

STANDARDS

Made under Section 7(2)(b) of The Gaming Act, Cap. 41

THE GAMING EQUIPMENT STANDARDS – GAMING DEVICES FOR ROUTE OPERATIONS, 2018

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PART I

PRELIMINARY PROVISIONS

1. Citation

These Standards may be cited as **The Gaming Equipment Standards – Gaming Devices for Route Operations, 2018.**

2. Scope

These standards specify the general hardware and software requirements and the list of significant events required by the Gaming Board of Tanzania (GBT) for gaming equipment to be used in venues that have licenses for slot machines or route operations as stipulated under section 26(1)(b) of the Act.

GBT requires that this equipment be attached to a central electronic monitoring system (CEMS), and therefore the Gaming Equipment Standards – Central Electronic Monitoring System, 2018 is also applicable.

3. Interpretation

In these Standards, unless inconsistent with the context, the words and expressions used have the meanings assigned to them in the Gaming Act, 2003 (“the Act”) and the Gaming Regulations (“the Regulations”) made under the Act, and:

“approved” means approved by GBT;

“attract mode” means information or graphics that relate to the game or games available on that machine that the gaming device (GD) may display during the idle mode of the gaming device;

“autoplay” means facility in a GD that automatically plays the next game following the completion of the current game;

“banknote acceptor” or “bill acceptor” or “bill validator” or “note acceptor” means a device that is fitted with photo-optic and other sensors (internal or external to the device) and that is used to accept and validate paper or plastic legal tender or approved coupons. Where reference is made to a "Bill acceptor system", this is intended to include all bill handling components, whereas "Bill validator system" refers to the validator unit and its sub-components, excluding other parts of the handling system;

“bet” or “wager” means amount of coins or credits put at risk at the beginning of a game or during a game;

“capping” or “truncating” means a situation where the amount added to the win meter from a single play within a game is less than either:

- (1) the monetary or credit value for the winning combination; or
- (2) the sum of the monetary value or sum of the credit values for the winning combinations, from a single play within a game that is displayed to the player on the paytable;

“cash” means coins, banknotes, tokens, magnetic or smart cards or any other legal representation of money in the gaming environment;

“cashout” means action initiated by a player when redeeming available credits from a GD, whether the GD pays credits from the hopper, by electronic transaction or by issuing a ticket;

“central electronic monitoring system” or “central monitoring system” or “monitoring and control system” means a host, data controller unit, bank controller and communications interface to each gaming device and the connections between them intended to receive data from or send data to a relevant gaming device or central system where such data relates to the security, accounting or operation of the relevant gaming device, the central system or any games or features played on, or associated with, the relevant gaming device; and to perform such other functions as may be determined by GBT from time to time. It is an electronic system or a computer system to which relevant gaming devices may be connected directly or indirectly, and which is designed or adapted for use to:

- (1) register all or part of the gaming taking place through such relevant gaming device; and; or
- (2) supervise all or part of the operations carried out in or through such relevant gaming device; and/or
- (3) to store and provide reports and information on the aforesaid matters;

“certification authority” means authority appointed by GBT to certify all gaming devices (GDs), both hardware and software;

“coin acceptance device” means a coin input devices, together with the coin validator, photo-optic sensors (internal or external to the validator) and any additional devices used to accept and validate a coin;

“coin acceptance system” means a system that comprises the coin acceptance device and the associated software required to validate the physical input of coins and the conversion of these coins into credits;

“coin dispensing device dump” or “hopper dump” or “hopper count” means a function in the GD whereby the entire contents of the coin dispensing device (CDD) are counted out into the coin tray without affecting the revenue calculation;

“coin dispensing device” means a device, together with coin storage mechanism (for example, hopper or tubes), photo-optic and other sensors (internal or external to the device) and any other devices and pathways used to pay out coins to the player;

“critical data” means data contained in critical memory and refers to:

- (1) all metering required by these Standards;
- (2) GD or game configuration data (or both);
- (3) information that pertains to the last five games (including the current game, if incomplete);
- (4) software state (the last normal state the GD software was in before interruption);
- (5) current credits; and
- (6) information regarding any significant events;

“critical memory” means memory locations for storing critical data;

“electronic funds transfer” means advanced funds transfer system whereby credits are transferred to or from a GD by any means other than coins, tokens or banknotes;

“equipment” means any hardware, software, firmware, flashware or any combination in whole or in part of these intended for use in gaming;

“error event” means set of operational conditions for a GD that constitutes a deviation from the normal conditions or the conditions specified during a game, during idle mode or during data interchange with another GD;

“feature” means activity within a game triggered by an outcome within that game. Any additional free game, free spin of certain reels, or secondary choice necessary to complete a game is considered a feature;

“game” means combination of events, including player interaction with the GD, that determine what prize may eventually be won from an amount staked or bet by the player. The game begins when the player:

- (1) makes a bet from the player's credit meter that is not part of any previous game; or
- (2) inserts one or more coins or any form of wager and game play is initiated.

The game is considered completed when the player:

- (1) cannot continue play activity without committing additional credits from the credit meter or CAD; and
- (2) has no credits at risk.

The following elements are all considered to form part of a single game, in other words, the game is not considered to have been completed until all the "elements" have been completed:

- (1) games that trigger a free game feature and any subsequent free games;
- (2) features occurring or triggered in a single game;
- (3) "second screen" bonus feature(s);
- (4) games with player choice (for example, draw poker or blackjack);
- (5) games where the rules permit wagering of additional credits, for example, blackjack insurance or the second part of a two-part keno game; and
- (6) game feature (for example, double-up).

The game is not considered to be completed until all the appropriate meters for the game have been updated.

“game feature” means a feature within a game that is only entered following a win, and which involves the risking of all or part of the result of that win. Game feature bets may incorporate a variety of symbols, player choices, or win chances;

“gaming device” means any device manufactured with the intention of being used for gaming purposes, including the monitoring and control system, GDs, host, data controller unit, bank controller or any combination of these, including software;

“gaming public” means persons or players who engage in gaming activities;

“host” means central computer(s) of a monitoring and control system on which the software is loaded, and that is (are) certified by the CA;

“idle mode” means state in which a GD is powered up, but is not active in the execution of a game, a test routine, an audit, a calibration, or a data interchange with an external device;

“legislation” means the Act and any Regulations or Rules made in terms of such Act;

“licensed premises” means any premises licensed in terms of the regulation 19 and 20 of the Gaming Regulations, 2003;

“logic area” means secure enclosure area that houses electronic components that have the potential to influence the operation of the host, the data controller unit, the bank controller or the GD;

“master reset” means intentional memory clear of the random access memory (RAM) and other volatile memory of a GD;

“maximum stake” means maximum bet or wager that is permissible in terms of legislation;

“memory” means locations within the GD for storing electronic data, and the data stored therein;

“metamorphic feature” or “metamorphic game” means feature of a game or series of games that is not completely independent of play history;

“multigame” means more than one game type offered by the gaming software on a single GD;

“paytable” means list of winning combinations with their associated win amounts, rules of the game and explanations as to how a winning combination may be made up that is, or is capable of being, displayed to the player;

“period meter” or “soft meter” means a meter implemented in software. These meters are used to record meter values since a given event (e.g. coins and bills in since the last clearance);

“Regulations” means Gaming Regulations made under the Act, as amended from time to time;

“reprogrammable memory device” means type of on-chip memory storage device;

“return to player” means ratio of total winnings to the total turnover, expressed as a percentage. These meters are used to record meter values since a given event (for example, coins and bills in since the last clearance);

“significant event” means set of operational conditions to be recorded by the monitoring and control system for GDs during a game, during idle mode or during data interchange with another GD;

“site data logger” means on-site or intermediate data collector for a monitoring and control system includes data collection units contained within, or as part of, GDs;

“stake” means total monetary value of all bets or wagers put at risk to play a single game;

“static artwork” means artwork that is physically printed on, for example glass, plastics, and non-removable stickers, and that is displayed on the GD to the player;

“test laboratory” means an approved laboratory whose test results are accepted by GBT;

“token” means circular elements with an indicated monetary value that might be put into GDs;

“tokenization” means situation where the insertion of one coin, either gives rise to more than one credit being made available to the player, or where more than one coin is required to be inserted in the CAD for the player to receive one credit;

“turnover” or “handle” means monetary value of the total of all cash or credits (or both) staked on game play;

“win” or “award” or “prize” means number of credits or monetary value awarded to the player as a result of a winning combination or combinations at the end of a single play within a game;

“winning combination” means one or more winning patterns that result in credits being added to:

- (1) the total win meter; and
- (2) the win display;

“winning pattern” means set of symbols that participates in a winning combination (including substitution);

“winnings” means monetary value of the total of all coin or credits added to the total win meter and the win display during a game, as a result of any game outcome according to the game rules, resulting in credits being added to the total win meter and to the win display. A GD might display this value in credits or monetary value.

4. Abbreviations

a.c.	alternating current
AM	Amplitude Modulation
CA	certification authority
CAD	coin acceptance device
CAS	coin acceptance system

CDD	coin dispensing device
CEMS	central electronic monitoring system
CPU	central processing unit
CRC	cyclic redundancy check
EDC	error detection and correction
EFT	electronic funds transfer
EMC	electromagnetic compatibility
EMI	electromagnetic interference
EPROM	erasable programmable read-only memory
GD	gaming device
GBT	Gaming Board of Tanzania
GPS	Global Positioning System
I/O	input/output
ITE	information technology equipment
km	kilometers
LAN	Local Area Network
OE	Original equipment
PCB	printed circuit board
PLD	programmable logic device
RAM	random access memory
RNG	random number generator
RTP	return to player
TL	test laboratory
WORM	write-once read-many

PART II

GENERAL REQUIREMENTS

5. Documentation

- (1) Each GD model shall have readily available and pertinent operating and service manuals.
- (2) The operating manual shall accurately depict the use of the GD in its operating environment, and shall provide sufficient detail and be sufficiently clear in its wording and diagrams to enable the relevant personnel to understand the manual with minimal guidance.
- (3) The service manual shall accurately depict the GD that it is intended to cover, and shall provide sufficient detail and be sufficiently clear in its wording and diagrams to enable a competent person to perform repair and maintenance in a way that is conducive to the long-term reliability of the GD.
- (4) Software documentation shall include an edit history providing details of all changes to code (what, why, who and when).

6. Enclosure construction

- (1) The enclosure shall be of a sturdy construction with a locking system that resists the kind of unauthorized entry that the GD is likely to be subjected to in a gaming venue. The enclosure shall be so designed to protect internal components from any external abuse to which the GD is likely to be subjected in a gaming venue.
- (2) Areas of the enclosure that are accessible to patrons and staff shall be so constructed and so finished as not to create a safety hazard or create a risk of injury.
- (3) All protuberances (for example, buttons and handles) on the enclosure that are accessible to patrons or staff, and all attachments to the enclosure (for example, labels and identification plates) shall be sufficiently robust to prevent their unauthorized removal.
- (4) Door support devices shall be of construction solid enough to prevent sagging of the door and any problems with door sensor alignment.
- (5) Spilled liquid shall not be able to enter the logic area, the power supplies, or areas that contain wiring of voltage exceeding 32 V DC.

- (6) Hinge centre pins, if used, shall not be able to be removed without leaving evidence of tampering.

7. Enclosure identification

- (1) The GD shall have an identification badge that bears the following information permanently affixed to the exterior of the enclosure by the manufacturer in a position that allows it to be read easily after the equipment has been installed:
 - (a) the name of the manufacturer;
 - (b) a unique serial number; and
 - (c) the date of manufacture.
- (2) The serial number shall be marked or affixed in a permanent manner onto the interior of the GD enclosure in a position that allows it to be read easily after the equipment has been installed.
- (3) Each external key switch of the gaming equipment enclosure, switches and player buttons shall be labelled or otherwise identified in the gaming device manual, either according to its function or to the series of events initiated by its activation. If a key lock initiates some kind of user activity other than simply unlocking a door, then its function shall be labelled (for example, if a key lock turns one way to enter audit mode, and turns the opposite way to enter cancel credit mode, then both directions shall be labelled accordingly) or clearly described in the gaming device (GD) manual. The GD manual will contain a clear description of all external key switch functions.

8. Enclosure security

- (1) All components of a GD that do not form part of the player's input interface (for example, buttons) shall be stored within one or more secure areas of the GD, with the exception of areas that have access to lighting only. Unauthorized access to a secure area by physical means shall be detectable. This requirement does not apply to areas that only provide access to lighting components, such as top boxes or belly panels.
- (2) A secure area shall resist forced entry and shall retain evidence of attempts at such entry.
- (3) Access to a locked area "A" shall not be possible from another locked area "B" without the use of a key or other secure access device for locked area "A".

9. Access detection systems

- (1) All access points shall have access detection sensors.
- (2) The door access detection system shall provide a signal to enable the monitoring and control system to interpret whether access to a logic area has occurred, regardless of whether mains power is switched on or off, or whether the GD is on-line or off-line. It shall remain able to detect this event with the mains power off for at least 24 hours. This event shall be reported once the mains power is restored, or the GD is back on line (or both).
- (3) When the door of the GD is shut, it shall not be possible to insert any object into the GD in such a way that the access detection sensor is disabled.
- (4) The access detection system shall be secure against attempts to disable it or to interfere with its normal mode of operation. Cable runs and mountings for the logic area access sensors shall be securely protected.
- (5) It shall not be possible to create a false alarm door open condition (for example, by bumping the door).
- (6) If the access detection system is disconnected, the gaming equipment shall interpret this action as the door having been opened.
- (7) The GD shall deactivate game play upon the opening of a door but may immediately reactivate when the door is closed, unless it has noticed the changing of counters or insertion of coins while this door is open, which is deemed to be interference and precludes automatic reactivation unless the GD was placed in test mode. In such case a significant event message shall be sent and the monitoring and control system shall add the staff card number to the event message. If no card number is available, the message shall be tagged by the monitoring and control system as an unauthorized access.

10. Logic areas

- (1) The following are the items of electronic componentry that shall be housed in one or more logic areas:
 - (a) central processing units (CPUs) and other electronic components involved in the operation and calculation of game play (for example, game controller electronics, and components housing the game or system firmware program storage media);
 - (b) electronics involved in the operation and calculation of game result determination;

- (c) electronics involved in the calculation of game display, and components housing display program storage media (passive display equipment exempted);
 - (d) communication controller electronics and components housing the communication program storage media; and
 - (e) all reprogrammable memory devices that affect the game play function of the GD.
- (2) Communication, input/output (I/O) and display interfaces that do not significantly influence the operation of the gaming device may be excluded from the logic area.
 - (3) Logic areas shall be fitted with access detection systems that shall enable the software and the system to detect whether the door to the logic area is open or closed, regardless of whether the mains power is switched on or off, or whether the GD is on-line or off-line. It shall remain able to detect this event with the mains power off for at least 24 hours.
 - (4) If the logic door is opened more than once while the GD is off-line or powered off, the GD shall, for the purposes of event reporting, treat this as a single entry.
 - (5) There shall be a facility for storing a logic door open event for at least 14 days.
 - (6) Provision shall be made on the logic door such that a physical seal can be fitted which would be broken if the logic area was accessed.
 - (7) It shall not be possible (without a detailed technical knowledge of the machine) to reset the logic area door open state (without detection) when the logic door is open (for example, the access detection system shall not be able to be tampered with or replaced without leaving evidence that this has occurred).
 - (8) It shall not be possible to insert a device into the logic area that can disable the door open sensor of the logic area when the door is shut without such act being detected or leaving evidence of tampering.
 - (9) If the logic area consists of a circuit board with no door as such, as the entire board can be removed and accessed, the security requirements for the logic doors extend to logic units (i.e. removal of the circuit board is equivalent to opening the door).
 - (10) It shall not be possible to reset the logic area door open state, by either hardware or software means, if the logic door is still open.
 - (11) If the logic area is not located inside another secure area of the GD, it shall possess a second means of physically securing the area by a lock in addition to the provision for fitting a seal.

- (12) It shall not be possible to access the data bus, address bus, or control lines of any of the circuit boards without gaining access to a logic area.

PART III

ELECTRICAL REQUIREMENTS

11. Enclosure wiring

All connectors and wires shall be easily identifiable, both in the GD itself and on the circuit diagrams in the manuals.

12. Electromagnetic interference

(1) Electromagnetic interference

The GD shall comply with the requirements for ITE equipment on radio disturbance characteristics. This requirement is subject to the requirements of the TCRA relating to emissions causing interference with other electronic communications equipment.

(2) Electromagnetic immunity:

When the GD is tested in electromagnetic immunity at severity level 2, at an electric field strength of 3 V/m, and over the frequency range 80 MHz to 1,0 GHz with 80 % AM modulation at 1 kHz, it shall not divert from normal operation by the application of electromagnetic interference (EMI).

(3) Magnetic immunity

(a) Immunity to alternating magnetic field at mains frequency: A GD shall not have its security properties changed by the application of a magnetic interference level to the GD. When tested the GD shall withstand a magnetic field that alternates at 50 Hz or 60 Hz and that have amplitude of 1 A/m. The GD shall exhibit a capacity to recover or reset and complete any interrupted play without loss or corruption of any control or data information associated with the GD.

(b) Immunity to impulse magnetic field: A GD shall not have its security properties changed by the application of a magnetic interference level to the GD. The GD shall withstand an impulse magnetic field strength of 100 A/m (peak) and shall exhibit a capacity to recover or reset and complete any interrupted play without loss or corruption of any control or data information associated with the GD.

(4) Temporary electrostatic disruption

When the GD is tested at a level of 8 kV for air discharge and 4 kV for contact discharge:

(a) it shall exhibit a capacity to recover or reset and complete any interrupted play without loss or corruption of any control or data information associated with the GD; and

(b) there shall be no abnormal payout from a CDD.

(5) Fast transient voltage

(a) The GD shall employ sufficient power supply filtering to prevent disruption to the device when the GD is tested with the application of the following fast transient voltages (rise time: 5 ns, duration: 50 ns):

(i) to the a.c. power lines of the power supply: 0,5 kV; and

(ii) to the I/O lines: 0,5 kV.

(b) The GD shall exhibit a capacity to recover or reset and complete any interrupted play without loss or corruption of any control or data information associated with the GD.

(6) Surge voltage

The GD shall employ sufficient power supply filtering to prevent disruption. When a surge voltage (rise time: 1,2 μ s, duration: 50 μ s) of 1 kV is applied to the a.c. power lines of the power supply and 2 kV is applied to earth, the GD shall exhibit a capacity to recover or reset and complete any interrupted play without loss or corruption of any control or data information associated with the GD.

(7) Long-term voltage level change

When a GD is operating at its rated voltage, and the voltage is changed to 253 V for 15 min, and 207 V for 15 min before being returned to the rated voltage, the GD shall show the capacity to recover or reset and to complete any interrupted play without loss or corruption of any control or data information associated with the GD. There may be a break between the two periods of abnormal operation.

This requirement is to demonstrate the ability of the GD to operate normally during voltage changes within the tolerances with which utility companies are required to comply (typically 10 % above and 10 % below the nominal 230 V).

(8) Surges and sags of voltage

When the voltage supply to the GD is varied in accordance with the following procedures, the GD shall exhibit a capacity to recover, or to reset, and to complete any interrupted play or data collection without loss or corruption of any control or data information associated with the GD, or any damage to the equipment:

- (a) connect the GD to a variable voltage power supply. Set the supply voltage to the rated value. Operate the gaming equipment for 15 min;
- (b) increase the supply voltage rapidly (i.e. within 0,5 s) to 1,20 times the rated voltage, maintain for 5 s and return rapidly to the rated voltage; and
- (c) reduce the supply voltage rapidly to 0,80 times the rated value, maintain for 5 s and return rapidly to the rated voltage.

This requirement is to demonstrate that the GD has sufficient power supply filtering to prevent disruption to the device in the event of surges or sags in the mains supply of 20 % above and 20 % below the nominal supply voltage.

13. Power supply

- (1) All ratings of fuses shall be clearly stated on or near the fuse holder, and switches on the power supply shall clearly indicate in a permanent manner the "on" and "off" positions.
- (2) The GD shall be able to operate from a 230 V, 50 Hz main power source, which might deviate 10 % above and below nominal voltage and 1 % above and below nominal frequency.
- (3) Where a GD enclosure contains more than one power switch, each switch shall be so marked in a permanent manner to indicate clearly to which board or component it applies.

PART IV

COMPUTER AND PERIPHERAL HARDWARE REQUIREMENTS

14. Random access memory (RAM)

- (1) GD RAM data storage shall be capable of reliably preserving its memory contents for at least 14 days with the mains power switched off.

- (2) When the battery is at or below its 14 days capacity limit, the GD shall automatically generate a type 4 significant event message to the monitoring and control system and disable itself. It shall not be possible to reset the GD until the battery capacity has increased above the 14 days capacity limit, either by recharging or replacement of the battery. If a rechargeable battery is used, the power source shall be capable of recharging the battery to its full capacity within 24 hours. General significant event messages such as "tilt" are not acceptable.
- (3) RAM clears of the GD shall not be possible except by accessing the logic area.
- (4) In a GD, batteries shall be secured and connected to the circuit boards that contain RAM such that the batteries cannot be easily disconnected.

15. Critical memory requirements

- (1) Manufacturers shall ensure that critical data are recorded in at least two physically separate and distinct hardware devices (which may be of the same type), either within the GD or the local data logger (or both). This critical data record shall be retained on these devices until such time that at least the following data have been successfully transmitted to the monitoring and control system:
 - (a) all auditing meters;
 - (b) current credits;
 - (c) GD or game configuration data (for example, GD address, denomination); and
 - (d) significant event information.
- (2) These devices shall be capable of being reliably updated at every critical memory change.

16. Program memory storage requirements

- (1) All ROMs (for example, EPROMs, CD-ROMs and PLDs) shall be clearly marked to identify the software and the revision level of the information stored in the devices.
- (2) All EPROMs (and PLDs that have erasure windows) shall be fitted with covers over their erasure windows.
- (3) EPROMs that contain any settings or programs that have the potential to cause the GD to fail to comply with these Standards or with legislation shall not be contained within the GD. This includes EPROMs that have a range of parameters that are used for setting up the device.

17. Programmable logical elements

All programmable logic elements that incorporate read-inhibit fuses shall be programmed to prevent unauthorized reading or copying of these elements.

18. Circuit boards

Patch wires and track cuts may be present, but shall be documented in the service manual in an appropriate manner.

19. Switches and jumpers

- (1) If switches or jumpers that have the potential to cause the GD not to comply with these Standards, or with legislation, are present, then setting them in a manner that would result in non-compliance shall cause the GD to enter "Tilt" mode, which in turn shall be signalled to the monitoring and control system. As long as the switch or jumper is set in this manner, it shall not be possible to reset the GD.
- (2) All switches and jumpers that have the potential to affect the communications or operational characteristics of the GD shall be documented for evaluation by the test laboratory (TL).

20. Communication

- (1) Where multiple GDs communicate over a single multi-drop transmission medium, each GD shall operate at an accurate and consistent baud rate, which shall ensure consistently accurate and error free communication (over and above the error checking and correction requirement).
- (2) Gaming equipment communication interfaces shall not present a hazard.
- (3) Ports for communication cabling shall be clearly and permanently labelled according to their function.
- (4) Ports for communication cabling (other than external ports used exclusively for auditing) shall be located within a secure area to prevent unauthorized access to the ports and to the attached cables.
- (5) The connection or interaction of a GD with a monitoring and control system shall not affect the function of the GD or affect the game in any way, other than to:
 - (a) disable the GD or game under the appropriate, approved circumstances, for example, when off-line to the next point in the monitoring and control system; and

- (b) introduce small delays (unperceivable to the player) in the duration of the game to facilitate communication with the monitoring and control system.

The general nature of the embedded processor usually found in GDs, sometimes requires a momentarily "hold off" of the next round of communication from the GD to the monitoring and control system owing to the sequencing and timing of communications to the monitoring and control system by a multitude of connected GDs.

21. Video monitors and touch screens

Where fitted, video monitors shall not present a hazard.

22. Global Positioning System (GPS)

- (1) There shall be a GPS device attached or in-built into the GD that will monitor its location.
- (2) The GPS device will send location coordinates to CEMS not less than every 1 hour.
- (3) The GPS coordinates shall be of accuracy of not more than 100 meters.
- (4) External antennas may be placed to increase the accuracy of the GPS coordinates.
- (5) During registration or installation of GD, the GPS coordinated recorded will be considered as the original GPS coordinates of the GD.
- (6) GD should send type 3 significant event to the CEMS whenever the GD is outside the radius of 2km from the original GPS coordinates that was captured during device registration and/or installation.

23. Printers (if applicable)

- (1) If a GD is equipped with a printer, the printer shall be located in a secure area other than the logic area.
- (2) The printer paper shall be easily replaced without any need to access the logic area of the GD. Instructions for the loading of printer paper shall be given in the operating manual.
- (3) The software shall register and react to any printer fault conditions and shall allow the machine to complete the printing of the current ticket and then pause printing and display appropriate on-screen messages.

PART V

TRANSACTION SYSTEM REQUIREMENTS

24. Coin acceptance systems

- (1) Each coin inserted shall register the actual monetary value or the number of credits on the player's credit meter or bet meter. If registered directly as credits, the conversion rate shall be clearly stated or be easily discernible from the GD.
- (2) During periods when the gaming equipment is inoperable for any reason, all coins shall either be prevented from being inserted, or be rejected.
- (3) The coin input system shall have means by which it can detect or logically deduce (or both) when potential cheating is in progress.
- (4) In games where tokenization is used, each valid coin inserted shall register a number of credits that are clearly stated on the machine artwork, video or other form of information display.
- (5) The coin acceptance system (CAS) shall be able to:
 - (a) not have its coin path easily altered from the outside of the GD without leaving evidence of physical modification;
 - (b) deliver an accepted coin to the correct area of the gaming equipment;
 - (c) credit the customer's credit balance with the appropriate monetary value or number of credits for each accepted coin, and to return all other coins to the coin tray; and
 - (d) detect and prevent attempted fraud.
- (6) The software shall direct coins to either the CDD or to the coin drop box. The "CDD full" detector shall be continually monitored to determine whether a change in diverter status is required. If the state of the detector changes, the diverter shall operate as soon as possible after the state change without causing a disruption of coin flow, or creating a coin jam.
- (7) Diverter operations shall be dependent only on CDD sensor status, not software counters. If a software counter is used, it shall be used in conjunction with a mechanical sensor, which shall override the software counter.

- (8) Coin validation shall be electronically based and be so designed as to ensure that each coin inserted and accepted as valid by the GD is added to the credit meter and that it updates all appropriate meters.

25. Coin dispensing devices

- (1) The CDD shall have detection devices to enable the GD to interpret and act upon conditions when the CDD is empty or when the CDD malfunctions.
- (2) The CDD shall be resistant to manipulation such as by the insertion of foreign objects into the output path.
- (3) If a GD can be operated with the use of coins and is fitted with a CDD, it shall be located in a suitably secured area within the GD.
- (4) If the GD does not issue clear instructions on the steps necessary either to perform a CDD refill or to reset the fault when a "CDD jam/empty" error message or equivalent wording is displayed, then these instructions shall be clearly set out in the operator manual.
- (5) If power to the CDD is removed, the CDD should not dispense extra coins. In this case if additional coins are dispensed, this shall only be acceptable as long as this extra payout is not reflected on the meters of a GD, and therefore does not affect the collection of fees, taxes and levies .
- (6) A GD shall not permit a cashout to be performed during any of the following conditions:
 - (a) during game play;
 - (b) while the GD is in demonstration, test or audit mode; and
 - (c) while the GD is in a fault condition that requires manual activation.Manual reactivation implies that the GD is reactivated for game play before the cashout is permitted.
- (7) If the value of the prize, when added to the player's current credits, exceeds the "maximum credit" setting in the GD, the value of the prize shall be dispensed directly from the CDD or a handpay shall be initiated.
- (8) The design and construction materials of a CDD shall be of an acceptable quality and the CDD shall require no adjustments for at least the manufacturer's recommended maintenance period.

26. Bill acceptor system

- (1) The banknote acceptor device shall perform a self-test at each power up. In the event of a self-test failure, the banknote acceptor shall automatically disable itself (i.e. enter banknote reject state) until the error state has been cleared.
- (2) If burning materials enter a banknote acceptor, the only degradation permitted is for the acceptor to reject all banknotes. Entering a state where either incorrect banknotes are accepted, or correct banknotes are accepted but not credited to the customer, is not acceptable.
- (3) If liquids are spilled into a banknote acceptor, the only degradation permitted is for the acceptor to reject all banknotes. Entering a state where either incorrect banknotes are accepted, or correct banknotes are accepted but not credited to the customer, is not acceptable.
- (4) Any interconnecting cable or plug (or both) relative to the banknote acceptor shall have some form of strain relief. Knots in the cables when passing through holes in the cabinet or housing are not an acceptable means for achieving such strain relief.
- (5) Interconnecting cables from the banknote acceptor device to the GD shall not be exposed external to the GD or readily accessible to unauthorized staff.
- (6) The banknote storage area (for example, receptacle) shall be attached to the GD in such a manner that it cannot be easily removed by physical force. It may be located within the GD or attached to the base on which the GD is positioned.

GBT may grant dispensation for this requirement if it can be demonstrated that an external banknote acceptor has at least the same degree of security as one located inside the GD. Areas of security that should be examined when considering such a dispensation are:

- (a) physical strength of the attached banknote acceptor device; and
 - (b) position and type of fixings (for example, screws, nuts, and bolts).
- (7) The designated path which banknotes traverse and associated handling devices shall be designed so that they resist jams and do not impair travel during insertion, acceptance, depositing or expulsion of banknotes.
 - (8) The designated path which banknotes traverse and associated handling devices shall be of solid construction.
 - (9) Any access to the banknote acceptor components shall disable the GD from game play until such time as the access has been cleared.

- (10) Any GD that has both a coin and a banknote acceptor is required to include a number of security features as follows:
 - (a) access to the coin drop box shall not give access to the banknote storage area;
 - (b) access to the banknote storage area shall not give access to the coin drop box;
and
 - (c) the GD shall be able to cater for simultaneous input of banknotes and coins.

The rejection of either or both is acceptable.

- (11) All points in the banknote path shall be easily accessible to allow for inspection and clearance by service personnel once valid access is gained to the area in which the banknote acceptor is housed. Actions intended to be carried out by persons other than licensed technicians shall not require the use of tools.
- (12) The banknote acceptor shall be easily removed for inspection by service personnel.
- (13) Access to banknote acceptor components and banknote storage areas shall be secured by means of key lock. Access doors for both areas shall be fitted with "door open/close" sensors (use of the main door sensor for access to banknote acceptor components is acceptable).
- (14) A GD that contains a banknote acceptor device shall maintain sufficient metering to be able to report the following:
 - (a) the total monetary value of banknotes accepted (banknote money in);
 - (b) the number or value of banknotes accepted for each banknote denomination;
and
 - (c) the individual monetary value of each of the last five banknotes accepted.

These meters are master meters, i.e. to be cleared only on master reset of the GD.

- (15) A GD with a banknote acceptor installed shall comply with the hardware requirements of these Standards.
- (16) Any access required to clear a banknote jam shall not give access to the banknote storage area, except if the jam occurs inside the banknote storage area.
- (17) The keys that open the locks on the banknote storage door shall be different from the standard outer door or banknote outer door. They may be the same as the coin drop box door keys.

- (18) The banknote acceptor device shall have a banknote storage area (for example, receptacle) full sensor. This shall be indicated on the GD. The banknote acceptor shall disable itself when full but game play may continue.

27. Bill validator system

- (1) It shall not be possible to successfully disable any validation feature and thus register any counterfeit banknote as a valid banknote.
- (2) Acceptor devices shall incorporate sophisticated detection methods to validate banknotes by suitable evaluation methods.
- (3) Banknote acceptors shall be factory set only; it shall not be possible to access or conduct maintenance or adjustments in the field, other than:
 - (a) the selection of banknotes and limits; or
 - (b) changing of approved EPROMs or downloading of approved software.

The adjustment of the tolerance level for accepting banknotes of varying quality, or the alteration of any of the possible checking procedures is prohibited in the field. If a banknote acceptor has multiple tolerance levels, the ability to switch to lower levels shall be disabled.

- (4) If the banknote acceptor only accepts banknotes in a particular direction, orientation or with a particular side facing up, there shall be sufficient instructions on the GD artwork to clearly indicate this to the patrons. A label with a symbolic sign of the banknote orientation attached near the banknote entry point is considered to be the best method of complying with this requirement.
- (5) The GD may have a facility where the banknote acceptor operation can be disabled or enabled by means of an action not available to the player, for example, audit mode or GD cabinet access. In the instance of the banknote acceptor being disabled, the GD can still be played using coin input.
- (6) A GD shall not register credits as the result of banknote input until the banknote has passed the point where it is possible to be rejected by the acceptor or to be withdrawn.
- (7) All invalid banknotes shall be rejected and returned to the player.
- (8) Under no circumstances may credits be lost if banknotes are input during game play.

- (9) All acceptance devices shall be able to detect the entry of valid banknotes and provide a method to enable the GD software to interpret and act appropriately upon a valid or invalid input (for example, the insertion of counterfeit banknotes).
- (10) The GD shall be able to detect a banknote jam that has occurred.
- (11) A banknote acceptor device shall be implemented with a means to enable or disable particular value banknotes. The procedure for setting acceptable banknote values shall be by means of a command from the system or access to a secure area of the GD. If permanent artwork is used to display the acceptable denominations, the latter method, which requires attending to each GD, is preferred.
- (12) The acceptance device(s) shall be electronically based and configured to ensure that it only accepts valid banknotes of legal tender or approved coupons and rejects all others.
- (13) An acceptance device shall include a mechanism which prohibits the input of any banknotes, or alternatively, rejects all banknotes entered, during periods when the GD is inoperable or deactivated for any reason.
- (14) The GD, if configured for a banknote acceptor device, shall not activate the banknote acceptor if any part of the banknote acceptor that relates to the validation process, or to delivery of the banknote to the storage area, is missing.
- (15) All accepted banknotes shall be deposited into the secure banknote storage area.
- (16) A banknote acceptor receptacle full condition need not disable the GD but shall disable banknote input.
- (17) In the case of GDs that support banknote acceptors that implicitly implement tokenization of the GD, the following requirements apply to this tokenization aspect:
 - (a) each valid banknote inserted shall register the actual monetary value or the correct number of credits for the current game. If registered directly as credits, the conversion rate shall be clearly stated on the GD; and
 - (b) the GDs shall ensure that all banknotes accepted shall correctly increment the player's balance (GD or account as the case may be) and relevant meters in all circumstances. This includes but is not limited to cases of power failure, door open, coin tilt, audit mode entry or any other form of deactivation of the GD.
- (18) The GD software shall incorporate a facility which shall automatically disable the banknote acceptor once the credit balance of the GD or account, if appropriate, exceeds the limit set in legislation expressed in monetary value. This limit shall not be able to be exceeded or disabled.

This monetary level may only be set, or changed, by either a downloadable parameter from the system or by accessing the logic area of the GD. This level shall be displayed to the patron in the following form or similar:

"Notes not accepted if credits over TZS X,XXX,XX are registered".

This information may be displayed as physical artwork.

- (19) If banknote input messages received from the banknote acceptor are to be maintained in the memory of a GD for a period of time without being added to the player's credit balance, the storage of these messages shall be maintained in, and comply with the critical memory requirements. The GD shall be able to recover these messages whenever it restarts, especially after a power failure or similar event.
- (20) The banknote acceptor device shall employ a reliable means of transmitting credit values to the GD. Pulse stream interface or serial communication without error detection and correction are not considered to be reliable communication methods.
- (21) The banknote input system shall be constructed in a manner that protects against vandalism, abuse or fraudulent activity. As a guide, the following might be tested:
 - (a) ability to prevent manipulation by the insertion of foreign objects into the banknote input system;
 - (b) ability to prevent easy alteration to the banknote path from the exterior of the GD without leaving evidence of physical modification of the device; and
 - (c) ability to deliver a banknote to the banknote storage area receptacle.
- (22) An alarm shall be raised for any of the following banknote acceptor specific conditions, unless done by staff authorized to do so and in accordance with an approved procedure:
 - (a) opening of the banknote acceptor area outer door (if separate from the GD main door); or
 - (b) opening of the banknote storage area door.

28. Electronic funds transfer

- (1) If cards that employ a form of electronic storage of data are to be used, the TL shall be satisfied with all aspects of security. Some of the major concerns include the following:
 - (a) prevention of illegal or accidental alteration of data;

- (b) protection from loss of data;
 - (c) recovery of information relating to damaged or lost storage devices (for example, cards);
 - (d) accuracy of read and write operations;
 - (e) protection from fraudulent duplication of card information or credit balances;
 - (f) maintenance of all electronic funds transfer (EFT) transactions in a system log;
 - (g) recovery of all EFT transactions after failure of the system; and
 - (h) correct updating to the storage media and to the system of all electronic funds transactions.
- (2) If EFT is used for gaming against a player account, no bet may exceed the available balance of an account.
 - (3) The GD card reader shall not accept an illicit card or a card that is not authorized for use.

29. Credit redemption

- (1) If a patron attempts to collect available credits, and the total coin value of those credits is less than the maximum CDD pay amount, the GD shall dispense the equivalent value in coins from the CDD.
- (2) If a player attempts to collect available credits, and the total coin value of those credits exceeds the maximum CDD pay amount, or if after a CDD pay the patron attempts to collect any residual credits (for example, in a tokenized game), the GD shall:
 - (a) generate a validated ticket for cash redemption; or
 - (b) initiate a funds transfer to an appropriate player account; or
 - (c) automatically lock-up and go into a handpay or cancel credit, whereby the player is given the option either to receive a cancelled credit or to cancel the cancel credit and play out the remaining credits.
- (3) Whenever credits are redeemed by a player, the number of credits paid out shall be clearly displayed (collect display) and shall be correspondingly removed from the credit display. In addition the monetary value of the amount redeemed may be displayed.

- (4) When there are "odd credits", or residual credits (i.e. less than the CDD base coin) in the player balance and a collect is attempted on a GD with a CDD, the GD shall pay out the balance as if it were a "large credit balance" (for example, by cash ticket or cancelled credit) instead of from the CDD. Alternatively, if a GD does not have this function, or if this function is disabled, there shall be a clear message on the GD in a prominent position, and in a font large enough to be easily read at a distance of three meters, that states that "This gaming device does not pay out any credit amount less than <value>" (insert appropriate value in the message), or equivalent wording.

30. Cashout by printed ticket

- (1) A valid ticket shall contain the following information:
 - (a) the name of the licensed venue;
 - (b) the unique GD identification number;
 - (c) the current date;
 - (d) the time of day;
 - (e) the value of the credit in numbers and words;
 - (f) the unique identifying number of the ticket voucher; and
 - (g) the validation (checksum) number or bar code; note that the validation number computation method shall be evaluated by the TL and certified by the CA.
- (2) Barcodes or other form of machine readable markings on a voucher shall have enough redundancy and error checking to ensure that 99.9 % of all misreads are flagged as an error.
- (3) A ticket request shall be rejected by the system if the device that generates the ticket security feature is not able to issue such a feature and the system shall initiate the appropriate error handling procedure. A security feature includes any mark, attribute or element (for example, a ticket number) that is added or attached to the ticket in order to allow the ticket to be validated.

PART VI

SOFTWARE REQUIREMENTS

31. Source code

(1) General

(a) The following shall appear in all source code modules:

- (i) module name;
- (ii) version number;
- (iii) revision number; and
- (iv) description of functions performed.

All source code shall be appropriately documented to ensure that TL is able to identify modules and revisions.

This does not apply to commercially available software that has no effect on the game play or game result determination. The intention here is to allow for easier analysis on changes made on various version modules.

(b) So as not to complicate the validation of software, all individual device-specific information (for example, GD identification number or address, venue name and touch screen calibration) and all device group specific information shall be stored separately from any common information (i.e. common to all GDs of a particular type).

The intention here is that it should be possible to easily verify game software. Venue and other location-specific information, date of compilation, etc., that might be included on the game software storage device (for example, EPROM or CD) make it impossible to obtain a signature that is common to all devices.

(c) Each GD shall have a function or program that displays the current software version(s) installed on the device.

(2) Control and upgrade

(a) Software media shall be clearly labelled, and shall contain sufficient information to identify the version and modification level. The identification used is at the discretion of the supplier but shall strictly follow the supplier's identification system as detailed in the supplier's software configuration control procedures.

- (b) Superseded approved versions of programs may be held on the storage media. However, it shall be possible to clearly identify which files belong to which version of the program.
 - (c) The method of loading programs to the storage media (for example, disk file transfer or download) shall be certified by the CA.
- (3) Verification
- (a) All program source codes for GDs shall be made available for examination by the TL.
 - (b) The party that submits software shall provide the means to demonstrate, or otherwise prove to the satisfaction of the TL, that the source code supplied compiles to the same executable code as contained in the firmware program store of the GD submitted for certification.
 - (c) When compiled, all source code supplied to the TL shall generate object code that is exactly the same as that installed in the GD. The TL shall verify that the program or source code modules comply with the requirements of this document.

This does not apply to commercially available software that does not influence game play or result determination.

- (d) If redundant sections of code exist in the program, the supplier shall provide an indication of the areas of code which are redundant.

One way of achieving this goal is to use compiler directives that omit sections of code (for example, if a particular compiler option is set or not set).

32. Critical memory requirements

- (1) Critical memory

Critical memory shall store all critical data.

- (2) Maintenance

- (a) To cater for disruptions that occur during the update process of critical memory, at any point in time during an update there shall be sufficient information to allow the software to fully recover from such disruptions without loss of critical data.
- (b) The result of the critical memory validation shall be stored and kept always up to date (i.e. shall be updated after every instance of critical memory change).

- (c) A validity check of critical data memory shall be undertaken at least before a game play.
 - (d) When meters in critical memory are being updated, the software shall ensure that errors in one copy of the meter readings are not propagated to other good copies.
- (3) Detection of corruption
- (a) Any failure of a validity check shall be classed as either:
 - (i) recoverable memory corruption, if at least one copy of critical memory is established to be good; or
 - (ii) unrecoverable memory corruption.
 - (b) A validity check of GD critical memory shall be undertaken at least after every restart of the device or transaction of significance (for example, logic door closed, door closed, parameter change or reconfiguration). After a device restart (for example, power off and on), the device shall complete its validity check of the critical memory by performing a comparison check of all logical copies of critical memory.
- (4) Recovery
- (a) If the GD is so designed that after an uncorrectable memory corruption it is possible to view all logical copies of meters, the GD shall highlight which of these figures are expected to be good as opposed to those that might be corrupted.
 - (b) An unrecoverable memory corruption shall result in a RAM error.
 - (c) If an unrecoverable memory corruption occurs, it shall require a master reset.
 - (d) If validity checking of critical memory information fails, and data memory remains operational, the software could recover critical memory information in order to continue game play. This option has the following implications:
 - (i) all logical copies of critical memory shall be recreated using the good logical critical memory as a source; and
 - (ii) the device shall verify that the recreation of the critical memory was successful before attempting to identify any permanent physical memory failure. If such permanent memory failure is determined, the device shall enter the unrecoverable memory corruption sequence.

33. Program memory storage

(1) Labelling

All program storage media shall be uniquely labeled, identifying the following:

- (a) the program name (and the software shell name, if applicable);
- (b) the name of the manufacturer;
- (c) the development number or the variation;
- (d) the version number;
- (e) the type and size of media; and
- (f) if applicable, the location in the GD (if critical).

(2) Write-once read-many (WORM) memory

- (a) A WORM (for example, CD-ROM) used as a program or fixed data storage device shall be written such that only the actual program and data required are written to the WORM.
- (b) The operational software shall provide an integrity check method to verify that there are no additional or missing program or data records or files on the WORM.
- (c) There shall be an ability to conduct an integrity check independent of the device's operational software to verify that there are no additional or missing program or data records or files on the WORM (for example, inserting a CD-ROM in another PC which then conducts a full signature check and directory search check over the CD-ROM space).
- (d) The method of changing to different versions of the program, including reversion to old versions, shall be certified by the CA.

(3) Reprogrammable memory

- (a) If a reprogrammable memory device is irreversibly configured at the hardware level as a read-only device (for example, the write line is cut off), it shall be treated for all purposes as an EPROM.
- (b) A reprogrammable memory program storage device shall be protected from unauthorized modification. Modification shall only be permitted once the TL and the CA or GBT (or both) are satisfied with the appropriate security measures (for example, if a high voltage chip that allows modification of the

reprogrammable memory devices is installed on the printed circuit board (PCB)). The method of securing the reprogrammable storage device shall be verified by the TL and certified by the CA on a case-by-case basis.

- (c) Before the termination of any programming operation on reprogrammable memory, each byte programmed shall be verified by a program comparison controlled by the programming device.
 - (d) Only the actual program and fixed data required shall be written to the reprogrammable memory device.
 - (e) The use of jumpers or similar devices can be used to enable or disable a reprogrammable memory, erasure or writing to reprogrammable memory provided there is a feedback signal to the software so that the setting of the jumper position can be recorded or appropriately acted upon. If a jumper or switch is set to "Write", then the GD shall not be able to enter "Play" mode. These jumpers shall be located within the logic area of the GD.
 - (f) All reprogrammable memory devices shall be housed in a secure area.
- (4) Read or write storage
- (a) A read or write storage device (for example, disk or tape) used for storage of program or fixed data shall be written in such a way that only the actual program and fixed data required by the program are written to the storage device.
 - (b) The operational software shall provide an integrity check method to verify that there are no additional or missing program or fixed data records or files on the storage device.
 - (c) There shall be an ability to conduct an integrity check independent of the device's operational software to verify that there are no additional or missing program or data records or files on the storage device.
 - (d) All methods of integrity checking shall have the ability to identify files or records that contain variable data and exclude them from the signature calculation.

(5) ROM program storage

All unused areas of ROM shall be written with the inverse of the erased state, which for most EPROMs are zero bits (00 hex), rather than one bits (FF hex).

(6) Verification

- (a) All non-critical memory RAM shall be checked for corruption at each power up.
- (b) All devices that contain program memory or critical memory shall be validated by software. This validation may include self-checking by specific devices with internal programs. RAM and program storage device space that is not critical to GD security need not be validated.
- (c) The CA shall certify the method of signature checking used, which shall include:
 - (i) a secure means of signature verification of all software resident on certain processor boards associated with a GD;
 - (ii) self-checking methods used by programmable coin mechanisms, banknote acceptors, smart card readers and intelligent displays; and
 - (iii) if the signature requirement is to be met by the self-checking method, evidence provided by the supplier of the device that a self-check has been performed. The details of the checks performed shall also be provided to the CA for approval.
- (d) Memory that does not change dynamically (for example, EPROM) shall be validated by the GD at least every time the hardware is reset (for example, at power on), the software is reset (where this is possible) or after a type 4 significant event. Failure of the validation shall be reported to the monitoring and control system, if possible. The fact that the GD activates normally is deemed to be proof that validation was successful.
- (e) If a validity check of the software fails, it is understood that this means that the GD cannot function as intended, in which case it shall disable itself immediately. This excludes transaction devices that do not influence the game results.
- (f) An error detection scheme shall detect at least 99.995 % of all possible data errors.
- (g) The integrity of the operation of the device shall be protected from nefarious or accidental use of the unused portions of the program memory storage media.
- (h) The initial value of the cyclic redundancy check (CRC) register is not an acceptable seed.
- (i) The following principles apply to signature seeding:
 - (i) the seed information shall be at least 15 bits in length; and

- (ii) the seed information shall influence the behaviour of the algorithm in a non-trivial way.
- (j) Signature algorithm seeds (or more generally "algorithm coefficients") shall be supplied by the initiator of the signature request at the time of activation.

34. Random number selection process

(1) General

- (a) The method of random number generation is not mandated. For example, a pseudo-random number generating algorithm, a dice shaker, a selector of keno balls, or a roulette wheel, can all be acceptable random number generators (RNGs) where these comply with the CA requirements.
- (b) If a software-based RNG is used, the choice of algorithm is at the discretion of the supplier of equipment.
- (c) If, for any reason, the background RNG activity is interrupted (for example, in the case of GD power down), it shall not be possible for the next input variable(s) for the RNG to be duplicated (i.e. in different GDs). The method of generating the next input variables under these circumstances shall be evaluated by the TL and certified by the CA.
- (d) RNG tests that might be applied include the following:
 - (i) the chi-square test;
 - (ii) the equi-distribution (frequency) test;
 - (iii) the gap test;
 - (iv) the poker test;
 - (v) the coupon collector's test;
 - (vi) the permutation test;
 - (vii) the run test (patterns of occurrences shall not be recurrent);
 - (viii) the spectral test;
 - (ix) the serial correlation test potency and degree of serial correlation (outcomes shall be independent from the previous game); and
 - (x) a test on subsequences.

(2) Requirements

Game software shall generate random symbols from an RNG that uses a mapping algorithm. The fundamental requirement is that the use of an RNG shall result in the selection of game symbols or the production of game outcomes that can be proven to ensure that:

- (a) the output of the symbols from the RNG is not predictable;
- (b) any outcome derived from the RNG is uniformly distributed;
- (c) any mappings to convert random numbers into game symbols are linear, and the distribution of the mapped symbols is identical to the distribution of the unmapped random number from which they were derived;
- (d) the mapped random number sequence shall demonstrate that they are statistically random when subject to the same statistical tests for randomness specified for the base RNG; and
- (e) the game outcomes which are derived from either a combination of mapped symbols or directly from the unmapped random numbers shall have the same distribution and probability of occurrence as the game that the machine implements. In particular, poker games shall have the same first hand distribution and probability as hands dealt from a randomly shuffled deck of cards; spinning reel games shall have the same outcome probabilities and outcome distribution as the physical model upon which the game is based, and so on.

(3) Background RNG activity

- (a) The mapping of numbers directly from the RNG output or through a scaling algorithm shall not influence a symbol to occur with a probability not equal to its statistical expectation.
- (b) If a random number with a range shorter than that provided by the RNG is required for some purpose within the GD, the method of rescaling, i.e. converting the number to the lower range shall be so designed that all numbers within the lower range are equally probable. Following a low probability game outcome (for example, a major prize win, or a particular graphic game result presentation), where that game outcome is represented by only one RNG value or a small number of RNG values, it is important that subsequent game play on that machine is unpredictable. That is, the machine does not subsequently go through one defined sequence of game outcomes, or one of only a few possible sequences of game outcomes. In such implementations the period of the RNG shall be much greater than its range.

- (c) Requirements for background RNG activity are as follows:
 - (i) the RNG shall be cycled continuously between games; and
 - (ii) when a game feature is initiated, random numbers for that feature shall be selected from the RNG.

The game software does not determine the outcome of a play (critical to the game result) or game feature until after all player options that pertain to the play or game feature have been made.
- (d) Seeding of the RNG is subject to the following requirements:
 - (i) the method of seed generation shall ensure that the same sequence of random numbers is never used in more than one device at the same time;
 - (ii) the "next" game outcome is not able to be predicted; and
 - (iii) seeding and reseeding shall be kept to an absolute minimum.
- (e) If a particular random number selected is outside the range of equi-distribution of rescaling values, it is permissible to discard that random number and select the next in sequence for the purpose of rescaling.

35. Information display

- (1) Display methodology
 - (a) External displays employed in communicating the results of games shall be certified on a case-by-case basis by the CA.
 - (b) The method of display of information, including game outcome, shall be certified by the CA.
 - (c) Symbols of virtual reel games (video) shall appear to the player in the same arrangement according to the reel strips. The order of the reel's symbols displayed to the player shall not be manipulated or rearranged.

- (2) Recovery

In the event of a non-destructive fault or failure, deactivation or interruption, the GD shall be able to recover with no loss to the player or of critical data to the monitoring and control system. An error-catching routine shall exist that prevents the GD from displaying a win amount that exceeds the maximum payout displayed on the paytable.

- (3) Last game information
- (a) All GDs shall be capable of storing and displaying last game data for at least the five most recently played games.
 - (b) The following information on the last game played (the game before the current game) shall be retrievable:
 - (i) the type of game played;
 - (ii) the award table used;
 - (iii) display card values, reels in position, or other game status information;
 - (iv) the total number of credits or monetary value at the start of the game (less credits bet);
 - (v) the total number of credits or monetary value played;
 - (vi) the player choices (if any) involved in the game outcome;
 - (vii) the total number of credits or monetary value associated with the award that result from the last play (win);
 - (viii) the total number of credits or monetary value added after the last game;
 - (ix) the total number of credits or monetary value collected or cancelled after the last game; and
 - (x) a display of the result of feature games following the last game display.
 - (c) In the case of a stepper motor GD, this means spinning the reels to the final resting point at the completion of the game and illuminating or flashing any lights or other indicators that were illuminated or flashing at the end of that game. The wheels, lights and display shall be returned to their original states when the viewing of the last game replay is completed.
 - (d) In the case of spinning reel games, the GD shall display at least the final resting place of the reels, the options (play lines or number of coins selected (or both)) and an indication of winnings, in a way similar to that originally shown to the player.
 - (e) In the case of keno and bingo games, all of the balls drawn, the selections made by the player and the final result shall be displayed in a way similar to that originally shown to the player.

- (f) In the case of card games, all cards dealt in a game shall be shown on the screen. In the case of poker or any other game with a hold or discard strategy, it is necessary to show the symbols and cards held and those discarded.

36. Prescribed display formats

- (1) If dates and times are displayed, they shall be displayed in a consistent format.
- (2) The acceptable all-numeric date formats are dd-mm-yyyy or dd-mm-yyyy.

The preferred date format is dd-mm-yyyy. This requirement does not apply to the date format on displays that are not accessible to the player, such as set-up screens.

- (3) The 24-hour time formats are acceptable.
- (4) Field separators within times shall be colons (:) or full stops (.). The time of day shall be given as East African standard time.

37. Data communication

- (1) Communication failure
 - (a) If there is a failure of a communication link between the GD and the next point in the monitoring system (i.e. the inability to send or, where applicable, to receive messages to and from the monitoring and control system) then, when communication is restored, the GD shall check whether there was a configuration or software change. If there was, then the GD shall send a significant event message as soon as possible after reactivation, but before permitting any game to be played.
 - (b) If the GD is unable to send messages to the monitoring and control system then the GD may complete the current game and permit cashout but shall then disable further game play until able to forward these messages to the monitoring and control system.
 - (c) All GDs shall be able to handle the following range of failures without loss of data:
 - (i) failure of central computer local area network (LAN) interfaces;
 - (ii) failure of the central LAN;
 - (iii) failure of central data communication interface devices;
 - (iv) failure of single data communication interface;

- (v) high data communication error rates on line;
- (vi) a foreign or additional device placed on a LAN;
- (vii) a foreign or additional device placed between LAN bridges, communication controllers, or on data communication lines between sites;
- (viii) single data communication port failure on remote controller (if any);
- (ix) LAN failure on regional or local controller (if any);
- (x) LAN failure on cashier terminal (if any); and
- (xi) data communication interface failure on a GD.

(2) Active daily period

If the site data logger instructs the GD to disable (for example, at the end of an active daily period) during game play, the GD shall complete the current game (including any feature games) before immediately disabling itself. If there are any credits remaining on the player's credit display, the machine shall allow the player to collect those credits (i.e. it shall permit a cashout).

38. Metering – Audit meters and displays

- (1) Unless otherwise specified in legislation, the value displayed by the meter may be in either credits or in monetary values as long as the units used are clearly shown near to the meter or display. Alternative wording for the meter name might be approved by GBT on a case-by-case basis.
- (2) The "total bet" meter is defined as the total value of all credits bet. It is a required soft meter and shall be designated on all reports or displays as "Total Bet". It shall, in addition, be recorded by the monitoring and control system. In the case of multigame GDs, this meter is also required and a separate value shall be maintained for each configured game on the GD.
- (3) The "total win" meter is defined as the total value of all credits won. It is a required soft meter and shall be designated on all reports or displays as "Total Win". It shall, in addition, be recorded by the monitoring and control system. In the case of multigame GDs this meter is also required and shall be maintained for each configured game on the GD.
- (4) The "total coin box drop" meter is defined as the total value of coins or tokens to the coin box drop of the GD. It is a required soft meter and shall be designated on all reports or displays as "Total Coin Box Drop". It shall, in addition, be recorded

by the monitoring and control system. An additional period meter is required in audit mode, to be reset following each clearance of the coin drop storage area.

- (5) The "total bill drop" meter is defined as the total value of all bills entered into the bill acceptor connected to the GD. It is a required soft meter and shall be designated on all reports or displays as "Total Bill Drop". It shall, in addition, be recorded by the monitoring and control system. An additional period meter is required in audit mode, to be reset following each clearance of the bill storage area.
- (6) The "total games played" meter is defined as the total number of games started and completed on the GD. The units shall be in games. It is a required soft meter and shall be designated on all reports or displays as "Total Games Played". It shall, in addition, be recorded by the monitoring and control system. In the case of multigame GDs this meter is also required and shall be maintained for each configured game on the GD.
- (7) The "total hand pay" meter is defined as the total value of all hand pays, including hand pays less than one coin or token, hand pays greater than the CDD limit. It is a required soft meter and shall be designated on all reports or displays as "Total Hand Pays". It shall, in addition, be recorded by the monitoring and control system.
- (8) The "total cash in" meter is defined as the total value of all cash entered into the GD (including amounts transferred from a card in an EFT environment). It shall be designated on all reports or displays as "Total Cash In". Separate meters for "cash", "EFT transactions" and "tickets/vouchers" that are added to derive the "total cash in" amount are acceptable.
- (9) The "total cash out" meter is defined as the total value of all cash paid out of the GD (including hand pays, printed tickets and vouchers and amounts transferred to a card in an EFT environment). It shall be designated on all reports or displays as "Total Cash Out". Separate meters for "cash" "EFT transactions" and "tickets/vouchers" that are added to derive the "total cash out" amount are acceptable.
- (10) The "total EFT in" meter is defined as the total value of all credits transferred from a card to a GD in an EFT environment. If the GD has EFT functionality, this shall be designated on all reports or displays as "Total EFT In". If the GD does not support EFT, this meter is not required.
- (11) The "total EFT out" meter is defined as the total value of all credits transferred to a card from a GD in an EFT environment. If the GD has EFT functionality, this shall be designated on all reports or displays as "Total EFT Out". If the GD does not support EFT, this meter is not required.

- (12) The "last five bills in" display shall enable the GD to display, in audit mode, the monetary value of each of the last five bills entered into the bill acceptor. The bills shall be listed in the order they were entered, with the most recently entered bill listed first.
- (13) A meter or display shall be updated and recorded by the monitoring and control system as the event occurs. All meters shall be added to, not incremented with the exception of coin-handling meters (i.e. coin-in and coin-out meters) which may be either added or incremented. The term "added" indicates the fetching of the current value from memory, conducting an arithmetic add operation and storage of the result in memory.
- (14) When a meter, of any type, reaches its maximum value, it shall automatically revert (i.e. "wrap round") to zero and subsequently continue counting (from zero) in the normal way.
- (15) GD shall have access to a function that enables the display of all metered information retained by the GD. It is not mandatory that metering information be displayed on the device from which the information originates. The information may be displayed on an external device or on a computer (or on both) to which the GD has communicated such information.

39. Metering – Player displays

- (1) A GD shall be able to display the information given to the player (as applicable to either "EFT" or "non-EFT" environments). Note that this does not prevent more than one piece of information being presented on the same display unit, provided that the associated artwork is not deemed to be misleading.
- (2) The "credit display" shall display the current number of credits available to the player under the heading "Credits". This display shall be updated immediately after each bet is made and at the end of the game, when it shall be increased by the value displayed by the "Win" display. It is acceptable to additionally display the monetary value if desired.
- (3) The "bet display" shall display the cumulative total number of credits bet by the player during the current game to the player under the heading "Bet". This display shall be updated at the start of each game. It is acceptable to additionally display the equivalent monetary value if desired.
- (4) The "win display" shall display the (cumulative) number of credits won for each win won by the player during a single game (and therefore the prize that has been won at the completion of each game) to the player under the heading "Win". This display shall be updated at the occurrence of each new win, and at the start of each

game. It is acceptable to additionally display the equivalent monetary value if desired.

- (5) The "collect display" shall display the number of credits collected from the GD by the player under the heading "Collect" or "Paid". This display shall be updated each time the player collects credits from the GD (whether by CDD, hand pay, printed ticket or voucher, or EFT card) and at the start of each game. It is permissible to display, in addition to the credit amount, the equivalent monetary value, if desired.
- (6) Player displays may be incremented or decremented (for example, stepped) to the value of the actual meter for visual effect. However, the internal storage of these displays shall be immediately added to (not incremented or decremented over a period of time).
- (7) The number of credits collected shall be subtracted from the player's credit display.
- (8) The value of the win display shall only be added to the player's credit display.
- (9) The player's credit display shall always be prominently displayed in all modes except audit, configuration and test modes. During game play in second screen bonus features, the player's credit amount does not need to be displayed, provided that the player is not required to bet additional credits during the feature.
- (10) The player's credit display shall have sufficient digits to allow the display of at least twice the credit value of the maximum prize. Tokenization and denomination configurable parameter options shall not permit credit values that are greater than the credit to be displayed.
- (11) Whenever credits are bet (for example, at the commencement of the game or in the event of additional wagers during a game) the number of credits bet shall be immediately subtracted from the player's credit display and displayed on the bet display.
- (12) It is mandatory for a multigame GD to show the monetary value of the player's available credits on the game select screen. The monetary value of the player's available credits may also be shown on each game play screen in addition to the player's available credits for that game. This requirement is optional for a single game machine.
- (13) If the current monetary amount is not an even multiple of the tokenization factor for a game or if the credit amount has a fractional component, the credits displayed for that game may be displayed and played as a truncated amount (i.e. fractional part removed). However, the fractional credit information shall be made available to the player when the truncated credit balance is zero or on the game select screen.

- (14) At least the following displays shall be able to be shown separately for each game offered on a multi-game GD:
 - (a) total of all credits bet; and
 - (b) total of all credits won.
- (15) Prize determination shall:
 - (a) be clearly specified on the exterior of the device, or easily accessible to the player; and
 - (b) be exclusively a consequence of the outcome of a computer based RNG in conjunction with the prevailing payout table and rules of the game.
- (16) There shall be a game selection screen where the full amount of the player's credit balance is displayed either in monetary value or in credits.
- (17) Only credits taken as wins by the player or automatically credited by the GD shall be added to the "Win" meter.
- (18) When residual credits are played off, credits bet shall be added to the "Total bet" meter.
- (19) When residual credits are played off, and if any credits are won, the value of the win shall be added to the "Win" meter and shall either:
 - (a) increment the player's credit meter; or
 - (b) be automatically dispensed, and the value of the coin(s) added to the "Coins out" meter.
- (20) The value of every prize (at end of game) shall be added to the credit display.

40. Metering – Labelling

All non-mandatory, retrievable electronic statistics or other information shall be suitably labelled.

PART VII

OPERATIONAL REQUIREMENTS

41. Access to restricted features

Access to the following restricted features of GD shall be regulated by at least a key switch, or by key-based access to the inside of the machine cabinet:

- (1) auditing information;
- (2) statistical information;
- (3) test functions; and
- (4) any other features deemed by GBT to be restricted.

42. Set-up – Device configuration

(1) Configuration of variables

- (a) A variable required to be set during device configuration or set-up shall not be able to be changed except following a valid memory clearance, unless able to be changed by some other secure method certified by the CA.
- (b) A GD shall not be able to be operated unless all configuration variables are set. A device may be configured remotely or by direct access by means of an approved mechanism.
- (c) If memory becomes corrupted, a GD shall not assume default values and recommence gaming operation unless the assumed values have been configured by an approved mechanism.

(2) Device enrolment

The unique GD monitoring and control system address shall only be able to be configured in a GD during the set-up mode. There shall be no configurable parameters on a GD, whether set manually or set by the monitoring and control system that are not certified by the CA and approved by GBT.

(3) Reconfiguration

- (a) The GD may be reconfigured to modify the following parameters, but only by a secure approved method:

- (i) the mapping of random numbers to cards or symbols;
 - (ii) the game or sets of games approved for play;
 - (iii)denomination and tokenization; and
 - (iv)the paytable.
- (b) All configuration settings required for the proper operation of the GD shall be entered before the GD can enter "Play" mode. If all configuration settings required have not been entered, the GD shall detect this condition and remain disabled.

43. System security

- (1) The set of games offered to the player for selection, or their paytables, may be changed only by a secure approved method. No changes to the set of games offered to the player for selection (or to their paytables) are permitted while there are credits on the player's credit meter or while a game is in progress.

The intention is to prevent any modification to the selection of games offered, or to their paytables, as the result of player history. The player may switch between any games offered without terminating the session.

- (2) GD shall disable all player inputs and suspend all gaming functions while any of its secure area doors are opened or remain open.
- (3) GDs shall not have any functions or parameters adjustable by or through any separate computer, input device or input codes, except for the following:
- (a) the adjustment of features that do not affect functionality in any way;
 - (b) the downloading in an authorized manner of any software, data or operational parameter; and
 - (c) an approved configuration (set-up) mode.
- (4) In general, the reactivation of a GD that has been deactivated shall require manual intervention by the gaming venue operator or the system operator. The following exceptions apply:
- (a) if a door open event occurs other than a logic door open, the GD may reactivate automatically when the door is eventually closed;
 - (b) if the personal identification number (PIN) retry limit is exceeded for a player's account card, the GD shall remain deactivated until the card is removed; and

- (c) if the power supply to a GD fails, the GD is deactivated as a matter of course. It is permitted for the GD to automatically reactivate itself unless it determines that there was a configuration or software change while the power was down, in which case the GD shall remain deactivated until manually reactivated.

The venue operator may choose to require manual reactivation in all cases.

- (5) If a GD loses communication with its site data logger, the GD shall disable itself.
- (6) Where a GD is unable to operate without the loss of any information (for example, metering, transactions or significant events) it shall immediately disable any further game play.
- (7) If a significant event has not already been logged (by the system or the GD) when deactivation occurs, the GD shall ensure that such an event is reported to the system as soon as possible.

44. Master reset

- (1) Following the initiation of a master reset procedure (using an approved RAM clear method), the game program shall execute a routine which initializes each and every bit in RAM to the default state.
- (2) It shall not be possible to reset any critical RAM without first accessing the logic area.
- (3) The default reel position or game display after a master reset shall not be a winning combination on any selectable line. The default game display upon entering game play mode shall also be a non-winning game.

The selection of a specific "default" combination that is displayed after every reset is acceptable, as long as it is a non-winning combination (i.e. it need not be selected at random).

- (4) A configuration setting that is required to be entered during set-up mode immediately following a master reset shall not be able to be changed after the machine leaves set-up mode.

45. Door open procedures

The following procedures shall be performed on the occurrence of any door open:

- (1) any software state prior to door opening shall be saved;
- (2) any game play shall be saved in its current incomplete condition;

- (3) if mechanical reels are spinning prior to the door opening, the reels shall continue spinning after the door is closed;

There should not be a false impression created that the game achieved a result while the door was open, or just prior to the door being opened;

- (4) credit input shall be disabled (may be re-enabled for the duration of a credit input test or CDD test);
- (5) the machine shall clearly indicate that the door has opened and game play is not possible;
- (6) if in CDD payout, the CDD shall be turned off and the brake applied (may be re-enabled for the duration of a CDD test);
- (7) all player inputs that can affect a play in progress shall be disabled (unless used in door open or test mode); and
- (8) cashout of any kind to players shall be disabled.

46. Door close procedures

When any door is closed the software shall return to the condition prior to when the first door open state occurred, except when the GMGD detects that there has been a configuration or software change, in which case it shall send the appropriate message to the CEMS. This means that:

- (1) a message or other indication stating that the door has closed, or other indication (i.e. such as the disappearance of a message or indication stating that the door was opened) shall be displayed; this may be for a preset period or until the next game play;
- (2) any relevant player inputs shall be re-enabled;
- (3) the alarm shall be turned off; and
- (4) any incomplete game play when the event occurred shall recommence from the beginning of the play or from the point at which interruption occurred and conclude normally, using the data that were saved previously.

47. Audit mode

- (1) It shall always be possible to enter audit mode when the GD is in idle mode.

- (2) The device shall not be playable while auditing information is being displayed on the device.
- (3) It is not mandatory that auditing information be displayed on the device from which the information originates. The information may be displayed on an external device or on a computer (or on both) to which the GD has communicated such information.
- (4) It is preferred that all non-game specific player displays (for example, credit display, win display, bet display and collect display) are displayed in the same position for all games.
- (5) Audit mode shall include as a minimum, the following items:
 - (a) display of all electronic meter and display information;
 - (b) last game replay;
 - (c) display of GD identification (i.e. the identification number that uniquely identifies the GD to the monitoring and control system); and
 - (d) display of software or game identification (or both).

48. Demonstration mode

- (1) Demonstration mode (where implemented) may only be entered into by means of an approved secure method evaluated by the TL and certified by the CA, and only while:
 - (a) the main door is open; and
 - (b) the GD is on-line to a data controller unit or bank controller.
- (2) While the GD is operating in the demonstration mode, there shall be clear notification that the GD is in that mode (for example, by tower light signal or on-screen message) and the main door of the GD shall be open at all times.
- (3) If soft meters are incremented in the demonstration mode, such credits shall be automatically cancelled upon the change of the GD from demonstration mode to game-play mode.
- (4) A GD in demonstration mode shall not be capable of being used as an off-line GD. Some suggested implementations which might help prevent such illegal activity are:
 - (a) not to allow coins to be entered into the GD (i.e. lockout) except in accordance with approved coin test procedures;

- (b) not to allow any coins out for credits in the GD except in accordance with approved CDD test procedures;
- (c) to provide a spot on a touch screen or to interpret a button (for example, service) that shall credit the GD with a number of coins;
- (d) if a "ticket" cashout is allowed, to clearly mark the ticket that is printed as a non-valid ticket including a non-valid serial number (for example, all zeroes or nines); and
- (e) if the main door is closed, to let the GD immediately exit demonstration mode and return to game-play mode.

49. Idle mode

- (1) While the GD is in idle mode, if there are credits showing on the credit display, the following shall remain on view until the next play:
 - (a) the bet display for the last play;
 - (b) the final reel stop positions, card values, etc. for the last game play; and
 - (c) the win display from the last play unless a payout has occurred since completion of the last game play, and the "win" display has been used as a "collect" display.
- (2) Multigame GDs may have a "Game Select" mode entered from "Idle" mode where the above information is not required to be displayed. If "Game select" mode is entered, it is necessary to display all of the information above when the same game is selected again.

50. Test or service mode

- (1) While the GD is operating in the test mode, there shall be clear notification that the GD is in that mode (for example, by tower light signal or on-screen message).
- (2) Opening the main cabinet door of the GD may automatically place the GD in a service or test mode. A diagnostics test mode may also be entered by means of an appropriate instruction from an attendant during an "Audit" mode access.
- (3) If there are any test-mode states which cannot be automatically cancelled by closing the door, (for example, if it is first necessary to manually set a switch) or exit from the "Audit" mode (if that was the method of entry to the "Test" mode), the action necessary shall be indicated on the machine and in the relevant manuals.
- (4) Test games, if implemented, shall:

- (a) not increment any meters, other than a temporary on-screen credit display;
 - (b) only be available after entering a specific test game mode within door open mode; and
 - (c) be clearly indicated as not in normal game play mode.
- (5) The following information shall be accessible in test mode if not available in audit mode:
- (a) the revision number for game (and if applicable, base) software in the machine;
 - (b) set-up and configuration data; and
 - (c) the expected return to player (RTP).
- (6) If a CDD test is implemented that does not require the door securing access to the CDD to be opened, no meters that are used to calculate revenue shall be affected.
- (7) If a "coin in" validation test is provided, the following conditions shall be met:
- (a) the number of coins accepted as valid by the CAD shall be displayed;
 - (b) the number of coins that pass coin direction sensors shall be displayed; and
 - (c) no meters shall be affected.

Alternative implementations such as providing indicators of the line status (for example, jammed, activated, and faulty) of the validator outputs and diverter outputs are acceptable if, at least, the same level of diagnostics is achieved.

- (8) Coins shall not be capable of being paid out other than:
- (a) by normal play, unless in CDD test mode; or
 - (b) by a coin dispensing device dump function.
- (9) If there is a possibility that credits can be obtained whilst the machine is in test mode, those credits shall be automatically cancelled when the door is closed and shall not be credited to the meters.
- (10) When the GD is in test, demo or service mode, the current play-mode status of the game, including the player's credit, shall be preserved.
- (11) Where the possibility exists to obtain credits whilst the door is open for any purpose (for example, coin-in test) including the service mode, such credits shall be automatically cancelled when the door is closed and shall not be credited to any meters.

51. Power save mode

- (1) If a GD has a "Power save" mode it shall only be activated when the GD has been idle for a period of time not less than 5 min, or when GD is in a disabled state.
- (2) For the purposes of this subclause, a GD shall be defined as being "idle" if, for the nominated duration, it:
 - (a) does not have any key switch activated (for example, accessing "Audit" mode);
 - (b) does not have any door open;
 - (c) has no credits on the player prize display yet to be transferred to the player's credit display;
 - (d) has not had any coins or banknotes input;
 - (e) has not had its touch screen touched;
 - (f) has not had any button pressed;
 - (g) does not have any fault condition; or
 - (h) does not have any electronic funds transfer or credit transfer to or from the GD pending.

Power save mode should be capable of being enabled or disabled by authorized staff by means of set-up mode, or by means of the monitoring system (if applicable).

Power save mode may be activated manually (i.e. by means of an auxiliary power switch or key switch) and in this case the conditions listed above are void.

- (3) While in "Power save" mode, power may be removed from the coin diverter, incandescent display, monitor and all fluorescent lights. Critical security functions of the GD shall still be performed.
- (4) The GD shall exit from "Power save" mode and return to the normal display mode immediately upon it ceasing to be "idle" (if not using a manual power save implementation).

52. Mechanical reels and wheels

- (1) Microprocessor-controlled reels (for example, stepper motor reels) shall automatically re-spin to the last legally obtained play-mode result when the play

mode is re-entered (for example, the main door is closed, power is restored, audit mode is exited, or a fault condition cleared).

- (2) Reel bounce and float shall be prevented when a spinning reel is being stopped.
- (3) Each microprocessor-controlled reel shall spin at least one revolution per play unless stopped by player intervention as provided for in the rules of the game.
- (4) A reel or wheel assembly shall be so designed that the spin of each reel is not obstructed by any other component.
- (5) Microprocessor-controlled reels shall be monitored to detect malfunctions such as a reel that is jammed, or is not spinning freely, or has failed to stop, or any attempt to manipulate their final resting position.
- (6) The control of electromechanically controlled display devices, such as spinning wheels and roulette wheels, shall be sufficient to enable the system to detect a malfunction or an attempt to interfere with the correct operation of that device. This may also be achieved by a last game recall facility.
- (7) Reel assemblies shall have a clearly identifiable reference point at which the start of the strip symbol artwork is located.
- (8) Reel assemblies shall be so constructed that winning symbol combinations match up with the pay lines.

53. Video displays

- (1) An attract mode may be used, as long as the information required while in idle mode is displayed after the attract mode has completed its cycle.
- (2) If the display is over-written by the payable, on restoration of the game screen the same display, that shows the winning combination resulting from the last game played, shall be suitably highlighted.
- (3) Screen save functions are subject to the following constraints:
 - (a) any screen save function shall only be activated when there are no credits on the machine;
 - (b) if a fault condition exists on the machine when the program enters the screen save function, the nature of the fault shall be displayed, otherwise the machine shall exit the screen save; and
 - (c) the screen save mode shall cease upon the occurrence of any of the following:

- (i) the activation of an input device;
 - (ii) any door opening; or
 - (iii) an error event condition.
- (4) Touch screens, if used, shall comply with the following:
- (a) touch screens, which are accessed by the general public, shall be resistant to scratching from conditions likely to occur during normal use;
 - (b) touch screens shall be accurate, and once calibrated shall maintain that accuracy for at least the manufacturer's recommended maintenance period;
 - (c) touch screens shall be designed and installed such that static build-up is minimized to a level that ensures no humanly perceptible static is discharged through a grounded patron that touches the screen;
 - (d) GDs that employ touch screens shall have a recalibrating facility that may be either manual or automatic, but in any case shall not require access to a logic area;
 - (e) touch screen selected input shall always be interpreted accurately and acted upon in accordance with the description of the choice (indicated on the screen) made by the player;
 - (f) if the opening of the GD door is found to affect touch screen calibration and recalibration is carried out with the door open, there shall be in place means to ensure that the recalibration is correct when the door is closed (for example, two sets of calibrations one for door open and one for door closed);
 - (g) touch screen button icons shall be sufficiently separated to reduce chances of the wrong icon being selected due to incorrect calibration or parallax errors; and
 - (h) all buttons and touch points shall be documented for evaluation by the TL and certification by the CA.

54. Electronic funds transfer system

A GD shall retain a card used for EFT gaming within the card reading device, once inserted, except if an amount debited from the card is placed directly on the credit meter and no further transactions are required from the card (for example, updating of account balance or credit out). The GD shall not release the card until one of the following conditions is met:

- (1) a player has requested a collect of remaining credits and all updating of account records or information (or both) has been successfully completed;
- (2) a player has a zero credit balance and all updating of account records or information (or both) has been successfully completed;
- (3) an invalid card event condition has been cleared by an approved method; or
- (4) power or communications failure (except that, if conditions (1) and (2) are met, the GD may release the card after successfully completing the updating of account records or information, or both).

55. Player input

- (1) The player's selected input shall be interpreted correctly and acted upon in accordance with the description of the choice as indicated on the labelling artwork or display.
- (2) A GD shall not be affected by the simultaneous or sequential activation of the various inputs.
- (3) In regard to multi-line games, each additional line that is brought into play by the wagering of a further credit or credits shall be clearly so indicated by the game that the player is in no doubt as to which lines are in play.
- (4) In the case of multi-line games, the winning play line(s) shall be clearly highlighted to the player. This may be accomplished by drawing a line over the symbols on the play line(s) or flashing of winning symbols and line selection box (or both). Where there are wins on multiple lines, alternative indication (for example, alternate flashing of winning patterns) may be given.

PART VIII

GAME DESIGN REQUIREMENTS

56. General

- (1) Games that have a component of strategic skill (for example, draw poker and blackjack) shall comply with the following requirements:
 - (a) the actual player return for a typical strategy, based upon the information available to the player in the game rules, shall not be less than the theoretical RTP;

- (b) any strategy advice or automatic holds shall be fair and not misleading to the player and shall not represent a poor choice;
 - (c) the player shall be able to override the automatic hold; and
 - (d) the automatic hold strategy shall be used in calculating the RTP of the game.
- (2) The presentation of mapped symbols or artwork shall not alter or be modified during play, except in cases of animation during a play or as a part of the game rules, which shall be clearly described on the artwork, otherwise this constitutes a different game.
 - (3) A machine shall not have any faults present, or be in any test, metering, door open or lockup mode, etc., for a game to begin.
 - (4) Games that involve player physical dexterity (for example, hand and eye coordination) shall return at least the minimum RTP without adaptive strategies. For example, the size of a target area shall be independent of results previously achieved.
 - (5) Game features that place an amount won by the player at risk (for example, double-up) are not permitted.
 - (6) Credits bet may come from the credits that the player has available to bet or from the number of coins inserted.
 - (7) The game may not be considered to be completed until all the appropriate meters for the game have been updated. It is permissible to update the credit meter before the completion of play provided that critical memory is updated when the credit meter is updated.
 - (8) If multigames are implemented, there shall be a method available so that it is possible to disable and enable individual games on multigame GDs. If it is not possible to accomplish individual game enable and disable, the entire machine shall be capable of being enabled or disabled.

57. Rules

A game shall follow a constant set of rules and shall at no time deviate from those rules. A rule change constitutes a different game, although variations to the maximum number of credits bet per game or lines per game (or both) are permitted. This requirement does not preclude implementations of games with multiple parts or features provided that the rules are clear to the player.

58. Game fairness objectives

- (1) Each time a game element (base, primary, feature, bonus or free) is played, there shall be a chance of obtaining any of the results displayed on the appropriate payable of that game.
- (2) Events of chance within the games shall be independent of (i.e. not correlated with) any other events within the game or any other events within previous games, except as provided by the rules of the game (for example, for metamorphic games).
- (3) The intent of the objectives is to ensure that, where applicable, the probability distribution of each event within a game is as it:
 - (a) appears to the player;
 - (b) is represented to the player; and
 - (c) could reasonably be inferred by the player.

This requirement does not prohibit the use of virtual reels.

- (4) GDs shall not cheat, mislead or unfairly disadvantage players.
- (5) The player shall be advised as to the frequency of the shuffling of cards (for example, by wording in the artwork or on the display screen).
- (6) Game fairness objectives for games such as horse, car, animal racing, golf or football and virtual reality games shall be assessed on a case-by-case basis by applying the general game fairness objectives.
- (7) Capping of awards shall not be permitted.

59. Result-determination methodologies

- (1) In the case of any GD, result determination for each individual play within a game shall:
 - (a) be for all attainable combinations of the mapped symbol set (except for random awards);
 - (b) be clearly specified on the exterior of the gaming equipment (or in a way readily available to the player and clearly apparent);
 - (c) be a consequence of one of the result determination methodologies described in this clause and approved by GBT;
 - (d) have a theoretical RTP not less than that specified in legislation; and

- (e) ensure that the maximum prize is not greater than that specified in legislation.
- (2) If a game's theoretical return cannot be reasonably calculated, the manufacturer shall provide the TL with sufficient documentation that will allow the TL to determine an approximate theoretical RTP which shall be not less than the minimum RTP specified in legislation.
- (3) The minimum RTP shall be met when playing at the lowest end of a non-linear payable (for example, if a game is continuously played at a minimum bet level for its total game cycle and the theoretical RTP is lower than the minimum RTP specified in legislation, then the game is unacceptable). This example also extends to games such as keno where the continuous playing of any spot combination results in a theoretical RTP lower than the minimum RTP specified in legislation.
- (4) The result in game play can be determined in the following ways:
 - (a) pure chance;
 - (b) pure chance plus skill where the skill element is supported by hold and selection strategies; and
 - (c) pure chance plus skill where the skill element involves eye and hand coordination.
- (5) The GD shall not have any means of manipulation that can affect the probabilities of random event outcomes during game play.
- (6) Events of chance within games shall not be influenced, affected, controlled or determined by anything other than (in conjunction with the prevailing payout table) numerical values obtained in an approved way from the certified RNG.
- (7) If the player's skill can influence the final outcome of the game, the game shall provide appropriate strategies for selection and holding of elements of the game (such as reels and cards) which, if followed exactly, shall ensure that the theoretical minimum RTP shall be not less than that defined in the appropriate legislation.
- (8) If the player's eye and hand coordination skill can influence the final outcome of the game, the pure chance of the game shall have a theoretical minimum RTP not less than that defined in the appropriate legislation, and the skill element shall not cause the theoretical RTP to be reduced.
- (9) At the start of each game play, the method by which all random behaviour is derived during the game shall be fully determined and frozen.

60. Game features

- (1) If a feature activity is provided in which the player has to wager credits, the player shall be given a choice whether to enter the feature activity or not. A player who elects not to enter the feature activity shall be positioned at the beginning of the primary game.
- (2) A game may offer random awards, provided that the award value complies with that specified by legislation.
- (3) Initial entry to a feature activity shall be conditional upon an immediately preceding occurrence of a winning event in the primary game.

61. Metamorphic features

- (1) Where allowed by GBT, features that are not completely independent of play history (i.e. that are metamorphic) shall:
 - (a) display clearly to the player which game rules apply to the current game state;
 - (b) display to the player sufficient information to indicate the current status towards the triggering of the next metamorphosis of the game (for example, if the game collects tokens towards a feature, the number of tokens missing or the total number required to trigger the metamorphosis shall be indicated along with the number of tokens collected at that point);
 - (c) not adjust the likelihood of a metamorphosis occurring, based on the history of prizes obtained in previous games (i.e. games shall not adapt their theoretical RTP based on past payouts); and
 - (d) not be misleading. If a game's metamorphosis is triggered after accruing a certain number of tokens or combination of tokens of different kinds, the probability of obtaining such tokens shall not deteriorate as the game progresses (for example, for identical tokens the last few tokens needed shall not be more difficult to obtain than the previous tokens of that kind).
- (2) The game's player return over the cycle of both the metamorphic and non-metamorphic part of the game shall comply with the minimum RTP as specified by legislation.
- (3) Any accumulated metamorphic game tokens shall not be lost during a full reconfiguration if the game that includes the tokens is still available after the full reconfiguration.

- (4) The maximum stake wagered and prize paid out by the game over the cycle of both the metamorphic and non-metamorphic parts of the game shall not exceed that specified in legislation.
- (5) If a metamorphic feature game requires extra credits to be wagered and the game accumulates all winnings (from the trigger and the feature) to a player win display (rather than directly to the player's credit display), the game shall:
 - (a) provide a means where winnings on the player win display can be bet (by means of the credit display) to allow for instances where the player has an insufficient credit balance to complete the feature; and
 - (b) transfer all credits on the player win display to the player credit display upon completion of the feature.
- (6) The inclusion of metamorphic features in a game shall not cause the RTP of the overall game to lessen to a value below that of the base game.
- (7) If the player is allowed to wager at less than the available optimum strategy during a metamorphic game feature, the manufacturer shall provide evidence that this option shall not reduce the overall player return for that game below the minimum theoretical RTP as specified by legislation.

62. Card games

The consequences for games that depict cards being drawn from a pack are as follows:

- (1) at the start of each game or hand, cards shall be drawn fairly from a randomly shuffled pack that consists of the full set of cards applicable to the game depicted;
- (2) once removed from the pack, cards shall not be returned to the pack except as provided by the rules of the game depicted;
- (3) the pack shall not be reshuffled except as provided by the rules of the game depicted;
- (4) as cards are removed from the pack, they shall be immediately used as directed by the rules of the game (i.e. they shall not be discarded owing to adaptive behaviour by the GD); and
- (5) it is permitted to reshuffle the remainder of the deck between draws during a single game.

63. Ball-drawing games

The consequences for games that depict balls being drawn from a barrel (for example, bingo) are as follows:

- (1) at the start of each game only balls applicable to the game shall be depicted;
- (2) once removed from the barrel, balls shall not be returned to the barrel except as provided by the rules of the game depicted;
- (3) the barrel shall not be remixed except as provided by the rules of the game depicted; and
- (4) as balls are drawn from the barrel, they shall be immediately used as directed by the rules of the game (i.e. they shall not be discarded owing to adaptive behaviour by the GD).

64. Roulette wheel, spinning reels, dice rolling, coin tossing games

- (1) In the case of games that depict or involve:
 - (a) the spinning of reels (such as slot machines or poker machines);
 - (b) the spinning of wheels (such as roulette);
 - (c) the rolling of dice;
 - (d) the tossing of coins; or
 - (e) other similar depictions, the requirements in 64(2) to 64(5) (inclusive) shall apply.
- (2) If virtual reels that map to physical reels are used, each of the reel stops of the virtual reel strip shall have the same probability of occurring (i.e. if the virtual reel consists of n positions, the probability of occurrence of each position shall be $1/n$). Symbols of the physical reel shall appear to the player in the same arrangement as would the corresponding symbols of the virtual reel (i.e. it shall not be possible to determine by observing the symbols displayed on the machine that the physical reels are used instead of virtual reels). This observation extends to all symbols visible to the player. Accordingly, mapped symbols shall have identical sequences of preceding and following symbols (if these symbols are visible to the player) on both the physical and virtual reel strip.
- (3) The behaviour of each reel, wheel, die, coin etc., shall be independent of (i.e. uncorrelated with) all other reels, wheels, dice, coins, etc.

- (4) The behaviour of each reel, wheel, die, coin etc., shall be independent of (i.e. uncorrelated with) its previous behaviour.
- (5) For each wheel, dice, coin, etc. depicted, the probability of any one face appearing shall be as for the actual physical device (for example, 1/20 for a 20 wheel; 1/6 for a 6 faced dice; and 1/2 for a coin).

65. Maximum prize

The maximum aggregate prize paid out by a GD shall be as specified in legislation and shall be displayed on the GD.

66. Maximum stake

The maximum aggregate stake shall be as specified in legislation and shall be displayed on the GD.

67. Game play

- (1) Game initiation
 - (a) A GD shall only initiate game play:
 - (i) after credits have been registered;
 - (ii) after the player has nominated the number of credits to bet on that game; and
 - (iii) after the player presses a "play" button (or similar input, for example, a touch screen); or
 - (iv) after the player has inserted the maximum bet.
 - (b) Where the above items are combined, such as "auto-play" buttons, or where pressing the "play" button causes a default number of credits to be selected, such facilities should be acceptable, provided that these functions are clearly explained in game instructions (for example, on button artwork).
 - (c) If an autoplay mode is incorporated, it shall be possible to turn this mode on or off at any time during game play.
- (2) Multigame machines

- (a) The methodology employed by a patron to select and discard a particular game for play on a multigame GD shall be clearly explained to the patron on the GD, and be easily followed. The GD shall clearly inform the patron of all games available at that time and offer them for selection.
 - (b) It shall not be possible to start a new game before the current play is completed and all relevant meters and displays have been updated (including features and other options of the game) unless the action to start a new game terminates the current play in an orderly manner.
 - (c) Machines that offer multiple games shall at all times indicate to the player which game has been selected for play or is being played. The player shall not be forced to play a game just by selecting that game.
- (3) Tokenization
- (a) Devices that implement tokenization shall ensure that if a sequence of higher value coins is entered, no credits shall be lost even if there is a power failure of the gaming equipment before all of the credits are incremented to the player's balance.
 - (b) Tokenization parameters shall either be hard-coded, or be able to be configured during the configuration of the GD.
 - (c) Tokenization and denomination configurable parameter options shall never allow the maximum stake or maximum prize values set by legislation to be exceeded.

68. Feature games

- (1) In all cases the number of credits bet on feature games shall be added to the total bet meter regardless of whether they are bet from the credits won in the base game or not, and shall be subtracted from the player's credit display.
- (2) If a base game can be followed by feature games, the credits won at the end of each feature shall be added to the player's win display and to the total win meter maximum stake or maximum prize values set by legislation.

PART IX

ARTWORK REQUIREMENTS

69. General

- (1) This clause is mainly applicable to spinning reel games. However, some parts of this clause are also applicable to draw poker, bingo, and other game types. The rules given apply to reel strips (physical or video), belly panel and top panel artwork (physical or video implementation) and, to a limited extent, to screen and display artwork. The layout of the reels display window is not specified.
- (2) Reel strips shall have a reel number.
- (3) The manufacturer's logos or copyright messages may be visible, but in a discreet manner.
- (4) By making a submission for evaluation, the manufacturer, supplier and operator of gaming equipment indemnifies GBT and its duly appointed testing agents of any claim by any party for breach of copyright, trademark, or registered name or design which may arise from the distribution of literature (such as rules of play) or operation of approved gaming equipment.
- (5) Artwork graphics shall not in any way or form be indecent or offensive.
- (6) These requirements refer to all forms of artwork (i.e. anything that appears on the top panel, belly panel, buttons, on the area surrounding the display, and on the display itself). The combination of all relevant messages appearing anywhere on the artwork shall comply with these requirements.
- (7) The artwork requirements apply equally to artwork displayed in physical form and in virtual form (for example, on a video display, as a holograph image and on an liquid crystal display (LCD) or similar display).
- (8) Where both multiplier instructions and tabulated prizes are displayed on artwork, there shall be no confusion possible as to whether the multiplier applies to the tabulated prizes or not.
- (9) The outcome of each game shall be displayed for a reasonable length of time.
- (10) If any game instructions are on the video screen only, they shall be accessible and visible without the need for credits to be inserted or staked. This requirement does not apply during game play except where specific instructions might be required to proceed to the next stage of the game.

- (11) If the artwork contains game instructions specifying a top award, it shall be possible to win this amount from a single game (including features or other game options). For example, if the artwork states that TZS 1,000 is the top award for a game it shall be possible to win TZS 1,000 on that game.
- (12) The functions of all buttons (in normal game mode) shall be clearly indicated, preferably on the button itself.
- (13) Customized artwork that makes use of stickers shall use stickers that do not shrink or peel with time or heat. Where possible, stickers shall be applied on the back of the artwork glass, to avoid intentional removal. Stickers applied to other parts of the GD shall not be easily removed. Stickers shall comply with the part number requirement, however where size limitations occur, the part number may be affixed to the sticker backing or surroundings.
- (14) If different versions of the artwork require a cutout or a window (for example, a card reader), each modification shall be submitted for testing and certification.
- (15) The name of the game being played shall be clearly visible to the player.
- (16) The coin or token denomination of the machine shall be clearly visible at all times, preferably near the coin slot. If the machine uses tokens or tokenization, the number of credits registered for each token or coin respectively shall also be displayed.
- (17) All game instructions shall be in English or Kiswahili and both grammatically and syntactically sound. Exceptions may be acceptable on a case-by-case basis.
- (18) The assumed direction of instructions is from left to right and from top to bottom. These directions shall be used as much as possible. Considerable breach of this common rule shall make the artwork unsuitable.
- (19) All game instructions on the artwork shall be easily interpreted, clearly visible, not ambiguous, and sufficient to explain all game rules. Common sense rules shall apply. Game play and device usage instructions shall be stated unambiguously and shall not be misleading to the player.
- (20) There shall be sufficient game instructions to allow a player to determine the correctness of prizes awarded. If random prizes are offered, the maximum value obtainable from the random prize shall be indicated. If the value of the random prize depends on credits wagered this shall be stated.
- (21) All statements on the artwork shall be true. The pay scale on the artwork shall correspond to the pay scale used in the mathematical treatise as submitted to the TL.

- (22) The display of the result of a game outcome shall not be misleading or deceptive to the player (for example, it shall not improperly indicate a near miss). Where symbols appear on a pay line, these shall be clearly bisected by the pay line.
- (23) Initial player selection options shall be described (for example, selection of a runner in a horse race shall identify name, number and expected payout).
- (24) Player selection options once the game has begun shall be clearly shown on the screen.
- (25) The winning amount for each separate wager and total winning amount shall be displayed on the screen.
- (26) All artwork that is relevant to game play or displays information required by the player shall be clearly marked with a part number unique to that manufacturer and with the name or logo of the manufacturer. Successive versions of the artwork shall have different part numbers, if applicable.
- (27) All occurrences of the scattered symbols should be labelled with the word "scatters" (or an equivalent) where they appear on the artwork panel.
- (28) Upon a win, all pay lines shall be clearly indicated. If it is possible to bet more than five lines, then upon a win for video machines, the pay lines shall be indicated in a manner such that all pay lines can be clearly identified by the player.

70. Game-specific artwork

(1) Card games

In the case of card games, the following apply:

- (a) It shall be clearly stated if more than one deck of cards is used in the game.
- (b) The artwork shall clearly state if the rules of the game do not shuffle the deck after every game. In this instance, the artwork shall indicate when shuffles actually do occur.
- (c) As a minimum, the player shall be able to view a tabulated display of the payable that shows all winning hands and their payouts when no game is in progress.

(2) Blackjack

In the case of blackjack, the following apply:

- (a) Insurance rules shall be clearly explained if insurance is available.

- (b) Pair-split rules shall be explained. Areas to be dealt with are the following:
 - (i) split aces have only one card dealt to each ace, if this is the game rule;
 - (ii) further splits, if available; and
 - (iii) double-down after splits, if available.
 - (c) Double-down rules shall be clearly explained including limitations of which totals may allow a double down to be selected.
 - (d) 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.
 - (e) Dealer play rules shall be clearly explained including special treatment of a soft 17 count, if any.
 - (f) Any limits on the number of cards that may be drawn by player or dealer (or both) shall be explained including winners declared (if any) when the limit is reached (for example, five under wins).
 - (g) Surrender rules shall be explained, if any exist.
 - (h) If the player loses on "dealer push" this shall be clearly explained.
 - (i) Deal rules used shall be clearly explained.
 - (j) Winning hands shall be clearly labelled as to the win category, for example, "blackjack", "six under" or "push".
 - (k) If pair splits have occurred, the results for each hand shall be shown (total points, resultant win or loss category, amount won, amount wagered).
 - (l) Special rules, if any, shall be clearly explained.
 - (m) All player options that are available at any point in time shall be shown on the artwork.
- (3) Poker

In the case of poker, the following apply:

- (a) The artwork shall provide clear indication if stud poker rules apply. Draw poker is assumed if nothing is stated.

- (b) The artwork shall provide a definition of winning combinations outside the scope of standard poker, for example, royal flush without wild cards, four of a kind, "jacks or better", and four deuces (when deuces are wild).
 - (c) Wild card rules shall be clearly explained, for example, jokers wild or deuces wild.
 - (d) Held and non-held cards, including recommended holds (if implemented) in draw poker or the equivalents shall be clearly marked on the screen, and the method for changing holds clearly displayed to the player.
 - (e) Winning hands shall be clearly labelled as to the win category, for example, "full house".
 - (f) All special rules outside the scope of common poker shall be clearly explained.
 - (g) When player options outside the scope of common poker are currently available, they shall be clearly explained on the artwork.
- (4) Simulated races

This subclause refers to games with simulated races with for example, animals (for example, horses), vehicles (for example, motor bikes) and humans (for example, 100 m dash). The following apply:

- (a) All participants in the race shall have characteristics that make it unique in appearance (for example, number, jockey colours).
 - (b) The result of the race shall be clearly obvious and not open to misinterpretation.
 - (c) If prizes are to be paid for combinations that involve runners other than just the first place finisher, the order of the place getters that can be involved with these prizes shall be clearly shown on the screen (for example, result 8-4-7).
 - (d) Each meaningful result position shall be available for display in all last game replays.
 - (e) The rules for alternative wagering options, for example, quinella, and the expected payouts shall be clearly explained on the artwork.
- (5) Scratch tickets

This subclause refers to games that simulate a lottery scratch tickets or similar. The following apply:

- (a) A precise definition of which player options shall be taken to complete the game, shall be shown on the artwork.
- (b) Details of how payouts are won and their amounts shall be shown on the artwork, for example, three matching scratched symbols win that prize.
- (c) All rules for symbols that may substitute in winning patterns shall be displayed on the artwork.

(6) Roulette

If standard roulette is simulated, the following rules apply:

- (a) Each "zero" used shall be uniquely labelled (for example, "0", "00", "000").
- (b) The simulated roulette wheel shall be in the identical format as a standard casino wheel (including colours of landing locations and positions of numbers) with the exception of the position of "zeroes" if more than one exist, in which case the "zeroes" may be placed arbitrarily.
- (c) A scorecard or description of all available wagers and their payouts shall be accessible by the player while not in game play.
- (d) The method of selecting individual wagers shall be explained by the artwork.
- (e) The wager(s) already selected by the player shall be displayed on the screen.
- (f) The simulated ball spin shall result in a location that unambiguously determines the winning number.

(7) Dice

This subclause refers to standard dice games. The following apply:

- (a) Each face shall clearly show the number of spots.
- (b) Simulated die shall be of the same layout as standard die (for example, the 1 and 6, 2 and 5, and 3 and 4, respectively shall be on opposite faces).
- (c) It shall be obvious, after each die has been thrown, which side is face up.
- (d) The result of each die shall be clearly visible or displayed.
- (e) There shall be a description of each wagering option available on the artwork. For example, the craps wagers "field" and "hardway" shall be clearly explained.
- (f) All possible wagering options available and obtainable at any point in time shall be displayed on the artwork.

71. Awards layout

- (1) The awards for the winning combinations of each symbol shall be placed in an area that visually belongs to the symbol. This can be achieved with appropriate boxing. The symbol shall preferably be placed on the left-hand side of the award scale.
- (2) The number of symbols that is required to appear in the reels display window in order to trigger each award shall be indicated. These numbers shall line up with the awards in order to avoid any ambiguity as to which award corresponds to which number. The use of pointers is also encouraged.
- (3) If some symbols share the same pay scale, they shall be placed in an area that visually belongs to the pay scale. This may be achieved with appropriate framing or boxing. The group of symbols shall be associated with its award, and shall not invade the area that visually belongs to some other group of symbols if this could cause ambiguities.
- (4) If the awards for multiple credits staked are tabulated, the number of credits bet required for each award shall be placed above (preferably) or underneath the awards' scale. Each such number shall have associated with it the word "credits" or an equivalent. Common tabulations shall display the number of credits bet as column headings and the number of symbols required as row headings.
- (5) Games that can be tokenized shall have all award references in credits and not in coins.
- (6) The nature of all awards shall be clearly indicated. If some awards are in cash whilst others are in credits, this shall be stated.

72. Positioning, size, colour and shape

- (1) If game instructions refer to a particular symbol, preference shall be given to the use of the actual symbol rather than a description of the symbol. For example, game instructions such as "when a pair of sunglasses occurs" shall become "when <sunglasses symbol> occurs ...".
- (2) Game instructions that belong to only one symbol or to a group of symbols shall be clearly associated with the symbol or group of symbols. This may be achieved with appropriate framing or boxing. Additional wording such as "these symbols" may also be used.
- (3) Symbols that are not characters or numbers shall maintain the same shape throughout all artwork.

- (4) Game instructions shall be printed in a colour that contrasts with the background colour. For example, red print on a black background is hard to read for some people, and is not acceptable.
- (5) Game instructions that refer to all symbols or awards shall read "all" (or an equivalent). If some symbols or awards are excluded from these instructions, this shall be indicated with wording such as "except" (or an equivalent).

73. Winning patterns

- (1) This subclause refers to spinning reel variations with draw poker characteristics where the player may hold one or more reels for a second chance to improve the hand. The artwork shall deal with the following:
 - (a) held and non-held reels, including recommended reels, shall be clearly marked on the screen at all times;
 - (b) the method for changing holds shall be clearly displayed to the player;
 - (c) if the player is required to wager additional credits to participate in the hold reels phase of the game, this shall be stated; and
 - (d) display that the player is able to hold or release reels.
- (2) All winning combinations relevant to the particular point in time of a game shall either be clearly displayed or shall be accessible. All non-defined combinations are assumed to be non-winning.
- (3) The trigger combination(s) and all other conditions that have to occur in order to trigger a feature, shall be specified unambiguously. The action of the game when feature trigger patterns occur during the feature (for example, free games) shall be clearly stated on the artwork (for example, further triggers, bonus payout or no further trigger (or both)).
- (4) If generic winning patterns (graphical representation of how the symbols of the same kind shall appear) are only represented graphically (without the aid of a verbalized explanation), they shall be supplemented with numbers to indicate to how many correct symbols each pattern corresponds. An exception to this requirement is the case of unusual winning patterns (for example, X_X_x_X_X), where numbers shall not be displayed and the pattern shall be positioned in proximity to the prize.
- (5) Winning patterns that are not "left to right" or "right to left" or "any", shall be clearly explained, preferably with pictorial representations.

- (6) If it is possible to bet on multiple possible lines and it is not clearly obvious which reel positions are part of each of the possible lines, the additional lines shall be clearly displayed on the artwork, and appropriately labelled. The additional lines shall either be shown on static artwork or be available for display on a help or payable screen or permanently displayed on all game play screens in a location separate from the actual reels. This requirement applies to all standard five-reel games where lines greater than five shall be schematized on the artwork and appropriately labelled.
- (7) This subclause refers to games, such as keno and bingo, where balls are drawn from a simulated cage or the equivalent and a player tries to pick in advance which of these balls are selected. The following apply:
 - (a) the player shall be able to view or access a tabulated display of the scorecard that shows all winning payouts when no game is in progress;
 - (b) any special rules that are outside the standard games of keno shall be clearly explained;
 - (c) all of the player's selections shall be clearly identified on the screen;
 - (d) the balls drawn shall be clearly identified on the screen;
 - (e) the game shall highlight balls drawn that match the player's selections (i.e. "hits");
 - (f) special hits, if any, shall be clearly identified;
 - (g) the screen shall provide clear indication of how many balls were selected and how many hits occurred;
 - (h) rules for purchase of additional features of the game, if any, shall be explained;
 - (i) the artwork shall clearly state how the player makes or changes selections. The following areas to be dealt with:
 - (i) how individual numbers are picked;
 - (ii) how individual numbers are cleared; and
 - (iii) how all selections are cleared.
- (8) The artwork shall explain all rules relative to free games. The following areas relative to free games shall be dealt with, in addition to the general requirements in subclause (7):

- (a) Additional payouts for non-winners during the free game sequences, if any, shall be displayed on the artwork. A clear indication shall be given whether this payout is multiplied by credits staked per line or the total credits staked.
 - (b) Any multipliers for prizes, special prizes, substitutes and other special rules during free games, shall be displayed on the artwork.
 - (c) A clear display of an accumulated win amount is required during each stage of the free games if the GD does not directly add wins to the credit meter.
 - (d) If more than one free game is offered, the number of free games that has occurred or the number that remains (or the total number) shall be displayed.
 - (e) Appropriate game instructions shall define the number of possible lines and credits per line that are wagered during the free games.
- (9) The prizes for the winning patterns of each symbol shall be placed in an area that visually belongs to the symbol. This can be achieved with appropriate boxing or framing. The symbol or group of symbols shall be associated with its prize, and shall not invade the area that visually belongs to some other group of symbols if this could cause ambiguities.

The number of symbols required to appear in the reels display window, in order to trigger each prize, shall be indicated. These numbers shall line up with the prizes in order to avoid any ambiguity as to which prize corresponds to which number.

- (10) Card faces shall clearly display the card value (for example, it shall be obvious which is a jack and which is a queen). Card faces shall clearly indicate the suite. The colour of the hearts and diamonds suites shall be red, clubs and spades shall be black. Jokers shall be easily distinguishable from all other cards.
- (11) This subclause refers to metamorphic games where the player still "pays" for the sequence game(s). The following apply:
 - (a) All instructions for the game including the differences between the main game and the metamorphic game shall be stated (for example, <character> appearing anywhere in window pays the original prize which started the feature).
 - (b) There shall be a statement that the number of lines or number of credits wagered (or both) during the metamorphic sequence may not exceed the wager of the game or games that triggered the feature, if that is the rule of the feature.
 - (c) Any special prizes, substitutes, multipliers or similar rules during the metamorphic sequence shall be clearly stated on the artwork.

- (d) If the metamorphic sequence consist of more than one feature game, the number of games in the metamorphic sequence that have occurred or the number that remains (or the total number) shall be displayed.
- (12) This subclause refers to games where one or more bonus prizes may be paid to the player during the feature sequence. Generally, bonus prizes are awarded as a result of some second (or subsequent) screen animation. The following apply:
- (a) Criteria for entry to further bonus features as well as the initial entry shall be clearly stated.
 - (b) All instructions and player choices for the bonus feature shall be clearly stated.
 - (c) A display of total amounts won shall be available at the end of each stage of the game including on second screen animations. This shall include display of bonus prizes won to date in multiple sequence bonus features.
 - (d) If bonus prizes are multiplied, the artwork shall clearly state whether they are multiplied by credits staked per line or total where appropriate.
- (13) The artwork shall appropriately state that all wins occur on selected lit lines (and "except scatters", if applicable) or equivalent.
- (14) The scattered symbol shall be clearly labelled with the word "scatters" on first occurrence in the game instructions. Further occurrences of the scattered symbol in the game instructions do not require further labelling.
- (15) The winning combinations and pays for scatters shall be explicitly stated or displayed.
- (16) The following requirements apply for artwork for games where one or more reels are automatically "held" for one or more "re-spins":
- (a) The rules for the criteria for the re-spin and which reel positions are held shall be clear and without possible misinterpretation. Examples of areas that shall be dealt with are:
 - (i) which reels shall be held, for example first two reels;
 - (ii) whether held reels occur on winning or non-winning patterns;
 - (iii) the specific line where the trigger combination shall occur, if any (for example, "on the centre line"), or scattered if that is the actual requirement of the game; and
 - (iv) if a partial number of reels (for example, 2, 3 or 4 reels) are held for some criteria, it shall be clearly stated what happens when the criteria form part of

a larger pattern (for example, what happens when all five reels comply with said requirement).

- (b) If the trigger is a winning pattern and the pattern does not pay during re-spins, this shall be clearly stated on the artwork.
 - (c) The rules for extensions or termination of the re-spin sequences including additional held reels, for example, improvements to the original held combination(s), shall be clearly explained on the artwork.
- (17) In the case of games with rules that allow for the accumulation of tokens to qualify for a feature or multiple feature to be triggered or game metamorphosis, the artwork shall clearly show:
- (a) the definition of the event that leads to the accumulation of tokens;
 - (b) a description of how many tokens are accumulated with each occurrence of the event;
 - (c) a description of how many tokens are required to trigger the feature;
 - (d) an indication of how many tokens are currently accumulated;
 - (e) if sub-tokens accumulate to tokens, a description of the number of sub-tokens needed to accumulate a token and the number of sub-tokens and tokens currently accumulated;
 - (f) if the accumulation of tokens may lead to free games, the number of possible lines and credits per line that shall be wagered during the free games; and
 - (g) game rules when further tokens are not accumulated during the feature sequence for events which normally would qualify to earn tokens.

74. Artwork wording

- (1) Conventions used in the wording of this subclause
 - (a) The following conventions regarding artwork wording apply:
 - (i) Some of the wording of this subclause is only relevant to reel games.
 - (ii) None of the wording used in the examples given is prescriptive. Because of the large variety of statements that can be constructed, only examples of a particular kind of statement are provided. For example, if one statement includes references to scatters, such as "except scatters", such references can be extended to a number of other statements. The reader is responsible for

identifying such situations and constructing appropriate variations. Also, for some statements, opposite statements exist. These opposites are not specified. For example, if the instructions say "No free games can be triggered during free games", the opposite statement might read "Additional free games can be triggered during free games", and vice versa.

- (iii) Game instructions relative to triggers of feature games are also not specified, nor are other game instructions that do not vary between different games for the same manufacturer.
 - (iv) Not all the words used during features are included, since they might only be relevant for specific games.
 - (v) Some of these statements are very general and shall be read in conjunction with some other, more specific statements in order to describe the rules of the game accurately.
 - (vi) Combinations of many of the statements are possible, but are not discussed.
 - (vii) The symbol "x" or "X" is used to denote variables that can be symbols, numbers or letters.
- (b) All rules that relate to the game shall be able to be clearly displayed to the player.
- (c) The artwork shall clearly state the rules for payments of prizes where multiple wins are possible. The following shall be dealt with:
- (i) A description of what patterns shall be paid when a pay line may be interpreted to have more than one individual winning pattern.
 - (ii) Where the game supports multiple pay lines, a message that indicates wins on different pay lines are added or the equivalent shall be displayed.
 - (iii) Where the game supports scatters, a message that indicates that scattered wins are added to pay line wins or equivalent, shall be displayed if this forms part of the rules of the game.
 - (iv) Treatment of coinciding scattered wins with respect to other possible scattered wins shall be clearly stated. For example, if both Pink Elephants and Red Frogs pay as scattered symbols and Purple Clovers substitute for both scattered symbols, the artwork shall state whether combinations of these scattered symbols pay all possible prizes or only the highest prize.
 - (v) Where mixed symbol prizes are paid, the treatment of prizes that may be interpreted to be both mixed and straight winners shall be described.

- (d) In games that permit multiple credits to be wagered on selected lit lines, the artwork shall either clearly state that the win(s) for each selected lit line shall be multiplied by the number of credits wagered on that line or show a tabulation of all possible wagers and their payouts.
- (2) Examples of general statements in artwork
- (a) "Win XXX credits on a lit or pay line" This indicates the maximum award that can be won for a single winning pattern. The total award awarded as a result of a play could exceed the XXX award, since a variety of awards can be won on different pay lines.
 - (b) "All wins to credit meter" All credits won are added to the credit meter.
 - (c) "Play 1 to XXX lines" or "Bet 1 to XXX credits per line" or "Play up to XXX credits" or "To start the game, press one of the XXX buttons" The button that starts a game (bet per line button or number of lines bet button) is specified, to avoid confusion. The maximum number of credits that can be bet is also displayed. If some of the instructions in this subclause are obvious from the artwork displayed in the button panel or video screen, some of the wording can be omitted.
- (3) Examples of general mandatory statements
- (a) "Malfunction voids all pays and plays": Credits accumulated as a result of a failure of the GD to function in the way in which it was designed and intended to function, are not valid and therefore shall not be paid.
 - (b) "All wins shown in credits": The GD only shows wins in credits.
- (4) Examples of coinciding wins statements
- (a) "Coinciding wins are added": Each symbol can be used only once for interpreting individual paying patterns. When two or more paying patterns are awarded, none of the symbols can participate in both winning combinations, except when the substitute symbol substitutes multiple times. If a winning combination consists entirely of substituting symbols, generally only the highest award is awarded, i.e. the award for the substituting symbols, or the award for the combination with the substituted symbols, whichever is the higher (except scatters). Other special cases that do not behave according to the above definition are clearly defined by additional wording.
 - (b) "Coinciding wins on different lit or pay lines are added": Wins that occur on each chosen line are added to the wins meter.

- (c) "Highest win only on each/anyone lit or pay line" or "Highest win only" or "Highest pay line win only paid" or "Highest win only, except scatters". Only the highest award is awarded on each lit line. If scatters are added, an appropriate combination of game instructions shall be used.
- (5) Examples of statements regarding features
- (a) "Each of the non-winning lit lines during free games pays X credits multiplied by credits staked per line, including when scattered wins occur". Any non-winning chosen line pays X credits, including when a scattered win occurs on that chosen line.
 - (b) "Non-winning combinations that occur on centre line during free games pay X credits multiplied by the number of credits staked, including when scattered wins occur". Any non-winning centre-line combination pays X credits, multiplied by credits staked, including the case when a scattered win occurs.
 - (c) "During free spins, the initial win is not repeated". If the reels held during the free spins represent a winning combination and if such a combination is improved as a result of a free spin, the original combination is not paid again. Only if the initial combination is improved shall an award be paid.
 - (d) "During free games all wins are doubled". Any win that occurs during the free games is at double the scheduled prize. If some prizes are offered only during free games, such prizes are also doubled when they occur. If prizes that are offered only during free games are already doubled, a statement excludes them from the above game instruction. The word "doubled" can be substituted with any other multiplier.
 - (e) "Free games cannot be won again during the feature". Free games can be triggered only during normal play. If a free game trigger occurs during the free game series, and a special prize is awarded in place of the series of free games, this is specified with an appropriate statement on the artwork. This is only one of the many statements that regulate triggers of free games. Because these rules are game specific more cases are not discussed, but should be treated on a case-by-case basis.
 - (f) "During free spins, the initial win is repeated each time no bigger win occurs". If the reels held during the free spins represent a winning combination and if such a combination is not improved as a result of a free spin, the award of the win that started the feature is awarded again.
- (6) Examples of statements regarding scatters

"Scattered awards added to lit lines or centre line wins" or "Scattered wins are always added to pay line wins" or "Coinciding scattered wins are added to pay line wins"

Scattered awards are always added to wins that occur on the chosen lines even if they occur on the same line as some other win. The statement "coinciding scattered wins added" is not acceptable.

(7) Examples of statements regarding substitutes

- (a) The artwork shall state all rules relative to substitutes that participate in scattered wins. The following shall be dealt with:
 - (i) if applicable, the artwork shall specifically state when the term "substitutes for all symbols" is used but the substitute does not participate in scattered wins (for example, <sub> substitutes for all symbols except scattered <scatter symbol>)
 - (ii) the artwork shall state payout rules for coinciding wins when there are multiple scattered win symbols and substitutes participate, including the situation where one or more scattered symbols may not appear; and
 - (iii) the requirements in (a) and (b) also apply to any change of substitutes, if this occurs.
- (b) If there is a feature where a symbol may substitute in a winning pattern when the symbol is not on a pay line, this shall be clearly specified on the artwork.
- (c) The artwork shall clearly state if the game provides for a change of substitutes, (for example, during free games) and any special conditions that might apply.
- (d) If the game provides for extra pays or if multipliers apply when substitutes participate in winning patterns, a clear explanation shall be provided.
- (e) If the game provides for multipliers to apply when substitutes participate in winning patterns, the multiplication factor or a tabulation of all prizes with possible multipliers shall be displayed.
- (f) If extra pays or multipliers apply when substitutes participate in winning patterns, the handling of winning patterns where multiple substitutes participate shall be clearly explained.
- (g) A substitute symbol acts like a wild card in a card game.

- (h) "X substitutes for A, B, C ...": Only the symbols indicated are substituted. If more than one substitute symbol exists, the range of symbols that are substituted by each substitute is specified.
- (i) "Each symbol can participate only once in any pay line win": When substitute symbols are used, to clarify the fact that the substitute symbol pays only in the highest paying pattern, wording to this effect shall be used. Also to avoid confusion when any paying pattern is used, such wording is desirable.
- (j) "X substitutes for all symbols and for all scattered pays at the same time": If a game offers two or more scattered symbols which are substituted by the symbol X, this wording explains that X substitutes up to a number of times: once in a pay line winning pattern, and once for each scattered symbol. Scattered symbols are substituted even when none of the scattered symbols appear on the display.
- (k) "If one or more X substitute in a winning pattern the prize for that winning pattern is doubled. Doubled prizes are shown in the coloured column." The substitute symbol X doubles the prize of a winning pattern in which it substitutes. Prizes for winning patterns for the symbol X are not doubled as the symbol X does not substitute for itself. If the symbol X also doubles the prizes for scatters, this is indicated on the artwork with appropriate additional wording.
- (l) "X substitutes for all symbols, including scatters": The symbol X substitutes a number of times concurrently: once for any non-scattered symbol and once for a scattered symbol. If X can substitute in two different winning combinations of non-scattered symbols, it substitutes only in the highest paying one. If X substitutes several times on each line, including for non-scattered symbols, this is stated on the artwork. The symbol X always substitutes for scatters even if no scattered symbols are displayed. If X is substituting, it does not pay for its own winning combinations, except when it is substituting for scatters.
- (m) "X Substitutes for all symbols [Optional: Including or Except Scatters]": The symbol X may substitute in any winning pattern in replacement for a symbol required by that pattern (for example, queen/substitute/queen, the substitute qualifies as a queen to make three queens). Unless the optional "except scatters", or the equivalent, is used, the substitute participates in scattered wins. Further qualification may be required to clarify circumstances of games with coinciding wins rules.
- (n) "X substitutes for all symbols except A, B, C ..": The symbol X substitutes for every symbol except the symbols as indicated. If more than one substitute symbol exists, the range of symbols that are excluded by each substitute is specified.

- (o) "Every X that substitutes in a win combination multiplies the award for that combination by XX": The award of the combinations is multiplied by XX for each substituting symbol.
 - (p) "If one or more X substitute in a win combination, the award for that combination is doubled. Doubled awards are shown in the coloured column" The substitute symbol X doubles the award of a combination in which it substitutes. Awards for winning combinations for the symbol X are not doubled because the symbol X does not substitute for itself. If the symbol X also doubles the awards for scatters, this is indicated on the artwork.
 - (q) "X substitutes for all symbols, including centre line and both scattered pays all at the same time" or "X substitutes for all symbols and both centre line and scattered pays at the same time" If a game offers two scattered symbols that are substituted by the symbol X, this wording explains that X substitutes up to three times: once in a centre-line combination, and once for each scattered symbol. Scattered symbols are substituted even when none of the scattered symbols appear on the display.
 - (r) "X substitutes for all symbols and X can be shared multiple times when substituting" The symbol X can be used as a substitute as many times as required to complete winning combinations if at least one symbol of the winning combination is displayed. If no symbols of a winning combination other than X are displayed, then X does not substitute, but it pays for its own winning combination. If X is substituting, it does not pay for its own winning combinations, except when it is substituting for scatters. X always substitutes for scatters.
 - (s) "Every X that substitutes in a winning pattern multiplies the prize for that winning pattern by XX." The prize of the winning pattern is multiplied by XX for each substituting symbol.
- (8) Examples of statements regarding tabulation
- (a) "The award for one credit staked is multiplied by the number of credits staked (per line)": If the pay scale for one credit is tabulated only for a few possible number of credits staked, the partial tabulation acts as the sample or guideline. To obtain an award that is not covered in the tabulation, the award for one credit staked is multiplied by the number of credits staked. Wording such as "Wins multiplied by credits staked" is not appropriate if partial tabulation exists because it does not state which awards are multiplied.

If partial tabulation exists, the artwork shall clearly indicate that the prize for one credit (or other appropriate bet) staked is multiplied by the number of credits bet (per line). Alternate game instructions shall ensure that it is not

possible to incorrectly assume that the tabulated prizes are further multiplied by credits bet.

- (b) "Credits Bet" or "Total Credits Bet": Used on multi-line games to distinguish between total credits wagered on a game and credits bet per line.
 - (c) "Credits bet per line": If wins for different credits bet per line are tabulated, use of this wording as a heading of a column in the tabulation indicates that the awards are for credits bet per line.
 - (d) "All wins multiplied by credits staked" or "All wins multiplied by credits staked per line": This wording shall only be used if the pay scale for one credit bet is displayed and the full tabulation of the award scales for additional credits bet is not displayed. If a full award scale tabulation for any number of credits bet is already displayed, the wording shall also say "As indicated".
 - (e) "These wins multiplied by credits staked (per line)" or "Scattered pays are multiplied by the total number of credits staked": The wins that visually belong to the above statement are multiplied by the number of credits staked. If some wins are excluded from the above statement, these game instructions shall be appropriately modified.
 - (f) "Credits": If wins are multiplied by the total number of credits staked, the heading of the columns of the tabulation indicate the number of credits required for each award.
- (9) Examples of statements regarding winning lines
- (a) "All wins on lit/bet lines only" (viewed in conjunction with a scatters statement)
All wins (except scatters) are paid only when the combination appears on a selected lit line.
 - (b) "All wins on centre line, except scatters" or "Centre line pays only" (viewed in conjunction with a scatters statement) or "All wins on centre line only" (viewed in conjunction with a scatters statement). Scattered wins can appear on any line according to the specified winning pattern. Other combinations are only paid on the centre line.
- (10) Examples of statements regarding winning patterns
- (a) "Of a kind": When many symbols share the same award scale, the wording "Of a kind" shall be positioned immediately above, beneath or beside the number of symbols required to complete a winning combination. The wording "Of a kind" is preferable to "Of a kind pays", to avoid a possible misinterpretation of an award with the numbers that indicate the winning pattern.

- (b) "All pays left to right only, including scatters": For example, for a five-reel machine, all awards are awarded for combinations of one, two, three or four of a kind from left to right, or for five of a kind.
- (c) "All pays left to right or right to left (or both), including scatters": Awards may be awarded for combinations of one, two, three or four of a kind in a sequence from either side, or for five of a kind.
- (d) "All pays left to right, except scatters": The winning patterns for scatters are specified separately.
- (e) "All pays left to right and right to left, except scatters": The winning patterns for scatters are specified separately.
- (f) "Mixed:<symbol X> or <symbol Y> or <symbol Z> mixed": Any combination of the symbols X, Y, Z that appear on the pay line (or scattered if the symbols are scatters) and according to the specified paying pattern shall win the indicated award. This is defined as occurring when two or more winning patterns of a distinct kind are displayed.

If prizes can be awarded for mixed or grouped symbols, the artwork shall clearly specify the grouping of the symbols either by placing the symbols in an area that clearly belongs to the pay scale and labeled with the term "mixed" (or the equivalent) or by using a descriptive term that clearly defines the grouping.

- (g) "All pays for two or more adjacent symbols, except scatters": The winning patterns for scatters are specified separately.
- (h) "All pays for two or more adjacent symbols, including scatters": Awards may be awarded for combinations of two, three or four of a kind beside each other on a line, or for five of a kind on a line.

PART X

SIGNIFICANT EVENTS REQUIREMENTS

75. General

- (1) Where these Standards states that the system shall detect and record significant events, a particular implementation is not implied. As long as the CA can be assured that these events are detected and reported, the method that is used to do so is of little concern. However, if it is stated in this document that the GD shall detect and record an event, the GD shall be programmed to create the event

response internally, pass it to the host of the system as soon as possible and, where required, deactivate game play.

- (2) Subclause (3) provides a summary of the significant events that are specified by the CA or GBT. In the case of each significant event, the type of event (relative to requirements for deactivation and reactivation) is indicated. Each of the significant events shall be tested during the formal acceptance tests.
- (3) In the following list, four types of significant event are defined:
 - (a) type 1: information only (no deactivation);
 - (b) type 2: events that lead to automatic deactivation but also allow for immediate automatic reactivation when the problem is solved (for example, authorized door open);
 - (c) type 3: events that lead to automatic deactivation and require manual reactivation; and
 - (d) type 4: events that lead to automatic deactivation and require manual reactivation, but only after the GBT audit procedures have been followed. These procedures might involve immediate approval for reactivation, or the approval could be withheld until physical inspection by an GBT inspector is completed.
- (4) To some significant events a suffix "/R" is appended, which means that the event has to be reported by the system in the daily type 4 events report. Note that not all events with this description are type 4 events.
- (5) By definition, all type 4 events shall be reported. The phrase "manual reactivation" is understood to include closing of the logic door (if necessary) or turning of a reset key.
- (6) Significant events other than type 1 that occur on a GD shall cause a clearly displayed message that an event has occurred and, unless otherwise indicated, shall also result in the following:
 - (a) all player inputs shall be disabled, including coin and banknote input;
 - (b) an identifiable alarm shall be activated, which may be either a tower light, or a sound of at least 1.5 seconds duration (or both);
 - (c) any game result shall be saved; the reels or video display shall not display a false game outcome; and

- (d) if the GD was in CDD payout, the CDD shall be turned off and the brake applied.
- (7) The following actions shall be performed, if possible, on clearing of the fault on a GD:
 - (a) any messages shall be removed;
 - (b) any relevant player inputs shall be re-enabled;
 - (c) the alarm shall be turned off; and
 - (d) any game play when the fault event occurred shall restart from the beginning of the play or from the point at which the interruption occurred and conclude normally, using the data that were saved previously.
- (8) Generic significant events are applicable to all GDs controlled by the system. All generic significant events shall be detected and notified as soon as possible, but before any game can be played.
- (9) All GD fault conditions shall activate an alarm, which shall include either a tower light or sound, or both.
- (10) To assist with service and fault diagnosis, the nature of the event shall be displayed.

76. GD and terminal events

- (1) Configuration change (type 4): Change of denomination, switches or jumpers, etc.
 - (a) The GD shall detect and report any configuration changes made to the device (even if the power is off when this occurs or the GD is not able to communicate with the system) and pass it to the system before game play is reactivated.
 - (b) It is acceptable if the GD only detects the changes when restarting.
 - (c) Reportable changes include any change to any configuration that alters the metering or the game outcome or the RTP of the game. Changes that need not be reported include, for example, the sound, the tower light, settings that might enable or disable a peripheral, or changes to the visual aesthetics of the GD.
- (2) Master reset (type 4): Intentional memory clear of the RAM and other volatile memory of a GD has occurred.
- (3) Error detected in volatile memory (type 4): Failure of internal test. The failure of some test(s) means that the GD cannot function correctly, in which case it shall

disable itself immediately after reporting the event to the monitoring and control system (if possible).

- (4) Logic area access (type 4): Opening of the logic area door. The GD shall detect the opening of the logic area door (or access to the logic area).
- (5) Power on (type 1): Power is successfully restored and the device can operate.
- (6) Logic area closed (type 1): A sensor registers that a logic door has been closed.
- (7) Enter test or audit mode (type 2): If the GD has a test mode or special staff or audit mode, a significant event shall be signalled when such mode is entered.
- (8) Exit test or audit mode (type 2): If the GD has a test mode or special staff or audit mode, a significant event shall be signalled when such mode is exited.
- (9) "Coin in tilt" or "Coin out tilt" (type 2): Sensors in the coin path shall indicate when a coin is jamming the path.
- (10) CDD empty or malfunction (type 2)
- (11) "CDD runaway", "coin out tilt" or "extra coin(s) paid" (type 2): One or more coins are improperly paid by the CDD.
- (12) General enclosure access (type 2): Opening of outer enclosure door, excluding the drop box door. This message shall be sent by the GD if it has noticed any interference, such as the changing of counters or insertion of coins, while this door is open. When the message is sent, the monitoring and control system shall add the staff card number to the event message. If no card number is available, the message shall be tagged as an unauthorized access by the monitoring and control system.
- (13) Drop box door open (type 1): Opening of drop box door. When the message is sent, the monitoring and control system shall add the staff card number to the event message. If no card number is available, the message shall be tagged by the monitoring and control system as an unauthorized access.
- (14) Enclosure door closed (type 2): A sensor registers that a door has been closed.
- (15) Cancel credit (type 2): Any incident of a manual cancel credit (for example, due to book or hand pay) shall indicate a significant event. The value of the credits shall be included in the significant event report.
- (16) Low memory back-up battery (type 4): The voltage that is produced by the battery or another device for maintaining the contents of RAM is approaching a level below which the memory cannot be maintained for a minimum of 14 d without mains power and data might be lost or corrupted.

- (17) Coin interference (type 2/R): External interference with a coin or token acceptor or validator. This refers to coin yo-yo, stringing, etc.
- (18) Reel error (type 2): A reel position does not agree with software control.
- (19) Collect credit (type 1): Cashout that exceeds the limit specified by legislation. This significant event is not specified in the legislation at present, but may be required later.
- (20) Banknote receptacle is removed (if the banknote storage area uses a receptacle) (type 2): The GD shall automatically disable itself, after reporting the event to the monitoring and control system.
- (21) Banknote storage area access (type 2): This message is sent by the GD when the banknote storage area is accessed. When the message is sent, the monitoring and control system shall add the staff card number to the event message. If no card number is available, the message shall be tagged as an unauthorized access by the monitoring and control system. This message is intended for use only with GDs where the banknote storage area is external.
- (22) Banknote acceptor mechanism is disconnected (type 1).
- (23) Software validation or signature failure (type 3): It is assumed that modification or unauthorized reading (or both) of the contents of the restricted components of the GD or loading of unapproved software (or both) could have occurred. The GD shall be manually reactivated after the problem is rectified. Equipment in a casino environment is not required to be capable of doing signature checking in response to a request from the CEMS.
- (24) Game play deactivated (type 4): Deactivation of game play. If a significant event has not already been logged (by the system or the GD) when deactivation occurs, the GD shall ensure that such an event is reported to the system as soon as possible. If the GD receives instruction to deactivate from any other part of the monitoring system, it shall deactivate immediately after reporting this deactivation, and shall not reactivate until it is instructed to do so by the system.
- (25) Game play activated (type 1) (Activation includes reactivation of game play): Activation and deactivation at normal commencement and conclusion of business require the generation of significant events so that the monitoring system can identify that the GD status has changed. This does not mean that the system shall send a separate message to the central controller of the system for each one of these events. The system may send a message that indicates change of status of several items of the GD as long as the status change events all occur within a period set by legislation.

- (26) Enter Demonstration Mode (type 2/R): Where demonstration mode is permitted by legislation and the GD enters this mode, it shall create and transmit a type 2/R event.
- (27) Exit Demonstration Mode (type 2/R): Where demonstration mode is permitted by legislation and the GD exits this mode, it shall create and transmit a type 2/R event.
- (28) Credit limit exceeded (type 1/R): Machine credit that exceeds the limit specified in legislation. Only the first occurrence during a particular customer's session shall be sent.
- (29) Maximum prize win (type 1/R): Winning of a prize that equals the limit specified by legislation.
- (30) Printer failure (type 2): The software shall register and react to any printer fault conditions, and shall allow the machine to complete the printing of the current ticket, if possible, and then pause printing and display an appropriate on-screen message until the problem has been solved and rectified.

77. Player and staff cards (if applicable)

- (1) Unauthorized card (type 1/R): Use of a stolen or unauthorized staff machine card or player card. The GD card reader shall not accept an illicit card or a card that is not authorized for use at that specific time.
- (2) Unauthorized staff PIN (type 1/R): Incorrect PIN entered three times consecutively with a staff machine card. The system shall ensure that the card is blocked from any further use. It is not necessary to disable the GD or the player interface.
- (3) Unauthorized player PIN (type 1): Incorrect PIN entered three times consecutively with a player card. The system shall ensure that the card is blocked from any further use. It is not necessary to disable the GD or the player interface.

78. Banknote acceptance (if applicable)

Banknote reject state (type 1): The GD shall report banknote reject events to the monitoring and control system.

ANNEX

GUIDELINES FOR SUBMISSION AND SCOPE OF TESTING

Testing for statutory compliance should in no way be considered or relied upon as quality assurance testing. The onus lies with the manufacturer or supplier that proper quality assurance and functionality testing is undertaken on a product before it is submitted for compliance testing.

A1. General

- (1) These Standards serve the following purposes:
 - (a) Fundamental 1: The protection and safety of the public, which includes but may not be limited to:
 - (i) fairness of the game;
 - (ii) integrity of the data associated with the above inclusive of any RNG and the results it may generate;
 - (iii) mechanical safety of any equipment;
 - (iv) electrical safety of any equipment;
 - (v) the generation, communication and transmission, recording and recall of the required significant events event and status reporting in this regard; and
 - (vi) integrity of communicated data;
 - (b) Fundamental 2: The collection of fees, taxes and levies paid by licensees, which includes but may not be limited to
 - (i) auditability of fees, taxes and levies paid;
 - (ii) integrity of the data associated with (i) above;
 - (iii) the generation, communication and transmission, recording and recall of the required significant events event and status reporting in this regard;
 - (c) Fundamental 3: Dispute resolution, which includes but may not be limited to
 - (i) integrity of the associated data,

- (ii) the integrity and accuracy of gaming or game related data communicated to the public, including the accuracy of awards or payments made to a player including the physical or actual amounts dispensed or handed to a player,
 - (iii) the accurate counting and recording of bets wagered, regardless of the origin or media of the wager,
 - (iv) the retention of current and past game status and results;
- (d) Fundamental 4: Compliance of the equipment, or a particular gaming game with the regulations and the rules of GBT.
 - (e) Fundamental 5: Inherently, the highest possible level of compliance with the greatest number of requirements in these Standards, and the regulations and rules .
- (2) These compulsory requirements should be met by the appropriate equipment before submission for gaming testing or verification. Compliance with these requirements should be included with the submission and the submission will be held in abeyance until such time as this requirement is met.
 - (3) Persons making submissions to a test laboratory (TL) should be aware that such submissions are subject to the audit and verification of submissions and arising test or evaluation reports, by both the laboratory accreditation authority and GBT.

A2. Interpretation

- (1) These Standards are, as a norm, produced in standardized English and are aimed at experienced technical or compliance persons. The basic rules of the interpretation of statutes apply to these Standards, namely:
 - (a) the literal interpretation of an English speaking person qualified in the fundamentals given in clause A1; and
 - (b) the intent of these Standards as interpreted by an English speaking person qualified in the fundamentals in clause A1 and confirmed by a test laboratory that is accredited against these Standards.
- (2) In the event that these Standards cannot be interpreted to a high degree of certainty by the above means or is grey or silent on a particular requirement, a query may be addressed by GBT.
- (3) The query will be considered by a panel of knowledgeable persons and a written clarification or interpretation provided.
- (4) For a query to be considered, the following information should be included:

- (a) the applicable part of these Standards;
 - (b) the publication date of these Standards being referred to;
 - (c) the section heading in which the requirement being queried is carried;
 - (d) the section number of the requirement being queried;
 - (e) a description in standardized English as to the circumstances causing the query;
 - (f) a description in standardized English of the type and nature of equipment or software (or both) the query applies to; and
 - (g) the submitter's unique reference number or code for the query.
- (5) In the event of a dispute as to the interpretation of these Standards or their scope of application (or both), the interpretation of the GBT should be regarded as final.

A3. Preparation for testing or verification

- (1) When gauging which hardware or software should be submitted for testing or verification by a test laboratory, the following ambit of the respective standards are applicable:
- (a) from the first point at which a player may insert a coin, token, bank note into a machine or game terminal for the direct purposes of converting these value instruments into credits with which to make a wager; or
 - (b) from the first point at which a player may insert, or hand in for conversion, a coin, token, bank note, ticket or electronic value instrument, for conversion into credits with which to make a wager;
 - (c) to the point in a game where these credits are "cashed out" and no further games can be played; and,
 - (d) to the point where credits, coins, tokens, bank notes, tickets or any other value instrument are credited or dispensed as redemption of a player balance; and
 - (e) where a players credits are utilized in any manner in the participation or operation of a jackpot or progressive; and
 - (f) where the transactions detailed in (a) and (e) are recorded for purposes of maintaining a player account or balance, and recorded for storage for later recall for purposes of reporting on an CEMS, recall of all data for dispute purposes, conducting and reconciling a drop or count and for audit purposes.

- (2) Inclusive of any processes in-between the processes in subclause (1) with the appropriate event, metering and accounting and error reporting, the accuracy and integrity of any calculation required in any of the processes in subclause (1), the accuracy and integrity of data communication or storage in any device or process through which data associated with all the points above may be:
 - (a) initiated,
 - (b) transmitted, received, or
 - (c) temporarily or permanently stored.

A4. Minimum submission guidelines

- (1) The testing of equipment for compliance with these Standards is conducted as type testing, where the equipment under test is in the same configuration as it is expected to be operated in the field.
- (2) This matching of configurations is inclusive of every hardware configuration intended to be utilized and which should be uniquely identified for practical testing purposes.
- (3) The testing of the CEMS takes place where the CEMS and any associated GDs connected to the CEMS are functioning as a whole to emulate the expected operating environment in which the combinations of equipment are expected to operate.
- (4) Where a GD is to be added to a CEMS environment, or any form of upgrade or change of the CEMS environment is to be undertaken, this likewise should be tested in a replica environment.
- (5) No CEMS environment change will be considered as only verifying a single element of the environment. Testing is expected to include the anticipated effects on the compliance and environment as a whole, as a result of the changing of a single element.
- (6) Regardless of the country or laboratory at which a submission is made for testing, the following documentation should be provided at the time of the submission and may be included with the test results or evaluation report (or both) provided to the certification authority or to GBT:
 - (a) An original formal request for the equipment or software being submitted, in standardized English, formally declaring which Standards the equipment or software has been designed to meet, signed by the applicant.

This declaration is specifically to include the requirements in the applicable Standards as to which the equipment or software meets and a detailed explanation of the requirements that the equipment or software does not meet and why this is the case.

- (b) Documents stating that no known default setting or configuration whether soft or hard, a RAM clear, a master reset, will result in a non-compliant configuration or operation of a GD in such a manner as to be detrimental to the public or GBT.
- (c) Documents stating that in the design, implementation and in-house testing or quality control due regard has been taken to prevent non-compliant or detrimental configurations which may be caused by human error on behalf of a maintenance function of the manufacturer's or supplier's maintenance personnel, or those of the licensed operator.

These documents may be evaluated by the test laboratory and where the test laboratory is not satisfied that fundamental 5 (see clause A.1) is not being met in the laboratories opinion, the submission may not proceed.

The test laboratory may indicate on its test or evaluation report that requirements declared as not being met are appropriate and that in their opinion, these requirements are not applicable to the equipment or software being submitted in the environment as it is intended to be used.

A copy of the declaration may be attached to the test or evaluation report and kept with the report.

- (d) A full set of users' and operators' manuals, and release notes detailing
 - (i) the assembly, set-up and configuration of the equipment,
 - (ii) the first level maintenance of the equipment inclusive of fault codes and fault identification logic,
 - (iii) the correct and proper operation of the equipment by both the operator or licensee and the player,
 - (iv) for changes to equipment previously submitted, a listing of changes to the design concept implementation or methodology in the creation or operation of equipment which has not been previously reviewed by a test laboratory,
 - (v) for the verification of data communication and in particular, the verification of data error detection and correction, the following additional information should be provided:

- (1) a full set of technical documentation and descriptive relating to the construction and functioning of the protocols under review, both during normal data communication and in the event of an unexpected break in communications;
- (2) a full set of technical and descriptive documentation, including any calculations and associated formulae, which in detail describes the methodology employed in meeting the error detection and correction (EDC) requirements of these Standards and which should confirm the source code implemented for this purpose;
- (3) documents that indicate whether any wire to a logic area access device or sensor should be:
 - broken (open circuited);
 - short circuited with another wire or conductive frame of the GD;
 - partially open circuited;
 - partially short circuited; or
 - partially short circuited to another wire or conductive frame of the GD.
- (7) The appropriate logic area access significant event should be reported to the CEMS, and the GD should accordingly be disabled for further play.

A5. Maintenance of a defect schedule

- (1) Where during testing a defect is found in a particular manufacturer's or supplier's equipment under test and is contrary either to the applicable Standards or a compliance letter (see subclause (2)), a schedule of all these defects for the particular manufacturer or supplier should be maintained by the test laboratory detailed with the required the Standards not met or undertaking in the compliance letter not correctly met.
- (2) In any retesting of the equipment which may have failed and for all subsequent applicable equipment provided for testing thereafter, all applicable defects should specifically be checked by the test laboratory and the result included in the test or evaluation report as required by the applicable Standards. The test laboratory is requested to report to the manufacturer or supplier any defect which reoccurs in equipment under test for the manufacturer or supplier to action.

A6. Deviations from these Standards

- (1) In line with international practice, provision is made for a manufacturer or supplier to apply to GBT, to deviate from, or be exempted from, certain requirements in these Standards, where compelling reasons to do so may exist.
- (2) All requests received will be reviewed by a panel of knowledgeable persons, representative of the gaming industry, nominated by the technical committee.
- (3) A request to deviate from a requirement in these Standards should be made in writing at any time to the address provided for standards queries, which shall be clearly motivated and justified as to the need for this deviation.
- (4) Alternately, the manufacturer or supplier may request in writing to make oral presentations to GBT, where again the need to deviate should be motivated and justified.
- (5) GBT will respond to each request during which the applicant might be expected to answer queries from the panel, which might be technical in nature.

A7. Deviations from the GBT rules and requirements

- (1) These deviations are ordinarily dealt with by GBT, as it sees fit.
- (2) Any deviations in this regard are at the sole discretion of GBT concerned.

A8. Ancillaries to equipment (add-ons)

- (1) Ancillaries refer to any equipment which is not originally designed or made by the original equipment (OE) manufacturer or supplier, or is provided by an alternate manufacturer or supplier, to be connected or associated with previously tested equipment to provide an additional functionality or features to the equipment that fall within or affect the scope of these Standards.
- (2) This may include but is not limited to for example jackpot and value represented fills, such as hopper fills, functionality, queuing systems, enhanced reporting systems, and automatic or automated cashier positions.
- (3) Where ancillaries to equipment connects to, reads, monitors, utilizes and acts upon, or displays data or events (or both) by physically or logically connecting or interacting with the equipment whether via a cached or 'copy' database or not, GBT may require that sufficient review, verification and testing in terms of these Standards take place to ensure that add-on in no reasonable way, affects, disrupts or alters the operation of the equipment, within the scope of these Standards, and as approved.

- (4) A submission in this regard should contain two letters of compliance from the OE designer, implementer, manufacturer or supplier and the add-on designer, implementer, manufacturer or supplier providing the necessary undertakings required in an ordinary submission and that the inclusion of add-on in no way affects or disrupts the original approved operation of the equipment.
- (5) The test laboratory should, in conjunction with the OE and add-on manufacturer or supplier, determine which requirements in these Standards can be applied to the equipment under test and add-on to be able to make the necessary verification of the possible effect of an add-on.
- (6) The requirements in these Standards utilized for this purpose should be listed in the resulting test report issued by the laboratory and provided to the certification authority for its records.