

West Virginia Lottery Commission Connie Oswald 900 Pennsylvania Ave. Charleston, WV 25302

Dear Ms. Oswald,

BMM is pleased to respond to RFQ LOT498, Gaming Consultant Services. I believe the following response will answer the West Virginia Lottery's questions adequately and completely.

The response from BMM contains proprietary and confidential data; although we respect the Freedom of Information Act, BMM considers its entire response proprietary. At a minimum, the section we request to be excluded from any inquiries would include the following:

- Test methodology outlined in the scope of work pages '14-20'
- Exhibit B CV of BMM Employees

Given our pricing approach, we hope you can plainly see BMM's commitment to the gaming industry in West Virginia. In these challenging economic times, we are willing to do anything necessary to support the Lottery and our clients in this process.

Our approach makes good business sense for us because of the global nature of our company and the significant value this would bring to the Lottery and to the gaming manufacturers vital to the lottery industry in West Virginia. You can see from our background and experience that a fair and good faith review of our credentials shows we are ready, willing and fully qualified to perform this work. We believe that our economic sacrifice is in the best interests of West Virginia and we hope you agree. We are proud to do so in support of the WV Lottery Commission.

Should any of the reviewing committee associated with this RFP have any questions or require additional information or clarification, please do not hesitate to contact Jean Corriveau – Business Development Manager, Lotteries and online gaming at the following coordinates:

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WV PUNCH, SING DIVISION

Respectfully,

Mike Dreitzer

Chief Operating Officer, Americas



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## **BMM Executive Summary**

BMM North America dba BMM Testlabs is pleased to respond to the RFQ LOT 498 for Gaming Consulting Services, issued by the West Virginia Lottery Commission.

BMM North America is a wholly owned subsidiary of BMM International. BMM's history dates back to its founding in Melbourne Australia in 1981, making BMM the oldest and most experienced professional independent testing and certification lab in the world. BMM focuses its professional testing and certification services in gaming spaces such as Lotteries, Casino, and legalized online gaming. Importantly, BMM also has an extensive history in servicing lotteries. BMM's first client was the Australian Lottery back 31 years ago. We still maintain a strong working relationship with the Australian Lottery to this day.

Over the last dozen years BMM has invested heavily into becoming a global company and to provide worldwide coverage for the fast growing regulated gaming markets. BMM currently has 13 offices globally in twelve countries, servicing over 350 separate gaming jurisdictions.

BMM delivers a customized approach in its regulatory consulting services. Each jurisdiction is unique with different drivers, objectives and requirements. BMM leverages its global experience to provide services, including project management, testing, certification, risk assessments and training to meet the specific customized requirements of our client. BMM understands the unique challenges and issues facing lottery operators. We understand the West Virginia Lottery offers a distinct type and system of wagering all its own. We are fully prepared to provide the customized support required in support of the the West Virginia Lottery Commission.

Importantly, throughout its history, BMM has been assisting lotteries in many jurisdictions with the implementation of various gaming systems, consulting services and certification services since it's inception. We are fully preapare to do the same with the West Virginia Lottery Commission.

BMM provides services to regulatory bodies, manufacturers and gaming operators, such as casinos or lotteries, for both, private and public entities. A core BMM principal in the delivery of its services is to maintain independent status, to report on what we deliver, what the process and approach we utilize is, and what the expected results are. In doing this BMM takes the utmost care not to overstep the boundaries of its role and to ensure the credibility and authority of the regulator are maintained. BMM is an expert service provider with very specific experience gained over three decades of working closely with gaming markets in North America and around the world. Our recent work with Lotteries such as Atlantic Lottery in Canada as well as the Illinois Lottery and Northstar, demonstrates that BMM has the required competencies and can tailor services to meet its client's requirements.

As a private company, BMM has the business flexibility to react quickly to client and market needs and to invest in resources and to build capacities fast, without dependence



on budget cycles and procurement constraints. It is BMM policy to invest in and retain expert talent, ensuring highest levels of expertise in current technologies, game designs, regulatory trends and changes, which is the lifeblood of a company and its different offerings with focus on serving the gaming community.

The processes BMM utilizes in the delivery of its services are known as the BMM WAY, a well-documented and standardized process and quality framework. It includes project management, risk assessments, audits, field evaluations, test methods, test scripts, client engagement methods and invoicing practices. All the above are accredited by A2LA to the International Organization of Standards ISO17025 IT, for laboratory Testing, and ISO17020 for all technical audits and field testing prior to go live as well as the auditing of systems that are live in the field.

BMM uses PMI's project management practices and certified Program and Project Managers where processes are tailored on a project basis in order to efficiently provide the best Project Management experience.

When we evaluate or assess a Lottery system, we review all elements including security, financials, and internal controls from a process perspective as well as the technical aspect of daily operations. This approach ensures that the Lottery operates with the highest levels of assurance of integrity in their practices and the security of daily operations.

BMM's accredited evaluation methodologies ensure adequate coverage, as well as provide and maintain a set of standard approaches to evaluate, ensure non-repudiation, maintain quality of evaluation practices and keep detailed records of the work performed. All of these factors allow BMM to issue evaluation reports with confidence.

Notably, these methods, developed and utilized by BMM for clients globally, have significantly benefited our clients and demonstrate BMM's unwavering commitment to quality. This is particularly evident in truly minimal the number of revocations BMM has globally, in comparison with other labs. This performance and quality indicator, whether it is measured in total or percentage occurrences, is indicative of BMM's superiority in quality and performance over its competitors.

In addition, BMM has developed and tailored a list of services to better serve lotteries around the globe. The services were developed with all Lottery offerings in mind such as traditional lottery product, video lottery, internet gaming and mobile gaming.

a2la accreditation: ISO 17025 - 2549.01. & ISO 17020 - 2549.02



## BMM Lottery professional services:

- Lottery Security and Compliance Management services
  - Lottery Security Assessments
  - o Policy Development
  - o Process Design
  - Design and Implementation of Controls
  - Project Management
  - Design of Fraud Detection and Monitoring Programs
- Testing Services
  - RNG & Math evaluation
  - Game evaluation
  - Point of Sales Devices
  - Lottery Gaming systems/CGS (LAN & Internet Base)
  - Video Lottery Gaming system (SAS, DXS, G2S)
  - iGaming Platforms
  - Monitoring Systems and Internal Control Systems (ICS)
  - Functional Testing
  - Customer Acceptance Testing (CAT)
  - o Performance, Stress and Load Testing
  - Security & Penetration Testing
- Lottery Retail Compliance & Site Inspection Programs
  - Retailer and Site Compliance and Integrity
  - Age of Majority
  - Sales and Operation Standard Audit
  - Lottery & Gaming Regulatory Inspections/Testing
- WLA Security Control Standard SCS and ISO/IEC27001 Advisory/Readiness Reviews/Implementation
- Field Services
  - o Regulatory Compliance
  - Forensics Evaluation
  - o Systems and Related Audits
  - IT System Security
  - Security Studies
  - Custom Training Programs
  - RPF/RFI Development/Evaluation/Review
  - Vendor Contract Negotiation

It is important to note that BMM is engaged in more than 50+ lottery projects per year, and none of the work completed by BMM in the past has resulted in errors similar to those found at the Tennessee Lottery in 2007, the details of which have long been made available to the public. Further, unlike what has been addressed



publically by the Missouri Gaming Commission earlier this year, BMM has never been fined by any gaming commission for withholding critical information and not testing the required scope of the jurisdiction's requirements. This speaks to BMM's credibility, expertise, processes maturity and quality in our evaluations.

If any of the reviewers should have any questions regarding our processes, the scope, costs, or any information provided, please do not hesitate to contact BMM. We would be very pleased to be considered by the West Virginia Lottery Commission for the work described, and feel BMM can provide the greatest value for your investment in the Gaming Consultant Services.

- 1. PURPOSE AND SCOPE: The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Lottery Commission and any other state agency that desires to utilize this contract to establish an open-end contract for a gaming consulting company that can provide a range of services and technical assistance required in acquiring traditional and video lottery central computer systems through a multi-disciplinary approach from an unbiased, objective, and independent position. The Contract may be utilized by West Virginia State agencies and all political subdivisions of the State in all 55 counties.
  - 1.1 Consulting services may include, but not be limited to the following tasks:
    - 1.1.1. Understand strengths and limitations of current gaming systems;

BMM is a systems centric company, which has global reach across our 13 offices. We are intimately familiar with all global gaming systems, as well as lottery systems. This includes those currently used by the West Virginia Lottery Commission, and the next generation systems by the current vendors.

1.1.2. Assist in observing and evaluating new offerings throughout the RFI and RFP process;

BMM is willing, capable and experienced in working with clients and analyzing all technology, whether prior to purchase contract or afterward in accordance with the required directives of the WVL.

1.1.3. Assist in development of equipment and service requirements and final procurement documents;

BMM is fully capable of managing the entire RFP process given its experienced personnel.



#### 1.1.4. Assist in development of evaluation criteria;

When working with clients to develop a comprehensive criteria document we use a very consultative approach involving all stakeholders of the client. It is not appropriate for us to develop a process that leads to a certain determined outcome, it's our job to help the key departmental stakeholders to have a clear understanding of the criteria which is important to the critical stakeholders and thier mission.

#### 1.1.5. Assist with vendor RFP clarification questions and answers;

Given BMM's experience with systems and lottery technology, and our proven processes of gathering facts, educating regulators and analyzing products for compliance, helping to provide the frame work of what is important to the lottery, and appropriate for the vendor to provide is certainly a natural for BMM.

## 1.1.6. Participate in vendor site visits (or "reverse" site visits to the Lottery);

Part of BMM's role in many jurisdictions is to serve as technical advisors to gaming commissions. In this role, we provide independent advice and input, which is not clouded by commercial concerns with buying or selling. We are simply there to ensure the technology either meets the needs or the requirements of the stakeholders or does not. BMM often performs technical audits of systems, IT infrastructures, and is experienced in retailer audits. Many of the methods used in these types of engagements would be implemented in these types of on-site audits.

## 1.1.7. Assist in preparing proposal evaluations and final report;

BMM analyzes and evaluates technology for compliance with regulations. The same methods would be done with reviewing proposals. Often, RFPs do not contain sufficient information to solicit an adequate response. In all of our internal measurements we have adopted a proven scoring method created by McKenzie & Company a global leader in business consulting. This model emphasizes empirical scoring based upon objective criteria.

#### 1.1.8. Perform acceptance testing;

Not only does BMM perform acceptance testing with major lotteries comparable to the West Virginia Lottery Commission, we also perform acceptance testing for major gaming operators.



1.1.9. Conduct contract extension analysis and provide recommendations regarding cost proposal payment plan;

BMM is fully capable of performing this service, if this is part of the contract.

1.1.10. Provide factual testimony regarding the consulting services performed in case of protest;

Implicit in all engagements is the understanding that the selected entity can and will provide expert testimony and advice for any related scope of work situations regardless of whether any contested case sees the light of day or is settled without a formal proceeding. BMM is a sought after expert and credible witness.

1.1.11. Assist with contract negotiations;

Having an independent third party assist in these types of negotiation is extremely effective in getting the best outcome for all parties. BMM can assist accordingly.

1.1.12. Provide various ongoing consulting services within the scope of consultant's expertise as needed;

Implicit in all engagements is the understanding that the selected entity can and will provide expert consultancy in its areas of expertise.

1.1.13. Participate in security evaluations of facilities and procedures;

BMM has extensive practical experience and certified resources for the evaluation and assessment of physical security policies and procedures as well as the selection and implementation of physical security controls.

1.1.14. Review randomizer algorithms used in proposed gaming systems;

One of BMM's core competencies is the testing and certification of RNGs for clients around the world. It is important to note that of the thousands of RNGs (and related modifications) evaluated by BMM in 31 years, none of the work completed has resulted in errors similar to those found at the Tennessee Lottery in 2007. This speaks to BMM's credibility, expertise, process maturity and quality in our evaluations.



1.1.15. Review proposed telecommunications networks and make suggestions for most efficient infrastructure;

BMM has the technical expertise to review and recommend effective and efficient telecommunications networks for its clients.

1.1.16. Compare other domestic lotteries' operations to offers received from resulting RFP; and

Implicit in all engagements is the understanding that the selected entity can and will provide expert consultancy in its areas of expertise.

1.1.17. Provide guidance and oversight during the RFI and RFP process.

Our objective is to service the West Virginia Lottery Commission with all of our experience and provide a credible independent source of expertise management and foresight which allows West Virginia Lottery Commission to make the best decisions possible for its operations.

## 1.2 Current Operating Environment

1.2.1 The integrity of the West Virginia Lottery is essential, and therefore, the Lottery must maintain control over all functions to assure the greatest long-term benefits to the State of West Virginia, the West Virginia Lottery, and the public.

BMM keenly understands the operating environment that the West Virginia lottery is in. We also fully understand the governance requirements of the lottery and its mandate to maximize benefits for its stakeholders. Integrity and Player Protection are key assets in the lottery operation and public trust is a Key Performance Indicator for lotteries as operators and regulators. At all times, BMM will service the West Virginia Lottery with an expert account management team and processes that will support the lottery's control over all functions and enable West Virgina Lottery to meet its objectives.

1.2.2 Video Lottery Games: As of July 1, 2012, the West Virginia Lottery operates and regulates games played on approximately 8,450 video lottery terminals at the state's four pari-mutuel racetracks and the limited gaming facility (The Greenbrier) and on approximately 7,500 machines at 1,550 bars and fraternal clubs (Limited Video Lottery).

West Virgina Lottery's Video Lottery Program operation is very similar to BMM clients in other jurisdictions, e.g. Atlantic Lottery with roughly the same VLT network size. BMM is the Test Lab of choice for Atlantic Lottery in providing Video Lottery



expert services for games and SW testing and certification as well as project management, supporting the client in the implementation and operation of their Video Lottery Programs.

In addition to this specific project located in North America, BMM has been working with one of the largest network of gaming devices in New South Wales for well over 15 years. This network spans over 15,000 seperate locations. Although not as large, BMM has actively been working with and supporting the Victorian network as well.

1.2.3 Currently, ten (10) different companies are licensed to manufacture video lottery terminals for sale in the West Virginia video lottery market. All operating video lottery terminals must be connected to the State Lottery Commission's central computer system. The current video lottery central system is Scientific Games' AEGIS server based system with separate hosts to manage the two video programs [racetrack video lottery and limited video lottery] independently. The West Virginia Lottery is also interested in researching and possibly incorporating Relational Database Management for Licensing, Security, and Operations into the central system.

BMM is very familiar with Video Lottery programs and has been and is involved in all aspects of testing, project management and operations for clients on various platforms, including Scientific Games. Our multi-jurisdictional Video Lottery experience combined with our technical expertise positions BMM well to assist the West Virginia Lottery in the research and implementation of relational database supported management systems for Licensing, Security and Operations. In support of these effortd, BMM has global resources and access to technical staff including Software Engineers and Database Administrators and Developers.

1.2.4 The West Virginia Lottery offers its players six different on-line games: PowerBall®, Mega Millions®, Hot Lotto®, Cash 25™, Daily 4™, Daily 3™ and TRAVEL Keno™. Approximately 1,580 West Virginia Lottery retailers are licensed to sell online games. In addition state law limits the TRAVEL Keno™ game to adult access facilities that maintain current .liquor or beer licenses. Approximately 295 of the 1,580 traditional lottery retailers sell the TRAVEL Keno™ game. The West Virginia Lottery produces televised numbers drawing shows six (6) evenings each week for the Daily 3™ and Daily 4™ games and four (4) times each week for the Cash 25™ game. The West Virginia Lottery's current vendor for on-line games services is GTECH.

BMM has lottery industry expert resources and is very familiar with a broad scope of online and draw based lottery games and their distribution throughout the retail or social channels. BMM serves lottery clients of varying sizes worldwide ranging from



500 retailers to 20,000 retailers with testing and certification services for gaming software and Random Number Generators, but also with expert advisory services in the area of retailer security and regulatory compliance, supporting lotteries to maintain highest standards of integrity and player protection in the operation and distribution of online games in the retailer network.

1.2.5 Instant Games: The West Virginia Lottery markets approximately forty-five (45) instant scratch-off games per year, with at least twenty (20) to twenty-eight (28) games "on-the-street" at a time. Typically, each instant game consists of approximately 1,000,000 tickets, but lesser quantities are issued for games with higher price points. These tickets are sold to the public through approximately 1,580 lottery retailers. GTECH Printing Corporation is the Lottery's current instant ticket printing vendor.

BMM has extensive experience in the instant product category, in particular with the security aspects of instant scratch cards. Our resources are very familiar with common challenges and risks instant products bring to lotteries, from quality and retail issues to fraud risks, such as void if removed number (VIRN) fishing & guessing and ticket tampering. BMM has expert resources with experience in managing instant ticket testing labs as well as fraud detection and monitoring programs in the retailer network. BMM resources have worked directly with lotteries as well as the instant product vendors on product quality and security issues. As an example, BMM offers mystery shop security inspection services to lotteries utilizing instant tickets in measuring the security in the retail network.

A lottery has to ensure that instant ticket products adhere to the highest standards of quality and security. BMM understands the instant product processes and can help lotteries audit and review instant ticket vendors, review security procedures, conduct RTP calculation, provide program analysis and develop quality assurance programs.

1.2.6 The West Virginia Lottery also participates in a multi-jurisdiction progressive game with Rhode Island and Delaware through the Multi-State Lottery (MUSL) that appeals to players due to the game's higher jackpots and produces additional revenue for the Lottery

BMM has been providing services to Lotteries that are part of the Multi-State Lottery association, participating in multi-jurisdictional games, providing compliance, testing and CAT/UAT services, ensuring all requirements are in compliance with MUSL requirements.

As you will see in section 3 of this response, BMM has the competencies and expertise to effectively and efficiently deliver all services required by the West Virginia Lottery Commission in its operational environment.



#### 3. GENERAL REQUIREMENTS:

- 3.1. Desired Items and Mandatory Requirements: Vendor shall provide Agency with the Desired Items listed below on an open-end and continuing basis. Desired Items must meet or exceed the mandatory requirements as shown below.
  - 3.1.1. Mandatory requirements: The firm or its principals:
    - 3.1.1.1. Shall have a minimum fifteen (15) years of experience providing lottery technical assistance in systems engineering and implementation in both traditional lottery and video lottery gaming. Prospective Vendors shall submit a curriculum vitae (CV) or resume that details their experience in the areas required pursuant to this section (section 3.1.1.1), section 3.1.1.2, and section 3.1.1.3 of this RFQ.

As the longest established and most experienced test lab in the world, BMM Testlabs has been providing general consulting services, including compliance testing, QA, program and project management services to gaming operators, regulators, lotteries and government agencies worldwide since 1981.

BMM understands there are distinct regulatory and jurisdictional differences between Video Lottery Gaming System operations, Casino Gaming operations and Traditional Lottery offerings. That said, the processes in the implementation, such as testing and QA, program and project management are identical in each of these segments from a technical perspective.

BMM has decades of experience in supporting gaming and lottery operators in bringing Video Lottery Gaming systems, Casino Gaming Programs and Traditional Lottery offerings to market by providing the technical and compliance expertise to ensure the operator's regulatory compliance. BMM also provides the program and project management expertise to ensure the effective and efficient implementation of all necessary programs.

A notable example of BMM's related experience is the provision of compliance services and project management in Video Lottery Gaming programs for Australian Lotteries. BMM has also supported and still is supporting the state wide, casino and club roll-out of over 170,000 terminals and central monitoring systems (CMS) in Australia over the past 15 years. This allows BMM to provide a comprehensive understanding of the complete set of technical, functional and



operational requirements that needs to be incorporated with the West Virginia Lottery needs.

BMM is an ISO Certified and Licensed GSA protocol (G2S, S2S, GDS & Transport Layers) testing organization with a number of GSA accredited test engineers. We maintain a solid team with extensive expertise in evaluating systems that use G2S, DXS, VLC E2,QCOM, X-series, ASP, S2S and of course SAS communications protocols.

BMM is licensed or recognized in over 350 jurisdictions and its list of clients exceeds 110 of the world's gaming operators, lottery operators, gaming vendors and regulators. BMM's list of lottery clients includes the Illinois State Lottery, Washington Lottery, Atlantic Lottery, Northstar Lottery Group and many others. BMM provides various services to these lottery operators such as RNG and Math evaluations and testing services as well as Program and Project Management services in Video Lottery Gaming System implementations and traditional lottery offerings. Please refer to section 3.1.1.4 for specific examples of recent experience with domestic Lotteries.

BMM has been working with Lotteries since its inception, and we consider our practice to be a large systems centric, gaming related systems specialist. This would include traditional lottery systems, instant lottery terminal networks and large VLT type gaming systems. For example, BMM served as the primary technical consultant on the largest network of games in the world, the Pubs and Clubs market in New South Wales, Australia, which has over 100,000 networked gaming terminals connected to centrally controlled systems, not dissimilar to those is West Virginia.

BMM has defined 2 key resources to lead the delivery services to the West Virginia Lottery Commission, Jean Corriveau and Thomas Bierbach; both have significant expertise and knowledge in the lottery and gaming industry. As both came from vendor and lottery background, they ensure that all of BMM's lottery services are tailored to fit their client's needs.

Jean Corriveau, CTFL, PMP, has an extensive VLT and Lottery background with multiple successful launches of gaming venues, with over 11 years of experience in QA and program and project management. Jean's past positions on the vendor side, as well as quality control lead for Atlantic Lottery exposed him to video lottery, traditional online lottery offerings, instant tickets and online gaming. Jean has the technical expertise and background required to provide world class services in large scale gaming solution implementations for lotteries and has been defined as a key resource for the West Virginia Lottery. It's also notable to say that



Jean also comes with extensive hands on experience with Scientific Games' AEGIS system.

Thomas Bierbach, CISM, CISA, ISO27001LA has extensive Lottery experience as former Director of Security & Compliance at Atlantic Lottery and over a decade of Risk Management and Security experience. He has worked with lotteries as advisor in the identification of controls and programs around security & compliance, integrity and player protection. Thomas is also an experienced senior manager with experience in leading teams and resources and managing programs and budgets in excess of \$7.5M.

Jean and Thomas as well as other Key Lottery resources' Curriculum Vitae (CV) of employees dedicated to Lottery services have been provided in Exhibit B.

3.1.1.2. Shall have expertise in lottery applications, including but not limited to: on-line, instant, and video lottery information technology.

With extensive experience assisting Lottery clients worldwide, BMM can offer the expertise and world-class Gaming Consulting Services to the West Virginia Lottery. As detailed in section 3.1.1.4, BMM has extensive experience in providing services with all the areas of products and system currently and on the West Virginia Lottery road map.

BMM is providing its testing approach as well as mathematical processes that are proprietary ISO accredited internal processes to expand on BMM's qualifications to fully serve the West Virginia Lottery Commission.

## **BMM Way**

#### Overview:

The methodology employed by BMM for testing products is described as black box testing. We are capable of performing tests on gaming systems, hardware, software, and casino management systems (CMS), Video Lottery Management Systems and Lottery (GMS) Gaming Management Systems. The focus of testing is compliance to standards published by the jurisdictions for which we hold licenses. BMM also performs UAT/CAT, when this is being performed or integrated into our compliance testing we test and verify the stated and agreed to functionality is implemented accurately into the technology.



BMM allocates ample resources to ensure the most up-to-date methods are used in testing products, review our test scripts to ascertain coverage of the full range of requirements for all jurisdictions, audit our testing process and methodologies, and continually educate our employees on industry best practices. Our testing practices include functional, regression, bug-regression, quality assurance, verification, and compliance testing.

## Categories of testing:

The methodology used for testing a product consists of four main categories:

- Quality Assurance This category includes tests that are not required for the
  jurisdiction but are meant to assure the quality of the product. This category
  includes items such as ticket in and ticket out verification, electronic transfer
  verification, reporting to a casino management system (backend), and Slot
  Accounting System (SAS) testing, DXS and G2S.
- Mains Evaluates the Operating System (OS) characteristics of the submitted product and evaluates accounting, event reporting, TITO, communication protocols, Random Number Generators, and any other OS functionality that is required by the jurisdiction.
- Games Evaluates the game specific features such as game characteristics and descriptions, payouts, art work, emulation, math model evaluation, and source code evaluation. These items are evaluated against manufacturer supplied documentation and compliance to jurisdictional requirements.
- Hardware This category is related to hardware items such as the slot machine interface, cabinet security, printers, coin acceptors, bill validator, hoppers, and button panels. This section also covers electrostatic discharge requirements.

### Resources used for testing:

Hardware:

Signature Verification Tools
IT infrastructure to include networking and security devices
Electrostatic Discharge Test equipment

#### Software:

Software verification tools (BMM SHA-1, EagleCheck 2.1) Simulation software for math models and RNG analysis Test scripts/Checklists Productivity software (Microsoft Office)



# Processes: ISO accredited BMM WAY

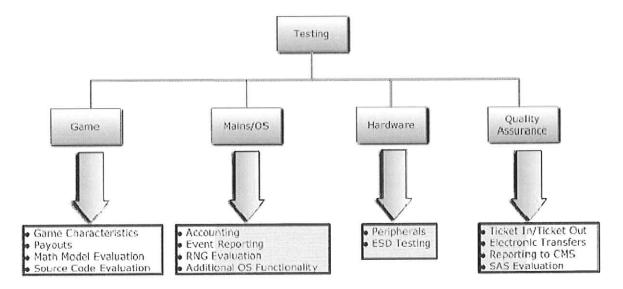


Figure 1: Testing Categories and items tested.

## **Testing Cycle:**

The basic flow of testing is described below:

- The testing cycle begins when the submission materials have been received.
- The scope of the project is defined and the applicable checklists selected to cover all requirements.
- All the applicable checklists are completed and any issues are recorded in the Deficiencies and Imperfections Reported during Testing (DIRT) report (defined as first-pass testing).
- The report is sent to the client and the project is suspended until the issues are resolved.
- Once the issues are resolved and the fixes have been verified, the certification report is issued.



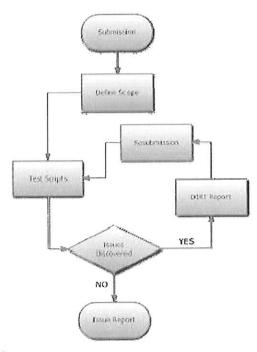


Figure 2: Testing cycle

## Suspension/Resumption Requirements:

Each test category uses checklists that require a check for pass or fail. Items that fail are entered in the DIRT report with details of the failure. The DIRT report is sent to client and testing is suspended until the items are resolved. When the items have been resolved, a regression test is completed for the product.

#### Test scripts:

Test scripts are an integral part of testing, quality assurance, and evaluations performed by BMM. They are utilized in every facet of testing carried out at BMM and are the primary vehicle for delivering service to our clients. Test scripts contain references to regulations, best practices, and quality assurance expectations. Test scripts are updated on a quarterly basis to maintain their quality, remain current with changes in regulations, and incorporate the latest best practices.

Test scripts provide the following functions:

- Provide adequate test coverage
- Provide and maintain a set of standard approaches to testing
- Ensure non-repudiation
- Maintain quality of testing practices
- Keep record of tests performed



## Computer Systems:

Computer systems are used in the testing process to facilitate various activities such as software verification, source code review, compiling source code, mathematical and RNG evaluations, and daily activities. The computer systems used by BMM contain information and tools that are necessary in the completion of testing activities.

#### Communication Software:

Communication software is used to report issues, provide status reports, send electronic final reports, and maintain open communication with our clients. Communication methods include electronic mail, remote desktop, and Skype. Communication software is adjusted to suit client needs and may be used as a tool for demonstration, training, or collaboration on an issue. BMM has been able to accommodate all client needs by remaining flexible and open to all forms of communication.

## IT Technology:

Multiple information technologies are used in the testing process. These technologies are utilized to increase efficiency, provide convenience, and remain current with technological advances. Information technology is used to provide facility for clients to connect and update servers, upload new software versions to the secure FTP site, and witness compilation.

#### Hardware:

Hardware testing includes testing of all hardware components that are associated with a gaming device. Hardware is tested to resist forced entry, provide reliable functionality, resist electrostatic discharge, and meet any other standard outlined in the jurisdictional requirements. Hardware is subjected to electrostatic discharge testing in all game states to verify functionality.

Hardware items tested include:

- Bill validators
- Coin acceptors
- Printers
- Hoppers
- Monitors
- Cabinets



## 3.1.1.3. Shall have expertise in analyzing applied statistics, modeling, and data analysis.

Since 1981, BMM has gathered unparalleled experience in the assessment, evaluation and testing of Random Number Generators (RNGs) and mathematical models in all types of lottery and gaming devices and systems, and has been consistently doing this work since 1981.

Since BMM's entrance into the US market in 2002, we have been making immense progress on the casino and lottery front, as well as offering broader services to all other regulators across the full spectrum of gaming.

BMM's mathematics team is a world-class team of experienced and dedicated professionals. Our team has regularly finds inconsistencies with Random Number Generator's and mathematical models that have been already approved by other testing agencies, both private and public. This team will bring the highest level of performance and thoroughness to the needs and requirements of the West Virginia Lottery Commission.

Our record for providing accurate, on-time assessments of whole lottery systems, totalisators, wagering systems, keno-style games and on-line gaming systems is unmatched. This record, coupled with our integrity and independence as a true independent test lab, makes BMM a test partner who will earn the West Virginia Lottery Commission trust and complete confidence in the work carried out.

In line with BMM's certified process and quality framework "The BMM Way", we follow strick analytical processes for modeling and data analysis.

Below is BMM's overview for RNG and mathematical analytics.

#### Mathematics:

All games are evaluated to determine compliance to minimum return to player (RTP), odds requirements, and volatility specified for each jurisdiction. The math evaluations include:

- RNG outcomes used to determine reel-strip stops or equivalent
- Awards are based on reel-strip (or equivalent) combinations matching the pay table
- Additional features (bonuses, free games, etc.) are treated as part of a single game
- Game volatility determined by pay table probabilities
- Game RTP percentage is determined by overall pay table (including features), and corresponding probabilities of each award
- Hit frequency is the ratio of all winning combinations to total combinations

RNG:



This evaluation consists of a source code review and statistical analysis. The source code review is used to determine the proper usage of the RNG algorithm used and that no secondary decisions are made between a random outcome and using the outcome for game results.

The statistical analyses are divided into two groups of tests that verify the robustness and unpredictability of the random numbers produced. The statistical tests are evaluated on a 99% confidence level:

- "Diehard" series of tests Birthday Spacing Test, the Overlapping 5-Permutation Test, the Binary Rank Test, the Bitstream Test, the OPSO, OQSO and DNA Tests, the Count-The-1's Test, the Parking Lot Test, the Minimum Distance Test, the 3D Spheres Test, the Squeeze Test, the Overlapping Sums Test, the Runs Test, and the Craps Test
- Empirical tests Chi-Square, Frequency, Pair Correlation, Triples Correlation, Runs Up, and Runs Down, Gap, and Serial Correlation.

Types of games include but are not limited to traditional Lottery products (instant, online), bingo, pull tab, lotto, reel strip based, poker variations, baccarat variations, and black jack variations.

3.1.1.4. Shall have had at least six (6) Domestic Lottery Customers during the last three (3) years and shall submit a list that provides the name of the customer and the dates that services were rendered to these customers.

Here's a comprehensive overview of the recent work BMM has provided to domestic Lotteries during the last three years.

- Atlantic Lottery Awarded Preferred test lab (2010-2015)
  - Audits
  - Game evaluation and certification
  - Math model assessments
  - Gaming System evaluation and certification (DXS & G2S)
  - o RNG analysis and certification
  - Abnormal Testing
  - Connectivity Testing
  - o Conversion Testing
  - Functional testing

Validation that the Lottery gaming system is working in accordance with the requirement specification as well operating procedures such as transaction processing, data backup, data restores, winning number entries, share value entries, claims and payments, subscriptions, report generation and any output required for the daily operation.



## Illinois Lottery

- June 2011 June 2012 : ICS testing and Audit for proper evaluation and integrity of new (ICS) Internal Control System:
  - Abnormal Testing
  - Connectivity Testing
  - · Configuration Testing
  - Conversion Testing
  - · Financial reconciliation and soundness
  - Functional testing

Validation that the ICS is working in accordance with the requirement specification as well as operating procedures such as transaction processing, data backup, data restores, winning number entries, share value entries, claims and payments, subscriptions, report generation and any output required for the ICS.

## Loto-Québec

March 2011 – Present: Certification testing

## Maryland Lottery

o 2010: Regulatory Consulting Services

## Northstar Lottery Group

- April 2011: CAT script development in preparation of CAT testing of new Lottery gaming system
- o May July 2011: CAT testing of new Lottery gaming system
- September 2011: Powerball, Subscription and MUSL functional and CAT testing
- February March 2012: CAT testing of first legalized Internet wagering site for online Lottery offerings
- o April 2012: CAT testing for new product offerings
- August September 2012: CAT testing of product modifications
- October 2012: CAT Testing for new product offering (My 3 Numbers)
- November 2012: CAT Testing for new product offering (Play & Play)

#### Oklahoma Lottery

- August September 2009: RNG Certification of Automated Drawing System
- April May 2011: RNG Certification of Automated Drawing System

## Ohio Lottery



- December 2010 Certification of Random Number Server with Draws application utilized with Raffle
- Washington D.C Lottery
  - o 2011 Present: Regulatory Consulting Services
- Washington State Lottery
  - o 2008 Present
  - o Video Lottery Terminal Testing

Not unlike the lottery vendors West Virginia Lottery Commission has contracted with, BMM has a long list of international experience that it makes available to all of its clients, hence limiting our experience to simply nationally known clients seems like a step to limit our qualifications. BMM is fully capable of providing all the services required by the West Virginia Lottery. Whether that experience was gained working with other international vendors that are part of the WLA, like the West Virginia Lottery Commision is a member, is regardless of the value the experience brings to the constituents of West Virginia and the benefactors of the lottery.

3.1.1.5. Shall have served as a subject matter expert witness to provide testimony on the RFP review and bid evaluation in legal proceedings resulting from contract award protests on at least three (3) occasions and submit a list of such occasions.

In BMM's role as an independent test lab servicing all markets for over the last 30 years, we always make our subject matter experts available for our regulatory clients and constituents. This service is implicit in all of our engagements with regulatory bodies and is the understanding that the selected entity can and will provide expert testimony and advice for any related scope of work situations regardless of whether any contested case sees the light of day or is settled without a formal proceeding. This is not limited to technical reviews, expert witness testimony, or general consulting from a broad range of subject matter experts. We have several key executive and management personnel who have participated in the development, the management and the review of the RFP process, who will meet these requirements. However, BMM's perspective as always been to provide our best advice and perhaps the best advice is that which avoids the necessity of a formal proceeding.

Although we have been doing this for years, most recently BMM has provided expert testimony in the following:

- 1. Federal court in Scranton, PA,
- 2. before gaming commissions in NJ, PA & NV,



- before Administrative Law Court proceedings in NJ, in legal depositions for many clients related to legal case regarding IP infringement, regulatory licensing matters, etc
- 3.1.1.6. Shall have no existing contracts with prospective vendors or any other association that may be a conflict of interest with prospective vendors who may bid on a contract award that result from services provided by consultant pursuant to this RFQ and shall attest to this requirement in writing.

Currently BMM does no certification testing for the West Virginia Lottery. If an entity currently does exclusive certification testing for WV Lottery as a protected monopoly, under the terms of this subsection, there would be direct conflict of interest as prospective vendors are required to have product exclusively certified by such entity to be able to qualify and comply with the terms of a contract with the West Virginia Lottery. Therefore such exclusive entity is conflicted between the interests of the State of West Virginia and the manufacturers that pay their bills.



3.1.1.7. Shall provide a list of ten (10) domestic lottery references. References shall include a name, title, organization, telephone number, email address, and a brief description of the system installed.

## Atlantic Lottery

o Patrick Daigle

Chief Financial Officer Office - 506-867-5896 Mobile - 506-381-5223 patrick.daigle@alc.ca

Byron Bridger

Sr. Category Manager, Destination O - 1–506-867-5800, ex. 6109 M - 1–506-875-1090 byron.bridger@alc.ca

## Illinois Lottery

Michele Eichhorn

Illinois Department of Revenue Phone: 217-524-5253
Michele.Eichhorn@illinois.gov

#### Loto-Québec

Roger Garceau

Director Security and Compliance Work:514-282-8000 x 5205 Roger.Garceau@loto-quebec.com

## Maryland Lottery

o Charles LaBoy

Assistant Director for Gaming Phone: 410-230-5588 Claboy@msla.state.md.us

## Northstar Lottery Group

o Jay Rivara

Vice-President Operations and Technology Work: 312-368-5809 Mobile: 480-392-1981 Jay.Rivara@northstarlottery.net

## Oklahoma Lottery

o Rollo Redburn

Director of Administration Work: 405-522-7711 Mobile: 405-833-7588 Rollo.redburn@lottery.ok.gov



- Ohio Lottery
  - Mary Neidart
     Drawing Manager
     216-774-5764
     mary.neidert@olc.state.oh.us
- Oregon Lottery
  - Syed Hussain
     Chief Information Officer
     503-540-1358
     Syed.hussain@state.or.us
- Washington D.C. Lottery
  - Buddy Roogow
     Executive Director
     202-645-8070
     Buddy.roogow@dc.gov
     Dionnee.bryant@dc.gov
- Washington State Gambling Commission
  - Paul Dasaro, Administrator Electronic Gambling Lab (360) 486-3505
     PaulD@wsgc.wa.gov
- 3.1.1.8. Shall be subject to initial and periodic background checks using the Agency's electronic fingerprint capture system. An individual shall be removed from supporting the contract if his or her background check produces adverse results. In the case of a criminal background refusal, the basis for refusal shall be a conviction of any felony or any crime related to theft, gambling, or involving moral turpitude. Any management, supervisory, and key technical personnel performing services pursuant to this contract are also subject to this background investigation.

As part of the hiring process, BMM conducts a background check as part of the consideration for employment as well as annually. The background check consists of the following;

**County Level Criminal Check** - The Company will perform a County Court Records search for any Felony and/or Misdemeanor convictions within the last 7 years not only in Clark County but throughout the United States

**Social Security Track** - This is to provide a reporting of all aliases maiden names as well as list of current and previous addresses that may have used.



BMM Compliance utilizes First Advantage SBS to complete these backgrounds.

In addition, BMM would be pleased to provide all required documents in this regards to the West Virginia Commission and/or follow any other requirements required by the West Virginia Lottery Commission.



## EXHIBIT B - WEST VIRGINIA LOTTERY KEY RESOURCES

## THOMAS BIERBACH, CISA, CISM, ISO/IEC27001 LEAD AUDITOR

#### **Director Lottery Security and Audit Services**

#### Description of Duties:

- Develop BMM Competencies and Capacity for the Lottery & Gaming Line of Business
- Development and marketing of BMM products and services for Lottery & Gaming in Security and Compliance Management and Services, including
  - Policy Development
  - Process Design
  - Design and Implementation of Controls
  - o Project Management
  - o Compliance Progressive Discipline Methodology
  - Design of Fraud Detection and Monitoring Programs
  - Lottery Security Assessments
  - Lottery Retail Compliance & Site Testing/Inspection Services
  - o Compliance Management Solution & Technology Support
- Support BMM Business Development in the Lottery & Gaming LoB
  - Representing BMM in the Global Lottery & Gaming Industry
  - Industry Subject Matter Expert speaking engagements & presentations
  - o Developing leads and qualifying prospects
  - Account Mgmt. and Stakeholder Relations
- Support BMM in Lottery & Gaming Products & Services Delivery
  - Client Consulting, Training, Audits
  - Program and Project Implementation

#### Relevant Specialized Experience:

- Self-motivated and resourceful Senior Manager with 25+ years of international corporate experience combining extensive technology and risk management expertise with strong business acumen.
- Excellent communicator and accomplished public speaker who brings multi-cultural and bilingual (German-English) advantages in leveraging relationships with diverse groups of people on all corporate levels.
- Strong leader and coach who effectively motivates others and directs top-level strategic corporate initiatives.
- Pro-active self-starter with track record of initiative, personal responsibility, ownership of work and reputation for removing obstacles and making things happen.
- Creative, dependable and enthusiastic change agent who strives on contributing to the growth of an
  organization utilizing his strong analytical skills to solve complex issues often turning impasses into
  opportunities.
- Risk Management



- Security Management
- · Operations Management
- ISO/IEC 27001 ISMS / WLA Security Control Standard SCS
- · Lottery Operations / Security
- Process Improvement
- Regulatory Compliance
- Fraud Monitoring / Detection
- Presentation and Training
- Public Speaking
- · Leadership / Coaching and Mentoring

#### Previous Experience

Duration		Company Name	Role
2011 present	-	Baseline Business Geographics	Principal and Vice President Risk Advisory & Compliance Solutions

- Senior advisor in the field of risk management and security & compliance in the Lottery & Gaming Industry, working with organizations in the identification and implementation of security & compliance programs and solutions in support of player protection and operational excellence
- Executive leadership in the execution of Baseline's growth strategy in market and brand development for GIS/GPS and mobile technology supported site compliance & inspection solutions in the Lottery & Gaming Industry.

## 2007 - 2011 Atlantic Lottery Corporation

Director, Security & Compliance

- Trusted advisor to the organization in the Security & Compliance function, provision of leadership in the
  development and management of programs, processes and services to ensure the integrity of lottery
  products and operational processes, the security of corporate assets, the protection of players and the
  regulatory compliance of the lottery operations.
- Co-Chair of the World Lottery Association Security & Risk Management Committee, building worldwide industry and cross jurisdictional relationships and liaisons within the Gaming and Lottery Industry, collaborating on security and risk management issues on a global stage and contributing to the evolution of the international WLA Security Control Standard.
- Led the organization to successful ISO27001 and WLA Security Control Standard Certification, directing and managing teams in the implementation and operation of the ISO Information Security Management System ISMS.
- Directed and led the broad service portfolio of the 40+ resources Security and Compliance team in Security and Risk Management disciplines, including Information Security, IT Security, Physical Security, Regulatory Compliance, Due Diligence, Investigative Services, Compliance Monitoring, Gaming Surveillance, Lottery Draws, and Ticket Testing.
- Provided senior leadership to the organization during a time of heightened public and stakeholder scrutiny in relation to extensive media coverage on the lottery industry issue of retailer wins,



- playing a key role in supporting the organization in its continuous efforts to maintain the highest standards of integrity and reputation and being a leader in the industry.
- Developed industry leading programs for Fraud Detection and Compliance Monitoring and directed their implementation and management, enhancing the vision of the Security & Compliance function and its value proposition to a world class organization.
- Numerous speaking engagements at international and worldwide Lottery & Gaming Industry and Security events; presented and spoke on a broad range of Security and Risk Management topics.

## 2005 - 2007 Atlantic Lottery Corporation

## Manager, IT Audit

- Development and execution of the Internal Audit strategy and plan for Information Technology for a wide range of areas including logical and physical access; change control management and processes; Major application and infrastructure projects; Quality assurance processes, relational database systems, ecommerce, and risk management practices and strategies.
- Providing assurance to management and stakeholders that risks are appropriately managed, presenting position on risk and significant issues to all levels of management and promoting change supporting the organization in meeting its objectives.

## 2002 - 2005 Intelisys Aviation Systems

#### **Operations Manager**

- Responsible for operations of the aviation systems provider, managing the systems and production group, coordinating quality assurance, policies and procedures, process development and business continuity planning. Enforcing high availability standards in the ASP delivery within the production data centre and mission critical operations for the company's growing global client community of midsize and regional airlines.
- Key Account Management for global clients in Asia, ME and Europe. Extensive international travel to client sites for troubleshooting, risk management and mitigation and issue resolution, liaising with client's management and operational staff on location. Managing implementations at headquarters as well as at client's sites and providing training, support and customer service.

#### 2000 - 2002 Intelisys Aviation Systems

## Senior Database Administrator

- Designed, developed and implemented large enterprise data structures for this aviation software provider. The data structure supports an entire suite of applications for airline reservations, fleet maintenance and flight operations and its physical design is implemented in MSSQL Server.
- Implemented and managed an Information Security Management System by ISO27001 standards for the protection of critical data and information assets. Coordinated vulnerability assessments and quarterly penetration testing, employee awareness training and managed information security policy documentation and compliance.

#### 1998 - 2000 AIC Group of Funds

#### **Database Administrator**

Provided support and guidance to a front-end development team, implementation of policies and standards for the interaction of any application with the SQL Server data structures. Teaching the development team as to how to efficiently communicate with SQL Server databases (Concepts of



transactions and rollback, concepts of concurrency and data integrity, optimized SQL code).

## 1993 - 1998 Bierbach Consulting Principal Business Consultant

- Coordinated events from planning to execution and participated at major international trade shows as exhibitor representing clients in Real Estate, Tourism and International Trade. Bilingual (English/German) representative for Canadian clients at European tradeshows, opening new markets to clients, supporting business development and sales, increasing market exposure. Events include CeBIT Germany, Frankfurt Book Fair, ANUGA Food and Beverages Germany.
- Instructional design and delivery of corporate training and coaching to staff and management
  of international clients in a large variety of areas, such as IT training, professional coaching
  and client product training.
- Hosted numerous corporate events presenting keynote speeches, motivational speeches, coaching and leadership programs.

1988 - 1993	Siemens Albis AG, Switzerland	Programmer/Analyst – Project Manager	

 Project Management and Team Lead, providing leadership in software projects and their implementation, supervising staff of programmers and integration analysts, management of software vendors and contractors.

## Education, Training and Certifications

Institution	Name of qualification	Type of qualification
Professional Evaluation and Certification Board, PCEB	ISO/IEC 27001 Lead Auditor	Certified ISO/IEC 27001 Information Security Standard Lead Auditor
Information Systems Audit & Control Association, ISACA	CISA	Certified Information Systems Auditor
Information Systems Audit & Control Association, ISACA	CISM	Certified Information Security Manager
Trios Training Centre	SQL Server Admin. /Implementation	SQL Server Database Administration and Implementation
Microsoft	MCP	Microsoft Certified Professional
KV Zurich Business School	Programmer / Analyst	Programmer Analyst Courses
Siemens Centre for Education, Germany	Business Administration and Management	Continuing Education Courses in Business Management



Institution	Name of qualification	Type of qualification
Amboring Volume	dorf SW Development and Database Design stre,	Continuing Education in SW Development and Relational Database Design through multiple courses
University of Cambrid	ge First Certificate in English	English Language Certification
REFA - Gerr Association of Indus Engineering Organization		Study of work analysis, work design and work planning, process design and process optimization.



## JEAN CORRIVEAU, CTFL, PMP

#### Business development Manager, Lotteries and Internet Gaming

#### Description of Duties:

- Communicate with regulators to maintain a consistent relationship between BMM and regulators
- Upsell BMM, attend tradeshows to expand BMM's visibility in the market globally
- Work with manufacturers and regulators to get real time updates on status of gaming industry products
- Provide regulatory guidance to manufacturers when needed
- Review submission, testing and certification processes with Quality and SD management teams so the BMM procedures and checklists comply with ISO/IEC 17025 and 17020.
- Document any new procedures and guidelines and adopt them into the Quality process
- Research possible leads and develop valued propositions
- Provide training and support externally or internally as needed
- Communicate with client and coordinate in lab visits from manufacturers
- Implement and maintain compliance reviews for SD work to ensure quality and accuracy

#### Relevant Specialized Experience:

- Project Management
- 10 years + Gaming industry expertise
- Multiple successful software launch around the globe
- Wide experience in software engineering, testing, support and customer interaction
- Strong presentation and communication skills
- · Profound understanding of software life cycle and gaming regulations

## Previous Experience

Duration	Company Name	Role	
2010 - 2011	CGI group	Test Lead - Lotteries	

- Manage & Lead multiple projects to meet quality expectations
- Provide test estimates and strategies
- Analyzing test results, evaluate risks and impact to the business
- Manage resources
- Prepare reports on tests conducted
- Develop, maintain, and execute comprehensive test plans in support of system programming changes
- Run, comprehend and accurately describe the results of tests. Submit defect reports and retest defect resolutions
- Provide problem determination services for testing issues management



Durat	ion	Company Name	Role
	Coordin	ate with Infrastructure team to ensure that the	ne test environments are properly setup for test cycle
	Perform	documentation analysis and actively partici	pate in other related projects and duties
2008	- 2010	Atlantic Lottery Corporation	Test Lead
	Manage	& Lead multiple projects in gaming for VLT	, online and Internet gaming
	Provide	test estimates and strategies	
	Analyzir	ng test results, evaluate risks and impact to	the business
	Manage	resources	
	Prepare	reports on tests conducted	
	Develop	, maintain, and execute comprehensive test	plans in support of system programming changes
	Run, cor resolutio		ts of tests. Submit defect reports and retest defect
	Provide	problem determination services for testing is	ssues management
	Coordin	ate with Infrastructure team to ensure that th	ne test environments are properly setup for test cycle
	Perform	documentation analysis and actively partici	pate in other related projects and duties
2007 -	- 2008	BelTek Systems Design Inc.	Project Manager
• N	lultiple su	ccessful DSD/ERP solution integration and	rollout
	ustomer		
		al Onsite workflow evaluation and delivery o	of software solution
	Activities and a second	g customer wireless software launch	
	8	stems to assess their likely compliance with	technical requirements
	-	eekly status reports	
		ent gathering and documentation	T
2007 -	- 2007	BMM Compliance	Team Lead Professional & Technical Services
•	Custome	er point of contact	
	Manage	multiple software vendors to meet and exce	eed jurisdictional regulations
	Project p	planning and delivery solution to meet time t	o market estimates
	<ul> <li>Developing test plans and test scripts hardware / software testing</li> </ul>		
	Analyzin	g test results and prepare reports on tests o	conducted
	Manage	resource pool	
	Oversee	ing multiple customers such as Lotteries an	d EGM manufacturers
		system data in preparation of certification	
		5 15 5	



Duration	Company Name	Role
2005 - 2007	Credentia Inc.	Director of Operation / Project Manager

- Overseeing daily operational activities
- Delivery and planning to foreign diplomats on EGM regulations processes and benefits (MACAU, China)
- Development & delivery of training material for EGM course
- Project Management
- Establish processes for operational workflow
- Developing test plans and test scripts hardware / software testing
- Executing established test plans and procedures
- Analyzing test results and prepare reports on tests conducted
- Research of jurisdictional regulation

## 2002 - 2005 Spielo GTECH

Lead Software developer

- Lead software developer working on new framework project (2005)
- Lead software developer project Jamaica (2004-05)
- Responsible of overlooking testing issues and coordinating re-submission to testing
- Onsite testing and installation of EGM terminals
- Developing games, packaging and submitting to testing
- Onsite testing of central communication and DXS communication protocol
- Troubleshooting & Maintaining Field software
- International on site Software support specialist(NY project 2003-04)
- Implementation of new back office
- Support developer for TITO
- Defining new templates for virtual 3 reel games
- Communication protocol TCP/IP, DXS, SAS, MGAM
- Software developer for state of Rhode Island
- Onsite market validation of new games/products
- Software developer for state of Delaware
- Software developer for state of lowa
- Part of R&D team working on new products
- Keeping up to date Software versions & labeling
- Coaching & Assisting programmers



Duration	Company Name	Role	
1999 - 2002	Aliant	Internet system coordinator	

- Providing customer service and technical assistance for dialup service, vibe, PPPoE and Vibe vision as Front Line Agent and also as Senior Technician (part-time)
- · Troubleshooting ADSL technologies
- Network escalations, troubleshooting
- Dispatching installers to fix trouble on lines and providing the proper information to resolve the issue
- Providing assistance for agents with training and questions

## Education, Training and Certifications

Institution	Name of qualification	Type of qualification
University of Moncton	Bachelor of Computer Science	Bachelor's of Computer Science Majors in Networking, Programming and Multimedia CISCO CCNA network certification with university program
Nexient	Introduction to Project Management	University of the George Washington curriculum September 2009
SQE	Requirement-Based testing	3 day course provided by Software Quality Engineering. October 2009
SQE	Test Management	3 day course provided by Software Quality Engineering. December 2009
PMI New-Brunswick Chapter	PMP certification preparation course	35 hours course on Project Management in preparation to attain PMP certification
PMI	PMP	Project Management certification
ISQTB	CTFL	Certified tester Foundation Level



#### ADAM FONG

#### Senior Director Service Delivery

#### Description of Duties:

- Oversee day to day operations of the Service Delivery groups
- · Manage and assign engineering resources
- Monitor work efficiency and maintain key performance metrics
- Generate performance and management reports on request or as per schedule
- Perform compliance consultation services
- Manage and oversee staff development and training
- Oversee the development and maintenance of testing procedures and methods
- Ensure proper maintenance of laboratory equipment
- Ensure proper adherence to organizational policies and procedures
- · Assist in the strategy and direction of new projects
- Any other duties as prescribed by VP of Operations

#### Relevant Specialized Experience:

- Experience with major gaming device platform architectures
- Experience with inspection and deployment of system based and mobile gaming devices
- Experience with the development of technical regulations, standards and internal control procedures

#### Previous Experience:

Duration	Company Name	Role	
11/2006 - 2/2012	NEVADA GAMING CONTROL BOARD	Senior Lab Engineer	

- Technical supervision for lab engineer staff and lab technician staff
- Design initial project scope, resource requirements, budget, and schedule for new gaming device evaluation and testing projects
- Oversee testing and evaluation of over 2500 gaming device modifications annually
- Assist in the development and deployment of testing tools
- Manage engineer technical development and training
- Assist and provide technical analysis in the investigation of alleged cheating incidents involving gaming equipment
- Oversee regulatory compliance field inspections for Nevada gaming establishments
- Perform in-depth analysis and testing of gaming system networks to identify risk potential and ensure regulatory compliance
- Consult with licensed gaming operators and manufacturers to ensure regulatory compliance with State Regulators, Technical Standards, and Internal Controls
- Analyze, develop and propose technical standards for gaming devices and associated equipment

Duration	Company Name	Role
2/2006 - 11/2006	FREEMAN	Systems Administrator

- Responsible for deployment and administration of all branch Information Systems consisting of workstations, servers, networked systems, printers, backup solutions, storage area networks, and mobile communications for over 300 end users
- Responsible for deployment and maintenance of all branch hardware and software for branch users as well
  as remote show site locations



- Responsible for organization and maintenance of branch network infrastructure to reflect current and future IT
- Responsible for development and maintenance of branch disaster recovery plan Responsible for development and implementation of data protection strategy

Institution	Name of qualification	Type of qualification
UNLV	MS – Management Information Systems	IT Management
UNLV	MBA	Business and General Management
UNLV	BA – Computer Science	Software Programming and Testing



# FRANCIS MENDOZA

# **Technical Project Manager**

# Description of Duties:

- Executing established test plans and procedures
- Developing test plans and test scripts hardware / software testing
- Analyzing test results and prepare reports on tests conducted
- Help in developing test tools
- Review systems to assess their likely compliance with technical requirements (gap analysis)
- Forensic investigations
- Prepare weekly status reports
- Communicate with client and coordinate in lab visits from manufacturers
- System interoperability testing (SAS, SDS, S2S, etc)
- Source code review
- Signature verification (Kobetron, Dataman, Flash reader
- Peripheral Device Testing / Certifications (Coin Acceptors, Printers, Bill Acceptors)

# Relevant Specialized Experience:

# Understanding of C, C++ languages

Vast understanding of hardware and peripheral device design, installation, repair and troubleshooting

Vast experience of all IGT game platforms

# Previous Experience:

Dur	ration	Company Na	ıme	Role
Nov	02 to Aug 06	International Technology	Game	Hardware Technician
•	Detailed kn	owledge of all I	GT Gam	e platforms
•	Responsible for proper installation, repair and maintenance for slot machines			

Experience with conversion and software upgrades, power analysis, and site work

Institution	Name of qua	lification	Type of qualification	
ITT Technical Institute	Electronic Technology	Engineering	Associate Degree	



#### TRAVIS J. FOLEY

Vice President Operations - Americas

#### Description of Duties:

- Develop and implement policies and procedures for effective and efficient delivery of goods and services for the company.
- Responsible for managing day-to-day activities of the operations management (Professional Services Delivery, and Field Services Delivery).
- Monitor the daily operations of these service delivery divisions of the company and reporting to the Chief Operating Officer.

# Relevant Specialized Experience:

Extensive gaming industry experience in regulatory compliance

Excellent knowledge of technology used in gaming environments.

Successful in developing, implementing, and meeting project guidelines and milestones.

Experience in public speaking and training.

Experienced in the management and supervision of subordinate staff along with the formulation/ administration of the Division budget.

#### Previous Experience:

Duration	Company Name	Role
07/2007 -		Chief - Technology Division
09/2011	NEVADA GAMING CONTROL BOARD	

- Interact directly with Gaming Control Board members regarding all technology related matters.
- Direct daily operations of the division's gaming lab and information technology services.
- Propose statute, regulation, technical standards, and agency policy regarding technology related matters.
- Interface with multiple jurisdictional gaming agencies.
- Work with national and international gaming labs to develop common standards for gaming devices.

Duration	Company Name	Role
08/1999 – 06/2001	NEVADA GAMING CONTROL BOARD	Sr. Electronics Lab Engineer  – Electronic Services Division

- Managed the northern Nevada field inspection team.
- Interfaced with casino operators regarding field inspections.
- Performed new responsibilities while continuing to perform lab engineer responsibilities as well.



Duration	Company Name	Role
03/1998 – 07/1999	NEVADA GAMING CONTROL BOARD	Electronics Lab Engineer – Electronics Services Division

- Conducted investigations of gaming cheating device technology.
- Conducted customer casino dispute investigations and resolutions including providing expert testimony during hearings.
- Reviewed and tested gaming devices for compliance with applicable regulations and standards.
- Designed and developed test equipment for field inspections of gaming devices.
- Developed a broad understanding of Nevada gaming regulations in the area of gaming devices and gaming associated equipment.

Duration	Company Name	Role
05/1996 -		Associate/Design Engineer
02/1998	VIDEOTRONICS, INC.	

- Designed and developed interface equipment for gaming devices.
- Implemented various bill validation systems into existing gaming devices to accept domestic and foreign currencies.
- Assisted with development and submission of a new gaming device

Institution	Name of qualification	Type of qualification
University of Nevada	Electrical Engineering	Bachelor of Science



#### ALISHA D. RAY

Vice President - Compliance

#### Description of Duties:

- Responsible for the corporate licensing function of BMM International and all related entities.
- Officer directing the Technical Compliance effort for BMM North America,
- Handles governmental affairs and regulatory relations with applicable jurisdictions.

### Relevant Specialized Experience:

- 13+ years experience in the Gaming industry with the last 11 years in regulatory compliance.
- Personally licensed in multiple jurisdictions.
- Proven ability to direct complex projects from concept to success completion.
- Team-oriented and goal driven individual with strong leadership skills.
- Organized, highly motivated, detail-directed and logic-driven problem solver.
- Exceptional ability to work in unison with managing members, owners and board members for the entity's overall success.
- Strong logic-based problem solving skills that enable the direction of group efforts to achieve maximum results.

# Previous Experience:

Duration	Company Name	Role	
11-2009 – 09-2011	INTERNATIONAL GAME TECHNOLOGY (IGT)	Compliance Staff Analyst	

- Lead in conducting projects, research and analysis in support of Product Compliance.
- Obtained regulatory product acceptance for over 150 products.

#### Previous Experience:

Duration	Company Name	Role
04/2009 – 11/2009	INTERNATIONAL GAME TECHNOLOGY (IGT) (CONTRACTOR)	Self / Contractor

Assisted IGT with Progressive Gaming ("PGIC") asset acquisition.



- Transition all compliance related documents and activities over to IGT from PGIC.
- Train IGT Product Compliance on acquired PGIC products.

# Previous Experience:

Duration	Company Name	Role
09/2000 – 01/2009	PROGRESSIVE GAMING INTERNATIONAL	Vice President of Compliance – Global

- Manage, administer and navigate regulatory guidelines in over 200 licensed jurisdictions.
- Manage product compliance, shipping compliance and licensing staff, globally.
- Compliance Officer duties related to the Compliance Committee.
- Perform due diligence verification and approval of all vendors, Purchase of Products, Distributors and

Employees.

Maintain Public Float information; report and maintain SEC Institutional Investors' information in

accordance with regulatory reporting.

 Reduced expenses by more than 50% through increased efficiencies and in-house expertise while

reducing head count nearly 50%.

# Previous Experience:

Duration	Company Name	Role	
12/1999 –	THE DESERT INN / I.T.T. SHERATON	AS400 System Administrator	
09/2000	CORPORATION		

- Maintain and monitor primary and back-up IBM AS/400 720 mainframes.
- Implemented and oversaw "mirror imaging" system for seamless conversion of data redundancy.
- Created and maintained Data Center disaster recovery plan.
- Managed all hotel and casino data applications, including, LMS, LSI, and CDS.

#### Previous Experience:

Duration	Company Name	Role	
03/1999 -	CAESAR'S PALACE / I.T.T. SHERATON	Casino Application Analyst	
12/1999	CORPORATION		

- Responsible for support of hotel, slot and casino applications for domestic Caesars properties.
- Wrote, implemented and administered Y2K testing scripts for LSI casino.
- Supported slot application analysts with transition from SDS to ACSC slot system.



Institution	Name of qualification	Type of qualification
University of Phoenix	Business Management and Administration	Bachelor of Science
Northwestern University / Kellogg School of Management	Executive Management	Certificate of Executive Leadership



#### **NICOLE BABBS**

### **Director of Quality**

# Description of Duties:

- Supporting, developing and managing the SD group of North America
- Holding weekly SD Group meetings covering work forecast, training, work in house, etc
- Hold weekly meeting with BSD Management for revenue forecasts, pipeline, scheduling of current and new projects
- Hiring of all SD related positions
- Ensure delivery of monthly SD revenue goal with assistance from Group Managers
- Providing technical support, training and leadership to team members
- Prepare weekly status reports
- Reviewing team time slips monthly with assistance from Group Managers for all team projects.
- Allocating tasks to consultants in the team or loaning consultants to other teams so that they
  achieve weekly billable hours objectives
- Performing twice-yearly staff reviews for team members and giving them regular feedback on their performance
- Assist SD Team in negotiating project deadlines and costs with clients

# Relevant Specialized Experience:

Understanding of Jurisdictional requirements and regulations

Vast experience with Project Management

11 years experience in gaming environment

#### Previous Experience:

Duration	Company Name	Role
11/98 – 11/99		Corporate Conference Centre
	MONASH UNIVERSITY	Manager

Manage Corporate Conference Centre

Responsible for hiring of staff

Supervise all building maintenance

Handle all bookings and set ups for functions

Responsible for all stock orders and SAP management

Improve efficiencies of Centre

Responsible for management of Executive floor of Monash University: Chancellor and Vice

Chancellor requirements

Institution	Name of qualification	Type of qualification	
RMIT	Applied Science, Myotherapy	Bachelor's Degree	



Institution	Name of qualification	Type of qualification
TAFE	Office Administration	Associate Diploma
TAFE	Office Administration	Associate Diploma



#### JUNE LIGHT

#### **Director, Mathematics**

# Description of Duties:

- Source code review
- Mathematics par sheet analysis
- RNG verification
- Executing established test plans and procedures
- Developing test plans and test scripts software testing
- Analyzing test results and prepare reports on tests conducted
- Help in developing test tools
- Review systems to assess their likely compliance with technical requirements (gap analyses)
- Forensic investigations
- Prepare weekly status reports
- Communicate with client and coordinate in lab visits from manufacturers
- Signature verification (Kobetron, Dataman, Flash reader)

# Relevant Specialized Experience:

Vast Understanding of SAS and SDS protocols

Vast understanding of C and C++ languages

Vast understanding of Class III and Class II gaming technology

#### Previous Experience

Dura	tion		Company Name	Role
Feb Mar		to	Bechtel Nevada	Communications Engineer

- Communication system design and drafting
- Developed new CADD drawings

Duration		Company Name	Role	
Nov 00 Nov 04	to	Sigma Gaming Inc	Software Engineer	



Duration	Company Name	Role
Duration	Company Name	Role

- Developed software for slot machine games
- Developed computer software in conjunction with hardware development
- Tested new software and hardware to make statistical decisions on quality for the company, increasing reliability and customer satisfaction
- Debugged and corrected issues on software created by numerous programmers
- Developed configuration management solutions to the most significant problems

Dura	ation		Company Name	Role	
Jun	98	to	Bechtel Nevada	Scientist Class B	
Nov	00				

- Geographically corrected remote sensing data using GCS, Imagine and Erdas software packages
- Modified code and processing methods to accommodate data
- Mathematically attained solutions to data errors
- Performed statistical analysis of errors within the collected data
- · Directed others in modification of data

Institution	Name of qualification	Type qualification	of
University of Nevada Las Vegas	Bachelor of Science in Electrical Engineering	i.e. Degree	
University of Nevada Las Vegas	Bachelor of Science in Applied Mathematic 2000	i.e. Degree	



#### **MICHEL DEVEAU**

Computer Scientist

#### Description of Duties:

- Mathematical analysis of game PAR Sheets
- Development of tools for aiding in the mathematical analysis of game PAR Sheets
- Statistical evaluations of RNGs
- Development of tools for aiding in the statistical evaluation of RNGs
- Source code evaluations of RNGs, Games, Operating systems & Gaming systems
- Development and/or review of test scripts
- Analyzing test results and prepare reports on tests conducted

### Relevant Specialized Experience:

- Background in Sciences (Physics) with a strong aptitude for mathematics
- · Experienced in the development of numerical analysis software
- Proficient in various software languages: C, C++, C#, Basic, JAVA
- Proficient in Linux and Windows Platforms
- · Experienced in the field of systems analysis

#### Previous Experience:

Duration	Company Name	Role	
April 2011-	BMM COMPLIANCE	Computer Scientist	

# present

- Mathematical Analysis (PAR Sheets and RNGs)
- Code reviews
- Software development
- Test script development/review

Duration	Company Name	Role	
August 2010-	CGI INC.	Consultant	
April 2011			

Duration	Company Name	Role	
February 2008-	ATLANTIC LOTTERY CORPORATION	Systems Analyst	

# August 2010

Systems Analyst for many projects at AL.



Duration	Company Name	Role		
May 2007-	BMM COMPLIANCE	Chief Mathematician		
January 2008				
<ul><li>Mathemat</li></ul>	ical Analysis (PAR Sheets and RNGs)			
	development t development/review			
• rest scrip	t development/review			
Duration	Company Name	Role		
March 2006-	CREDENTIA INC.	Mathematician		
May 2007				
	ical Analysis (PAR Sheets and RNGs)			
	development t development/review			
· root oonp	( development review			
Duration	Company Name	Role		
April 2004-	UNIVERSITE DE MONCTON	Scientific Researcher		
March 2006				
	ent of motor/robotic control software			
Developm	ent of mathematical analysis software			
Duration	Company Name	Role		
June 1997-	MICRO OPTICS DESIGN CORPORATION	Various Engineering roles		
April 2004				
	ent of motor/robotic control software			
	ent of mathematical analysis software			
<ul> <li>Managem</li> </ul>	ent and team leading			
Duration	Company Name	Role		
June 1997-	UNIVERSITE DE MONCTON	Professor (1 year contract)		



Institution	Name of qualification	Type of qualification	
Université de Moncton	Master of Sciences (Physics)	Scientific analysis	
Université de Moncton	Bachelor of Sciences (Physics)	Scientific analysis	



#### **NATHAN GU**

### Senior Group Manager

### Description of Duties:

- Executing established test plans and procedures
- Developing test plans and test scripts hardware / software testing
- Analyzing test results and prepare reports on tests conducted
- Help in developing test tools
- Review systems to assess their likely compliance with technical requirements (gap analyses)
- Forensic investigations
- Prepare weekly status reports
- Communicate with client and coordinate in lab visits from manufacturers
- System interoperability testing (SAS, SDS, S2S, etc)
- Source code review
- Signature verification (Kobetron, Dataman, Flash reader)

# Relevant Specialized Experience:

Understanding of SAS and SDS protocols

Understanding of C, C++ languages

Experience with Konami, Bally, Aristocrat, and IGT systems

#### Previous Experience

<b>DURATION</b> 2003 - 2005		COMPANY NAME	ROLE		
		Gaming Laboratories International	Test Engineer II		
•		rm completion test for Konami, Unidesa	a, Quest and IGT platforms to ensure		
•	Perforn	n system functionality test for Bally, Aristo	crat, Konami and IGT systems		
0	Perforn	n full SAS/SDS test for communication ch	ips		
•	Perform data code review of virtual reel strips, combination determination, asso pay madding for Konami, Unidesa, Quest and IGT platforms				
0	Help te	am engineers get projects done in an acc	urate and timely manner		
0	Provide				
DUR	ATION	COMPANY NAME	ROLE		
1999	9 - 2003	Liberate Technologies Inc	Software QA Lead		
•	Develo	oped solid test document including test et-based interactive projects and internation	plans, test suites and test cases for onalized applications as well;		



# DURATION COMPANY NAME ROLE

- Automated functional and regression tests for various client-server applications;
- Integrated DTV mail with standard IMAP (Internet Message Access Protocol) or SMTP (Simple Mail Transfer Protocol) mail server over the network operator's TCP/IP network
- Updated client and server with new released build
- Provided written communication of test results to QA Manager
- Analyzed test results and make recommendation for release decision.

DURATION		COMPANY NAME	ROLE		
1997 -	1999	Global English	Software QA Engineer		
•	Perform	ed software testing project on internet using	IE and Netscape		
•	Automat	ed functional and regression testing of the	application using QA partner		
•	Create applica	and execute test plan, test suite, and testions	st cases for localized internet-based		
•		functional, error, boundary, installation, for client and server	acceptance and O.S. compatibility		
•	Isolated	bugs by using FileMaker Pro to generate cl	ear bug reports		
•	Worked	closely with project team to identify and sol	ve problems		



#### **LUCRETIA MARTIN**

#### Group Manager

#### Description of Duties:

- Hardware / software testing
- Review systems to assess their likely compliance with technical requirements (gap, Lotto Quebec, Atlantic Lottery, Tribal Compacts)
- Signature verification (Kobetron, BMM Signatures)

# Relevant Specialized Experience:

- For example: Understanding of SAS and SDS protocols
- Understanding of C, C++ languages, Assembly, HTML
- Experience with Aristocrat, Aspect, Bally, Bluberi, Casino Technology, Konami, and WGSC.

#### Previous Experience:

Duration	Company Name	Role
August 2010 – December 2011	UNIVERSITY OF NEVADA-LAS VEGAS	Assistant to The Systems Administrator

- Student account creation and management
- Computer Science Faculty desktop support
- Printer management
- Customer Support

Duration			Company Name	Role				
July August	2011 2011	=	UNIVERSITY OF NEVADA-LAS VEGAS	Undergraduate Research Assistant, under the supervision of Dr. Laxmi Gewali				

- Drew figures to complement code comments
- Assembled documentation for "Simple Geometric"

Institution	Name of qualification	Type of qualification
University of Nevada- Las, Vegas	B.A. Computer Science, concentration in Computer and Electrical Engineering	Software and hardware testing

# ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: LOT498

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.

Adde	endu	ım I	Numbers Received:			
			ox next to each addendum re	eceive	1)	
	[/	1	Addendum No. 1	[	]	Addendum No. 6
	[	]	Addendum No. 2	]	]	Addendum No. 7
	[	]	Addendum No. 3	I	]	Addendum No. 8
	[	]	Addendum No. 4	[	]	Addendum No. 9
	ſ	ì	Addendum No. 5	ſ	1	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.

Authorized Signature

Date

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