

GLI STANDARD SERIES

GLI-19:

STANDARDS FOR INTERACTIVE GAMING SYSTEMS

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About This Standard

Gaming Laboratories International, LLC (GLI) has developed this technical standard for the purpose of providing independent technical analysis and/or certifications to interactive gaming industry stakeholders indicating the state of compliance for interactive gaming operations and systems with the requirements set forth herein.

Operators and suppliers are expected to provide documentation, credentials, and associated access to source code and a production equivalent test environment with a request to the independent testing laboratory that it be evaluated in accordance with this technical standard. Upon the successful completion of testing, the independent testing laboratory will provide a report evidencing the evaluation of, or certification to, this standard.

GLI-19 should be viewed as a living document that will be tailored periodically to align with this developing industry over time as interactive gaming implementations and operations evolve.



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Chapter 1: Introduction to Interactive Gaming Systems

1.1 Introduction

1.1.1 General Statement

Gaming Laboratories International, LLC (GLI) has been testing Gaming Equipment since 1989. Over the years, GLI has developed numerous technical standards utilized by jurisdictions all over the world. This document, *GLI-19*, sets forth the technical standards for Interactive Gaming Systems.

1.1.2 Document History

This document is a compilation based upon many standards documents from around the world. Some were written by GLI; others were written by industry regulators with input from independent test laboratories and interactive gaming operators, developers, and suppliers. GLI has taken each of the standards documents and merged the unique rules, eliminated some rules and updated others, to reflect both the change in technology and the purpose of maintaining an objective standard that achieves common regulatory objectives without unnecessarily impeding technological innovation. It is the policy of GLI to update this document as often as warranted to reflect changes in technology and/or testing methods. This document will be distributed without charge and may be obtained by downloading it from the GLI website at www.gaminglabs.com or by contacting GLI at:

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1.1.3 Acknowledgment of Other Standards Reviewed

GLI acknowledges and thanks the regulatory bodies and other industry participants who have assembled rules, regulations, technical standards, and other documents which have been influential in the development of this document.

1.2 Purpose of Technical Standards

1.2.1 General Statement

The purpose of this technical standard is as follows:

- a) To eliminate subjective criteria in the evaluation and/or certification of Interactive Gaming Systems.
- b) To assess the criteria that impact the credibility and integrity of interactive gaming from both revenue collection and player perspectives.
- c) To establish a standard that will ensure interactive gaming is fair, secure, auditable, and able to be operated correctly.

- d) To distinguish between local public policies and Independent Test Laboratory criteria, acknowledging that it is the prerogative of each regulatory body to set its own public policies with respect to interactive gaming.
- e) To recognize that the evaluation of internal control procedures (such as anti-money laundering, financial, and business processes) employed by operators should not be incorporated into the laboratory testing of the standard. Instead, these should be addressed within operational audits and assessments performed for local jurisdictions.
- f) To develop a standard that can be easily revised to allow for new technology.
- g) To formulate a standard that does not specify any particular design, method, or algorithm, thereby allowing a wide range of methods to conform to the standards while simultaneously encouraging the development of new methods.

1.2.2 No Limitation of Technology

One should be cautioned that this document shall not be read in such a way that limits the use of future technology. This document should not be interpreted to mean that if the technology is not mentioned, then it is not allowed. On the contrary, GLI will periodically review this standard and update it to include minimum standards for any new and relevant technology.

1.2.3 Adoption and Observance

This technical standard can be adopted in whole or in part by any regulatory body that wishes to implement a comprehensive set of technical requirements for Interactive Gaming Systems.

1.3 Other Documents That May Apply

1.3.1 Other GLI Standards

This technical standard covers the requirements for Interactive Gaming Systems. Depending on the technology utilized by a system, additional GLI technical standards may also apply.

NOTE: The entire family of GLI Standards is available free of charge at www.gaminglabs.com.

1.3.2 Minimum Internal Control Standards (MICS)

Implementing Interactive Gaming Systems is a complex endeavor, necessitating the development of internal processes and procedures to ensure that the gaming production environment is secure and controlled adequately. To that end, it is expected that a set of Minimum Internal Control Standards (MICS) will be established by the regulatory body to determine the minimum required internal processes for the management and handling of interactive gaming as well as the requirements for internal control of any system or component software and hardware within the gaming production environment, and their associated accounts. The regulatory body's MICS may also include technical security controls and testing requirements for the gaming production environment as well as change management policies.

1.3.3 Gaming Security Framework (GSF)

Adherence to the *GLI Gaming Security Framework (GLI-GSF)* is necessary for Interactive Gaming Systems. The GLI-GSF details technical security controls and testing requirements, which will be assessed during evaluations of the gaming production environment. This includes, but is not limited to, operational process reviews critical to compliance, vulnerability and penetration testing of the external and internal infrastructure and applications handling sensitive information, and any other criteria set by the regulatory body.

NOTE: The *GLI Gaming Security Framework (GLI-GSF)* is available free of charge at www.gaminglabs.com.

1.4 Interpretation of this Document

1.4.1 General Statement

This technical standard applies to systems that support interactive gaming and is intended to be general in nature and not limit or authorize specific game types and functionalities. The intent is to provide a framework to cover those currently known and permitted by law.

NOTE: This technical standard does NOT apply to systems that support wagering on live, real-world wagering events. For detailed standards applicable to these systems, please reference the *GLI-33 Standards for Event Wagering Systems*.

1.4.2 Operators and Software Suppliers

The components of an Interactive Gaming System, although they may be constructed in a modular fashion, are intended to function cohesively.

- a) Interactive Gaming Systems may be developed to have configurable features; the final configuration of which depends on the options chosen by the operator. From a testing perspective, it might not be possible to test all of the configurable features of an Interactive Gaming System submitted by a software supplier in the absence of the final configuration chosen by the operator; however, the configuration that will be utilized in the gaming production environment shall be communicated to the independent test laboratory to facilitate creating a functionally equivalent test environment.
- b) Because of the integrated nature of an Interactive Gaming System, there are several requirements in this document which may apply to both operators and software suppliers. In such cases, the collection of systems and solutions needed to meet these requirements will be considered to be the gaming production environment and the individual entities providing them will need to meet such eligibility requirements as the regulatory bodies deem appropriate for performance of these requirements.

NOTE: This document is not intended to determine which parties are responsible for meeting the requirements detailed herein. It is the responsibility of the stakeholders of each jurisdiction to determine how to best meet the requirements laid out in this document.

1.4.3 Use of “Mechanisms”

When a requirement in this technical standard requires that a “mechanism” be in place, it means that the operator or software supplier shall use a critical component or clear, documented process that has been effectively implemented to achieve the desired outcome. Operators and software suppliers have the flexibility to determine what type of mechanism is best for the situation at hand, whether it is by the use of technology, an operational procedure, or a mix of activities. Compliance shall be evaluated based on the effectiveness of the overall mechanism rather than the use of any specific implementation approach.

1.5 Testing and Auditing

1.5.1 Laboratory Testing

The independent test laboratory will test and evaluate or certify the components of the Interactive Gaming System in accordance with the chapters of this technical standard within a controlled test environment, where applicable.

- a) Unless otherwise directed by the regulatory body, the independent test laboratory shall be provided access to the component’s source code along with the means to verify compilation of such source code. The result of the compiled source code shall be identical to that in the component submitted for evaluation or certification.
- b) It may be necessary to perform additional laboratory testing when certain components are integrated with the Interactive Gaming System. This will be particularly relevant when the implementation involves changes to the component.
- c) Where the regulatory body has adopted a change management program (CMP), such as the *GLI Change Management Program Guide (GLI-CMP)*, the CMP will be used to determine which changes to previously tested components require modification testing. The scope of any required modification testing will depend on the nature, extent, and potential impact of the changes.
- d) Any requirements within the chapters of this technical standard which necessitate additional operational procedures to meet the intent of the requirement may be documented within the evaluation or certification report and used to supplement the scope of the operational audits and assessments.

1.5.2 Operational Audits and Assessments

The integrity and accuracy of the operation of an Interactive Gaming System is highly dependent upon operational procedures, configurations, and the gaming production environment’s network infrastructure. As such, operational audits and assessments are essential additions to the testing and evaluation or certification of an Interactive Gaming System. Where required by the regulatory body, the following operational audits and assessments shall be performed on an annual basis, or at a frequency specified by the regulatory body:

- a) An internal controls audit, against the applicable internal control procedures identified in Appendix A: Internal Control Procedures and Practices and the regulatory body’s Minimum Internal Control Standards (MICS); and

- b) An integrity and security assessment, as described in Appendix B: Integrity and Security Assessments, against the applicable controls and tests identified in the *GLI Gaming Security Framework (GLI-GSF)* and any other controls and tests identified by the regulatory body.

Chapter 2: Platform/System Requirements

2.1 Introduction

2.1.1 General Statement

If the Interactive Gaming System is comprised of multiple computer systems at various sites, the system as a whole and all communication between its components shall conform to the applicable technical requirements within this document.

2.2 System Clock Requirements

2.2.1 System Clock

The Interactive Gaming System shall maintain an internal clock that reflects the current date and time that shall be used to provide for the following:

- a) Time stamping of all transactions, configuration changes, and games;
- b) Time stamping of significant events; and
- c) Reference clock for reporting.

2.2.2 Time Synchronization

The Interactive Gaming System shall implement a mechanism to ensure that all components that comprise the system operate on a common time reference sufficient to maintain the validity of time-based communications.

2.3 Control Program Requirements

2.3.1 Control Program Self-Verification

The Interactive Gaming System shall be capable of verifying that all critical control program components deployed on the system are authentic copies of the approved versions, using a software solution or other mechanism approved by the regulatory body. The critical control program verification function shall:

- a) Perform self-verification of the critical control program components:
 - i. At least once every twenty-four hours; and
 - ii. Upon request by authorized personnel or the regulatory body;
- b) Employ a cryptographically secure hash algorithm that produces a message digest of at least 128 bits. Other test methodologies shall be reviewed on a case-by-case basis;
- c) Include all critical control program components which may affect interactive gaming operations, including but not limited to executables, libraries, gaming or system configurations, server-side game files, customized operating system files, components that directly control required system reporting, and database elements that directly affect system operations; and

- d) Provide an indication of the verification failure if any critical control program component is determined to be invalid.

NOTE: To ensure full compliance, the critical control program verification function may need to be installed on each server hosting critical control program components that comprise the system, including all Player Account Managers and Gaming Platforms, if such functionality is not centralized to a single server.

NOTE: This requirement does not apply to Player Applications, including client-side graphics and audio files (e.g., rules of the game, help screens, etc.).

2.3.2 Control Program Independent Verification

Each critical control program component of the Interactive Gaming System shall have a method to be verified via an independent third-party verification procedure. The third-party verification process shall operate independently of any process or security software within the system. The independent test laboratory, prior to system certification, shall evaluate the integrity check method.

2.4 Gaming Communications, Controls, and Overrides

2.4.1 Communication Loss

If communications between critical components of the Interactive Gaming System are lost, the affected components shall cease operations related to that communication. Detection of such communication failures may occur upon an attempted communication between components.

2.4.2 Gaming Management

The Interactive Gaming System shall be able to disable or suspend the following on demand, as applicable. A mechanism shall be in place to record the date and time for disabling or suspending and the reason for doing so:

- a) All interactive gaming activity;
- b) Individual game themes and paytables, or versions (e.g., desktop, mobile, tablet, etc.);
- c) Individual bonusing/promotional offers;
- d) Individual progressive jackpots or incrementing bonus jackpots; and
- e) Individual Remote Player Device logins.

2.4.3 Game Voiding and Cancellation

The Interactive Gaming System shall provide a mechanism for authorized personnel to void or cancel pays or plays. During each phase of the voiding or cancellation process, the system shall update the gameplay status, the game history, and the player's credit meter or player account balance, accordingly.

2.5 Information to be Maintained

2.5.1 Information Retention

The Interactive Gaming System shall have mechanisms which can:

- a) Maintain and back up all applicable recorded information with timestamps and versioned data fields as discussed within this standard;
- b) Where applicable, record bonusing/promotional amounts separately from other amounts (e.g., for wagers, wins or payouts, voids or cancellations, etc.); and
- c) Export this recorded information in machine-readable format for the purposes of analysis and auditing/verification (e.g., CSV, JSON, XLS, PDF, etc.).

NOTE: Internal control procedures may be in place to ensure this information is recorded where it is not maintained directly by the system.

2.5.2 Gameplay Information

The information to be maintained and backed up by the Interactive Gaming System for each individual game played by the player shall include, as applicable:

- a) Unique game cycle ID and/or gaming session ID, if different;
- b) Unique game theme ID and/or payable ID, if different;
- c) The date and time the game was played;
- d) The denomination played for the game, if a multi-denomination game type;
- e) The display associated with the final outcome of the game, either graphically or via a clear text description;
- f) The funds available for wagering at the start of play and/or at the end of play;
- g) Total amount wagered;
- h) Total amount won, including any progressive jackpots and/or incrementing bonus jackpots won;
- i) Any non-wager purchase that occurred between the start of play and the end of play;
- j) Total amount voided or cancelled;
- k) Rake, commission, or fees collected;
- l) The results of any player choices involved in the game outcome;
- m) The results of any intermediate game states, such as double-up/gamble or bonus/feature states;
- n) If a progressive jackpot and/or incrementing bonus jackpot was won, an indication that the jackpot was awarded;
- o) For games with skill, any player advice offered to the player that is necessary to understand the game history or outcome;
- p) Contributions to progressive jackpots or incrementing bonus jackpots;
- q) Unique player account ID;
- r) Relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.); and
- s) The current status of the gameplay (e.g., in progress, interrupted, voided, cancelled, complete, etc.) and the date and time of each previous status change.

NOTE: For individual games with multiple players, such information shall be recorded for each player.

2.5.3 Game Theme/Paytable Information

The information to be maintained and backed up by the Interactive Gaming System for each individual game theme and payable available for play shall include, as applicable:

- a) Unique game theme ID and/or payable ID, if different;
- b) The name of the game theme and game type (e.g., reel, blackjack, poker, table, etc.);
- c) Game configuration data (e.g., denominations, wager categories, etc.);
- d) The date and time the game theme and/or payable was or is scheduled to be made active, if known;
- e) The date and time the game theme and/or payable was or is scheduled to be retired, if known;
- f) Theoretical return to player (RTP) percentage;
- g) The number of games played;
- h) Total amount wagered, not including subsequent wagers of intermediate winnings accumulated during game play such as those acquired from double-up/gamble features;
- i) Total amount won, separately indicating any progressive jackpots and/or incrementing bonus jackpots won;
- j) Total amount voided or cancelled;
- k) Total amount of non-wager purchases made in relation to the game;
- l) The number of times each jackpot is awarded;
- m) For games which support double-up/gamble features:
 - i. Total double-up/gamble amount wagered;
 - ii. Total double-up/gamble amount won;
 - iii. Number of double-up/gamble games played;
 - iv. Number of double-up/gamble games won;
- n) Persistence feature information, if supported by the Interactive Gaming System:
 - i. Unique player account ID, if tied to a particular player account;
 - ii. Game achievements, capabilities earned, or similar;
 - iii. Last save point, if play from save is supported;
- o) Total rake, commission, or fees collected; and
- p) The current status of the game theme and payable (e.g., pending, active, disabled, retired, etc.) and the date and time of each previous status change.

2.5.4 Contest/Tournament Information

Where contests/tournaments are supported, the information to be maintained and backed up by the Interactive Gaming System for each contest/tournament shall include, as applicable:

- a) Name or identification of the contest/tournament;
- b) The participating game theme IDs and/or payable IDs, if different;
- c) The date and time the contest/tournament occurred or is expected to occur, if known;
- d) For each registered player:
 - i. Unique player account ID and/or name;
 - ii. Amount of entry fee collected, and the date and time collected;
 - iii. Player scorings/rankings;
 - iv. Amount of winnings paid, and the date and time paid;

- e) Total amount of entry fees collected;
- f) Total amount of winnings paid to players;
- g) Total amount voided or cancelled;
- h) Total rake, commission, or fees collected; and
- i) The current status of the contest/tournament (e.g., pending, in progress, interrupted, voided, cancelled, complete, etc.) and the date and time of each previous status change.

2.5.5 Player Account Information

The information to be maintained and backed up by the Interactive Gaming System for each player account shall include, as applicable:

- a) Unique player account ID and username, if different;
- b) The date and method from which the account was opened (e.g., remote vs. on-site), including relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.);
- c) The personally identifiable information (PII) collected by the operator to register a player and create the account, including, their full legal name, date of birth, residential address, contact information, and any other information required by the operator or the regulatory body;
- d) The player's full or partial government identification number (e.g., driver's license number, social security number, taxpayer identification number, passport number, or equivalent), and any stored current and previous personal financial information (e.g., credit or debit instrument numbers, bank account numbers, etc.), which shall be encrypted or hashed to a cryptographic algorithm as allowed by the regulatory body;
- e) The date and method of identity verification (e.g., automatic vs. manual), including:
 - i. If a government identification credential is used for identity verification, a description of the government identification credential provided by the player to confirm their identity and its date of expiration;
 - ii. If a government identification credential is not used for identity verification, the mechanism used to confirm the player's identity;
- f) The date of player agreement to the operator's terms and conditions and privacy policies, including the versions agreed upon;
- g) Previous accounts, if any, and reason for closure;
- h) The account's current and previous authentication credentials, which shall be encrypted or hashed to a cryptographic algorithm as allowed by the regulatory body;
- i) Account details and current account balance. All discretionary account funds shall be maintained separately;
- j) The date and time the account is accessed by any person (player or operator), including relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.) and duration of access;
- k) Limitation/time-out/suspension information:
 - i. The date and time of the request;
 - ii. Description and reason of limitation/time-out/suspension;
 - iii. The type of limitation/time-out/suspension (e.g., system-imposed weekly deposit limitation, one-hour time-out, self-imposed monthly deposit limitation, self-imposed temporary suspension, etc.);

- iv. The date and time limitation/time-out/suspension commenced;
- v. The date and time limitation/time-out/suspension ended or is scheduled to end, if known;
- l) Financial transaction information:
 - i. Unique transaction ID;
 - ii. The date and time of the transaction;
 - iii. The type of transaction (e.g., deposit, withdrawal, adjustment, non-wager purchase, etc.);
 - iv. Amount of transaction;
 - v. Total account balance before/after transaction;
 - vi. Total amount of fees paid for transaction, if any;
 - vii. Unique user account ID or equivalent which handled the transaction;
 - viii. Method of deposit/withdrawal (e.g., cash, personal check, cashier's check, wire transfer, money order, credit or debit instrument, electronic payment account, etc.);
 - ix. Deposit authorization number or a unique identifier that can be used to authenticate the type of account and the source or destination of the funds;
 - x. Relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.);
 - xi. The current status of the transaction (e.g., pending, in progress, interrupted, voided, cancelled, complete, etc.) and the date and time of each previous status change;
- m) Player attribute information, if supported by the Interactive Gaming System:
 - i. Unique assignment or use ID;
 - ii. If tied to a particular game theme or payable, unique game theme ID and/or payable ID, if different;
 - iii. The date and time of its assignment or use;
 - iv. The criteria for its assignment or use (e.g., skill level, subscriptions, account memberships, player tracking information, skill requirements of the game, etc.);
 - v. The type of action taken, or alteration made to the game (e.g., games, denominations, and wager options offered, game rule change, payable change, or other configuration change related to the game or game outcome, etc.);
 - vi. Any other information necessary to reconcile its assignment or use;
 - vii. The current status of its assignment or use (e.g., pending, active, inactive, paused, cancelled, etc.) and the date and time of each previous status change;
- n) The date and method from which the account was closed (e.g., remote vs. on-site), including relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.) and reason for closure; and
- o) The current status of the player account (e.g., pending, active, inactive, closed, suspended, etc.) and the date and time of each previous status change.

2.5.6 Bonusing/Promotional Offer Information

Where bonusing/promotional offers are supported, the information to be maintained and backed up by the Interactive Gaming System for each bonusing/promotional offer shall include, as applicable:

- a) Unique bonusing/promotional offer ID;
- b) The participating game theme IDs and/or payable IDs, if different;
- c) The date and time the bonusing/promotional offer was or is scheduled to be made active, if known;

- d) The date and time the bonusing/promotional offer was or is scheduled to be retired, if known;
- e) The bonusing/promotional offer parameters (e.g., value, eligibility, restrictions, order of precedence, etc.);
- f) Current amount available for bonusing/promotional offer;
- g) Total bonusing/promotional amounts issued;
- h) Total bonusing/promotional amounts redeemed;
- i) Total bonusing/promotional amounts expired;
- j) Total bonusing/promotional offer adjustments; and
- k) The current status of the bonusing/promotional offer (e.g., pending, active, disabled, retired, etc.) and the date and time of each previous status change.

2.5.7 Jackpot Information

Where progressive jackpots or incrementing bonus jackpots are supported, the information to be maintained and backed up by the Interactive Gaming System for each jackpot offered shall include, as applicable:

- a) Unique jackpot ID, or other unique identifier if the jackpot is only tied to a specific game theme, payable, or particular player;
- b) The participating game theme IDs and/or payable IDs, if different;
- c) Unique player account IDs, if the jackpot is tied to particular players;
- d) The date and time the jackpot was or is scheduled to be made active, if known;
- e) The date and time the jackpot was or is scheduled to be retired, if known;
- f) Current value of the jackpot (jackpot payoff);
- g) Any other pools containing jackpot contributions:
 - i. Current value of the amount exceeding the ceiling, where required by the regulatory body (overflow);
 - ii. Current value of the Jackpot Diversion Scheme (diversion pool);
- h) Reset value of the current jackpot if different from startup value (reset value);
- i) Initial value of the jackpot (startup value);
- j) Percentage increment rate (increment);
- k) Jackpot limit value (ceiling);
- l) Percentage increment rate after ceiling is reached (secondary increment);
- m) Percentage increment rate for diversion pool (hidden increment);
- n) Diversion pool limit value (diversion limit);
- o) Any parameters indicating time periods the jackpot is available for triggering (time limit);
- p) Any additional information needed to properly reconcile any configurable jackpot; and
- q) The current status of the jackpot (e.g., pending, active, disabled, retired, etc.) and the date and time of each previous status change.

2.5.8 System Significant Event Information

System significant event information to be maintained and backed up by the Interactive Gaming System shall include, as applicable:

- a) Failed user account access attempts, including relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.);

- b) Program error or signature mismatch;
- c) Significant periods of unavailability of any critical component of the system (e.g., any length of time gameplay is halted for all players, communications are halted, and/or system functions cannot be successfully completed for any user);
- d) Large wagers (single and aggregate over a specific time period) in excess of a value specified by the regulatory body, including gameplay information;
- e) Large wins or payouts (single and aggregate over a specific time period) in excess of a value specified by the regulatory body, including gameplay information;
- f) System voids, overrides, and corrections;
- g) Changes to live data files occurring outside of normal program and operating system execution;
- h) Changes to policies and parameters for operating systems, databases, networks, and applications (e.g., audit settings, password complexity settings, system security levels, manual updates to databases, etc.);
- i) Changes to date/time on master time server;
- j) Changes to the download data library, including the addition, changing, or deletion of software, where supported;
- k) Changes to game theme parameters (e.g., game rules, payout schedules, rake percentage, paytables, etc.) or change in status (e.g., pending, active, disabled, retired, etc.);
- l) Changes to progressive jackpot or incrementing bonus jackpot parameters (e.g., jackpot payoff, reset value, increment, ceiling, etc.) or change in status (e.g., pending, active, disabled, retired, etc.);
- m) Changes to bonusing/promotional offer parameters (e.g., value, eligibility, restrictions, etc.) or change in status (e.g., pending, active, disabled, retired, etc.);
- n) Player Account Management:
 - i. Adjustments to a player account balance;
 - ii. Changes made to sensitive information recorded in a player account (e.g., registration information, authentication credentials, payment methods, etc.);
 - iii. Lock-out, time-out, suspension, or closure of a player account;
 - iv. Large financial transactions (single and aggregate over a specific time period) in excess of a value specified by the regulatory body, including transaction information;
 - v. Negative player account balance (due to adjustments and/or chargebacks);
- o) Any incident or error that results in a loss of communication with, or other failure of, a third-party service provider's services that affects the system's operation (e.g. geolocation, know-your-customer, payment processing, statistics/line data, etc.);
- p) Irrecoverable loss of sensitive information (permanent loss, corruption, or deletion of such information where restoration from backup or other recovery mechanisms is not possible);
- q) Any other abnormal system events that require manual user intervention to restore normal operations, excluding routine or expected operational activities; and
- r) Other significant or unusual events as deemed applicable by the regulatory body.

2.5.9 System Verification Information

System verification information to be maintained and backed up by the Interactive Gaming System for each critical control program component verification shall include, as applicable:

- a) The date and time of the verification;
- b) Critical control program component identification;

- c) Expected control program component's signature;
- d) Generated control program component's signature;
- e) For on demand verifications, unique user account ID or equivalent executing the verification; and
- f) Any other pertinent validation information (e.g., hash results and seeds used).

2.5.10 User Account Information

The information to be maintained and backed up by the Interactive Gaming System for each user account shall include, as applicable:

- a) Unique user account ID and username, if different;
- b) User's name and assigned role, job title, or position, where necessary for access control, authorization, audit, or regulatory oversight;
- c) Full list and description of functions that each group or user account may execute;
- d) The date and time the account was created;
- e) The date and time of each access, including relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.);
- f) The date and time of each authentication credential change;
- g) The date and time the account was disabled or deactivated, including reason for status;
- h) Group membership of user account; and
- i) The current status of the user account (e.g., pending, active, inactive, disabled, deactivated, etc.) and the date and time of each previous status change.

2.6 Reporting Requirements

2.6.1 General Reporting Requirements

The Interactive Gaming System shall be capable of providing the necessary information to produce reports as required by the regulatory body. In addition to meeting the requirements in the section above for "Information Retention", the following requirements shall apply for required reports:

- a) These required reports shall be able to be produced on demand, and for intervals required by the regulatory body (e.g., day-to-date (DTD), week-to-date (WTD), month-to-date (MTD), year-to-date (YTD), life-to-date (LTD), etc.).
- b) Each required report shall contain:
 - i. The operator's name (or other identifier), the title of report, the selected interval and the date/time the report was generated;
 - ii. An indication of "No Activity" or similar message if no information appears for the period specified; and
 - iii. Labeled fields which can be clearly understood in accordance with their function.
- c) Where applicable, each required report shall separately indicate bonus/promotional amounts from other amounts (e.g., for wagers, wins or payouts, voids or cancellations, etc.).

NOTE: In addition to the reports outlined in this section, the regulatory body may also require other reports utilizing the information stored under the "Information to be Maintained" section of this document.

2.6.2 Game Performance Reports

The following information shall be provided by the Interactive Gaming System to produce one or more reports on game performance for each game theme as a whole and for each individual payable for that game theme, as applicable:

- a) Unique game theme ID and/or payable ID, if different;
- b) The name of the game theme and game type (e.g., reel, blackjack, poker, table, etc.);
- c) The date and time the game theme and/or payable was or is scheduled to be made active, if known;
- d) The date and time the game theme and/or payable was or is scheduled to be retired, if known;
- e) Theoretical RTP percentage;
- f) Actual RTP percentage;
- g) The number of games played;
- h) Total amount wagered;
- i) Total amount won or paid out;
- j) Total amount voided or cancelled;
- k) Total rake, commission, or fees collected;
- l) Total funds remaining in interrupted games; and
- m) The current status of the game theme and payable (e.g., pending, active, disabled, retired, etc.) and the date and time of each previous status change.

2.6.3 Operator Liability Reports

The following information shall be provided by the Interactive Gaming System to produce one or more reports on operator liability, as applicable:

- a) The starting liability amount (total amount held by the operator for player accounts), total additions and subtractions to account balances, and the ending liability amount;
- b) The total amounts held in interrupted games;
- c) The total amount of winnings or payouts owed but unpaid or partially paid by the operator on completed games; and
- d) Any operational funds used to cover all other operator liability where required by the regulatory body.

2.6.4 Jackpot Balancing Reports

Where progressive jackpots or incrementing bonus jackpots are supported, the following information shall be provided by the Interactive Gaming System to produce one or more reports on jackpot balancing for each jackpot offered, as applicable:

- a) Unique jackpot ID, or other unique identifier if the jackpot is only tied to a specific game theme, payable, or particular player;
- b) Current value of the jackpot (jackpot payoff);
- c) Total value of the jackpot payoffs paid;
- d) The number of times the jackpot is awarded;

- e) For each jackpot awarded:
 - i. Winning player account ID;
 - ii. Winning game theme ID and/or payable ID, if different;
 - iii. Winning game cycle ID and/or gaming session ID, if different;
 - iv. The date and time of jackpot trigger;
 - v. Jackpot hit and jackpot payoff amount; and
 - vi. Unique user account ID or equivalent who processed and/or confirmed the win if not done so automatically.

2.6.5 Player Account Activity Report

The following information shall be provided by the Interactive Gaming System to produce one or more reports for each player account, as applicable:

- a) Unique player account ID;
- b) Beginning account balance;
- c) Total amounts deposited;
- d) Total amounts withdrawn;
- e) Total amounts wagered;
- f) Total amounts won or paid out;
- g) Total amounts adjusted;
- h) Total amounts for other additions to, or deductions from, the account balance; and
- i) Ending account balance.

2.6.6 System Significant Events and Alterations Reports

The following information shall be provided by the Interactive Gaming System to produce one or more reports for each system significant event or alteration, as applicable:

- a) The date and time of the significant event or alteration;
- b) Event/component identification;
- c) Identification of each individual who performed and/or authorized the significant event or alteration;
- d) Reason/description of the significant event or alteration, including data or parameter altered;
- e) Data or parameter value before alteration; and
- f) Data or parameter value after alteration.

Chapter 3: Player Account Requirements

3.1 Introduction

3.1.1 General Statement

The requirements of this chapter apply to player accounts supported by the Interactive Gaming System and maintained by the operator. In addition to the requirements contained within this chapter, the operational procedures and controls indicated in the “Player Account Controls” section of this document shall also be met.

NOTE: Player accounts are required for a player to participate in interactive gaming.

3.2 Player Account Registration and Verification

3.2.1 General Statement

The requirements of this section apply to registration, verification, validation, and/or activation of player accounts where such functionality is supported directly by the Player Account Manager.

3.2.2 Account Registration

Prior to the establishment of a player account, there shall be a method to collect player’s personally identifiable information (PII) for the registration process.

- a) At a minimum, the following registration information shall be collected from each player:
 - i. Full name (i.e., first name and last name);
 - ii. Date of birth (i.e., month, day, and year);
 - iii. Contact information (i.e., email address and/or phone number);
 - iv. Physical residential address (a post office box or equivalent is not acceptable); and
 - v. Full or partial government identification number (e.g., driver’s license number, social security number, taxpayer identification number, passport number, or equivalent); and
 - vi. Any other information required by the operator or the regulatory body.
- b) During the registration process, the player shall:
 - i. Be denied registration if they submit a date of birth which indicates that they are underage;
 - ii. If not all registration fields are required, be informed on the registration form which fields are required, which fields are optional, and the consequences of failing to complete any required fields;
 - iii. Be provided with links to the terms and conditions for accessing and using the player account and the privacy policy governing the protection of PII, and acknowledge acceptance of both;
 - iv. Acknowledge that they are prohibited from allowing any unauthorized person to access or use their player account;
 - v. Consent to the monitoring and recording of the use of their player account by the operator and the regulatory body; and
 - vi. Affirm that the PII the player is providing to open the player account is accurate.

- c) A player may hold only one active player account at a time unless specifically authorized by the regulatory body.

3.2.3 Identity Verification

The Player Account Manager shall employ a KYC Solution (Know-Your-Customer Solution) to reasonably prevent player account activation and access for persons who are underage, suspended, excluded, prohibited, or using false or unauthorized identity information. This solution may be provided in-house or by a third-party KYC Service Provider. The KYC Solution shall:

- a) Use multisource verification, which may include governmental databases or other authoritative data sources, to verify the player's identity prior to account activation, unless otherwise specified by the regulatory body.
- b) Verify the following player registration information as an exact match:
 - i. Last name, except that partial matches may be used only to accommodate suffixes;
 - ii. Date of birth; and
 - iii. Full or partial government identification number (e.g., driver's license number, social security number, taxpayer identification number, passport number, or equivalent).
- c) Verify the following player registration information as at least a partial match:
 - i. First name, including common names or minor typographical differences; and
 - ii. Physical residential address, including abbreviations, apartment or unit mismatches, or minor typographical differences.
- d) If player identity cannot be automatically verified, apply one of the following manual verification mechanisms:
 - i. Government identification credential verification;
 - ii. Manual verification of the player registration information collected by the operator; or
 - iii. Any other mechanism approved by the regulatory body.
- e) Prevent any attempt to create an account by an individual who is identified to be:
 - i. Underage or using the PII of a deceased person;
 - ii. On any suspension lists maintained by the operator;
 - iii. On any exclusion lists provided by the regulatory body; or
 - iv. Prohibited from establishing or maintaining an account for any other reason.
- f) Maintain details of identity verification in a secure manner.

3.2.4 Identity Validation

Where required by the regulatory body, the KYC Solution shall be designed to validate that the player creating the account is the legitimate owner of the claimed identity and to reasonably ensure the authenticity of any supporting evidence. The KYC Solution shall include at least one of the following, as applicable:

- a) Requiring the player to correctly answer at least three dynamic knowledge-based questions derived from public and private data such as public records, credit reporting information, marketing data, and other recorded facts. The KYC Solution shall employ mechanisms to:
 - i. Prevent duplicative questions from being presented to the same player during a single validation attempt;

- ii. Implement a limit on the number of incorrect answers a player is permitted to provide during a single validation attempt and ensure that a new and unique question is presented after any incorrect response;
- iii. Limit the amount of time a player is allotted to answer each question to no more than five minutes, or another period required by the regulatory body;
- iv. Ensure that no question can be answered based on the player registration information already provided and/or information that is publicly available and easily accessible;
- b) Matching Remote Player Device identification and contact information entered by the player during registration to the claimed identity. The KYC Solution shall employ mechanisms to:
 - i. Ensure that both the device used by the player to create the account and the contact information provided by the player during registration are associated with the claimed identity whose information has been verified;
 - ii. Reasonably detect device identification fraud or prior fraudulent activity associated with the device or contact information. If current or past fraudulent activity is detected, the KYC Solution shall determine whether device and contact information matching is sufficient to validate the player's claim to the identity and, if not, shall employ one of the other mechanisms set forth herein;
- c) Requiring the player to submit a government identification credential that is reasonably determined to belong to the player. The KYC Solution shall employ mechanisms to:
 - i. Validate the authenticity and current validity of the credential and reasonably detect tampering, alteration, forgery, or reuse;
 - ii. Where biometric data or similar comparison technologies are used, employ measures such as a liveness check or equivalent safeguards to reasonably confirm that the credential belongs to the player presenting it;
 - iii. Prevent duplicate or repeated use of the same credential in a manner indicative of fraud, misuse, or account creation abuse;
- d) Requiring the player to enter a One-Time Authentication Credential (OTAC) delivered through a validated communication channel associated with the claimed identity; or
- e) Any other mechanism approved by the regulatory body in accordance with contemporary industry standards.

3.2.5 Mandatory Multi-Factor Authentication (MFA)

To maintain the security of accounts and reduce credential stuffing and account takeover attacks, multi-factor authentication (MFA) shall be enabled and configured by the player at the time the player creates the account. Once enabled and configured, MFA shall not be disabled by the player unless otherwise specified by the regulatory body. At least two of the following factors shall be used to achieve MFA:

- a) Information known only to the player, such as a strong alphanumeric password, passphrase, or pattern, or answers to knowledge-based questions;
- b) Something possessed by a player, such as a hardware token, software token, passkey, authenticator application, or OTAC;
- c) A player's biometric data used in conjunction with a device-bound or otherwise securely managed authenticator, such as a fingerprint, facial recognition, voice recognition, or retina pattern scan; or

- d) Any other factor approved by the regulatory body in accordance with contemporary industry standards.

NOTE: A single successful MFA may satisfy multiple concurrent or consecutive actions requiring MFA, provided such actions occur on the same Remote Player Device and within twenty-four hours or a period of time specified by the regulatory body. For example, a player may perform MFA upon account login and subsequently update their player registration information without being required to perform any additional MFA immediately thereafter.

3.2.6 Location Detection Permission

At the time of account creation, the Player Account Manager shall require location permission and record a geolocation check unless otherwise specified by the regulatory body. The player's location may be used to verify proximity to the declared physical residential address to permit account creation, provided all other identity verification and validation requirements are met.

3.2.7 Account Activation

The player account can only become active and begin to accept deposits and paid wagers once:

- a) Identity verification and validation are successfully completed;
- b) The player is determined to not be underage, deceased, on any suspension lists or exclusion lists, or prohibited from establishing or maintaining an account for any other reason;
- c) The player has acknowledged the necessary terms and conditions and privacy policies; and
- d) The player account registration process is complete.

NOTE: Additional identity verification and validation may be conducted throughout the lifetime of the player account if the operator has reasonable suspicion that the player's identity has been compromised.

3.3 Player Account Management

3.3.1 Authentication Credentials

A player account may be accessed at the Interactive Gaming System using authentication credentials, such as a username (or similar) and a strong alphanumeric password, a passkey, biometric data (e.g., facial recognition, fingerprints, or retina patterns), or a secure alternative means, for the player to perform authentication to log in. Allowable authentication credentials and authentication methods are subject to the discretion of the regulatory body as necessary. This requirement does not prohibit the option for more than one method of authentication being available for a player to access their account.

- a) If the system does not recognize the authentication credentials provided, an explanatory message shall be displayed which prompts the player to try again. The error message shall be the same regardless of which authentication credential is incorrect.
- b) Where a player has forgotten their authentication credentials, MFA shall be employed for the retrieval or reset of their forgotten authentication credentials.

- c) The player account shall be automatically locked-out after three consecutive failed access attempts in a thirty-minute period, or a period to be determined by the regulatory body. MFA shall be employed for the account to be unlocked. Alternatively, the system may, as supported, automatically release a locked-out account after thirty minutes, or a period to be determined by the regulatory body, have elapsed.
- d) The system shall support a mechanism that allows for a player account to be locked-out or suspended by the operator in the event that suspicious player activity is detected. MFA shall be employed for the account to be unlocked.

3.3.2 Financial Transactions

Funds may be deposited to or withdrawn from the player account using payment methods allowed by the regulatory body that can produce a sufficient audit trail. Where financial transactions can be performed automatically by the Player Account Manager the following requirements shall be met:

- a) The system shall provide confirmation/denial of every financial transaction initiated, including:
 - i. The type of transaction (deposit/withdrawal);
 - ii. The transaction value; and
 - iii. For denied transactions, a descriptive message as to why the transaction did not complete as initiated.
- b) Funds deposited into a player account shall not be available for wagering until they are received from the issuer or the issuer provides an authorization number indicating that the funds are authorized. The authorization number is to be maintained in an audit log.
- c) Where financial transactions are allowed through Electronic Funds Transfers (EFT), there shall be security measures and controls to prevent EFT fraud. A failed EFT attempt may not be considered fraudulent if the player has successfully performed an EFT on a previous occasion with no outstanding chargebacks. Otherwise, the player account shall:
 - i. Be temporarily locked-out for investigation of fraud after five consecutive failed EFT attempts within a ten-minute time period or a period to be determined by the regulatory body. If there is no evidence of fraud, the account may be unlocked; and
 - ii. Have its access suspended after five additional consecutive failed EFT attempts within a ten-minute period or a period to be determined by the regulatory body and require MFA to recover the suspended account.
- d) MFA shall be employed prior to completing large financial transactions (single and aggregate over a specific time period) in excess of a value specified by the regulatory body.
- e) The system shall employ a mechanism that can detect and prevent any withdrawal activity initiated by a player that would result in a negative account balance. Where payment processing issues outside the control of the system cause an account to be overdrawn, the player account shall be suspended until the negative account balance is settled.
- f) Unless otherwise specified by the regulatory body, withdrawals from a player account shall be paid directly to an electronic payment account in the name of the player or made payable to the player and forwarded to the player's residential address using a secure delivery service or through another payment method that is not prohibited by the regulatory body. The name and residential address are to be the same as held in player registration details.

- g) If a player initiates a financial transaction and that transaction would exceed limits put in place by the operator and/or regulatory body, this transaction may only be processed provided that the player is clearly notified that they have withdrawn or deposited less than requested.
- h) It shall not be possible to transfer funds between two player accounts.
- i) Security or authorization mechanisms shall be in place to ensure that only authorized adjustments can be made to player account balances, and these changes are auditable.

NOTE: To support use of a single player account across multiple jurisdictions, it is recommended that the system maintain separate wallets to handle funds deposited through various payment methods. This is to address cases where one jurisdiction prohibits a payment method that another jurisdiction permits.

3.3.3 Transaction Log or Account Statement

The Player Account Manager shall be able to provide a transaction log or account statement history to a player upon request. The information provided shall include sufficient information to allow the player to reconcile the statement or log against their own financial records. Information to be provided shall include, at a minimum, details on the following types of transactions within the past year or other time period as requested by the player or as required by the regulatory body, as applicable:

- a) Financial transactions (transaction time stamped with a unique transaction ID):
 - i. Deposits to the player account;
 - ii. Withdrawals from the player account;
 - iii. Bonusing/promotional amounts added to/removed from the player account (outside of gameplay);
 - iv. Manual adjustments or modifications to the player account (e.g., due to refunds);
 - v. Any non-wager purchases;
- b) Gaming transactions (gaming session start/end time stamped with a unique gaming session ID):
 - i. The name of the game theme and game type (e.g., reel, blackjack, poker, table, etc.);
 - ii. Total amount wagered;
 - iii. Total amount won, including any progressive jackpots and/or incrementing bonus jackpots won, for completed games;
 - iv. Total bonusing/promotional amounts wagered/awarded;
 - v. Total amount voided or cancelled;
 - vi. Rake, commission, or fees collected; and
- c) Any other additions to, or deductions from, the account balance that would not otherwise be metered under any of the above-listed items.

NOTE: Where supported by the system, the player's self-imposed limitation, time-out, and suspension history may also be included.

3.3.4 Account Updates

MFA shall be employed for a player to access and update their registration information and authentication credentials, and to add, modify, or remove the payment methods used for financial transactions as supported by the Player Account Manager. In addition, there shall be a mechanism for the operator to perform these updates on behalf of a player upon request or where necessary. If

any required registration information is re-entered or modified, the accuracy of the re-entered or modified registration information shall be verified before the player is allowed to conduct any further wagers or financial transactions.

3.3.5 Account Closure

Players shall be provided with a mechanism to close their player account at any time unless the operator has suspended the player account for reasons that would prevent account closure. In addition, there shall be a mechanism for the operator to close a player account.

- a) MFA shall be employed by the player to initiate an account closure request.
- b) The player account closure process shall commence immediately upon receipt of the account closure request and result in the account being closed after:
 - i. All interrupted games have been completed, voided, or cancelled; and
 - ii. Any unrestricted player funds remaining in a player account have been refunded to the player, provided that the operator acknowledges that the funds have cleared.
- c) A player shall not be encouraged or induced to keep their player account open following their account closure request to close their account. However, an operator may explain the effects of an account closure and ask the player if they wish to proceed.

3.3.6 Inactive Player Accounts

The Player Account Manager shall have a mechanism for the operator to identify, manage, and close inactive player accounts. Any unrestricted player funds remaining in a closed inactive player account shall be refunded or otherwise handled in accordance with the operator's internal control procedures.

3.4 Limitations, Time-Outs, and Suspensions

3.4.1 General Statement

The requirements in this section apply where the Player Account Manager supports the ability to directly manage and implement responsible gaming tools, including limitations, time-outs, and/or suspensions.

3.4.2 Limitations

Players shall be provided at all times with a mechanism to impose limitations for account activity including but not limited to deposits and wagers over a player-specified time period (e.g., day, week, month) as required by the regulatory body. In addition, there shall be a mechanism for the operator to impose limitations for account activity as required by the regulatory body.

- a) Once established by a player and implemented by the system, it shall only be possible to reduce the severity of self-imposed limitations after the time period of the previous limit has expired, or as required by the regulatory body.

- b) Players shall be notified in advance of any system-imposed limits and their effective dates. Once updated, system-imposed limits shall be consistent with what is disclosed to the player.
- c) Upon receiving any self-imposed or system-imposed limitation order, the system shall ensure that all specified limits are correctly implemented immediately or at the point in time (e.g., next login, next day) clearly indicated to the player.
- d) The self-imposed limitations set by a player shall not override more restrictive system-imposed limitations. The more restrictive limitations shall take priority.
- e) Limitations shall not be compromised by internal status events, such as time-outs or self-imposed suspension orders and revocations.

3.4.3 Time-Outs

Players shall be provided at all times with a mechanism to establish a player-specified time-out period up to seventy-two hours, or a period specified by the regulatory body. In addition, there shall be a mechanism for the operator to impose a time-out period on a player. During a time-out period:

- a) The player may not place new wagers or deposit funds to their player account.
- b) The player shall not be prevented from withdrawing any or all of their unrestricted player funds, provided that the operator acknowledges that the funds have cleared.

3.4.4 Suspensions

Players shall be provided at all times with a mechanism to suspend their player account for a player-specified time period (no less than seventy-two hours, or a period specified by the regulatory body) or indefinitely, as required by the regulatory body. In addition, there shall be a mechanism for the operator to suspend a player account as required by the regulatory body. While a player account is suspended:

- a) The player shall be given a notification containing suspension status that the account is suspended, the reason for suspension, the restrictions placed on the account, and general instructions for resolution where possible.
- b) The player shall be prevented from:
 - i. Placing new wagers;
 - ii. Depositing funds to their player account with the exception of settling a negative account balance, but only to the extent the account balance is brought back to zero; and
 - iii. Making changes to or closing their player account, unless authorized by the operator.
- c) The player shall not be prevented from withdrawing any or all of their unrestricted player funds, provided that the operator acknowledges that the funds have cleared, and that the reason for suspension would not prohibit a withdrawal.

3.5 Bonusing/Promotional Offers

3.5.1 General Statement

Bonusing/promotional offers that are redeemable for cash, wagering credits, or merchandise, may be provided to a player based upon pre-determined events or criteria established by the parameters of the offers.

3.5.2 Player Cancellation of Offer Participation

The player shall be provided with a mechanism to cancel participation in a bonusing/promotional offer that utilizes restricted bonusing/promotional credits. In addition, there shall be a mechanism for the operator to cancel participation on behalf of a player upon request or where necessary.

- a) Upon request for cancellation, the player shall be informed of the amount of unrestricted player funds that will be returned upon cancellation and the value of restricted bonusing/promotional credits that will be removed from the player account.
- b) If the player elects to proceed with cancellation, unrestricted player funds remaining in a player account shall be returned in accordance with the terms of the offer.

3.5.3 Player Completion of Offer Terms

Once a player has met the terms of a bonusing/promotional offer, the winnings earned while participating in the offer shall not be limited (i.e., the restricted bonusing/promotional credits of the offer will become unrestricted bonusing/promotional credits).

Chapter 4: Remote Player Device and Application Requirements

4.1 Introduction

4.1.1 General Statement

The requirements of this chapter apply to the Remote Player Devices and Player Applications used by the player to remotely take part in wagers and financial transactions with the Interactive Gaming System over a public network or private network, depending on the implementations authorized by the regulatory body.

4.2 Player Applications

4.2.1 General Statement

A Remote Player Device interacts with the Interactive Gaming System through a Player Application, which may be downloaded to or installed on the device (mobile application or desktop application), accessed through the device's browser interface (web application), or implemented through a combination of these methods.

4.2.2 Application Identification

Player Applications shall contain sufficient information to identify the application and its version, which, for example, may be displayed via a display screen or contained in the application source code.

4.2.3 Application Validation

For Player Applications installed locally on the Remote Player Device, it shall be possible to validate that the application is an authorized and suitable version for use with the Interactive Gaming System.

NOTE: Application validation methods will be evaluated on a case-by-case basis and approved by the regulatory body and the independent test laboratory based on industry-standard security practices.

NOTE: This requirement does not apply to client-side graphics and audio files (e.g., rules of the game, help screens, etc.).

4.2.4 Compatibility Verification

During any installation or initialization and prior to commencing interactive gaming operations, the Player Application used in conjunction with the Interactive Gaming System shall detect any incompatibilities or resource limitations with the Remote Player Device that would prevent proper operation of the application (e.g., software version, minimum specifications not met, browser type, browser version, plug-in version, etc.).

4.2.5 Communications

The Player Application shall be designed or programmed such that it may only communicate with authorized critical components through secure communications.

4.2.6 Application Errors

If Player Application validation fails, device compatibility requirements are not met, resource limitations prevent proper operation, or communication between the Interactive Gaming System and the Remote Player Device is lost, the application shall prevent interactive gaming operations and provide indication of an error. It is permissible for the application to detect such conditions when the application or device attempts to communicate with the system.

4.2.7 Client-Server Interactions

The following requirements apply to Player Applications and the client-server interactions between the Remote Player Device and Interactive Gaming System:

- a) Players shall not be able to use the application to transfer data to one another, other than chat functions (e.g., text, voice, video, etc.) and approved files (e.g., user profile pictures, photos, etc.);
- b) The application shall not automatically disable any virus scanners and/or detection programs or alter any device-specified firewall rules to open ports that are blocked by either a hardware or software firewall;
- c) The application shall not access any TCP/UDP ports (either automatically or by prompting the user to manually access) that are not necessary for the communication between the Remote Player Device and the server;
- d) If the application includes additional non-gaming related functionality, this additional functionality shall not alter the application's integrity in any way;
- e) The application shall not possess the ability to override the volume settings of the Remote Player Device; and
- f) The application shall not store sensitive information in an unprotected manner. It is recommended that autocomplete, password caching, or other methods that automatically populate password fields be disabled by default for the application.

4.2.8 Application Content

Player Applications shall not contain any malicious code or functionality deemed to be malicious in nature by the regulatory body. This includes, but is not limited to, unauthorized file extraction/transfers, unauthorized device modifications, unauthorized access to any camera, microphone, or player location, unauthorized access to any locally stored personal information (e.g., contacts, calendar, etc.), and malware.

4.2.9 Cookies

Where cookies are used, the player shall be informed of the cookie use upon Player Application access or during player registration. When cookies are required for interactive gaming, gameplay cannot

occur if they are not accepted by the Remote Player Device. All cookies used shall contain no malicious code.

4.2.10 Outcome Generation Restrictions

The Player Application shall not contain any logic that unilaterally generates the outcome of any game. All critical functions including the generation of any game outcome shall be generated by the Interactive Gaming System and be independent of the Remote Player Device.

NOTE: This requirement does not prohibit the use of cryptographic hashes or other inputs generated by the Remote Player Device as supplemental entropy sources for RNGs utilized by the Interactive Gaming System, or as part of an approved “provably fair” function, such as cryptographic seed exchanges between the Remote Player Device and the Interactive Gaming System, provided that these sources are not the sole entropy source.

4.3 Player Access

4.3.1 Account-Based Wagering

A player may only place a wager on a Remote Player Device by using funds from their player account (i.e., anonymous wagers are prohibited).

4.3.2 Multi-Factor Authentication (MFA) for Login

Multi-Factor Authentication (MFA) shall be performed upon each login attempt from a specific Remote Player Device and shall be successfully completed before initial access to the player account is granted. After a player successfully logs into their account on that device using MFA, the Interactive Gaming System may allow the player to designate that account-device pairing as trusted for a period not to exceed fourteen days, or another period specified by the regulatory body. During this period:

- a) Only re-authentication for the same account-device pairing may be exempted from MFA, provided the account-device pairing maintains its trusted status.
- b) Any attempt to re-authenticate to a different player account from the same device or the same account from a different device shall undergo MFA and once that is successfully completed, the new account-device pairing may be exempted from MFA, subject to all of the conditions prescribed herein.
- c) If the account-device pairing maintains its trusted status, the system shall require MFA to re-establish this status.

4.3.3 Post-Login Information

Once a player is successfully logged in, the Player Application shall make the following available to the player:

- a) Any material updates to the terms and conditions and/or privacy policies (i.e., beyond any grammatical or other minor changes) which shall be agreed upon by the player prior to allowing gameplay or financial transactions related to the update.
- b) The last date and time the player logged into their player account.

- c) Current account balance information, including any bonusing/promotional credits, and transaction options. All discretionary account funds, including restricted bonusing/promotional credits and bonusing/promotional credits that have a possible expiration shall be indicated separately.
- d) Where a credit meter is supported, the ability to transfer funds between the player account and the credit meter for game play:
 - i. A transfer shall not be accepted that could cause the player to have a negative account balance. Where the account balance is less than the amount requested by the player, a transfer of the available funds may be processed provided that the player is clearly notified that they have transferred less than requested.
 - ii. The player account balance is to be debited when the transfer is accepted by the Player Account Manager and funds are added to the player's credit meter.

4.3.4 Information Access

In addition to the “Game Requirements” within this document, the Player Application shall be able to provide access to the required “Operator Display Content”, either directly from the player interface or from a page accessible to the player, including, but not limited to pages containing:

- a) Gaming Rules;
- b) Player Protection Information;
- c) Terms and Conditions; and
- d) Privacy Policies.

NOTE: During laboratory testing, the independent test laboratory shall ensure that the Player Application provides access to placeholder pages on which the operator will be responsible to disclose the required “Operator Display Content”.

4.3.5 Access Inactivity

After thirty minutes of inactivity while logged into their player account on a Remote Player Device, or a period determined by the regulatory body, the player shall be required to re-authenticate to access their player account on that device. No further wagers or financial transactions on that device are permitted until the player has been re-authenticated.

NOTE: Where the system provides one-way communication or content streaming and the player's expected interaction is passive, such as viewing the transmission of a live game, the absence of player input shall not, by itself, cause the player to be treated as inactive, unless otherwise specified by the regulatory body.

4.4 Device and Application Integrity, Monitoring, and Security

4.4.1 Device Identification

The Interactive Gaming System shall generate a persistent, tamper-resistant identifier for each Remote Player Device.

4.4.2 Multiple Devices or Accounts

To reduce the risk that Remote Player Devices or player accounts are used in a fraudulent manner, the Interactive Gaming System shall employ reasonable mechanisms to monitor the device used by a player to access their player account and, at a minimum, shall detect and perform all necessary due diligence or flag for investigation when:

- a) More than four unique accounts are accessed from the same device within a fourteen-day period, or other period specified by the regulatory body; and
- b) More than three unique devices are accessed by the same account within a twenty-four-hour, or other period specified by the regulatory body.

NOTE: This requirement does not preclude an operator from performing other procedures designed to detect and prevent suspicious player activity or other fraudulent activity, nor does it preclude an operator from conducting multiple device investigations based on narrower or more restrictive parameters (e.g., fewer devices or a shorter timeframe).

4.4.3 Device and Application Integrity and Attestation

The Interactive Gaming System shall verify that Remote Player Devices, Player Applications, and related data are authentic, untampered, and operating under secure runtime conditions. The system shall employ multiple detection methods to reasonably identify non-secure devices that may affect the integrity of the device or application, which may include compromised runtime environments, application-level tampering, system-level tampering, code hooking, rooting, jailbreaking, emulators, virtualization, or similar conditions. These detection methods may include controls that function independently of native operating system security or attestation services.

4.4.4 Application Runtime Protection

The Interactive Gaming System shall continuously monitor the Player Application during execution to:

- a) Reasonably detect unauthorized interference, which may include code injection, overlay attacks, memory tampering, manipulation of security functions, interference with application functionality, unauthorized modification of Application Programming Interface (API) calls, or similar activity; and
- b) Take reasonable action upon detection to prevent compromise, which may include logging out the player, restricting functionality, denying gameplay while the interference is present, and/or generating alerts for investigation.

4.5 Geolocation Operations and Enforcement

4.5.1 Geolocation Solution Requirements

Where required by the regulatory body, the Interactive Gaming System shall employ a Geolocation Solution to perform geolocation checks to authenticate a Remote Player Device's location data. This solution may be provided in-house or by a third-party Geolocation Service Provider. In addition to

the requirements contained within this chapter, the operational procedures and controls indicated in the “Geolocation Solution Controls” section of this document shall also be met.

NOTE: Where interactive gaming occurs over a private network, the Interactive Gaming System may use a location detection component in lieu of a Geolocation Solution, provided the component reasonably detects in real time when a player is no longer within the permitted geofence and responds as required by the regulatory body. Such methods may include beacon technology, directional antennas, or other technologies evaluated on a case-by-case basis by the independent test laboratory or regulatory body.

4.5.2 Geolocation Triggering Actions

The Interactive Gaming System and/or Geolocation Solution shall identify the triggering actions that require a geolocation check before the action is accepted or completed, as required by the regulatory body. To identify the player’s location, a geolocation check shall be required prior to:

- a) Accepting a paid wager where any of the following conditions apply:
 - i. The player is attempting to place the first paid wager after logging in on a specific Remote Player Device;
 - ii. No successful geolocation check has occurred within the preceding twenty minutes, or other recheck frequency specified by the regulatory body; or
 - iii. A change to the player’s IP Address has been detected.
- b) Completing the following account management activities:
 - i. Account creation or closure;
 - ii. Large financial transactions (single and aggregate over a specific time period) in excess of a value specified by the regulatory body; and
 - iii. Changes made to sensitive information recorded in a player account (e.g., registration information, authentication credentials, payment methods, etc.).

NOTE: As required by the regulatory body, the recheck frequency for mobile connections may increase based on the player’s proximity to the border of the permitted geofence, using an assumed travel velocity of sixty-five miles per hour (one hundred and five kilometers per hour), or another velocity specified by the regulatory body.

4.5.3 Geolocation Checks, Logging, and Failures

For each geolocation check, the Interactive Gaming System shall communicate a geolocation request to the Geolocation Solution using an anonymized identifier for the player. This anonymized player ID shall not include any names or other PII (e.g., a player account ID is acceptable). The Interactive Gaming System shall maintain sufficient records to associate the geolocation check with the applicable player and device.

- a) Each geolocation check and its result shall be recorded in a log, which shall include, at a minimum, the anonymized player ID, date and time of the check, relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.), and geolocation result including the reason for any geolocation failure.

- b) A geolocation failure occurs when, at the time of a required geolocation check:
 - i. The device's location data cannot be authenticated by the Geolocation Solution (e.g., not enough location data or data accuracy is low);
 - ii. The device's required location services, permissions, settings, configurations, or other conditions necessary for reliable geolocation are disabled, unavailable, unreliable, unsupported, or manipulated;
 - iii. The Geolocation Solution detects fraud, tampering, spoofing, proxying, or other conditions that may prevent reliable authentication of the player's real-world geographic location; or
 - iv. The regulatory body requires the triggering action to occur only within a permitted geofence, and the device's physical location is determined by the Geolocation Solution to be outside the permitted geofence.
- c) Upon detection of a geolocation failure, the Interactive Gaming System shall:
 - i. Reject the attempted triggering action;
 - ii. Notify the player that the attempted triggering action could not be accepted or completed due to a geolocation failure; and
 - iii. Prevent the triggering action from being accepted or completed until the geolocation failure is resolved by a subsequent successful geolocation check.

4.5.4 Geolocation Data Sources and Cross-Validation

The Interactive Gaming System and/or Geolocation Solution shall use authenticated location data from the Remote Player Device to determine the device's real-world geographic location. To reasonably ensure the device's location data is accurate and reliable, the Interactive Gaming System and/or Geolocation Solution shall:

- a) Cross-validate the device's location data against multiple independent location data sources, where available and applicable, to reasonably determine the real-world geographic location of the player, including, but not limited to:
 - i. IP Address analysis;
 - ii. Global Positioning System (GPS) or Global Navigation Satellite System (GNSS);
 - iii. Wi-Fi and cellular triangulation; and
 - iv. Device sensor data, where applicable.
- b) Not utilize an IP Address analysis as a primary location data source for geolocation checks unless otherwise authorized by the regulatory body. An IP Address analysis may be used as a supporting location data source to identify network-based location risks, which may include TOR exit nodes, data center proxies, residential proxies, proxy services, anonymizers, unauthorized VPN usage, and similar technologies.

NOTE: The use of a Virtual Private Network (VPN) may be permitted only where location data other than IP Address can reliably confirm the real-world geographic location of the player.

4.5.5 Geolocation Spoofing, Proxying, and Evasion Detection

The Interactive Gaming System and/or Geolocation Solution shall reasonably detect and prevent the use of technologies, services, or methods intended to conceal, relay, proxy, spoof, falsify, or otherwise misrepresent a player's real-world geographic location. Such methods include, at a minimum:

- a) Network-routing techniques that may conceal, relay, proxy, or misrepresent the player's real-world geographic location;
- b) Fake location applications, spoofing tools, manipulated location services, or other location-data falsification methods;
- c) Remote desktop software, remote control tools, screen-sharing tools, or similar relay technologies;
- d) Emulators, virtualization tools, or other software used to circumvent or falsify geolocation controls; and
- e) Other technologies or techniques intended to interfere with, bypass, or falsify geolocation results.

4.5.6 Geolocation Integrity Risks

The Interactive Gaming System and/or Geolocation Solution shall implement best practice security mechanisms to reasonably detect and prevent geolocation integrity risks.

4.5.7 Geolocation Beacon Technology

When Beacon Technology is used by the Interactive Gaming System and Geolocation Solution to assist in enforcing the permitted geofence, such as short-range communications technology:

- a) The Beacon Technology shall support configuration and adjustment of signal strength, broadcast range, and related parameters to establish and maintain the permitted geofence as accurately as reasonably practicable; and
- b) The tokens broadcast by the Beacon Technology shall be refreshed at least every five minutes, or a period otherwise specified by the regulatory body. Expired tokens shall be invalidated so as to prevent attacks or hacking.

NOTE: Alternative methodologies and technologies of location detection shall be reviewed and approved by the regulatory body on a case-by-case basis.

Chapter 5: Random Number Generator (RNG) Requirements

5.1 Introduction

5.1.1 General Statement

This chapter sets forth the technical requirements for a Random Number Generator (RNG). The types of RNGs include the following, or a combination thereof:

- a) Software-based RNGs do not use hardware devices and derive their randomness principally and primarily from a computer-based or software-driven algorithm. They do not incorporate hardware randomness in a significant way.
- b) Hardware-based RNGs derive their randomness from small-scale physical events (e.g., electric circuit feedback, thermal noise, radioactive decay, photon spin, etc.).
- c) Mechanical RNGs generate game outcomes mechanically, employing the laws of physics (e.g., wheels, tumblers, blowers, shufflers, etc.).

NOTE: See also related requirements found in “Game Outcome Using a Random Number Generator” section as contained in the “Game Requirements” chapter of this standard.

5.2 General RNG Requirements

5.2.1 Source Code Review

The independent test laboratory shall review the source code pertaining to any and all core randomness algorithms, scaling algorithms, shuffling algorithms, and other algorithms or functions that play a critical role in the final random outcome selected for use by a game. This review shall include comparison to published references, where applicable, and an examination for sources of bias, errors in implementation, malicious code, code with the potential to corrupt behavior, or undisclosed switches or parameters having a possible influence on randomness and fair play.

5.2.2 Statistical Analysis

The independent test laboratory shall employ statistical tests to assess the outcomes produced by the RNG, after scaling, shuffling, or other mapping (hereafter referred to as “final outcome output”). The independent test laboratory shall choose appropriate tests on a case-by-case basis, depending on the RNG under review and its usage within the game. The tests shall be selected to assure conformance to intended distribution of values, statistical independence between draws, and, if applicable, statistical independence between multiple values within a single draw. The applied tests shall be evaluated, collectively, at a 99% confidence level. The amount of data tested shall be such that significant deviations from applicable RNG testing criteria can be detected with high frequency. In the case of an RNG intended for variable usage, it is the responsibility of the independent test laboratory to select and test a representative set of usages as test cases. Statistical tests may include any one or more of the following:

- a) Total Distribution or Chi-Square test;
- b) Overlaps test;
- c) Coupon Collector's test;
- d) Runs test;
- e) Interplay Correlation test;
- f) Serial Correlation test; and
- g) Duplicates test.

5.2.3 Distribution

Each possible RNG selection shall be equally likely to be chosen. Where the game design specifies a non-uniform distribution, the final outcome output shall conform to the intended distribution.

- a) All scaling, shuffling, and mapping algorithms used shall be unbiased. The discard, delay, substitution, or modification of RNG values is permissible in this context and may be necessary to eliminate bias.
- b) The final outcome output shall be tested against intended distribution using appropriate statistical tests (e.g., Total Distribution test).

5.2.4 Independence

Knowledge of the numbers chosen in one draw shall not provide information on the numbers that may be chosen in a future draw. If the RNG selects multiple values within the context of a single draw, knowing one or more values shall not provide information on the other values within the draw, unless provided for by the game design.

- a) The RNG shall not discard, delay, substitute, or modify selections based on previous selections or internal state history, except as intended by game design (e.g., without-replacement functionality).
- b) The final outcome output shall be tested for independence between draws and, as applicable, independence within a draw, using appropriate statistical tests (e.g., Serial or Interplay Correlation tests, and Runs test).

5.2.5 Available Outcomes

The set of possible outcomes produced by the RNG (i.e., the RNG period and internal state space), taken as a whole, shall be sufficiently large to ensure that all outcomes shall be available on every draw with the appropriate likelihood, independent of previously produced outcomes, except where specified by the game design.

NOTE: This requirement is to prevent the occurrence of rare game states being used to infer the RNG states which produced those results or to predict the states which will follow. This also ensures that once low probability events have occurred, there is still a chance that they will occur again within a short time period.

5.2.6 External RNG

Where the RNG is run separately from the Gaming Platform, the following shall be met:

- a) The External RNG shall contain sufficient information to identify the revision level and have a method for any critical control program to be verified via an independent third-party verification procedure in accordance with the “Control Program Independent Verification” requirements of this document.
- b) Any games reliant on output from an External RNG shall cease to operate or otherwise correctly react in the event that the External RNG or communication with it fails unless a backup RNG is used.

5.3 RNG Strength and Monitoring

5.3.1 RNG Strength for Outcome Determination

The RNG used in the determination of game outcomes in a Gaming Platform shall be cryptographically strong, or of similar strength deemed appropriate for that RNG by the regulatory body on a case-by-case basis. “Cryptographically strong” means that the RNG is resistant to attack or compromise by an intelligent attacker with modern computational resources, and who may have knowledge of the source code of the RNG.

NOTE: This does not prohibit the use of RNGs that are not cryptographically strong for purposes other than game outcome determination, such as those used for quick pick features.

5.3.2 Cryptographic RNG Attacks

A cryptographic RNG cannot be feasibly compromised by a skilled attacker with knowledge of the source code. At a minimum, cryptographic RNGs shall be resistant to the following types of attack:

- a) Direct Cryptanalytic Attack: Given a sequence of past values produced by the RNG, it shall be computationally infeasible to predict or estimate future RNG values. This shall be ensured through the appropriate use of a recognized cryptographic algorithm (RNG algorithm, hash, cipher, etc.);
- b) Known Input Attack: It shall be infeasible to modify the input to the RNG to attack it to put it into a known state, for example by “flushing out” existing entropy; and
- c) State Compromise Extension Attack: When the internal state of the RNG is known at some point in time, it shall either be infeasible for knowledge of this state to predict future output, or the effective duration of any potential exploit is limited. Where required, the RNG shall periodically modify its state, through the use of external entropy, limiting the effective duration of any potential exploit by a successful attacker.

NOTE: Because of continuous computational improvements and advances in cryptographic research, compliance to this criterion shall be re-evaluated as required by the regulatory body.

5.3.3 Software-Based RNGs and Seeding

A software-based RNG shall be designed and seeded such that it does not reproduce the same output stream (cycle) that it has produced before, nor shall any two instances of an RNG produce the same stream as each other (synchronize), except where explicitly intended by design and approved by the regulatory body. Where seeding is used by the software-based RNG:

- a) Initial seeding (initialization) shall use an entropy source or a unique combination of available parameters in its initial seeding, such as a combination of timestamps, parameters unique to a server, previous RNG outputs, or other, similar methods.
- b) The set of available seeds shall be sufficiently large to ensure independence of outcomes.
- c) It shall not be possible to computationally determine or reasonably estimate the state of the RNG after initial seeding.
- d) Re-seeding may be used where the re-seeding input is at least as random as, and independent of, the output of the RNG being re-seeded. When a RNG is re-seeded, it shall only be done with a re-seeding method that ensures all RNG outcomes remain equally probable.
- e) Seeding and re-seeding methods shall ensure that all seed values are determined in a manner that does not compromise the cryptographic strength of the RNG.

5.3.4 Hardware-Based RNGs and Dynamic Output Monitoring

A hardware-based RNG may be used for or as part of the RNG implementation to generate outcomes that achieve the cryptographic benchmarks set out in this chapter. The hardware-based RNG shall be implemented in accordance with any necessary requirements as specified by the supplier (e.g., entropy rate limits, output whitening).

- a) The hardware-based RNG shall be able to provide sufficient non-deterministic entropy for continuous operation of the game and otherwise manage insufficient entropy through blocking until it is available.
- b) Dynamic monitoring of the hardware-based RNG's output shall be implemented to detect if the performance of the hardware-based RNG has deteriorated or otherwise malfunctioned. It is suitable for this to be implemented by the hardware-based RNG itself (e.g., tests that are designed to simply monitor the RNG as being accessible and functioning).
- c) Where degradation or malfunction is detected and randomness of the output is not guaranteed, the game shall be disabled unless there is an automatic failover to a backup RNG.

NOTE: Dynamic monitoring should not extend unnecessarily to “run time statistical tests” for continued randomness of output, unless specified by the supplier as such tests require a probability pass/fail measure. A threshold that is too lenient will not sufficiently detect true failures, and one that is too strict will produce too many false positives, and there is not a suitable pass/fail threshold that adequately achieves a valid test for the purpose of continuous gameplay.

5.4 Mechanical RNG (Physical Randomness Device)

5.4.1 General Statement

The requirements defined within this section apply to mechanical RNGs or “physical randomness devices”. While software may be a part of the device, the software is primarily limited to operating machinery and/or reading and recording game outcome data (the software does not play a deterministic role in determining the game outcome). A mechanical RNG may potentially qualify as a cryptographic algorithm, provided it passes statistical testing.

NOTE: Devices which faithfully and mechanically create or display a game outcome selected by a computer RNG are not considered physical randomness devices and shall be evaluated or certified as RNGs once the faithful reproduction of RNG selected outcome has been assured. Physical randomness devices may incorporate RNGs in secondary roles (e.g., rotation speed). Such secondary RNGs need not be evaluated or certified against the RNG requirements contained herein, as they do not directly select the game outcome. Rather, the physical randomness device shall be evaluated or certified as a whole as described in this section.

NOTE: The approved components of a physical randomness device cannot be swapped out or replaced with unapproved components, as they are integral to the behavior and performance of the physical randomness devices. The “approved components” in this context include those physical items that produce the random behavior (e.g., balls in a mixer, cards in a shuffler, etc.). As one example, a shuffler evaluated or certified by the independent test laboratory to utilize plastic cards cannot be viewed as an approved equivalent to the same mechanical shuffler using paper cards.

5.4.2 Data Collection

To provide best assurance of random behavior, the independent test laboratory shall collect game outcome data for at least 10,000 game outcomes. The data collection shall be accomplished in a fashion reasonably similar to the intended use of the device in the field. In particular, the recommended setup and calibration shall be executed initially, and the device and components (cards, balls, etc.) shall be replaced or serviced during the collection period as recommended by the supplier.

NOTE: Due to feasibility concerns associated with reasonable data collection on some devices, the regulatory body may elect to accept testing results from a smaller collection amount on a case-by-case basis. Equally possible, a larger data collection sample may be required. Regardless, the independent test laboratory will clearly state in the applicable evaluation or certification report, the amount of data used for testing. When less than 10,000 games are used, a statement on the statistical limitations of reduced testing will be clearly denoted within the evaluation or certification report.

5.4.3 Durability

All mechanical pieces shall be constructed of materials to prevent degradation of any component over its intended lifespan.

NOTE: The independent test laboratory may recommend a stricter replacement schedule than that suggested by the supplier of the device to comply with the ‘Durability’ requirement stated above. In addition, the independent test laboratory may recommend periodic inspection of the device to ensure and maintain its integrity.

5.4.4 Tampering

The players and/or gaming attendants (e.g., dealers, croupiers, etc.) used in live games shall not have the ability to manipulate or influence the physical randomness devices in a physical manner with respect to the production of game outcome data, except as intended by game design.

5.5 “Provably Fair” RNGs

5.5.1 General Statement

The requirements defined within this section apply to “Provably Fair” RNGs based on a commit-reveal scheme, which enable players or other authorized parties to independently verify that each game outcome was generated in a fair, unbiased, and deterministic manner, without manipulation by the Gaming Platform, operator, or any other party.

5.5.2 Seed Generation and Management

The “Provably Fair” RNG shall employ a cryptographic commit-reveal mechanism based on one or more entropy inputs (seeds), which are combined using a publicly disclosed, deterministic algorithm to produce the random values used for each game outcome. At a minimum, the following elements shall be included:

- a) **Server Seed (Committed Value):** A server seed generated securely by the Gaming Platform using a cryptographically secure random process. Prior to wager acceptance or game initiation, the Gaming Platform shall commit to the server seed by publishing a cryptographic hash of the server seed. After wager acceptance or game initiation the server seed shall not be modified, replaced, or regenerated. The server seed itself shall remain confidential until the reveal phase.
- b) **Client Seed (Player-Influenced Value):** A client seed that is either provided directly by the player or generated on the Remote Player Device prior to the game round, and which shall not be modified by the Gaming Platform. The client seed shall contribute to the determinism and unpredictability of the game outcome.
- c) **Outcome Uniqueness Function:** Where a single committed server seed is used to derive outcomes for more than one game played, the “Provably Fair” RNG shall incorporate a nonce, counter, or equivalent uniqueness function to ensure that each game outcome is unique, deterministic, and independently verifiable. Where a separate server seed is generated and cryptographically committed for each game played, this function is not required.

NOTE: Optional additional entropy sources (e.g., hardware-based RNGs or external randomness beacons) may be incorporated, provided their use is fully documented and does not diminish the determinism, transparency, or verifiability of the commit-reveal scheme.

5.5.3 Algorithm Documentation

The algorithm used for the “Provably Fair” RNG and its associated commit-reveal scheme shall be fully documented, including, but not limited to:

- a) The cryptographic commitment method used for the server seed;
- b) The method of seed combination and, where applicable, nonce, counter, or equivalent uniqueness function incorporation;
- c) All cryptographic primitives and deterministic processes used;
- d) Any transformations, shuffling procedures, or scaling methods applied; and
- e) The process by which intermediate values are converted into game outcomes.

NOTE: The documentation shall be sufficiently detailed to enable an independent third party to implement a verification process capable of reproducing and validating historical game outcomes using only the disclosed commitments, revealed values, and publicly documented algorithm.

Chapter 6: Game Requirements

6.1 Introduction

6.1.1 General Statement

This chapter sets forth the technical requirements for the rules of play, game fairness, game selection, game outcome, related player displays and artwork, payout percentages and odds, bonus/feature states, progressive jackpots, incrementing bonus jackpots, game recall, game modes, common features, games with skill, tournaments, and other game requirements.

NOTE: Please reference the “Games with Skill” section of this technical standard for specific and supplemental requirements for games containing one or more skill elements.

6.2 Player Interface Requirements

6.2.1 Player Interfaces

The player interface is an interface application or program through which the player views and/or interacts with the Remote Player Device, including the touch screen, keyboard, mouse, or other forms of player interaction devices. The player interface shall meet the following requirements:

- a) Any orientation change, resizing, or overlay of the player interface screen shall be mapped accurately to reflect the revised display and touch/click points or buttons and shall not terminate or interrupt a gaming session currently in progress.
- b) All player-selectable touch/click points or buttons represented on the player interface screen that impact gameplay and/or the integrity or outcome of the game shall be clearly labeled according to their function and shall operate in accordance with applicable game rules.
- c) There shall be no hidden or undocumented touch/click points or buttons anywhere on the player interface screen that affect gameplay and/or that impact the integrity or outcome of the game, except as provided for by the game rules.
- d) Game instructions, as well as information on the functions provided by the player interface, shall be clearly communicated to the player and not be misleading or inaccurate.

6.2.2 Adaptive Displays

The display of the game instructions and information shall be adapted to the player interface. For example, where a device uses technologies with a smaller display screen, it is permissible to present an abridged version of the rules of the game accessible directly from within the game screen and make available the full/complete version of the rules of the game via another method, such as a secondary screen, help menu, or other interface that is easily identified on the visual game screen.

6.2.3 Alternating Displays

Where multiple items of game instructions and information are displayed on the player interface, it is acceptable to have these items displayed in an alternating fashion provided that the rate at which

the instructions and information alternates permit the player a reasonable opportunity to read each item.

6.2.4 Simultaneous Inputs and Outputs

Simultaneous or sequential activation of various inputs and outputs, including player interaction devices comprising a player interface, shall not, whether intentionally or not, cause wager malfunctions or invalid results contrary to a game's design intent.

6.3 Gaming Session Requirements

6.3.1 General Statement

A gaming session is defined as the period of time commencing, at minimum, when a player initiates a game or series of games on a Gaming Platform for a particular game theme by committing a wager and ending at the time of a final outcome for that game or series of games and coincide with the opportunity for the player to exit the game.

NOTE: This standard is not intended to preclude or prohibit designs that allow the simultaneous play of multiple games themes on a Gaming Platform. Where multiple game themes are accessible simultaneously, players may play more than one game at a time in separate gaming sessions. However, in such a case, metering and applicable limits shall be enforced against each available game, as it is played, and all other requirements within this chapter shall continue to apply to these multiple game-in-play designs.

6.3.2 Information to be Displayed

A player interface shall display the following information within a gaming session, or sufficient information for the player to otherwise derive it, except when the player is viewing an informational screen such as a menu or help screen:

- a) Current funds available for wagering;
- b) Denomination being played, when values are displayed in credits;
- c) Current wager amount and placement, selection, or location of all active wagers, so that the player is in no doubt as to which wagers have been made and the amounts bet per wager;
- d) Any wager options in effect or available prior to game initiation or during gameplay;
- e) The following information for the last completed game until the next game starts, wager options are modified, or the player exits the game:
 - i. Any wager options in effect;
 - ii. Accurate representation of the game outcome; and
 - iii. The total amount won and, where applicable, the amount won for each winning wager. If wins are associated with multiple wagers, each winning wager may be indicated in turn. If there is a large volume of wager information to convey, a summary screen may suffice.

NOTE: It is acceptable for the information for the last completed game to be cleared before the above-mentioned conditions occur as long as the same information is clearly available to the player under the "Game Recall" section of this document.

6.3.3 Credit Meter

Depending on the implementation within the Gaming Platform, a credit meter may be used by the player to maintain their funds available for wagering for the gaming session. If a credit meter is supported, the following shall apply:

- a) The credit meter shall be visible to the player at any time a wager may be placed, at any time a transfer to or from the player account balance is allowed, or at any time the meter is actively being incremented or decremented.
 - i. The credit meter shall be displayed in credits or local currency format. If the game's credit meter allows for toggling between credits and currency, this functionality shall be easily understood by the player. The credit meter shall clearly indicate whether credits or currency are currently being displayed.
 - ii. If the current local currency amount is not an even multiple of the denomination for a game, or the credit amount has a fractional value, the credits displayed for that game may be displayed and played as a truncated amount, (i.e., fractional part removed). However, the fractional credit amount shall be made available to the player when the truncated credit balance is zero.
- b) Once the credit meter is available, funds may be transferred from the player account balance to the credit meter for gameplay. This may be automatic where the player account balance is automatically transferred to the credit meter or the player is presented transfer options, which require selection before occurring. Such options would include how much the player wishes to transfer to the player's credit meter.
- c) If the game requires additional wagers during the course of gameplay, it shall be possible to transfer additional funds if the player's credit meter has insufficient funds to continue.
- d) Once gameplay is completed, the player shall have the option to transfer some or all of the funds on the player's credit meter back to the player account balance. Exiting a gaming session shall cause all funds to be automatically transferred back to the player account balance.

6.3.4 Selection of Game

The Gaming Platform shall clearly inform the player of all game themes and denominations available for play and their rules and payable information before the player commits to playing them. The following requirements apply to the selection of a specific game on the player interface:

- a) The player shall be made aware of which game theme and denomination has been selected for play and is being played.
- b) The player shall not be forced to play a game just by selecting a game theme, unless the game screen clearly indicates the game selection is unchangeable. If not disclosed, the player shall be able to return to the main menu or game chooser screen prior to committing a wager.
- c) The default game display upon entering gameplay mode from a main menu or game chooser screen, shall not correspond to the highest advertised award (unless that was the outcome of the player's last gameplay). This applies to the base game state only and not to any intermediate game states, such as double-up/gamble or bonus/feature states.

6.3.5 Game Cycle Requirements

The Gaming Platform shall ensure that game cycles are processed accurately, sequentially, and without unintended duplication or interruption. Game cycles consist of all player actions and gameplay activity occurring from one wager to the next:

- a) A game cycle shall be initiated when the player:
 - i. Places or commits a wager; and/or
 - ii. Activates a "play" touch/click point or button or performs an equivalent action in accordance with the rules of the game.
- b) The Gaming Platform shall prevent multiple game cycles from being initiated that arise from communications errors, pressing the "play" touch/click point or button repeatedly, or performing the equivalent action more than once while awaiting a response from the platform.
- c) Amounts wagered or committed at any point at the start of, or within the course of a game cycle shall be subtracted from the player's credit meter or player account balance. A wager shall not be accepted that could cause the player to have a negative credit meter or player account balance.
- d) If a player's credit meter combines restricted bonusing/promotional credits and unrestricted player funds, restricted bonusing/promotional credits shall be wagered or committed first, as allowed by the rules of the game, before any unrestricted player funds are wagered or committed.
- e) The following game states shall be considered to be part of a single game cycle:
 - i. Games that trigger extended play and any subsequent plays;
 - ii. "Second screen" bonus/feature states;
 - iii. Games with player choice (e.g., draw poker or blackjack);
 - iv. Games where the rules permit wagering of additional credits (e.g., blackjack insurance, or the second part of a two-part keno game);
 - v. Double-up/gamble features; and
 - vi. Any other intermediate game state not mentioned above.
- f) By the end of the game cycle, the value of every award at the end of a game cycle shall be added to the player's credit meter or player account balance, except for merchandise and large wins or payouts where required by the regulatory body. If fractional payments occur (i.e., less than one cent or equivalent), the game may either use conventional rounding or maintain more fractional decimal places beyond a whole cent or equivalent and award a whole value when added together either after a game or when a player exits the game.
- g) A game cycle shall be considered complete when all amounts wagered or committed are lost or when the final transfer to the player's credit meter or player account balance takes place.
- h) It shall not be possible to start a new game cycle within the same gaming session before the current game cycle is completed and the game history and the player's credit meter or player account balance have been updated, including the game states listed in this section, unless the action to start a new game terminates the current game cycle in an orderly manner. Some exceptions may be granted in instances where, for example, if the operator elects to conduct offline, manual consideration of large wins or payouts, if a player chooses to continue gaming while a large win or payout is pending, or the game in question is a scheduled game which will take place in the future.

6.3.6 Wagering Period

Where the game includes a defined wagering period (e.g., roulette), the wagering period and cutoff for accepting wagers on a game shall be clearly communicated to the player. It shall not be possible to place wagers once the wagering period for that game has closed.

6.3.7 Player Input and Automatic Selection

Where a game requires player input during the game cycle, and imposes a time limit to make that selection, the game shall display a timer or equivalent indicator of the remaining time and shall clearly disclose via rules or artwork the automated selection if the player fails to act within the allotted time. Where an automated selection process is implemented upon expiration of the allotted time, the following shall apply:

- a) For selections or interactions involving strategy or player skill:
 - i. The game shall provide the player with no less than fifteen seconds to act unless otherwise specified by the regulatory body; and
 - ii. The automated selection shall be made in accordance with a reasonable strategy.
- b) For selections or interactions not involving strategy or player skill:
 - i. The game shall provide the player with no less than five seconds to act unless otherwise specified by the regulatory body; and
 - ii. The automated selection shall be determined using a random selection process.

6.3.8 Additional Wagers During a Game

Games shall not permit a player to wager additional credits during a game cycle unless the following requirements are met:

- a) The player shall be clearly given the choice whether to place the additional wager before any additional credits are committed. If placing the additional wager is required to continue the game in progress, the player shall be given the opportunity to end the game without placing the additional wager.
- b) If placing the additional wager is optional, the game shall not alter the chance of achieving a winning outcome based solely on the player's decision whether to place the additional wager and shall not mislead the player regarding any effect of the additional wager on game outcomes, awards, or probabilities, unless such effect is clearly disclosed.
- c) Unless otherwise disclosed, where the player has insufficient funds available to place the additional wager, including any amounts won during the game in progress, the game shall allow the player to add funds to the credit meter or player account balance for this purpose.
- d) Any subsequent outcome, feature, award, or result within the game in progress shall not be determined before the player chooses whether to place the additional wager, unless otherwise disclosed to the player.

6.4 Game Information, Transparency, and Disclosure Requirements

6.4.1 Game Information and Rules of Play

The following requirements apply to the game information, artwork, paytables, and help screens including any written, graphical, and auditory information provided to the player either directly from the player interface or from a page accessible to the player:

- a) Player interface and player interaction device usage instructions, payable information, and rules of play shall be complete and unambiguous and shall not be misleading or unfair to the player. If there are multiple player interaction devices able to affect the same player action, then all such options shall be clearly explained to the player.
- b) Help screen information shall be accessible by a player without the need for funds deposited or commitment of a wager. This information shall include descriptions of unique game features, such as extended play, bonus spins, double-up/gamble, autoplay mode, countdown timers, symbol transformations, community bonuses, progressive jackpots, incrementing bonus jackpots, etc.
- c) Minimum, maximum, and other available wagers shall be stated within, or be able to be deduced from, the artwork.
- d) Adequate instruction for any wager option available or obtainable at any point in time shall be described in the artwork. The game shall clearly indicate when a wager option is unavailable, such as by greying out unavailable selections or otherwise distinguishing them from available wager options.
- e) Paytable information shall include all possible winning outcomes and combinations, along with their corresponding payouts, for any available modifiers and/or wager options, as well as any symbol, object, number required, wager, or multiplier condition associated with each award.
- f) The artwork shall clearly indicate whether awards are designated in credits, currency, or some other unit.
- g) For artwork that contains game instructions explicitly advertising a credit award or merchandise prize:
 - i. It shall be possible to win the award or prize from a single game, or series of games enabled by an initiating game, when including bonuses/features or other game states, unless the artwork clearly specifies the criteria necessary to win the award or prize.
 - ii. Where player choices influence the likelihood of winning the award or prize, the game rules and help screens shall disclose the applicable decision mechanics and their impact on outcomes.
- h) The game shall reflect any change in award value that occurs during the course of play and shall clearly state the criteria by which any award value is modified, including, where applicable, any fixed or increasing multiplier rules, how the award is calculated, when the multiplier is applied, and whether any player action affects the multiplier or award value.
- i) Game instructions that are presented aurally shall also be presented in written form.
- j) Game instructions shall be rendered with sufficient font size and clarity in a color that contrasts with the background color to ensure that all instructions are clearly visible/readable.
- k) The artwork shall clearly state the rules for payment of awards where multiple wins or interpretations of winning combinations are possible. The artwork shall clearly communicate the treatment of:

- i. Coinciding game outcomes, including outcomes that may qualify for more than one win category, and whether all possible awards are paid or only the highest award.
 - ii. Coinciding scatter wins with respect to other possible scatter wins, whether combinations of scatters pay all possible awards or only the highest award;
 - iii. Awards for mixed or grouped game symbol/object, including whether an outcome that may be interpreted as both a mixed and straight combination pays one or both awards; and
 - iv. Wins involving substitutes or wilds, including how awards are handled when substitutes or wilds create winning combinations for symbols/objects that do not otherwise appear.
- l) Where multiplier instructions or calculated, accumulated, or displayed awards are shown:
 - i. The artwork shall clearly state what the multiplier does and does not apply to; and
 - ii. If only some awards are eligible for multiplication, the artwork shall not imply that other displayed awards are further multiplied unless this is the rule of the game.
 - m) The game shall not advertise ‘upcoming wins’, for example, “three times pay coming soon”, unless the advertisement is accurate and mathematically demonstrable, or unless the player has a direct advertisement of the current progress to that win (e.g., they have two of four tokens collected that are required to win an award).
 - n) The game artwork shall clearly explain to the player any non-wager purchase option and its value in credits or local currency.
 - o) The artwork shall disclose any restrictive features of gameplay, such as any play duration limits, maximum total win values, etc. which are implemented as an element of game design.
 - p) For scheduled games, when the game will occur and a countdown of the time remaining to place a wager on that game shall be displayed to the player. It shall not be possible to place wagers on that game once this time has passed.
 - q) Where videos or other media are used to advertise gameplay, it shall be made clear to players where footage has been edited, enhanced, or sped-up for demonstration purposes.

6.4.2 Game Symbols and Objects

All game symbols/objects shall be clearly displayed to the player and shall not be misleading.

- a) Game instructions that specifically correspond to one or more game symbols/objects shall be clearly associated with them and shall not create ambiguity as to which symbol/object is being described. For example, this may be achieved with appropriate framing or boxing. Additional wording, such as “these symbols” may also be used.
- b) If game instructions refer to a particular game symbol/object, and the written name for the symbol/object may be mistaken for another symbol/object, or may imply other characteristics, then the visual display of the instructions shall clearly indicate to which symbol/object the instruction refers.
- c) Game symbols/objects shall retain their shape throughout all artwork, except while animation is in progress. Any symbol/object that changes shape or color during an animation process shall not appear in a way that can be misinterpreted to be some other symbol/object defined in the payable.
- d) If the function or appearance of a game symbol/object changes (e.g., a symbol/object becomes a substitute during a bonus/feature state, symbol/object changes color, etc.), the artwork shall clearly indicate this change of function or appearance and any special conditions that apply to it.

- e) If limitations exist with respect to the location and/or appearance of any game symbol/object, the limitation shall be disclosed in the artwork. For example, if a symbol/object is only available in a bonus/feature state, then the artwork shall disclose this.
- f) The artwork shall clearly state which game symbols/objects may act as a scatter, substitute, or wild, and in which winning combinations, game states, and conditions they may be applied, including any exclusions, behavior changes, extra pays, multipliers, etc.
- g) The artwork shall contain textual and/or graphical information to clearly explain the order, position and direction in which game symbols/objects are to appear, in order for an award to be issued or for triggering a bonus/feature state, including numbers or another visual representation to indicate how many correct symbols/objects each pattern corresponds to.

6.4.3 Virtual Player Chips/Tokens

If virtual representations of player chips and/or tokens are used, the following shall apply:

- a) All chips/tokens shall have identical physical characteristics except for specific differences in denomination.
- b) The chips/tokens of all possible denominations for the game shall be shown so that unavailability of chips/tokens of smaller denominations will not force players to wager more.
- c) Each chip/token shall be designed so that the specific denomination can be determined when placed in a stack of chips/tokens of various denominations.
- d) The chips/tokens used shall be unique for each denomination they are representing, and the denomination shall be clearly visible on any chips/tokens.
- e) It shall be made clear to the player how to select a chip/token, apply the chip/token to a wager option, remove the chip/token.

NOTE: The above requirements also apply to using physical player chips and/or tokens in live games.

6.4.4 Pseudo-Live Games

The following requirements apply to games that simulate the play of live games using pre-recorded footage of a live gaming studio, computer-generated imagery, and/or green screen technology:

- a) Disclosures about the use of pre-recorded footage, computer-generated imagery, and/or green screen technology shall be available to the player in the game rules or help screens;
- b) The pre-recorded footage, computer-generated imagery, and/or green screen technology shall not:
 - i. Be represented to the player as a live game; or
 - ii. Mislead a player to imply human decision-making or real-time interaction with a live person;
- c) The pre-recorded footage, computer-generated imagery, and/or green screen technology may serve only as a graphical presentation of the game and shall not influence or determine game outcomes; and
- d) The game outcomes displayed to the player shall accurately correspond to the outcomes determined by the game independent of the pre-recorded footage, computer-generated imagery, and/or green screen technology.

6.4.5 Multi-Player Games

The following requirements apply to games consisting of multiple players linked to a single gaming session:

- a) Each player shall be informed when the next multi-player game will begin. If applicable to the game, the wagering period shall be the same and simultaneous for all participating players;
- b) For multi-player games where each player takes turns to play:
 - i. The multi-player game shall clearly indicate to each player when it is their turn;
 - ii. Each player shall only be able to place wagers and make player choices during their turn;
 - iii. Where the player's turn has a time limit, the requirements for "Player Input and Automatic Selection" shall be met. Additionally, this time limit shall be the same for all players unless otherwise disclosed to the player;
- c) The wagers and player choices of each player shall be clearly distinguishable from the wagers and player choices of any other player;
- d) The actions or outcomes of any one player shall not affect the actions or outcomes of any other player, unless otherwise denoted by the game rules; and
- e) At the end of the game, each player's wagers shall be settled individually in accordance with the applicable game rules and payable.

NOTE: Please reference the "Peer-to-Peer (P2P) Gaming" section of this chapter for specific and supplemental requirements for multi-player games where players compete with and against each other.

6.4.6 Rakes, Commissions, and Fees

There shall be sufficient information available to the player regarding charges imposed on players or award payout adjustments such as a rake, commission, or fee taken by the operator, as applicable. Any variation in the published information shall be disclosed to the player.

6.5 Game Types

6.5.1 General Statement

This section is intended to define a baseline set of requirements for traditional types of games while recognizing that many variants of these same games and other game types not covered by this section are still permissible unless prohibited by the regulatory body.

6.5.2 Reel/Line/Way Games

The following requirements apply, as relevant to the specific game design, to reel/line/way games:

- a) For multi-line/multi-way games, the game shall provide a summary display of the paylines/ways that are available to form winning combinations;
- b) The bet multiplier, where applicable, shall be shown. It is acceptable if this may be easily derived from other displayed information;

- c) For games that permit multiple credits to be wagered on selected paylines/ways, the artwork shall:
 - i. For linear pays, clearly state that the wins for each selected payline/way will be multiplied by the bet multiplier;
 - ii. For non-linear pays, convey all possible wagers and their awards;
- d) The artwork shall indicate any rules and/or limitations which pertain to how pays are evaluated, including an indication of:
 - i. How paylines/ways are evaluated, such as left to right, right to left, both ways, or another defined method;
 - ii. How individual game symbols/objects are evaluated, such as adjacent reels/columns only, selected paylines/ways only, or another defined method, and any exceptions such as scatter pays;
 - iii. Where a payline/way may be interpreted to have more than one such winning combination, whether only the highest winning combination is paid per payline/way;
 - iv. Whether awards on different paylines/ways are added together;
 - v. For scatter pays, the applicable scatter, number required, payment basis, and whether scatter pays are added to payline/way wins, paid separately, or limited to the greater win where the same game symbol/object or outcome qualifies for both;
- e) If a game symbol/object that can form part of a winning combination does not appear on all reels/columns, the artwork shall clearly indicate the reels/columns on which the symbol/object may appear or otherwise ensure that the game does not imply that an impossible winning combination can occur;
- f) Each individual payline/way to be played shall be clearly indicated by the game so that the player is in no doubt as to which paylines/ways are being wagered upon and the amounts wagered per payline/way. Displaying the number of paylines/ways wagered and the total wager amount shall be sufficient to meet this requirement; and
- g) Winning paylines/ways shall be clearly discernible to the player. Where there are wins on multiple paylines/ways, each winning payline/way shall be indicated in turn or otherwise displayed so the player can identify each win and its associated award. This requirement does not preclude other intuitive methods of displaying payline/way wins such as the grouping of common win categories, nor shall it prohibit a player option to bypass a detailed outcome display of payline/way wins, where supported.

6.5.3 Card Games

The following requirements apply, as relevant to the specific game design, to games depicting cards being drawn from one or more card decks:

- a) The following information shall be accessible to the player while no game is in progress:
 - i. A clear indication of the variant of the card game being played and the rules that apply;
 - ii. A display showing all possible winning hands or outcomes and their payouts;
 - iii. An explanation of any special rules, winning combinations, and/or payouts that are outside the standard game;
 - iv. All player options that are available at any point in time;
 - v. The number of cards in a deck and the number of decks in play;

- b) At the start of each game, hand, and/or other applicable dealing sequence, cards shall be drawn in order from one or more randomly shuffled decks consisting of the full set of cards applicable to the game;
 - i. The drawing of cards shall occur at a rate that allows players to follow the game;
 - ii. It is acceptable to draw random numbers for replacement cards at the time of the first hand's random number draw, provided that the replacement cards are sequentially used as needed, and so long as any stored RNG values are encrypted;
 - iii. The decks shall not be reshuffled except as provided by the rules of the game. When a deck is shuffled, it shall be shuffled randomly and frozen prior to use;
- c) Cards once removed from the decks shall not be returned to the decks except as provided by the rules of the game;
- d) Card faces shall clearly display the card value and the suit. Where suit color is used, the suit colors shall be consistent with the game rules and shall not mislead the player;
- e) Rules for jokers and wild cards shall be clearly explained in the help screens. Jokers and wild cards shall be distinguishable from all other cards;
- f) For poker games:
 - i. After drawing and displaying the initial cards, unless the highest possible winning combination is obtained, the player shall have the option to hold or discard any or all cards according to the rules of the game;
 - ii. If a possible winning combination is obtained after the initial cards are dealt, the game shall automatically notify the player of the winning hand or hands, display the kind of hand (e.g., one pair, two pair, three of a kind), and the potential award amount;
 - iii. If the game is automatically completed due to obtaining the highest possible winning combination, it shall clearly indicate to the player why the game ended;
 - iv. Held and non-held cards, including recommended holds where allowed, shall be clearly marked on the screen. The method for changing holds shall be clearly displayed to the player;
 - v. Any cards that are discarded shall be replaced by the remaining cards in the deck in the order they are drawn;
- g) For blackjack games:
 - i. Unless otherwise indicated to the player, aces count as either 1 or 11, kings, queens, and jacks count as 10, and all other cards count their face value;
 - ii. If the first two cards dealt to either the player or the dealer total 21 ("Blackjack"), the game shall immediately terminate and credits, if any, shall be awarded;
 - iii. Insurance rules shall be clearly explained, including conditions under which the option is offered;
 - iv. Pair split rules shall be clearly explained, including whether split aces have only one card dealt to each ace, or if further splits or double-downs after splits are available;
 - v. Double-down rules shall be clearly explained, including limitations of which totals may allow a double-down to be selected;
 - vi. Surrender rules shall be clearly explained, including the portion of the wager returned to the player;
 - vii. Any limits on the number of cards that may be drawn by player and/or dealer shall be explained, including any winners declared when the limit is reached (e.g., "Five Under" wins);
 - viii. Dealer play rules shall be clearly explained, including whether the dealer shall take additional cards if the total value of their hand does not exceed 16, whether if the player loses on "Dealer Push", and any special treatment of a soft 17 count;

- ix. Push rules shall clearly explain what occurs in the case of a tie between the player and dealer (e.g., the player loses, the player's wager is returned, etc.);
 - x. If pair splits have occurred, the results for each hand shall be shown (e.g., total points, resultant win category or loss category, amount wagered, amount won, etc.);
 - xi. The current total of all hands, including the dealer's total, shall be displayed during and at the end of the game. The term "bust" or the equivalent may be used to indicate a hand whose total has exceeded 21; and
- h) At the conclusion of each game or hand, the game shall display the applicable results for each player position, including any winning combination or win category (e.g., "Blackjack", "Five Under", "Push", "Full House", etc.), final hand value or score, win/loss/push result, amount wagered, amount won, and any wager amount returned, as applicable.

6.5.4 Dice Games

The following requirements apply, as relevant to the specific game design, to simulations of physical dice games:

- a) Each die face shall clearly show the number of spots or other indication of the face value;
- b) Unless clearly indicated otherwise, the simulated dice shall be of the same layout as standard dice (e.g., the 1 and 6, 2 and 5, and 3 and 4 respectively shall be on opposite faces);
- c) For craps games, the wagers "Field" and "Hardway" shall be clearly explained; and
- d) It shall be obvious what the result of each die is (e.g., which is the up face on each die), after the dice are thrown.

6.5.5 Roulette/Wheel Games

The following requirements apply, as relevant to the specific game design, to simulations of roulette or other wheel games:

- a) The following information shall be accessible to the player while no game is in progress:
 - i. A description of all available wagers and their payouts;
 - ii. The method of selecting individual wagers;
- b) The wagers already selected by the player shall be displayed on the screen. Placement of new wagers shall not obscure these wagers, unless other means are provided to inform the player of the total wagers placed;
- c) For roulette games:
 - i. The type of roulette and the rules for that type shall be clearly stated;
 - ii. Unless clearly indicated otherwise, the simulated roulette wheel shall be in the identical format as a standard casino wheel (including colors of landing locations and position of numbers) with the exception of the position of "Zeroes", if more than one exists, in which case the "Zeroes" may be placed arbitrarily;
 - iii. Each "Zero" used shall be uniquely labelled (e.g., "0" versus "00"); and
- d) The result of each spin of the wheel shall be clearly shown to the player (e.g., any simulated ball, pointer, or other result indicator shall result in a location that unambiguously determines the winning number or outcome), and the winning wagers and corresponding win amounts shall be displayed.

6.5.6 Ball/Number Drawing Games

The following requirements apply, as relevant to the specific game design, to games depicting balls or numbers being drawn from one or more pools:

- a) The following information shall be accessible to the player while no game is in progress:
 - i. A display showing all possible winning draws or outcomes and their payouts;
 - ii. An explanation of any special rules, winning combinations, and/or payouts that are outside the standard game;
 - iii. Rules for purchase of additional features of the game, if any;
 - iv. The number of balls/numbers in a pool and the number of pools in play;
- b) Where a game has scheduled drawings (e.g., for keno or lottery drawing games), the date and time of each drawing shall be clearly disclosed to the player.
- c) At the start of each game and/or other applicable drawing sequence, balls/numbers shall be drawn in order from one or more randomly mixed pools consisting of the full set of balls/numbers applicable to the game;
 - i. The drawing of balls/numbers shall occur at a rate that allows players to follow the game;
 - ii. Where additional balls/numbers are drawn by the game, they shall be drawn from their original pools without duplication unless otherwise allowed for by the game rules;
 - iii. The pools shall not be re-mixed except as provided by the rules of the game. When a pool is re-mixed, it shall be re-mixed randomly and frozen prior to use;
- d) All balls/numbers drawn shall be clearly displayed to the player and shall remain available for review for the duration of the game;
- e) Where player selections are permitted:
 - i. The artwork shall clearly state the method for making, modifying, and clearing individual or all player selections;
 - ii. All of the player selections shall be clearly identified directly on the game screen;
 - iii. Where the game uses multiple player cards/tickets, it is acceptable for the player selections to be accessible by flipping or switching through the cards/tickets;
- f) If the player is permitted to discard their current player cards/tickets and instead select new cards/tickets before the commencement of the game, this functionality shall be:
 - i. Clearly explained to the player in the game rules;
 - ii. Made readily available to the player before the commencement of the game;
- g) For keno games:
 - i. Number combinations shall be selected from the defined player selection field by the player or randomly generated by an auto-select (quick pick) function;
 - ii. Each game shall draw a pre-determined quantity of numbers from the player selection field;
 - iii. Winning outcomes shall be determined and awards paid based on the number of matches between the balls/numbers drawn and the player selections, in accordance with the published rules;
- h) For bingo games:
 - i. Player cards shall contain numbers or other elements arranged according to the game rules;
 - ii. Player cards within the same game shall not be identical, unless otherwise disclosed;
 - iii. The rules shall identify the applicable bingo format, card layout, number or element range, winning patterns, prize categories, and prize distribution method;

- iv. Where automatic marking of drawn balls/numbers or other elements is supported, the functionality shall be clearly disclosed to the player;
- v. Where the game notifies players of proximity to a prize or winning condition, such notifications shall be accurate and based on the current game state;
- vi. A winning outcome shall occur when a player card completes a pre-determined bingo pattern as defined by the game rules;
- vii. Where multiple players simultaneously complete the same winning pattern or prize category, the applicable prize shall be awarded or divided in accordance with the disclosed game rules;
- i) For lottery drawing games:
 - i. Players shall purchase or receive virtual tickets consisting of number combinations selected by the player or randomly generated by an auto-select (quick pick) function;
 - ii. A lottery drawing shall randomly determine the official winning numbers for the game;
 - iii. Prizes shall be awarded to virtual tickets that match the official winning balls/numbers in accordance with the defined prize structure;
- j) At the conclusion of each game, the game shall:
 - i. Highlight the balls/numbers drawn which match the player selections (i.e., “hits”);
 - ii. Provide clear indication of how many selections were made and how many hits were achieved;
 - iii. Clearly identify any special hits, winning conditions, and awards; and
- k) The results of each drawing, including the order in which the balls/numbers were drawn, shall be available on demand for players enrolled in such game.

6.5.7 Immediate Prize/Reveal/Scratch Ticket Games

The following requirements apply, as relevant to the specific game design, to games where the player pushes a button, purchases an electronic scratch ticket, or performs another action to start the game, and immediately is presented with its winning or losing outcome:

- a) The following information shall be accessible to the player without placing a wager:
 - i. A precise definition of the player choices required to complete the game and if the player choices made affect the game outcome;
 - ii. Details of how prizes are won, and their amounts;
 - iii. All rules for game symbols/objects that may substitute in winning patterns;
- b) For games that leverage popular real-life themes (cards, dice, etc.), but do not mirror actual gameplay and probabilities a disclaimer shall be added to the artwork that states outcomes are not distributed with the probabilities that would typically be expected from this game;
- c) After placing a wager, the outcome and prize of the game shall be revealed to the player. The player may or may not have to interact with the game to reveal the win/loss results; and
- d) The outcome of the game can either be pre-determined or probability-based as allowed by the regulatory body, with both relying on randomness as opposed to player skill;
 - i. For pre-determined games, the outcome and prize are determined upon placing a wager; or
 - ii. For probability-based games, the outcome and prize may be determined during the course of gameplay based on random events and any player selections or actions permitted by the game rules.

6.5.8 Risk/Crash/Mine Games

The following requirements apply, as relevant to the specific game design, to games where the player places a wager to potentially win an award that changes over the course of play and is contingent upon avoiding a game termination event (e.g., reaching the crash point or revealing a mine) or performing a cashout:

- a) The outcome-determining elements (e.g., crash point, mine locations) shall be randomly determined;
- b) The game artwork shall clearly indicate where applicable:
 - i. How the award may increase or decrease during the game, including the rate or mechanism of change;
 - ii. Any bonuses which may be added to the award;
 - iii. The conditions under which the player may perform a manual cashout (e.g., minimum thresholds, required actions, or revealed positions);
 - iv. Any conditions that trigger an automatic cashout (e.g., reaching a maximum threshold, revealing all required positions, or player pre-selection, if supported);
- c) The current award value shall be displayed and updated in real time as applicable to the game;
- d) The game shall be completed when one of the following events occurs:
 - i. The player performs a manual cashout after satisfying the applicable conditions disclosed to the player;
 - ii. An automatic cashout is triggered in accordance with the game rules; or
 - iii. A game termination event occurs, unless otherwise indicated in the artwork;
- e) Unless otherwise specified in the rules:
 - i. Upon a game termination event, the award shall cease changing and all pending winnings shall be forfeited; and
 - ii. Upon cashout, the award value at the time of cashout shall be awarded to the player.

6.5.9 Shooting/Fishing Games

The following requirements apply, as relevant to the specific game design, to games where the player attempts to fish or shoot targets with varying award amounts:

- a) The location and movement of each target shall be randomly determined. The outcome of each hit attempt shall be randomly determined in accordance with a predefined probability assigned to the target type, as disclosed in the game rules;
- b) Awards for each target shall be pre-determined, and award values shall be disclosed according to the rules of the game;
- c) The game shall inform the player if their aim or timing affects the outcome;
- d) The result of each attempt shall be clearly shown to the player;
- e) If a single game consists of multiple attempts, then a counter shall be maintained and displayed to the player to indicate the number of attempts made and the number of attempts remaining, completed, or an equivalent representation of progress during the game; and
- f) Awards shall be paid to the player based on the targets hit.

6.5.10 Drop/Pachinko-Style Games

The following requirements apply, as relevant to the specific game design, to games where one or more balls or tokens are dropped onto a pegged board and the outcome depends on which pocket, gate, or hole each ball or token ends up in.

- a) The pegged board shall contain a defined number of pegs, and pockets, gates, or holes;
- b) Pegs, and pockets, gates, or holes with awards shall be pre-determined and award values shall be disclosed according to the rules of the game;
- c) The path of the ball or token shall be randomly determined;
- d) The ball or token dropped, and its path, shall be clearly displayed to the player; and
- e) The result of each drop shall be clearly visible or displayed.

6.5.11 Sports/Racing Games

The following requirements apply, as relevant to the specific game design, to simulations of sports or racing games:

- a) Each virtual participant in a game shall be unique in appearance, where applicable to the wager;
- b) If awards are to be paid for combinations involving virtual participants other than solely the first-place finisher, the order of the virtual participants that can be involved with these awards shall be clearly shown on the screen (e.g., result 8-4-7);
- c) The rules for any exotic wagering types (e.g., same game parlay, teaser, perfecta, trifecta, quinella, etc.) and the expected payouts, shall be clearly explained in the artwork;
- d) Initial wager selection options shall be described (e.g., selection of a runner in a horse race should identify name, number and expected payout);
- e) Wager selection options once the game has commenced shall be clearly shown on the screen; and
- f) The results of the game shall be clear and not open to misinterpretation by the player. Where awards depend on the finishing order or position of one or more virtual participants, all result positions used to determine awards shall be clearly shown on the screen (e.g., displaying the full finishing order in a horse race).

6.5.12 Puzzle Solving Games

The following requirements apply, as relevant to the specific game design, to games in which a player shall correctly solve a puzzle to win an award:

- a) The player shall correctly solve a puzzle to win a game, which is viewable by the player before each puzzle is presented.
- b) Before each game, the player shall be allowed to preview the amounts to be awarded if the puzzle is correctly solved.
- c) Unless otherwise disclosed to the player, awards shall be paid based upon the player's skill in correctly discerning a pattern and completing that puzzle.
- d) When a game presents a potential winning pattern, the puzzle shall be capable of completion within the pre-determined time period.

6.6 Game Outcome Using a Random Number Generator (RNG)

6.6.1 RNG and Evaluation of Game Outcome

The evaluation of game outcome using an RNG shall comply with the following rules:

- a) The type of RNG used shall be suitable for this type of game;
- b) Where more than one instance of an RNG is used to determine different game outcomes, each instance of an RNG shall be separately evaluated; and
- c) Where each instance of an RNG is identical, but involves a different implementation within the game, each implementation shall be separately evaluated.

6.6.2 Game Selection Process

Determination of events of chance affecting game outcome shall not be influenced, affected, or controlled by anything other than the values, or where applicable, mechanical outcomes derived by an approved RNG in conjunction with the rules of the game.

- a) When making calls to the RNG, the game shall not limit the outcomes available for selection, except as provided for by game design and documented in the rules of the game.
- b) The outcomes selected by the RNG shall be mapped correctly and in accordance with the approved payable, reel strips, card decks, or other outcome definitions. Where the game requires outcomes mapped based on a table of weighted probabilities:
 - i. Outcomes shall be mapped in proportion to specified weights without bias; and
 - ii. If the game rules allow weights to be changed, the nature and timing for changing the weights shall not mislead or disadvantage players.
- c) The game shall not discard, delay, substitute, or modify outcomes selected by the RNG due to adaptive behavior or based on value. Additionally:
 - i. Outcomes shall be used immediately as directed by the rules of the game; and
 - ii. Where a sequence of outcomes is required, the whole sequence in the order generated shall be used in accordance with the game rules.
- d) After selection of the game outcome, the game shall not display a “near-miss” or similar outcome presentation, where it makes a variable secondary decision which affects the outcome shown to the player. For example, if the RNG chooses a losing outcome, the game shall not substitute a different losing outcome to show to the player than that originally selected.
- e) Where multiple RNG calls occur for a single game outcome, the sequence and manner of calls shall be fixed and shall not vary dynamically in a way that changes the probability of outcomes unless otherwise disclosed to the player.
- f) Any associated equipment used in conjunction with a Gaming Platform shall not influence or modify the behaviors of the game’s RNG and/or random selection process, except as authorized, or intended by design.

6.6.3 “Provably Fair” RNG Outcome Confirmation

When a game uses a “Provably Fair” RNG based on a commit–reveal scheme to determine game outcomes, the following requirements shall apply:

- a) The Gaming Platform shall disclose to the player the algorithm used to derive the game outcome, including the cryptographic commitment method and all transformations, shuffling methods, or scaling steps applied from seed combination to game outcome.
- b) Prior to wager acceptance or game initiation, the Gaming Platform shall make available a cryptographic hash of the server seed. This hash shall serve as a binding commitment that the server seed used to determine the game outcome cannot be altered after wager acceptance or game initiation.
- c) Upon conclusion of the game, the Gaming Platform shall make available to the player the revealed server seed, client seed, nonce, counter, or equivalent uniqueness function, where applicable, and any other parameters required to independently reproduce the game outcome.
- d) Using the information made available to the player, the game outcome shall be exactly reproducible in a deterministic manner through a confirmation mechanism accessible to the player. The confirmation mechanism shall:
 - i. Confirm that the revealed server seed corresponds to the previously published cryptographic commitment and that the reproduced outcome matches the original game outcome;
 - ii. Produce identical results when applied to the same information; and
 - iii. Be integrated within the Gaming Platform or made available through open-source software or a third-party confirmation tool accessible through a clearly identifiable link on the Gaming Platform.

6.7 Game Fairness, Randomness, and Outcome Integrity Requirements

6.7.1 Game Fairness

The following requirements are intended to ensure that games are designed and presented in a manner that is fair, transparent, and not misleading to the player:

- a) The game shall not be designed to mislead the player regarding the effect of player action, the progression of game features, or the likelihood of winning. This includes, but is not limited to:
 - i. Creating the perception that player skill, dexterity, or choices influence the outcome when each outcome is determined solely by chance, unless it is clearly and prominently disclosed that player actions do not affect the outcome. This requirement does not apply to games where no reasonable perception of skill or strategy exists (e.g., pick-a-bonus game, where it is obvious to the player that the outcome is chance-based).
 - ii. Creating the impression that a feature progresses or persists over time, when each outcome remains random and independent, unless it is clearly and prominently disclosed that animations, meters, visual indicators, or collection elements do not imply increased likelihood of winning or actual game progression; and
 - iii. Creating false expectations regarding the likelihood of winning by misrepresenting the occurrence, frequency, or proximity of events, including “near-miss” or similar outcome presentations that simulate proximity to an explicitly advertised top award or bonus/feature state trigger at a frequency greater than would naturally occur under the game’s mathematics or rules.

- b) The game shall not include any hidden functions that can be leveraged by a player to circumvent the rules of play and/or the intended behaviors of game design; this requirement does not preclude reasonably identifiable “discovery features” offered by a game which are intentional from a design perspective, but which may be undocumented or unknown to the player.
- c) Except as provided for by the rules of the game, events of chance shall be independent and shall not correlate with any other events within the same game, or events within previous games.
- d) The final outcome of each game shall be displayed for a sufficient length of time that permits a player a reasonable opportunity to verify the outcome of the game. These requirements do not preclude an option for the player to bypass the outcome display.
 - i. The outcome of the game shall be clear and not open to misinterpretation by the player.
 - ii. All game symbols/objects shall be fully displayed (i.e., no symbols/objects may be partially displayed).
 - iii. Non-winning outcomes for which the player had no opportunity to receive through the player selection process shall not be displayed.
 - iv. For pre-determined games where the outcome and award are the same regardless of the player selections, the game shall not display other award values at the conclusion of the game.
- e) If the game is designed in such a way where fractional credits are awarded and then rounded either up or down, this rounding function shall be prominently disclosed to the player.
- f) The game shall not encourage players to chase their losses, reinvest their winnings, increase their wagers, or continue gameplay after the player has indicated that they want to stop.

6.7.2 Independence from Communications Channel

Events of chance shall be independent of communications channel characteristics, including but not limited to effective bandwidth, link utilization, and bit error rate, between the Gaming Platform and the Remote Player Device.

- a) Communications channel characteristics, or cryptographic hashes derived therefrom, may be utilized solely as a supplemental entropy source for an RNG (e.g., within a provably fair implementation), provided that:
 - i. Such characteristics shall not be the sole entropy source;
 - ii. Their use shall not compromise the integrity, fairness, or security of the game; and
 - iii. Their implementation shall not permit any post-selection alteration of game outcomes; and
 - iv. The player shall be informed of such use.
- b) The player shall be informed where these communications channel characteristics may have, or appear to have, any other effect on the game, such as in decision making where speed is a factor, the update of the jackpot displays, or disconnection from multi-player games.

6.7.3 Random Event Probability

For games that incorporate a random event or an element of chance that affects the gameplay or outcome, the mathematical probability of any chance event occurring for a paid game shall be constant, unless otherwise denoted by the game artwork.

6.7.4 Simulation of Physical Objects

Where a game incorporates a graphical representation or simulation of a physical object that is used to determine game outcome, the behaviors portrayed by the simulation shall be consistent with the real-world object, unless otherwise denoted by the game artwork. This requirement does not apply to graphical representations or simulations that are utilized for entertainment purposes only. The following shall apply to the simulation, unless otherwise disclosed to the player:

- a) The probability of any event occurring in the simulation that affects the outcome of the game shall be analogous to the properties of the physical object;
- b) Where the game simulates multiple physical objects that would normally be expected to be independent of one another based on the rules of the game, each simulation shall be independent of any other simulations; and
- c) Where the game simulates physical objects that have no memory of previous events, the behavior of the simulated objects shall be independent of their previous behavior, so as to be non-adaptive and non-predictable.

6.7.5 Physics Engine

Games may utilize a “physics engine” which is specialized software that approximates or simulates a physical environment, including behaviors such as motion, gravity, speed, acceleration, inertia, trajectory, etc. A physics engine shall be designed to maintain consistent play behaviors and gameplay environment unless an indication is provided to the player by the game artwork. A physics engine may utilize the random properties of an RNG to impact gameplay or outcome, in which case, the “Random Number Generator (RNG) Requirements” shall apply.

NOTE: Implementations of a physics engine in a game will be evaluated on a case-by-case basis by the independent test laboratory.

6.7.6 Live Game Correlation

Unless otherwise denoted in the game artwork, where the Gaming Platform offers a game that is recognizable as a simulation of a live game such as poker, blackjack, roulette, etc., the same probabilities associated with the live game shall be evident in the simulated game. For example, the odds of getting any particular number in roulette where there is a single zero (0) and a double zero (00) on the wheel, shall be 1 in 38; the odds of drawing a specific card or cards in poker shall be the same as in the live game.

6.7.7 Win Capping and Truncation

Unless prohibited by the regulatory body, a game may encounter a situation where winnings are capped or limited to a maximum total win value, regardless of the actual game outcome which would have resulted in a higher value of winnings. In such cases, the following applies:

- a) The maximum total win value shall be displayed in credits or the local currency selected for the game.

- b) The artwork shall clearly describe how win truncation or capping is applied, including whether eligible wins are reduced, limited, truncated, or otherwise adjusted to the maximum total win value.
- c) Where the win truncation or capping only occurs within an individual game state or sequence of game states (e.g., coinciding wins, wins accumulated within a bonus/feature state, etc.), this shall be clearly stated to the player.
- d) It shall be possible to win the disclosed maximum total win value in at least one of the configured denominations or wager categories for the game.
- e) Where the maximum total win value is won during gameplay:
 - i. It shall be explicitly indicated to the player on the game screen that the win truncation or capping has occurred; and
 - ii. If the player is in a double-up/gamble or bonus/feature state, that game state shall terminate.
- f) No single advertised award on the game can exceed the maximum total win value (e.g., a winning combination cannot be advertised to pay 20,000 credits if the maximum total win value is 10,000 credits).

6.7.8 Simultaneous Wins for Common Awards

Where multiple players are competing for a common award (e.g., fixed prize, progressive jackpot, incrementing bonus jackpot, etc.), the Gaming Platform shall have a means to accurately identify and record the order of wins when multiple players win the common award at nearly the same time, such that the full amount of the common award can be awarded to the winning player who triggered first. If this is not possible or if it's possible for multiple players to win the common award at the exact same time (e.g., in a multi-player game), the full amount of the common award shall be awarded to each winning player unless information on how the common award is distributed is disclosed to the player.

6.8 Game Payout Percentages, Odds, and Non-Cash Awards

6.8.1 Percentage Payout Requirements

Each house-banked game shall theoretically payout a minimum of seventy-five percent (75%) during the expected lifetime of the game unless otherwise specified by the regulatory body. Progressive jackpots, incrementing bonus jackpots, bonus/promotional credits and/or prizes, merchandise prizes, etc. shall not be included in the percentage payout if they are external to the game, unless required for operation.

- a) The minimum percentage requirement shall be met for all enabled wagering configurations.
 - i. If a game is continuously played at any single wager category, game configuration, etc. for the life of the game, the minimum percentage requirement shall be satisfied.
 - ii. Except as provided for by the rules of the game, a game shall not adapt its return to player (RTP) based on past payouts.
 - iii. Any implementation of win truncation or capping shall not reduce the RTP to a value below the minimum percentage requirement.

- b) Games that may be affected by player skill or strategy shall meet the minimum percentage requirement when using an optimal method of play that provides the greatest RTP over a period of continuous play.
- c) For progressive jackpots and incrementing bonus jackpots used in the RTP calculations for the game, the minimum percentage requirement shall be met using the lowest available parameters for the jackpot during the expected lifetime of the game.
- d) Where allowed by the regulatory body for games in which the above minimum percentage requirements are not met (e.g., electronic scratch ticket games or lottery drawing games), the minimum RTP of the game shall be displayed to the player and shall meet the “Return to Player (RTP) Display” requirements.

NOTE: The independent test laboratory will provide the minimum and maximum return percentage for the game within the evaluation or certification report, unless otherwise noted. Additional awards added to a game may require a re-evaluation of the return percentage, considering the value of the award and possibly other factors. The independent test laboratory will re-evaluate a game’s return percentage when requested. At the discretion of the regulatory body, the independent test laboratory may apply an alternative approach to return percentage calculations.

6.8.2 Return to Player (RTP) Display

At its discretion, a regulatory body may elect to require the artwork to contain the RTP for each house-banked game. If the RTP is displayed, the following requirements shall be met:

- a) The artwork shall fully explain how the displayed RTP was determined (i.e., minimum, maximum, average, etc.) and thus how the player may realize it (i.e., wager requirements). If no explanation is given then the displayed RTP shall be the same value at all wager categories (i.e., minimum = maximum = average).
- b) For games that may be affected by player skill or strategy, the displayed RTP shall be based on a method of play specifically advertised in the game rules (e.g., using a player advice feature) or an optimal method of play that is derivable from the game rules.
- c) For games that offer progressive jackpots or incrementing bonus jackpots:
 - i. The displayed RTP shall include the variable contribution of such jackpots in the game’s overall RTP calculation; or
 - ii. The variable contribution of such jackpots shall be calculated and displayed separately from the RTP of the rest of the game.
- d) For games that offer intermediate game states which require extra credits to be wagered, the displayed RTP shall consider that an additional wager was placed unless otherwise advertised.
- e) If the displayed RTP represents the actual RTP, the number of gameplays associated with that calculation shall be advertised along with the period with which the gameplays took place.

6.8.3 Advertised Top Award Odds

Each explicitly advertised top award shall be available to be won by a player. The odds of winning each explicitly advertised top award based solely or partially upon chance shall occur at least once in one hundred million (100,000,000) games, unless the game artwork prominently displays to the player the actual odds of winning that top award, or a message indicating that top award’s odds exceed this value (e.g., “Odds of triggering XXX exceeds 100 million to one”).

- a) The group of explicitly advertised top awards, each of which shall meet this odds requirement, consists of the following:
 - i. Highest explicitly advertised progressive jackpot or incrementing bonus jackpot;
 - ii. Highest explicitly advertised non-jackpot award, which may be a credit award or merchandise prize;
 - iii. Highest explicitly advertised single multiplier or similar; and
 - iv. Awards, including aggregate awards, explicitly advertised in any attract or enticement message built into the game artwork (e.g., “win up to XXX”).
- b) This odds requirement applies to any explicitly advertised award amount, for the specific outcome or mechanism by which it is achieved, and to all wager categories eligible to win that award.
- c) This odds requirement does not apply to:
 - i. Bonusing/promotional credits and/or prizes;
 - ii. Winning multiple combinations where no specific aggregate award amount is explicitly advertised for those combinations;
 - iii. Screenshots containing examples of awards in the artwork which are clearly indicated and presented as examples used to explain functionality; and
 - iv. Any “fine print” informational messages, which are usually displayed within other text in the artwork that explains the general game or rules in the “about” section at the end of the artwork.
- d) Where the aggregate award is not explicitly advertised, this odds requirement does not apply to:
 - i. The aggregate total of multiple explicitly advertised awards won together within the same game; and
 - ii. The aggregate total of multiple occurrences of the same explicitly advertised award within the same game, including through the use of a bonus/feature state.
- e) If the explicitly advertised top award can occur within a bonus/feature state, odds calculations shall include the odds of triggering the bonus/feature state including the odds to achieve the award.
- f) For odds calculations:
 - i. Odds shall be combined only where the same explicitly advertised top award is achieved through equivalent variations of the same mechanism (e.g., with and without substitute or wild symbols, or equivalent outcome permutations); and
 - ii. Awards that have the same value but are achieved through different mechanisms, game states, or distinct events (e.g., base game state vs. bonus/feature state) shall be treated as separate awards and evaluated independently.
- g) Where player choices influence the likelihood of winning an explicitly advertised top award, the odds calculations shall assume an optimal method of play that maximizes the expected frequency of occurrence of that award.

6.8.4 Limitations on Awards

Limitations on the award amounts in lieu of merchandise prizes, annuities, or payment plans shall be clearly explained to the player on the game theme that is offering such an award.

6.9 Bonus/Feature Requirements

6.9.1 General Bonus/Feature Requirements

It is not possible to define requirements for all conceivable types of bonus/feature states that may be developed over time. The following requirements apply to bonus/feature states that are commonly in use:

- a) The artwork shall clearly describe the rules of each bonus/feature state before gameplay and, where relevant to the current bonus/feature state, during gameplay. These rules include, but are not limited to:
 - i. All applicable wagers, player choices, special rules, and instructions;
 - ii. Possible awards, winning combinations or events, multiplier ranges, additional payouts, and modified payout conditions;
 - iii. Any special game symbols/objects, including scatters, substitutes, and wilds; and
 - iv. Where awards or additional payouts are multiplied or otherwise based on a wager amount, whether the calculation is based on each separate wager, the total amount wagered, or another defined basis.
- b) The game shall clearly define all trigger patterns and any other conditions required to trigger a bonus/feature state, and the behavior of the game when such triggers occur during an active bonus/feature state (e.g., retriggering, additional awards, or no further triggers).
- c) Unless otherwise disclosed to the player, the game shall not adjust the likelihood of triggering a bonus/feature state based on the history of awards obtained in previous games.
- d) If a bonus/feature state is not randomly triggered, the game shall display sufficient information to the player to indicate the current status towards triggering the bonus/feature state.
- e) The game shall make it clear to the player that they are in a bonus/feature state, the rules that apply to that game state, and any differences from the base game.
- f) The bonus/feature state shall not be presented in a manner that is misleading to the player.
- g) If a game offers a bonus/feature state which allows the player to hold one or more reels/cards/symbols for the purpose of a replay or draw, or where reels/cards/symbols are automatically held:
 - i. The held reels/cards/symbols shall be clearly indicated;
 - ii. The criteria for such holds shall be clearly stated; and
 - iii. The method for changing holds shall be clearly explained to the player.
- h) If a bonus/feature state consists of multiple plays or events (e.g., spins/hands/draws):
 - i. A counter shall be maintained and displayed to indicate the number of plays or events initially awarded and then the number of plays or events remaining, the number of plays or events that have been completed, or an equivalent representation of progress during the bonus/feature state; and
 - ii. The outcome of each play or event shall be displayed for a sufficient length of time that permits a player a reasonable opportunity to verify the outcome of the play or event.
- i) If awards won during a bonus/feature state are accumulated to a temporary “win” meter, rather than directly to the credit meter or player account balance:
 - i. The temporary “win” meter shall be displayed during the bonus/feature state; and
 - ii. The game shall transfer all funds on the temporary “win” meter to the player’s credit meter or player account balance upon completion of the game.

- j) If the game terminates a bonus/feature state prematurely the reason shall be explicitly indicated to the player on the game screen (e.g., a maximum total win value is reached).
- k) The game shall clearly describe any features or functions that allow the player to bypass normal gameplay or otherwise alter entry into a bonus/feature state. This includes options that permit direct access to a bonus/feature state or modify the likelihood of triggering a bonus/feature state through purchased entry or an increased wager. The rules shall explicitly disclose the mechanics, cost, and impact of these features (e.g., RTP, award values and probabilities, etc.).

NOTE: Please reference the “Additional Wagers During a Game” section of this chapter for specific and supplemental requirements for bonus/feature states that require extra funds to be wagered in order to participate.

6.9.2 Player Selection or Interaction in Bonus/Feature States

Bonus/feature states which require player selection or interaction are prohibited from automatically making selections or initiating gameplay, unless the game meets one of the requirements listed below and explains the means for automatic selection or initiation in the artwork:

- a) The player is presented with a choice and specifically acknowledges their intent to have the game auto-initiate the bonus/feature state by means of a button press or another player interaction;
- b) The bonus/feature state provides only one choice to the player (e.g., press button to spin wheel). In this case, the bonus/feature state may auto-initiate after a time out period of at least ten seconds or a period specified by the regulatory body; or
- c) The bonus/feature state is offered as part of a community bonus that involves two or more players and where the delay of an offered selection or game initiation will directly impact the ability for other players to continue their bonus/feature state. Prior to automatically making selections or initiating a community bonus the player shall be made aware of the time remaining in which they shall make their selection or initiate play.

6.9.3 Token/Symbol Accumulation Features

Where a game requires the accumulation of tokens/symbols to trigger a bonus/feature state or win an award, the following requirements apply:

- a) The artwork shall clearly indicate:
 - i. Each event or condition leading to the accumulation of tokens/symbols;
 - ii. The number of tokens/symbols accumulated with each occurrence of the event or condition;
 - iii. The number of tokens/symbols required to trigger the bonus/feature state or win the award;
 - iv. The number of tokens/symbols currently accumulated, or the number remaining to be collected;
 - v. Whether the accumulation is retained across multiple wagers, games, gaming sessions, or triggering events; and
 - vi. Any event or condition under which accumulated tokens/symbols are modified, forfeited, or otherwise not retained.
- b) The game shall clearly describe any event or condition under which tokens/symbols are not accumulated during a bonus/feature state or other game state which would normally qualify for token/symbol accumulation.

- c) Where token/symbol accumulation occurs over multiple games, or where the game uses cyclical, perceived, or presentational accumulation that is not saved or retained for future gameplay:
 - i. The probability of obtaining like tokens/symbols shall not deteriorate as gameplay progresses, unless otherwise disclosed to the player; and
 - ii. The game shall not imply that prior gameplay, continued gameplay, wager amount, or player strategy improves the probability of triggering the bonus/feature state or winning the award, unless such effect is supported by the rules of the game and clearly disclosed to the player.
- d) If the game requires the collection of sub-tokens/sub-symbols to obtain a token/symbol, the requirements of this section shall apply to the sub-token/sub-symbol accumulation process, as applicable, with references to triggering a bonus/feature state or winning an award interpreted as obtaining a token/symbol.

6.9.4 Community Bonuses

Community bonuses, where players collaborate and/or compete for a shared award, shall:

- a) Contain an appropriate description of the rules governing each community bonus, each payout, and any conditions regarding player eligibility for each community bonus award;
- b) Continuously and conspicuously display the player's eligibility for a community bonus, regardless of the number of credits on the game. For example, if the player has thirty seconds of eligibility time remaining but has run out of credits, the game will continue to display a countdown timer and count down the seconds remaining; and
- c) For community bonuses not dependent on the number of credits available, alert the player of their continued eligibility regardless of whether the player has credits remaining on the game.

6.9.5 Persistence Features

A persistence feature is associated with a unique attribute (e.g., player account ID, game theme ID, payable ID, etc.) and incorporates persistent states, metamorphic behaviors, features that are not independent of prior gameplay, or features that enable progress towards the award of gameplay enhancements and/or bonuses through the achievement of some designated game outcome. These additional offerings become available when the player has achieved specific thresholds or game states defined for gameplay. Each designated outcome advances the state of the persistence feature.

- a) The persistence feature shall recognize a particular attribute for the purpose of restoring previously achieved persistence thresholds or game states during each subsequent visit to a game;
- b) The persistence feature shall contain in its help screens a clear description of each persistence-related feature and/or function, and the applicable rules, including how persistence thresholds or game states are maintained, any conditions under which progress may be reset or expire, how the player restores previously achieved persistence thresholds or game states;
- c) The player shall be notified each time a persistence threshold or game state has been achieved;
- d) The persistence feature shall not be designed in such a manner as to be misleading to the player with respect to progression, reset conditions, or likelihood of achieving persistence thresholds or game states; and

- e) Where applicable, the game rules shall state any restrictions specific to the persistence feature, including any limitations tied to the triggering conditions under which the persistence thresholds or game states may be altered or forfeited; and
- f) Where a persistence feature may be retained permanently or indefinitely, the game shall meet the applicable theoretical payout percentage, odds, and award probability requirements for each player-accessible persistence threshold, level, or game state, unless otherwise approved by the regulatory body and clearly disclosed to the player.

6.9.6 Play from Save Features

Play from save is a feature utilized in some game designs where complexity increases, or additional elements are added to the game, as play continues. Additionally, play from save allows the player to save a game at critical points (i.e., save points), typically after some accomplishment or goal has been achieved. The player can resume gameplay from that point at a later date and continue on to the next goal. The following requirements apply to play from save:

- a) Awards issued or made available for reaching a save point shall be clearly defined and displayed to the player prior to placing any wager. If a random type award may be won, the details and all possible payouts shall be displayed to the player before the start of the game;
- b) The game shall provide a suitable notification to the player whenever a designated save point is reached during play;
- c) If game rules or awards change as different levels are reached during play from save activity, these changes shall be clearly displayed to the player before the start of the game; and
- d) If the play from save state is not indefinitely maintained, then the game shall provide an indication to the player of any limitation and/or expiration of saved data that is stored for use in supporting gameplay at a later period in time.

6.9.7 Pre-Game Features

Where a player is offered a pre-game feature that may affect the awards available, the probability of achieving those awards, or another game condition during the rest of the game, the following requirements apply:

- a) The player shall be given the option, before the game begins, whether to participate in the pre-game feature;
- b) The rules, applicable awards, award probabilities, or game conditions, and effect of each pre-game feature option shall be clearly disclosed to the player before the option is selected;
- c) The award, award probabilities, or game condition displayed or otherwise indicated by the pre-game feature shall be applied in accordance with the information disclosed to the player; and
- d) Unless otherwise disclosed to the player, the pre-game feature shall not adjust, compensate, withhold, or retain awards, award probabilities or other game conditions based on prior results.

6.9.8 Double-Up/Gamble Features

The following requirements apply to games which offer some form of a double-up/gamble feature after completion of a winning primary game, where the player may risk all or part of the amount won

on the primary game for the opportunity to increase that amount. Such games may use alternative terminology such as “Triple-Up” or “Take-or-Risk” to describe a double-up/gamble feature:

- a) All double-up/gamble feature instructions shall be fully disclosed in the game's artwork and shall be accessible without committing to the feature, including:
 - i. The maximum number of double-ups/gambles available or award limit which shall be possible for the player to win; and
 - ii. Any game conditions in which the double-up/gamble feature is unavailable or is terminated.
- b) All references to the double-up/gamble feature in the game shall use terminology which cannot be misinterpreted to indicate another feature or game state.
- c) The double-up/gamble feature shall have a theoretical RTP that is:
 - i. One hundred percent (100%), unless otherwise clearly advertised to the player; and
 - ii. Independent from, and does not impact, the theoretical RTP of the primary game.
- d) Entry to a double-up/gamble feature shall only occur upon completion of a winning primary game.
 - i. The player shall have a choice as to whether or not they want to participate in the double-up/gamble feature.
 - ii. Only amounts won on the primary game shall be available for wagering on a double-up/gamble feature (i.e., it is not possible to wager any funds from the player's credit meter or player account balance on a double-up/gamble feature).
- e) If a double-up/gamble feature offers a choice of multipliers for player selection, it shall be clear to the player on the screen:
 - i. What the range of choices and payouts are; and
 - ii. Which multiplier has been selected.
- f) When the double-up/gamble feature is terminated before reaching the maximum number of double-ups/gambles available or award limit, the reason shall be explicitly indicated to the player on the game screen.

6.9.9 Mystery Award Features

If the game offers a “mystery award” or random award value, where the actual award amount is not displayed to the player, the following information shall be displayed for each mystery award or random award value:

- a) The minimum award amount, unless the minimum amount that could potentially be awarded is zero;
- b) The maximum award amount that could potentially be awarded; and
- c) If the value of the award depends on amounts wagered, or any other factors, the conditions in relation to this value.

6.9.10 Pre-Reveal Features

Where a game offers a feature that displays, discloses, previews, or otherwise makes available to the player the outcome, award, or losing result of a game or game state before the player commits a wager or other required consideration, the following requirements apply:

- a) The artwork shall clearly describe the pre-reveal feature prior to its use, including:
 - i. The pre-revealed result and any associated award;
 - ii. Whether the pre-revealed result applies to the current or future games or game states;
 - iii. Whether, after the reveal, the player may decline, cancel, modify selections, or terminate the gaming session; and
 - iv. The effect of ending the gaming session or changing the wager amount, wager options, or other player selections after the reveal, including whether such actions may alter the pre-revealed result.
- b) The pre-revealed result shall not be altered, replaced, re-randomized, re-sequenced, skipped, discarded, or consumed after being revealed, except where such behavior is explicitly disclosed to the player, permitted by the game rules, and recorded in game history.

6.10 Progressive Jackpots and Incrementing Bonus Jackpots

6.10.1 General Statement

This section applies to monetary awards or “jackpot payoffs” which increase based on gameplay as follows:

- a) Progressive jackpots increase according to the amounts wagered in the game.
- b) Incrementing bonus jackpots behave identically as progressive jackpots, except they increase based on the occurrence of one or more specific conditions established by the rules of the game instead of, or in addition to, increases based on amounts wagered.

NOTE: This section does not apply to awards of restrictive bonusing/promotional credits, bonus/feature states which offer awards which may increase over a single game cycle or, static awards whose odds of winning change as the game is played, persistence features which increase as the game is played (e.g., number of bonus/feature states, multipliers, several achievements, tokens, symbols, or other accumulated events towards the triggering of a bonus/feature state, etc.) or “levels” of static awards available to be won based on player experience and/or achievements.

6.10.2 Jackpot Display

The jackpot display shall be visible to all eligible players and be used to indicate the current jackpot award amount or “payoff” for each jackpot in credits or the local currency format to all players who are playing a game which may potentially trigger the jackpot. If the jackpot offers a “mystery jackpot payoff” where the actual payoff amount is not displayed to the player, the “Mystery Award Features” shall apply.

- a) As games are played, the current jackpot payoff for each jackpot shall be updated on the jackpot display at least every thirty seconds from the incrementing game event to reasonably reflect the actual size of the jackpot payoff. The use of odometer and other “paced” updating displays are allowed.
- b) Where the jackpot display has a maximum display limitation (i.e., it could only display a certain number of digits):
 - i. A maximum jackpot payoff limit or “ceiling” shall be required unless the maximum display amount acts as such; and

- ii. The requirements for “Maximum Jackpot Payoff Limits” shall be met.

NOTE: Each jackpot payoff shall be displayed as accurately as possible within the constraints of communication delays and latencies.

6.10.3 Maximum Jackpot Payoff Information

If a maximum jackpot payoff limit or “ceiling” is supported by the jackpot, once the jackpot payoff reaches its ceiling, it shall remain at that value until awarded to a player.

- a) All additional contributions after reaching the ceiling amount shall be credited to an overflow or diversion pool, unless otherwise specified by the regulatory body.
- b) The ceiling amount, if disclosed to the player, shall be accurate.
- c) Where win truncation or capping is implemented by the game, the ceiling amount shall be less than or equal to the maximum total win value.

6.10.4 Descriptions of Jackpots

Descriptions of jackpots, including any written, graphical, and auditory information, shall be accessible by a player without the need for funds deposited or commitment of a wager, including all qualifying wagers, possible winning outcomes, and combinations, as applicable. In addition, the following information shall be available to the player for each jackpot in the artwork of the game or within the gaming rules:

- a) The imperfections of the communications medium for the game, and how it may affect players in relation to the jackpot;
- b) Any maximum jackpot payoff limit or “ceiling” and/or time limit which is supported by the jackpot;
- c) How the jackpot is funded and determined; and
- d) Any planned or unplanned retiring of the jackpot, including how any outstanding contribution amounts are dealt with in order to ensure player fairness.

6.10.5 Jackpot Odds

The odds of winning the highest explicitly advertised jackpot based solely or partially upon chance shall meet the “Odds” requirement specified earlier in this chapter. For shared jackpots, unless otherwise clearly disclosed to the player, each game shall have equivalent odds of winning each explicitly advertised jackpot, adjusted for the denomination played. For instance, the odds shall remain equivalent for multi-denomination games based on the total value of the player’s monetary wager. A tolerance of one percent (1%) is acceptable for determining equivalent odds.

NOTE: The tolerance is calculated by obtaining all associated expected values for each level for each total monetary wager, determining the median expected value, identifying the maximum difference between any expected value and the median expected value, and dividing the maximum difference by the median expected value.

6.10.6 Jackpot Diversion

A Jackpot Diversion Scheme may be used, where a portion of the jackpot contributions are diverted to another pool or “diversion pool” to be used as needed by the design of the jackpot (e.g., the diversion pool may be added to the reset value of the next jackpot or be used to pay simultaneous wins of a jackpot).

- a) A Jackpot Diversion Scheme shall be able to be implemented such that it does not have a mathematical expectation of infinity.
- b) Diversion pools shall not be truncated. Diverted contributions once that diversion pool has reached its upper limit shall be accounted for.
- c) Where a diversion pool is used to fund the reset value of a jackpot, the reset value shall assume an empty diversion pool for the purposes of RTP calculations.

6.10.7 Mystery-Triggered Jackpots

Mystery-triggered jackpots shall be awarded based on a random event (e.g., triggering randomly upon each play, triggering once the jackpot payoff reaches a randomly selected hidden trigger threshold, etc.). For mystery-triggered jackpots which use a hidden trigger threshold to determine when the jackpot is awarded, the hidden trigger threshold shall:

- a) Be selected randomly upon initial startup and each jackpot reset. The selected hidden trigger threshold shall be the range of the startup value or reset value to the ceiling amount; and
- b) Remain unknown at all times. It shall not be possible to gain access to or knowledge of the hidden trigger threshold at any time while the jackpot is active.

6.10.8 Jackpot Wins

Jackpots may be awarded based on obtaining winning symbols, or by other criteria, such as mystery-triggered jackpots, bad-beat jackpots, etc. When a jackpot is triggered:

- a) A winning player shall be notified of a jackpot win and its jackpot payoff:
 - i. By the end of the game in play; or
 - ii. If awarded by an External Jackpot Controller, within thirty seconds of the jackpot trigger being recognized.
- b) Contributions toward the jackpot shall not be lost. Jackpot payoffs when awarded shall not be rounded down or truncated unless the rounded down or truncated amount is carried over to the reset amount.
- c) When in use, the jackpot payoff may be added to the player’s credit meter if either:
 - i. The credit meter is maintained in the local currency amount format;
 - ii. The jackpot payoff is incremented in whole credit amounts; or
 - iii. The jackpot payoff in local currency amount format is converted properly to credits upon transfer to the credit meter in a manner that does not mislead the player.
- d) The jackpot payoff shall update to the reset value and continue normal operations.

NOTE: A jackpot may be disabled or retired concurrent with the winning of the jackpot if the game was configured to automatically disable or establish in its place an award which does not increment.

6.10.9 Swapping Jackpot Levels

For games offering multiple jackpot levels, when a single winning combination may be evaluated as more than one of the available payable combinations, unless otherwise explicitly defined in the game rules, the player shall always be paid the highest possible value based on all combinations to which the outcome may correlate (e.g., if “Jackpot A” is awarded for five aces on a payline and “Jackpot B” is awarded for four aces on a payline, and “Jackpot B” has a larger award than “Jackpot A”, the player shall be awarded the jackpot payoff for “Jackpot B” if the player obtains an outcome of five aces on a payline).

6.10.10 Changes to Jackpot Parameters

The following requirements apply to modifying jackpot parameter values once the current jackpot payoff has already had player contributions to it and without requiring it to be disabled or retired:

- a) For jackpots with a configurable increment rate which affects the RTP of the games, changes to the increment rate may not take effect until the current jackpot is won, unless a reliable method exists to reconcile these changes;
- b) For jackpots with a configurable ceiling which does not affect the RTP of the games, changes to the ceiling may only be greater than the current jackpot payoff. Alternatively, changes to the ceiling may not take effect until the current jackpot is won;
- c) Changes to the parameters shall not decrease the odds of winning the current jackpot;
- d) For mystery-triggered jackpots which use a hidden trigger threshold to determine when the jackpot is awarded:
 - i. The hidden trigger threshold shall be reselected when modifying any parameters that could result in an immediate trigger due to the modification; and
 - ii. The reselected hidden trigger threshold shall be in the range of the current jackpot payoff to the ceiling and shall not result in a trigger without any contribution after the modification.

6.10.11 Jackpot Transfers and Modifications

There shall be a secure means for transferring or combining contributions from a disabled or retired jackpot (and any overflow or diversion pools specific to that jackpot), correcting errors with a jackpot, or any other reasons required by the regulatory body.

6.10.12 Jackpot Disable

For cases where a jackpot is disabled (e.g., operator intervention, error condition, time limit has expired, etc.), the following requirements shall apply:

- a) An appropriate message shall be displayed to the affected players indicating that the jackpot is not available;
- b) For house-banked games, if the minimum percentage requirement, as specified within the “Percentage Payout Requirements” section is no longer met when the jackpot is not available, the affected games shall be disabled.

- c) It shall not be possible for the jackpot payoff to be incremented or won while in this state; and
- d) Upon resumption of the jackpot from the disabled state, it shall be possible to return the jackpot with the identical parameters as before the disable, including the jackpot payoff. The hidden trigger threshold, if used to determine jackpot win for a mystery-triggered jackpot, may only be reselected if the reselected threshold is in the range of the current jackpot payoff to the ceiling.

6.11 Alternative Game Modes

6.11.1 Free Play/Demo Mode

Free play/demo mode allows a player to simulate gameplay without paying, principally for the purpose of learning or understanding gameplay mechanics. If the Gaming Platform or game supports a free play/demo mode, the following requirements apply:

- a) Free play/demo mode shall accurately represent the normal operation of a paid game. Games played in free play/demo mode shall not mislead the player about the likelihood of winning any awards available in the paid version of the game;
- b) Free play/demo mode shall be prominently displayed so a player knows at all times if/when this mode is active;
- c) Free play/demo mode shall not update the player's funds available for wagering. Specific accounting is permissible for this mode provided the meters clearly indicate as such;
- d) Free play/demo mode shall be terminated whenever the player opts to exit this mode, or when the free play/demo mode games are concluded; and
- e) When free play/demo mode is exited, the player shall be returned to an appropriate prior state.

NOTE: Paid games using credits received from a bonusing/promotional offer are not considered a part of free play/demo mode.

6.11.2 Autoplay Mode

Autoplay mode allows a game to place wagers automatically without player interaction, once a denomination, wager, and other play attributes have been selected by the player. If the game supports an autoplay mode, the following requirements apply:

- a) Autoplay mode shall be securely configured at the Gaming Platform level or at the game level using a function that, reflective of jurisdictional preference:
 - i. Allows or disallows the availability of autoplay mode; and
 - ii. Where supported, controls the maximum number of autoplays, the maximum wager per game, the maximum total wagered, the maximum total lost, and/or other game options;
- b) The player shall manually opt in to activate autoplay mode (i.e., it shall not be activated by default);
- c) Any player options supported by the game shall have the same default selections for games played in autoplay mode that they would for manual gameplay.
- d) Autoplay mode may allow the player to choose the number of autoplays, the individual game wager, the total amount to be wagered, the total amount to be lost, and/or other game options based on the design of the game. When this is supported:

- i. Player-defined thresholds shall remain in effect for the duration of autoplay mode;
 - ii. The game shall display the progression of the autoplay mode (e.g., number of autoplays remaining, the number of autoplays used, wager amounts remaining, amounts wagered thus far, etc.), reflecting player-defined thresholds;
- e) Autoplay mode shall end automatically and return to manual gameplay when sufficient funds are unavailable to continue, or a player-defined thresholds has been reached;
- f) Autoplay mode shall offer the player an option to terminate autoplay mode at the completion of a current game, regardless of how many autoplays they initially chose or how many remain; and
- g) Where a game interruption occurs during autoplay mode, the player shall be required to re-activate autoplay mode upon returning to the game.

6.11.3 Tournament Mode

Tournament mode allows a player to engage in competitive play against other players in an organized, measured event. Play during tournament mode may be in-revenue or out-of-revenue. If the game supports a tournament mode, the following requirements apply:

- a) The tournament rules and specific information for each tournament shall be available to the player before entry or registration and shall include:
 - i. The required qualifications to enter into and advance through the tournament;
 - ii. The available awards, and for tournaments with multiple awards, the distribution of funds based on specific outcomes;
- b) For out-of-revenue tournaments, the game shall not accept real money from any source, nor pay out real money in any way. The tournament mode shall utilize tournament-specific credits, points, or chips which shall have no cash value. Additionally, the “Game Payout Percentages, Odds, and Non-Cash Awards” requirements are waived for out-of-revenue tournaments;
- c) For time-based tournaments, a timer shall be displayed to players to indicate the remaining period of play. If a tournament is based on some extended duration of play or is initiated or concluded based upon the occurrence of a specific event, then this information shall be disclosed to the players;
- d) If the game contains both tournament and non-tournament modes of play, the following additional requirements apply:
 - i. The player shall be provided with an option on whether or not to participate.
 - ii. If/when opting in, the player shall be able to complete their non-tournament game prior to entering the tournament mode of play, unless the Gaming Platform supports simultaneous tournament and non-tournament modes of play;
 - iii. The player shall have the same access to game information and rules of play in tournament mode as they would outside of tournament mode;
 - iv. A message shall be prominently displayed on the game informing the player that it is operating in a tournament mode;
 - v. When exiting tournament mode, the game shall return to the original state it was in prior to entering the tournament mode;
 - vi. Any tournament-specific game meters displayed to the player on the game shall be automatically cleared when the tournament mode is exited; and
- e) At the conclusion of the tournament, the player rankings shall be displayed, and the winners notified.

NOTE: Tournaments which employ one or more virtual opponents to compete against a player shall meet the requirements specified for “Virtual Opponents”.

6.12 Games with Skill

6.12.1 General Statement

A game with skill contains one or more elements in its design which can be leveraged by a player, including through gameplay or wagering strategy, to impact the return percentage. The applicable requirements defined within this section shall apply to games with skill to ensure player fairness and clarity with respect to player notification.

NOTE: This technical standard is not intended to classify a game as a “skill game” or to serve as a legal basis for game classification within the context of skill. Such classifications will be subject to interpretation by the regulatory body.

6.12.2 Display for Games with Skill

A game with skill shall conform to the applicable display requirements found in related sections of this standard for “Game Information and Rules of Play”, “Information to be Displayed”, and “Game Fairness”. In addition, any game with skill other than traditional casino games (e.g., poker, blackjack, etc.) shall prominently disclose to the player, prior to committing a wager:

- a) That the outcome is affected by player skill;
- b) The nature of the player skill required; and
- c) Whether player skill, rather than an element of chance, is the predominant factor in determining the outcome.

6.12.3 Outcome Integrity for Games with Skill

Except as otherwise disclosed to the player, once a game with skill is initiated, no function of the game related to game outcome shall be altered during play. Additionally:

- a) A game with skill shall not incorporate reflexive, adaptive, or compensating behavior that makes the game more difficult when it detects a highly skilled player or when the game’s RTP exceeds a certain threshold, unless such behavior is clearly disclosed to the player.
- b) In the event that available paytables or rules of play change between games, notice of the change shall be prominently displayed to the player and shall provide adequate information so a player can make an informed decision.

6.12.4 Odds for Skill-Based Awards

Each explicitly advertised skill-based award shall be available to be achieved by a player. If a skill-based award is an explicitly advertised top award as defined in the “Odds” requirements of this

chapter, and if this skill-based award incorporates an element of chance, the opportunity to achieve the award shall meet the requirements of that section.

6.12.5 Player Advice Features

Unless prohibited by the regulatory body, a player advice feature may be offered that provides advice, hints, or suggestions to a player. An illustrative example might be a trivia game that provides hints, clues, or other player assistance in making a player choice. Another example might be a poker game with an auto-hold feature that assists a player in their decision as to which of the cards to hold and discard.

- a) The player advice feature shall clearly describe to the player that it is available and any advantage it offers;
- b) The method for obtaining the player advice feature and what options exist for selection shall be disclosed to the player;
- c) Any player advice feature that is offered to the player for purchase shall clearly disclose the cost and benefit;
- d) The player advice feature shall not be misleading or inaccurate, and shall reflect the rules in relation to this feature, while noting that the rules may change as a function of the advice offered, providing that any such changes are disclosed to the player prior to acceptance of the advice;
- e) The player advice feature shall allow the player the option of accepting any assistance, and shall not force the player to accept the assistance unless it reflects the only possible option for the player to pursue at the time;
- f) The availability and content of the player advice feature shall remain consistent unless otherwise disclosed and shall not adapt in a way that disadvantages the player based upon prior gameplay, game states, player skill level, or player attributes.
- g) The player advice feature and game design shall prevent access to any “information store” such that data related to the skill element is not readily available through software tampering (e.g., a trivia game shall prevent access to an answers database); and
- h) When consistently followed, the player advice feature shall not reduce the player’s expected return below the minimum percentage requirement specified within the “Percentage Payout Requirements” section, where applicable.

6.12.6 Player Interaction Devices Used with Games With Skill

If unique player interaction devices (e.g., joysticks, game controllers, camera systems, sound systems, motion sensors, image sensors, accelerometers, etc.) are employed by the game to support skill, then the game with skill shall provide adequate and clear instruction on their purpose, usage, and effect.

6.12.7 Safeguards Against Tampering

A game with skill shall not contain vulnerabilities that allow hacking or tampering with client-side operations, whether to replace or assist in the skill-based task or to provide any other unfair advantage to the player.

6.12.8 Virtual Opponents

A game with skill may employ one or more virtual opponents to compete against a player, provided the following requirements are met:

- a) The rules shall clearly disclose to the player, before the player commits a wager, how the virtual opponents may be used.
- b) The use of virtual opponents shall not mislead the player regarding the nature of the game.
- c) The game screen shall explicitly indicate to the player when the player is competing against one or more virtual opponents.
- d) Unless otherwise disclosed to the player, virtual opponents shall not:
 - i. Use player behavior, non-public information, privileged information, or other player-specific information to make decisions, unless such use is disclosed to the player; and
 - ii. Adapt to a specific player in a manner that disadvantages the player unless such adaptive behavior is approved by the regulatory body
- e) The use of virtual opponents shall not provide any unfair advantage to any player, including through cheats, exploits, unauthorized capabilities, or other undisclosed or unauthorized functionality.

6.13 Peer-to-Peer (P2P) Gaming

6.13.1 P2P Gaming

Peer-to-Peer (P2P) gaming involves environments which offer players the opportunity to wager with and against each other. In these environments, the operator usually does not engage in the gaming as a party but usually provides the environment for use by its players, and may take a rake, commission, or fee for the service. In addition to the requirements for “Multi-Player Games”, the following requirements apply:

- a) Players shall be prevented from competing against themselves unless authorized by the applicable gaming rules;
- b) If player advice features are offered which may provide a player with an advantage over other players, players shall be provided with sufficient information to make an informed decision, prior to participation, as to whether to compete against players who may possess such features;
- c) Players shall be provided with appropriate warnings where the use of bots, scripts, or other unauthorized software can affect gameplay so that they can make an informed decision whether to participate; and
- d) It shall be explicitly indicated to the player on the game screen while sponsored players are competing against them.

6.13.2 Pot/Pool Display

Where players are competing for a specific pot or pool, the pot or pool amount for which they are competing shall be clearly displayed to each player and shall be updated each time a wager is placed or whenever the pot or pool amount otherwise changes in accordance with the applicable gaming rules.

6.13.3 Reporting Suspicious Players

Players shall be provided with a mechanism to report suspected cheating, collusion, or usage of bots, scripts, or other similar software by others to create an unfair advantage.

6.13.4 P2P Gaming Sessions

Where multiple P2P gaming sessions are available for player selection or assignment:

- a) Players shall have the option to join a random P2P gaming session or a P2P gaming session where all players have been selected at random;
- b) A mechanism shall be in place to keep track of each player's choice of P2P gaming session, as well as instances where players repeatedly enter and exit P2P gaming sessions without wagering until they arrive at their preferred P2P gaming session; and
- c) If some features or awards are available only for certain P2P gaming sessions, this shall be made clear to the players.

6.13.5 P2P Skill Levels

Where the Gaming Platform classifies players by skill levels, the following requirements shall apply:

- a) The classification criteria for each skill level, including beginner and expert, shall be clearly and conspicuously displayed to the player.
- b) If the P2P gaming session identifies player's skill levels, such identification shall be accurate.
- c) Where the Gaming Platform offers P2P gaming sessions restricted to certain skill levels:
 - i. The skill levels allowed shall be disclosed to the player; and
 - ii. Only players within those specified skill levels may join the P2P gaming session.

6.13.6 "Away from Play" Status

The Gaming Platform shall support an "Away from Play" status which can be triggered either by player request or upon a period of inactivity, which shall be disclosed to the player and be less than or equal to the inactivity timeout period specified under the "Access Inactivity" section of this document. This status shall be fully described in the help screens or applicable gaming rules.

- a) The player shall be informed when the "Away from Play" status is triggered.
- b) The "Away from Play" status shall disallow all play and cause the player's turn to be automatically skipped during any round of play which takes place while this status is active.
- c) If the "Away from Play" status is triggered during the middle of a game, that game shall be treated as an interrupted game and meet the requirements under the section entitled "Completion of Interrupted Games".
- d) If a player performs any game sensitive action while in an "Away from Play" status (i.e., selecting an amount to wager, etc.), the status shall be removed, and the player will be enrolled into the next game. Non-game sensitive actions, such as accessing the help menu do not require this status to be removed.

- e) If a player has been in “Away from Play” status for more than a period of time disclosed to the player, the player shall be automatically removed from the P2P gaming session they are currently enrolled in.

6.14 Game Recall

6.14.1 Player Facing Recall

A ‘game recall’ facility shall be provided to the player, either as a re-enactment or by description. The ‘game recall’ facility shall clearly indicate that it is a replay of the previous game.

6.14.2 Last Play Information Required

Game recall shall consist of graphical, textual, or video content, or some combination of these options, or other means (e.g., “flight recorder”), so long as the full and accurate reconstruction of game outcome and/or player actions is possible. It is allowable to display values in currency in place of credits. Game recall shall display the following information as applicable:

- a) The name of the game theme and game type (e.g., reel, blackjack, poker, table, etc.);
- b) The date and time the game was played;
- c) The denomination played for the game, if a multi-denomination game type;
- d) The display associated with the final outcome of the game, either graphically or via a clear text description;
- e) The funds available for wagering at the start of play and/or at the end of play;
- f) Total amount wagered;
- g) Total amount won, including any progressive jackpots and/or incrementing bonus jackpots won;
- h) Any non-wager purchase that occurred between the start of play and the end of play;
- i) Total bonusing/promotional amounts wagered/won;
- j) Total amount voided or cancelled;
- k) Rake, commission, or fees collected;
- l) The results of any player choices involved in the game outcome;
- m) The results of any intermediate game states, such as double-up/gamble or bonus/feature states;
- n) If a progressive jackpot and/or incrementing bonus jackpot was won, an indication that the jackpot was awarded; and
- o) For games with skill, any player advice offered to the player that is necessary to understand the game history or outcome.

NOTE: Games with a variable number of intermediate game states per game may satisfy this requirement by providing the capability to display the last fifty intermediate game states in addition to each base game state.

6.14.3 Bonus/Feature Recall

Game recall shall reflect at least the last fifty events (e.g., spins/hands/plays) of completed bonus/feature states. If a bonus/feature state consists of ‘x number of events,’ each with separate outcomes, each of the ‘x events,’ up to fifty, shall be displayed with its corresponding outcome,

regardless of whether the result was a win or loss. The recall shall also reflect position dependent events if the outcome results in an award.

6.15 Disable Requirements

6.15.1 Game Disable

When a game or gaming activity is disabled by the Gaming Platform while a game is in progress:

- a) Each player playing that game shall be, where possible:
 - i. Advised to complete the game; and
 - ii. Permitted to conclude their current game in play (i.e., bonus rounds, double-up/gamble and other game features related to the wager shall be fully concluded right away or the next time that game becomes available to the player).
- b) Once the game has fully concluded it shall no longer be accessible to a player.

6.16 Interrupted Games

6.16.1 Interrupted Games

A game is considered interrupted when the game outcome remains unresolved or the outcome cannot be properly conveyed to the player. Interrupted games may result from the following occurring during gameplay:

- a) Loss of communications between the Gaming Platform and the Remote Player Device;
- b) A Gaming Platform restart;
- c) A Remote Player Device restart or malfunction;
- d) Abnormal termination of the Player Application; or
- e) A game-disable command by the Gaming Platform.

6.16.2 Wagers in Interrupted Games

Wagers associated with an interrupted game that can be continued shall remain pending and any associated funds shall be held by the Gaming Platform until the game is completed.

- a) Player accounts shall display or otherwise make available any wagered amounts, pending winnings, or other funds held in connection with interrupted games.
- b) Where an interrupted game cannot be continued, the Gaming Platform shall resolve the game in accordance with the rules of the game. At a minimum, the Gaming Platform shall either pay the player any determinable winnings earned prior to the interruption or return the funds held for the interrupted game, whichever provides the better outcome for the player.

6.16.3 Completion of Interrupted Games

The Gaming Platform shall provide the means for a player to complete an interrupted game. An interrupted game shall be resolved before a player is permitted to participate in another instance of

the same game.

- a) Where no player input is required to complete the game, it is acceptable for the game to return to a game completion state, provided the game history and the player's credit meter or player account balance reflects a completed game.
- b) For single-player games, where player input is required to complete the game, the game shall return the player to the game state immediately prior to the interruption and allow the player to complete the game, unless any superseding game rules and/or terms and conditions for game recovery are disclosed to the player.
- c) For multi-player games, where player input is required to complete the game and the player cannot complete an action required of them to allow a game to continue within the allotted time:
 - i. The Gaming Platform shall complete the game on behalf of the player in accordance with the game rules and/or terms and conditions disclosed to the player;
 - ii. The game history and the player's credit meter or player account balance shall be updated accordingly;
 - iii. The outcome of the game shall be available to the player and shall indicate which decisions, if any, were made by the Gaming Platform on behalf of the player; and
 - iv. The Gaming Platform shall be designed such that one player not completing an action in the required time shall not impact any other players in the same gaming session with regards to completing the game and being credited for wins or debited for losses.

6.17 Virtual Event Wagering

6.17.1 General Statement

Virtual event wagering allows for the placement of wagers on computer-generated simulations of, or previously recorded, wagering events in which virtual participants compete with one another as allowed by the regulatory body.

- a) Gaming Platforms which support virtual event wagering shall meet the applicable requirements defined within this section along with the requirements specified for "Virtual Event Wagering" within the *GLI-33 Standards for Event Wagering Systems*.
- b) Any RNGs utilized to impact the virtual wagering event's outcome, contributing event elements, or sequence of event elements shall comply with applicable requirements as found within the "Random Number Generator (RNG) Requirements" chapter and "Game Outcome Using a Random Number Generator" section of this document.

NOTE: Implementations of virtual event wagering which do not rely on the use of an RNG will be evaluated on a case-by-case basis by the independent test laboratory.

6.18 Live Game Requirements

6.18.1 General Statement

Where authorized by a regulatory body, the following requirements apply where wagers are placed through a Gaming Platform on live games conducted by a gaming attendant (e.g., dealer, croupier,

etc.) and/or other live gaming equipment (e.g., automated roulette wheel, ball blower, gaming device, etc.) in a live gaming studio. This includes, but is not limited to live drawings, live card games, live table games, live keno games, live bingo games, live gameshow games, and live play of gaming devices or other games as allowed by the regulatory body.

- a) The entire process is viewed by all players through real-time remote audio and video feed using streaming, narrowcast, broadcast or other technology and a graphical interface.
- b) The Gaming Platform receives instructions from each player through the player interface or another communication channel to facilitate player decisions where required.
- c) In addition to the requirements contained within this section, the operator or third-party live game service provider maintaining these components, services and/or applications shall meet the operational procedures and controls indicated in the *GLI Live Gaming Studio Guide (GLI-LGS)*.

NOTE: Where authorized by a regulatory body, an operator or live game service provider may utilize a surrogate to place wagers on behalf of a player instead of directly through a system. Such implementations, when used in conjunction with a Gaming Platform, will be reviewed on a case-by-case basis.

6.18.2 Live Game Information

A live game shall conform to the applicable display requirements found in related sections of this standard for “Game Information and Rules of Play”, “Information to be Displayed”, and “Game Fairness”. In addition, the following display requirements apply:

- a) The Gaming Platform shall provide information to the player which:
 - i. Describes procedures in place to deal with live game interruptions caused by the discontinuity of data flow, video and voice from the network server during a game (e.g., internet connection outage, simulcast control server malfunction, etc.);
 - ii. Indicates the possibility of human error by the gaming attendant and system error by the specialized device and how errors are resolved; and
 - iii. Identifies any correlation between the player’s wager and selections through the Gaming Platform and what will be displayed in the video feed, such as physical player chips/tokens and their values.
- b) The Gaming Platform may not provide any real-time information for the current live game being played that can be used to aid in:
 - i. Projecting or predicting the outcome of a game;
 - ii. For card games, tracking the cards played and cards remaining to be played;
 - iii. Analyzing the probability of the occurrence of an event relating to a game; or
 - iv. Analyzing the strategy for playing or wagering to be used in a game, unless allowed by the rules of the game.
- c) Players shall be informed for any live game relying on ‘live’ monitoring of an event (e.g., bingo) that ‘live’ transmissions may be subject to delay or interruption. Where a delay is apparent or created by the Gaming Platform, the scale of the delay shall be displayed to the player.

6.18.3 Tipping Functionality

Where allowed by the regulatory body, tipping functionality may be available allowing a player to tip the gaming attendant for the live game. Tipping transactions shall be optional, player-initiated, and independent of wagering functionality.

- a) Tipping transactions shall not:
 - i. Be required as a condition for participation in a live game;
 - ii. Impact the pace of gameplay or introduce delays in wager resolution; and
 - iii. Affect the outcome of any game or the integrity of the RNG or live gaming equipment used in the live game.
- b) The player interface shall:
 - i. Clearly distinguish tipping transactions from wagers; and
 - ii. Present the remote player with a confirmation screen prior to finalizing a tipping transaction.
- c) Tipping transactions shall be:
 - i. Recorded separately from wagers; and
 - ii. Reconciled against player's available funds prior to being made available to the gaming attendant.

6.18.4 Player Fairness in Live Games

The following rules apply when players participate in games through the Gaming Platform with on-premises players who are playing at the actual game in a gaming venue (e.g., casino, bingo hall, card room, etc.):

- a) The rules, artwork, and functionality of the live game, as made available to the player through the Gaming Platform, shall, where applicable:
 - i. Include no more or no less information than that which is made available to on-premises players;
 - ii. Not result in any advantage or disadvantage as compared to on-premises players; and
- b) Players who are playing through a Gaming Platform shall be no more or no less eligible to win the game than on-premises players.

NOTE: Nothing herein may preclude the possibility of implementing specific bonusing/promotional offers only for on-premises players or players who are playing through a Gaming Platform.

6.18.5 Live Gaming Equipment

Live gaming equipment shall meet the regulatory body's applicable technical requirements and/or adopted GLI Standards. Live gaming equipment includes, but is not limited to, simulcast control servers, physical randomness devices (automated and non-automated mechanical wheels, tumblers, blowers, shufflers, shoes, shakers, throwers, etc.), specialized devices (scanners, cameras, sound, computers, servers monitors, communications equipment, related components, etc.), live game management components used by the gaming attendants (e.g., dealer, croupier, etc.) to manage live game activity, and any other technologic aids to the play of live games.

NOTE: The applicable technical requirements are to be determined based on the type of live gaming equipment used. For instance, a card shuffler shall meet the regulatory body's technical requirements for card shufflers and/or the *GLI-29 Standards for Card Shufflers and Dealer Shoes*, a ball drawing machine shall meet the regulatory body's technical requirements for ball drawing machines and/or the *GLI-15 Standards for Electronic Bingo and Keno Systems*.

6.18.6 Game Outcome Data

Game outcome data refers to any result generated or detected by specialized devices during the live game up to and including the outcome of the player's wager including any intermediate game states that impact the outcome, as determined by the Gaming Platform.

- a) Game outcome data shall be recorded by the Gaming Platform and made available to the player for review immediately following its generation or detection (subject to the natural limitations of system processing and Internet communication delays).
- b) Game outcome data may be automatically registered by specialized devices, provided that the software used for automated recognition shall:
 - i. Ensure a very high degree of accuracy in identifying and reporting the game outcome data to the Gaming Platform. The rules of the game shall be programmed into the Gaming Platform;
 - ii. Not provide any information that may be used to compromise the device and its components (e.g., cards contained in the current shuffle or dealing shoe);
 - iii. Not interfere with or modify the device's behavior beyond what functionality is associated with that software; and
 - iv. Include a manual operation mode to allow for corrections of an erroneous result (where the device misreads a card, the position of the ball, etc.) if such corrections are not done directly on the Gaming Platform. The player shall be made aware that the manual operation mode is in use.

6.18.7 Physical Randomness Devices

Live games may utilize physical randomness devices, as described within the "Mechanical RNG (Physical Randomness Device)" section of this document, to generate outcomes.

- a) Outcomes generated by the physical randomness device shall be digitized into game outcome data and securely transmitted to the Gaming Platform via specialized devices for processing without alterations unless approved by the regulatory body.
- b) Except for a human error or an error correctable with a manual override, at any time during the game the game outcome data shall match the physical randomness device's outcome. Where a discrepancy between the physical randomness device and the game outcome data exists, the physical randomness device's outcome shall be considered correct.

6.19 Spectator Wagering Requirements

6.19.1 General Statement

Where authorized by a regulatory body, the following requirements apply where a spectator player's gaming activities are tied to the gameplay of a host player. The host player's gameplay is viewed by

all spectator players through real-time remote audio and video feed using streaming, narrowcast, broadcast or other technology. The games used by the host player shall meet the requirements of this standard.

6.19.2 Game and Player Display

The player interface shall clearly indicate to the spectator player where wagers, player choices, and/or outcomes are based on the host player's gameplay.

- a) Information shall be available to fully describe the spectator wagering functionality, including a clear explanation of all settings and default options for both host players and spectator players.
- b) A host player shall be able to control whether or not they want to allow for spectator players.
- c) Spectator players shall have the same access to the game information and rules of play for the game being played by the host player as they would if the spectator players were playing the game themselves.
- d) The host player's wagers and game outcomes shall not be modified or influenced by the presence of spectator players, or by spectator player activity, volume of wagers, or game outcomes.
- e) The Gaming Platform shall not provide the host player with information on the spectator players' wagers, which may influence the choices made by a host player.
- f) A host player shall be clearly indicated to the spectator players if they are a sponsored player.

6.19.3 Linked Gaming

Linked gaming occurs when a spectator player's game is tied directly to each game of a host player, such that identical game outcomes (wins and losses) are applied proportionally to the spectator player's account.

- a) Proportionality rules (e.g., bet scaling, payout ratios) shall be disclosed to the spectator player prior to game initiation.
- b) The spectator player's credit meter or player account balance shall be updated simultaneously with the host player's credit meter or player account balance.
- c) The spectator player may opt in or out of subsequent linked games but may not retroactively cancel or alter wagers after the host player's game has been initiated.
- d) The spectator player may choose whether or not to automatically wager extra credits during play when the host player decides to wager extra credits or the host player's game.

6.19.4 Performance-Based Wagering

Performance-based wagering occurs when a spectator player places a wager on measurable outcomes derived from one or more host player's completed games (e.g., "win/lose", "total amount won in fifty spins", "number of bonus/feature states triggered in ten minutes", etc.).

- a) Each performance wager shall clearly specify the metric being wagered on, the settlement condition, and the odds/payout or price structure.
- b) Performance wagers may only be placed before any contributing host player's games have ended.

- c) The host player shall not be able to see which spectator player's wagers are placed on their performance.
- d) If a host player's session ends prematurely before settlement conditions are satisfied, wagers shall be voided or cancelled unless they are already resolvable.

Appendix A: Internal Control Procedures and Practices

A.1 Introduction

A.1.1 General Statement

This appendix sets forth internal control procedures and practices for interactive gaming operations which will be reviewed in an internal controls audit, including, but not limited to establishing gaming rules, managing games, monitoring games and Random Number Generator (RNG) output, handling various wager and financial transactions, creating and managing progressive jackpots and incrementing bonus jackpots, player account management, fundamental practices relevant to the limitation of risks, and any other objectives established by the regulatory body.

NOTE: It is also recognized that additional procedures and practices which are not specifically included within this standard will be relevant and required for an operational audit as determined by the operator and/or regulatory body within their rules, regulations, and Minimum Internal Control Standards (MICS).

A.2 Internal Control Procedures

A.2.1 Internal Control Procedures

The operator shall establish, maintain, implement, and comply with internal control procedures for interactive gaming operations, including performing wager and financial transactions.

A.2.2 Information Management

The operator's internal control procedures shall include the processes for maintaining the recorded information specified under the section entitled "Information to be Maintained", and other logs or records required by this standard unless specified otherwise, for a period of five years or as otherwise specified by the regulatory body.

A.2.3 Risk Management

The operator's internal control procedures shall contain details on its risk management framework, including but not limited to:

- a) Automated and manual risk management procedures;
- b) Employee management, including access controls and segregation of duties;
- c) Information regarding identifying and reporting fraud and suspicious conduct;
- d) Controls ensuring regulatory compliance;
- e) Description of Anti-Money Laundering (AML) and Anti-Terrorist Financing (ATF) compliance standards, including procedures for detecting structuring to avoid reporting requirements;
- f) Description of all software applications that comprise the Interactive Gaming System;
- g) Description of all forms of interactive gaming available to be offered by the operator;
- h) Description of all integrated third-party service providers; and
- i) Any other information required by the regulatory body.

A.2.4 Use of Third-Party Service Providers

The operator's internal control procedures shall identify any third-party service provider involved in supporting or performing functions subject to the operator's internal control procedures. This shall include, at a minimum, the identity of the third-party service provider, a description of the services provided to the operator (e.g. geolocation, know-your-customer, payment processing, live games, etc.), the provider's roles and responsibilities, and the operator's procedures for evaluating the adequacy of, and monitoring compliance with, the provider's applicable controls, procedures, and contractual or regulatory obligations.

- a) The operator shall maintain processes to ensure that:
 - i. The collection, use, and disclosure of sensitive information by or through the third-party service provider is limited to the information necessary to provide the applicable service.
 - ii. The third-party service provider's protection of sensitive information is evaluated and verified, as applicable to the nature of the service provided; and
 - iii. Communications between the operator and the third-party service provider conveying sensitive information are encrypted and protected against unauthorized access, interception, or alteration.
- b) When an incident or error occurs that results in a loss of communication with, or other failure of, the third-party service provider's services that affect the operational system, the incident or error shall be recorded in a log containing the date and time of occurrence, its duration, nature, a description of its impact on the system's performance, and its resolution if resolved.

A.2.5 Prohibited or Restricted Persons

There shall be a method described in the operator's internal controls to identify and implement the following regarding prohibited or restricted persons:

- a) Employees, subcontractors, directors, owners, and officers of an operator, as well as those within the same household shall not place wagers on any games, unless using clearly marked test accounts for testing purposes;
- b) Individuals identified to be any of the following shall not place wagers on any games:
 - i. Underage, or using the PII of a deceased person;
 - ii. On any suspension lists held by the operator;
 - iii. On any exclusion lists that may be provided by the regulatory body;
 - iv. Placing wagers on behalf of another person, unless authorized by the regulatory body; or
 - v. Prohibited from interactive gaming for any other reason.

A.2.6 Workstation Access Controls

The operator's internal control procedures shall include controls for securing workstations used to perform regulated functions of the Interactive Gaming System, including procedures to ensure that:

- a) Access to workstations by an individual is controlled by a secure logon procedure or other secure process approved by the regulatory body to guarantee that only authorized personnel are allowed access.
- b) It is not possible to modify the configuration settings of the system without an authorized secure process.
- c) If user sessions are supported by the workstation:
 - i. A user session is initiated by the individual logging in to their user account using their secure username and password or an alternative means for the individual to provide authentication credentials as allowed by the regulatory body.
 - ii. All available options presented to the individual are tied to their user account.
 - iii. If the workstation does not receive input from the individual within fifteen minutes, or a period specified by the regulatory body, the user session times out or locks up, requiring the individual to re-establish their login in order to continue. For mobile workstations, the period shall not exceed two minutes unless otherwise specified by the regulatory body.
 - iv. User accounts are automatically locked-out after three consecutive failed access attempts in a thirty-minute period, or a period to be determined by the regulatory body. Where supported, a mechanism may be used which automatically releases a locked-out account after thirty minutes, or a period to be determined by the regulatory body, has elapsed.

NOTE: It is acceptable for this section to be met by an off-the-shelf operating system which is installed on the same server.

A.2.7 Test Accounts

The operator may establish test accounts to be used to test the various components and operation of an Interactive Gaming System in accordance with internal control procedures adopted by the operator, which, at a minimum, shall address procedures for:

- a) Authorizing testing activity and assigning each test account for use;
- b) The issuance and segregation of funds used for testing, including the identification of who is authorized to issue the funds, the maximum amount of funds that may be issued, and the purpose for which the issued funds may be used;
- c) Maintaining a record for all test accounts, to include when they are active and to whom they are issued; and
- d) Auditing testing activity to ensure the accountability of funds used for testing and proper adjustments to reports and records.

A.3 General Operating Procedures

A.3.1 Operator Reserves

The operator shall have processes in place for maintaining and protecting adequate cash reserves, as determined by the regulatory body, including segregated accounts of funds held for player accounts and operational funds used to cover all other operator liability where required by the regulatory body.

A.3.2 Protection of Player Funds

The operator shall have processes in place to ensure funds in an operator account are either to be held in trust for the player in a segregated account or in a special purpose segregated account that is maintained and controlled by a properly constituted corporate entity that is not the operator and whose governing board includes one or more corporate directors who are independent of the operator and of any corporation related to or controlled by the operator. In addition, the operator shall have procedures that are reasonably designed to:

- a) Ensure that funds generated from interactive gaming are safeguarded and accounted for;
- b) Make clear that the funds in the segregated account do not belong to the operator and are not available to creditors other than the player whose funds are being held; and
- c) Prevent commingling of funds in the segregated account with other funds including, without limitation, funds of the operator.

A.3.3 Taxation

Where the regulatory body has taxation procedures, the operator shall have a process in place to identify all payouts that are subject to taxation (single payouts or aggregate payouts over a specific time period as required).

NOTE: Payout amounts exceeding any jurisdiction-specified limit shall require the appropriate documentation to be completed before the player is paid.

A.3.4 Complaint/Dispute Process

The operator shall provide a method for a player to make a complaint/dispute, and to enable the player to notify the regulatory body if such complaint/dispute has not been or cannot be addressed by the operator, or under other circumstances as specified by the law of the regulatory body.

- a) Players shall be able to log complaints/disputes on a 24/7 basis.
- b) Records of all correspondence relating to a complaint/dispute shall be maintained by the operator.
- c) A documented process shall exist between the operator and the regulatory body on the complaint/dispute reporting and resolution process, with response times and escalation to an independent external channel where the regulatory body provides one.

A.3.5 Chat Features

Procedures shall exist for cases where the operator provides for the use of chat features which allow the player to communicate directly with the operator and/or other players.

- a) The operator shall maintain chat logs and email correspondence between the player and the operator for a period of ninety days or as required by the regulatory body;

- b) When a player interacts with a chatbot or virtual assistant:
 - i. The player shall be clearly notified that they are interacting with a chatbot or virtual assistant, not a human;
 - ii. The player shall be provided with contact information or functionality to request to interact with a human representative; and
 - iii. The operator shall implement a process for the periodic human review of interaction logs between the player and the chatbot or virtual assistant, which assesses the chatbot's or virtual assistant's performance for accuracy, sentiment, and adherence to the operator's internal control procedures.

A.3.6 Responsible Gaming Plan

The operator shall have a responsible gaming plan, containing policies and procedures to promote responsible gaming. The operator shall maintain evidence that the relevant policies and procedures were followed and present such evidence to the regulatory body upon request. The responsible gaming plan shall include:

- a) Measures and processes to detect and identify problem gambling, and actions and/or behavior which is indicative that a player is at risk of developing a gambling problem. These measures and processes may include, but are not limited to, using analytical tools and/or behavior monitoring mechanisms with pre-designed and/or evolving parameters, and player facing and/or responsible gaming personnel.
- b) Policies and procedures governing the actions that shall be taken by the operator with respect to problem gamblers and players who are at risk of developing a gambling problem.
- c) Recordkeeping of any internal responsible gaming investigation carried out on a player, any decisions taken on the basis of the operator's responsible gaming policies and procedures, and player interactions, which shall consist of a clear and detailed audit trail that shall be made available to the regulatory body upon request.
- d) Responsible gaming training upon hire and regularly thereafter for personnel responsible for responsible gaming-related matters, and for player interaction in general.
 - i. The operator shall keep a record of the personnel required to complete the training, the type and frequency of training, and the responsible gaming training and testing undertaken.
 - ii. The personnel shall be trained to understand problem gambling issues, know how to respond to them, and look out for players demonstrating signs or indications of gambling-related harm.
- e) Applicable standards of socially responsible advertising, including compliance with all observed rules and regulations, and encouraging affiliates, which may include content providers, social media influencers, social media accounts, and brand ambassadors, to also adhere to these standards.
- f) Procedures for evaluating and continuously monitoring the responsible gaming plan and initiatives.

NOTE: The regulatory body may require a responsible gaming plan to undergo an independent third-party evaluation against industry standards for responsible gaming or other requirements as required by the regulatory body.

A.3.7 Personally Identifiable Information (PII) Security

Any information obtained with respect to a player, including personally identifiable information (PII) and funds-related information, shall be handled in compliance with the operator's privacy policy, and applicable privacy laws, regulations, and standards observed by the regulatory body. PII and funds-related information shall be treated as critical assets for risk assessment purposes.

- a) PII and funds-related information shall be kept confidential and disclosed only where authorized by the privacy policy or regulatory requirements. This includes, but is not limited to:
 - i. The amount of funds credited to, debited from, or present in any particular player account;
 - ii. The amount of funds wagered by a particular player on any game or gaming session;
 - iii. The player account ID and authentication credentials that identify the player; and
 - iv. The name, address, and other information in the possession of the operator that would identify the player to anyone other than the regulatory body or the operator.
- b) There shall be procedures in place for the security and authorized sharing of PII and funds-related information as required by the regulatory body, including, but not limited to:
 - i. The designation of one or more employees having primary responsibility for the design, implementation, and ongoing evaluation of such procedures and practices;
 - ii. The nature and scope of all information collected, the locations in which it is stored, and the servers or storage devices which may be used for storage or transfer;
 - iii. Measures to protect information from unauthorized access; and
 - iv. Procedures for responding to a data security breach, including notification to the regulatory body where required.
- c) Where required by the regulatory body, players shall be provided with a method to request:
 - i. Access and updates to their PII;
 - ii. Confirmation that their PII is being processed and information about the PII processing;
 - iii. The forwarding of PII received from the player, in a structured, commonly used, and machine-readable format, and transmission of those data to another operator, where technically feasible, provided that such PII was provided by the player or is processed by automated means, and the basis for processing is PII consent or fulfilment of a contract or preparatory steps to a contract; and
 - iv. Objection to PII processing based on legitimate interests, the performance of a task in the public interest or in the exercise of official authority, direct marketing, including related profiling, or scientific or historical research purposes or for the purpose of statistics; and
 - v. Erasure of their PII or restriction of PII processing where the PII is no longer necessary for the purpose for which it was collected or processed, the player withdraws consent, the player objects to the processing and there is no overriding legitimate basis to continue, the PII was unlawfully processed, or erasure is required to comply with a legal obligation.
- d) There shall be procedures in place to record, process, and respond to the requests from players described in this section, including, but not limited to:
 - i. Maintaining records of such requests;
 - ii. Complying with such requests as required by the regulatory body; and
 - iii. Providing the player with any denial or rejection reasons and information on the possibility to file a complaint/dispute with the regulatory body.
- e) Where prohibited by the regulatory body, the operator may not utilize solely automated decision-making which:

- i. Produces legal effects that affect the player, such as those which result in the player being subjected to surveillance by a competent authority; or
- ii. Significantly affects the player in a similar manner (e.g., it has the potential to influence the circumstances, behavior, or choices of the player).

A.3.8 Payment Processing Security

The operator or a third-party financial service provider used to conduct transactions with financial institutions shall protect payment methods used in the system from fraudulent use. There shall be established procedures:

- a) To reconcile all financial transactions between the operator and the financial service provider daily or as otherwise specified by the regulatory body;
- b) To protect any payment method used from fraudulent use; and
- c) For assuring the ownership of the payment method with the identity of the player to avoid fraud and money laundering.

NOTE: The regulatory body may require a financial service provider used to process transactions to undergo an independent third-party evaluation against industry standards for payment security, such as the Payment Card Industry Data Security Standards (PCI-DSS), or other requirements as required by the regulatory body.

A.4 Operator Display Content

A.4.1 Operator Display Content

Operator display content refers to any written, graphical, and auditory information provided to the public regarding interactive gaming operations.

- a) Operator display content shall be complete, unambiguous, and not misleading or unfair to the player.
- b) Operator display content that is presented aurally (via sound or voice) shall also be displayed in written form.
- c) Operator display content shall be rendered with sufficient font size and clarity in a color that contrasts with the background color to ensure that all information is clearly visible/readable.
- d) Operator display content shall contain the same information and carry the same meaning across all languages it is provided in.
- e) The operator shall keep a log of any changes to the operator display content.

A.4.2 Gaming Rules

The operator shall adopt and adhere to comprehensive gaming rules which shall be approved by the regulatory body and made available to the player. Where gaming rules are altered for games being offered, all rule changes shall be time and date stamped showing the rule applicable in each period. If multiple rules apply to a game or gaming session, the operator shall apply the rules that were in place when the game or gaming session was played:

- a) The methods of funding a wager or player account (e.g., cash, personal check, cashier's check, wire transfer, money order, credit or debit instrument, electronic payment account, etc.), including, as applicable:
 - i. Information regarding all currencies accepted by the system, the conversion rates used with each currency, and where the conversion rates are drawn from;
 - ii. A clear and concise explanation of all fees;
- b) As allowed by the regulatory body, any awards that are offered in the form of merchandise prizes, annuities, lump sum payments, or payment plans instead of cash payouts for each game that is offering such an award;
- c) The procedures by which any unrecoverable malfunctions of hardware/software are addressed including if this process results in the voiding or cancelling of any pays or plays;
- d) The procedures to deal with interruptions caused by player disconnection from the Gaming Platform where the results of a game are affected by response times;
- e) Any non-wager purchase option and its price;
- f) A description on prohibited or restricted persons, including any applicable limitations on gameplay for restricted persons;
- g) What happens to the player's wagers placed but remaining undecided in interrupted games including how they are handled when they remain undecided beyond the specified time period;
- h) Where transactions may involve rounding, information on how these circumstances are handled shall clearly explain:
 - i. Rounding up, down (truncation), true rounding; and
 - ii. Rounding to what level (e.g., 5 cents).

A.4.3 Player Protection Information

Player protection information shall be approved by the regulatory body and made available to the player. The player protection information shall contain at a minimum:

- a) Information about potential risks associated with excessive gameplay, and where to get help for a gambling problem;
- b) A statement that no underage persons are permitted to participate in interactive gaming;
- c) A list of the available responsible gaming tools that can be invoked by the player (e.g., self-imposed limitations, time-outs, and suspensions) and information on how to invoke those measures;
- d) For player accounts, mechanisms in place which can be used to detect unauthorized use of their account, such as reviewing financial statements against known deposits;
- e) Contact information or other means for reporting a complaint/dispute; and
- f) Contact information for the regulatory body and/or a link to their website.

NOTE: All links to problem gambling services provided by third parties are to be regularly tested by the operator. Interactive gaming may not occur where the links used to supply information on player protection are not displayed or are not operational. Where the link is no longer available or not available for a significant period of time, the operator shall provide an alternative support service.

A.4.4 Terms and Conditions

A set of terms and conditions shall be approved by the regulatory body and made available to the player. The terms and conditions shall:

- a) State that only individuals legally permitted by their respective jurisdiction can participate in interactive gaming;
- b) Advise the player to keep their authentication credentials (e.g., password and username) secure;
- c) Disclose all processes for dealing with lost authentication credentials, forced password changes, password strength and other related items as required by the regulatory body;
- d) Specify the conditions under which an account is declared inactive and explain what actions will be undertaken on the account once this declaration is made;
- e) Clearly detail what happens to the player's wagers placed but remaining undecided in interrupted games prior to any self-imposed or operator-imposed suspension, including the return of all wagers, or settling all wagers, as appropriate;
- f) Contain information about timeframes and limits regarding deposits to and/or withdrawals from the player account, including a clear and concise explanation of all fees, if applicable;
- g) State that the operator has the right to:
 - i. Refuse to establish a player account for what it deems good and sufficient reason;
 - ii. Refuse deposits to and/or withdrawals from player accounts for what it deems good and sufficient reason; and
 - iii. Unless there is a pending investigation or player dispute, suspend or close any player account at any time pursuant to the terms and conditions between the operator and the player.

A.4.5 Privacy Policies

A set of privacy policies shall be approved by the regulatory body and made available to the player. The privacy policies shall state:

- a) The PII required to be collected;
- b) The purpose and legal basis for collecting and processing PII, including any specific legitimate interest relied upon by the operator or third-party service provider if required by the regulatory body;
- c) The period for which PII is stored or, if no fixed period can be established, the criteria used to determine the retention period;
- d) The conditions under which the PII may be disclosed and the measures used to prevent unauthorized or unnecessary disclosure;
- e) The identity and contact information of the operator and the categories or identities of third-party service providers that may receive or process PII;
- f) For PII collected directly from the player, whether there is a legal or contractual obligation to provide the PII and the consequences of not providing that PII;
- g) Any player rights regarding their PII as required by the regulatory body;
- h) Where applicable and required by the regulatory body, information regarding the use of automated decision-making, including profiling, the significance and expected consequences of such processing for the player, and any available method to contest the decision or request human review; and
- i) The rights and possibility of a player to file a complaint/dispute with the regulatory body.

A.4.6 Bonusing/Promotional Offers

Players shall be able to access clear and unambiguous terms pertaining to any available bonusing/promotional offers.

- a) The rules for each bonusing/promotional offer shall address the following at a minimum:
 - i. The date and time the offer is presented, becomes active, and expires;
 - ii. Player eligibility requirements, including any limitations on participation;
 - iii. Wagering requirements and limitations, including any restrictions by type of game, game theme and/or payable;
 - iv. Qualifying criteria for receiving bonusing/promotional credits and/or prizes, including any frequency of issuance;
 - v. Any restriction or terms applicable to restricted bonusing/promotional credits conversions and withdrawals;
 - vi. The order in which bonusing/promotional credits are used for wagers; and
 - vii. How the player is notified when bonusing/promotional credits and/or prizes have been awarded;
 - viii. Rules regarding offer cancellation or expiration; and
 - ix. Any other offer-specific information not otherwise addressed.
- b) Bonusing/promotional offers shall not be described as:
 - i. “Free” unless those offers are in fact free and without any cost to the player. If the player has to risk or lose their own player funds or if there are conditions attached to their own player funds, these conditions shall be disclosed and may not be described as free; or
 - ii. “Risk-free” if those offers require the player to incur a loss or risk their own player funds to use or withdraw winnings from the purportedly risk-free wager.

A.4.7 Contests/Tournaments

A contest/tournament, which permits a player to either purchase or be awarded the opportunity to engage in competitive gameplay against other players, may be permitted provided the following rules are met:

- a) Rules shall be made available to a player for review prior to contest/tournament registration. The rules shall include at a minimum:
 - i. All conditions registered players shall meet to qualify for entry and advancement through the contest/tournament;
 - ii. Specific information pertaining to any single contest/tournament, including the available awards and distribution of funds based on specific results; and
 - iii. The name of the organization (or persons) that conducted the contest/tournament on behalf of, or in conjunction with, the operator, if applicable.
- b) Procedures shall be in place to record the results of each contest/tournament and make them publicly available for registered players to review for a reasonable period of time. Subsequent to being posted publicly, the results of each contest/tournament shall be made available upon request. The results include the following:

- i. Name of the contest/tournament;
- ii. Dates and times of the contest/tournament;
- iii. Total number of entries;
- iv. Amount of entry fees;
- v. Total prize pool; and
- vi. Amount paid for each winning category.

NOTE: For free contests/tournaments (i.e., registered player does not pay an entry fee), the information required by the above shall be recorded except for the number of entries, amount of entry fees and total prize pool.

A.4.8 Interactive Gaming in Multiple Languages

Where interactive gaming is made available to the player in multiple language versions, the operator shall have procedures to ensure the following, as required by the regulatory body:

- a) Each language version of the same game shall offer the same payout percentages, probabilities, and awards.
- b) Each language version shall be consistent with the game instructions and information for that version.
- c) All game instructions and information shall be provided in the language specified for that version.
- d) Displayed terminology shall have the same meaning in all language versions, so that no version is favored or disfavored. It is not mandatory to translate common terminology used internationally for interactive gaming.

NOTE: If required by the regulatory body, this section will be evaluated by an independent test laboratory for the languages determined by them to be in scope.

A.5 Player Account Controls

A.5.1 Registration and Verification

If player account registration, verification, validation, and/or activation functionality is performed manually by the operator, the operator shall have processes and procedures to satisfy the requirements for “Player Account Registration and Verification” as indicated within this document.

A.5.2 Limitation to One Account per Player

The operator shall implement procedures to terminate all player accounts of any player that establishes or seeks to establish more than one account, whether directly or by use of another individual as proxy. Such procedures may allow a player that establishes or seeks to establish more than one username or more than one player account to retain one account provided that the operator investigates and makes a good-faith determination that the player's conduct was not intended to obtain a competitive advantage.

A.5.3 Fraudulent Accounts

The operator shall have a documented public policy for the treatment of player accounts discovered to have been used in a fraudulent manner, including but not limited to:

- a) The maintenance of information about any account's activity, such that if fraudulent activity is detected, the operator has the necessary information to take appropriate action;
- b) The suspension of any account discovered to be engaged in fraudulent activity, such as a player providing access to underage persons; and
- c) The handling of deposits, wagers, and payouts associated with a fraudulent account.

A.5.4 Player Account Management

Processes and procedures shall be in place for the operator to effectuate and satisfy the requirements for "Player Account Management" prescribed in this document, including performing the following player account tasks when requested by the player or as necessary:

- a) Accessing and updating a player's recorded registration information, including their PII;
- b) Generating and providing a player with transaction logs or account statements;
- c) Establishing and updating the authentication credentials of a player, including MFA settings or parameters;
- d) Adding, modifying, and removing a player's payment methods used for financial transactions;
- e) Identifying and managing inactive player accounts; and
- f) Closing player accounts and handling the funds remaining in the account.

A.5.5 Player Funds Maintenance

Procedures shall be in place to ensure all financial transactions are conducted in accordance with local commerce regulations and requirements mandated by the regulatory body.

- a) For financial transactions performed manually by the operator, procedures shall be in place to satisfy the requirements for "Financial Transactions" as indicated within this document.
- b) The operator shall incorporate technical and procedural safeguards to prevent the acceptance of financial transactions that present elevated risk indicators.
- c) A player's request for withdrawal of unrestricted player funds shall be completed by the operator within a reasonable amount of time, unless there is an unresolved player complaint/dispute or investigation. Such investigation shall be documented by the operator and available for review by the regulatory body.

A.5.6 Responsible Gaming Tools

Processes and procedures shall be in place for the operator to implement and manage responsible gaming tools, in accordance with the requirements for "Limitations, Time-Outs, and Suspensions" as indicated within this document. Additionally, the operator shall ensure that advertising or marketing materials are not sent directly to a residential address, email address, phone number, and/or any other contact method associated with a suspended player.

A.5.7 Player Account and Device Monitoring

The operator's internal control procedures shall include controls to protect player accounts and monitor player accounts, devices, and related activity to detect, investigate, and respond to unauthorized access, suspicious player activity, fraud, evasion, manipulation, or automated abuse. Such controls shall include, at a minimum:

- a) Protecting player accounts containing funds from unauthorized access, changes, removal, or misuse;
- b) Reviewing player transactions, including aggregated activity over time periods identified in the internal control procedures, to identify activity that triggers enhanced due diligence, reporting obligations, or other required review;
- c) Identifying player accounts for investigation where account opening, account closure, deposits, withdrawals, or other activity patterns indicate potential misuse, which may include:
 - i. Opening and closing accounts within short time frames; and
 - ii. Deposits and withdrawals without associated gameplay;
- d) Detecting abnormal, inconsistent, or suspicious account, device, network, or access patterns, which may include:
 - i. Rapid account creation or association of accounts with suspicious devices;
 - ii. Attempts to disguise, alter, manipulate, or evade device identification or fingerprinting; and
 - iii. Changes to device identity or key attributes, such as GPU, screen resolution, operating environment, hardware identifiers, or similar attributes, that may indicate device reset, data tampering, or spoofing; and
- e) Procedures for using internal integrity and attestation controls as a basis for determining device trustworthiness, which may include the ability to block, restrict, or flag access from non-compliant devices where native operating system security or attestation services are unavailable, bypassed, unreliable, or compromised.

A.5.8 Player Loyalty Programs

The operator shall establish and implement controls for the administration, accounting, redemption, and disclosure of player loyalty programs or comparable benefit arrangements, where such programs are offered by the operator, and involve the use of player loyalty points or other comparable entitlements. At a minimum, the controls shall ensure that:

- a) The manner in which player loyalty points or comparable entitlements are earned, accumulated, adjusted, expired, forfeited, redeemed, or otherwise used is clearly documented and available to the player;
- b) Procedures to ensure that awards, benefits, or redemption opportunities are equally available to all players who achieve the minimum level of qualification for such player loyalty points or other comparable entitlements.
- c) Redemption of player loyalty points or other comparable entitlements is performed as a secure transaction that automatically debits the balance for the value redeemed;
- d) All transactions involving player loyalty points or other comparable entitlements are recorded, including points earned, redeemed, adjusted, expired, forfeited, or reversed; and

- e) Player loyalty point or other comparable entitlement balances and related transaction history are made available to the player upon request.

A.6 Gaming Procedures and Controls

A.6.1 RNG Monitoring, Logging, and Statistical Assurance

The operator shall implement mechanisms to monitor the operation and integrity of all RNGs using controls appropriate to the RNG design and implementation to ensure the RNGs function as intended.

- a) Best practice monitoring activities include, where applicable:
 - i. Review and validation of the RNG seeding process;
 - ii. Analysis of RNG outputs for statistical randomness and absence of bias or patterns, where applicable to the RNG design and monitoring method;
 - iii. Detection of anomalies, failures, or degradation in RNG performance, including those caused by mechanical wear or damage, if applicable; and
 - iv. Verification of the mapping between RNG outputs and game symbols, which may be performed as a non-real-time control.
- b) Any detected abnormalities, errors, or indications of unacceptable RNG behavior, shall be securely logged and escalated for investigation.
- c) Access to RNG components, including software, hardware, and seeding mechanisms, shall be restricted, controlled, and securely logged to ensure integrity and traceability.

NOTE: Records of RNG outputs, including associated game symbol mappings where applicable, may be maintained to support monitoring, verification, and audit activities.

A.6.2 Return to Player (RTP) Evaluation and Game Output Monitoring

The operator shall implement controls to document, monitor, and evaluate both theoretical and actual Return to Player (RTP) percentages for all games to ensure accuracy, transparency, and the timely detection of abnormal performance. Any detected abnormalities, including actual RTP results falling outside defined expected ranges, shall be securely logged and escalated for investigation.

- a) The operator shall maintain accurate and current documentation (e.g., PAR sheets) indicating the theoretical RTP percentages for each game based on adequate levels of credits wagered, as well as the number of credits that may be played, the payout schedule and other information descriptive of the particular type of game.
- b) Records shall be maintained for each game indicating the initial theoretical RTP percentage, dates and type of changes made affecting the game's theoretical RTP percentage, and the recalculation of theoretical RTP percentage because of the changes.
- c) Each change to a game's theoretical RTP percentage, including adding and/or changing progressive jackpot or incrementing bonus jackpot increments, shall result in that game being treated as new for all reports and records.
- d) If bonusing/promotional credits and/or prizes are included in the reports and records for the game, it shall be in a manner that prevents distorting the actual RTP percentages of the affected paytables.

- e) The operator shall monitor actual game output on a defined periodic, transactional, or volume basis to evaluate performance against the theoretical RTP percentages and detect abnormal behavior.
- f) The operator shall have procedures in place to periodically compare the theoretical and actual RTP percentage, including:
 - i. Establishing acceptable variance thresholds;
 - ii. Identifying and investigating deviations outside expected ranges; and
 - iii. Implementing appropriate corrective actions where necessary.

NOTE: The regulatory body may require an operator to undergo an annual or periodic payout calculation evaluation by an independent test laboratory and/or qualified employee of the operator to examine the game logs for each game hosted on the Interactive Gaming System and produce a formal report noting the actual percentage payout of each game as calculated using the data from the game logs.

A.6.3 Interrupted Game Handling

There shall be established procedures for the handling of interrupted games. If a game cannot be continued due to an Interactive Gaming System action, the operator shall:

- a) Return all wagers to the players of that game;
- b) Update the game history and the credit meters or player account balances accordingly;
- c) Inform the regulatory body of the circumstances of the incident; and
- d) Disable the game if the game is likely to be affected by the same failure.

A.6.4 Progressive Jackpot and Incrementing Bonus Jackpot Procedures

The operator shall establish, maintain, implement, and comply with internal control procedures for jackpot operations, including the following:

- a) Where jackpot contributions are part of the RTP calculations, ensuring the contributions are not assimilated into revenue.
- b) Jackpot adjustments and transfers, as supported.
- c) For large jackpot awards exceeding a particular value as defined by the regulatory body:
 - i. Jackpot verification and payment procedures, including independent reconciliation and operator signoff;
 - ii. Payment when multiple jackpot triggers occur and there is no definitive way of knowing which trigger occurred first (unless it's handled automatically by the Interactive Gaming System); and
 - iii. Disbursement options for jackpot awards, including information for periodic payments.
- d) For jackpots with parameters which are configurable after initial setup, performing independent reconciliation of jackpot contributions and awards to ensure that all jackpot increments deducted:
 - i. Have been paid to players as jackpot payoffs;
 - ii. Are displayed as part of jackpot payoffs; or
 - iii. Are held in separate accounts, which can be demonstrated to be paid to players as part of future jackpot payoffs.

- e) Jackpot retiring procedures, including procedures for distribution of contributions to the actual players who contributed the funds or a similar player base (e.g., the contributions could be added to another jackpot).

A.6.5 Sponsored Players for Peer-to-Peer (P2P) Gaming

The operator shall have processes to ensure the player is not disadvantaged by sponsored players participating in P2P gaming. The following risks are expected to be mitigated:

- a) The operator's controls shall mitigate the conflict between the role of the sponsored player and the role of authorized personnel who have access to the Interactive Gaming System (both physically and virtually) to be able to manipulate the games or have information not available to all the other players and be able to take advantage of it;
- b) The operator shall not profit from the P2P gaming participation (beyond the rake, commission, or fee);
- c) If the sponsored player's gameplay is funded by the operator, the sponsored player shall not profit from the P2P gaming participation, the funds may not be withdrawn and shall ultimately be lost/played; and
- d) Procedures shall be in place to address the risk that the sponsored player is motivated to protect personal wagers beyond the assignment of stimulating P2P gaming participation. If the sponsored player risks private wagers, then the sponsored player shall not have any knowledge of software or other PII (the sponsored player is a bona fide independent contractor with no prior relationship with the operator).

A.7 Integrity, Collusion, Fraud, and AML/ATF Controls

A.7.1 Integrity and Compliance Program

The operator shall implement and maintain documented policies, procedures, controls, and monitoring mechanisms designed to ensure the integrity of interactive gaming and comply with anti-money laundering (AML) and anti-terrorist financing (ATF) obligations. Such policies, procedures, controls, and mechanisms shall be periodically reviewed and updated as necessary based on operational experience, regulatory requirements, identified risks, and environmental changes.

A.7.2 Integrity Monitoring and Response

The operator shall establish procedures to monitor gameplay, games, player accounts, transactions, player communications where available, devices, and related activity for suspicious player activity, coordinated player activity, prohibited player activity, unauthorized player assistance, and other integrity concerns. Such procedures shall provide for the review, investigation, escalation, and appropriate response to detected or reasonably suspected integrity concerns, and shall include, at a minimum:

- a) Review and investigation of alerts, reports, complaints, or other indications of integrity concerns;

- b) The ability to refuse, delay, suspend, void, cancel, or limit wagers, gaming activity, transactions, or player account activity, where permitted by the regulatory body, internal control procedures, or gaming rules;
- c) The ability to restrict, suspend, or close player accounts where integrity concerns are identified or reasonably suspected;
- d) Documentation of the basis for any material action taken; and
- e) Escalation of confirmed or suspected integrity concerns to appropriate internal personnel and, where required, to the regulatory body or other appropriate authority.

A.7.3 Regulatory Notification and Reporting

Unless otherwise directed by the regulatory body, the operator shall document and notify the regulatory body upon detecting or becoming aware of:

- a) Any suspected illegal, criminal, fraudulent, or prohibited activity related to interactive gaming that is required to be reported to the regulatory body;
- b) Any person suspected of misrepresenting their identity or using false identification to establish or attempt to establish a player account or place a wager;
- c) Any criminal or disciplinary proceeding commenced against the operator in connection with its interactive gaming operations;
- d) Any activity, pattern, or conduct that raises a concern regarding the integrity of a wager, game, or interactive gaming generally; and
- e) Any other matter required to be reported by the regulatory body, internal control procedures, or applicable laws or regulations.

A.7.4 Anti-Money Laundering (AML) and Anti-Terrorist Financing (ATF)

The operator shall develop, implement, and maintain AML/ATF policies and procedures that adequately address the risks posed by interactive gaming for potential money laundering and terrorist financing. Such policies and procedures shall include, at a minimum:

- a) Internal control procedures designed to ensure ongoing compliance with applicable AML/ATF laws, regulations, and standards recognized or required by the regulatory body;
- b) Ongoing training of relevant personnel in the identification, handling, escalation, and reporting of unusual and suspicious transactions or activities;
- c) Designation of one or more responsible individuals for AML/ATF compliance, including responsibility for reporting unusual or suspicious transactions and activities to appropriate authorities;
- d) Use of automated systems, monitoring tools, and data processing methods to support AML/ATF monitoring, detection, investigation, and reporting; and
- e) Periodic independent testing of AML/ATF policies and procedures at a scope and frequency required by the regulatory body, with records of such testing maintained.

A.7.5 Recordkeeping

The operator shall maintain complete, accurate, and auditable records demonstrating compliance with this section, including monitoring activity, alerts, reports, investigations, decisions, actions taken, regulatory notifications, AML/ATF documentation, and other supporting evidence necessary to demonstrate compliance.

A.8 Geolocation Solution Controls

A.8.1 Geolocation Solution Audits

The geolocation service provider shall support and comply with all regulatory body requests for periodic audits to assess and validate the Geolocation Solution's ongoing ability to effectively detect and mitigate existing and emerging location fraud risks, including the operational procedures and controls within this section, as well as the "Geolocation Operations and Enforcement" section within this document.

A.8.2 Geolocation Accuracy Radius

To ensure location data is accurate and reliable, the geolocation service provider shall ensure that the Geolocation Solution:

- a) Calculates and applies an appropriate accuracy radius for each geolocation check based on authenticated location data sources and relevant risk factors, which may include internet connection type, mobility risk, proximity to permitted geofence borders, and velocity considerations;
- b) Reasonably determines whether the player's real-world geographic location, inclusive of the accuracy radius, is contained within the permitted geofence; and
- c) Provides configurable controls for determining whether the accuracy radius of the location data sources may overlap or exceed buffer zones established for the permitted geofence.

A.8.3 Geolocation Mapping

The geolocation service provider shall have procedures to reasonably mitigate and account for discrepancies between mapping sources and variances in geospatial data. This may include utilizing boundary polygons based on accurate maps and overlaying location data onto these boundary polygons.

A.8.4 Geolocation Solution Maintenance

To maintain the overall integrity of the Geolocation Solution, the geolocation service provider shall ensure the Geolocation Solution:

- a) Utilizes closed-source databases (IP, proxy, VPN, fraud, etc.) that are frequently updated and periodically tested for accuracy and reliability;

- b) Undergoes frequent updates, including configuration changes and the application of patches, to maintain cutting-edge data collection, device compatibility, and fraud prevention capabilities against potential data manipulation techniques and location fraud risks (e.g., fake location applications, virtual machines, remote desktop programs, etc.); and
- c) Utilizes dynamic cryptographic signing to verify that all geolocation payloads originate exclusively from an authorized and untampered instance of the provider's Software Development Kit (SDK), ensuring the authenticity of the location data source and preventing the use of harvested keys, 'headless' clients, or unauthorized library emulations.

A.8.5 Geolocation Fraud Monitoring

Given that location fraud shall be assessed based on individual geolocation checks and cumulative player location activity over time, the geolocation service provider shall employ mechanisms to:

- a) Actively assess the risk profile of each player and device using current and historical geolocation access data and reasonably detect suspicious player activity or location anomaly indicators;
- b) Provide alerting mechanisms to reasonably identify unauthorized or improper access, fraudulent activity, and players or devices that have been blocked or otherwise flagged for investigation; and
- c) Cumulatively aggregate, authenticate, and analyze historical geolocation and fraud data to support investigations of players or devices that exhibit suspicious player activity or location anomaly indicators.

A.8.6 Geolocation Reporting and Analytics

The geolocation service provider shall have procedures to maintain and provide the operator and regulatory body with a real-time dashboard and data feed of all geolocation checks which:

- a) Is customizable and displays location data and visuals on demand;
- b) Displays and is filterable by, at a minimum, the following data, as applicable:
 - i. Time period;
 - ii. Anonymized player ID;
 - iii. Relevant location information (e.g., device ID and type, application ID and version, connection type, location data, etc.), where available; and
 - iv. Geolocation result including the reason for any geolocation failure.
- c) Provides an interactive mapping tool capable of:
 - i. Displaying locations of geolocation checks; and
 - ii. Using coordinates to pinpoint locations.
- d) Provides data, visuals, and reporting capabilities pertaining to suspicious or unusual activities, including:
 - i. Malicious or repeated location spoofing;
 - ii. Account sharing, and device sharing;
 - iii. Inconsistent locations (location jumping); and
 - iv. Other high-risk transactional data.

A.8.7 Operator Responsibilities for Geolocation

The operator shall maintain documented policies and procedures related to the use of Geolocation Solutions.

- a) The operator shall have a process in place to verify that the latest versions of the Geolocation Solution are being used.
- b) The operator shall receive alerts or notifications when Geolocation Solution updates or patches become available.
- c) Where a secondary Geolocation Solution is used, the operator shall maintain documented criteria, approved by the regulatory body, defining the specific circumstances under which the secondary Geolocation Solution may be utilized (e.g., primary Geolocation Solution outage). For switching Geolocation Solutions, the operator shall:
 - i. Maintain logs or reports documenting when switching occurred and the corresponding reason for each switch; and
 - ii. Periodically review switching events to ensure they align with the documented criteria.
- d) Where the operator utilizes any internal geolocation logic prior to submitting requests to Geolocation Solutions, this logic shall be formally documented, approved, and designed in a manner that does not compromise regulatory requirements.

Appendix B: Integrity and Security Assessments

B.1 Introduction

B.1.1 General Statement

Unless otherwise specified by the regulatory body, Integrity and Security Assessments shall be conducted annually against the applicable controls and tests identified in the GLI Gaming Security Framework (GLI-GSF), together with any additional controls or tests identified by the regulatory body. The appropriate audit procedures and assessment methods shall be selected on a case-by-case basis based on the scope, architecture, configuration, deployment model, data flows, third-party service provider relationships, and risk profile of the Interactive Gaming System's gaming production environment.

NOTE: It is recommended for the regulatory body to allow flexibility for Integrity and Security Assessment schedules for multi-jurisdictional operators to allow consolidation of assessments for multiple jurisdictions to a common schedule. Please refer to the *GLI Gaming Security Framework (GLI-GSF)* for additional information.

B.2 Assessment Requirements

B.2.1 Assessment Scope and Composition

Integrity and Security Assessments shall include a Gaming Information Security (GIS) Controls Audit and a Gaming Technical Security (GTS) Assessment applicable to the critical components of the Interactive Gaming System's gaming production environment, which include but are not limited to:

- a) Components that record, store, process, share, transmit, or retrieve sensitive information, including personally identifiable information (PII), financial transactions, authentication credentials, encryption keys, random number generator (RNG) seeds, or outcomes;
- b) Components which generate, transmit, or process random numbers used to determine the outcome of games and events;
- c) Components that record the current state, status, or history of a player's wagering activity;
- d) Points of entry to and exit from the above critical components, including systems, applications, interfaces, and third-party service provider connections that provide access to or communicate directly with those critical components; and
- e) Communication networks that support access to, communication between, or transmission of sensitive information to or from critical components.

B.2.2 Gaming Information Security (GIS) Controls Audit

The GIS Controls Audit shall evaluate the effectiveness of the administrative, technical, physical, environmental, incident response, risk management, and gaming security controls applicable to the critical components identified within the assessment scope. The GIS Controls Audit shall include applicable GIS controls and any additional controls required by the regulatory body or determined necessary based on the risk, architecture, configuration, or operation of the gaming production environment.

B.2.3 Gaming Technical Security (GTS) Assessment

The GTS Assessment shall evaluate the security posture of the systems, applications, interfaces, networks, infrastructure, service provider connections, and critical components applicable to the assessment scope. The GTS Assessment shall include technical security testing sufficient to identify vulnerabilities, misconfigurations, exploitable conditions, weaknesses in security controls, and other technical risks that may affect the Interactive Gaming System's gaming production environment, including the following tests and assessments, as applicable:

- a) Vulnerability assessments of digital platforms, websites, applications, and internal, external, and wireless networks, with the intent of identifying vulnerabilities or potential vulnerabilities affecting devices, servers, applications, or other components that transfer, store, or process sensitive information or are connected to or present on such networks;
- b) Penetration tests of applicable components to determine whether identified vulnerabilities are susceptible to compromise;
- c) Cloud security assessments to verify that cloud-specific security controls and configurations are properly implemented and managed;
- d) Firewall security assessments to verify the operating condition and effectiveness of security configurations and rule sets for perimeter and internal firewalls;
- e) Risk assessments or risk ratings of identified vulnerabilities, non-conformities, threats, or weaknesses;
- f) Validation of findings and elimination of false positives;
- g) Review of segmentation, access controls, configurations, and security controls protecting critical components and sensitive information; and
- h) Any additional tests required by the regulatory body or determined necessary based on the risk, architecture, configuration, and operation of the gaming production environment.

NOTE: The *GLI Gaming Security Framework (GLI-GSF)* establishes a common terminology and potential technical security testing methods for the gaming production environment. It is not intended to be used in a prescriptive manner, but as a guide based on risk appetite and threat sources as determined by the regulatory body.

B.3 Recurring Vulnerability Scans

B.3.1 Vulnerability Scans

In addition to the Integrity and Security Assessments required by this appendix, unless otherwise specified by the regulatory body, Vulnerability Scans of the internal and external network of the Interactive Gaming System's gaming production environment shall be performed at least quarterly and upon any significant changes to the gaming production environment as determined by the regulatory body.

NOTE: It is recommended for the regulatory body to allow flexibility for Vulnerability Scan schedules for multi-jurisdictional operators to allow consolidation of assessments for multiple jurisdictions to a common schedule. Please refer to the *GLI Gaming Security Framework (GLI-GSF)* for additional information.

Glossary of Key Terms

Access Control – The process of granting or denying specific requests for obtaining and using sensitive information and related services specific to a system; and to enter specific physical facilities which house critical network or system infrastructure.

Adaptive Behavior (aka “Compensated Play” or “Percentage Compensation”) – Adjusting the likelihood of winning outcomes occurring or the award values based on previous payouts or wagers.

Algorithm – A finite set of unambiguous instructions performed in a prescribed sequence to achieve a goal, especially a mathematical rule or procedure used to compute a desired result. Algorithms are the basis for most computer programming.

Alternative Game Mode – Any mode of gaming other than the normal mode of gameplay. This includes modes such as autoplay, tournament, and free play/demo modes.

Artwork – The graphics, thematic art, help screens, and other textual information that is shown to a player by the player interface.

Audit Trail – A record showing who has accessed a system and what operations the user has performed during a given period.

Authentication – Verifying the identity of a user, process, software package, or device, often as a prerequisite to allowing access to resources in a system.

Automated Decision-Making – The ability to make decisions by technological means based on PII or data provided directly by players, data observed about players, or derived or inferred data (e.g., risk rating). For any type of processing to be classed as automated rather than solely automated, there will be meaningful human involvement in the process (e.g., through review or filtering) and that human involvement will take place prior to the final decision.

Autoplay Mode – A player-selectable mode of a game that allows a player to place wagers automatically without any manual interaction, once a denomination, wager, and other play attributes have been selected for gameplay.

Backup – A copy of files and programs made to facilitate recovery if necessary.

Beacon Technology – Short-range communications technology used to assist in determining whether a Remote Player Device is within a permitted geofence. Examples include Bluetooth Beacons, Near Field Communication, Ultra-Wideband, Ultrasonic Signals, or comparable technologies.

Best-Hand Play – Illicit peer-to-peer coordination where between two or more players only the one who has the best score always plays, while the other or others leave the game.

Biometric – A biological identification input, such as fingerprints or retina patterns.

BT, Bluetooth – A low power, short-range wireless communications protocol utilized for the interconnection of cellular phones, computers, and other electronic devices. Bluetooth connections typically operate over distances of ten meters or less and rely upon short-wavelength radio waves to transmit data over the air.

Bonusing/Promotional Offers (aka “Bonusing/Promotional Credits and/or Prizes” or “Bonusing/Promotional Amounts”) – Credits and/or prizes not included in the standard payable of a game, that are awarded based upon pre-determined events or criteria established by the terms of the offers. Such offers may be triggered by player activity tied to a specific player account or game or by external conditions not directly tied to player activity, at random, as a bundle with the purchase of related products, services, or activities, or upon the completion of specified tasks disclosed to the player. Examples include, but are not limited to, earning bonusing/promotional credits based on a first deposit or wager, awarding prizes after wagering a specific amount in a game or gaming session, awarding credits for wagering more than a specific amount within a specified time period, applying a specified multiplier to eligible winnings, and awarding bonusing/promotional credits after making a non-wager purchase.

Chip Dumping – Illicit peer-to-peer coordination where two or more players help each other to stay in the game, leading to losses and therefore to an exchange of chips even with certainly winning combinations.

Client-Side Tampering – The unauthorized manipulation of location data, application logic, or related client-side components before a geolocation request is communicated from the Remote Player Device to the Interactive Gaming System and/or Geolocation Solution.

Collusion – Coordinated action by two or more players to gain an unfair advantage in a P2P gaming session.

Communications Technology – Any method used, and the components employed, to facilitate the transmission and receipt of information, including transmission and reception by systems using wire, wireless, cable, radio, microwave, light, fiber optics, satellite, or computer data networks, including the Internet and intranets.

Community Bonus – A feature where players collaborate and/or compete for a shared award.

Contributions – The financial method by which jackpot pools are funded.

Coordinated Player Activity – Activity involving two or more players, accounts, devices, payment methods, chat or external communication channels, or related identifiers that may indicate collusion, multi-accounting, syndicate behavior, shared account control, information sharing, signaling, Illicit peer-to-peer coordination (e.g., chip dumping, soft-play, best-hand play, etc.), or other conduct designed to obtain an unfair advantage, evade controls, or compromise the integrity of interactive gaming.

Credit Meter – A meter which maintains the player funds available to the player for the commitment of a wager which is transferred to and from the player account balance.

Critical Component – Any sub-system for which failure or compromise can lead to loss of player entitlements, government revenue or unauthorized access to data used for generating reports for the regulatory body.

Critical Control Program – A software program that controls behaviors relative to any applicable technical standard and/or regulatory requirement.

Cryptographic RNG – A Random Number Generator (RNG) which is resistant to attack or compromise by an intelligent attacker with modern computational resources who has knowledge of the source code of the RNG and/or its algorithm. Cryptographic RNGs cannot be feasibly ‘broken’ to predict future values.

Debit Instrument – A card, code, or other device with which a person may initiate an electronic funds transfer. The term includes, without limitation, a prepaid access instrument.

Direct Cryptanalytic Attack – An RNG attack whereby the attacker, given a sequence of past values produced by an RNG, is able to predict or estimate future RNG values.

Discretionary Account Funds – Restricted bonusing/promotional credits and bonusing/promotional credits that have a possible expiration.

Diversion Pool – The monies collected pursuant to a contribution schedule that are intended to be used for the funding of future jackpots or for other purposes.

Domain – A group of computers and devices on a network that are administered as a unit with common rules and procedures.

Double-Up (aka “Gamble”) – A game feature available to a player to double or risk current winnings.

Effective Bandwidth – The amount of data that actually can be transferred across a network per unit of time. The effective bandwidth through the Internet is usually considerably lower than the bandwidth of any of the constituent links.

EFT, Electronic Funds Transfer (aka “ECT”, “Electronic Credits Transfer”) – A financial transaction involving an electronic transfer of funds between an electronic payment account and a player account using a financial service provider. This includes Automated Clearing House (ACH) transfers.

Electronic Payment Account – An account maintained with a financial institution or third-party financial service provider, such as PayPal, Google Pay, or Apple Pay, for the purposes of making electronic funds transfers. The term does not include a player account, or any other account held by an operator and used for gaming purposes.

Encryption – The conversion of data into a form, called a ciphertext, which cannot be easily understood by unauthorized people.

Encryption Key – A cryptographic key that has been encrypted in order to disguise the value of the underlying plaintext.

Expected Value – The mathematically calculated average return to player associated with a specific jackpot level for a given total monetary wager.

Explicitly Advertised Award – An award that can be awarded by a game and which is explicitly advertised to the player in the game artwork.

Financial Service Provider (aka “Payment Processor”) – An in-house or third-party entity who directly facilitates payment processing, including the depositing of funds to or withdrawing of funds from player accounts.

Firewall – A component of a computer system or network that is designed to block unauthorized access or traffic while still permitting outward communication.

Flight Recorder – Game recall functionality that records various player physical actions and correlates them in time to other wager inputs such as touch screen activations, button presses, etc. in order to more fully reconstruct the outcome of gameplay. When used in conjunction with a game containing a physical skill element, such functionality may be especially useful for recording/documenting aspects of game history specific to a player’s physicality, dexterity, motions, or gestures.

Free Play/Demo Mode – A game mode that allows a player to simulate gameplay without placing any paid wager, principally for the purpose of learning or understanding gameplay mechanics.

Game Cycle – The period from an initial wager to the point of the final transfer to the player’s credit meter or player account balance, or when all funds wagered are lost. A game cycle is also defined as “wager to wager”.

Game Theme (aka “Personality Program”) – The concept, subject matter, and methodology of design in which a game is built around, including artwork, game graphics, one or more paytables, sound effects, and music.

Game with Skill – A game in which the skill of the player, rather than pure chance, is a factor in affecting the outcome of the game as determined over a period of continuous play. A game with skill contains one or more elements of skill in its design which can be leveraged by a player to impact the return percentage.

Gaming Platform (aka “Remote Gaming Server (RGS)” or “Game Aggregator”) – The hardware, software, firmware, communications technology, other equipment, as well as operational procedures used to host interactive gaming and/or aggregate game content, as well as drive the features common

to game offerings, game configurations, RNGs, reporting, etc. The Gaming Platform may be a standalone system or integrated within another part of the Interactive Gaming System.

Gaming Rules (aka “House Rules”) – Any written, graphical, and auditory information compiled by the operator for the purpose of summarizing portions of the internal control procedures and certain other information necessary to inform the public of the functionality of the interactive gaming operations.

Gaming Session – The period of time commencing, at minimum, when a player initiates a game or series of games on a Gaming Platform for a particular game theme by committing a wager and ending at the time of a final outcome for that game or series of games and coincide with the opportunity for the player to exit the game.

Geolocation Information Leakage – The exposure of validation logic, diagnostic feedback, rejection codes, technical failure reasons, or other information that could enable a player or unauthorized party to understand, bypass, or evade geolocation controls.

Geolocation Integrity Risk – Any attack, vulnerability, or unauthorized interference with location data, geolocation results, and related geolocation controls. These may include, but are not limited to, replay attacks, “Man-in-the-Middle” attacks, geolocation result forgery/reconstruction, geolocation information leakage, client-side tampering, Wi-Fi injection, or similar methods.

Geolocation Result Forgery/Reconstruction – The generation or alteration of apparently valid geolocation results through reverse engineering, exposed software development kit (SDK) logic or validation methods, unauthorized interfaces, manipulated client-side components, or similar exploits.

Geolocation Service Provider – An in-house or third-party entity who identifies, or provides information for the identification of, the real-world geographic location of individuals.

Geolocation Solution – A mechanism to reasonably detect the real-world geographic location of a player when using their Remote Player Device.

Group Membership – A method of organizing user accounts into a single unit (by job position) whereby access to system functions may be modified at the unit level and the changes take effect for all user accounts assigned to the unit.

Hardware-Based RNG – An RNG that derives its randomness from small-scale physical events such as electric circuit feedback, thermal noise, radioactive decay, photon spin, etc.

Hash Algorithm – A function that converts a data string into an alpha-numeric string output of fixed length.

House-Banked Game – A game in which the operator participates as a party to the wager and banks the game by paying winning wagers and collecting losing wagers, rather than merely facilitating the gaming activity. Examples of house-banked games include, but are not limited to, spinning reel

games, house-banked card games, dice games, roulette, keno, immediate prize games, crash games, and mine games.

Inactive Player Account – A player account considered to be inactive under the conditions as specified in the terms and conditions.

Increment Rate – The configurable or hardcoded value used to increment the jackpot.

Incrementing Bonus Jackpot – A monetary award or “jackpot payoff” that increases on the occurrence of one or more specific conditions established by the rules of the game. In addition to those specific conditions, it is acceptable for incrementing bonus jackpots to also increase according to the amounts wagered.

Information Security – Protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide integrity, confidentiality, and availability.

Interactive Gaming – Gaming, conducted through the use of communications technology, which uses an element of chance, skill, or strategy, or some combination of these elements in the determination of awards, contains some form of activation to initiate the selection process, and makes use of a suitable methodology for delivery of the determined outcome to the player’s Remote Player Device.

Interactive Gaming System – The hardware, software, firmware, communications technology, other equipment, as well as operational procedures implemented in order to allow player participation in interactive gaming, and, if supported, the corresponding equipment related to the determination and display of game outcomes, and other similar information necessary to facilitate player participation. The system provides the player with the means to play games. The system provides the operator with the means to review player accounts, disable games, generate various gaming transaction, financial transaction, and player account reports, input outcomes for live games, and set any configurable parameters. The term does not include Remote Player Devices or communications technology used by a player to participate in interactive gaming.

Internet – An interconnected system of networks that connects computers around the world via TCP/IP.

IP Address, Internet Protocol Address – A unique number for a computer that is used to determine where messages transmitted on the Internet should be delivered. The IP address is analogous to a house number for ordinary postal mail.

Jackpot Display – A display which is used to indicate the jackpot payoff and any other relevant jackpot information.

Jackpot Diversion Scheme – A portion of the jackpot contributions are diverted to another pool or “diversion pool” to be used as needed by the design of the jackpot (e.g., the diversion pool may be added to the reset value of the next jackpot or be used to pay simultaneous wins of a jackpot).

Jailbreaking – Modifying a smartphone or other electronic device to remove restrictions imposed by the operator or software supplier to allow the installation of unauthorized software.

Key – A value used to control cryptographic operations, such as decryption, encryption, signature generation or signature verification.

Known Input Attack – An RNG attack whereby the attacker is able to compromise an RNG by determining or estimating the state of the RNG after initial seeding.

KYC Service Provider, Know-Your-Customer Service Provider (aka “Identity Verification Service Provider”) – An in-house or third-party entity who verifies, or provides information for the verification and validation of the identity of individuals.

KYC Solution, Know-Your-Customer Solution (aka “Identity Verification Solution”) – A mechanism to reasonably verify and validate the identity of individuals.

Link Utilization – The percentage time that a communications link is engaged in transmitting data.

Live Game – A game conducted by a gaming attendant (e.g., dealer, croupier, etc.) and/or other gaming equipment (e.g., automated roulette wheel, ball blower, gaming device, etc.) in a live gaming studio in which players have the ability to review gameplay and communicate game decisions through the Gaming Platform. Live games include, but are not limited to, live drawings, live card games, live table games, live keno games, live bingo games, live gameshow games, and live play of gaming devices or other games as allowed by the regulatory body.

Live Gaming Studio (aka “Live Game Environment”) – A physical location that utilizes live video streaming technology to provide live games to a Remote Player Device that permits the player to participate in live streamed games, interact with game attendants, and interact with fellow players.

Location Anomaly Indicator – Any current or historical geolocation pattern that may indicate suspicious, unauthorized, coordinated, automated, or improper access. These may include, but are not limited to, impossible travel, anomalous velocity, successive physical locations that could not reasonably be traveled between in the time reported, location behavior inconsistent with account, device, or network history, repeated failed or unauthorized geolocation attempts, or patterns suggesting coordinated, relayed, shared, or automated access activity.

Malware – A program that is inserted into a system, usually covertly, with the intent of compromising the confidentiality, integrity, or availability of the victim’s data, applications, or operating system or of otherwise annoying or disrupting the victim.

“Man-in-the-Middle” Attack – The unauthorized interception, modification, injection, substitution, or manipulation of location data or geolocation results while communicated between the Remote Player Device, the Interactive Gaming System, and/or the Geolocation Solution.

Mapping Algorithm – An algorithm or method by which a value is associated to a symbol/object that is usable and applicable to the current game (e.g.: the value 51 might be mapped to an ace of spades).

Maximum Total Win Value – The highest amount of winnings that may be awarded to a player after applying any win cap or truncation, regardless of whether the actual game outcome would have resulted in a higher win amount.

Mechanical RNG (aka “Physical Randomness Device”) – An RNG that generates outcomes mechanically, employing the laws of physics. Live game implementations include, but are not limited to, mechanical wheels, tumblers, blowers, shufflers, etc.

MFA, Multi-Factor Authentication – A type of authentication which has been demonstrated to effectively provide higher security than a username and password alone to verify an individual's identity. Supporting technologies may include Customer Identity and Access Management (CIAM) platforms, Fast Identity Online (FIDO) authentication solutions, or similar authentication frameworks.

Mystery Award – An award paid by a game that is not associated with a specific payable combination.

Near-Miss – A design where the outcome presented to the player suggests a higher likelihood of winning an explicitly advertised top award or triggering a bonus feature game than is determined by the game's mathematics or rules.

NFC, Near Field Communication – A short-range wireless connectivity standard that uses magnetic field induction to enable communication between devices when they are touched together or brought within a few centimeters of each other.

Non-Wager Purchase – A purchase made by the player that debits the funds available for wagering and which does not influence the outcome of any game. An example might be the purchase of an artistic attribute of a game.

Operator – A person or entity that oversees interactive gaming, using both the technological capabilities of the Interactive Gaming System as well as their own internal control procedures. For the purposes of this document, the term operator also includes any person or entity that oversees some or all interactive gaming on the operator's behalf, such as a game supplier, software supplier, or a management services provider.

OTAC, One-Time Authentication Credential (aka “One-Time Passcode (OTP)”) – A secure, temporary, authentication credential either sent to a Remote Player Device, or an email address, or phone number that has been confirmed as being owned or possessed by the player or generated by an authentication application or software program used by the player and accepted by the Interactive Gaming System.

Overflow – Pool containing the contributions which exceed the maximum jackpot payoff limit or “ceiling”.

P2P Gaming, Peer-to-Peer Gaming – Gaming where players wager with and against one another rather than against the operator, who may take a rake, commission, or fee for facilitating the gaming activity. Examples of P2P gaming include, but are not limited to, player-banked card games, player-banked drawings, contests, tournaments, competitive games with skill, etc.

PAR Sheet – A specification sheet for a game that provides the theoretical return to player, hit frequency, symbol combination, number of reels, number of credits that can be accepted, and reel strip listing as applicable.

Parlay – A single wager that links together two or more individual wagers and is dependent on all of those wagers winning together.

Passkey – An authentication credential that uses a pair of cryptographic keys and typically authenticates an individual through biometrics, a PIN, or device authentication.

Password – An authentication credential, using a string of characters (letters, numbers, and other symbols) used to authenticate an identity or to verify access authorization.

Paytable (aka “Variation”) – The mathematical behavior of a game based upon the data from the supplier’s PAR sheet, inclusive of the return percentage, and reflective of all possible payouts/awards.

Perfecta (aka “Exacta”) – A wager type in which the player picks the first and second place participants in a wagering event in the correct finishing order.

Permitted Geofence – A virtual geographic perimeter delineated by a Global Positioning System (GPS), Radio-frequency Identification (RFID), or other similar technology, within which the player may place a wager and/or perform account activities as required by the regulatory body.

Persistence Feature – A feature that is associated with a unique attribute (e.g., player account ID, game theme ID, payable ID, etc.) and incorporates persistent states, metamorphic behaviors, features that are not independent of prior gameplay, or features that enable progress towards the award of gameplay enhancements and/or bonuses through the achievement of some designated game outcome.

Physics Engine – Specialized software that approximates the laws of physics, including behaviors such as motion, gravity, speed, acceleration, mass, etc. for a game’s elements or objects. The physics engine is utilized to place game elements/objects into the context of the physical world when rendering computer graphics or video simulations.

PII, Personally identifiable information – Sensitive information that identifies, relates to, describes, or can reasonably be linked to a player, including, but not limited to, a player’s full legal name, date of birth, residential address, contact information, full or partial government identification number

(e.g., driver's license number, social security number, taxpayer identification number, passport number, or equivalent), personal financial information (e.g., credit or debit instrument numbers, bank account numbers, etc.), or other personal information as may be specified by the regulatory body.

PIN, *Personal Identification Number* – An authentication credential, using a numerical code associated with an individual and which allows secure access to a domain, account, network, system, etc.

Play from Save – A feature utilized in some game designs where complexity increases, or additional elements are added to the game, as play continues. A player is able to save their progress and resume from the saved point of gameplay.

Player Account (aka “Wagering Account”) – An account maintained by an operator for a player where information relative to wager and financial transactions are recorded on behalf of the player including, but not limited to, deposits, withdrawals, wagers, winnings, and balance adjustments. The term does not include an electronic payment account, or an account used solely by an operator to track bonusing/promotional points or credits or similar benefits issued by an operator to a player which may be redeemed for merchandise and/or services.

Player Account Manager – The hardware, software, firmware, communications technology, other equipment, as well as operational procedures used to create, manage, and track player accounts and history, and to provide player account functions, including account management, payments, wallets, and responsible gaming controls. The Player Account Manager may be a standalone system or integrated within another part of the Interactive Gaming System.

Player Application – The software used to take part in wagers and financial transactions with the Interactive Gaming System which, based on design, is downloaded to or installed on the Remote Player Device, run from the Interactive Gaming System which is accessed by the Remote Player Device, or a combination of the two. Examples of Player Applications include proprietary download software packages, html, flash, etc.

Player Attribute – Any specific and verifiable fact concerning a player or group of players which is based upon objective criteria relating to the player or group of players and which may be utilized to affect some prescribed action taken, or alteration made to the game (e.g., game rule change, payable change, or other configuration change related to the game or game outcome, etc.).

Player Interaction Device – An internal or external device that connects to a device and that registers various types of player inputs allowing the player to interact with the device. Several examples include touch screens, joysticks, handheld controllers, camera systems, etc. The player interaction device may be hard-wired or wireless. A “smart” player interaction device supports two-way communications with the device. For the purpose of this technical standard, a traditional keyboard is excluded from this definition unless it is used to affect the outcome for a wager.

Player Interface – An interface application or program through which the individual views and/or interacts with the Remote Player Device to communicate their actions to the Interactive Gaming System.

Player Loyalty Program – A program that awards player loyalty points (or other comparable entitlement) to players, typically based on the volume of play or revenue received from a player.

Pool – An accumulated reservoir of monetary contributions.

Prepaid Access Instrument – A card, code, electronic serial number, mobile identification number, personal identification number or similar device used in conjunction with an Interactive Gaming System that allows player access to funds that have been paid in advance and can be retrieved or transferred at some point in the future through such a device.

Primary Game – Gameplay which takes place before any double-up/gamble features are played.

Profiling – Any form of automated processing of PII consisting of the use of PII gathered from various sources to evaluate certain personal aspects relating to a natural person, in particular to analyze or predict aspects concerning that natural person's economic situation, personal preferences, interests, reliability, behavior, location, etc.

Progressive Jackpot – A monetary award or “jackpot payoff” that increases generally based on a function of wagers or some other metrics.

Prohibited Player Activity – Activity prohibited by internal control procedures, Gaming rules, or applicable laws or regulations. These may include, but are not limited to, cheating, fraud, theft, embezzlement, collusion, identity misrepresentation, money laundering, terrorist financing, use of funds derived from illegal activity, unauthorized player assistance, or other activity that compromises the integrity of interactive gaming.

Protocol – A set of rules and conventions that specifies information exchange between devices, through a network or other media.

Proxy – An application that “breaks” the connection between client and server. The proxy accepts certain types of traffic entering or leaving a network and processes it and forwards it. This effectively closes the straight path between the internal and external networks. Making it more difficult for an attacker to obtain internal addresses and other details of the internal network.

Pseudo-Live Game – A game that simulates the play of a live game that replicates a live game experience using pre-recorded video footage of a live gaming studio, computer-generated imagery, and/or green screen technology.

Quinella – A wager type in which the player picks the first and second place participants in a wagering event, but not necessarily in the finishing order.

Rake, Commission, or Fee – An amount retained and not distributed by the operator from the total amount wagered on a game.

Remote Player Device – A player-owned device operated either on an in-venue wireless network or over the internet that at a minimum will be used for the execution or formalization of wagers placed by a player directly. Examples of a Remote Player Device include a personal computer, mobile phone, tablet, etc.

Reset Value – The amount of a jackpot payoff initially offered before it increases.

Restricted Bonusing/Promotional Credits (aka “Non-Cashable Bonusing/Promotional Credits”) – Bonusing/Promotional amounts that either are not redeemable for cash or cannot be cashed out until a wagering requirement or other restrictions associated with the credits is met.

Restricted Player Funds – Player funds that are not redeemable for cash, including restricted bonusing/promotional credits.

Risk – The likelihood of a threat being successful in its attack against a network or system.

RNG, Random Number Generator – A computational or physical device, algorithm, or system designed to produce unpredictable values in a manner indistinguishable from random selection.

RNG Period – The length of the ordered sequence of raw numbers output by the RNG. When the RNG is cyclic, it has a finite period. Otherwise, the RNG is said to have an infinite period.

RNG State – The state defined by one or more variables in computer memory and represents a specific point within the cycle of the RNG. RNG state may be modified by replacing one or more of these variables with new values or otherwise mixing the values with new data.

Rooting – Attaining root access to the operating system code to modify the software code on the mobile phone or other Remote Player Device or install software that the operator or software supplier would not allow to be installed.

RTP, Return to Player – A ratio of the ‘total amount won’ to the ‘total amount wagered’ by a player. Such a return may be “theoretical” (based on mathematical calculations or simulations) or “actual” (based on the metering supported by an enabled game).

Scaling Algorithm – An algorithm or method by which the numbers selected by an RNG are scaled or mapped from a greater range to a lesser range for use in the game.

Secure Communication – Communication that provides the appropriate confidentiality, authentication, and content integrity protection.

Seeding/Seed – The initialization of the state variables of an RNG. The source value or values used for initialization is the seed.

Sensitive Information – Information that shall be handled in a secure manner, such as PII, gaming data, RNG seeds, authentication credentials, PINs, passwords, secure seeds and keys, and other data which is of a sensitive nature.

Server – A running instance of software that is capable of accepting requests from clients, and the computer that executes such software. Servers operate within a Client-Server Architecture, in which “servers” are computer programs running to serve the requests of other programs (“clients”). In this case the “server” would be the Interactive Gaming System and the “clients” would be the Remote Player Devices.

Shared Jackpot – A jackpot which is integrated with or linked to multiple game themes contributing to a common jackpot payoff.

Shuffling Algorithm – An algorithm or method by which RNG output is used to produce without replacement data, or, equivalently, to randomize the order of multiple objects. All possible orderings are intended to be equally likely.

Skill – The human attributes of a player such as knowledge, dexterity, visual recognition, logic, memory, reaction, strength, agility, athleticism, hand-to-eye coordination, numerical and/or lexical ability, or any other ability or expertise relevant to gameplay.

Skill Level – A measure of a player's proficiency at a given game or type of game, expressed as a rating, rank, or tier and typically derived from gameplay over time.

Soft-Play – Illicit peer-to-peer coordination where one or more players decline to play against another player in situations where such behavior is unreasonable in accordance with normal practices of play (for example, a player leaves the game even if the win is secure).

Software RNG – An RNG that derives its randomness from a computer-based or software-driven algorithm.

Source Code – A text listing of commands to be compiled or assembled into an executable computer program.

Sponsored Player (aka “Proposition Player” or “Shill”) – A player hired by the operator or other entity to participate in interactive gaming, and wagers using personal funds or funds provided directly or indirectly by the operator or other entity.

Startup Value – The initial jackpot value (does not include values from overflow or diversion pools).

State Compromise Extension Attack – An RNG attack in which an attacker compromises a single state of the RNG and penetrates past or future outputs of the RNG using this information. Usually this attack is executed using the seed state or a vulnerable state in which insufficient entropy is available.

Surrender – An option available in some card games where the player can forfeit half of their wager rather than play out their active hand of cards. There are two types of surrender: early and late. These terms refer to whether or not a dealer checks to see if she/he has a blackjack (when an Ace or 10 is showing) before the player makes the surrender decision.

Suspicious Player Activity – Activity, pattern, or condition involving gameplay, games, player accounts, transactions, communications, devices, or related activity that may indicate coordinated player activity, unauthorized player assistance, prohibited player activity, unauthorized proxy betting, or other integrity concerns. These may include, but are not limited to, irregular gameplay patterns or series of abnormal wagers or gaming activity, unusual gameplay volumes, wager structuring, timing anomalies, rapid changes in gameplay behavior, abuse of gameplay mechanics, manipulation of game outcomes, peer-to-peer gaming session hopping, misuse of insider information, abuse of bonuses/promotional offers, payment fraud, identity theft, account takeover or misuse, or behavior inconsistent with normal player activity.

Teaser – A wager type that combines two or more wager selections, typically involving point spreads or over/unders, in which the player receives an adjusted spread or total for each selection in exchange for reduced odds or payout.

Third-Party Service Provider – An entity who acts on behalf of an operator to provide services used for the overall conduct of interactive gaming.

Threat – Any circumstance or event with the potential to adversely impact network operations (including mission, functions, image, or reputation), assets, or individuals through a system via unauthorized access, destruction, disclosure, modification of information, and/or denial of service. Also, the potential for a threat-source to successfully exploit a system vulnerability.

Time Stamp – A record of the current value of the Interactive Gaming System date and time which is added to a message at the time the message is created.

Touch Screen – A video display device that also acts as a player input device by using electrical touch point locations on the display screen.

Tournament (aka “Contest/Tournament”) – An organized, measured event that permits a player to engage in competitive wagering against other players. An out-of-revenue tournament involves only non-wagered competition using tournament credits or points that have no cash value. In contrast, an in-revenue tournament allows for wagered competition in conjunction with the operation of the tournament.

Trifecta – A wager type in which a player wins by selecting the first, second, and third place participants in a wagering event in the correct finishing order.

Unauthorized Access – A person gains logical or physical access without permission to a network, system, application, data, or other resource.

Unauthorized Player Assistance – The use of bots, scripts, and other unauthorized player software, which may include automated tools, external systems, real-time analytical tools, or prohibited decision-making aids to generate, recommend, execute, or influence wagers or gameplay decisions in violation of the gaming rules.

Unrestricted Bonusing/Promotional Credits (aka “Cashable Bonusing/Promotional Credits”) – Bonusing/Promotional amounts that are redeemable for cash.

Unrestricted Player Funds – Player funds that are redeemable for cash, including unrestricted bonusing/promotional credits.

Virtual Event Wagering – A form of wagering that allows for the placement of wagers on computer-generated simulations of, or previously recorded, wagering events in which virtual participants compete with one another.

Virtual Opponent – A computer-based player that participates in a game with skill and effectively mimics the actions of a live player.

Virtual Participant – The athlete or other entity that competes in a virtual wagering event or games simulating sports or racing games.

Virus – A self-replicating program, typically with malicious intent, that runs and spreads by modifying other programs or files.

Virus Scanner – Software used to prevent, detect and remove computer viruses, including malware, worms and Trojan horses.

VPN, Virtual Private Network – A logical network that is established over an existing physical network and which typically does not include every node present on the physical network.

Vulnerability – Software, hardware, or other weaknesses in a network or system that can provide a “door” to introducing a threat.

Wager (aka “Bet”) – Any commitment of credit, currency, or other representation of value by a player on the outcome of a game.

Wagering Event – A sporting event or game, competition, contest, match, race, or other occurrence or type of activity approved by the regulatory body upon which wagers may be offered.

Wi-Fi – The standard wireless local area network (WLAN) technology for connecting computers and electronic devices to each other and/or to the internet.

Wi-Fi Injection – The use of synthetic, spoofed, replayed, or otherwise manipulated Wi-Fi signals or access point data to falsify or influence a device’s location data.

Winning Combination – A game result in which one or more winning patterns appear.

Winning Pattern – A pattern which results in a prize being awarded.