

## GLI-11 V2.1: Summary of Relevant Changes

Rule Markup	Comment
General - removed and relocated Revision History	Done to reduce overall document size and to improve usability/readability.
General - removed and relocated Submission Requirements	Done to reduce overall document size and to improve usability/readability.
General - made various grammatical, spelling, punctuation, capitalization, terminology, and formatting changes throughout the document. Added flexibility to numerous requirements which may have had too narrow a focus in their previous form. Attempted to bring further rationale and reason to a number of requirements. Numerous clarifications and corrections in some instances. Updated language to conform to current industry terminology.	Done to improve readability and usability and applicability.
General - added several new source standards including: 'NIST Special Publication 800-57 Recommendations for Key Management – Part 2: Best Practices for Key Management Organization', and 'GSA G2S' and 'S2S' protocol standards.	Done to reflect new industry-accepted standards that are applicable to GLI-11.
General - standardized references to "gaming device" throughout the document.	Done to improve consistent use of terminology.
a) <del>Electro-Static Interference-</del> Protection against static discharges requires that the <del>machine's</del> gaming device's conductive cabinets be earthed in such a way that static discharge energy shall not <u>permanently</u> damage, or <u>permanently</u> inhibit the normal operation of the electronics or other components within the gaming device. Gaming devices may exhibit temporary disruption when subjected to a significant electro-static discharge greater than human body discharge, but they shall exhibit a capacity to recover and complete any interrupted play without loss or corruption of any control or <u>critical</u> data information associated with the gaming device. The tests will be conducted with a severity level of a <del>minimum</del> <u>maximum</u> of 27KV air discharge.	Added "permanently" in relevant statements, as temporary disruption is allowed. Other clarifications as noted. As per prior issue determinations.

<p>a) <del>Temperature and Humidity. Gaming devices can be expected to operate in a variety of extreme environments. In the event that the designed operational parameters of a gaming device are exceeded, the machine, if incapable of continued proper operation, shall perform an orderly shutdown without loss of game status, accounting, and security event data. The manufacturer should supply any documentation if the device has had temperature and humidity testing against any recognized standard.</del></p>	<p>Removed requirement completely as the lab has no means to test this and since UL or equivalent labs typically do.</p>
<p>The gaming device shall be designed so that power and data cables into and out of the gaming device can be routed so that they are not accessible to the general public. This is for game integrity reasons only, not for health and safety. Security-related wires and cables that are routed into a logic area shall <del>not be able to be easily removed.</del><u>be securely fastened within the interior of the device.</u></p>	<p>Re-worded requirement to clarify intent.</p>
<p>A gaming device shall have <del>a not easily removable, without leaving evidence of tampering, an</del> identification badge, <del>permanently</del> affixed to the exterior of the cabinet by the manufacturer, <u>that is not removable without leaving evidence of tampering</u> and this badge shall include the following information:</p>	<p>Re-worded requirement to clarify intent and readability.</p>
<p><u>Surges.</u> The <del>machine</del><u>gaming device</u> shall not be adversely affected, other than resets, by surges or dips of <math>\pm 20\%</math> of the supply voltage.</p>	<p>Re-worded to indicate that a game can return to a completed state (other than returning to its exact prior state) following a power reset, so long as the game recall and acctg are all intact and accurate and so long as they allow for complete reconstruction of the interrupted game. Allows game reset to return to completion of game rather than the exact previous game screen. The intent here is that of returning to the previous “game state”. If you define playable game state as” the moment a wager is committed until the moment the game is completed”, then you can consider returning to game completion as returning to the previous game state.</p>
<p><i><u>NOTE</u>Note: It is acceptable for the equipment to reset provided no damage to the equipment or loss or corruption of data is experienced in the field. <u>Upon reset, the game must return to its previous state. It is acceptable for the game to return to a game completion state provided the game history and all credit and accounting meters comprehend a completed game.</u></i></p>	<p></p>

<p>a) There must be a method to monitor the drop box area, even if manufactured by a different company. <u>It is preferred that the monitoring method provide for notification to the on-line system.</u></p>	<p>Added recommendation to indicate that drop box monitoring shall include reporting to the on-line system, in addition to monitoring by the gaming device itself.</p>
<p>a) Doors shall be manufactured of materials that are suitable for allowing only legitimate access to the inside of the cabinet (i.e., <u>locks</u>, doors, and their associated hinges shall be capable of withstanding determined <del>illegal</del> <u>and unauthorized</u> efforts to gain access to the inside of the gaming device and shall leave evidence of tampering if <u>such an illegal</u> entry is made);</p>	<p>Re-worded to remove references to "illegal" and to include "locks".</p>
<p>a) The sensor system shall register <u>an external</u> door as being open when the door is moved from its fully closed and locked position, <u>provided power is supplied to the device.</u></p>	<p>Clarified that the door sensor system is only expected to be functional if/when power is supplied to the gaming device, as per industry comments.</p>
<p><b><u>General Statement.</u></b> The logic area is a separately locked cabinet area (with its own locked door), which houses electronic components that have the potential to significantly influence the operation of the gaming device. There may be more than one (1) such logic area in a gaming device. <u>The logic door shall be monitored.</u></p>	<p>Added statement that logic door shall be monitored as many suppliers have implemented this and since industry protocol presently supports this.</p>
<p>General - changed "RAM" to "NV Memory" globally.</p>	<p>Modified to accommodate more appropriate terminology.</p>
<p>a) Access to the currency storage area is to be secured via separate key locks and shall be fitted with sensors that indicate door open/close or stacker <del>removed</del> <u>receptacle removed, provided power is supplied to the device.</u></p>	<p>Clarified and added statement that power must be supplied in order for currency storage area sensors to be expected to function, as per industry comments.</p>
<p>a) The <del>Gaming Device</del> <u>gaming device</u> shall have the ability to retain data for <del>the electronic meters</del> <u>all critical memory as defined herein</u> and shall be capable of maintaining the accuracy of all information required for thirty (30) days after power is discontinued from the <del>machine</del> <u>gaming device</u></p>	<p>Revised and simplified NV Memory/Program Memory requirements. Clarified that the NV Memory in question pertains specifically to "critical memory" only. Clarified that "recharge" requirement applies only in cases where the relevant type of battery technology is utilized (many suppliers no longer use such a battery type). Clarified that clearing of NV Memory allows for "other secure methods". Per industry comments.</p>
<p>b) <del>For rechargeable battery types only, if</del> the battery back-up is used as an 'off chip' battery source, it shall re-charge itself to its full potential in a maximum of twenty-four (24) hours. The shelf life shall be at least five (5) years;</p>	

<p>c) <del>Random access</del> <u>NV</u> memory that uses an off-chip back-up power source to retain its contents when the main power is switched off shall have a detection system which will provide a method for software to interpret and act upon a low battery condition <u>before the battery reaches a level where it is no longer capable of maintaining the memory in question</u>; and</p>	
<p>d) Clearing non-volatile memory shall require access to the locked logic area. <del>or other secure method provided that the method can be controlled by the regulatory body.</del></p>	
<p><b><i>Function of <del>RAM</del> NV Memory Reset.</i></b> Following the initiation of <del>a RAM</del> <u>an NV memory</u> reset procedure (utilizing a certified <del>RAM Clear</del> <u>NV memory clear</u> method), the game program shall execute a routine, which initializes <del>each and every bit</del> <u>all bits</u> in <del>RAM</del> <u>critical NV memory</u> to the default state. <u>All memory locations intended to be cleared as per the NV memory clear process shall be fully reset in all cases.</u> For games that allow for partial <del>RAM</del> <u>NV memory</u> clears, the methodology in doing so must be accurate <del>and the game must validate the un-cleared portions of RAM.</del></p>	<p>Re-worded to clarify intent and to accommodate both partial and full clears so long as all critical memory areas are reset fully and accurately. Per supplier comments, as some suppliers do not perform "full" resets and since some newer memory allocation techniques exist such as partitioning. Removed requirement to validate un-cleared portions of NV Memory resulting from a partial clear.</p>
<p><b><i>Default Reel Position or Game Display.</i></b> The default reel position or game display <u>immediately</u> after <del>a RAM</del> <u>an NV memory</u> reset shall not be the <u>advertised</u> top award on any selectable line. The default game display, upon entering game play mode, shall also not be the <u>advertised</u> top award. This applies to the base game only and not <u>to</u> any secondary bonus <del>devices</del> <u>features</u>. <u>This does not apply to games or paytables selected after the initial game play.</u></p>	<p>Re-worded to clarify intent and to emphasize that this is specific to the "advertised" top award, since that is what is most relevant from a player perspective and since that reflects the typical mathematical analysis for top award. Added clarifying statement that regulation is not meant to govern reels/displays subsequent to the initial play. As per industry comment.</p>
<p>a) Information pertaining to the last <del>ten</del> (10) <del>plays</del> <u>games</u> with the <del>RNG</del> <u>game</u> outcome (including the current game, if incomplete); <del>and</del>. <u>Gaming devices offering games with a variable number of free games, per base game, may satisfy this requirement by providing the capability to display the last 50 free games in addition to each base game;</u></p>	<p>Clarified requirement to address recall expectations for cases of free games, as per comment from Engineering and based upon prior issue determinations.</p>
<p>a) <del>3</del> <u>Any payable configuration information residing in memory; and</u></p>	<p>Added additional verbiage to clarify other items that are expected to be stored in critical</p>

<p>b) <u>It is a recommendation that, at minimum, a log of the last 100 significant events be kept in critical memory.</u></p>	<p>memory, or that are recommended to be stored. As per industry comment and comments from Engineering.</p>
<p><del>3</del><i>Note: The “Maintenance of Critical Memory” section is not intended to preclude the use of alternate storage media types, such as hard disk drives, for the retention of critical data. Such alternate storage media is still expected to maintain critical data integrity in a manner consistent with the requirements in this section, as applicable to the specific storage technology implemented.</i></p>	<p>Added clarifying note to "critical memory maintenance" to better accommodate other means of supporting this function, especially for newer media storage devices, such as hard disk drives. As per supplier comments.</p>
<p><b><u>Comprehensive Checks.</u></b> Comprehensive checks of critical memory shall be made <del>during each gaming device restart (e.g., processor reset). Upon resumption, the integrity of all critical memory shall be checked following game initiation, but prior to display of game outcome to the player.</del> It is recommended that critical memory is continuously monitored for corruption <del>or comprehensive checks occur at the start of game play. In addition, it is recommended that a triple redundancy check be implemented. Test .</del> The methodology shall detect <del>99.99 percent of all possible failures including but not limited to items defined in section 3.14.1 and at a minimum enable errors to be identified with an</del> <u>extremely high level of accuracy.</u></p>	<p>Heavily revised "comprehensive critical memory checks" to clarify WHEN they are expected to be performed. Re-worded accuracy statement as per industry comments. Aligned regulation with NV requirements. Changed to a recommendation that the integrity of all program components in non-volatile memory be continuously verified.</p>
<p><b><u>General Statement.</u></b> An unrecoverable corruption of <del>RAM</del> <u>critical memory</u> shall result in <del>a RAM</del> <u>an</u> error. The <del>RAM should</del> <u>memory error shall</u> not be cleared automatically; <del>and shall</del> result in a tilt condition, which <del>identifies</del> <u>facilitates the identification of</u> the error and causes the gaming device to cease further function. <del>It is recommended that the player’s credits be displayed to avoid player disputes.</del> <u>The critical memory error shall also cause any communication external to the gaming device to immediately cease.</u> An unrecoverable <del>RAM</del> <u>critical memory</u> error shall require a full <del>RAM</del> <u>NV memory</u> clear performed by an authorized person.</p>	<p>Revised "unrecoverable critical memory" error processing to clarify expectations and to ensure that all external communication shall cease outside of reporting the error/tilt condition. This is to ensure that any memory corruption does not lead to erroneous communications. Added requirement that unrecoverable corruption of critical memory should not be cleared automatically. As per industry comments.</p>

<p><u>The term <i>Program Storage Devices, including Device</i> is defined to be the media or an electronic device that contains the critical control program components. Device types include but are not limited to EPROMs, ROMs, Flash ROMs, DVD, compact flash cards, optical disks, hard drives, solid state drives, USB drives, etc. This partial list may change as storage technology evolves.</u></p>	
<p><u>All program storage devices shall:</u></p>	<p>Heavily revised "program storage device requirements" section as per industry comments. This modification of GLI-11 attempts to add generalization and clarity to requirements covering control program integrity checks which have caused an abundance of industry confusion. Furthermore, previous control program regulations were written too specifically to early uses of patented technologies. As stated, this version will serve to generalize those requirements and provide development flexibility for these essential security functions.</p>
<p>a) <u>Be housed within a fully enclosed and locked logic compartment;</u></p>	
<p>b) <u>Be clearly marked with sufficient information to identify the software and revision level of the information stored in the device. In the case of media types on which multiple programs may reside it is acceptable to display this information via the attendant menu.</u></p>	
<p>c) <u>Validate themselves during each processor reset;</u></p>	
<p>d) <u>Validate themselves the first time they are used; and</u></p>	
<p>e) <u>CD-ROM, Compact Flash, Hard Drives DVD, and any other type of optical disk-based Program Storage Devices shall:</u></p>	
<p>i. <u>Be Not be a re-writeable disk; and</u>  ii. <u>The "Session" shall be closed to prevent any further writing.</u></p>	
<p><u><i>Control Program Verification.</i></u></p>	<p>Heavily revised "control program requirements" section as per industry comments. Improved distinctive requirements for various types of control program media. Added clarifications to "Alterable Program Storage" to better define what is expected, especially for newer methods of storage technology. Created EPROM specific requirement for authentication for corruption and recommended CRC-16. Reduced Non-EPROM authentication requirements to just having an internal mechanism for detection of corruption. Added note exempting Alterable Program Storage devices that have been rendered "read-only" from the "write"</p>
<p>a) <u>EPROM-based Program Storage:</u></p>	
<p>i. <u>Gaming devices which have control programs residing in one or more EPROMs must employ a mechanism to verify control programs and data. The mechanism must use, at a minimum, a checksum; however, it is recommended that a Cyclic Redundancy Check (CRC) be used (at least 16-bit).</u></p>	
<p>b) <u>Non-EPROM Program Storage shall meet the following rules:</u></p>	

<p>i. <u>The software shall provide a mechanism for the detection of unauthorized and corrupt software elements, upon any access, and subsequently prevent the execution or usage of those elements by the gaming device. The mechanism must employ a hashing algorithm which produces a message digest output of at least 128 bits.</u></p>	<p>regulations.</p>
<p>ii. <u>In the event of a failed authentication, after the game has been powered up, the gaming device should immediately enter an error condition and display an appropriate error. This error shall require operator intervention to clear and shall not clear until: the data authenticates properly, following the operator intervention, or the media is replaced or corrected, and the gaming device’s memory is cleared.</u></p>	
<p><i><u>Note: Control Program verification mechanisms will be evaluated on a case-by-case basis and approved by the regulator and the independent testing laboratory based on industry-standard security practices.</u></i></p>	
<p>c) <u>Alterable Media shall meet the following rules in addition to the requirements outlined in 2.17.1(b):</u></p>	
<p>i. <u>Employ a mechanism which tests unused or unallocated areas of the alterable media for unintended programs or data and tests the structure of the media for integrity. The mechanism must prevent further play of the gaming device if unexpected data or structural inconsistencies are found.</u></p>	
<p>ii. <u>Employ a mechanism for keeping a record any time a control program component is added, removed, or altered on any alterable media. The record shall contain a minimum of the last ten (10) modifications to the media and each record must contain that date and time of the action., identification of the component affected, the reason for the modification and any pertinent validation information.</u></p>	
<p><i><u>Note: Alterable Program Storage does not include memory devices typically considered to be alterable which have been rendered “read-only” by either a hardware or software means.</u></i></p>	

<p><u><b>Independent Control Program Verification.</b> The device shall have the ability to allow for an independent integrity check of the device’s software from an outside source and is required for all control programs that may affect the integrity of the game. This must be accomplished by being authenticated by a third-party device, which may be embedded within the game software (see NOTE below), by having an interface port for a third-party device to authenticate the media, or by allowing for removal of the media such that it can be verified externally. This integrity check will provide a means for field verification of the software to identify and validate the program. The test laboratory, prior to device approval, shall evaluate the integrity check method.</u></p>	<p>Clarified intent of "Independent Control Program Verification". Added note to allow for alternative methods that may include embedded routines, removal of PSD, or other methodologies. As per industry comments.</p>
<p><u><i>Note: If the authentication program is contained within the game software, the manufacturer must receive written approval from the test laboratory prior to submission.</i></u></p>	
<p><u><b>General Statement.</b> A Multi-Station game is a gaming device unit that incorporates more than one (1) player terminal, and that only has one (1) random number generator, which is controlled by the master terminal. The master terminal, containing the <del>games</del>game’s Central Processing Unit (CPU), <del>which</del> shall determine the outcome of the game and RNG results. The master terminal will house the game display which is shared among the player terminals. Each <del>station</del>terminal shall meet the applicable technical standards outlined throughout this document including <del>EGD</del>gaming device identification and metering. This rule does not apply to “Central Determined” type games- <del>nor does it apply to “Community Bonus” style games. There must be a method for each player to know when the next game will begin.</del></u></p>	<p>Added clarification that a "multi-station game" does not include community bonus games which often appear to be outwardly similar but which do not fully adhere to the definition of a multi-station gaming platform. As per industry comments and based upon various issue determinations.</p>
<p>a) There shall be no hidden or undocumented buttons/touch points (<del>if applicable</del>) anywhere on the screen <u>that affect game play and/or that impact the outcome of the game</u>, except as provided for by the game rules <del>that affect game play.</del></p>	<p>Clarified that "hidden touch points" must be relative to game play or must impact game outcome in order to be considered a compliance concern. As per several issue determinations as well as feedback from Engineering.</p>

<p>General - various changes to "Bill Validator" section to clean up wording and readability. Standardized terminology to reflect "bill validator". Clarified that bill validators can handle a variety of items including bills, ticket/vouchers, coupons, or other approved notes. Made other relevant changes related to physical security, monitoring, and alarming for bill validators.</p>	<p>As per industry comment.</p>
<p><u><i>Cashout Limit Exceeded.</i></u> If credits are collected, and the total credit value is greater than or equal to a specific limit (e.g., <del>Hopper Limit</del> <u>hopper limit</u> for hopper games, <del>Printer Limit</del> <u>printer limit</u> for printer games, etc.), the game shall lock up until the credits have been paid, and the handpay is cleared by an attendant. <u><i>Note: In certain situations the printing of multiple independent tickets, each below the ticket limit, is an acceptable alternative, if approved by the regulatory body.</i></u></p>	<p>Added clarification to "Cashout Limit Exceeded" that allows for printing of multiple tickets, if allowed by the regulatory body. Added note allowing multiple independent tickets to be issued as an acceptable alternative to printing a handpay ticket whenever the printer limit is exceeded. (Requires laboratory approval). Does not affect ticket printing when IRS limit is exceeded. As per comments from industry.</p>
<p>General - various changes to "Printers" section to clarify and improve readability.</p>	<p>As per industry comment.</p>
<p><u>If offline voucher issuance is supported, the gaming machine MUST mask all but the last 4 digits of the validation number as displayed in the twenty-five (25) ticket/voucher-out log.</u></p>	<p>Added several clarifying requirements related to "offline voucher" issuance and redemption and otherwise revised ticket/voucher processing requirements, as per industry comment. Where the previous standard only allowed a single offline voucher to be printed, this version has introduced the latest technological considerations for offline voucher issuance and redemption.</p>
<p>a) <u>If offline voucher issuance is supported, an offline authentication identifier must, at a minimum, be printed on the immediate next line following the leading edge validation number that in no way overwrites, or otherwise compromises, the printing of the validation number on the ticket (not required for ticket/vouchers that are non-redeemable at a gaming machine). The offline authentication identifier must be derived by a hash, or other secure encryption method of at least 128 bits, that will uniquely identify the voucher, verify that the redeeming system was also the issuing system, and validate the amount of the voucher. For cases where a suitable authentication identifier is not printed on the voucher, the gaming device must print at most one wagering instrument after the gaming device to system communications have been lost.</u></p>	

<p>a) <u>All payable information, rules of play, and help screen information should be able to be accessed by a player, prior to them committing to a bet. This includes unique game features, extended play, free spins, double-up, take-a-risk, auto play, countdown timers, symbol transformations, and community style bonus awards.</u></p>	<p>Added clarifying requirements for "game display" to reflect latest gaming device features and functionality, as per industry comments.</p>
<p>a) <u>Upcoming wins</u><del>Wins</del>. The game shall not advertise 'upcoming wins,' for example three (3) times pay coming soon;<del>;</del> <u>Notwithstanding the foregoing, a game may display such advertising if:</u></p>	<p>Revised requirements related to "upcoming wins" to better accommodate certain cases seen in testing and which did not pose a player fairness issue. This was also in response to specific progressive software functionality submitted by suppliers that advertised to players that a progressive event would be triggered in X minutes as a function of current rate of coin-in. Allows advertising upcoming wins as long as there is an accurate progress indicator toward such an award. As per industry comment and prior issue determinations.</p>
<p>i. <del>Extended</del><u>It is mathematically demonstrable that an award occurrence is upcoming; and</u></p>	
<p>ii. <u>If the player is shown a graphical representation in the form of a progress indicator it must accurately depict the current progress towards such an award.</u></p>	
<p><del>a) ——— Player Choices. When a non skill game offers the player a choice, the ratio between the pay resulting from the optimal selection and the pay resulting from the worst selection should be less than or equal to 100.5%. For example, if selection A has an expected pay (i.e. the average expected return from making a selection) of 215.48 credits and selection B has an expected pay of 214.41 credits, the ratio — 215.48/214.41 — results in 1.005 which is equal to 100.5 %. If the ratio is greater than 100.5%, the game must then display additional information so that the player can make an informed decision regarding optimal play.</del></p>	<p>Removed "player choices" requirement as it was causing confusion and could not be evaluated properly. As per industry feedback.</p>
<p>a) Each individual line to be played shall be clearly indicated by the gaming device so that the player is in no doubt as to which lines are being bet on;<del> the credits bet per line and (displaying the number of lines bet shall be sufficient to meet this requirement);</del></p>	<p>Revised wording related to "multi-line games" to accommodate games seen by the lab that support alternative methods of line display and/or cases where required information can be easily derived. Requirement was also revised to address mechanical reel slot games that utilize "video overlays", sophisticated "backlighting", or other means of displaying game outcomes. Allows displaying all winning paylines at once as a substitute for display of individual winning paylines, as long as game history displays individual winning paylines. (This is done to speed up game play for games with very large (500) numbers of lines). As per</p>
<p>b) <u>The credits bet per line shall be shown (it is acceptable if the bet per line can be calculated from the number of lines bet and the total bet); and</u></p>	

<p>c) The winning <del>playline</del>payline(s) shall be clearly discernable to the player. <del>(E</del> (e.g., on a video game it may be accomplished by drawing a line over the symbols on the <del>playline</del>payline(s) and/or the flashing of winning symbols and line selection box<del>;</del>). Where there are wins on multiple lines, each winning <del>playline</del>payline may be indicated in turn. (This would not apply to <u>electro-mechanical reel slot-games unless technology is used which implements paylines similar to those used on video displays, e.g. backlit reels flashing for each winning payline</u>).</p>	<p>prior issue determinations.</p>
<p><u>Symbol Probability.</u> For game types (such as spinning reel games or video spinning reel games), <u>unless otherwise denoted on the payglass</u>, the mathematical probability of a symbol appearing in a position for any game outcome shall be constant.</p>	<p>Added clarifying blurb that symbol probability requirement can be exempted if there is a suitable player helpscreen disclosure, which is a common industry practice. As per industry comments.</p>
<p><u>Software Requirements for Percentage Payout.</u> Each game shall theoretically payout a minimum of seventy-five percent (75%) during the expected lifetime of the <del>base-game (i.e.g., the game percentage without any</del>, progressives, <del>bonusing</del>bonus systems, merchandise, etc<del>;</del>). <u>shall not be included in the percentage payout if they are external to the game</u>.</p>	<p>Added clarification that the required return percentage is not meant to include contributions from any award derived externally to the gaming device. These external mechanisms often inflate the RTP. As per prior issue determinations as well as comments from Engineering.</p>
<p>General - retained the odds requirement of 1:50 million based on supplier feedback that indicated that some benchmark was needed by the industry.</p>	<p>As per "overwhelming" industry/supplier comments received during the v2.1 comment period.</p>
<p><u>Player Selection or Interaction in Bonus Games.</u> All gaming devices which offer a bonus game or extended feature which requires player selection or interaction are prohibited from automatically making selections or initiating games or features unless the gaming device meets the requirements listed immediately below and explains the mechanism for auto-initiation or selection on the device glass or video display.</p>	<p>Revised "player selection or interaction in bonus games" section to reflect recent submissions to the lab and to clarify expectations for these cases. As per industry comments and the intent of aligning with NV technical standards.</p>
<p>a) <u>The patron is presented with a choice and specifically acknowledges his intent to have the gaming device auto-initiate the bonus or extended play feature by means of a button press or other physical/machine interaction.</u></p>	

<p>b) <u>The bonus or extended feature provides only one choice to the patron i.e., press button to spin wheel. In this case, the device may auto-initiate the bonus or extended feature after a time out period of at least two (2) minutes.</u></p>	
<p>c) <u>The bonus of extended feature is offered as part of community play that involves two or more patrons and where the delay of an offered selection or game initiation will directly impact the ability for other patrons to continue their bonus or extended feature. Prior to automatically making selections or initiating a community based bonus or feature the patron must be made aware of the time remaining in which they must make their selection or initiate play.</u></p>	
<p>General - various cleanup within the "Metering" section.</p>	<p>Standardized references to "gaming device" and made minor adjustments to meter descriptions throughout this section.</p>
<p>a) <u>Cashable Promotional Credit Wagered. If supported by function, the gaming device must have a meter that accumulates the total value of promotional cashable credits which are wagered. This includes credits that are transferred to the machine electronically or through the acceptance of coupon or voucher;</u></p>	<p>Added new metering requirement, as per submissions seen by the lab, and as per industry comments.</p>
<p>a) <u>External Doors.</u> The machine must have meters that accumulates the number of times the any external cabinet door that allows access to the <u>locked</u> logic area or currency compartment which was opened since the last <del>RAM</del><u>NV memory clear, provided power is supplied to the device.</u></p>	<p>Added clarification that external door metering / bill validator door metering is predicated upon power being supplied to the gaming device.</p>
<p>b) <del>aa) Bill validator door.</del> (i.e. <del>stacker door</del>)<u>Stacker Door.</u> The <del>machine</del><u>gaming device</u> must have a meter that accumulates the number of times the <del>Bill Validator</del><u>stacker</u> door has been opened since the last <del>RAM Clear</del><u>NV memory clear provided power is supplied to the device; and</u></p>	

<p>Progressive Occurrence. The <del>machine</del> gaming device must have a meter that accumulates the number of times each progressive meter is activated. See also <i>GLI-12 Progressive Gaming Devices in Casinos</i>. <u>(The above rule shall be interpreted as requiring that the controller, whether that is the gaming device itself, or an external progressive controller, when configured for progressive functionality, shall provide for this occurrence meter for each progressive level offered.)</u></p>	<p>Added clarification that progressive occurrence metering is expected to reflect each progressive level offered as well as both internal and external progressive types.</p>
<p><b><u>Protection of Sensitive Information.</u></b> The gaming machine must not allow any information contained in communication to or from the online monitoring system that is intended by the communication protocol to be protected, or which is of a sensitive nature, to be viewable through any display mechanism supported by the gaming device. This includes, but is not limited to, validation information, secure PINs, credentials, or secure seeds and keys.</p>	<p>Added requirement for "protection of sensitive information" within the Communication Protocol section to ensure that this type of information can not be viewed in any manner at the gaming device. Added in response to various advances in protocol-based devices which posed potential security risks.</p>
<p>General - simplified and consolidated various "error condition" requirements.</p>	<p>Based on industry feedback</p>
<p><b><u>General Statement.</u></b> The game shall be capable of entering a lock up condition if <u>any awards from a single event is game cycle are</u> in excess of a limit that is required by a taxing jurisdiction. <u>Notwithstanding the foregoing, it is permissible to provide a mechanism to accrue W2G eligible winnings to a separate meter. This meter must not provide for the ability to place wagers and when collected by the player must lockup as required by a taxing jurisdiction.</u></p>	<p>Added clarifying statements related to taxable award limits. Clarified that lockup limits shall be based on a single game cycle. As per industry feedback.</p>
<p><b><u>18Note:</u></b> For "Last Play Information" stated above, <u>it is allowable to display values in currency in place of 'credits'.</u></p>	<p>Added clarifying note to "last play information" to accommodate alternate, yet equivalent, designs seen by the lab.</p>
<p>Each gaming device may be equipped with a certified program, which allows for tournament mode play. The tournament option <del>should</del>shall default to disabled. If tournament is an option, it shall be enabled by a <del>switch key (reset feature)</del>regulator-approved and controlled <u>method requiring manual intervention</u> and/or total replacement of the logic board with a certified tournament board.</p>	<p>Revised requirement for controlling tournament software to allow for alternative control mechanisms, so long as they are secure, manual, and acceptable to the regulatory body.</p>

<p>No gaming device, while enabled for tournament play shall accept credits from any source, nor pay out credits in anyway, but shall utilize credit points only. Tournament credits shall have no cash value. These games shall not increment any mechanical or electro-mechanical meters <u>unless they are meters designed exclusively for use with tournament software</u>, and shall not communicate any <u>tournament-related</u> accounting information to the system. The percentage requirements as addressed in Section 4<u>3</u>.4 are waived for tournament games.</p>	<p>Revised tournament metering requirements to allow for tabulation of any tournament-specific data. As per industry comments.</p>
<p>Miscellaneous / Other Changes</p>	<p>* Added note for PCB identification to be readily viewed without removal from the gaming device, where feasible.</p>
	<p>* Added manufacturer's symbol as an alternative to manufacturer's name for PCB identification.</p>
	<p>* Added note that the laboratory is not responsible for conformance to local electrical codes.</p>
	<p>* Added note that the laboratory will make no determination as to tower light performance.</p>
	<p>* Please reference the "redline markup" of GLI-11 which delineates <u>all</u> the differences between v2.0 versus v2.1.</p>