

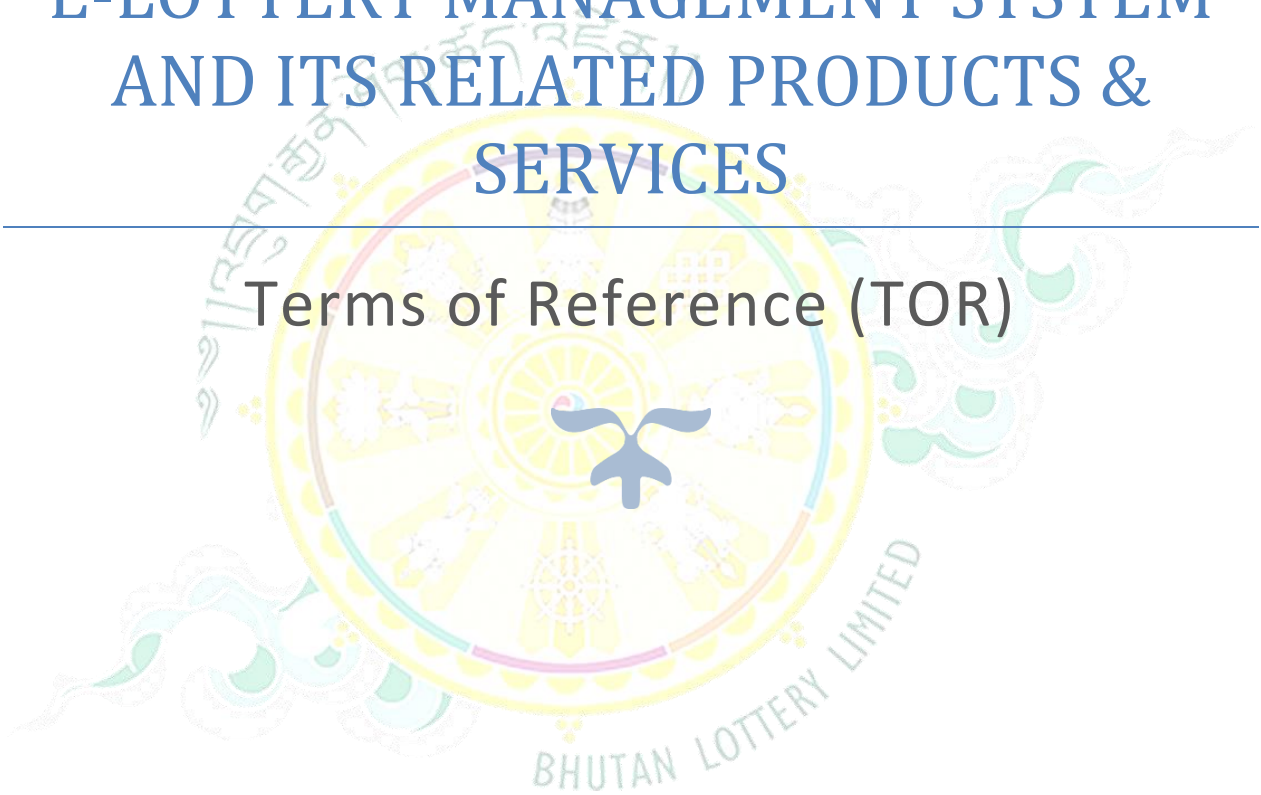


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# E-LOTTERY MANAGEMENT SYSTEM AND ITS RELATED PRODUCTS & SERVICES

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Terms of Reference (TOR)



OCTOBER 15, 2020  
Bhutan lottery limited  
Phuentsholing, Chukha, Bhutan

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## 1 Introduction

The project involves the provision of all the services and execution of the works, which comprises of planning, customization, development, design, installation, commissioning and testing. The project also includes provision of support services, maintenance, enhancements, user training and other requirements as specified in RFP.

The successful Contractor will provide fully-functional systems, the Lottery's goal is to obtain systems that will provide the best value in technology available today and also provide the greatest flexibility to adapt to changes in the future.

## 2 Background

Bhutan Lottery Limited was reinstated in 2016 as a State Owned Enterprise (SOE) under the Ministry of Finance (MOF), mandated to generate revenue for the government, generate employment opportunities, and provide quality entertainment options through innovations and maintaining fair and transparency.

The lottery has evolved from pre-printed traditional paper lottery to computerized lottery where the digitalized versions of lottery tickets are sold. This trend is being observed in the lottery industry with most lottery operators adopting modern digital channels of distribution. Online lottery is also expected to get a great boost in the near future and develop as a new mode of entertainment.

In recognition to above findings, Bhutan Lottery intends to introduce digital version of lottery called "E-Lottery" system. The E-Lottery system must support the operation of "Enterprise-Class" gaming platform which includes multi channels of distribution like Electronic Point of Sale (EPOS), Internet Web, Mobile Application, USSD and SMS. The gaming software must be capable to support major gaming like lotto, traditional draw games and quick draw games like keno, instant games and many more.

The interested bidders must submit proposals for lottery gaming platform associated with the following lottery games:

- i. **Lotto Jackpot (5/36)**
- ii. **Instant Bingo,**
- iii. **Instant Crossword Puzzle.**

**Response Note:** The proposal will be based on the Leased Hosted Solution Engagement Model (In which gaming software will be hosted by contractor and Lottery Office will have the dedicated access to manage & run the games).

The estimated sales forecast for domestic market based on the existing products is Nu. 219 (Two Hundred Nineteen) million annually.

### 3 Project Objectives

The proposed systems pursuant to this TOR are for implementation and operation of e-Lottery System including associated gaming products with support services. The objectives are as follows:

#### 3.1 System and services

- I. Lottery game sales through retail terminals and online purchase by player registration.
- II. The lottery software system must be able to capture the real time data in terms of sales, winners, payout and other related information.
- III. Support for accounting processes relating to the sale of lottery games and the distribution of lottery prizes and payouts.
- IV. Lottery system are designed to provide an uptime of 99.9% (Equipment's are designed with redundancy to prevent single point of failure)
- V. System configured to give Lottery Office full access and exclusive control to conduct operations.

#### 3.2 Implementation and Operation

- I. Obtain and install a gaming System that is sufficiently flexible to meet the gaming product needs of the Lottery over the term of the Contract.
- II. Obtain retailer terminals, supporting systems and services that are operationally sound, incorporate the highest level of transparency, integrity & security and lead to high retailer and player satisfaction.
- III. The system and its functionalities must be fully customizable and can be adapted to exact requirements of the operator.
- IV. Seamless integration with third-party systems (e.g. Online Payment System (domestic & global), Telcos and many more) via API or web service interface.
- V. Ensure that all proposed systems and services are ready to be operational upon agreed project schedule.
- VI. Ensure that system and services corrections, improvements and expanded gaming features are delivered in a timely manner.
- VII. Maintain the highest standards for responsible gaming framework including player spending limits and age verification performance.

Fulfillment of these objectives is consistent with the proposal evaluation criteria.

## 4 Lottery Gaming System

**RESPONSE NOTE:** Full

This section describes the systems and services specifications for the Lottery Gaming System (E-Lottery System). The Bidder must provide the following summary level responses:

- I. **Overview.** Present an overview of the System's design.
- II. **Flexibility of the System.** The System must be flexible, able to grow and adaptable to the business needs and rules of the Lottery.

### 4.1 Central Configuration

**RESPONSE NOTE:** Full

The Lottery Office requires a configuration capable of handling the immediate and long term needs of the Lottery. Configuration block diagrams, down to the component level of the proposed system must be submitted with the Proposal. The bidder must describe how they will perform a technology review to ensure smooth functioning of the system.

### 4.2 Gaming Host Systems at the Primary Server

**Response Note:** FULL

- I. **Transaction Processing/Database/Games Administration Hosts.** All games, database, and games administration functions must not limit to terminal lottery system, it must be supported by a protectively redundant configuration for terminal and Internet Web/app based lottery.
- II. At the primary Server, each processing complex must consist of at least two physically separate systems, networked or coupled for high availability processing and storage redundancy. A component failure in one primary server system must not cause a failure in the other system(s).
- III. **Failover.** The remaining system(s) i.e. primary or secondary shall immediately assume the load in case of a failure in one of the systems, without loss or corruption of any data and transactions received prior to the time of the failure.
- IV. **Secure Connections.** There must not be any option to connect into any gaming system from a remote or unauthorized terminal without prior approval of Lottery. Connections to other remote systems and terminals must be protected by firewalls, encryption, and/or other means.
- V. **Time Synchronizing.** All gaming hosts at the primary Server must have a time synchronizing mechanism to ensure consistent time recording and reporting for events and transactions.
- VI. **Disaster Recovery.** In the event of disaster, the bidder must have planned documented process or set of procedures to take consistent action during and after a disaster. The disaster could be natural, environmental or man-made, the system must have mechanism to support the continuity of its operation under the scenario of using two hosting centers.

### 4.3 Gaming Host Systems at the Backup Server

**RESPONSE NOTE:** Full

- I. **Backup Gaming Host Systems.** The bidder shall provide one or more remote backup systems, data transferred to or recorded at remote backup systems will always contain the most recent transactions, allowing a takeover during the failure of Primary Server. Games administration functions must also be available at the backup System, the bidder shall demonstrate that the backup data center is fully functional.
- II. **Gaming System Backup.** The remote backup systems must mirror the primary data center host systems.
- III. **Remote Backup Location.** The remote backup systems and their facility shall be provided by the successful contractor.
- IV. **Secure Connections.** These systems must have the same specification as the primary systems given under section 4.2 under SL. No. IV
- V. **Time Synchronizing.** All gaming hosts at the backup data center must have a time synchronizing mechanism to ensure consistent time recording and reporting for events and transactions.
- VI. **Disaster Recovery.** These systems must have the same specification as the primary systems given under section 4.2 under SL. No. V

### 4.4 Internal Control System Configuration

**Response Note:** Full

Operating instructions, modules and fully operational services must facilitate by the bidder, the bidder must ensure services like maintenance and enhancement for the ICS application software must be provided during entire contract period.

The ICS systems must receive real-time transactions, bidders are encouraged to propose the best practice followed by lottery operators across the world.

### 4.5 Gaming System Quantitative Performance Criteria

**Response Note:** Full

The bidder shall fully describe the operation of its e-Lottery system, its capacity to expand and adapt to the Lottery's changing business. At a minimum, the proposed system must be capable of doing the following:

- I. The System must initially support a network of at least 40 (Forty) lotto retailer terminals at different locations within boundary of Bhutan (REF. **APPENDIX (B)**).
- II. The system must have capability to expand or accommodate up to one thousand (1,000) active retailer terminals.
- III. The System must be capable of handling up to ten thousand (10,000) concurrent sales transactions per minute.
- IV. Capability to generate quick pick ticket numbers without having to enter data by operators.

- V. All other transaction shall be produced in no more than five second after completion of data entry to availability of tickets.
- VI. During the failure of primary data center auto-failover mode from backup data system must be accomplished in no more than two minutes while still maintaining current transactions.
- VII. The system must be able to process printed tickets to validate and make payout.

#### 4.6 Systems Management and Monitoring

**Response Note:** Full

Bidder shall fully describe all its applications, features and services in the systems management and monitoring capabilities.

#### 4.7 Operating Hours

**Response Note:** Full

Bidder shall describe capability to accommodate maximum of twenty four hour-a-day operations and shall accommodate the timeframe specified by the Lottery.

#### 4.8 Host Systems Security

**Response Note:** Full

Host systems security represents a critical component to ensure the integrity of the System. Bidder shall fully describe the security features of the host system.

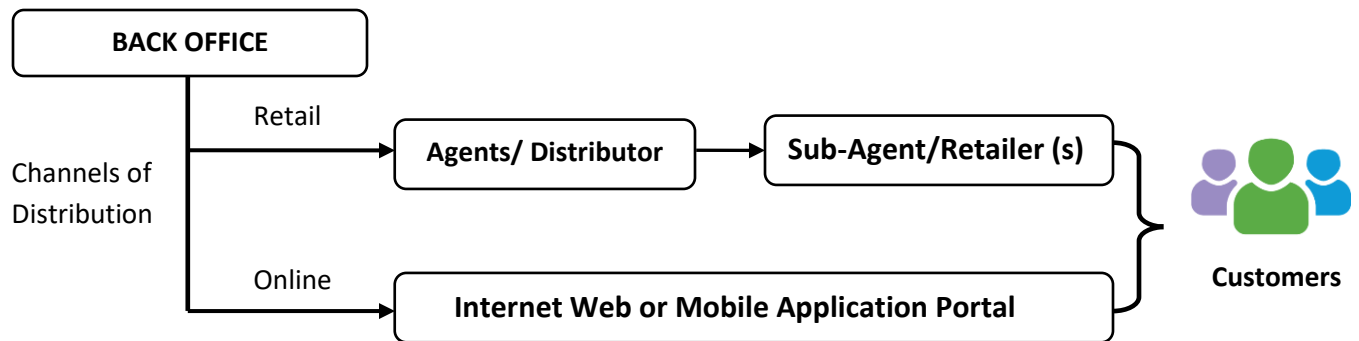
At the primary and backup data center configuration includes the development, backup & testing systems, administrative of host systems, games management and applications shall meet following security requirements:

- I. **Systems Access.** All systems and users requiring access to a host system (for any purpose) must be approved by the Lottery. Host systems must also support controls and procedures that allow the Lottery to audit all system access.
- II. **Authentication, Authorization and Access Controls.** The Proposal must clearly identify controls related to user authentication, authorization and access controls for operating systems.
- III. **Compliance with Security Requirements.** Gaming host systems must be compliant with all systems security and fault tolerance requirements accepted by the Lottery.
- IV. **Protection against Unauthorized Access or Service Disruption.** The Bidder will ensure that host systems are not vulnerable to unauthorized access. The proposal must specify the methods by which host systems will be protected against unauthorized access, viruses, spy-ware, denial of service and other attacks.
- V. **Other Systems Security Controls.** The Proposal must provide additional information on other systems security components and controls that will be implemented including host intrusion protection, login and password controls, system security log management, etc.



## 5 Online & Retail Sale Functionality

**Response Note:** Full



### 5.1 Retail Sale Functionality

The back office system must be able to manage the network between Lottery Office, Agents and Sellers with the following retailer functionality:

- I. Track Agents/sellers day to day activity LIVES.
- II. Set Agent/seller Limit and Rules.
- III. Track Sales, Commission, Payout, etc.
- IV. Retail System must support terminal device like PC, handheld device, Smartphone or all-in-one POS.

### 5.2 Online Sale Functionality

At a minimum the online sales functionality (Internet Web/App) must meet the following standards:

- I. Capabilities to register players with verification services that meet the most stringent standards for age and identity verification.
- II. Integration of banking services that facilitate player account funding and external transfer capabilities (e.g. bank transfers, Payment gateway, debit cards, other online payments, etc.).
- III. Capabilities that allow players to play games with funds.
- IV. Responsible gaming controls that ensure the highest level of standards are enforced.
- V. Development, delivery and tracking of all notifications to players such as email messages or short message service ("SMS") messages.
- VI. The development and integration of configurable marketing and promotion capabilities into the System.
- VII. A comprehensive back office management system that supports the operational needs of the Lottery. This includes a claims and payments system with ability to process payments to winners.
- VIII. Capabilities to accurately geo-locate players prior to accepting the registration while only enabling players within the physical boundaries of Bhutan.
- IX. Integrated gaming services for multiple sales channels.

- X. The system and its functionalities are fully customizable and can be adapted to exact requirements of the operator.

## 6 Retailer Terminal System

**Response Note:** Full

The authorized Agent/Seller at terminal location must be able to access the platform through web-access without having to install separate application to manage and sell the printed tickets. Initially, Lottery Office will start with forty (40) retail terminals, however the lottery system must be capable of supporting additional terminals if required in future. The retailer system must be able to support various devices like lotto terminal Touch-Points, PC, Laptop, Phone, tablets, android hand-held device, etc.

### 6.1 Features and Functions

**Response Note:** Full

The bidder shall fully describe all the features and functions of the retailer system, the bidder shall also describe how proposed system meets the following criteria:

- I. **Secure Sign-On.** The terminal system must prohibit unauthorized user, for security purpose the password should not be displayed nor printed or visible in any manner. The password facility must permit multiple levels of secure access.
- II. **User Interface Design.** The bidder shall fully describe the process of selling a ticket and operation at terminal.
- III. **Control of Validations.** The System must have control to validate tickets at terminal for a specific game and draw.
- IV. **Training Mode.** The terminal system must be capable of operating in a training mode. Ticket facsimiles generated in training mode transactions shall be marked "VOID - DEMO - NOT FOR SALE."
- V. **Transaction Integrity**
  - a. The terminal system must provide a method of preserving the integrity of the transaction when there is a fault with retail device, printer, internet connection and other means of disruption, bidder shall demonstrate its solution to address such condition.
  - b. The system must return to its service when the fault is cleared without notable delay or disruption for the retailer.
- VI. **Broadcast Messages.** Messages from the central system must be received and displayed to the retailer.
- VII. **Terminal Printer.** A thermal printer or an essentially equivalent alternative must be recommended by bidder. Printers must come with high-resolution printing features, fast, quiet and reliable.
  - a. The printer must be capable of printing lottery tickets with lottery logo or game logo or a promotional coupon must be printable.

- b. The printer must be capable of printing tickets having uniform size or variable length as determined by the Lottery.
- c. Encrypted barcode or QR code must be printable on the tickets.

## 6.2 Retailer System Security

**RESPONSE NOTE:** Full

Retailer software system must exhibit a high degree of security, the bidder must describe the following applicable security features at retailer terminals.

- a. **Secure Transmissions.** All data communications from the retailer system to the central gaming host systems must be encrypted.
- b. **Protection against Unauthorized Access or Service Disruption.** The bidder will ensure that terminal systems are not vulnerable to unauthorized access. The proposal must specify the methods by which these systems will be protected.
- c. **Other Terminal Security Controls.** The proposal must provide additional information on any other retailer security components.

## 7 Software Controls and Data Management

### 7.1 Gaming Software Security, Control Features and Functions

**RESPONSE NOTE:** Full

The system must provide particular features and functions to meet requirements for secure and efficient operation. Bidder shall fully describe how its proposed solution provides necessary gaming software security, outlining any key control features and functions. At a minimum, the proposal must contain the following requirements:

1. **Logging Activity.** All game processing activities are to be recorded immediately on multiple hosts, the activity includes sales, cancels, validation, all related transactions, retail terminal commands, errors and any changes using the games management applications. Requirements include, but are not limited to:
  - I. The gaming system back-up, recovery and redundancy features can be supported using log files for re-processing, if necessary.
  - II. The gaming system can be audited and checked for appropriate usage and freedom from error in the event of outage and recovery.
  - III. The lottery office shall be able to view transactions status and its operations as and when required. The transaction log will include detailed records of sales, validations, canceled tickets, terminal outages, login information and system events.
2. The Lottery requires real-time data transactions to the Internal Control System. The transaction shall include periodic checkpoints to ensure that the ICS receives on real-time. In addition, the system must be able to generate statement within five minutes after the closure of the sales.

3. **Transactions Protected.** The system must ensure that transactions cannot be tampered or manipulated. The proposal must include methods and procedures that prevent tampering within the system. The Lottery reserves the right to review all the system narratives, source program and operational procedures to ensure the integrity of data and system.
4. **Tickets Duplication.** The system must ensure that printed tickets cannot be duplicated by external means.
5. **One-Time Cashing/Claim.** A physical winning ticket must be able to claim or cashed only one time.
6. **Transaction Storage Redundancy.** Every transaction of the terminals must be received by three systems: (a) Gaming system which handles the transaction, (b) Local backup system which is capable of recovering in the event of system failure, and (c) Remote backup system for processing the transaction. During the system failure, every transaction must be recorded on the other two systems.
7. **Game Monitoring.** Real-time monitoring of gaming transaction traffic and system utilization must be accessible by both the Bidder and the Lottery. The system must immediately notify its abnormality and their causes, such as system failure, validation problems, etc.
8. **Software Quality Assurances and Acceptance Testing.** The Bidder shall perform quality assurance for software enhancements and corrections. The software QA program shall be complemented after the acceptance testing program is carried out by Lottery at testing terminal.
9. **Dual Security System.** The retailer terminal must generate a unique number aside from the system-logged transaction serial number, this mechanism can be used to link winning tickets to selling terminals. This application must be under the control of Lottery, the use of an encrypted control number is required.
10. **Incomplete Transaction Protocol.** For incomplete and unresolved transactions between the host systems and the retailer terminals, there must be mechanisms for reconciliation.
11. **Communications Outages.** In the event of a communications disruption between the central system and any terminal, the System shall continue to attempt to service the terminal until the problem is resolved.
12. **Validations.** The System must be capable of validating winning tickets by means of a reader, app or by manual entry.
  - a. The System must validate winning tickets presented within the claim periods.
  - b. In addition to the customer display result, the terminal shall also able to print draw result. The terminal must print receipts for claimed winning tickets, the exact specifications will be established during implementation.
13. The retailers at terminal shall able to validate the winning tickets. A Lotto ticket can be played multiple times under a single lotto number per game and win multiple prizes.
14. The system must set claim period, the exact specifications will be discussed during implementation.

## 7.2 Application and Database Security

**RESPONSE NOTE:** Full

Application security controls is one of the critical component which will ensure the integrity of the System. The following are the security requirements:

1. **Authentication, Authorization and Access Controls.** The proposal must clearly identify controls related to user authentication, authorization and access controls for applications. The Bidder shall propose a convenient method allowing authorized users the ability to reset and manage their own passwords on the System.
2. **Log File.** Log file must record all the system events and activates, modifications to the system must be protected by verification steps. The application must provide display and reporting tools for the Lottery to verify the events recorded.
3. All applications and databases must be designed to support only the intended functions, the users must be granted access accordingly to perform their job functions.
4. **Protection against Application or Service Disruption.** The proposal must provide information on the mechanisms to validate developed code for ensuring applications is not vulnerable to denial of service attacks or similar security threats.
5. **Other Application Security Controls.** The proposal must provide additional information on other application and database security controls like login & password, application & database security log management, etc.

## 7.3 Games Drawing Controls

**RESPONSE NOTE:** Full

1. **Automatic Game Close.** At a specified time before the drawing, the system shall automatically close a game without operator intervention.
2. **Transactions at Close.** The system must maintain control of transactions underway at close time so that all transactions are completed before the game close. The Central Gaming System (CGS) and Internal Control System (ICS) need to share the same Network Time Protocol (NTP) servers.
3. **Manual Winning Number Entry/Random Number Generator (RNG) Drawing System.** The gaming software must support both system of drawing i.e. Manual Entry and Random Number Generator (RNG).
4. **Suspend Sales After Last Drawing.** The System must provide the option to suspend sales after the draw of the last game if their needs to change in the game matrix.

## 7.4 Games Management Application

**RESPONSE NOTE:** Full

The Lottery requires access to games management applications for performing functions such as configuring game settings, managing retailer terminals, performing retailer accounting functions, sending messages to retailer, sales, payouts and retailer reports. The Bidder shall describe and propose how its solution will satisfy the following requirements:

## 7.5 Games Management Application Access

**RESPONSE NOTE:** Full

The games management application must be web browser-based, compatible with web browsers like Chrome or Firefox that do not require installation of any additional client software. The number of users required to access the games management application will be determined by the Lottery.

## 7.6 Games Management Application Features and Capabilities

**RESPONSE NOTE:** Full

The system shall provide a range of features and capabilities to manage and run the games. The features and capabilities not limited to followings:

- i. **Management Reports.** The games management application must be capable of generating management reports and must have option to schedule automated reports through the application.
- ii. **Retailer Terminal Management.** The Bidder shall describe all of the parameters & features that the games management application has capability to enable or disable any of the retailer terminals partially or fully.
- iii. **Game Control.** The games management application must support the capability (for an authorized user) to shut off, resume sales and validations on each game independently.
- iv. **Game Monitoring.** Authorized games management application users must have the capability to observe real-time statistics on the operation of the System, retailer, or group of retailers. (I.e. statistics on sales by game, by calendar day or draw.)
- v. **Retailer Reports.** The system must be capable of printing retailer statements by the authorized user and report must be in the same format for Lottery to review results with retailers.

## 7.7 Data Warehouse / Backup System

**RESPONSE NOTE:** Full

The Lottery requires a data warehouse or data backup solution that will allow lottery office to produce customized reports for operational and analytical purposes. The data warehouse will contain a subset of the database, there must be option to add new datasets and tables to the data warehouse as required by the Lottery.

The data contained within the data warehouse must be updated on the schedule basis set by the Lottery. The Bidder shall describe which platform will be used for the data warehouse solution, Bhutan Lottery strongly prefers solution to be based on Microsoft SQL Server.

It must be possible to access the data contained within the data warehouse by using API (including, but not limited to, an ODBC connection) and a direct SQL query. The contractor may propose a query and reporting tool to be used with the data warehouse that will allow the end-user to build reports.

## 7.8 Claims and Payments

**RESPONSE NOTE:** Full

The System must provide a robust mechanism for payments to winners. Bidder shall describe the capability of its proposed solution to accurately and conveniently provide validations and claims processes for winning tickets. At a minimum, the solution shall be capable of performing all of the following functions:

1. The System must validate winning tickets presented within the claim periods as determined by the Lottery.
2. Winning ticket amounts must appear on a customer display screen and the terminal must be able to print both retailer and customer receipt to confirm the winning tickets. The exact specifications will be further established during implementation.
3. The retailers will pay winning tickets up to a winning amount set by the Lottery. A lotto ticket will have one or more plays under a single ticket number and can have multiple winning on the same ticket.
4. **Control of Validations.** The System must have control to validate tickets at terminal for a specific game and draw.
5. The System must be capable of validating winning tickets by means of a reader or by manual entry.

## 7.9 Data Management and Reporting

**RESPONSE NOTE:** Full

1. **Database Access.** The Lottery requires access to gaming information including retailer data, sales records, terminal maintenance data, and daily transactions for scheduled and ad hoc reporting. Queries and reports must be supported within the games management application.
2. **Sales Reporting.** The bidder must provide software tools for accessing, reporting and downloading gaming information. The Lottery's access to data on the active gaming systems must be read-only.
3. **History.** The System database must contain all retailer data and financial activity online for the term of the Contract.
4. **Report Export.** Reports generated by the System must be exportable to Excel and other common data formats (PDF or XML). All reports generated from the system must be date-driven capable of being sorted and filtered.

## 7.10 Internal Control System (ICS)

**RESPONSE NOTE:** Full

The bidder shall provide fully operational ICS System (Refer Section 4.4), the System will check independently by re-processing transactions, monitoring daily transactions, winner verification, prize payout calculations, commission, sales summaries and reconciliation activities. The reports shall be convertible to electronic file format(s) agreeable to the Lottery.

## 8 Data Center Facilities and Disaster Recovery Plan

**RESPONSE NOTE:** Full

The bidder must facilitate data centers facility having both Primary Data Center (PDC) and Backup Data Center (BDC) at different locations or through cloud based hosting facility. The intent of this requirement is to survive in the event of a major outage, the PDC and BDC must be configured in an active state and provide additional service facilities as required.

In addition to BDC, bidder must maintain ninety (90) days of backups in order to completely restore the Central Gaming System if needed. If BDC is promoted to primary role because of significant degradation of the PDC, a new BDC will be provided within five (5) calendar days.

### 8.1 Primary Data Center

**RESPONSE NOTE:** Full

The proposal shall contain specifications and a description for the location and the space planned for the project.

Service Level designed to provide an uptime of 99.9%

### 8.2 Backup Data Center (BDC)

**RESPONSE NOTE:** Full

The bidder must provide a remote BDC where gaming transactions are logged and processed. The retailer network, the primary data center, games access management and the Lottery's ICS must connect to this facility.

- The remote BDC must be operated under the safety and security requirements of the primary data center.
- The remote BDC must be active to support a failover in case the primary data center can no longer serve.

## 9 Service, Operation and Training

The bidder is required to provide support services to Lottery.

### 9.1 Operation Services

**RESPONSE NOTE:** Full

The bidder must provide operation and monitoring services:

- The bidder shall continuously monitor the systems operation, any faults must be detected, diagnosed and corrected.



- **Secure Operating Principles.** The bidder must restrict “superuser” capabilities to access and make change to system components. The proposal must have detailed plan in which the data centers will be monitored and provide uninterrupted connections.

## 9.2 Lottery Staff Training

**RESPONSE NOTE:** Full

The contractor must provide training to Lottery staff at the Lottery offices or appropriate venues as approved by the Lottery.

1. **Customized Training.** Training must be customized to meet the specific task and support activities, during the contract term additional training may be needed.
2. **Training Methods and Tools.** Training must include presentations and discussions, as well as hands-on training, computer-based activities and workshops. The bidder shall describe what training will be provided to Lottery staff regarding concepts of the e-Lottery system, use of the games management applications and administrative reports. The training must also contain services, security features, controls and any other relevant aspects of the proposed systems.

## 9.3 Technical Support Services

**RESPONSE NOTE:** Full

The proposal must provide support services for System management, System error correction, supports for business rules and game changes will be delivered to the Lottery by responding to the following:

1. **Software Support.** The bidder must provide software and systems engineering support for System changes like upgrades, error correction, addition and changes for games, promotions and improvement to systems.
2. **Quality Assurance and Acceptance Testing.** The bidder must provide Quality Assurance Testing mechanism to support the acceptance testing.
3. **Shared Records for Change Management.** The joined responsibilities between bidder and Lottery to make timely System changes and maintain accuracy, bidder must provide shared access to change requests and change tracking.

## 10 Implementation Plan

**RESPONSE NOTE:** Full

The Proposal must contain a detailed implementation plan and time chart (Gantt, PERT, or similar) identifying the major milestones to be accomplished for the business requirements definition, software development & installation and testing.

The plan must make clear which items are on the critical path for timely implementation and final implementation plan will be approved by Lottery.

## 11 Bidder Corporate Capability

**RESPONSE NOTE:** Full

The Bidder is required to demonstrate corporate experience, technical capability, integrity and financial background.

### 11.1 Corporate Background Review

**RESPONSE NOTE:** Full

The Bidder shall provide all of the following information:

- Name and address of the business entity making the Proposal.
- Type of business entity (e.g. corporation, partnership, etc.).
- Place of incorporation, or other form of organization, if applicable.
- Name and location of major offices
- Name, address, and function of substantial subcontractors, associated companies, or consultants that will be involved in any phase of this project.

### 11.2 E-Lottery Systems Experience

**RESPONSE NOTE:** Full

The Bidder shall describe in details the current and historical experience with Lottery gaming systems over the past five years. Each experience statement shall include the following details:

- Name of Lottery or gaming enterprise(s)
- Estimated contract value
- Number and type of terminals delivered to the customer
- The term of the contract including effective dates
- Types of services directly provided by the Bidder under the contract

The descriptions must include names, titles, addresses and telephone numbers that may be contacted to verify qualifying experience.

### 11.3 Software Development and Support Capabilities

**RESPONSE NOTE:** Full

Capacity to provide the software and systems support is critical to the success of the Lottery.

- **Software Development Plans.** The bidder shall describe its staff skill levels, headcounts, and locations pertinent to developing and maintaining software. To facilitate the timely delivery of software modifications and enhancements.
- **Software Quality.** The bidder must address software engineering quality practices, in particular certified ISO, SEI, CMM Quality Standards or other recognized quality practices standards.

- During the term of the contract, the bidder must ensure software upgrades are compatible with the proposed systems.

#### 11.4 Project Management Capabilities

**RESPONSE NOTE:** Full

The bidder shall describe the project management capabilities for gaming system and related product & services providing pertinent examples.

#### 11.5 Security Management Capabilities

**RESPONSE NOTE:** Full

The bidder must demonstrate a capacity to develop and implement a comprehensive plan for maintaining effective security controls and practices critical to ensuring the integrity of Lottery operations.

The bidder shall also describe its corporate organization and tools pertinent to managing all aspects of information security pertaining to gaming operations.



## 12 APPENDIX (A): GLOSSARY

**API:** Abbreviation for Application Programmable Interfaces

**Capability:** A feature or capacity of the System

**Central Time:** Central Standard Time.

**Consumables:** Play slips, printer paper or toner and any other operational supplies required by retailers to operate terminals.

**CMM-Capability Maturity Model**

**Checksum:** An algorithm-based method of determining the integrity and authenticity of a digital data object, used to check errors or alterations during the transmission or storage of a data object.

**Bidder:** The Vendor with whom the Lottery then executes the Contract.

**Deliverable:** A defined product or feature proposed by the Bidder.

**E-Lottery System:** Online lottery management system.

**Facilities:** Data centers, warehouses, repair center and other such locations.

**File:** A related collection of records containing a consistent set of data fields that describe an entity.

**GUI:** Graphical User Interfaces

**ISO:** International Organization for Standards

**Lottery:** The Bhutan Lottery Limited

**Lottery:** The Bhutan Lottery Limited

**Lottery LAN:** A local area network (LAN) within the Lottery office.

**Lotto Games:** Games sold through a computer network at retailer locations.

**Play:** A single set of numbers for a Lottery drawing. A ticket may contain multiple plays, depending on the game.

**Portal:** A primary user interface to serve as the gateway to players for core services such as account management and game purchase and redemption.

**Proposal:** All materials submitted by a Bidder in response to TOR.

**Report:** Information produced by the System that is viewed via display, printed or saved to a file depending on the needs of the Lottery.

**Retailer:** An entity authorized by the Lottery to sell tickets.

**RNG:** Random Number Generator, system that randomly determines the winning number.

**Sales:** Revenue from sale of lottery tickets.

**SEI-Software Engineering Institute**

**System:** "System" refers to the E-Lottery System proposed by the Bidder.

**Validation:** Process by which winning tickets are checked to ensure the ticket presented is valid and genuine.

### 13 APPENDIX (B): DEDICATED RETAIL OUTLETS

SL#	Terminal Location (Dzongkhag-Wise)	UOM	Retail Terminal (Qty.)
1	Bumthang	Nos.	2
2	Chhukha	Nos.	4
3	Dagana	Nos.	2
4	Gasa	Nos.	1
5	Haa	Nos.	1
6	Lhuentse	Nos.	1
7	Mongar	Nos.	2
8	Paro	Nos.	3
9	Pema Gatshel	Nos.	1
10	Punakha	Nos.	2
11	SamdrupJongkhar	Nos.	2
12	Samtse	Nos.	2
13	Sarpang	Nos.	3
14	Thimphu	Nos.	5
15	Trashigang	Nos.	2
16	TrashiYangtse	Nos.	1
17	Trongsa	Nos.	1
18	Tsirang	Nos.	2
19	WangduePhodrang	Nos.	1
20	Zhemgang	Nos.	2
<b>Total:</b>			<b>40</b>