hard Disk Caddy & Disk	110302
Enterprise NVR-AS 3TB SATA Hard Disk Caddy & Disk	110303
Enterprise NVR-AS 4TB SATA Hard Disk Caddy & Disk	110304
Enterprise NVR-AS 6TB SATA Hard Disk Caddy & Disk	110306
Enterprise NVR-AS 8TB SATA Hard Disk Caddy & Disk	110308
Enterprise NVR-AS 8TB SATA Hard Disk Caddy & Disk (Internal Bay)	110328
Enterprise NVR-AS 200 Channel Redundant PSU	110016
Direct Attach twinax cable kit with SFP+ connectors - 1m	110351
Direct Attach twinax cable kit with SFP+ connectors - 3m	110352
Direct Attach twinax cable kit with SFP+ connectors - 5m	110353
10GBASE-SR fibre optic SFP+ transceiver	110361
Sliding rack rails with cable management arm	110300



IndigoVision



Control Center IndigoUltra®

Your security solution of choice.

Control Center IndigoUltra® merges your choice of products, allowing a custom-tailored integrated system design. Performing reliably on any scale IndigoUltra® allows for quickest response times and accurate incident management.

With IndigoVision's Distributed Network Architecture, IndigoUltra® supports an unlimited number of client workstation installs and NVRs connected to the system; supporting continuous system growth whatever the future might bring.

Control Center is IndigoVision's effective, scalable and robust security management solution. It has an intuitive interface that provides easy system setup and efficient administration which save you both time and money. Relentless testing and quality control 365 days a year ensure strong foundations for a robust, trusted security management offering.

IndigoUltra® delivers:

- Unlimited Device Connections
- Unlimited Client Workstations
- Unlimited NVR Connections

Product Codes

Control Center	
IndigoVision Product CD - Control Center Software	340003
IndigoUltra® Single Device Connection License	340000-U
IndigoPro® to IndigoUltra® - Upgrade Single Device Connection License	345000-PU
IndigoLite® to IndigoUltra® - Upgrade Single Device Connection License	345000-LU
IndigoUltra® - Migration with active SUP - Single Device Connection License	341003-U
IndigoUltra® - Migration - Single Device Connection License	341000-U
IndigoUltra® - Demo - Single Device Connection License	346003-U



Specification

General Specification	
Number of Device Connections	Unlimited
Number of Client Workstations	Unlimited
Number of NVR-AS Connections	Unlimited
Live Video	100 video streams (25 per screen)
PTZ Control	✓
Audio	Receive / Record / Transmit*
Video Resolutions	up to 20MP*
Video Compression Formats	MPEG-4* / H.264* / MJPEG* / JPEG2000*
Audio Compression Formats	AAC* / G.711*
Snapshots	BMP / JPEG
Privacy Zones	✓
Sequences, Salvos and Guard Tours	✓
Pursuit Mode	✓
Video Wall	✓
Playback	25 streams
Synchronised Playback	✓
Reverse Playback	✓
Thumbnail Overview	Time / Alarm / Bookmark / Motion* / Audio*
Incident Export	Incident Player / 3rd Party Player (.mp4)*
Recording Schedules	✓
Fallover / Redundancy	✓
Automatic NVR Switching	✓
Watermarking	Digital watermarking on recording and export
Maps	Multi-layered maps (BMP / JPEG / PNG / DWG), Tile Server
Webpages	✓
Zones	Group multiple inputs into a single alarm
Event Inputs	Binary* / Analytics* / Network Loss / Video Loss* / Motion Detection*
Alarm Video	Live and looped replay / Pre-alarm video / Alarm Groups
Actions on Event	Record / Email / Snapshot* / Move to Preset / Relay Output* / Audio*
Alarm Schedules	✓
Alarm Reports	✓
Bookmarking	✓
Motion and Audio Search	✓
Alarm and Bookmark Search	✓
Third Party Inputs	Through IndigoVision Integration Modules or IndigoVision Binding Kit
Integrated Data	Manage millions of data records from LPR, EPOS and other integrations
Alarm Escalation	✓
Alarm Procedure Documents	HTML / Text / URL
System Alerts	✓
Audit Log	✓
Architecture	DNA (Distributed Network Architecture)
Segmented Databases	✓
User Groups	✓
Access Permissions	Object and function based permissions
User Authentication	Windows authentication / Basic password
PC Monitors	4
Keyboard Support	IndigoVision / Pelco / American Dynamics / Panasonic
Multiple Languages	10+ languages including, English, Chinese, French, German, Spanish
Matrix Numbering	1 - 9,999,999
Network Connection Types	TCP / UDP Unicast / UDP Multicast
Device Discovery	✓
Timezones	✓
Supported Cameras and Encoders	IndigoVision Ultra, BX and GX camera ranges, 9000 Range Encoders, FrontLine, Camera Gateway and 3rd Party Cameras**
Industry Open Standards	ONVIF Profile S
License Mechanism	Software License Key
Control Center Supported Operating Systems	Windows 10 * 64-bit, Windows 8.1 * 64-bit, Windows 8 * 64-bit, Windows 7 * 64-bit
Windows NVR-AS Supported Operating Systems	Windows Server 2012 R2 *, Windows Server 2012 *, Windows Server 2008 R2 *, Windows 10 * 64-bit, Windows 7 * 64-bit
License Server Supported Operating Systems	Windows Server 2012 R2 *, Windows Server 2012 *, Windows Server 2008 R2 *, Windows 10 * 64-bit, Windows 7 * 64-bit. The License Server is also available as part of the IndigoVision NVR-AS 4000 Linux appliances

* Features may vary based on capabilities of the camera or encoder model. Please refer to the relevant product datasheets for details.

** Please see our Control Center Supported 3rd Party Cameras list for full details.



IndigoVision



Minidome Cameras

High-end: performance, not price tag.

With BX HD, 4MP and 4K Minidome Cameras you get supreme connectivity and flexibility, combined with great video and audio. You also get maximum reliability, and the other significant benefits of IndigoVision's Distributed Network Architecture. BX HD, 4MP and 4K Minidome Cameras deliver a different dimension of safety when combined with IndigoVision's Control Center.

Key Features

SENSOR

HD

4MP

4K


Day/Night


WDR

COMPRESSION

H.264

UP TO
30fps


G.711

INTELLIGENCE


Analytics


Motion Detection

OTHER


DNA


PoE


PoE+

Onvif

PHYSICAL


Outdoor


IR


IK10

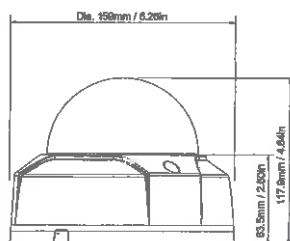

Low Temp

Product Codes

Minidome Camera	Camera
Vandal Resistant HD Minidome Camera	610440
Environmental Vandal Resistant HD Minidome Camera	610460
Vandal Resistant 4MP Minidome Camera	611440
Environmental Vandal Resistant 4MP Minidome Camera	611460
Environmental Vandal Resistant 4K Minidome Camera	614460

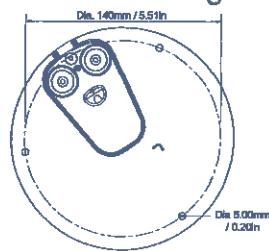
Product Code 68xxxx also available to order consisting of 61xxxx Product Code plus Enhanced Management Software License

Dimensions - Minidome Camera



View on Side Face

Dimensions - Hole Mounting Pattern



View on Bottom Face

Specification

Camera Features	HD	4MP	4K
Sensor	1/3" Progressive CMOS	1/3" Progressive CMOS	1/1.7" Progressive CMOS
Active Pixels	HD (1920x1080)	4 MP (2560x1440)	12 MP (4000 x 3000)
Horizontal Resolution	> 800 TVL	> 1000 TVL	> 1200 TVL
Minimum Sensitivity	Day 0.01 Lux (colour) Night 0.001 Lux (mono) 30 IRE, F1.4, 1/30s shutter	Day 0.01 Lux (colour) Night 0.001 Lux (mono) 30 IRE, F1.4, 1/15s shutter	Day 0.05 Lux (color) Night 0.005 Lux (mono) 30 IRE, F1.4, 1/15s shutter
Dynamic Range	WDR > 120dB		
Gain Control	Auto/Manual setting		
Back Light Compensation	On/Off		
White Balance Mode	Auto/Manual		
Day/Night	True Day/Night with Mechanical IR Cut Filter		
IR Illuminator	Built-in IR Illuminator 850nm wavelength, effective distance >50m		
Video Resolution	4000x3000 pixels (12MP)**; 4096x2160 pixels (8MP)**; 3840x2160 pixels (8MP)**; 3072x2048 pixels (6MP)**; 2560x1440 pixels (4MP)**; 2304x1296 pixels (3MP)**; 1920x1080 pixels (HD); 1280x960 pixels (1.3MP); 1280x720 pixels (720p); 704x576 pixels (D1); 704x480 pixels (D1) 352x288 pixels (SIF); 352x240 pixels (SIF)		
Signal/Noise Level	> 50dB		
Lens Options	HD & 4MP: 2.7mm - 12mm, Horizontal view angle 100° (W) 33° (T), F1.4, Vari-focal, M14 mount with Remote Zoom/Focus 4K: 4.1mm - 16.4mm, Horizontal view angle 106° (W) 32° (T), F1.4, Vari-focal, M14 mount with Remote Zoom/Focus		
Shutter	Rolling, Auto from 1/3 - 1/10,000 sec		
Exposure Control	Auto/Low Noise/Low Motion Blur/Manual		
Video Compression	Full frame rate, full colour. H.264/MJPEG, up to 30fps (ISO 14496-10)		
Privacy Zones	4 User Defined		
Video Bit Rate	User-configurable bit rates from 64Kbps up to 10Mbps		
Video Multi-Streaming	Up to 32Mbps total video output; Unlimited multicast connections. Up to four 8Mbps unicast connections; Up to sixteen 1Mbps unicast connections		
Video Multi-Encoder	Up to two simultaneous resolutions including 12MP (20fps)**; 4K(30fps)**; 4MP(30fps)**; 4MP (20fps)*; 3MP (30fps)*; 1080p (30fps), 720p (30fps), D1 (30fps), SIF (30fps)		
Video Analytics	Motion Detection, Hooded, Tripwire, Intrusion, Abandoned, Missing		
Audio Compression	G 711		
Audio Bit Rate	32Kbps per channel		
Audio Resolution	Full Duplex, 8kHz or 16kHz sample rate Mono Input, Mono Output		
Audio Analytics	Audio Detection		
Audio Input	Line in, terminal block connector		
Audio Output	Line out, terminal block connector		
Binary Input/Output	1 Pull up input for non-powered contacts, 1 Solid state open collector output, Max 5.0V, 30mA		
Network Interface	IEEE802.3 and IETF standards: 10/100 Base-T Ethernet, IPv4/IPv6, TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, SSH, PPPoE, uPnP, QoS, DHCP		IEEE802.3 and IETF standards: 100/1000 Base-T Ethernet, IPv4/IPv6, TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, SSH, PPPoE, uPnP, QoS, DHCP
Network Security	HTTPS / IP Filter / IEEE 802.1x		
Time	Embedded real-time clock, NTP client		
SD Storage	microSDHC 128GB support (card not included)***		
Dimension/Weight	159mm (dia) x 117.9mm (h) and 0.8Kg / 6.26in (dia) x 4.64in (h) and 1.764lb		
Regulatory	EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 60130-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, IEC60068-2-27 (Shock), IEC60068-2-6 (Sine Vibration), UL60950		
Housing	White vandal resistant aluminium alloy with clear polycarbonate dome		
Protection Rating	IP67, IK10 (IEC 62262)		
IndigoVision Software Requirements	Control Center v14.1 or later (4K); Control Center v13.2 or later (HD & 4MP)		
ONVIF	Profile S		

Camera Features	HD & 4MP Vandal Resistant	HD & 4MP Environmental Vandal Resistant	4K Environmental Vandal Resistant
Operating Temperature	-20°C to 60°C (-4°F to 140°F)	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)
Cold Start	-20°C (-4°F)	-30°C (-22°F)	-30°C (-22°F)
Electrical	Camera only: PoE (802.3af Class 0) or 12V DC @ 0.33A, 4W. Power supply ordered separately (Product code: 110064; 130176)	Camera only: PoE (802.3af Class 0) or 12V DC @ 0.33A, 4W. Camera including heater: PoE (802.3af Class 0) or 12V DC @ 1.0A; 12W. Power supply ordered separately (Product code: 110064; 130176)	Camera only PoE+ (802.3af Class 4) or 12V DC/24V AC, 9W Camera including heater: PoE+ (802.3af Class 4) or 12V DC/24V AC, 19W. Power supply ordered separately (Product code: 110064; 130176)

* 4MP and 3MP resolution only available on 4MP variant. ** 12MP, 4K and 4MP (30fps) resolution only available on 4K variant *** SDCard Storage independent of IndigoVision's NVRS.

BX RANGE



IndigoVision



360°

Fisheye Camera

Amazing Megapixel video that delivers detail from every angle

Part of IndigoVision's professional BX Range, the Fisheye Camera delivers 360° visibility with pin-sharp detail. When used as part of IndigoVision's end-to-end system, any single point of failure is removed through IndigoVision's Distributed Network Architecture (DNA) technology.

Key Features

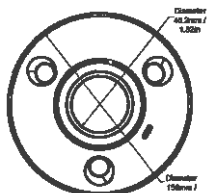
SENSOR	6MP	12MP	Day/Night	WDR
	COMPRESSION	H.264	UP TO 30fps	G.711
		INTELLIGENCE	Analytics	Motion Detection
	OTHER		DNA	PoE
PHYSICAL		Outdoor	IR	IK10

Product Codes

Fisheye Camera	Camera
6MP Fisheye Camera with Built-In IR Illuminator	612740
12MP Fisheye Camera with Built-In IR Illuminator	614740

Product Code 66xxx also available to order consisting of 61xxx Product Code plus Enhanced Management Software License.

Dimensions



View on Top Face



View on Side Face

Specification

Camera Features	6MP	12MP
Sensor	1/1.8" Progressive CMOS	1/2.3" Progressive CMOS
Active Pixels (HxV)	6 MP (3072x2048)	12 MP (4000x3000)
Horizontal Resolution	> 800 TVL	> 1000 TVL
Minimum Sensitivity	Day: 0.01 lux (color), Night: 0.005 lux (mono), 30 IRE, F2.0, 1/30s shutter	Day: 0.01 lux (color) Night: 0.005 lux (mono), 30 IRE, F2.2, 1/30s shutter
Lens Options	1.55mm, Horizontal view angle 185°x185°, F2.0, Fixed Iris	1.57mm, Horizontal view angle 185°x185°, F2.2, Fixed Iris
Dynamic Range	WDR 100dB Max	
Gain Control	Auto/Manual setting	
Back Light Compensation	On/Off	
White Balance Mode	Auto/Manual	
Day/Night	True Day/Night with Mechanical IR Cut Filter	
IR Illuminator	Built-in illuminator 850nm wavelength, effective distance >10m	
Video Resolution	4000x3000 pixels (12MP)*, 2880x2880 pixels (8MP)*, 2880x2160 pixels (6MP), 2048x1536 pixels (3MP); 704x576 pixels (D1), 704x480 pixels (D1) 352x288 pixels (SIF), 352x240 pixels (SIF)	
Signal/Noise Level	> 50dB	
Shutter	Rolling, Auto from 1/3 - 1/10,000 sec	
Exposure Control	Auto/Low Noise/Low Motion Blur/Manual	
Video Compression	Full frame rate, full color H.264/MJPEG, up to 30fps (ISO 14496-10)	
Privacy Zones	4 User Defined	
Video Bit Rate	User-configurable bit rates from 40Kbps up to 10Mbps	
Video Multi-Streaming	Up to 32Mbps total video output; Unlimited multicast connections. Up to four 8Mbps unicast connections; Up to sixteen 1Mbps unicast connections	
Video Multi-Encoder	Edge Dewarping: Dual Streaming 3MP (2048 x 1536) @ 30fps + D1/SIF @ 30fps Native: Dual Streaming 12MP (4000x3000)* @ 15fps + D1/SIF @ 30fps or 3MP 2048x1536 pixels + or 6MP (3072 x 2048) @ 30fps + 720P @ 30fps	
Video Analytics	Motion Detection, Hooded, Tripwire, Intrusion	
Audio Compression	G.711	
Audio Bit Rate	32Kbps per channel	
Audio Resolution	Full Duplex, 8kHz or 16kHz sample rate, Mono Input, Mono Output	
Audio Analytics	Audio Detection	
Audio Input	Built-in microphone or Line in, RCA connector	
Audio Output	Line out, RCA connector	
Binary Input/Output	2 Pull up inputs for non powered contacts; 1 solid state opto-isolated relay output, Max 24V, 500mA	
Network Interface	IEEE802.3 and IETF standards: 100/1000 Base-T Ethernet, IPv4/IPv6, TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, SSH, PPPoE, uPnP, QoS, DHCP	
Network Security	HTTPS / IP Filter / IEEE 802.1x	
Time	Embedded real-time clock, NTP client	
SD Storage	microSDHC 128GB support (card not included)**	
Dimension/Weight	150mm (dia) x 47.7mm (h) and 0.58Kg / 5.91in (dia) x 1.88in (h) and 1.28lb	
Regulatory	EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 50130-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, IEC60068-2-27 (Shock), IEC60068-2-6 (Sine Vibration), UL60950-1	
Housing	White vandal resistant aluminium alloy including 500mm cable bundle	
Protection Rating	IP67, IK10 (IEC 62262)	
Electrical	Camera only: PoE (802.3af Class 0) or 12V DC @ 1.1A; 13W Power supply ordered separately (Product code: 110064; 130176)	
Operating Temperature	-30°C to 60°C (-22°F to 140°F)	
Cold Start	-30°C (-22°F)	
IndigoVision Software Requirements	Control Center v13.2 or later	
ONVIF	Profile S	

* 12MP and 8MP resolution only available on 12MP variant. **SDCard Storage independent of IndigoVision's NVRs.



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

State of West Virginia
 Request for Quotation
 04 - Audio/Video

Proc Folder: 361319

Doc Description: CLOSED CIRCUIT TELEVISION SYSTEM (CCTV)

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-08-15	2017-09-19 13:30:00	CRFQ 0613 VNF1800000003	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 26305
 US

VENDOR

Vendor Name, Address and Telephone Number:

FOR INFORMATION CONTACT THE BUYER

Crystal Rink
 (304) 558-2402
 crystal.g.rink@wv.gov

Signature X

FEIN #

DATE

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

ADDITIONAL INFORMATION

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA VETERANS NURSING FACILITY, IS SOLICITING BIDS FOR THE ONE-TIME PURCHASE OF CLOSED CIRCUIT TELEVISION SYSTEM (CCTV) PER THE ATTACHED.

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	DOME CAMERA INDIGO VISION OR EQUAL/INTERNAL	29.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL	6.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	DOME CAMERA INDIGO VISION OR EQUAL INTERNAL	18.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
DOME CAMERA INDIGO VISION OR EQUAL INTERNAL

BUYER TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL

BUYER TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL	12.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	360 DEGREE FISH EYE CAMERA FOR INTERNAL USE	3.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
7	360 DEGREE FISH EYE CAMERA FOR EXTERNAL USE	4.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

BILL TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
8	DOME CAMERA INDIGO VISION OR EQUAL EXTERNAL	8.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

INVOICE TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
9	PTZ DOME CAMERA INDIGO VISION OR EQUAL/ EXTERNAL	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

INVOICE TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
10	NETWORK VIDEO RECORDERS	2.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

INVOICE TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
11	VIDEO MANAGEMENT SYSTEM	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
48171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

INVOICE TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
12	MOUNTING ARMS	4.00000	EA		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :
PLEASE SEE ATTACHED SPECS FOR MORE DETAILS

INVOICE TO		SHIP TO	
DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY		DIVISION OF VETERANS AFFAIRS 1 FREEDOMS WAY	
CLARKSBURG	WV26301	CLARKSBURG	WV 26301
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
13	LABOR FEE FOR INSTALLATION (TO INCLUDE CABLE)	1.00000	LS		

Comm Code	Manufacturer	Specification	Model #
46171610			

Extended Description :

LABOR FEE FOR INSTALLATION (TO INCLUDE CABLE)

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	MANDATORY PRE-BID MEETING	2017-08-29
2	VENDOR QUESTION DEADLINE	2017-09-01

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.

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.

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:

August 29, 2017 at 10:00 AM EST

West Virginia Veterans Nursing Facility
1 Freedom Way
Clarksburg, WV 26301

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.

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: September 1, 2017 at 10:00 AM EST

Submit Questions to: Crystal Rink
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Crystal.G.Rink@wv.gov

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.

6. BID SUBMISSION: All bids must be submitted electronically through 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.:

SEALED BID:
BUYER: Crystal Rink
SOLICITATION NO.:
BID OPENING DATE: September 19, 2017
BID OPENING TIME: 1:30 PM EST
FAX NUMBER: 304-558-3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression of Interest or Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: 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 n/a convenience copies of each to the Purchasing Division at the address shown above. 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

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: September 19, 2017 at 1:30 PM EST

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

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.

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.

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 and 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.

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.

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.

13. REGISTRATION: Prior to 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.

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

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.

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 in accordance with W. Va. CSR § 148-22-9.

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.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and 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 to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

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.”

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.”

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 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.

22. INTERESTED PARTY DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$100,000, the vendor must submit to the Purchasing Division a disclosure of interested parties to the contract, prior to contract award. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. "Interested parties" means: (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors; (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract; and (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency: Provided, That subdivision (2) shall be inapplicable if a business entity is a publicly traded company: Provided, however, That subdivision (3) shall not include persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.

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.
- 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.

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 _____ and extends for a period of _____ 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 _____ successive one (1) year 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. 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 _____ ninety (90) calendar _____ 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.

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.

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.

6. 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 a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

BID BOND (Construction Only): Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid 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 100% of contract value. 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. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

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.

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.

Valid West Virginia Contractors License

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.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. Subsequent to contract award, and prior to the insurance expiration date, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies mandated herein, including but not limited to, policy cancelation, policy reduction, or change in insurers. The insurance coverages identified below must be maintained throughout the life of this contract. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

Commercial General Liability Insurance in at least an amount of:

1\$1,000,000.00 or more. Please make Certificate Holder: WV VNF 1 Freedom Way, Clarksburg, WV 26301

Automobile Liability Insurance in at least an amount of: _____

Professional/Malpractice/Errors and Omission Insurance in at least an amount of:

Commercial Crime and Third Party Fidelity Insurance in an amount of:

Cyber Liability Insurance in an amount of: _____

Builders Risk Insurance in an amount equal to 100% of the amount of the Contract.

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.

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 held 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.

11. LIQUIDATED DAMAGES: Vendor shall pay liquidated damages in the amount of

n/a

for n/a

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

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.

13. 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.

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.

15. 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.

16. 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.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. 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.

19. 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.

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

21. 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.

22. COMPLIANCE WITH LAWS: 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.

23. 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.

- 24. 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.
- 25. 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.
- 26. 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.
- 27. 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.
- 28. 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.
- 29. 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.
- 30. BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.
- 31. 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/privacy/default.html>.

32. 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.

33. 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.

34. 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 States 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.

35. 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 submitting 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 or her knowledge, the Vendor has properly registered with any State agency that may require registration.

36. 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.

37. 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.

38. PURCHASING AFFIDAVIT: In accordance with West Virginia Code § 5-22-1(i), the contracting public entity shall not award a contract for a construction project to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees. Accordingly, prior to contract award, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

39. 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.

40. 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.

41. 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 the 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.

42. 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 criminal background check.

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

43. 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 furnace, 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 item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand 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 sufficient quantity or otherwise are not reasonably available to meet contract requirements.

44. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 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.

45. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$100,000, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. "Interested parties" means: (1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors; (2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract; and (3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency: Provided, That subdivision (2) shall be inapplicable if a business entity is a publicly traded company: Provided, however, That subdivision (3) shall not include persons or business entities performing legal services related to the negotiation or drafting of the applicable contract. The Agency shall submit a copy of the disclosure to the Ethics Commission within 15 days after receiving the supplemental disclosure of interested parties.

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. CONTRACTOR'S LICENSE: West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor. West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. If an apparent low bidder fails to submit a license number in accordance with this section, the Purchasing Division will promptly request by telephone and electronic mail that the low bidder and the second low bidder provide the license number within one business day of the request. Failure of the bidder to provide the license number within one business day of receiving the request shall result in disqualification of the bid. Vendors should include a contractor's license number in the space provided below.

Contractor's Name: _____
Contractor's License No.: WV- _____

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a contract award document.

2. DRUG-FREE WORKPLACE AFFIDAVIT: W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit an affidavit that the Vendor has a written plan for a drug-free workplace policy. If the affidavit is not submitted with the bid submission, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the affidavit within one business day of the request. Failure to submit the affidavit within one business day of receiving the request shall result in disqualification of the bid. To comply with this law, Vendor should complete the enclosed drug-free workplace affidavit and submit the same with its bid. Failure to submit the signed and notarized drugfree workplace affidavit or a similar affidavit that fully complies with the requirements of the applicable code, within one business day of being requested to do so shall result in disqualification of Vendor's bid. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

2.1. DRUG-FREE WORKPLACE POLICY: Pursuant to W. Va. Code § 21-1D-4, Vendor and its subcontractors must implement and maintain a written drug-free workplace policy that complies with said article. The awarding public authority shall cancel this contract if: (1) Vendor fails to implement and maintain a written drug-free workplace policy described in the preceding paragraph, (2) Vendor fails to provide information regarding implementation of its drug-free workplace policy at the request of the public authority; or (3) Vendor provides to the public authority false information regarding the contractor's drug-free workplace policy.

Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

3. DRUG FREE WORKPLACE REPORT: Pursuant to W. Va. Code § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. For contracts over \$25,000, the public authority shall be the West Virginia Purchasing Division. For contracts of \$25,000 or less, the public authority shall be the agency issuing the contract. The report shall include:

- (1) Information to show that the education and training service to the requirements of West Virginia Code § 21-1D-5 was provided;
- (2) The name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;
- (3) The average number of employees in connection with the construction on the public improvement;
- (4) Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Post-accident; and (D) Random.

Vendor should utilize the attached Certified Drug Free Workplace Report Coversheet when submitting the report required hereunder. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

4. AIA DOCUMENTS: All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the AIA A101-2007 and A201-2007 or the A107-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.

5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

6. LOCAL LABOR MARKET HIRING REQUIREMENT: Pursuant to West Virginia Code §21-1C-1 et seq., Employers shall hire at least seventy-five percent of employees for public improvement construction projects from the local labor market, to be rounded off, with at least two employees from outside the local labor market permissible for each employer per project.

Any employer unable to employ the minimum number of employees from the local labor market shall inform the nearest office of the bureau of employment programs' division of employment services of the number of qualified employees needed and provide a job description of the positions to be filled.

If, within three business days following the placing of a job order, the division is unable to refer any qualified job applicants to the employer or refers less qualified job applicants than the number requested, then the division shall issue a waiver to the employer stating the unavailability of applicant and shall permit the employer to fill any positions covered by the waiver from outside the local labor market. The waiver shall be either oral or in writing and shall be issued within the prescribed three days. A waiver certificate shall be sent to both the employer for its permanent project records and to the public authority.

Any employer who violates any provision of this article is subject to a civil penalty of one hundred dollars per day of violation. The West Virginia Division of Labor is responsible for establishing procedures for the collection of civil penalties.

The following terms used in this section have the meaning shown below.

(1) The term "construction project" means any construction, reconstruction, improvement, enlargement, painting, decorating or repair of any public improvement let to contract in an amount equal to or greater than \$500,000. The term "construction project" does not include temporary or emergency repairs;

(2) The term "employee" means any person hired or permitted to perform hourly work for wages by a person, firm or corporation in the construction industry; The term "employee" does not include:(i) Bona fide employees of a public authority or individuals engaged in making temporary or emergency repairs;(ii) Bona fide independent contractors; or(iii) Salaried supervisory personnel necessary to assure efficient execution of the employee's work;

(3) The term "employer" means any person, firm or corporation employing one or more employees on any public improvement and includes all contractors and subcontractors;

(4) The term "local labor market" means every county in West Virginia and any county outside of West Virginia if any portion of that county is within fifty miles of the border of West Virginia;

(5) The term "public improvement" includes the construction of all buildings, roads, highways, bridges, streets, alleys, sewers, ditches, sewage disposal plants, waterworks, airports and all other structures that may be let to contract by a public authority, excluding improvements funded, in whole or in part, by federal funds.

7. DAVIS-BACON AND RELATED ACT WAGE RATES:

- The work performed under this contract is federally funded in whole, or in part. Pursuant to _____, Vendors are required to pay applicable Davis-Bacon wage rates.
- The work performed under this contract is not subject to Davis-Bacon wage rates.

8. SUBCONTRACTOR LIST SUBMISSION: In accordance with W. Va. Code § 5-22-1, the apparent low bidder on a contract valued at more than \$250,000.00 for the construction, alteration, decoration, painting or improvement of a new or existing building or structure shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. (This section does not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects.) The subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. If the apparent low bidder fails to submit the subcontractor list, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the subcontractor list within one business day of the request. Failure to submit the subcontractor list within one business day of receiving the request shall result in disqualification of the bid.

If no subcontractors who will perform more than \$25,000.00 of work are to be used to complete the project, the apparent low bidder must make this clear on the subcontractor list, in the bid itself, or in response to the Purchasing Division's request for the subcontractor list.

a. Required Information. The subcontractor list must contain the following information:

- i. Bidder's name
- ii. Name of each subcontractor performing more than \$25,000 of work on the project.
- iii. The license number of each subcontractor, as required by W. Va. Code § 21-11-1 et. seq.
- iv. If applicable, a notation that no subcontractor will be used to perform more than \$25,000.00 of work. (This item iv. is not required if the vendor makes this clear in the bid itself or in documentation following the request for the subcontractor list.)

b. Subcontractor List Submission Form: The subcontractor list may be submitted in any form, including the attached form, as long as the required information noted above is included. If any information is missing from the bidder's subcontractor list submission, it may be obtained from other documents such as bids, emails, letters, etc. that accompany the subcontractor list submission.

c. Substitution of Subcontractor. Written approval must be obtained from the State Spending Unit before any subcontractor substitution is permitted. Substitutions are not permitted unless:

- i. The subcontractor listed in the original bid has filed for bankruptcy;**
- ii. The subcontractor in the original bid has been debarred or suspended; or**
- iii. The contractor certifies in writing that the subcontractor listed in the original bid fails, is unable, or refuses to perform his subcontract.**

Subcontractor List Submission (Construction Contracts Only)

Bidder's Name: _____

Check this box if no subcontractors will perform more than \$25,000.00 of work to complete the project.

Subcontractor Name	License Number if Required by W. Va. Code § 21-11-1 et. seq.

Attach additional pages if necessary

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title)

(Printed Name and Title)

(Address)

(Phone Number) / (Fax Number)

(email address)

CERTIFICATION AND SIGNATURE: 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.

(Company)

(Authorized Signature) (Representative Name, Title)

(Printed Name and Title of Authorized Representative)

(Date)

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ VNF1800000003

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 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.

Company

Authorized Signature

Date

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

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GENERAL CONSTRUCTION SPECIFICATIONS (No AIA Documents)

- 1. PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Division of Veterans Assistance to establish a contract for the one-time purchase and complete installation of a closed-circuit television (CCTV) system for the West Virginia Veterans Nursing Facility located in Clarksburg, WV.

The Vendor shall furnish all materials, labor, and equipment necessary to complete all Construction Services. The Vendor shall furnish any incidental work, materials, labor, and equipment that are necessary to complete the Construction Services, even if such incidental work is not explicitly included in the Project Plans.

- 2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

2.1 "Construction Services" means to provide all labor, material, equipment and related incidentals needed for the provision and complete installation of a closed-circuit television system at the West Virginia Veterans Nursing Facility as more fully described in these specifications as more fully described in the Project Plans.

2.2 "Project Plans" means documents developed by an architect, an engineer, the Agency, or another design professional, which are attached hereto as Exhibit B, that provide detailed instructions on how the Construction Services are to be performed. In the event that Project Plans contain drawings or other documents too large to attach in Exhibit B, Vendors can obtain copies in accordance with Section 9 of these Specifications.

2.3 "VSS" represents Vendor Self Service meaning the item upon which the Vendor should list their proposed price for the contract services.

2.4 "CCTV" Close Circuit Television is a TV system in which signals are not publicly distributed but monitored, primarily for surveillance and security purposes.

2.5 "Pricing Page" means the pages, contained wvOASIS or attached hereto as Exhibit A, upon which Vendor should list its proposed price for the Contract Services.

2.6 "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.7 "ISO 9001 Quality Standard" means "International Organization for Standardization" This worldwide federation of 110 national standards bodies works to promote the growth of manufacturing, trade and communication among business operations worldwide, through the development of generic quality standards.

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2.8 "DSP" means Digital Signal Processing.

2.9 "NTP" means Notice To Proceed

2.10 "ONVIF" means Industry Standard for Camera to Server compression and communication Protocol.

2.11 H.264 compression algorithm is an Industry Standard

2.12 G.711 Compression Algorithm is an Industry Standard

3. ORDER OF PRECEDENCE: This General Construction Specifications document will have priority over, and supersede, anything contained in the Project Plans.

4. QUALIFICATIONS: Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:

4.1 Experience: Vendor, or Vendor's supervisory staff assigned to this project, must have successfully completed at least 10 (ten) projects that involved work similar to that described in these specifications or the Project Plans. Compliance with this experience requirement will be determined prior to contract award by the State through references provided by the Vendor upon request, through knowledge or documentation of the Vendor's past projects, through confirmation of experience requirements from the architect assisting the State in this project, or some other method that the State determines to be acceptable. Vendor must provide any documentation requested by the State to assist in confirmation of compliance with this provision. References, documentation, or other information to confirm compliance with this experience requirement may be requested after bid opening and prior to contract award.

4.2 The Contractor shall be a firm normally employed in the low voltage and video cabling industry.

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- 4.3 The Vendor must be certified by the manufacturer of the products, adhere to the engineering, installation and testing procedures and utilize the authorized manufacturer components and distribution channels for the equipment being installed.
- 4.4 All CCTV system components including but not limited to cameras, recorders, computers, servers, workstations, network equipment, power equipment, and accessories shall be installed, configured, and commissioned by personnel fully certified and authorized by the CCTV system manufacturer.
- 4.5 The CCTV system manufacturer should use a quality control system registered to the ISO 9001 Quality Standard. (define in Section 2)

5. CONTRACT AWARD: The Contract is intended to provide Agency with a purchase price for the Construction Services. The Contract will be awarded to the lowest qualified responsible bidder meeting the required specifications. If the Pricing Pages contain alternates/add-ons, the Contract will be awarded based on the grand total of the base bid and any alternates/add-ons selected.

6. SELECTION OF ALTERNATES: If the Pricing Pages contain alternates/add-ons, the alternates/add-ons will be selected as follows. The alternate/add-on will be selected in the order of priority listed on the Pricing Pages. The first alternate/add-on must be selected before the second alternate/add-on can be selected and so on.

7. PERFORMANCE: Vendor shall perform the Construction Services in accordance with this document and the Project Plans.

8. SUBSTITUTIONS: Any substitution requests must be submitted in accordance with the official question and answer period described in the INSTRUCTIONS TO VENDORS SUBMITTING BIDS, Paragraph 4. Vendor Question Deadline. Vendors submitting substitution requests should submit product brochures and product specifications during the official question and answer period.

9. PROJECT PLANS: The checked box will apply to Project Plans for this solicitation.

No Additional Project Plan Documents: There are no additional Project Plans other than those attached hereto as Exhibit B or any subsequent addenda modifying Exhibit B.

Additional Project Plan Documents: There are additional Project Plan documents other than those attached as Exhibit B. Copies of the additional Project Plan documents not attached as Exhibit B can be obtained by contacting the entity identified below.

10. CONDITIONS OF THE WORK

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10.1 Permits: The Vendor shall procure all necessary permits and licenses to comply with all applicable Federal, State, or Local laws, regulations and ordinances of any regulating body.

10.2 Existing Conditions: If discrepancies are discovered between the existing conditions and those noted in the specifications, Vendor must immediately notify the Agency's representative. Vendor must also immediately notify the Agency if suspected hazardous materials are encountered.

10.3 Standard Work Hours: The standard hours of work for this Contract will be Monday – Friday 8:00 am to 4:00 pm EST. excluding holidays recognized by the State of West Virginia. Any work outside of the standard hours of work must be approved in advance at the Agency's sole discretion. Authorization of work outside of the standard hours of work will not entitle Vendor to additional compensation.

10.4 Project Closeout: Project Closeout shall include the following:

10.4.1 Final Cleanup: Vendor shall perform the final cleanup activities listed below, along with any other final cleanup activities normally associated with the work performed under this Contract, prior to final inspection:

10.4.1.1 All wiring shall meet state and federal guidelines.

10.4.1.2 Software shall meet guidelines set forth in Specification.

10.4.1.3 All equipment in operable condition in accordance with this contract

10.4.2 Final Inspection: Vendor shall participate in a final inspection with the Agency's project manager. The purpose of the final inspection will be to identify deficiencies that need to be remedied prior to Agency's final acceptance of the work. Vendor shall at all times be obligated to perform in accordance with the Contract and must take all actions necessary to ensure that work complies with requirements of Contract prior to final acceptance. Final acceptance does not waive or release Vendor from its obligation to ensure that work complies with the Contract requirements. Vendor shall submit any warranty documents to the Agency project manager at final inspection.

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11. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

11.1 Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

11.2 Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

11.3 Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

11.4 Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

11.5 Vendor shall inform all staff of Agency's security protocol and procedures.

12. MISCELLANEOUS:

12.1 Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: _____

Telephone Number: _____

Fax Number: _____

Email Address: _____

Exhibit A CRFQ VNF1800000003

Closed Circuit Television System (CCTV)

Item #	Specs	Description	Unit of Measure	Unit Cost	Quantity	Extended Cost
1	13.1.1	Dome Camera Indigo Vision or Equal/Internal	each		29	-
2	13.1.1	Dome Camera Indigo Vision or Equal/External	each		6	
3	13.1.2	Dome Camera Indigo Vision or Equal/Internal	each		18	
4	13.1.2	Dome Camera Indigo Vision or Equal/External	each		2	
5	13.1.3	Dome Camera Indigo Vision or Equal/External	each		12	
6	13.1.4	360 degree Fish Eye Cameras/Internal	each		3	
7	13.1.4	360 degree Fish eye Cameras/External	each		4	
8	13.1.5	Dome Camera Indigo Vision or Equal/External	each		8	
9	13.1.6	PTZ Dome Camera Indigo Vision or Equal/Ext	each		1	
10	13.1.7	Network Video Recorders	each		2	
11	13.1.9	Video Management System	each		1	
12	13.1.15.3	Mounting arms	each		4	
13		Labor Fee for Installation to include cable	Lump Sum		1	
				Total Bid Amount:		\$

Company:

Vendor Contact:

Address:

Phone:

Email:

Fax:

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EXHIBIT B – PROJECT PLANS

13. MANDATORY REQUIREMENTS:

13.1. Mandatory Contract Services Requirements and Deliverables: Contract Items must meet or exceed the mandatory requirements listed below.

13.1.1 Dome Cameras, Indigo Vision or equal

13.1.1.1 Functional Overview (29 Internal & 6 External)

- A. The camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.
- B. The camera shall capture audio, compress using the G.711 algorithm and transmit video via and IP/Ethernet network
- C. The camera shall perform on-board video content analysis (VCA)

13.1.1.2 Capture

- A. The camera shall capture video using a 1 / 3” HD progressive scan CMOS,2 Megapixel sensor that supports >120dB Wide Dynamic Range (WDR).

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13.1.1.3 Compression

- A. The video compression shall be carried via dedicated hardware compression; software compression via DSP (Digital Signal Processing) is not acceptable
- B. The camera shall support H.264 (ISO 14496-10) compression algorithm and should guarantee the compression at 25/30 frames per second.
- C. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR) options.
- D. The camera shall support minimum of two (2) video profiles, each providing independent configuration of bitrate, framerate and resolution.
- E. The camera shall support video compression from a minimum of 64kbps and a maximum of 10Mbps.
- F. The camera shall support audio compression using the G.711 compression algorithm, streaming @ 32Kbps per channel sampled at 8KHz or 16KHz with a minimum of 16-bit resolution.

13.1.1.4 Storage

- A. The camera shall support on-board storage via a micro-SDHC storage slot and card.
- B. The camera shall support a minimum of 128GB of on-board storage.

13.1.1.5 Transmission, Interfaces, and Network

- A. The camera shall have a RJ-45 connector and comply with IEEE802.3 and IETF standards: 10/100 Base-T Ethernet
- B. The camera shall support a minimum bandwidth of 32Mb/s

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- C. The cameras shall support a minimum of four simultaneous unicast connections as a well as, simultaneously, an additional multicast stream.**
- D. The camera shall support a minimum of the following network protocols: TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, DDNS, DHCP.**
- E. The camera shall contain password protection and support HTTPS for the web interface and IEEE802.1x.**
- F. The camera shall contain an embedded real-time clock as well as acting as an (NTP) Notice to Proceed client.**
- G. The cameras shall conform to the ONVIF protocol , Profile S or current. This is an Industry Standard for Camera to Server Compression and Communication Protocol.**

13.1.1.6 Analytics

- A. The camera shall support the following analytics functions as standard:**
 - I. Motion Detection, including configurable region of interest**
 - II. Hooded camera/camera tampering**
 - III. Tripwire**
 - IV. Intrusion**
 - V. Abandoned / Missing Object**

13.1.1.7 Configuration

- A. All configuration of the camera should be possible via the embedded webpage using a web browser and**

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HTTP/HTTPS using port 80.

- B. Configuration of the cameras should be possible via a standard ONVIF configuration tool

13.1.1.8 Physical *

***No Microdome cameras**

13.1.1.9 Electrical

- A. The camera shall support Power over Ethernet (802.3af Class 0)
- B. The camera shall have the option of a direct 12V DC PSU

13.1.1.10 Environmental

- A. Vandal Resistant Variant: The camera shall have an operating temperature of -20oC (-4oF) to +60oC (+140oF)
- B. Vandal Resistant Variant: The camera shall have a cold start minimum temperature of -20oC (-4oF)
- C. Environmental Vandal Resistant Variant: The camera shall have an operating temperature of -40oC (-40oF) to +60oC (+140oF)
- D. Environmental Vandal Resistant Variant: The camera shall have a cold start minimum temperature of -30oC (-22oF)

13.1.1.11 Variants

- A. The camera shall have a remote zoom/focus lens with the following attributes should be at a minimum of

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	Focal Length	H Viewing Angle	Max Aperture
Standard	2.7-12.0mm	100° (W) 33° (T)	F1.4

13.1.1.12 Licensing

- A. The camera shall be fully functionally without any on-board licensing options. Software cannot be a "Sole Source". It must be Universal.

13.1.2 Dome Cameras, Indigo Vision or equal

13.1.2.1 Functional overview (18 Internal & 2 External) The High

- A. Definition fixed dome camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network
- B. The High Definition fixed dome camera shall capture audio, compress using the G.711 algorithm and transmit audio via an IP/Ethernet network
- C. The High Definition fixed dome camera shall perform on-board video content analysis (VCA)

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13.1.2.2 Capture

- A.** The camera shall capture video using a 1 / 3" HD progressive scan CMOS, 4 Megapixel sensor that supports >120Db Wide Dynamic Range (WDR).
- B.** The camera shall capture video at a minimum of 4MP resolution minimum of 1920X1080 and maximum of 2560 x 1440
- C.** In day mode, the camera shall operate down to 0.1 Lux (color), @ 30IRE, F1.4, 1/30s shutter
- D.** In night mode, the camera shall operate down to 0.01 Lux (mono), @30IRE, F1.4, Minimum of 1/15s shutter and maximum of 1/30s shutter
- E.** The cameras shall be a true day/night cameras with mechanical IR cut filter
- F.** The camera shall support an option for Auto Back Light Compensation (BLC)
- G.** The camera shall support auto or fixed white balance.

13.1.2.3 Compression

- A.** The video compression shall be carried via dedicated hardware compression; software compression via DSP is not acceptable.
- B.** The camera shall support H.264 (ISO 14496-10) compression algorithm and shall offer the compression at 25/30 frames per second.
- C.** The camera shall support both constant bitrate (CBR) and variable bitrate (VBR) options.

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- D. The camera shall support a minimum of 2 and a maximum of 4 video profiles, each providing independent configuration of bitrate, framerate and resolution.**

- E. The camera shall support video compression from a minimum of 64Kbps and a maximum of 10Mbps.**

- F. The camera shall support audio compression using the G.711 compression algorithm, streaming @ 32Kbps per channel sampled at 8KHz or 16KHz with a minimum of 16-bit resolution.**

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13.1.2.4 Storage

- A. The camera shall support on-board storage via a microSDHC storage slot and card.
- B. The camera shall support a minimum of 128GB of on-board storage.

13.1.2.5 Transmission, Interfaces, and Network

- A. The camera shall have a RJ-45 connector and interface with IEEE802.3 and IETF standards: 10/100 Base-T Ethernet
- B. The camera shall support a maximum bandwidth of 32Mb/s
- C. The cameras shall support a minimum of 4 simultaneous unicast connections as well as, simultaneously, an additional multicast stream.
- D. The camera shall support the following network protocols: TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, DDNS, DHCP.
- E. The camera shall contain password protection and support HTTPS for the web interface and IEEE802.1x.
- F. The camera shall contain an embedded real-time clock as well as acting as an NTP client.
- G. The cameras shall conform to the ONVIF protocol, Profile S or current.

13.1.2.6 Analytics

- A. The camera shall support the following analytics functions as standard:
 - I. Motion Detection, including configurable region of interest

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- II. Hooded camera/camera tampering
- III. Tripwire
- IV. Intrusion
- V. Abandoned / Missing Object

13.1.2.7 Electrical

- A. The camera shall support Power over Ethernet (802.3af Class 0);
- B. The camera shall have the option of a direct 12VDC PSU
- C. Vandal Resistant Variant: The camera shall consume 4W

13.1.2.8 Environmental

- A. The camera shall have an operating temperature of -20°C (-4°F) to +60°C (+140°F)
- B. Vandal Resistant Variant: The camera shall have a cold start minimum temperature of -20°C (-4°F)

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- C. Environmental Vandal Resistant Variant: The camera shall have an operating temperature of -40oC (-40oF) to +60oC (+140oF)**
- D. Environmental Vandal Resistant Variant: The camera shall have a cold start minimum temperature of -30oC (-22oF)**

13.1.2.9 Variants

- A. The camera shall have an M14 remote zoom/focus lens with the following attributes as the minimum:**

	Focal Length	H Viewing Angle	Max Aperture
Telephoto	10 - 23mm	26.5° (W) 11.5° (T)	F1.6

13.1.3 Dome Cameras, Indigo Vision or equal

13.1.3.1 Functional Overview (12 External)

- A. The fixed camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.**
- B. The fixed camera shall capture audio, compress using the AAC-LC algorithm and transmit audio via and IP/Ethernet network.**
- C. The fixed camera shall perform on-board video content analysis (VCA).**

13.1.3.2 Capture

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- A. The camera shall capture video using a 1 / 3" HD progressive scan CMOS, 2 Megapixel sensor that supports Wide Dynamic Range (WDR), with a (SNR) Signal to Noise Ratio of better than 39dB and an effective (TVL) TV Line of 850 (horizontal)**
- B. The camera shall capture video at a minimum of 1080p resolution at a minimum of (1920 x 1080)**
- C. In day mode, the camera shall operate down to 0.05 Lux (color), @30IRE, F1.2, 1/15s shutter**
- D. In night mode, the camera shall operate down to 0.005 Lux (mono), @30IRE, F1.2, a minimum of 1/15s shutter and a maximum of 1/30s shutter**
- E. The cameras shall be a true day/night cameras with mechanical IR cut filter.**
- F. The camera shall support an option for Auto Back Light Compensation (BLC)**
- G. The camera shall support auto or fixed white balance.**

13.1.3.3 Compression

- A. The video compression shall be carried via dedicated hardware compression; software compression via DSP is not acceptable.**
- B. The camera shall support H.264 (ISO 14496-10) compression algorithm and must offer the compression at 25/30 frames per second**
- C. The camera shall support ACF+ (Activity Controlled Frame rate) so that the frame rate can be reduced when the on-board motion algorithm dictates that there is little or no relevant motion in the scene.**

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- D. The camera shall support video compression with a minimum of 32kbps and a maximum of 8Mbps**

- E. The camera shall support audio compression using the AAC-LC compression algorithm, sampled at a minimum of 16Khz with a maximum of 16 bit resolution.**

- F. The audio must be synchronized with the video.**

13.1.3.4 Analytics

- A. The camera shall support the following analytics functions as standard:
 - I. Motion Detection, including configurable region of interest**
 - II. Hooded camera/camera tampering****

- D. The camera shall support the following advanced analytics options:
 - I. Virtual Tripwire with a minimum of 2 or maximum of 4 separately configurable tripwires**
 - II. Museum mode**
 - III. Congestion detection**
 - IV. Counter Flow****

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13.1.3.5 Configuration

- A. All configuration of the camera should be possible via the embedded webpage using a web browser and HTTP/HTTPS using port 80.

13.1.3.6 Physical *

*No MicroCameras

13.1.3.7 Electrical

- A. The camera shall support Power over Ethernet (802.3af Class 0);
- B. The camera shall support external power of 24V AC/DC @ 0.4A
- C. The camera shall have the option of a direct 24V DC PSU
- D. Any attached heater shall use 25W maximum

13.1.3.8 Environmental

- E. Environmental Variant
 - I. The camera shall have an operating temperature of -40oC (-40oF) to +50oC (+122oF)
 - II. Ingress Protection rating of IP66
 - III. Impact Protection Rating of IK10 Regulatory

13.1.3.9 Variant

- A. The camera shall have a remote zoom/focus lens with the following attributes as the minimum:

Focal Length	H Viewing Angle	Max Aperture
--------------	-----------------	--------------

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Telephoto 10-23mm 26.5° (W) 11.5° (T) F1.6

13.1.4 360-degree Fisheye Cameras

13.1.4.1 Functional Overview (4 External & 3 Internal)

- A. The camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.**
- B. The camera shall capture audio, compress using the G.711 algorithm and transmit video via and IP/Ethernet network.**
- C. The camera shall perform on-board video content analysis (VCA)**

13.1.4.2 Capture

- A. 6MP Variant: The camera shall capture video using a 1/1.8" progressive scan (CMOS) Complementary Metal Oxide Semiconductor, 6 Megapixel sensor that supports >100dB Wide Dynamic Range (WDR).**
- B. The video compression shall be carried via dedicated hardware compression; software compression via DSP is not acceptable.**
- C. The camera shall support H.264 (ISO 14496-10) compression algorithm and should offer the compression at 25/30 frames per second.**

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- D. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR) options.**
- E. The camera shall support a minimum of 2 video profiles, each providing independent configuration of bitrate, framerate and resolution.**
- F. The camera shall support video compression from a minimum of 64kbps and a maximum of 10Mbps.**
- G. The camera shall support audio compression using the G.711 compression algorithm, streaming @ 32Kbps per channel sampled at 8KHz or 16KHz with a minimum of 16bit resolution.**

13.1.4.3 Storage

- A. The camera shall support on-board storage via a microSDHC storage slot and card.**
- B. The camera shall support up to 128GB of on-board storage.**

13.1.4.4 Transmission, Interfaces and Network

- A. The cameras shall conform to the ONVIF protocol, Profile S or current. This is an Industry Standard for Camera to Server compression and communication Protocol.**
- B. The camera shall have a RJ-45 connector and comply with IEEE802.3 and IETF standards: 10/100 Base-T Ethernet.**
- C. The camera shall support a minimum bandwidth of 32Mb/s.**
- D. The cameras shall support a minimum of 4 simultaneous unicast connections as a well as, simultaneously, an additional multicast stream.**

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- E. The camera shall support the following network protocols: TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, DDNS, DHCP.**
- F. The camera shall contain password protection and support HTTPS for the web interface and IEEE802.1x.**
- G. The camera shall contain an embedded real-time clock as well as acting as an NTP client.**

13.1.4.5 Analytics

- A. The camera shall support the following analytics functions as standard:
 - I. Motion Detection, including configurable region of interest.**
 - II. Hooded camera/camera tampering**
 - III. Tripwire**
 - IV. Intrusion****

13.1.4.6 Configuration

- A. All configuration of the camera shall be possible via the embedded webpage using a web browser and HTTPS.**
- B. Configuration of the cameras shall be possible via a standard ONVIF configuration tool.**

13.1.4.7 Physical*

- * No Micro-Cameras**

13.1.4.8 Electrical

- A. The camera shall support Power over Ethernet (802.3af Class 0)**

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B. The camera shall have the option of a direct 12V DC PSU

13.1.4.9 Environmental

A. The camera shall have an operating temperature of -30°C (-22°F) to +60°C (+140°F)

B. The camera shall have a cold start minimum temperature of -30°C (-22°F)

13.1.4.11 Variants

A. The camera shall have a Fisheye lens with the following attributes as a minimum

	Focal Length	H Viewing Angle	Max Aperture
6MP Variant	1.27-8mm	185.0°	F2.0

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13.1.4.11 Licensing

- A. The camera shall be fully functional without any on-board licensing options.

13.1.5 Dome Cameras

13.1.5.1 Functional Overview (8 External)

- A. The camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.
- B. The camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.
- C. The camera shall capture audio, compress using the G.711 algorithm and transmit video via and IP/Ethernet network.
- D. The camera shall perform on-board video content analysis (VCA)

13.1.5.2 Capture

- A. 4MP Variant: The camera shall capture video using a 1/3" HD progressive scan CMOS, 4 Megapixel sensor that supports >120dB Wide Dynamic Range (WDR).
- B. 4MP Variant: The camera shall capture video at up to 4MP resolution (2560 x 1440)
- C. In day mode, the camera shall operate down to 0.1 Lux (color), 30 IRE, F1.4, 1/30s shutter.
- D. In night mode, the camera shall operate down to 0.01 Lux (mono), 30 IRE, F1.4, a minimum of 1/15s Shutter and a maximum of 1/30s shutter.
- E. The cameras shall be a true day/night cameras with mechanical IR cut filter.

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- F. The camera shall support an option for Back Light Compensation (BLC).
- G. The camera shall support auto or fixed white balance.

13.1.5.3 Compression

- A. The video compression shall be carried via dedicated hardware compression; software compression via DSP is not acceptable.
- B. The camera shall support H.264 (ISO 14496-10) compression algorithm and should offer the compression at 25/30 frames per second
- C. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR) options.
- D. The camera shall support a minimum of 2 video profiles, each providing independent configuration of bitrate, framerate and resolution.
- E. The camera shall support video compression from 64kbps up to 10Mbps.
- F. The camera shall support audio compression using the G.711 compression algorithm, streaming at a minimum of 32Kbps per channel sampled at a minimum 8KHz and a maximum of 16KHz minimum of 16bit resolution.

13.1.5.4 Storage

- A. The camera shall support on-board storage via a microSDHC storage slot and card.

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- B.** The camera shall support a minimum of 128GB and a maximum of 250 GB of on-board storage.

13.1.5.5 Transmission, Interfaces and Network

- A.** The cameras shall conform to the ONVIF protocol, Profile S or current.
- B.** The camera shall have a RJ-45 connector and comply with IEEE802.3 and IETF standards: 10/100 Base-T Ethernet.
- C.** The camera shall support a minimum bandwidth of 32Mb/s.
- D.** The cameras shall support a minimum of 4 simultaneous unicast connections as well as, simultaneously, an additional multicast stream.
- E.** The camera shall support the following network protocols: TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, DDNS, DHCP.
- F.** The camera shall contain password protection and support HTTPS for the web interface and IEEE802.1x.
- G.** The camera shall contain an embedded real-time clock as well as acting as an NTP client.

13.1.5.6 Analytics

- A.** The camera shall support the following analytics functions as standard:
 - A.** Motion Detection, including configurable region of interest

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- II. Hooded camera/camera tampering
- III. Tripwire
- IV. Intrusion
- V. Abandoned / Missing Object

13.1.5.7 Configuration

- A. All configuration of the camera should be possible via the embedded webpage using a web browser and HTTP/HTTPS using port 80.
- B. Configuration of the cameras should be possible via a standard ONVIF configuration tool.

13.1.5.8 Physical *

* No MicroCameras

13.1.5.9 Electrical

- A. The camera shall support Power over Ethernet (802.3af Class 0)
- B. The camera shall have the option of a direct 12V DC PSU

13.1.5.10 Environmental

- A. The camera shall have an operating temperature of -40oC (-40oF) to +60oC (+140oF)
- B. The camera shall have a cold start minimum temperature of -30oC (-22oF)

13.1.5.11 Variants

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- A. The camera shall have a remote zoom/focus lens with the following attributes as a minimum.

	Focal Length	H Viewing Angle	Max Aperture
Standard	2.7-12.0mm	100°(W) 33°(T)	F1.4

13.1.5.12 Licensing

- A. The camera shall be fully functional without any on-board licensing options.

13.1.6 PTZ Dome Camera

13.1.6.1 Functional Overview (1 External)

- A. The camera shall capture high definition video, compress the video using the H.264 algorithm and transmit video via an IP/Ethernet network.
- B. The camera shall capture audio, compress using the G.711 algorithm and transmit video via and IP/Ethernet network.
- C. The camera shall perform on-board video content analysis (VCA).

13.1.6.2 Capture

- A. The camera shall capture video using a 1/2.8" HD progressive scan CMOS, 4 Megapixel sensor that supports >100dB Wide Dynamic Range (WDR).
- B. The camera shall capture video at a minimum of 4MP resolution (2560 x 1440).

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- C. In day mode, the camera shall operate down to 0.05 Lux (color), 30 IRE, F1.6, 1/10s shutter.**
- D. In night mode, the camera shall operate down to 0.01 Lux (mono), 30 IRE, F1.6, 1/10s shutter.**
- E. The cameras shall be a true day/night cameras with mechanical IR cut filter.**
- F. The camera shall support an option for Back Light Compensation (BLC).**
- G. The camera shall support auto or fixed white balance.**

13.1.6.3 Compression

- A. The video compression shall be carried via dedicated hardware compression; software compression via (DSP) Digital signal Processing is not acceptable.**
- B. The camera shall support H.264 (ISO 14496-10) compression algorithm and should offer the compression at 25/30 frames per second**
- C. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR) options.**
- D. The camera shall support a minimum of 2 and a maximum or 4 video profiles, each providing independent configuration of bitrate, framerate and resolution**
- E. The camera shall support video compression with a minimum of 64kbps and a maximum of 8Mbps.**
- F. The camera shall support audio compression using the G.711 compression algorithm, streaming at a minimum of**

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32Kbps per channel sampled at a minimum of 8KHz with a maximum of 16bit resolution.

13.1.6.4 Storage

- A. The camera shall support on-board storage via a microSDHC storage slot and card.
- B. The camera shall support a minimum of 128GB of on-board storage.

13.1.6.5 Transmission, Interfaces and Network

- A. The cameras shall conform to the ONVIF protocol, Profile S or current.
- B. The camera shall have a RJ-45 connector and comply with IEEE802.3 and IETF standards: 10/100 Base-T Ethernet.
- C. The camera shall support a minimum bandwidth of 32Mb/s.
- D. The cameras shall support a minimum of four (4) simultaneous unicast connections as a well as, simultaneously, an additional multicast stream.
- E. The camera shall support the following network protocols: TCP, UDP, RTP, RTSP, ICMP, IGMP, SNMP, HTTP, HTTPS, PPPoE, uPnP, DDNS, DHCP.
- F. The camera shall contain password protection and support HTTPS for the web interface and IEEE802.1x.
- G. The camera shall contain an embedded real-time clock as well as acting as an NTP client.

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13.1.6.6 Analytics

- A. The camera shall support the following analytics functions as standard:**
 - I. Motion Detection, including configurable region of interest**
 - II. Hooded camera/camera tampering**
 - III. Tripwire**
 - IV. Intrusion**

13.1.6.7 Configuration

- A. All configuration of the camera should be possible via the embedded webpage using a web browser and HTTP/HTTPS using port 80.**
- B. Configuration of the cameras should be possible via a standard ONVIF configuration tool.**

13.1.6.8 Physical *

*No Microcameras

13.1.6.9 Electrical

- A. The camera shall support Power over Ethernet Plus - PoE+ (802.3at Class 0)**
- B. The camera shall have the option of a direct 24V AC PSU**
- C. The camera shall consume 23W with heater**

13.1.6.10 Environmental

- A. Environmental Pendant Variant: The camera shall have an operating temperature of -20oC (-4oF) to +60oC (+140oF)**

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when powered using PoE+ power source

- B. **Environmental Pendant Variant:** The camera shall have an operating temperature of -40oC (-40oF) to +60oC (+140oF) when powered using 24V AC power source
- C. **Environmental Pendant Variant:** The camera shall have a cold start minimum temperature of -20oC (-4oF)

13.1.6.11 Variants

- A. **Pan Range** shall be 360° continuous rotation
- B. **Pan Speed** 0.5° -350° /s
- C. **Tilt Range** must be 180°
- D. **Tilt Speed** 0.5° -250° /s
- E. **The camera shall have auto focus with a manual override.**

	Focal Length	H Viewing Angle	Max Aperture
Standard	4.3-129mm	66.5° (W) 3.25° (T)	F1.6 to F4.4

13.1.6.12 Licensing

- A. **The camera shall be fully functional without any on-board licensing options. The software shall not be a "Sole Source". It shall be Universal**

13.1.7 Network Video Recorder(s) NVR's

13.1.7.1 Functional Overview

- A. **The NVR-AS shall provide the function of recording video and audio streams directly from IP cameras and/or encoders.**

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The streams may originate from devices complying with the ONVIF standard.

- B.** The NVR-AS shall provide the function of recording video and audio streams from cameras and/or encoders via Camera The NVR-AS shall be codec agnostic and support a number of standard codecs
- C.** The NVR-AS shall provide the function of reviewing video and audio streams on-demand to Control Center workstations.
- D.** The NVR-AS shall provide the function of storing alarms generated by any supported device on the system.
- E.** The NVR-AS shall provide the function of notifying workstations on the system of any alarms.
- F.** The NVR shall support the function of indexing recordings for rapid display of time, alarm or motion based thumbnails
- G.** The NVR-AS shall provide the function of notifying Recording and logging of bookmarks in association with recordings
- H.** The NVR-AS shall be codec agnostic and support a number of standard codecs
- I.** The NVR-AS shall provide the function of reviewing video and audio streams on-demand to Control Center workstations.
- J.** The NVR-AS shall provide the function of storing alarms generated by any supported device on the system.
- K.** The NVR-AS shall provide the function of notifying workstations on the system of any alarms.
- L.** The NVR shall support the function of indexing recordings for rapid display of time, alarm or motion based thumbnails
- M.** The NVR-AS shall provide the function of notifying Recording and logging of bookmarks in association with recordings

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- N.** The NVR-AS shall have the option to digitally sign recordings at the moment of recording and automatically verify this signature on export.
- O.** Gateway for those devices that are supported.

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- P. The NVR-AS shall have the option of a Linux or a Windows operating system.
- Q. The NVR-AS shall provide self-diagnostics including: Disk status, CPU usage, motherboard temperature, network status, fan status.

13.1.7.2 Transmission

- A. The NVR-AS shall have 4 RJ-45 connectors and comply with IEEE802.3 and IETF standards: 10/1000 Base-T Ethernet.
- B. The NVR-AS shall support a maximum video throughput of 500Mb/s (for details see table below).
- C. The NVR-AS shall support the following network protocols: TCP, UDP, IGMP, SNMP, HTTP, IGMP, SNMP, HTTP, NTP, Telnet, FTP.

13.1.7.3 Electrical

- A. The operating voltage: shall be 100-240V, ~ 50/60Hz, with a maximum current of 1A.
- B. The principal power supply shall be internal with an external IAC connection
- C. The NVR-AS shall have an option for redundant internal power supply

13.1.7.4 Environmental

- A. The operating temperature shall be 10°C (50°F) to 35°C (95°F)

13.1.7.5 Storage

- A. The NVR-AS shall utilize nearline SATA drives
- B. The NVR-AS shall support a maximum of 16 drives

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- C. The drives shall have a minimum 3-year warranty independent of the NVR-AS
- D. The NVR-AS shall support 2, 3, 4, 6 and 8TB drives
- E. The NVR-AS shall have options for RAIDs 5&6
- F. The NVR-AS shall support a maximum of 200 recorded streams and 20 playback streams with a maximum playback bitrate of 400Mb/s
- G. The NVR-AS shall have the additional minimum specifications depending on variant:

	Available Storage (GB)	Max. Recording Streams with Digital water Marking	Max Recording Bitrate (Mbps)	Max Recording Bitrate with digital watermarking (Mbps)
RA60TB Raid 6	60TB	200	500	500

*Calculating storage at 30 days continuous record of average 12 FPS with High Definition MP quality.

13.1.8 Video Management System

13.1.8.1 General

- A. The software shall be run on any PC based on Microsoft Windows (Windows 7 or later for 64-bit systems)
- B. The software shall consist of a single client application.
- C. The client software shall not be dependent on, nor require any connection to, a central management or configuration server.

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- D. The client software shall be installable without any need for software or hardware license.**
- E. The client software shall be ONVIF compliant and provide support for ONVIF compliant cameras.**
- F. The software shall have flexible and dockable windows meaning that most primary functions can be auto- hidden when not in use. The docking function shall be available in all four sides of the GUI. Dockable windows shall include:
 - I. Site Explorer**
 - II. Alarms/Events window**
 - III. PTZ and advanced telemetry functions**
 - IV. Monitors Window**
 - V. Maps window****

13.1.8.2 Architecture

- A. The system shall support a distributed architecture.**
- B. Video shall normally stream direct from camera to client; streaming via a proxy, or intermediate server shall not be the normal function of the system but may be selected as an option.**
- C. A client need not ask "permission" to connect to a camera. The handshake shall be between client and camera directly.**
- D. There shall be no single management server. System management shall be distributed throughout the system.**

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- E. Recording failover shall be standard without need for additional license and/or hardware.**
- F. It must be possible to record to multiple recorders at the same time.**
- G. Client workstations must remain "connected" to all recording devices simultaneously**

13.1.8.3 Navigation

- A. Users shall be able to navigate and find devices by a number of methods**
 - I. Hierarchical Tree View**
 - II. Multi-layered Scalable Maps**
 - III. Site search function whereby a partial string may be typed and a corresponding partial list be made available**

13.1.8.4 Live Video

- A. Live Video on Workstation Screens**
- B. The Video Management System shall show live video from IP Cameras and Video Transmitters in MJPEG, MPEG4 and H.264 formats.**
- C. The Video Management System shall support cameras with resolutions ranging from Standard Definition, High Definition (HD) and a maximum of 5 Megapixel.**
- D. The Video Management System shall show video across 4 displays per workstation - each display must have a minimum of 4 and a maximum of 25 viewing panes.**
- E. The Video Management System shall allow configuration of the video and audio transport types (TCP, UDP, Multicast) for each user.**

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- F. The Video Management System shall allow configuration of the video and audio stream settings for each user, depending on the support hardware.**
- G. Users shall be able to change the video pane layout in each of the 4 screens independently:**
 - I. Grid layouts: 1x1, 2x2, 3x3, 4x4, 5x5**
 - II. Widescreen layouts: 2x3, 3x4, 4x6**
 - III. Hotspot layouts based on 3x3, 4x3, 4x4, 5x5 larger pane in top, left**
 - IV. Hotspot layouts based on 4x3, 4x4, 5x5 larger panes in center.**
- H. Users shall be able to change the aspect ratio in each of the 4 video windows independently in order to display Standard Definition or High Definition video. Choose between:**
 - I. Widescreen (16:9)**
 - II. Standard (4:3)**
- I. Users shall be able view video at the correct aspect ratio or optionally stretch video to fit the available space, regardless of original aspect ratio.**
- J. Users shall be able to move any image from one display screen to another via drag-and-drop.**
- K. The Video Management System shall allow the overlay of time and date and site information on live video panes, either on all panes, or selected pane only. In addition, the overlay may consist of a user-provided transparent PNG file.**
- L. The Video Management System shall allow users to view live video and review recorded video at the same time.**

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- M.** Users shall be able to digitally zoom up to 1000% and also digitally scroll live video from any camera using the mouse wheel
- N.** Users shall be able to save the current zoom/scroll position as a camera view (virtual preset).
- O.** Users shall be able to display any camera view (virtual preset).
- P.** Administrators shall be able to configure hidden zones on fixed cameras.
- Q.** The Video Management System shall allow users to reveal the hidden zone in live video if the user has the appropriate permission.
- R.** The Video Management System shall allow the removal of interlacing artifacts from 4SIF video using the following criteria:
 - I.** Best performance
 - II.** Best image quality
 - III.** Smoothest rendering
- S.** The Video Management System shall allow the display of objects detected via analytics on the video (a minimum of 10 at once).
- T.** The Video Management System shall allow the display of analytics levels on video.
- U.** Users shall be able to take a snapshot of one image or all images currently displayed and save as a bitmap or JPEG image to a configurable location. This shall include zoomed images.
- V.** Users shall be able to print a snapshot of an image displayed in a video pane direct on a printer (color or grayscale, depending on printer).

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- W.** Users shall be able to replay currently viewed live video by a single mouse click for replays from 10, 15 or 30 seconds before current time or from alarm time.
- X.** Users shall be able to run a 3rd party "applet" from live video mode. The applet shall be passed the IP Address of camera in selected video pane as well as its name and the current user type. Up to 4 different applets shall be supported.
- Y.** Users shall be able to configure the size for text and icons displayed on video panes. Text and icons can be fixed size or adjust automatically when video pane size changes.
- Z.** Users shall be able to view stream statistics on all current video streams, including the following information:
 - I.** Frame rate
 - II.** Resolution (SIF, 2SIF, 4SIF, 720p, 1080p, 5MP)
 - III.** Current bit-rate
 - IV.** Audio bit-rate
- AA.** In the event of the video connection failing, the Video Management System shall display a clear error message with the option to also display the last video frame received.

13.1.8.5 Pursuit Mode

- A.** The VMS shall have an additional live mode whereby, when a single camera is selected, all surrounding cameras are streamed at the same time. A "surrounding camera" shall be user configurable and would normally mean a camera with a physically adjacent field of view.

13.1.8.6 Event Counting

- A.** The Video Management System shall allow users to view a count of analytics events on the video pane while video is

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being displayed.

- B.** The Video Management System shall allow users to reset the event count for a camera.

13.1.8.7 Live Video on Analog Monitors

- A.** The Video Management System shall be able to display camera information in the On Screen Display (OSD) of an analog monitor
 - I.** Camera name
 - II.** Date and time
- B.** The Video Management System shall be able record video to analog VCRs (via decoders.)
- C.** The Video Management System shall support point to point connections between encoders and decoders for the following data:
 - I.** Video (SD only)
 - II.** Audio transmit and receive
 - III.** Serial
- D.** Users shall be able to specify whether a receiver is connected to an analog monitor or VCR.

13.1.8.8 Audio in Live Video

- A.** Users shall be able to listen to audio from multiple cameras through PC speakers.
- B.** Users shall be able to speak to one or more cameras through a PC microphone.

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- C. Users shall be able to listen to audio from a camera through an analog monitor's speakers.
- D. Users shall be able to speak to a camera displayed on an analog monitor through a microphone connected to a decoder.
- E. Users shall be able to mute a client speaker.
- F. The Video Management System shall have an option to allow or prevent simultaneous listen and speak (full duplex audio). If full duplex audio is off, the direction of audio will be switched automatically when the user listens or speaks.
- G. Users shall be able to listen to audio streams that do not have associated video.
- H. The Video Management System shall support the following for cameras through the ONVIF interface or Camera Gateway
- I. Live audio through PC speakers*

13.1.8.9 Broadcast Audio

- A. Users shall be able to manually broadcast live audio from the user's microphone to multiple remote speaker sets forming a PA group.
- B. Users shall be able to play a pre-recorded message to a remote speaker or PA group.
- C. Users shall be able to schedule the broadcast of pre-recorded messages to a remote speaker or PA group.

13.1.8.10 PTZ Control

- A. All PTZ control shall be user-restricted (see users section).

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- B.** Users shall be able to configure named preset positions with optional "tool tip" text.
- C.** Users shall be able to configure named custom commands with optional "tool tip" text. Commands can be per PTZ type or per camera, as required.
- D.** Users shall be able to copy custom PTZ commands from one camera to another.*
- E.** Users shall be able to simultaneously pan and tilt a PTZ camera displayed in a video pane in any direction and at varying speed by moving the PC mouse on the video pane.
- F.** Users shall be able to zoom a PTZ camera in or out using the PC mouse.
- G.** Users shall be able to simultaneously pan, tilt AND zoom a PTZ camera displayed in a video pane or monitor using a joy stick on one of the supported CCTV keyboards.
- H.** Users shall be able to adjust the focus of a PTZ camera using the on screen PTZ controls or a CCTV keyboard:
 - I.** Focus near
 - II.** Focus far
 - III.** Auto-focus*
- I.** Users shall be able to adjust the iris of a PTZ camera using the on screen PTZ controls or a CCTV keyboard:-Open iris-Close-Auto-iris.*
- J.** Users shall be able to move a PTZ camera to a preset position using the on screen PTZ controls or a CCTV keyboard.*
- K.** Users shall be able to perform a custom command on a PTZ camera using the on screen PTZ controls (e.g. operate

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wipers.)*

- L. Users shall be able to enter the menu on a PTZ camera using the on screen PTZ controls or a CCTV keyboard (menu options navigated using pan and tilt.)*
- M. The Video Management System shall automatically drop the connection to a PTZ camera if not moved for 5 seconds to allow other users to control it.*
- N. Users shall be able to hold onto connections to PTZ cameras to prevent other users taking control if not moved (overrides the 5 second timeout.)**
- O. Users shall be able to take control of a PTZ camera if user has a higher priority than the user currently moving it (overrides PTZ hold.)**
- P. Inform user when can't take control of a PTZ camera because another user with a higher priority is controlling it.**
- Q. Users shall be able to show or hide the on screen PTZ controls.
- R. The Video Management System shall support the following for cameras using the ONVIF interface or Camera Gateway:
 - I. Pan, tilt and zoom control with mouse and joystick
 - II. Go to preset
 - III. Set preset

13.1.8.11 IP Video Wall

- A. An IP video wall shall be constructed using secondary workstations, each of which manages up to 4 monitors. The

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video wall shall be controlled over an IP network and have an unlimited number of primary workstations.

- B.** The video wall shall have the ability to be managed from primary workstations through a standard CCTV keyboard. The system shall support multiple primary and up to 98 secondary workstations giving a maximum video wall size of 9800 video panes.
- C.** Monitors within the video wall shall be able to display:

 - I.** live video
 - II.** guard tours
 - III.** salvos
 - IV.** site maps
 - V.** alarm status.
- E.** It shall be possible to constrict the video wall using any PC monitors e.g. CRT, Plasma, LCD, HD TV.
- F.** The IP Video Wall shall be fully scalable to meet any control room requirement. It shall be possible to add more slaves with monitors as needed up the limit of 98.
- G.** The IP Video Wall shall support unlimited master workstations.
- H.** The IP Video Wall shall support standard and High Definition widescreen video.
- I.** The IP Video Wall shall be controlled using standard CCTV keyboards.
- J.** The IP Video Wall shall be able to display site maps and alarm status.
- K.** The IP Video Wall shall support black-screen-monitoring features.

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- L. The IP Video Wall shall be able to dynamically change the video layout of a monitor.**

13.1.8.12 Virtual Matrix

- A. The Video Management System shall allow users to easily drag icons representing cameras, sequences, salvos and guard tours onto PC viewing panes and onto analog monitors.**

13.1.8.13 Sequences

- A. Users shall be able to configure sequences of cameras, camera views and or presets (PTZ cameras); each camera can have a separate dwell time (1 to 300 seconds).**
- B. Users shall be able to reorder the cameras within a sequence.**
- C. Users shall be able to run multiple sequences in video panes.**
- D. Users shall be able to run sequences on analog monitors.**
- E. Users shall be able to pause (hold) a sequence.**
- F. Users shall be able to display the next or previous camera in the sequence.**

13.1.8.14 Salvos

- A. Users shall be able to configure salvos containing cameras, camera views and or presets (PTZ cameras). Each salvo can optionally have an associated video pane layout.**
- B. Users shall be able to reorder the cameras within a salvo.**
- C. Users shall be able to display a salvo across a set of video panes within in any of the video windows (changes layout automatically if configured to do so).**

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- D. Users shall be able to display a salvo across a set of monitors.
- E. Users shall be able to view all cameras in a site as a salvo.
- F. Users shall be able to view all cameras from a map as a salvo.

13.1.8.15 Guard Tours

- A. Users shall be able to configure guard tours containing salvos -- each salvo can have a separate dwell time (1 to 300 seconds.)
- B. Users shall be able to reorder the salvos within a guard tour.
- C. Users shall be able to run a guard tour in a set of video panes within a video window (one per window.)
- D. Users shall be able to run a guard tour in a set of analog monitors.

13.1.8.16 Tasks

- A. Users shall be able to configure scheduled tasks for users that display video (sequences, salvos, guard tours) either automatically when the user logs in or on a daily time schedule.
- B. Users shall be able to run scheduled tasks for the user while that user is logged in.
- C. Users shall be able to disable or enable scheduled tasks on a PC.

13.1.8.17 Matrix Numbering

- A. The Video Management System shall automatically allocate logical numbers to cameras, salvos, sequences,

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guard tours so that they can be started by number using a CCTV keyboard.

- B. The Video Management System shall allow the following options for configuring matrix numbers:
 - I. Display matrix numbers on user interface number of digits in numbering scheme (1-7)
 - II. Whether to put PC panes in the virtual matrix or otherwise
- C. Users shall be able to manually renumber cameras, salvos, sequences, guard tours.
- D. It shall be possible to allocate a matrix number to cameras, monitors, sequences, salvos, guard tours in the range 1 to 9,999,999.

13.1.8.18 Keyboards for Closed Circuit Television System

- A. Video Management System shall support a choice of analog surveillance keyboards to be connected to any user's PC. They must be compatible with the following:
 - A. American Dynamics ADCC1100
 - B. American Dynamics (Sensormatic) AD2088
 - C. IndigoVision Surveillance Keyboard
 - D. Pelco KBD300A
 - E. Pelco 9760 (PTZ control only)
 - F. Panasonic keyboard WV-CU650
- B. The CCTV keyboard shall be connectable to any available PC COM port.

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- C. The CCTV keyboard shall allow users to control PTZ Cameras using a joystick.**
- D. Using the CCTV keyboard, users shall be able to make any PTZ camera go to a preset position.**
- E. Using the CCTV keyboard, users shall be able to start and stop video on video panes or external monitors by camera number and monitor number.**
- F. Using the CCTV keyboard, users shall be able to start and stop sequences on video panes or external monitors by sequence number and monitor number.**
- G. Using the CCTV keyboard, users shall be able to hold a sequence.**
- H. Using the CCTV keyboard, users shall be able to view the next/previous camera in sequence.**
- I. Using the CCTV keyboard, users shall be able to start salvos on video panes or external monitors by salvo number and monitor number.**
- J. Using the CCTV keyboard, users shall be able to start and stop guard tours on video panes or external monitors by tour number and monitor number.**
- K. Using the CCTV keyboard, users shall be able to change the video pane layout.**
- L. Using the CCTV keyboard, users shall be able to close error message popup windows within the Video Management System.**
- M. Using the CCTV keyboard, where the keyboard supports it, users shall be able control playback of recorded video, including the following functionality:**
 - A. Switch between live and playback**

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- B. Scroll forward and back along the timeline
 - C. Zoom in and out on the timeline
 - D. Set playback position
 - E. Play and pause footage
 - F. Synchronise playback
 - G. Control playback speed from the jog shuttle
 - H. Replay the last 10 seconds of footage
 - I. Return to live streaming (if replaying in live)
 - J. Play back video from all current live cameras
- N. Using the CCTV keyboard, users shall be able to view the camera with the next or previous matrix number.

13.1.8.19 Video Review

Timeline and Calendar

- A. Users shall be able to view the recorded video footage for a camera along a timeline. They shall be able to expand and contract the timeline to show a larger or smaller time range and to scroll the timeline backwards and forwards to show different time periods.
- B. Users shall be able to use the mouse wheel to both scroll and expand/contract the timeline.
- C. For a camera, users shall be able to see summary information about how much recording footage is available from which NVR.

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- D. Users shall be able to change the playback NVR associated with a camera.**
- E. The Video Management System shall provide one-button click controls to go to the beginning or the end of available recording footage.**
- F. The Video Management System shall provide a calendar control to allow navigation to any year / month /day in the recording library.**
- G. The Video Management System shall provide a go to “today” control for getting current recording footage.**
- H. The Video Management System shall provide a go to “hour / minute / second” control.**
- I. The Video Management System shall display alarms related to the selected camera along the timeline including summary counts of the number of alarms in each time period.**
- J. The Video Management System shall display video bookmarks along the timeline. Bookmarks can either be those from a selected camera or from current bookmark query as displayed in the bookmark list.**

13.1.8.20 Playback on PC Screen

- A. The Video Management System shall play back video recorded in MJPEG, MPEG4 and H.264 formats.**
- B. The Video Management System shall replay footage in same video pane, or navigate to recorded video panes.**
- C. The Video Management System shall play back video from up to 25 cameras at once in a single video window.**

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- D.** The Video Management System shall play back each camera separately or synchronize to playback from the same time.
- E.** The Video Management System shall play back synchronized recorded audio in each video pane.
- F.** The Video Management System shall display time and date information on recorded video panes, either on all video panes, or on the selected pane only. This should be able to be set independently of the settings for live video panes.
- G.** The Video Management System shall play back video using the following standard VCR operations:
 - I.** Play-pause-fast forward at different speeds (x1/4, x1/2, x2, x4, x8, x16, x32, x64, x128)
 - II.** Rewind at different speeds (x1/4, x1/2, x2, x4, x8, x16, x32, x64, x128)
 - III.** Single frame forward-single frame back
- H.** The Video Management System shall provide a jog shuttle speed control for fast forward and rewind.
- I.** Users shall be able to move playback to a different time either using the timeline or entering a specific date and time.
- J.** Users shall be able to move playback to the time of the next alarm, bookmark or motion over threshold.
- K.** Users shall be able to move playback to the time of the previous alarm, bookmark or motion over threshold.
- L.** Users shall be able to digitally zoom up to 1000% and scroll replayed video.
- M.** Users shall be able to reveal the hidden zone in recorded video if user has the appropriate permission.

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- N.** Users shall be able to remove interlacing artifacts from 4SIF video.
- O.** Users shall be able to display analytics levels on video.
- P.** Users shall be able to take a snapshot of one image or all images currently displayed and save as a bitmap or JPEG image to a configurable location. This should include zoomed images.
- Q.** Users shall be able to print a snapshot of an image displayed in a video pane direct to a printer (color or grayscale, depending on printer.)

13.1.8.21 Motion Search

- A.** Users shall be able to find motion in recorded footage from a selected time and display a motion profile on the timeline.
- B.** Users shall be able to adjust the motion threshold used for thumbnails and for moving playback to next/previous motion.
- C.** Users shall be able to configure a region of interest for motion search.
- D.** The Video Management System shall support the following options for motion search:
 - I.** General motion search – for motion in any direction
 - II.** Directional motion search - for objects moving in a particular direction
 - III.** Museum mode search – for objects being removed from a scene
 - IV.** Object size.
- E.** It shall be possible to combine motion search modes to further refine the search.

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- F. Users shall be able to adjust the speed and granularity of the motion search.**

13.1.8.22 Audio Search

- A. Users shall be able to search for sounds in recorded footage from a selected time and display an audio level profile on the timeline.**
- B. Users shall be able to adjust the audio threshold used for thumbnails and for moving playback to next/previous sound.**

13.1.8.23 Thumbnails

- A. The Video Management System shall be able to display thumbnail images taken from the video footage in the current time line period. Thumbnails can be displayed by:
 - I. Time: At equal intervals across the timeline period depending on the number of thumbnails set for the user.**
 - II. Alarms: One image for each alarm in the period.**
 - III. Bookmark: One image for each bookmark in the period**
 - IV. Motion: One image for each time motion goes above a configurable threshold**
 - V. Audio: One image for each time the audio goes above a configurable threshold****
- B. Users shall be able to play back a recording from a selected thumbnail.**

13.1.8.24 Bookmarks

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- A. Users shall be able to add a bookmark to a recording for a camera at a specified time.**
- B. Users shall be able to find bookmarks by:**
 - I. Site name**
 - II. Camera name**
 - III. Time range**
 - IV. A text string within the bookmark**
- C. Users shall be able to produce reports of bookmarks and export to RTF or CSV formats.**
- D. Users shall be able to delete one or more bookmarks (if created by the same user)**
- E. Users shall be able to delete bookmarks created by any user.**
- F. The Video Management System shall ensure that bookmarks are held alongside recordings on the NVR, not on a user's PC.**
- G. Users shall be able to view recorded video associated with a bookmark.**
- H. It shall be possible for text information to be automatically fed into the IP Video System as Bookmarks via an SDK.**
- I. The Video Management System shall ensure that the text information is displayed in a scrolling bookmark comments window beside the playback window.**
- J. Detailed search options shall allow for filtering of bookmarks e.g. by time, by user.**
- K. Within the bookmark comments window the highlighted bookmark shall correspond to the current playback**

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position.

- L.** Next and previous incident buttons shall automatically scroll the bookmark comments window keeping the highlighted text and associated video in synch.
- M.** In a live view pane, users shall be able to add a bookmark to the recording of that camera.
- N.** Users shall be able to view bookmarks as a transparent overlay on a live pane.
- O.** The Video Management System shall support permissions for bookmarks so that only those users with the appropriate security level can view bookmarks created by users at the same level as them or below.

13.1.8.25 Incident Export

- A.** Users shall be able to export video clips from a selected camera or cameras within a site to a named incident.
- B.** Users shall be able to select the start and end times of the export by clicking and dragging on the timeline.
- C.** Time to export shall be no more than 30 seconds per hour of video recorded.
- D.** Users shall be able to queue video exports to be performed as a background process.
- E.** The Video Management System shall show progress and estimated time to completion in an export status window.
- F.** Users shall be able to add additional clips to existing incidents.
- G.** The Video Management System shall automatically digitally sign video clips on export.

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- H. Users shall be able to protect the original recordings to preserve the evidence.
- I. Users shall be able to review incidents in a standalone incident player application, directly from CD.
- J. Users shall be able to play back incidents with all the playback operations provided by the full Video Management System application.
- K. Users shall be able to check and authenticate digital watermarks embedded within exported clips.
- L. The Incident Player application shall be able to be run at the same time as the main Video Management System application so that users can easily verify the success of an export.
- M. The Video Management System shall support the following ONVIF cameras and cameras streamed via Camera Gateway
 - I. Export of video recorded in MJPEG, MPEG4 and H.264
 - II. Playback of exported video in exported player
- N. The Video Management System shall provide the option to include date and time on each frame of the recording when it is exported.
- O. Administrators shall have the ability to restrict the location that users may export video files to.

13.1.8.26 Storyboarding

- A. Users shall have the ability to produce a simple easy to view video summary of an incident

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- B. Users shall have the ability to export all video associated with this summary**
- C. All video in this export should be fully watermarked as per section G.11**
- D. The Storyboard GUI should allow you to add, remove and edit clips involved in the summary. This editing should be done via GUI.**

13.1.8.27 Playback on Analog Monitors

- A. Users shall be able to play back recorded video on an analog monitor from a selected time.**
- B. The Video Management System shall support basic play back operations on an analog monitor:**
 - I. Play**
 - II. Pause**

13.1.8.28 Audio in Playback

- A. Users shall be able to listen to audio recorded with video from all cameras being played back or selected cameras only.**
- B. Users shall be able to listen to audio streams without the need to display anything in the video pane.**
- C. The Video Management System shall support the following for 3rd Party cameras through ONVIF:**
 - I. Listen to recorded audio**

13.1.9 Recording

13.1.9.1 Configuring Recording

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- A. Users shall be able to start an instant recording from live video viewed in a video pane. They shall have the option to start recording video only or both video and audio.
- B. Users shall be able to configure the recording schedule for cameras on NVRs. Recording can be configured to be:
 - I. 24/7
 - II. Timed (from minute to weekly schedules)
 - III. On alarm or event
- C. Users shall be able to specify the transport protocol to be used for recording (TCP, UDP, Multicast.)
- D. Users shall be able to specify whether audio should be recorded with the video.
- E. Users shall be able to specify whether the recording should be protected when an alarm or event occurs (from a specified time before the alarm / event.)
- F. Users with appropriate permissions shall be able to enable or disable recordings temporarily.
- G. Users shall be able to delete recording schedules.
- H. Users shall be able to copy recording schedules from one camera to other cameras on the same NVR.
- I. Users shall be able to copy all recording schedules from all cameras from one NVR to another NVR.
- J. Users shall be able to specify an alternative NVR to record to during a video "lockout" for either a camera or a site. Lockout permission can be used to prevent all other users from viewing and recording from a selected camera or all cameras in a selected site.

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- K.** The Video Management System shall support digital signing (watermarking) of recordings as they are recorded on the NVR.

13.1.9.2 Managing Recordings

- A.** Users shall be able to find recordings within a specified time period.
- B.** Users shall be able to protect recordings.
- C.** Users shall be able to unprotect recordings.
- D.** The Video Management System shall display a warning message if an NVR is unable to retain the number of days recording for which it was configured.

13.1.9.3 Configuring Recording Redundancy

- A.** The Video Management System shall support the configuration of failover NVRs for each primary NVR with the following options:
 - I.** 1 to N: 1 primary NVR can have one or more failover NVRs
 - II.** N to 1: multiple primary NVRs can have the same failover NVR
- B.** The Video Management System shall support two modes of failover recording:
 - I.** Continuous recording to primary and failover NVRs
 - II.** Recording to failover NVR only when primary NVR fails
- C.** The Video Management System shall automatically failover when a primary NVR is down.

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- D.** In addition, users shall have the option to manually failover, for example to allow for routine maintenance of a primary NVR.
- E.** Users shall have the option to manually fail back to a primary NVR, with the option to restore the recording configuration from the failover NVR to the primary.

13.1.10 Alarms

13.1.10.1 Alarm Configuration

- A.** The Video Management System shall support binary inputs on IP Cameras, encoders, decoders and alarm panels.
- B.** The Video Management System shall support video loss alarm inputs.
- C.** The Video Management System shall support network loss alarm inputs.
- D.** The Video Management System shall support NVR fault alarm inputs, including:
 - I.** Raid degraded
 - II.** License failure
 - III.** Recording failure
 - IV.** Redundant power failure
 - V.** Redundant network failure
- E.** The Video Management System shall support analytics alarm inputs, with separate events for each analytics filter.
- F.** The Video Management System shall support alarm inputs from 3rd party systems.

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- G.** The Video Management System shall enable multiple alarm inputs (detectors) to be grouped into an alarm zone.
- H.** The Video Management System shall support inputs (detectors) that do not cause an alarm to be generated.
- I.** The Video Management System shall support AND logic between detectors so that the alarm input is activated only when both detectors are activated with a defined time period.
- J.** The Video Management System shall support detectors that are activated and deactivated by different inputs e.g. activate on a binary input from one device and deactivate on a binary input from another device.
- K.** Users shall be able to dock the alarm viewing window below the Live View or Playback View windows.
- L.** Users shall be able to sort the alarm information in various ways by clicking on column headings.
- M.** The Video Management System shall support set and unset of alarm zones such that alarms are only generated when the alarm zone is set.
- N.** Users shall be able to configure the time schedule for each alarm zone – different start and end times for each day and multiple time periods per day.
- O.** Users shall be able to define specific dates and times within time schedules so that exceptions for holidays etc. can be specified.
- P.** The Video Management System shall enable the same time schedule to be applied to multiple zones
- Q.** Users shall have the option of restoring the previous view after an alarm has been cleared.
- R.** Users shall be able to manually set and unset zones.

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- S.** Users shall be able isolate faulty alarm inputs (detectors) such that they do not cause false alarms. Users shall be able to easily identify which alarm inputs are isolated and the reason for isolation.
- T.** The Video Management System shall enable zones to be set and unset on an event.
- U.** The Video Management System shall enable detectors to be isolated and restored on an event.
- V.** Users shall be able to specify a priority for each alarm zone (1-10.)
- W.** Users shall be able to configure the alarm sound for all alarm zones in a site or for each alarm zone individually. Sound can be from any .wav file and can be sounded once or repeated while the alarm is active.
- X.** The Video Management System shall allow alarms to be configured to require text from a user at the point of acknowledging and at the point of clearing.
- Y.** The Video Management System shall allow an alarm procedure document (.html, text or URL) to be associated with a site or to an individual alarm zone. This procedure document shall be displayed when an alarm happens.
- Z.** Users shall be able to configure the actions that should be performed when an alarm occurs:
 - I.** Show video from camera, camera view or salvo in specified monitors .
 - II.** Stop video when alarm cleared
 - III.** Move camera to preset position
 - IV.** Send email to multiple recipients, with option to include snapshots

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- V. Perform a relay action automatically
 - VI. Start recording one or more camera – records for specified duration
 - VII. Auto-protect recording from a specified duration before the alarm
-
- AA. Users shall be able to configure a second authorizing user for alarm clearing and relay actions – second user has to enter a password to authorize these functions.
 - BB. The Video Management System shall support the following for 3rd Party cameras through native protocols and / or ONVIF:
 - I. Motion detection events.
 - II. Record on motion.
 - III. Video loss
 - IV. Network loss
 - V. Change video quality on event, including frame rate, resolution and bitrate.

13.1.10.2 Black Screen Monitoring

- A. Users shall be able to configure an unlimited number of alarm groups each containing a set of alarm zones and/or detectors.
- B. For each user or user group, it shall be possible to associate one or more video panes with each alarm group. This should include analog monitors.
- C. Users shall be able to choose a display mode for alarm video. As multiple alarms come in, the video can either be “cascaded” across the chosen viewing panes or “queued” behind the chosen viewing panes. As alarms are cleared,

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the associated video is cleared from the chosen viewing panes. Cascaded video can either remain in the same video pane until cleared, or can move to the first available pane as earlier alarms are cleared.

- D.** When all alarm video is cleared from a viewing pane the Video Management System shall display video and layout being viewed before any alarm was displayed.
- E.** The Video Management System shall clearly mark black screen monitoring viewing windows as being distinct from normal live view windows through background color and icon.
- F.** The Video Management System shall remove any black screen monitoring analog monitors from the normal site hierarchy.
- G.** The Video Management System shall have permissions to determine which users or user groups get access to which alarm groups and which windows are used to display alarm video.

13.1.10.3 Spot Monitoring

- A.** Users shall be able to configure any of the available viewing panes or analog monitors as a spot monitor for viewing significant live footage.
- B.** The Video Management System shall provide a toolbar option on all live viewing panes to copy the current video stream into the spot monitor.
- C.** The Video Management System shall keep an audit record of what video was started and stopped in the spot monitor, by which user and what times.
- D.** The Video Management System shall allow the video sequence that was viewed in the spot monitor by a selected user in a selected time period to be exported as a single

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incident.

- E. Users shall be able to review all video watched by a selected user in a selected time period in an incident player. The video should be played back as one sequence in a single video pane.

13.1.10.4 Alarm response

- A. The Video Management System shall generate an alarm if any of the detectors within an alarm zone are activated.
- B. The Video Management System shall not generate new alarms for subsequent detector activations within the same zone so that the user only has one alarm to handle.
- C. The Video Management System shall alert new alarms with flashing icon and optionally a sound.
- D. The Video Management System shall automatically perform the actions configured for the alarm zone or detector:
 - I. Show video from camera, camera view or salvo in specified video panes or monitors
 - II. Move camera to preset position
 - III. Stop video when alarm cleared
 - IV. Send email to multiple recipients
 - V. Perform a relay action
 - VI. Start recording one or more cameras
 - VII. Auto-protect recording from a specified duration before the alarm
- E. When an alarm happens, the Video Management System shall be able to show live video from a camera on one pane and beside it show a looped replay from just before the

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alarm to just after.

- F. From a looped replay, users shall be able to quickly jump to continuous replay from the alarm time.
- G. The users shall be able to display a map showing the location of the alarm.
- H. Users shall be able to view pending alarms in a list ordered by priority and time.
- I. Users shall be able to filter the alarm list to show alarms only from specific areas (sites and zones.)
- J. The Video Management System shall be able to display alarm procedure document for the alarm.
- K. The Video Management System shall allow users to acknowledge alarms, entering alarm response text as required.
- L. The Video Management System shall allow users to edit the alarm response text at any time before the alarm is cleared.
- M. The Video Management System shall allow users to clear alarms, entering alarm response text as required.
- N. Users shall be able to find historical alarms matching specified criteria:
 - I. Alarm type
 - II. Alarm state (new, acknowledged, cleared)
 - III. From site(s)
 - IV. From alarm zones(s)
 - V. User(s) who acknowledged or cleared

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VI. Time range

- O.** The Video Management System shall be able to escalate alarms to other user groups if the alarm is not acknowledged within a pre-defined time period.
- P.** The Video Management System shall be able to escalate alarms to other user groups if the alarm is not cleared within a pre-defined time period.
- Q.** The Video Management System shall support different escalation time periods for different alarm priorities.
- R.** The Video Management System shall be able to propagate an alarm to other areas (zones) if the alarm is not acknowledged within a pre-defined time period.
- S.** Users shall be able to produce reports of historical alarms and events and export to RTF or CSV formats.
- T.** Users shall be able to authorize an alarm to be cleared, by a second user entering a password.
- U.** Users shall be able to view live or recorded video associated with the alarm.
- V.** The Video Management System shall ensure that alarms are held on an alarm server, not on a user's PC.

13.1.10.5 DATA

- A.** The Video Management System(VMS) shall support integration with external data sources. An external Data Source shall be defined as any text string up to 320 characters.
- B.** The VMS shall support up to 1 external data record every second

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- C. The VMS shall support up to 2 million data records**
- D. The VMS shall support the ability to search and filter data records using the following:**
 - I. A partial text string to search data record**
 - II. Source IP address of data**
 - III. Name of Data source**
 - IV. The VMS shall allow for the association of data records with video data**
 - V. Integration shall be available via a freely available open interface. The interface shall be via a software development kit.**

13.1.10.6 Relays

- A. Users shall be able to configure relay actions using binary outputs on IP Cameras, encoders and decoders.**
- B. Users shall be able to configure relay actions using external outputs to 3rd party systems.**
- C. The relay activation shall be pulsed with a configurable pulse time period.**
- D. The Video Management System shall support latched relay outputs.**
- E. Users shall be able to associate relay actions with specific cameras so that the actions are readily available when video is displayed from that camera.**
- F. The Video Management System shall perform relay actions on alarm and event.**

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- G.** The Video Management System shall be able to perform relay actions on a time-schedule.

13.1.10.7 Monitoring and Diagnostics

- A.** The Video Management System shall automatically check for devices not on the network and notify users when not available.
- B.** It shall be possible to define the users who get notified if devices become unavailable.
- C.** Users shall be able to manage the bandwidth used for network scans by configuration of:
- I.** Monitor period (mins)
 - II.** Minimum check interval (msec)
 - III.** Perform fast check on log in
 - IV.** Perform fast check on refresh.
- D.** The Video Management System shall scan for devices using any combination of IP broadcast addresses, individual IP addresses or ranges of IP addresses.
- E.** Users shall be able to turn off scanning of devices.
- F.** Users shall be able to set sites to offline mode. In this mode, all automatic communication with the site will be halted, while still allowing requested traffic.
- G.** Users shall be able to manually refresh any diagnostics view.
- H.** The Video Management System shall notify users when device times are not synchronized with the viewing PC (more than 60 seconds out.)

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- I. The Video Management System shall notify users of problems with NVRs. The notifications will be those supported by each NVR.**

- J. Users shall be able to view the current status of an NVR with visual indicators showing whether each item is OK, or indicates problems:**
 - I. Total disk space**
 - II. Minimum free disk space**
 - III. Used disk space (total – free)**
 - IV. Percentage space used (used disk space / total disk space)**
 - V. License expiry date**
 - VI. Maximum streams**
 - VII. Maximum third party streams**
 - VIII. Number of cameras recording**
 - IX. Number of cameras not recording**
 - X. Number of recordings**
 - XI. Maximum recordings**
 - XII. Age of last deleted recording (indicates storage being achieved for each camera)**
 - XIII. NVR time (in UTC)**
 - XIV. Any additional features supported by the NVR.**

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- K. Users shall be able to view per camera disk utilization for an NVR. Display a list of cameras being recorded by an NVR, showing the cameras with the highest disk usage at the top. Display the following info. For each camera:
 - I. Start time of first recording**
 - II. End time of last recording**
 - III. Total size of all recording**
 - IV. Total duration of all recordings**
 - V. Recording rate (total size / total duration), in kbps****
- L. The Video Management System shall have a green / amber / red status indicator for any user's PC's CPU workload.**
- M. The Video Management System shall provide a support information tool, which gathers together log files and site database into a zip file.**

13.1.10.8 Installation

- A. The Video Management System shall be able to install the user's application on an unlimited number of PC workstations at no extra cost.**
- B. The Video Management System shall include an un-install application to cleanly remove the users application from a PC.**
- C. The Video Management System Installation Application shall create a new site database**
- D. It shall be possible to share a single site database across multiple installations of the Video Management System.**
- E. Users shall be able to specify the location of a backup site database to be opened if the main site database cannot be**

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opened when a user logs in.

- F. The Video Management System shall automatically check for site database updates.**
- G. The Video Management System shall be available in the multiple languages, including:**
 - I. English**
 - II. French**
 - III. Italian**
 - IV. German**
 - V. Spanish**
 - VI. Chinese (Simplified)**
 - VII. Finnish**
 - VIII. Polish**
 - IX. Norwegian**
 - X. Dutch**
 - XI. Portuguese**
 - XII. Russian**
 - XIII. Hungarian**
- H. The Video Management System shall support 3rd party branding:**
 - I. Display 3rd party supplied text in title bar**

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- II. Display 3rd party supplied bitmap/logo in login window
- I. The Video Management System shall provide online context sensitive help.
- J. The Video Management System shall provide an electronic user's guide in PDF format.

13.1.11 Users

13.1.11.1 User Configuration

- A. Users shall be able to configure named user groups. A group can be granted administrator rights:
 - I. Full (can configure everything)
 - II. Restricted (can configure everything except users and groups)
 - III. No configuration rights (limited user functions only)
- B. The Video Management System shall be able to hide administration options from normal users.
- C. The user interface shall be cleanly split into administrative functions and operational functions.
- D. Users who do not have administrative rights shall get a much simpler interface so that they are not confused by visible but disabled features.
- E. Users shall be able to configure named user accounts and allocate them to user groups.
- F. Users shall be able to enable and disable user accounts.
- G. Users shall be able to set-up a user to use either Windows authentication or a password when he logs into the Video

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- H. Users shall be able to limit the total number of video streams (live or recorded) that a user or member of a user group can display at once.**
- I. Users shall be able to limit the number of time-based thumbnail images that a user or member of a user group will display at once.**
- J. Users shall be able to allocate each user group or user a priority that is used when controlling PTZ cameras.**
- K. Users shall be able to grant global permissions to user groups or users (global permissions do not apply to specific objects such as cameras):**
 - I. PTZ hold (allows a user to keep control of a PTZ camera when not moving it)**
 - II. Video lockout (allows a user to perform a video lockout on any site of camera)**
- L. Users shall be able to grant permission for user groups and/or users to access any object in the system (sites, cameras, monitors, salvos, alarm zones, detectors and relays.) For each object access can be limited by function:**
 - I. List – see object in the user interface**
 - II. View – view video from cameras, sequences, salvos and guard tours**
 - III. Transmit audio(speak) to a camera, speaker or PA group**
 - IV. Playback recording from a camera or salvo**
 - V. Record – make an instant recording of a camera**
 - VI. Export video clips or take snapshots from a camera**

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- VII. Control a PTZ camera**
- VIII. Display video on a monitor or video wall or activate a relay**
- IX. Respond to alarms from an alarm zone**
- X. Hidden zone (live or playback) – access video behind a hidden zone**
- XI. Audio (live or playback) – receive audio from a device**
- XII. Set and unset an alarm zone**
- XIII. Isolate and restore a detector**
- XIV. Work offline**
- XV. Configure presets and access the camera menus**

- M. Users shall be able to reset access permissions on individual objects to use the access permissions of their parent site.**

- N. Users shall be able to configure application settings specific to each PC, including:**
 - I. Enable or disable scheduled tasks**
 - II. Enable or disable the application as the topmost window**
 - III. Location for snapshot images**
 - IV. Format of snapshot image (bitmap or JPEG)**
 - V. Folder for snapshot image**
 - VI. Replay incident in live or Playback view**
 - VII. Use software or hardware assisted video renderer**

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- VIII. Use de-interlace filtering on live view by default**
- IX. Use de-interlace filtering on playback by default**
- X. Set video de-interlacing**
- XI. Enable or disable use of a CCTV keyboard**
- XII. Serial port for CCTV keyboard**
- XIII. CCTV keyboard type**
- XIV. Video pane text scale factor (% of the default text size)**
- XV. Resize text on video panes in proportion to video pane size**
- XVI. Video pane icon size (normal, medium, large)**
- XVII. Select icon size on video panes in proportion to video pane size**
- XVIII. Date / time display on video panes (none, all, selected)**
- XIX. Load bookmarks on startup**
- XX. Spot monitor (external monitor or specified video pane)**
- XXI. Protect recordings by default when exporting**
- XXII. Write date and time on exported recordings**
- O. Users shall be able to prevent simultaneous listen and speak (full duplex audio.)**
- P. Users shall be able to configure the use of buffered playback when reviewing recordings.**
- Q. Users shall be able to enable or disable alert messages.**

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13.1.11.2 User Logon

- A. Users shall be able to log into the Video Management System manually.**
- B. It shall be possible to start the Video Management System from the command line with the following options:**
 - I. Username and password**
 - II. Normal, full screen or video-only modes**
 - III. Site database**
- C. The Video Management System shall allow users to log out and log in without closing the application.**
- D. The Video Management System shall have an option to require all users to re-enter their password when logging out.**
- E. The Video Management System shall remember display settings on a PC for each user at log off and restore settings at log in:**
 - I. Which cameras are displayed in which video panes**
 - II. PTZ controls displayed**
 - III. Map window position**
 - IV. Alarm window position**
 - V. Video window positions (default hidden)**
 - VI. Main window size and position and site explorer width**
 - VII. Recording calendar displayed**

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- F. Users shall be able to change their own password (if given write permission to the site database).
- G. Users shall be able to change their default location on the tree hierarchy.

13.1.11.3 Video Lockout

- A. Users shall be able to lockout all other users preventing them from viewing or recording video from a selected camera or all cameras in a selected site.

13.1.11.4 AUDIT TRAIL

- A. The Video Management System shall support an audit trail that can log user actions to a SQL database (ODBC Compliant) e.g. SQL Server.
- B. Users shall be able to specify the authentication method to be used between the client application and the audit trail database:
 - I. Local user password
 - II. Windows user password
- C. The audit trail shall log the following user actions to the audit trail database:
 - I. User logged on
 - II. User attempted to log on and was denied access
 - III. User logged off
 - IV. User changed "home" site
 - V. User acknowledged an alarm

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- VI. User cleared an alarm**
- VII. User received an alert message (e.g. device not available)**
- VIII. User starting playing back a recording (forward)**
- IX. User started playing back a recording (backwards)**
- X. User stopped playing back a recording**
- XI. User denied playing back a recording or playback failed**
- XII. User took control of a PTZ camera**
- XIII. User released control of a PTZ camera**
- XIV. Second user authorized relay action**
- XV. Second user authorized alarm to be cleared**
- XVI. Second user denied authorizing a relay or alarm to be cleared**
- XVII. Export recordings**
- XVIII. Protect recordings**
- XIX. Manual start or stop recording**
- XX. User log out denied**
- XXI. User starts playing live video from a specific camera**
- XXII. User stops playing live video from a specific camera**

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XXIII. Creation, deletion or editing items stored in the Video Management System configuration database

XXIV. User created a bookmark

- D. The audit trail shall log the following information for each entry in the audit log:**
- I. Date and time that the user performed the action in UTC**
 - II. Name of the user performing the action**
 - III. DNS name of computer running CC**
 - IV. The name of the application writing to the log**
 - V. A string naming the type of action performed e.g. Log on**
 - VI. Name and matrix number of the object that the action applies to e.g. camera name and number**
 - VII. Further information about the action, in a structured form e.g.: "Alarm Time: 16-Feb-06 10:11:41, Alarm Response: False alarm"**
 - VIII. Severity (applies to error message received log entry only)**
- E. The user shall be able to export a report from the audit trail database into a standard reporting tool, e.g. Excel.**

13.1.11.5 Site Setup

- A. The Video Management System shall discover IP Video devices on a network either by broadcast address or unicast addresses for each device.**

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- B.** The Video Management System shall allow configuration of IP Video System devices via their web configuration interface.
- C.** The Video Management System shall enable mass configuration of devices, in particular encoder settings on IP cameras and encoders.
- D.** Administrators shall be able to view video from each stream at the same time as making changes to the media parameters on an encoder to aid configuration.
- E.** Administrators shall be able to upgrade the firmware on IP Video System devices - multiple devices can be upgraded in one go.
- F.** Administrators shall be able to create a hierarchy of sites and sub-sites for organizing cameras and other items by location.
- G.** Administrators shall be able to set the time-zone on a site - different sites can each have their own time zone.
- H.** Users shall be able to reorder sites under their parent site (sites are ordered by number.)
- I.** The Video Management System shall be able to automatically create a site hierarchy within a site database containing IP Video System devices visible on the network.
- J.** Users shall be able to create sequences and salvos within the sites, set up 24/7 recording for each camera and enable video loss and network loss alarms.
- K.** Users shall be able to add cameras, monitors, alarm panels, alarm servers and NVRs to sites by dragging and dropping, selecting from a list or manually entering the IP Address and name.
- L.** Users shall be able to remove devices from sites.

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- M.** Users shall be able to move devices, and other items such as sequences, salvos, and sub sites from one site to another by dragging and dropping.
- N.** Users shall be able to enter a localized display name for cameras, monitors, alarm panels, alarm servers and NVRs which overrides the name stored on the device.
- O.** The Video Management System shall enable a copy of the configuration database to be cached locally on each user workstation to ensure continuity of operation when a connection to the central database is not available.
- P.** The Video Management System shall support a configuration database that is divided into multiple 'segments', e.g. one segment for each site. The Video Management System shall allow each segment to be configured and accessed independently.
- Q.** The Video Management System shall support user access permissions so that only authorized users can access specific segments.
- R.** When the configuration database is divided into segments, the Video Management System shall allow all sites to be monitored e.g. from a central monitoring facility.

13.1.12 Maps

13.1.12.1 Configuration

- A.** Users shall be able to create one or more maps for each site by importing an image for the background. The following image formats shall be supported:
 - I.** Bitmap (BMP)
 - II.** JPEG (JPG)

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III. Portable Network Graphics (PNG)

IV. AutoCAD drawings (DWG)

- B. Users shall be able to add links to other maps.**
- C. Users shall be able to reposition items by drag and drop or entering specific coordinates.**
- D. Users shall be able to add cameras to map via drag and drop.**
- E. Users shall be able to specify the field of view for each camera.**
- F. Users shall be able to add alarm zones and detectors to map.**
- G. For alarm zones, users shall be able to have options to not display the alarm icon and/or name unless the alarm is active.**
- H. For zones and detectors, users should be able to configure a detector/zone area on the map.**
- I. Users shall be able to specify the amount of detail displayed for each object including icons, matrix numbers and labels.**
- J. Color schemes shall be configurable to make text and fields-of-view more visible.**

13.1.12.2 Navigation

- A. The map shall be fully scalable with zoom and pan supported under mouse control.**
- B. Users shall be able to displays the previous maps viewed (back, forward).**

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- C. Users shall be able to link to any map from any map.
- D. Users shall have the option of scaling icons to a fixed zoom level.
- E. The map should be viewable on a separate monitor from the main video(s).

13.1.12.3 Video

- A. Users shall be able to display live and recorded video from any camera on a map (drag and drop.)
- B. Users shall be able to view video from some or all of the cameras on a map via drag-select.
- C. Users should be able to click on the field-of-view of any camera to view the video.
- D. Where fields-of-view overlap, clicking on the convergent area should result in all cameras being displayed.

13.1.12.4 Alarms

- A. Activated alarms shall be visually represented on the map.
- B. Where detector/zones areas have been configured, these should be visually represented as being in an alarmed state.
- C. Where detector/zones areas have been configured and in an alarmed state, the user should be able to start video from all cameras associated with that zone by clicking on it.
- D. Users shall be able to:
 - I. Manage alarms from a map
 - II. Clear alarms

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III. Acknowledge alarms

IV. View Video associated with an alarm

V. Isolate/restore alarms

VI. Set/unset detectors

13.1.12.5 Actions

- A. Users shall be able to trigger events to binary outputs on cameras or encoders.

13.1.14 Interface

13.1.14.1 Restricted Client Interface

- A. The Video Management System shall include a restricted access version of the video viewing and replay application that prevents all users from accessing the setup screens even if they have an administrator login.
- B. The Video Management System shall provide a restricted access site database management utility, which prevents creation of new site databases.
- C. The Video Management System shall provide a restricted access version of the video viewing and replay application, which prevents all users from modifying the audit log configuration even if they have an administrator login.

13.1.14.2 Automation Interface

- A. The Video Management System shall provide a COM interface to enable the functionality of the Video Management System user interface to be controlled by other applications.

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B. The Automation Interface shall allow a 3rd party application to query for details of items within the Video Management System site database:

- I. Sites**
- II. Cameras**
- III. Monitors**
- IV. Video panes**
- V. Salvos**
- VI. Sequences**
- VII. Guard tours**
- VIII. Video windows**

C. The Automation Interface shall allow a 3rd party application to:

- I. Change the layout of a video window**
- II. Start or stop video from camera in video pane or monitor by matrix number**
- III. Move a PTZ camera to a preset position****
- IV. Start a salvo in video pane or monitor by matrix number**
- V. Start a sequence in a video pane or monitor by matrix number**
- VI. Playback a camera by matrix number at a specific time**

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- VII. Switch between Live, Playback, and Setup modes**
- VIII. Export video from a camera or all cameras in a site**
- IX. Protect recordings for a camera or all cameras in a site**
- X. Set the PTZ type of a cameras and send PTZ commands***
- XI. Start looped replay**
- XII. Find a camera ID from an IP address**

13.1.14.3 Binding Interface

- A. The Video Management System shall have a tool to allow external networked systems to send events and instructions to the Alarm Server. Such commands shall include:**
 - I. Send alarm**
 - II. Send bookmark**
 - III. Set/unset alarm**
 - IV. Isolate/restore detectors**
 - V. Clear/acknowledge an alarm**

- B. The Video Management System shall have a tool to allow external networked systems to listen to the NVR and detect any new events received by the Alarm Server. Such events shall include:**
 - I. Changes in alarm zone**
 - II. Changes in alarm detector**

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III. Changes in relay output

***Only on support cameras**

****Excluding ONVIF cameras**

13.1.15.1 Networking

13.1.15.1.1 General

- A. The Vendor must provide all miscellaneous materials such as network switches, cabling, power supplies, and other technical components to have the CCTV system functional and operable. Network switches should supply IEEE 802.3af (or 802.3at if necessary) PoE (power-over-Ethernet) on gigabit (10/100/1000Mbps) switched network ports.**
- B. Vendor must provide and install One (1) rack located in the Main IT Office to install the NVR's in. This rack must be a 4-post style.**
- C. The Vendor must provide all switches and equipment with the capacity to expand up to 15% more cameras.**
- D. The closed-circuit television system shall not depend on the owner's network unless specifically indicated on plans or specifications.**

13.1.15.2 Wireless

- A. The Vendor must provide all wireless data communications from the existing two (2) light poles in the parking lot to the Main building to include:
 - I. Data Capacity minimum of 500MBs**
 - II. Data Speed minimum of 250****

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- III. Distance Communication minimum range of 4000 feet or 1219.2 meters**
- IV. Weathertight enclosures to protect all wiring and connections.**
- B. The wireless equipment must utilize the existing 120VAC source at light poles.**
- C. Vendor must provide Ethernet surge protectors.**
- D. All pole equipment must be mounted in a weathertight service box at the base of the pole for ease of future service. Covers must be attached with security screws.**

13.1.15.3 Fiber cable

- A. The Vendor must provide fiber cable between closets to interface with all switches located in closets to include:
 - I. Each cable must include a minimum of 6 multi-mode fibers**
 - II. All cables must be run through existing fiber conduits where available.**
 - III. All fibers must be individually terminated within the existing Leviton brand patch panels**
 - IV. All fibers must have a minimum capacity of 1310DBs with a maximum loss of 0.09**
 - V. All fibers must be tested by a trained and certified person and that report shall be submitted to the WVNF Office of Technology as soon as completed.**
 - VI. All cables will run from each of (6) closets total on the Ground and Mid Floors to the Upper Floor closet.****

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- VII. A single cable will run from the Upper closet to the IT Office.

13.1.15.4 Power

- A. Vendor must provide rack mounted battery backups for all equipment located in closets
- B. Battery Backups must operate from an existing 120VAC source
- C. Battery Backups must provide a minimum of 25 minutes continuous service to all equipment in the event of a purchase power outage.

13.1.16 Labor

- A. The Vendor must provide all labor, equipment, and related components involved to install the CCTV and have the system functional and operable.
- B. The vendor shall be responsible to coordinate with West Virginia Office of Technology (WVOT) on acquiring network connections as well as any network configuration information such as IP numbers that will be required to connect NVR's to the owner's network.
- C. The vendor shall break the facilities into zones and establish the margin lines between the zones.
- D. The Vendor shall keep area of construction clean and free from debris during installation.

13.1.17 Miscellaneous

- A. The Vendor must keep the current video surveillance system operational until the new install is completed and

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operational.

- B.** The Vendor must use black Cat 6 plenum rated cable for any cabling inside the building.
- C.** The Vendor must use seal tite conduit for any cabling outside the building.
- D.** Vendor must use Signal Closets for any equipment installation.
- E.** Vendor must use rack mounted equipment in all closets
- F.** The Vendor shall be responsible for any shipping fees associated with completion of this project.
- G.** The Vendor must fire caulk any wall penetrations of fire walls.

13.1.17 Warranty

- A.** The Vendor must provide one year on- site warranty on all materials installed for the entire CCTV system.
- B.** If any materials manufacturer's warranty exceeds one year the vendor must honor that warranty period.
- C.** The Vendor must provide one year on-site warranty on all labor for the entire CCTV system.

14. PERFORMANCE: Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency. In the event that this Contract is designated as an open-end contract, Vendor shall perform in accordance with the release orders that may be issued against this Contract.

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- 15. PAYMENT:** Agency shall pay Vendor at the Completion of the project. Completion of the project will be when all work is done, fully functional and cleanup is complete. This project shall be completed within 90 calendar days of receiving the "Notice to Proceed" Letter.
- 16. TRAVEL:** Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency separately.