



STANDARD SERIES

GLI-17:

Bonusing Systems in Casinos

Version: 1.2

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ABOUT THIS STANDARD

This Standard has been produced by Gaming Laboratories International, LLC (GLI) for the purpose of providing independent certifications to suppliers under this Standard and complies with the requirements set forth herein.

A supplier should submit equipment with a request that it be certified in accordance with this Standard. Upon certification, Gaming Laboratories International, LLC will provide a certificate of compliance along with an appropriate *Gaming Labs Certified*[®] mark evidencing the certification to this Standard.

Bonusing Systems In Casinos

GLI-17 Revision 1.2

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REVISION HISTORY

REV 1.2

*General grammatical changes were made throughout the document.

2.4.1(c) changed the rule to require the manuals to be submitted in either hard or soft copy format instead of both.

3.1.1 changed to clarify that the rules in this section apply to the 'bonus' gaming device.

3.1.3 removed the requirement for the gaming device to have logs for the transaction audit trails and added the requirement for the gaming device to have the ability to recall this information. Also, changed the audit trails to bonusing transactions to refer to bonus awards instead of monetary. Reworded the exception for games using cashless or promotional systems to allow for both systems that may be used at one time.

3.1.3 NOTE Removed the section that allowed the audit transactions to be displayed 'at or near' the gaming device because of the change in 3.1.3.

3.1.4(a) changed to better clarify the intent of the rule and removed the reference to 3.1.4 NOTE1, since removed.

3.1.4(b) is now 3.1.4(c) and 3.1.4(b) is now a rule for the gaming device's 'handpaid' meter to include bonus wins that are handpaid.

3.1.4(c)(ii) changed the reference to the NOTE2 to 'NOTE' since NOTE2 was renamed.

3.1.4NOTE added a waiver for the handpay meter as long as there is a method to audit the bonus awards that are handpaid.

3.1.4NOTE1 removed since now clarified in 'NOTE'.

3.2.3NOTE changed to clarify that each local regulatory agency will determine the controls governing changes to critical parameters.

3.4.1(d) removed the requirement for the system to generate a 'Comparison from Theoretical to Actual Hold' report also see new note for this section.

REV 1.1

*Several changes were made based on the TAM Conference held in Golden, Colorado on November 8 & 9 of 2001, where many regulators attended and supplied their comments.

1.1.1 Removed the comment within the definition that says this feature shall not impact the theoretical percentage for the game because it was incorrectly worded in v1.0. Also added a sentence to the end of this section that indicates the parameters and eligibility for the bonus is to be determined by the property.

3.1.2 Replaced the word 'had' with 'allows' to better clarify.

3.1.3 Clarified the last 25 transactions 'transmitted' to the host system. In addition, added the ability to have a 100 event log if a gaming device has Cashless or host Promotional features enabled simultaneously with cashless features.

3.1.3(b) Removed the comment only requiring the 'time and date' if logged separately from the gaming device recall since already covered by 3.1.3.

3.1.3 NOTE Changed to allow for the bonus award transactions to be recallable at or near the gaming device

3.1.5 'Diagnostic Tests on a Bonusing Gaming Device' was moved to 3.2.5 and was replaced with Identifying a Bonusing Device. Also every rule after 3.1.5 has been changed from v1.0 to 1.1.

3.2.2 Renamed from Error Conditions to Communication failure.

3.2.2 NOTE Added a note to address the system recognizing communication failures.

3.2.3 NOTE Added a sentence indicating that each bonus configuration must be submitted to the regulatory agency for prior approval before implementation.

3.3.1(a)(ii) Removed the requirement to record the patron account since there may not be an account with a bonusing system.

3.3.1 NOTE Removed the entire note that required the system to monitor the time and date stamp because this information must be available on the game to allow for correlation of bonusing events to game recall.

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CHAPTER 1

1.0 OVERVIEW - STANDARDS FOR BONUSING SYSTEMS IN CASINOS

1.1 Introduction

1.1.1 Bonusing Systems Defined. Bonusing Systems are comprised of gaming devices that are configured to participate in electronically communicated bonus award payments from a host system, and the host system that controls the bonus award issuance parameters. The bonus host system provides designated gaming devices with additional features that entitle players to special Bonus Awards based on events triggered by the gaming device. In other words, bonus awards are a derivative of an existing casino feature whereby game events may result in additional pays to those described on the payable (artwork or help screens). Facilities now exist to support these awards at a gaming machine utilizing protocol commands for direct credit transfers to the gaming machine as the patron is playing the device. Bonus awards are those based on a gaming machine event or some external trigger which do not include triggers based upon specific patron account activity. For discussion of additional awards based on player accounts, please see GLI-18, Promotional Systems in Casinos. A bonus award is typically won based on several criteria: a variable amount of play occurring on a group of participating gaming machines or achieving a winning combination during a specific time frame. Examples include: multiplied jackpots, whereby the host system is able to instruct the gaming machine to multiply all wins within a specified range by a specified value or an nth coin award is won when a percentage of play on participating gaming machines reaches a randomly selected value. The parameters and eligibility are to be determined by each property in accordance with the Minimum Internal Control Procedures (MICPs).

1.1.2 Phases of Certification. The approval of a Bonusing System shall be certified in two phases:

- a) Initial laboratory testing, where the laboratory will test the integrity of the system in conjunction with EGDs, in the laboratory setting with the equipment assembled; and
- b) On-site certification where the communications and set up are tested on the casino floor prior to implementation.

1.2 Acknowledgment of Other Standards Reviewed

1.2.1 RESERVED

1.3 Purpose of Standard

1.3.1 General Statement. The purpose of this technical standard is as follows:

- a) To eliminate subjective criteria in analyzing and certifying Bonusing System operation.
- b) To only test those criteria which impact the credibility and integrity of gaming from both the Revenue Collection and game play point of view.
- c) To create a standard that will insure that Bonusing Systems in Casinos are fair, secure, and able to be audited and operated correctly.
- d) To distinguish between local public policy and laboratory criteria. At GLI, we believe that it is up to each local jurisdiction to set their public policy with respect to gaming.
- e) To recognize that non-gaming testing (such as Electrical Testing) should not be incorporated into this standard but left to appropriate test laboratories that specialize in that type of testing. Except where specifically identified in the standard, testing is not directed at health or safety matters. These matters are the responsibility of the manufacturer, purchaser, and operator of the equipment.

- f) To construct a standard that can be easily changed or modified to allow for new technology.
- g) To construct a standard that does not specify any particular technology, method or algorithm. The intent is to allow a wide range of methods to be used to conform to the standards, while at the same time, to encourage new methods to be developed.

1.3.2 No Limitation of Technology. One should be cautioned that this document should not be read in such a way that limits the use of future technology. The document should not be interpreted that if the technology is not mentioned, then it is not allowed. Quite to the contrary, as new technology is developed, we will review this standard, make changes and incorporate new minimum standards for the new technology.

1.3.3 Scope of Standard. This standard will only govern Bonusing Systems and Device requirements necessary to achieve certification.

1.3.4 Exceptions to Standard. This standard does not govern Cashless or Promotional System requirements for any other form of electronic transaction.

Please refer to GLI-16 for Cashless and GLI-18 for Promotional System regulations.

1.4 Other Documents That May Apply

1.4.1 General Statement. This standard covers the minimal requirements for Bonusing Systems and Device(s) and all associated components. The following other standards may apply:

- a) Gaming Devices in Casinos (GLI-11);
- b) On-Line Monitoring and Control Systems (MCS) and Validation Systems in Casinos (GLI-13); and
- c) Individual Gaming Board Minimum Internal Control Procedures.

***NOTE:** All bonuses should require formal submission to and written approval from the local regulatory group who may respond to unconditionally approve, require additional constraints be placed on the bonuses to resolve any issues, or disallow the bonus. The possible permutations and effects concern subtleties best left to the discretion of the individual jurisdiction.*

CHAPTER 2

2.0 SUBMISSION REQUIREMENTS

2.1 Introduction

2.1.1 General Statement. This chapter shall govern the types of information that are, or may be required to be submitted by the submitting party in order to have equipment tested to this Standard. Where the information has not been submitted or is not otherwise in the possession of the test laboratory, the submitting party shall be asked to supply additional information. Failure to supply the information can result in denial in whole or in part of the submission and/or lead to testing delays.

2.1.2 Previous Submission. Where the testing laboratory has been previously supplied with the information on a previous submission, duplicate documentation is not required, provided that the previous information is referred to by the submitting party, and those documents are easily located at the testing laboratory. Every effort shall be made to reduce the redundancy of submission information.

2.2 Prototype (Full Submission) Submissions

2.2.1 General Statement. A Prototype (full submission) submission is a first time submission of a particular piece of hardware or software that has not previously been reviewed by the test laboratory. For Modifications of previous submissions, including required changes to previously submitted Prototype (full submission) certification, whether certified or pending certification, see ‘Submissions of Modifications (partial submissions) to a Previously Certified Item,’ Section 2.7.

NOTE: *Due to abnormal component complexity and/or excessive cost it is sometimes necessary for on-site testing of a system at the manufacturer’s facility. Regular upgrades normally preclude testing at the manufacturers’ facility except in the case of prototype submissions.*

2.2.2 Submission Letter Requirements. Each submission shall include a request letter, on company letterhead, dated within one (1) week of the date the submission is received by the test laboratory. The letter should include the following:

- a) The jurisdiction(s) for which you are requesting certification;
- b) The items requested for certification. In the case of software, the submitting party shall include ID numbers and revision levels, if applicable. In the case of proprietary hardware, the submitting party shall indicate the manufacturer, model, and part and revision numbers of the associated components of hardware; and
- c) A contact person who will serve as the main point of contact for engineering questions raised during evaluation of the submission. This may be either the person who signed the letter or another specified contact.

2.3 System Hardware Submission Requirements – Prototype (Full Submission) Certification

2.3.1 Presentation of Equipment to the Test Laboratory; Identical Equipment. Each item of gaming equipment supplied by a manufacturer to the field shall be functionally identical to the specimen tested and certified. For example, an interface element supplied as a certified device shall not have different internal wiring, components, firmware, circuit boards, circuit board track cuts or circuit board patch wires from the certified specimen, unless that change is also certified, see also ‘Submissions of Modifications (partial submissions) to a Previously Certified Item,’ Section 2.7.’

2.3.2 Inventory of Equipment to the Test Laboratory. Each submission of hardware shall contain the following:

- a) Server, Database, Front End Controller, Data Collector and Ancillary Stations to include but not limited to: Surveillance/Security monitor functionality; EGD Management functionality; and Accounting/Reporting Functionality; Bonus Award Configuration Management functionality;
- b) Monitors, keyboards, mouse, printers, etc., to support the items listed above;
- c) Minimum of seven interface element devices with corresponding power connectors (if separate from harness), keypads, displays, and card reader (or equivalent if an alternative media is used);
- d) Minimum of one wiring harness for each EGD type desired for operational approval with system where specific harnessing is required;
- e) Minimum of two of each type magnetic cards (or equivalent if an alternative media is used) used in the system, if applicable; and
- f) Un-interruptible Power Supply (UPS) for critical components.

NOTE: *In an effort to reduce system submission size, monitor and data switches may be used. Additionally, separate software may be housed in the same unit, as long as the functionality is not impaired and the software is identical to the field version.*

2.3.3 Accompanying Documentation. All accompanying technical documents, manuals, and schematics shall be submitted. In addition, the following items shall be provided:

- a) If applicable, all UL, CSA, EC, AS3100, etc. or equivalent certification. This certification information may be supplied at a later date;
- b) Any other proprietary equipment that may be used in the field in conjunction with the Submission, if necessary to test the requirements set forth;
- c) Accompanying software, see also 'System Software Submission Requirements – Prototype (Full Submission) Certification,' Section 2.4;
- d) RNG algorithm and associated internal test documentation, including data collection used for mathematical analysis (hard and soft copies), if applicable; and

- e) If the submitting party has specialized equipment and/or software which is needed by the test laboratory to test submitted system, such as load/game simulators or test data files, then the specialized equipment and/or software and all appropriate operation and user manuals for the equipment and/or software shall be included with the submission.

NOTE: Commercially available products are not required for submission unless omission will impact testing and proper operation of the system.

2.4 System Software Submission Requirements – Prototype (Full Submission) Certification

2.4.1 General Statement. Each submission of software shall contain the following:

- a) Two sets of all EPROMs, CD-ROMs, or other storage media which contain identical contents. This includes all program executables, system component firmware, bin files, etc. Where the test laboratory already has tested a software component, resubmission may not be necessary;
- b) Source Code, a Link Map and Symbol Table for all primary software executables. In addition, if requested, explanation of all non-volatile RAM on any system device with the non-volatile RAM locations described;
- c) All user manuals in either hard or soft copy format to include a general overview of the system from a component level, software and hardware setup and integration, and system block diagrams and flow charts for the communication program, if required;
- d) If not included in the user manuals, a connectivity manual for all unique electronic gaming devices capable of being interfaced with system to include device model numbers and compatibility list, if applicable; wiring diagrams depicting connection points to devices, power, etc.; and identification by part number or some other scheme, any unique wiring harnesses, ancillary boards required for communication of a particular device;

- e) If not included in the user manuals, provide example reports for each standard report capable of being generated on the system with a formula summary detailing all reporting calculations including data types involved, mathematical operations performed, and field limit;
- f) If not included in the user manuals, a list of all supported communication protocols specifying version, if applicable;
- g) If utilizing a software verification algorithm, provide a description of the algorithm, theoretical basis of the algorithm, results of any analyses or tests to demonstrate that the algorithm is suitable for the intended application, rules for selection of algorithm coefficients or "seeds", and means of setting the algorithm coefficients or "seeds";
- h) If not included in the user manuals, provide concise instructions for configuration of all applicable parameters of bonus activity; and
- i) If completed by the manufacturer, provide a system test plan and results to detail electronic gaming devices and software versions tested with.

2.5 Software Programming Requirements and Compilation

2.5.1 General Statement. The following items shall be contained within all submitted source code or related modules:

- a) Module Name;
- b) Brief description of module function; and
- c) Edit History, including who modified it, when and why.

2.5.2 Source Code Commented. All source code submitted shall be commented in an informative and useful manner.

2.5.3 Source Code Completeness. All source code submitted shall be correct, complete and able to be compiled.

2.6 Program Identification

2.6.1 Software Requirements. On the primary system software components submitted and subsequently placed in the field, each program shall be uniquely identified and either display version information at all times or via a user accessible function.

2.6.2 Firmware Requirements. On the system firmware submitted and subsequently placed in the field, each program shall be uniquely identified, displaying:

- a) Program ID ;
- b) Manufacturer;
- c) Version number;
- d) Type and size of medium (requirement can be met by manufacturer stamp) ; and
- e) Location of installation in interface element device, if potentially confusing.

NOTE: For EPROM based firmware, the identification label shall be placed over the UV window to avoid erasing or alteration of the program.

2.7 Submissions of Modifications (Partial Submissions) to a Previously Certified Item

2.7.1 General Statement. For any update submission (e.g., a revision to an existing hardware or software that is currently under review, certified or has been reviewed and not certified), the following information shall be required to process the submission in addition to the requirements set forth in ‘Submission Letter Requirements,’ Section 2.2.2. All modifications require re-testing, examination, and re-certification by the test laboratory.

2.7.2 Modification of Hardware. Each hardware submission shall:

- a) Identify the individual items being submitted (including part number);
- b) Supply a complete set of schematics, diagrams, data sheets, etc. describing the modification along with the reason for the change(s); and
- c) Provide the updated or new hardware, a description and the method of connection to the original system or hardware components.

2.7.3 Modification of System Software Functions or to Correct Software Error. The submitter should use the same requirements as in the ‘Software Submission Requirements – Prototype (Full Submission) Certification’ Section 2.4 listed above, except where the documentation has not changed. In this case, a resubmission of identical documents is not required. However, the submission must include a description of the software change(s) and modules affected and new source code for the entire program, if applicable.

2.7.4 Software Submission - Modification to Existing or Create New System Functionality. For a system specific submission (e.g., new workstation software), the following information may be required to process the submission:

- a) If new, a complete description of the function, including amendment manual and user documents, and new source code, if applicable; and
- b) If modifying, the submission must include a description of the software change(s), modules affected and new source code, if applicable.

2.8 System Security Submission Requirements

2.8.1 General Statement. Where a system requires the use of defined user roles with associated passwords or pin numbers, a default list of all users and passwords or pin numbers must be submitted including a method to access the database.

2.9 Joint Venture Submissions

2.9.1 General Statement. A system is considered a joint venture when two or more companies are involved in the manufacturing of one system. Due to the increasing amount of joint venture submissions (more than one supplier involved in a product submission) and to alleviate any confusion to the suppliers, our regulator clients and our firm, GLI has set forth the following procedures for such submissions:

- a) One company will prepare and submit the entire submission, even if they are using parts from other suppliers, and must identify all part numbers of all components. This will be the primary contact for the submission;
- b) The company submitting an approval request should do so on their letterhead. GLI will delegate an internal file number in this company's name and will bill this company for all costs incurred throughout the approval process;
- c) The primary contact will be called when questions arise. However, GLI engineers will work with all parties involved, completing the review;
- d) All suppliers who are part of the submission "group" may need to be licensed in the jurisdiction(s) where the submission is being approved. As a courtesy to the supplier, GLI may inquire as to who does not need to be licensed from the regulator client. It should be noted that licensing questions should be handled directly with the jurisdiction; and
- e) Upon completion, the primary contact company will receive the approval letter, provided the submission meets the jurisdictional requirements. The primary contact company may then release copies of the approval letter to the associated manufacturer(s).

CHAPTER 3

3.0 *BONUSING GAMING DEVICE AND SYSTEM REQUIREMENTS*

3.1 **Gaming Device(s) with a Bonusing Feature Requirements**

3.1.1 General Statement. The requirements throughout this section apply to the bonus gaming device. These requirements are in addition to the requirements set forth in GLI-11 Gaming Devices and Casinos, and GLI-13 On-Line Monitoring and Control Systems (MCS) and Validation Systems in Casinos.

3.1.2 Configuring Bonus Transactions on a Gaming Device. Since a Bonusing feature would impact the electronic accounting meters, any Gaming Device that allows Bonusing gaming as a selectable feature must conform to the Configuration Setting requirements outlined within GLI-11 Gaming Devices in Casinos.

3.1.3 Audit Trails for Bonusing Transactions. Bonus Gaming Devices must have the ability to recall the last twenty-five (25) monetary transactions received from the host system. However, if a gaming device has Cashless or host-Promotional features, or both, enabled simultaneously with bonus features, a single 100-event log would suffice. The following information must be displayed:

- a) The transaction value; and
- b) The time and date.

3.1.4 Meter Requirements for Bonusing Gaming Devices. Bonus gaming devices must incorporate electronic accounting meters that conform to the following electronic metering requirements:

- a) The operation of the mandatory electronic accounting meter, "Coins-Out" as described in GLI-11, shall reflect Bonus wins, if the host pays those Bonus wins to the game (i.e. not handpaid);
- b) The operation of the mandatory electronic accounting meter, "Handpays" as described in GLI-11, shall reflect Bonus wins that are handpaid by the gaming device; and
- c) In addition to the "Coins-Out" meter being incremented, the following additional specific Bonus Meters will be added:
 - i. Total Bonus In (received by game) meter; and
 - ii. Total Bonus Handpaid meter (Bonus Award received by game that forced handpay condition). **NOTE**

***NOTE:** If conditions exist wherein a bonus award is transferred to a gaming device, and results in a handpay, then this meter must increment for the value of the bonus award. Further, where this meter is not supported in the protocol, this requirement may be waived as long as there is a method to audit the Bonus Awards that are Handpaid.*

3.1.5 Identifying a Bonusing Device. A patron should be able to identify each supporting machine at or near the gaming device, by a means left to the discretion of the individual jurisdiction (e.g. provide a host message indicating bonusing capability or a specific sticker on gaming machines to indicate participation).

3.1.6 Notification of a Bonus Award. The method of bonus win notification, at or near the gaming device, can include any combination of host messaging, sounds, or visual indicators as long as deemed acceptable to the individual jurisdiction. Since bonuses are awarded directly to the gaming device, the gaming device itself shall reflect the amount of the bonus win. Additionally, electronic accounting meters, and logs will reflect all bonus transactions accordingly, see also section 3.1.3 and 3.1.4 of this document.

3.1.7 Disclaimers and Feature Expiration. Any disclaimers and their display to the public are also left to the discretion of the individual jurisdiction, as they will likely be non-uniform across specific manufacturer implementations. Qualifying parameters and/or frequency of events and any specific information relevant to the award type (e.g. current multiplier value during the bonusing session) shall be displayed.

3.2 Central System Security Requirements

3.2.1 General Statement. The rules within this section shall be implemented by the host system to allow for securely changing of any of the associated parameters. Additionally, the communication process must be robust and stable enough to secure each bonus award transaction such that failure event(s) can be identified and logged for subsequent audit and reconciliation.

3.2.2 Communication Failure. Messages must be either displayed to the patron or be available under a diagnostic function, either at the game or system level, which would indicate the reason for any bonus transaction failure due to a Communication Failure.

NOTE: In this circumstance, the bonusing system must recognize failure of bonus win payment to be paid to the gaming device, and notify appropriate casino personnel so manual procedures can be implemented to ensure proper payment.

3.2.3 Modification of Critical Parameters. All changes to factors that may impact bonus redemption frequency or amount must be logged indicating:

- a) who made the change;
- b) the altered parameter;
- c) the time and date of change;
- d) the parameter value before and after the change; and
- e) the reason for the parameter adjustment.

***NOTE:** Since bonus issuance may result in player fairness issues, which are jurisdictional public policy issues, each local regulatory agency will determine the controls governing changes to critical parameters.*

3.2.4 Prevention of Unauthorized Transactions. The following minimal controls shall be implemented by the host system to ensure that games are prevented from responding to commands for crediting outside of properly authorized Bonus transactions (hacking):

- a) The network hubs are secured (either in a locked/monitored room or area) and no access is allowed on any node without valid login and password;
- b) The number of stations where critical Bonusing applications or associated databases could be accessed is limited; and
- c) The users who have the requisite permission levels/login to adjust critical parameters are limited.

3.2.5 Diagnostic Tests on a Bonusing Gaming Device. Controls are placed on any diagnostic functionality available at the device/system such that all activity would reflect a specific individual(s) tasked to perform these diagnostics whereby all bonusing diagnostic activity that effect the gaming machine associated meters may be audited by the local regulatory group.

3.3 Central System Audit Trails

3.3.1 General Statement. The central system shall have the ability to produce logs for all complete bonus transactions to include the same information required on gaming machine audit logs. In addition, these logs shall be capable of being filtered by:

- a) Machine number;
- b) Time/Date; and
- c) Type.

3.4 Financial Reports

3.4.1 General Statement. The system shall have the ability to produce the following reports:

- a) Bonus Summary and Detail Reports. These reports shall include transaction information indicating the gaming machine number, amount, date/time and type of bonus;
- b) Bonus Meter Reconciliation Summary and Detail Reports. These reports shall provide reconciliation of each participating gaming machine bonus meter(s) against host system's bonus activity; and
- c) Auditing Report. This report shall provide modification details whenever critical parameters are modified.

NOTE: There must be a report or method that would allow the comparison of the theoretical hold percentage of the bonusing gaming device to the actual hold of the device.

3.5 Central System Random Number Generator

3.5.1 General Statement. Bonus systems that utilize an electro-mechanical system based Random Number Generator (RNG) must comply with the requirements outlined within the 'Mechanical and Electro-Mechanical Random Number Generator (RNG) Requirements,' of GLI-11.