TECHNICAL STANDARDS FOR GAMING DEVICES

AND ON-LINE SLOT SYSTEMS

1.010 Definitions. As used in these standards unless the context requires otherwise:

1. "Alterable media" means any form of storage device that allows the modification of the programs or data on the device during the normal operation of the gaming device. This does not include devices typically considered to be alterable but through either software or hardware means approved by the chairman, have been rendered un-alterable.

2. "Cashable credits" means the monetary units displayed on a credit meter that are redeemable for cash.

3. **[Effective on 11/1/07]** "Cashless Wagering Kiosk" is a device capable of accepting or generating wagering instruments and/or wagering credits or is capable of initiating electronic transfers of money to or from a wagering account or is used to facilitate other forms of cashless wagering functionality.

4. "Chairman" means the chairman of the state gaming control board or his designee.

5. "Complete voucher" means a voucher which contains, at a minimum, a complete validation number and is of a quality that can be redeemed through the use of an automated reader or scanner.

6. "Conventional ROM Device" is a device incapable of being altered while installed in a gaming device and may contain executable programs or data that are directly addressed by a processor.

7. "Credit meter" means a slot machine indicator that displays the number of denominational credits or monetary value available to a patron for wagering.

8. "Debit instrument" means a card, code or other device with which a person may initiate an electronic funds transfer or a wagering account transfer.

9. "Duplicate voucher" means any reprinted complete or incomplete voucher.

10. "Electronic funds transfer" means a transfer of funds from an independent financial institution to a gaming device through a cashless wagering system.

11. "Inappropriate coin-in" is a legal coin or token of the correct denomination which has been accepted by a gaming device after the device has already accepted its maximum number of coins or when the device is in a state which normally rejects additional coins.

12. "Incomplete voucher" means a voucher which contains, at a minimum, the voucher validation number printed across the printed leading edge and is manually redeemable, but is not of a quality that can be redeemed through the use of an automated reader or scanner.

13. "Leakage Current" is any electrical current which flows when a conductive path is provided between exposed portions of a gaming device and the environmental electrical ground when the gaming device is isolated from the normal AC power ground.

14. "Non-cashable credits" means the monetary units displayed on a credit meter that have no cash redemption value.

15. "On-line slot system" means, as used in these standards, an on-line slot metering system, a cashless wagering system, or both.

16. "Presentation error" is a condition where a complete or incomplete voucher has been printed, however, the voucher is not presented to the patron for removal.

17. "Print failure" is a condition following the failed attempt to print a complete or incomplete voucher.

18. "Promotional account" means an electronic ledger used in a cashless wagering system to record transactions involving a patron or patrons that are not otherwise recorded in a wagering account.

19. "Random Access Memory" (RAM) is the electronic component used for computer workspace and storage of volatile information in a gaming device. The term does not include memory which is used exclusively for bit-mapped video displays.

20. "Random Number Generator" is a hardware, software, or combination hardware and software device for generating number values that exhibit characteristics of randomness.

21. "Read Only Memory" (ROM) is the electronic component used for storage of non-volatile information in a gaming device. The term includes Programmable ROM and Erasable Programmable ROM.

22. "Replacement voucher" means any voucher that is printed following a failed attempt to print a complete or incomplete voucher.

23. "Slot machine coupon" means a printed wagering instrument that has a fixed dollar wagering value that can only be used to acquire non-cashable credits.

24. "Slot machine payout receipt" means an instrument that is redeemable for cash and is either issued by a gaming device or as a result of a communication from a gaming device to associated equipment that cannot be accepted by gaming devices for wagering purposes.

25. "Slot machine wagering voucher" means a printed wagering instrument that has a fixed dollar wagering value that can only be used to acquire an equivalent value of cashable credits or cash.

26. "Socket ID" as used for a system based game means the unique identification assigned to a client station or mobile communications device for accumulating and recording meter and wagering account transfer data associated with a client station or mobile communications device.

~~26.~~**27.** "System Based Game" is a gaming device comprised of a server or system part and client stations that, together, form a single integrated device where the system portion of the game determines the outcomes of the individual games conducted on the client stations and the client stations cannot operate independently from the system. Both the system portion and the clients of the system based gaming device will reside in a single gaming establishment.

~~27.~~**28.** "System Supported Game" is a gaming device comprised of a collection of conventional gaming devices or client stations connected to a system for the purpose of downloading control programs and other software resources to the conventional gaming device or client station on an intermittant basis. The system portion as well as the client stations are installed in a single gaming establishment. The client stations connected to the system are capable of operating independently from the system once the downloading process has been completed. This configuration encompasses cases where the system may take control of peripheral devices or associated equipment typically considered part of a conventional gaming device such as a bill validator or a printer. In a system supported game, game outcome is determined by the conventional gaming devices or client stations connected to the system and not by the system itself.

~~28.~~**29.** "Tilt condition" is a programmed error state for a gaming device. A tilt condition has occurred when the device detects an internal error, malfunction, or attempted cheating, and it disallows further play until the error is resolved.

~~29.~~**30.** "Wagering account" means an electronic ledger for a cashless wagering system patron deposit account wherein only the following types of transactions are recorded:
   (a) Deposits and withdrawals of cash or cash equivalents at a designated area of accountability;
   (b) Deposits initiated with a debit instrument;
   (c) Wagering account transfers to and from gaming devices;
   (d) Wagering account adjustments; and
   (e) Other transactions approved by the chairman.

~~30.~~**31.** "Wagering account transfer" means a transfer of funds between a cashless wagering system wagering account and a gaming device.

~~31.~~**32.** "Wagering instrument" means, as used in these standards, a representative of value, other than a chip or token, that is issued by a licensee and approved by the board for use in a cashless wagering system and includes slot machine coupons and slot machine wagering vouchers.

(Adopted: 9/89. Amended: 11/20/97; 5/03; 1/1/05, 11/17/05; 7/26/07. Subsection 3 effective as noted.)

STANDARD 1

INTEGRITY OF DEVICES

No Changes

STANDARD 2

PROPER ACCOUNTING FOR GAMING DEVICES

No Changes

INTEGRITY OF AND PROPER ACCOUNTING
FOR ON-LINE SLOT SYSTEMS

3.010 Communication security. The on-line slot system shall include secured communication as follows:
1. All communications that initiate a gaming device pay command shall employ some form of encryption that has been approved by the chairman.
2. All data communication shall incorporate an error detection and correction scheme approved by the Chairman to ensure the data is transmitted and received accurately.
(Adopted: 5/03. Effective: 8/22/04.)

3.020 Error conditions. The on-line slot system shall be capable of detecting and displaying certain conditions. These conditions shall be recorded on an error log that may be displayed or printed on demand, and shall archive the conditions for a minimum of thirty days. The conditions include but are not limited to:
1. Power reset or failure of a gaming device or any component of the on-line slot system.
2. Communication loss between a gaming device and any component of the on-line slot system.
(Adopted: 5/03. Effective: 8/22/04.)

3.030 Program access control. The on-line slot system shall be capable of restricting or limiting access to any and all program components by a method approved by the chairman.
(Adopted: 5/03. Effective: 8/22/04.)

3.040 Data access control.
1. The on-line slot system shall not permit the alteration of any **system stored** accounting or event log information that was properly communicated from the gaming device unless documented, secure access controls are provided.
2. Cashless wagering systems must employ a method that has been approved by the chairman that renders all critical cashless wagering system stored data non-alterable. Critical cashless wagering system data includes data relating to, but is not limited to, slot machine coupons and slot machine wagering voucher validation numbers and instrument value, promotional account and wagering account personal identification numbers and account balances.
3. On-line slot systems may only communicate with equipment or programs external to the system through a secure interface. This interface will specifically not allow any external connection to directly access the alterable data of the system. The interface must:
(a) Be based on a specific defined protocol or a specific set of defined commands and as a result of these commands, retrieve information for an external request; or
(b) Place redundant data in an area sufficiently segregated from the associated software that is available to external requests or associated equipment; or
(c) Be of a suitable design capable of supplying requested information while isolating the external request or equipment from the system data.
(Adopted: 5/03. Effective: 8/22/04.)

3.050 On-line system clock.
1. The on-line slot system shall maintain an internal clock that accurately reflects the current time (in hours, minutes and seconds) and date that shall be used to provide for the following:
(a) Time stamping of significant events;
(b) Reference clock for reporting; and
(c) Time stamping of configuration changes.
2. If multiple clocks are used, then a means shall be provided that will update all clocks in devices attached to the system, including the gaming devices, at least once in each 24-hour period.
(Adopted: 5/03. Effective: 8/22/04.)

3.060 On-line slot system integrity.

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1. The on-line slot system shall be designed so that no single failure of any system component will cause the cessation of system operation. Alternatively, each gaming establishment must provide for back-up components or systems using a plan approved by the chairman.

2. The database shall be stored on redundant media so that no single failure of any portion of the system would cause the loss or corruption of data.
(Adopted: 5/03. Effective: 8/22/04.)

3.070 Interface with gaming device.
1. Each gaming device interfaced with an on-line slot system using an interface component shall have the interface component either installed inside a secure area of the gaming device or shall employ a secure communication method between the gaming device and the interface component.

2. The interface component shall send information to the on-line slot system via a communication protocol approved by the chairman.

3. A system shall be designed such that communications that access gaming device components, including but not limited to, bill validators, hoppers and printers, may only access those components through a processor that has been approved using the standards and criteria for a gaming device.
(Adopted: 5/03. Effective: 8/22/04.)

3.080 Clearing meters. An interface component shall have a mechanism whereby an error will not cause the loss of stored accounting meter information.
(Adopted: 5/03. Effective: 8/22/04.)

3.090 Meter backup requirements. Data recorded by electronic meters shall be preserved after a power loss to an interface component and shall be maintained for a period of at least seventy-two (72) hours.
(Adopted: 5/03. Effective: 8/22/04.)

3.100 Address requirements. Interface components shall allow for the configuration of a unique identification number to be used in conjunction with the gaming device file in the on-line slot system. This identification number will be used by the on-line slot system to track all mandatory information of the associated gaming device.
(Adopted: 5/03. Effective: 8/22/04.)

3.110 Required meters. The on-line slot metering system shall be equipped to read specific values of or store the information accumulated by the electronic digital storage meters in the gaming device. The following meter information is stored in units equal to the denomination of the device or in dollars and cents:
1. Coin in.
2. Coin out.
3. Coin drop.
4. Attendant paid jackpots.
5. Attendant paid cancelled credits.
6. Physical coin in.
7. Physical coin out.
8. Bill in.
9. Voucher out (for the metering of payout receipts).
10. Machine paid external bonus payout.
11. Attendant paid external bonus payout.
12. Attendant paid progressive payout.
13. Machine paid progressive payout.
Note 1: System meters shall be referred to with the above terms and shall accumulate the information as required by Technical Standard 2.040.
Note 2: The system shall maintain paytable coin-in and theoretical payback percentage information provided by the gaming device for each multi-game or multi-denomination/multi-game slot machine.
Note 3: The system shall maintain paytable coin-in and weighted average theoretical payback percentage information provided by each gaming device which is considered a slot machine and which contains paytables with a difference in theoretical payback percentage which exceeds 4 percent between wager categories.
(Adopted: 5/03. Effective: 8/22/04.)

3.120 Recording of meter information. An on-line slot metering system must have a mechanism in place to record all required meters, as specified by Technical Standard 3.110, on demand and at the time a drop box (coin or currency) is removed.
(Adopted: 5/03. Effective: 8/22/04.)

3.130 Payout receipts. Systems that issue a printed payout receipt shall:
1. Include on all payout receipts:
(a) Licensee name, city and state;
(b) Gaming device number;
(c) Date and time of issuance;
(d) Alpha and numeric dollar amount;
(e) Sequence number; and
(f) Expiration period or date when receipt will expire, if applicable.
2. Only allow the printing of a payout receipt upon a communication initiated by a gaming device.
3. Provide for on-line, real-time validation of payout receipts.
4. Be incapable of authorizing payment on a payout receipt that has been previously paid, voided, or that is unissued.
5. For payout receipts printed at a gaming device, not allow an expiration period of less than thirty days.
(Adopted: 5/03. Effective: 8/22/04.)

3.140 Documentation required of on-line slot metering systems. Documentation generated by an on-line slot metering system indicating information by slot machine, by denomination and in total, shall be available on a day, month, year-to-date basis and for at least a previous two-year cumulative basis. The system shall be designed so that documentation may be created daily or on demand and includes, at a minimum:
1. For each document:
(a) Document title;
(b) Version number of the current system software;
(c) Date or time period of activity; and
(d) Date and time the document was generated.
Note: Documents that compare metered amounts to actual amounts shall include a dollar variance and a percentage variance. The percentage variance is the dollar variance divided by the metered amount.
2. Slot machine performance including:
(a) By machine **or socket ID**:
 (1) Denomination or an indication that the machine is a multi-denomination machine;
 (2) Slot machine number and game type;
 (3) Coin in;
 (4) Metered or actual drop (system configurable);
 (5) Actual jackpot payout slips issued;
 (6) Actual fill slips issued;
 (7) Win;
 (8) Theoretical hold percentage;
 (9) Actual hold percentage;
 (10) Percentage variance (theoretical hold vs. actual hold); and
 (11) Projected dollar variance (i.e., coin in times the percentage variance).
(b) By denomination and in total:
 (1) Weighted average theoretical hold (i.e., floor par);
 (2) Combined actual hold percentage (all win divided by all coin in);
 (3) Percentage variance (floor par vs. combined actual hold percentage); and
 (4) Projected dollar variance (i.e., total coin in times the percentage variance).
Note 1: Floor pars are the sum of the theoretical hold percentages of all machines within a denomination weighted by coin in contribution.
Note 2: Drop, fills, jackpot payouts, and win figures may need adjustment to determine the true slot machine performance.
Note 3: The system shall compute accurate theoretical hold percentages, based on coin-in contribution, for each multi-game or multi-denomination/multi-game slot machine.
Note 4: The system shall compute accurate theoretical hold percentages for each gaming device which is considered a slot machine and which contains paytables with a difference in theoretical payback percentage which exceeds 4 percent between wager categories.
3. Meter drop vs. actual drop for each drop type (coin and bills), by machine and in total.

4. Meter attendant paid jackpots, cancelled credits, progressive payouts and external bonus payouts (in total) vs. actual attendant paid jackpots, cancelled credits, progressive payouts and external bonus payouts (in total).
Note: The system must produce a report (by machine and in total) that compares each type of attendant pay for those machines that have variances.
5. Meter fills vs. actual fills.
Note: Meter fills equal "Meter physical coin in" - "Meter physical coin out" - "Meter coin drop".
6. Meter machine paid and attendant paid external bonus payouts vs. external bonusing system machine paid and attendant paid external bonus payouts.
7. Meter voucher out vs. system payout receipts issued.
8. System payout receipts redeemed, by cashiering station, by shift.
9. System payout receipts issued, to include date issued, amount, sequence number and identification of gaming device where issued.
10. System payout receipt liabilities, by date issued and receipt sequence number.
11. Meter win vs. actual taxable win.
Note: "Meter win" equals "meter coin in" (-) "meter coin out" (-) "meter machine paid progressive payout" (-) "meter machine paid external bonus payout" (-) "total of meters accumulating attendant payouts" (excluding attendant paid cancelled credits).
12. Exception report. In the event data or parameters are changed, an exception report shall be produced to document:
(a) Data or parameter altered;
(b) Data or parameter value prior to alteration;
(c) Data or parameter value after alteration;
(d) Date and time of alteration; and
(e) Identification of user that performed alteration.
13. By machine, a report of all required meter amounts read and recorded by the on-line slot system.
(Adopted: 5/03. Effective: 8/22/04.)

3.150 Additional requirements for cashless wagering systems. In addition to those requirements set forth for on-line slot metering systems, and except for those requirements described in Technical Standards 3.110 through 3.140, all cashless wagering systems submitted for approval shall:
1. Prevent the direct wagering at a gaming device or an electronic funds transfer to a gaming device through the use of a credit card.
2. In the event of debit instrument transactions, execute such transactions in accordance with all applicable state and federal electronic funds transfer requirements or wagering account transfer requirements including receipting and fee disclosure requirements. Additionally, for electronic funds transfers, the cashless wagering system must provide for a configurable daily transfer limit which must not exceed $1,000 per day per debit instrument.
3. Employ some form of data encryption that has been approved by the chairman for all data that is transmitted to or from a gaming device. This standard does not apply to data that is transmitted between a gaming device and a gaming device interface component.
4. Provide a secure method for patron access to wagering accounts and promotional accounts.
5. For all patron initiated transactions, assign to each transaction a unique identifier of at least eight digits that includes the gaming device designation.
6. Be equipped to read and store the specific values indicated on the electronic digital storage meters in the gaming device, as applicable to the system. The following gaming device meter information is stored in units equal to the denomination of the device or in dollars and cents:
(a) Voucher in.
(b) Voucher out (for the metering of slot machine wagering vouchers and payout receipts).
(c) Electronic funds transfer in (EFT In).
(d) Wagering account transfer in (WAT In).
(e) Wagering account transfer out (WAT Out).
(f) Cashable electronic promotion in.
(g) Cashable electronic promotion out.
(h) Non-cashable electronic promotion in.
(i) Non-cashable electronic promotion out.
(j) Coupon promotion in.
(k) Coupon promotion out.
Note: System meters shall be referred to with the above terms and shall accumulate applicable system generated information as well as information stored on gaming device meters as required by Technical Standard 2.040.

7. Have a mechanism in place to record all required meters, as specified by Technical Standard 3.150(6), at the time a drop box (coin or currency) is removed and at any time specified by the end user.

8. Prevent an expiration period of less than thirty days for slot machine wagering vouchers.

9. Include on all slot machine wagering vouchers and coupons:
(a) Licensee name, city and state;
(b) Gaming device number or printer station number, as applicable;
(c) Date and time of issuance;
(d) Alpha and numeric dollar amount;
(e) Sequence number;
(f) Validation number;
(g) Second printing of validation number on the leading edge of the voucher or coupon;
(h) Unique identifier (e.g., bar code);
(i) Transaction type or other acceptable method of differentiating ticket types; and
(j) Expiration period or date when voucher or coupon will expire, if applicable.

10. Cause a relevant, informative message to be displayed whenever any player-initiated wagering account transfer or electronic funds transfer is being processed.

11. **If communications between a gaming device or a gaming device interface component and a system are lost, the gaming device or the gaming device interface component may continue to issue wagering instruments provided that, printed on the instrument, there is an authentication code derived by a HASH, or other secure encryption method of at least 128 bits, that will: uniquely identify the wagering instrument, verify that the redeeming system was also the issuing system, and validate the amount of the voucher. For cases where a suitable authentication code is not printed on the voucher, the system must print at most one wagering instrument after the gaming device or gaming device interface component to system communications have been lost.** ~~In the event communications between the system and a gaming device are lost, allow no more than one wagering instrument to be printed.~~

12. Require all electronic funds transfers to be recorded by the system.

13. Provide for on-line, real-time validation of wagering instruments or debit instruments, as applicable.

14. Be incapable of authorizing payment on a wagering instrument that has been previously paid, voided, or that is unissued, and the system shall display the status of the instrument.

15. Prevent the removal or erasure of events and transactions from any communication device until that information has been successfully transferred and acknowledged by the communication device next in succession.

16. Be designed to prevent unauthorized changes to cashless wagering system programs and databases.

17. Require the end user to initiate any remote access and shall only allow remote access by the system's licensed manufacturer from that manufacturer's place of business.

(Adopted: 5/03. Effective: 8/22/04.)

3.160 Documentation Required of Cashless Wagering Systems. Documentation generated by a cashless wagering system shall be available on a day, month, year-to-date basis and for at least a previous two-year cumulative basis. The system shall be designed so that documentation may be created daily or on demand and includes, at a minimum:

1. For each document:
(a) Document title;
(b) Version number of the current system software;
(c) Date or time period of activity; and
(d) Date and time the document was generated.

2. Wagering instrument issuances by date and identification of gaming device where issued, by gaming device.

3. Wagering instrument redemptions by date and means of redemption (e.g., gaming device, cashier station, kiosk, etc.).

4. Wagering instrument liabilities by date issued and by instrument sequence number.

5. Wagering instruments expired by date issued, sequence number and identification of gaming device where issued.

6. Wagering instruments voided by date issued, instrument sequence number and identification of gaming device where issued.

7. Debit instrument (i.e., wagering account) activity and balances, by patron and gaming device and shall include the date and time of each transfer to or from each gaming device.

8. Vouchers and coupons counted in the count room, by gaming device and by type of instrument.

9. Gaming device meter EFT in vs. system EFT in.
10. Gaming device meter WAT in vs. system WAT in.
11. Gaming device meter WAT out vs. system WAT out.
12. System promotional account activity and balances, by patron or by promotion, as applicable.
13. System wagering account activity (deposits, transfers to and from gaming devices, **WAT Win,** withdrawals, adjustments) and **beginning and ending** balances, by wagering account**, and in total**.
14. Gaming device meter cashable electronic promotion in vs. system cashable electronic promotion in.
15. Gaming device meter cashable electronic promotion out vs. system cashable electronic promotion out.
16. Gaming device meter non-cashable electronic promotion in vs. system non-cashable electronic promotion in.
17. Gaming device meter non-cashable electronic promotion out vs. system non-cashable electronic promotion out.
18. Gaming device meter voucher in vs. system voucher in forms accepted.
19. System voucher in vs. vouchers counted in the count room, by gaming device.
20. Gaming device meter voucher out vs. system voucher out forms issued.
21. Gaming device meter coupon promotion in vs. system coupon promotion in forms accepted.
22. System coupon promotion in vs. coupons counted in the count room, by gaming device.
23. Gaming device meter coupon promotion out vs. system coupon promotion out forms issued.
24. Slot machine performance report, as set forth in Technical Standard 3.140(2), that properly includes the wagering activity recorded on the gaming device meters set forth in Technical Standard 3.150(6), if the cashless wagering system is integrated with an on-line slot metering system.
25. For each individual adjustment made to a cashless wagering account or a promotional account, a summary of the adjustment to include:
(a) Patron name and account number, or specific promotion, as applicable;
(b) Amount of, and explanation for, the adjustment; and
(c) Identification of the user completing and/or authorizing the adjustment.
26. All cashiering activities (e.g., log on, redemptions, deposits/withdrawals and adjustments to wagering accounts, log off, etc.), by cashier.
27. All exceptions to include:
(a) Date and time of exception;
(b) Gaming device number or user identification number and terminal location where the exception occurred; and
(c) A description of the exception or a unique code that identifies the exception.
(Adopted: 5/03. Effective: 8/22/04.)

3.161 Documentation Required of System Based Game.
1.   Documentation generated for a system based game shall be available on a day, month, year-to-date basis and for at least a previous two-year cumulative basis. The system shall be designed so that documentation may be created daily or on demand and includes, at a minimum:
(a) For each document:
(1)   Document title;
(2)   Version number of the current system software;
(3)   Date or time period of activity; and
(4)   Date and time the document was generated.
(b) For each WAT In transaction or WAT Out transaction:
(1) Wagering account number;
(2) Socket ID; and
(3) Date and time of transfer.
(c)   Revenue report shall include total amount of WAT In, WAT Out and WAT Win by socket ID and grand totals.
(d)   Each WAT In transaction and WAT Out transaction by wagering account number; total WAT In, total WAT Out and total WAT Win by wagering account number; and grand totals.
(e)   Each WAT In transaction and WAT Out transaction by socket ID; total WAT In, total WAT Out and total WAT Win by socket ID; and grand totals.

2. The system based game shall be designed to display or create documentation on demand which includes the number of socket IDs available to operate mobile communications devices, and the identification of each mobile communications device assigned to a socket ID.
3. All exceptions to include:
(a) Date and time of exception;
(b) Socket ID where the exception occurred; and
(c) A description of the exception or a unique code that identifies the exception.

3.170 Waiver provisions. Upon a showing of good cause, the chairman may waive any of the requirements of Technical Standard 3.
(Adopted: 5/03. Effective: 8/22/04.)

STANDARD 4

MOBILE GAMING SYSTEMS

No Change

STANDARD 5

CASHLESS WAGERING KIOSK

No Change

End – Technical Standards