GAMING LABORATORIES INTERNATIONAL®

PROFESSIONAL LOTTERY SERVICES

GLI® A TRUSTED, PROVEN

For nearly three decades, Gaming Laboratories International (GLI®) has worked closely with lotteries around the world, offering an unparalleled range of services designed to support our clients in creating the competitive edge of a world-class organization with security and integrity. Drawing from our experience in more than 475 jurisdictions worldwide, we have partnered with lotteries to deliver services that meet the highest standards of quality, ensuring that the work we do for you is second to none.

We are grateful for the opportunity to work with our lottery partners, providing long-term, value-added solutions. You will not find another company more dedicated in helping safeguard your assets than GLI. Today, over 65 lotteries rely on us to help maximize the efficiency, security and compliance of their lottery operations.

The significant growth in and the reliance on technology to power lottery operations comes with an equally significant escalation in risk. Whether it is the modernization of your lottery system, the introduction of new gaming sources of revenue or the protection of these assets, we recognize this increasing threat to your business. We have spent many years developing a strong, global professional and technology services practice through the expansion of our capabilities and by investing in industry experts to the benefit of our customers.

Our commitment to keeping your assets safe has resulted in the development of a global professional and technology services practice that is strong due to the sheer volume and quality of our experts on staff. To enhance our ability to reduce risk to lottery operators, we have formalized our professional and technology services brand, now known as Bulletproof – a trusted provider of world-class solutions including software quality assurance (QA) and testing, cybersecurity, Information Technology (IT) services and end-to-end lottery solutions.

Through Bulletproof, we offer specialized expert practices around each of our service offerings to empower the continuous improvement of your lottery processes, systems and overall business infrastructure. Our knowledge of the lottery industry and our understanding of lottery central gaming systems provides tremendous value to lottery operators. Our comprehensive portfolio of

PARTNER

best-in-class solutions includes significant expertise in lottery operations, enabling us to bolster our existing services for the lottery industry. When you complement your existing resources with our deep technical proficiency and the expertise of our industry-certified IT professionals, the results are solutions tailored to meet your specific business needs at a fraction of traditional in-house setup costs.

With Bulletproof - a GLI company, you also have a team you can rely on for accurate and up-to-date professional lottery systems modernization projects, cybersecurity assessments and consulting as well as lottery operations process consulting. We are here to support you every step of the way to meet your business objectives while protecting player trust and managing integrity and security.

BULLETPROOF
a GLI company

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"Bulletproof is a response to you, our clients, who have asked for more services around cybersecurity and Information Technology, customized for lottery. We have been building and investing in these additional services now for several years. We are very proud of the team we have built at GLI and are excited to offer these professional and technology services to our customers globally under the Bulletproof brand."

JAMES MAIDA, PRESIDENT/CEO,
GAMING LABORATORIES INTERNATIONAL (right)
STEVE BURNS, CEO, BULLETPROOF (left)

OUR TEAM

Our team is comprised of some of the highest accredited and most experienced lottery and IT professionals. While others who serve lotteries come from firms with little to no lottery experience, our experts have years of global lottery experience and have held senior management positions at lotteries. This differentiates us from the rest and makes us extremely competitive because we don't have to learn the business of our clients first like competitors often do. We identify operational issues at lotteries that others miss, and we are always a cut above the rest.

Our senior leadership team ensures our employees receive the best support, most advanced and up-to-date methodologies and tools as well as training while enabling them to deliver world-class solutions to our lottery clients around the globe.

Lottery clients trust our team, knowing they are some of the best lottery professionals in the world. The consistent growth we have experienced is a testimony to our team's competency, dedication and talent.

Pictured Left to Right:

WADE DAUPHINEE
Director GRC

THOMAS BIERBACH
Director Lottery Services

GREG DOUCETTE
VP Solutions Delivery & GRC

KELLY BLACK
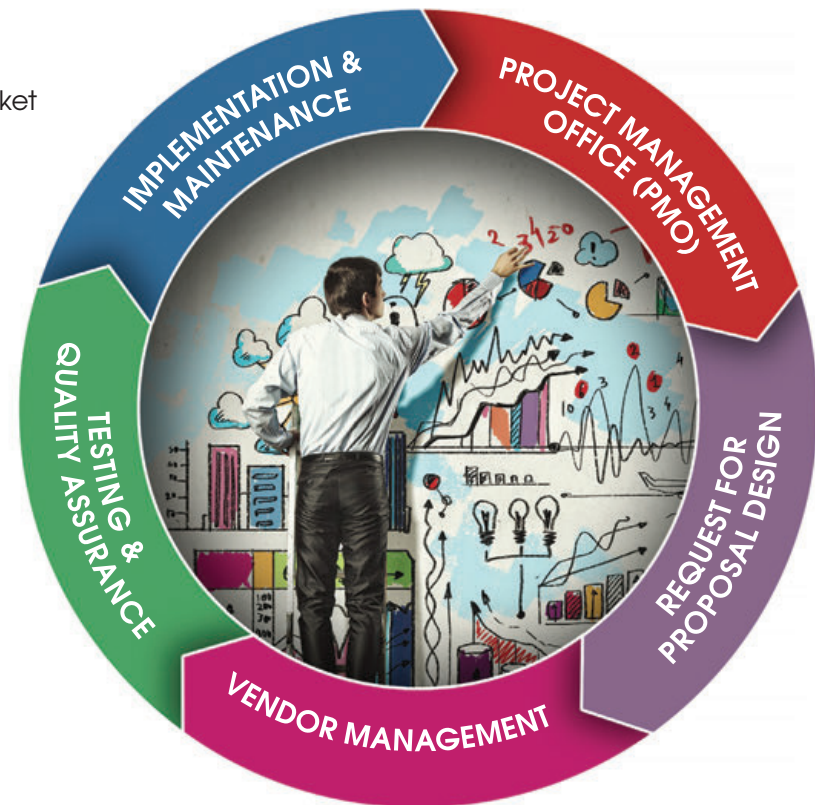Managing Director Solutions Delivery

SOLUTIONS
DELIVERY

When you undertake a multi-year lottery system modernization, those initiatives can be risky and time consuming, requiring significant investment, key organizational resources and senior management commitment. We understand that often, a lottery can have difficulty managing a system modernization project while still being required to perform their ongoing day-to-day operational activities.

We have identified a number of critical areas that will generate problems if not managed effectively. We utilize best-of-breed methodologies for delivery of critical lottery projects.

We do this to assist a lottery's need for cost containment, flexible innovative product design, speed to market, market segment growth, improved customer engagement, streamlined business processes, increased service quality, and regulatory changes. Our end-to-end service delivery brings a complete governance, planning, execution, control and monitoring structure to your lottery project.

This best-in-class methodology, along with our extensive industry experience, enables us to fulfill your business requirements on time and on budget while achieving your business benefits.

IMPLEMENTATION & MAINTENANCE

PROJECT MANAGEMENT OFFICE (PMO)

TESTING & QUALITY ASSURANCE

REQUEST FOR PROPOSAL DESIGN

VENDOR MANAGEMENT

PROJECT MANAGEMENT OFFICE (PMO)

Project Management & Governance

Our project management methodology is built upon the Project Management Institute (PMI) standards and best practices. It encompasses a core set of policies, processes, procedures, templates and tools designed to deliver business initiatives through proven project management activities.

Project Health and Recovery

The purpose of a project health check is to identify and analyze critical lottery projects for issues and risks while recommending timely and practical corrective actions driving success.

REQUEST FOR PROPOSAL DESIGN

Request for Proposal (RFP)

An RFP is a major undertaking for a lottery system's modernization project. Our expertise in the complete RFP development process can accelerate your lottery's creation of a future state roadmap and deliver a successful RFP and procurement process. Our professionals will utilize its requirements gathering and lottery process mapping processes to generate the required content to deliver a complete end-to-end RFP.

Requirements Gathering

The creation of clear and concise requirements is critical in support of a new lottery system. We will help develop business and technical requirements and support documentation, such as process flow charts of your lottery's business processes, allowing for an effective and efficient RFP design and proposal response from vendors.

Lottery Process Mapping

Our industry experts know lottery operations inside out. Whether your lottery is looking to map and document its latest draws process or to re-engineer a process so it is more efficient and effective, our process mapping experts can help.

VENDOR MANAGEMENT

Independent Verification & Validation (IV&V)

We bring a proven project QA and Independent Verification & Validation (IV&V) methodology to your project. Our SQM3 is configurable to align with a project's size and risk factors and is supported by a suite of automated tools that alleviate the administrative burden of developing effective checklists, interview guides and collating deliverable review comments.

Multi-Vendor Management

When multiple vendors provide various pieces, it is easy to lose track of the delivery status on a lottery project. Leverage our industry-leading vendor relationships to ensure project success with vendor management support through our project management office (PMO). Our PMO ensures projects are managed and vendor deliverables are implemented on time and with quality.

DID YOU KNOW?

- 75% of IT projects fail. *(Gartner)*

- 44% of IT projects are challenged: late, over budget, and/or with less than the required features. *(The Standish Group)*

Outmanage risk. Contact our experts to discuss your next project.

QUALITY ASSURANCE & TESTING

Functional Testing

Our professionals deliver end-to-end lottery system testing, covering system integration, user acceptance, mobile, compatibility and interoperability, usability, localization and data warehousing testing. This testing is performed against business and/or system requirements with complete integration of the end-to-end system with lottery sub-systems and peripherals.

Test Automation

We deploy automation testing for repetitive but necessary manual tasks in a formalized testing process, such as regression testing, but that does not fully replace manual testing. The automation tests augment the testing suite to improve test coverage, efficiency and speed to market.

Performance Testing

Our professionals can evaluate an application or system against performance requirements through tuning, optimization or refactoring as well as validating response times, throughput and breaking points using load, stress, endurance, volume and scalability testing techniques. We will ensure that the lottery system will handle high-volume transactions for large lottery jackpots.

QA Assessments & Consulting

We can also provide an independent review of a lottery's QA and quality control (QC) processes employed in the software development lifecycle (SDLC) to determine the effectiveness of the methodologies, processes, policies and procedures delivering a recommended improvement roadmap.
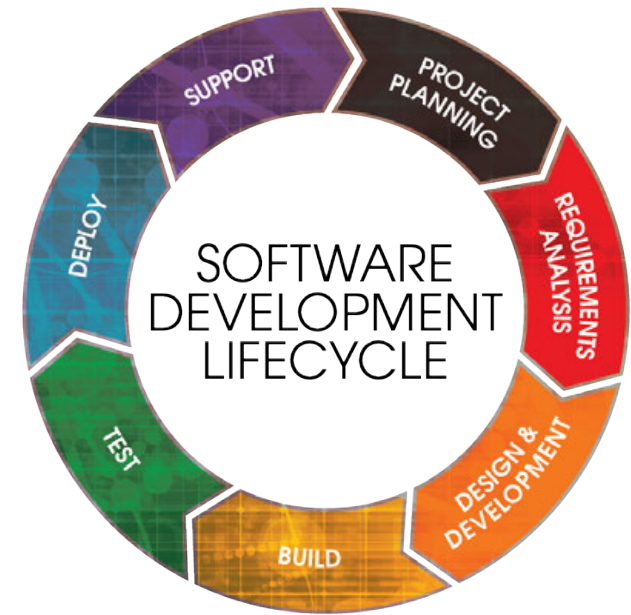
IMPLEMENTATION & MAINTENANCE

System Implementation Planning

Our team of experts will analyze the necessary components required to integrate your lottery system solutions. Large and costly capital lottery modernization projects require cooperation among multiple vendors, and it is critical that the vendors work collaboratively to integrate the gaming pieces, seamlessly providing a unified business solution.

System Cutover

A system cutover may only take a day. However, the implementation planning may take weeks or even months to ensure a successful cutover. We can assist with configuration and change management processes required for a successful cutover. Our team will help define Service Level Agreements (SLAs) and operational procedures to help ensure post-implementation sustainability.

SOFTWARE DEVELOPMENT LIFECYCLE

System Maintenance

System maintenance is ongoing and covers a wide variety of activities, including removing program and design errors, updating training and system documentation, refreshing test data, and driving system advancements. We can assist lotteries in the management and maintenance of their critical lottery systems post-project implementation.

IN 2016, **SOFTWARE FAILURES COST THE U.S. ECONOMY $1.1 TRILLION** WITH GOVERNMENT BEING ONE OF THE WORST HIT INDUSTRIES. *(Tricentis)*

SECURITY AND AUDIT SERVICES

Our **Governance, Risk & Compliance (GRC) Division** provides lotteries with the security and compliance services needed to ensure you are protecting the confidentiality, integrity and availability of your data and information.

Network Risk Assessment (NRA)

- Internal & External Network Vulnerability Assessments and Penetration Testing
- Wireless Network Vulnerability Assessments and Penetration Testing
- Firewall Assessments

Infrastructure Risk Assessment

- Assessment of Server and Workstation Security Configurations
- Assessment of IT Security Infrastructure (Intrusion Detection Systems, Audit Logging)

Application Risk Assessment

- Gaming Application Vulnerability Assessments and Penetration Testing
- Web Application Security Assessments

Information Technology Security Controls Reviews

- IT Security Program and Governance Reviews
- IT Security Policy and Procedure Reviews
- IT Security Architecture Reviews
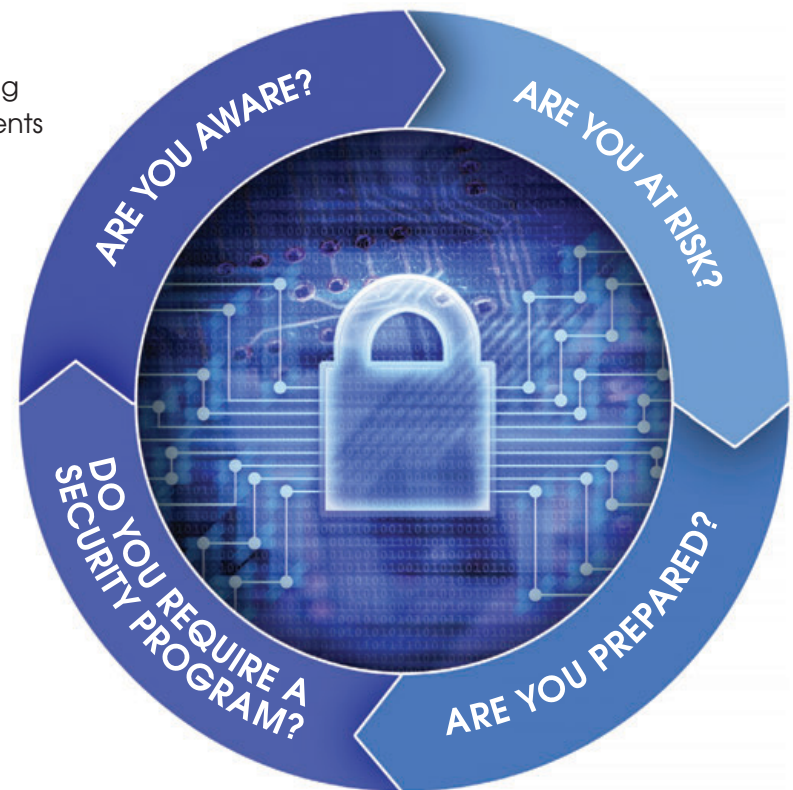
Social Engineering

HUMAN

- Physical Security Attacks
- Help Desk Social Engineering Calls

TECHNICAL

- Email Phishing
- USB Drops

ARE YOU AWARE?

ARE YOU AT RISK?

DO YOU REQUIRE A SECURITY PROGRAM?

ARE YOU PREPARED?

PREPARING YOU FOR EVERY AUDIT

We can provide independent third-party assessments and certification audits of your lottery's information security processes against nationally recognized and internal security standards.

ISO 27001 International Standard for Information Security Management Practices

- Compliance Assessments
- Information Security Management System (ISMS) Consulting and Audit Preparation
- Certification Audits

PCI Data Security Standards (DSS)

We can assist with all of your PCI requirements, from the completion of a self-assessment questionnaire or a report on compliance to conducting a gap assessment against the current PCI:DSS standard. We have PCI-Qualified Security Assessors (QSAs) on staff.

We can deliver the following services:

- Compliance Assessments (Health Checks)
- Consulting and Audit Preparation/Support
- Certification Audits

NIST 800-53 – Security and Privacy Controls Standard for Federal Information Systems and Organizations

- Compliance Assessments

DID YOU KNOW?

SECURITY AND PRIVACY ARE LISTED AS THE NO. 2 CONCERN FOR CIOs IN A 2016 FORBES ANNUAL SURVEY.

THE AVERAGE SECURITY BREACH GOES UNDETECTED 197 DAYS, AND THE AVERAGE DATA BREACH COSTS $4 MILLION, ACCORDING TO A 2016 IBM SURVEY.

Security Awareness Training

Our experts can develop security awareness training for educating lottery employees about information security.

WE'RE READY TO HELP WITH EVERY SECURITY PROGRAM

A well-designed and functional information security program aligned with your lottery's business objectives and regulatory requirements can help drive an effective and efficient organization while protecting the confidentiality, integrity and availability of assets and information.

Our team offers the following services which are categorized by security standards:

ISO 27001 Information Security Management Program

- ISO 27001 Gap Assessments and Roadmap Consulting
- Information Security Management System (ISMS) Consulting

PCI Data Security Standards (DSS) Consulting

We can assist with all of your PCI requirements, from the completion of a self-assessment questionnaire or a report on compliance to conducting a gap assessment against the current PCI:DSS standard. We have PCI-Qualified Security Assessors (QSAs) on staff who can deliver consulting and audit preparation/support.

Security Architecture Design

Our professionals have extensive experience working with network engineers and system developers to ensure lottery security requirements are accurately identified in the lottery gaming system layers and enterprise system architecture levels. Our engineers have the expertise to ensure network and system architectures include security controls that cascade for redundancy to provide for robust defense-in-depth solutions.

Whether the architecture is for a new or redesigned lottery network or system, our engineers work with the lotteries to ensure that appropriate cost-effective security mechanisms are incorporated into the final network or security design. Our engineers have a depth and breadth of lottery experience that allows us to take a comprehensive and practical "real-world" approach that few others can match.

WE SPECIALIZE IN MANAGED SECURITY SERVICES

Managed Security Services Provider

In the reality of increasing cyber crime, the absence of a proper technical security program is simply not an option. An incident could create irreparable harm to a lottery's image, reputation, operation and erode player trust.

Our managed security services are specifically designed to support the lottery industry in its fight against cyber attacks and cyber crime. The word "managed" simply means that we look after this service or function for you. To help organizations protect their data, we offer a suite of comprehensive managed security services including:

- **24x7 Surveilance**
- **Cyber Incident Response Team**
- **Virtual Chief Security Officer**

Managed IT Services

Your lottery may have IT generalists on staff, but with today's complex systems, it's just not possible for them to know everything. Our managed IT services enable you to control costs in a predictable way and reallocate internal resources to more strategic and transformational projects.

We have a wide range of service options that can be easily tailored to your unique needs. Our team of operational experts work 24 hours a day, 7 days a week, 365 days a year to ensure your internal and external IT services are virtually bulletproof. Our core IT infrastructure service offerings include:

- **24/7 IT service desk and end-user support**
- **Proactive monitoring of your IT infrastructure**
- **Device management services**
- **Remote backup and disaster recovery**

OUR EXPERTISE ALLOWS YOU TO FOCUS ON YOUR **CORE LOTTERY BUSINESS AND SERVICES**
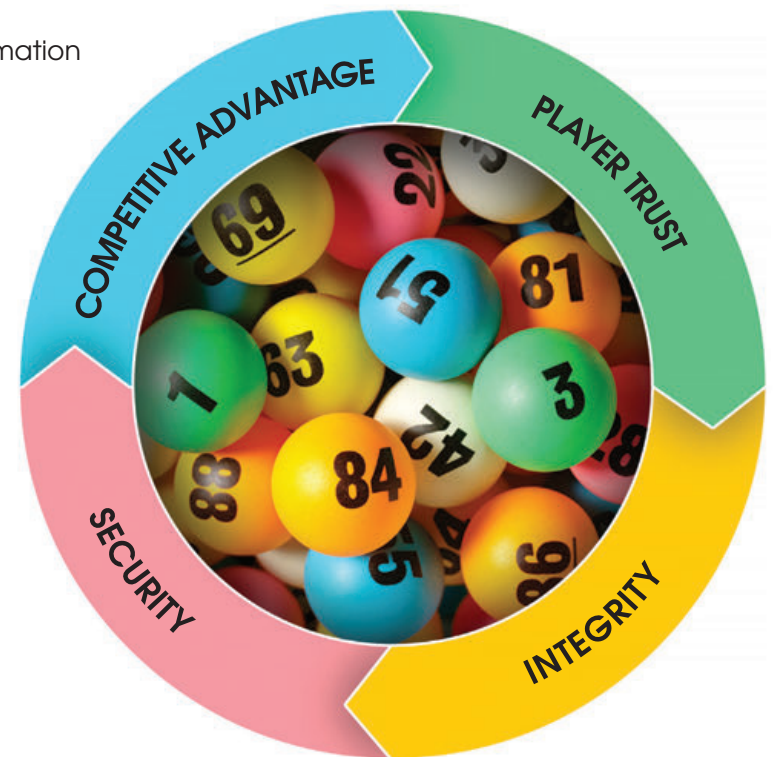
LOTTERY OPERATIONS

Facing unprecedented change, today's lottery and gaming organizations are challenged to take advantage of new opportunities while mitigating risks, meeting their business objectives and complying with regulators and other stakeholder expectations. Integral to their success is the balance of risks related to reputation, user authentication, privacy and security of sensitive information, and responsible gaming – all while simultaneously managing cost-effective and efficient operations across disparate sites.

Understanding this complex and heavily regulated environment is what the professionals in our lottery and gaming practice do best.

That equates to providing our clients excellence in service and relevant information needed to make informed decisions.

We have nearly 30 years of gaming and lottery industry experience and knowledge and have assembled a professional services team consisting of some of the world's leading lottery security experts for one reason – to protect your business and its profitability and reputation. Our lottery experts bring years of hands-on lottery operational experience not only from working with lotteries and gaming organizations worldwide, but from first-hand experience in senior risk management roles at lotteries.

LOTTERY REPUTATION AND PLAYER TRUST

The cornerstones of every lottery operation are security and integrity, and a lottery's reputation is one of its biggest assets.

Retailer Security and Player Protection Health Check

The risk of players being defrauded by retail staff involved in the validation of lottery tickets is a hot topic and a risk that all lotteries share. Mature security controls around the ticket lottery operation in the retail network are critical for player protection as well as the protection of a lottery's reputation.

We can conduct an independent review of the security operations, programs and controls with respect to retailer security. The result is the strengthening of our clients'

lottery security operations, enabling them to demonstrate their focus and maturity in integrity and player protection.

Instant (Scratch Card) Ticket Testing

Instant tickets, complex physical printed products, are subject to particular fraud risks through manipulation of the ticket by retailers and players to determine whether a ticket is a winner or not.

We offer instant ticket (scratch card) testing services at our state-of-the-art instant ticket testing lab. We test both instant tickets (scratch cards) and break-open tickets (pull-tab).

Our independent expert ticket testing service enables clients to bring their products to market with confidence, provide

assurance to their stakeholders that risks are appropriately managed, and give lotteries vendor management leverage in driving continuous improvement in the quality of their instant lottery ticket vendor's products.

INTEGRITY

WLA Responsible Gaming Assessment and Certification Consultation

Responsible gaming is at the foundation of every lottery's business. To help ensure lottery operations are equipped to implement best practices, we offer Responsible Gaming Program Audits (RGPA) that are customized to meet your specific needs.

Automated Draw Machine (ADM) Assessment

The RNG is only one layer of a complex system of interacting components. One has to consider that while the RNG is the core technology component responsible for the generation of random numbers, it alone will not produce draw results. To meet the requirements for lottery draw games, RNGs are only one embedded part of a system of components consisting of the three key operational layers in any automated draws function: people, process and technology.

We have developed a risk-based methodology that has proven itself in conducting detailed reviews and assessments in four key focus areas within electronic and automated draw systems (ADM). We understand the complexities of these layers and specialize in providing expertise in the implementation and operation of ADMs within electronic draw systems, above and beyond its core RNG testing and certification expertise.

We begin each RGPA with a review of existing programs, personnel, resources and performance metrics (if any) to assess how they align with the legal, cultural and socio-economic conditions in the jurisdiction. Based on the analysis, our experts will make customized recommendations for internationally accepted evaluation criteria which can include all or portions of standards from the National Council on Problem Gambling (NCPG), World Lottery Association (WLA), Responsible Gaming Council (RGC), European Lottery (EL), Responsible Gaming Framework Standards or other recognized standards.

Random Number Generation (RNG) Analysis, Certification and Game Math Analysis

We provide consulting and statistical analysis services relating to the certification of automated RNGs to lotteries.

The general approach is through source code review and final outcome data analysis. At the request of the client, raw output data analysis is offered as an additional service.

Lottery Ball Testing

The inspection and certification of lottery balls is considered to be a critical integrity process performed throughout the Lottery industry. We can perform these services on behalf of Lotteries with industry-leading testing practices within our controlled lab environments.

Our testing process includes accurate weighing of balls and the measurement of balls using a calipers compared to specifications given by the manufacturer. The balls are also examined for any disfigurement or surface/finish inconsistencies. Post testing, a letter documenting results with an approval or rejection status is created. We customize our testing to be either on-site or at our lab to meet specific Lottery requirements.

WE ARE EXPERTS IN PROVIDING FUNCTIONAL AND COMPLIANCE EVALUATIONS OF A VAST ARRAY OF GAMING AND VIDEO LOTTERY MACHINES, HARDWARE, SOFTWARE, SYSTEMS AND PERIPHERAL EQUIPMENT.

COMPETITIVE ADVANTAGE

Lottery Product Consulting

Our team of experts can provided end-to-end consulting support to lotteries for the rollout out of innovative products into their market.

- Social Gaming
- iLottery
- iGaming
- Esports
- Online Casino

Lottery Modernization Consulting

We act as a technical advisor for a lottery, identifying the details of their modernization solution with their chosen technology provider. We also provide consulting on the introduction of a new advanced technical central lottery system that can support enhanced player experiences and game innovation. Also considered is the integration to back-office business analytics systems along with the development of process and procedure to maintain a steady state operations that considers data confidentiality, integrity and availability (CIA).

SharePoint Services

SharePoint is one of Microsoft®'s fastest growing products and is becoming one of the cornerstones of many lottery's IT strategy. SharePoint gives you the ability to collaborate online; manage and organize data; build dashboards and online applications; automate business processes; and work together seamlessly online, even from different geographic locations.

VLT GAME AND GSA CERTIFICATIONS

Lottery Terminal Testing

We are the largest company dedicated to providing the gaming and lottery industries with independent testing and evaluation of all types of technology. In 1989, we began testing Video Lottery Terminal (VLT) devices and central control systems. We are experts in providing functional and compliance evaluations of a vast array of gaming and video lottery machines, hardware, software, systems and peripheral equipment. To best serve our clients, we have assembled the most experienced team possible, comprised of separate, dedicated teams of mathematicians and electrical engineers to perform thorough independent testing.

SECURITY

World Lottery Security Control Standard (WLA SCS) & ISO 27001

WLA Security Control Standard (WLA SCS) certification is the lottery industry's only certification and validation of the maturity of a lottery's security and integrity. The WLA SCS is built upon ISO 27001 and its Information Security Management System, which is the world's foremost information security standard.

We provide lotteries with the following services:

- **ISO 27001 and WLA SCS Training**
- **WLA SCS / ISO / IEC 27001 Gap**
- **ISO 27001 and WLA SCS:2012 Certification**
- **Lottery Security and Integrity Assessments**

Our SharePoint practice is here to help make the transition to SharePoint easy.

- SharePoint Migrations
- SharePoint Architecture & Custom Development
- SharePoint Governance Consulting
- SharePoint Staff Augmentations
- SharePoint Ongoing Support Service
- SharePoint Help Desk

Education Services

We created **Bulletproof's Education Services** because we understand that our clients face critical challenges communicating messages and business improvements to both internal and external clients. Education is not simply about providing new information or re-enforcing existing information; it is a strategic, planned, measured exercise to bring about change, increase competitive edge, and/or grow profitability.

We design education solutions to not only deliver these messages, but keep them focused on a continual improvement cycle. Our Solutions Architects, Learning Consultants, Instructional Designers and Application Specialists are industry leaders. Leveraging their lottery expertise and experience, we work with our lottery customers to understand their business issue(s), design solutions to solve challenges, and develop the training and learning platforms that support the change and value needed. Our consulting practice may be a stand-alone offering to the market and is always a critical phase of all of our full solutions.

Our education services professionals examine your organization, analyze your business goals and direction, and identify shortcomings, pitfalls and areas that require improvement or net new solutions. Our services include:

- **Custom eLearning**
- **Learning Management**
- **Instructor Led Training (ILT)**

WORLD LOTTERY ASSOCIATION

WLA

ASSOCIATE MEMBER

WITH NEARLY 30 YEARS OF EXPERIENCE, OUR PROFESSIONAL SERVICES TEAM IS HERE TO PROTECT YOUR BUSINESS, PROFITABILITY AND REPUTATION. **LET US SHOW YOU THE DIFFERENCE WE CAN MAKE IN YOUR LOTTERY OPERATION.**

At GLI, we are so much more than just testing. We are committed to helping you deploy and manage your products securely using customized services and solutions from our Bulletproof team and time-tested strategies to achieve your business goals. For more information, please visit **gaminglabs.com** or call **(732) 942-3999**.

GLI®

GAMING LABORATORIES INTERNATIONAL®

Vancouver, British Columbia Canada

Las Vegas, NV

Wheat Ridge, CO

Mexico City, Mexico

Moncton, New Brunswick Canada

Halifax, Nova Scotia Canada

Fredericton, New Brunswick Canada

Lakewood, NJ World Headquarters

San Juan, Puerto Rico

Lima, Peru

Buenos Aires, Argentina

Haarlem, The Netherlands

Kraków, Poland

Graz, Austria

Barcelona, Spain

Bologna, Italy

Midrand, S. Africa

Macau, China

Sydney, Australia

Melbourne, Australia

Adelaide, Australia

WLA — WORLD LOTTERY ASSOCIATION

cibelae — CORPORACIÓN IBEROAMERICANA DE LOTERÍAS Y APUESTAS DE ESTADO

NASPL

THE EUROPEAN LOTTERIES

*GLI's core purpose is to be the trusted global
compliance and quality expert relied upon by
our clients – delivering world-class customer
service and value that is unmatched.*

For more information about GLI's professional and technology
services provided under the Bulletproof brand, visit **bulletproofsi.com**.