
Gaming Policy and Enforcement Branch (GPEB)

TGS2

Technical Gaming Standards for Progressive Gaming Devices in Gaming Venues

Technical Standards Document (TSD) Version 1.3



BRITISH COLUMBIA

**Ministry of Public Safety
and Solicitor General**

Gaming Policy and Enforcement Branch

3rd Floor, 910 Government Street
P.O. Box 9202 Stn. Prov. Govt.
Victoria, British Columbia, Canada
V8W 9J1

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Table of Contents

1	Overview of TSD	4
1.1	Introduction	4
1.1.1	General Statements I	4
1.1.2	General Statement II	4
1.2	Acknowledgment of Other TSDs Reviewed	4
1.2.1	General Statement	4
1.3	Purpose of TSD	4
1.3.1	Purpose	4
1.3.2	No Limitation of Technology	5
1.4	Other TSDs That May Apply	5
1.4.1	Other TSDs	5
1.5	Progressives Defined and Sections Applied	5
1.5.1	General Statement	5
2	Submission Requirements	6
2.1	Introduction	6
2.1.1	General Statement	6
2.2	Progressive Submission Requirements	6
2.2.1	General Statement	6
2.2.2	Prototype Submissions	6
2.2.3	Presentation of Equipment to BCLC; Identical Equipment	6
2.2.4	Accompanying Documentation	6
2.2.5	Submission Letter Requirements	6
2.2.6	Progressive Hardware	7
2.2.7	Progressive Software	7
2.2.8	Software Programming Requirements and Compilation	8
2.2.9	Program Storage Media	8
2.2.10	Documentation needed for Submissions of Modifications	8
3	Progressive Component Requirements	9
3.1	Introduction	9
3.1.1	General Statement	9
3.2	Hardware and Player Safety	9
3.2.1	General Statement	9
3.3	Environmental Effects on Progressive Integrity	9
3.3.1	Game Integrity Standard	9
3.4	Progressive Meter/Display Requirements	9
3.4.1	General Statement	9
3.4.2	Progressive Displays	10
3.4.3	Types of Updating Displays	10
3.4.4	Progressive Display Digital Limitations	10
3.4.5	Alternating Displays	10
3.5	Progressive Controller Requirements	10
3.5.1	General Statement	10
3.5.2	Progressive Controller Description	10
3.5.3	Setting the Jackpot Amounts	11
3.5.4	Progressive Controller Program Interruption	11
3.5.5	Progressive Resumption	11
3.5.6	Communications for Signalling of a Jackpot	11
3.5.7	Monitoring of Credits Bet	11
3.5.8	Access to the Progressive Controller	11
3.5.9	Progressive Controller Required Meters	11



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Document Version:	Version 1.3, January 4, 2006
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3.5.10	Controller and Display Functions during Progressive Jackpot Win	12
3.5.11	Progressive Jackpot Amount	12
3.5.12	Progressive Controller Error Conditions	12
3.5.13	Transferring of Progressive Jackpot	12
3.5.14	Jackpot Limits	12
3.5.15	Time Limits.....	13
3.6	Progressive Jackpots	13
3.6.1	General Statement.....	13
3.6.2	Swapping Progressive Levels.....	13
3.6.3	EGD Requirements when any Progressive is Awarded	13
3.6.4	Progressive Gaming Device Metering Requirements.....	13
3.7	Progressive Awards Paid Over Time	13
3.7.1	Notice of Payment Over Time.....	13
3.8	Progressive Percentage Requirements and Odds.....	14
3.8.1	General Statement.....	14
3.8.2	Linked Gaming Device Odds	14
4	Multiple Site Progressive Requirements	14
4.1	Introduction	14
4.1.1	General Statement.....	14
4.1.2	Phases of Approval.....	14
4.2	Multi-Site Central Progressive Computer System Requirements	14
4.2.1	General Statement.....	14
4.2.2	Location of Central Progressive Computer System.....	14
4.2.3	Method of Communication for Multi-Site Gaming Devices	14
4.2.4	Data Collection Requirement.....	15
4.2.5	Multi-Site Encryption Method	15
4.2.6	Multi-Site Monitoring and Other On-Line System Requirements.....	15
4.2.7	Central Progressive Computer System Power Supply	15
4.2.8	Communication Failure	15
4.2.9	Central Progressive Computer System Required Reports	15
4.2.10	Multi-Site System Meter Readings.....	15
4.2.11	Multi-Site System Door Monitoring	16
4.2.12	Jackpot Win during Poll Cycle	16
4.3	Multi-Site Progressive Procedures	16
4.3.1	General Statement.....	16
4.4	Multi-Site Jackpots	16
4.4.1	Multiple Jackpots during the Same Polling Cycle.....	16

1 Overview of TSD

1.1 Introduction

1.1.1 General Statements I

The General Statements are as follows:

- a) Before being permitted to operate in the live environment, all progressive gaming devices used in the Province of British Columbia must be tested to the applicable requirements set forth in this Technical Standards Document (TSD).
- b) The British Columbia Lottery Corporation (BCLC) may select an appropriate Accredited Testing Facility (ATF), or other equivalent body, to perform this testing; however, BCLC's selection requires approval from the Gaming Policy and Enforcement Branch (GPEB).
- c) The appointed testing body must provide their evaluation results to BCLC, who in turn must provide these evaluation results to GPEB for review, and where required, subsequent discussion.
- d) Although the appointed testing body may recommend the approval of any progressive gaming devices for use in the Province of British Columbia, the ultimate authority to approve progressive gaming devices rests solely with GPEB. Only GPEB can issue a Certificate of Technical Integrity under **Section 75 of the Gaming Control Act of British Columbia**.

Note: A "Progressive Gaming Device" does NOT include, for purposes of this TSD, ancillary electronic equipment used in the conduct of Table Games.

1.1.2 General Statement II

It is the policy of GPEB, in consultation with BCLC, to update this TSD at minimum once annually, to reflect any changes in technology, testing methods, or known cheating methods.

Note: GPEB reserves the right to modify (or selectively apply) the requirements set forth in this TSD as deemed necessary to ensure the integrity of gaming in the Province of British Columbia.

1.2 Acknowledgment of Other TSDs Reviewed

1.2.1 General Statement

This TSD has been developed by reviewing and using portions of the Gaming Laboratories International (GLI) TSD named 'GLI-12'.

1.3 Purpose of TSD

1.3.1 Purpose

The purpose of this TSD is as follows:

- a) To eliminate subjective criteria in analyzing and certifying progressive gaming device operation.
- b) To test those criteria that impact the credibility and integrity of progressive gaming device operation from both the Revenue Collection and Player's play point of view.
- c) To create a TSD that will ensure that progressive gaming devices in gaming venues are fair, secure, auditable, and able to operate correctly.
- d) To recognize that non-gaming testing (such as Electrical Testing) should not be incorporated into this TSD but left to appropriate test laboratories that specialize in that type of testing.
- e) To recognize that except where specifically identified in this TSD, testing is not directed at health or safety matters. These matters are the responsibility of the manufacturer of

- the equipment.
- f) To construct a TSD that can be easily changed or modified to allow for new technology.
 - g) To construct a TSD that does not specify any particular method or technology (e.g.: choice of algorithm for random number generation). The intent is instead to allow a wide range of methods and technologies to be used to comply with this TSD, while at the same time, to encourage new methods and technologies to be developed.

1.3.2 No Limitation of Technology

One should be cautioned that this TSD should not be read in such a way that limits the use of future technology. The TSD should not be interpreted that if the technology is not mentioned, then it is not allowed. As new technology is developed, GPEB, in consultation with BCLC, will review this TSD, make any changes deemed necessary, and incorporate new minimum standards for the new technology.

Note: Although BCLC may recommend that particular changes be made to this TSD, the ultimate authority to approve changes rests solely with GPEB.

1.4 Other TSDs That May Apply

1.4.1 Other TSDs

This TSD covers the actual requirements for various types of progressive gaming devices in gaming venues. The following other TSDs and documents may apply:

- a) TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues;
- b) TGS3 – Technical Gaming Standards for On-line Monitoring and Control Systems and Validation Systems in Gaming Venues;
- c) TGS4 – Technical Gaming Standards for Electronic Bingo Systems in Gaming Venues;
- d) The Criminal Code of Canada; and
- e) The Gaming Control Act of British Columbia.

Note: Any progressive gaming device shall not affect, supersede, replace or in any way alter the other language provisions of the TGS1-Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues.

1.5 Progressives Defined and Sections Applied

1.5.1 General Statement

A Progressive Gaming Device means, “A gaming device that has an increasing jackpot, based on a function of credits that are bet. This includes games that award progressive jackpots or a ‘pool’ based on criteria other than obtaining winning symbols on the machine, such as ‘Mystery Jackpot.’ However, this does not include games that incorporate a bonus feature as part of the game theme, which offers awards that increase as the game is played and, as well, is not configurable.” **Sections 1, 2, and 3** of this TSD shall set forth the technical requirements for the following types of progressive gaming devices. **Section 4** only applies to multi-site progressive gaming devices:

- a) Stand-Alone Progressive Gaming Devices. A stand-alone progressive gaming device is a single progressive game that is not a part of a link;
- b) Multiple Gaming Device (Linked) Progressives. A ‘linked progressive’ is one (1) or more EGD(s) that offer common a progressive jackpot(s) which are linked to a progressive controller within a single gaming venue; and
- c) Multi-Site Progressive Gaming Devices. Multi-site progressive gaming devices are interconnected in more than one (1) gaming venue. The purpose of a multi-site progressive gaming device is to offer common progressive jackpot(s) (system jackpot) at all participating locations.

2 Submission Requirements

2.1 Introduction

2.1.1 General Statement

This section shall govern the types of information that are, or may be required to be submitted by the submitting party, in order to have equipment tested to this TSD. Where the information has not been submitted, or is not otherwise in the possession of BCLC (together with GPEB) and/or the ATF, the submitting party shall be asked to supply additional information. Failure to supply the information can result in denial, in whole or in part, of the submission and/or lead to testing delays. This TSD does not address submission requirement information for EGDs or other gaming components, such as On-Line Monitoring and Control Systems (MCSs).

2.2 Progressive Submission Requirements

2.2.1 General Statement

The submission requirements throughout this section apply to all progressive gaming device submissions.

2.2.2 Prototype Submissions

A Prototype (full submission) submission is an initial submission of a particular piece of hardware or software that has not previously been reviewed by BCLC (together with GPEB) and/or the ATF. For modifications of previous submissions, including required changes to a previously submitted Prototype (full submission) certification, whether certified or pending certification, see also **Section 2.2.10 Documentation needed for Submissions of Modifications**.

Note: The testing of the submission may take place in the BCLC testing facilities, or at the ATF's facilities, or both, at the discretion of GPEB (in consultation with BCLC).

2.2.3 Presentation of Equipment to BCLC; Identical Equipment

Each item of gaming equipment, supplied by a manufacturer to the field, shall be functionally identical to the specimen tested and certified. For example, a progressive gaming device supplied as certified associated equipment shall not have different internal wiring, components, firmware, circuit boards, circuit board track cuts, or circuit board patch wires from the certified specimen, unless that change is also certified, see also **Section 2.2.10 Documentation needed for Submissions of Modifications**.

Note: This section shall not apply to wiring changes or component level changes, where wiring and components that are substituted, equate exactly to the previous approved configuration.

2.2.4 Accompanying Documentation

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

- a) If applicable, all UL, CSA, etc. or equivalent certification, see also **Section 3.2 Hardware and Player Safety**. This certification information may be supplied at a later date;
- b) Any other equipment that may be used in the field in conjunction with the submission;
- c) Accompanying software, see also **Section 2.2.7 Progressive Software**; and
- d) If the submitting party has specialized equipment that is needed to test the submitted device, then the specialized equipment and all appropriate operation manuals for the equipment shall be included with the submission.

2.2.5 Submission Letter Requirements

Each submission shall include a request letter, on company letterhead, dated within one (1) week

of the date the submission is received by BCLC (together with GPEB) and/or the ATF. The letter should include the following:

- a) A formal request for certification specifying British Columbia as the jurisdiction for which the device will be approved; and
- b) The items requested for certification. In the case of software, the submitting party shall include Identification (ID) numbers and revision levels, if applicable. In the case of hardware, the submitting party shall indicate the raw board, assembled board, and assembled unit number for the hardware; and
- c) A list of all EGDs compatible with the system and any other components; and
- d) A contact person who will serve as the main point of contact for engineering questions raised during evaluation of the submission. This may be either the person who signed the letter or another specified contact.

2.2.6 Progressive Hardware

Each submission shall include and identify the individual items (including part number) being submitted and be accompanied by schematics, operational and/or service manuals for each component along with the following:

- a) The Progressive Controller. The documentation accompanying the controller shall include the following:
 - i. The type of Progressive it controls (Stand-Alone, Linked, Multi-Site) and how to configure for each type;
 - ii. A description of how the controller board communicates with the game and provide the communications protocol;
 - iii. A description of the location of the controller and the housing unit;
 - iv. A description of how the jackpot value is displayed;
 - v. A listing of error conditions and tilts the controller supports;
 - vi. The number of displays which the controller can support; and
 - vii. A description of the events which occur when a jackpot is won.
- b) The Progressive Display and all accompanying schematics, operational, and/or service manuals. The documentation accompanying the display shall explain how the display drivers are interfaced to the controller and how the controller is interfaced to an EGD. If the controller is provided for multi-tier jackpots, indicate the operation in this respect.

2.2.7 Progressive Software

Each submission shall include all software that controls each component of the progressive gaming device. In addition, all accompanying schematics, operational, and/or service manuals shall be submitted. The documentation accompanying the software shall include and describe the programming procedures for:

- a) Two copies of all software needed to run the system and the source code, a link map, and symbol table for each program (Note: The source code may be reviewed, compiled and studied, either at BCLC testing facilities, or at the ATF's facilities, or both, at the discretion of BCLC);
- b) A general overview of the system, describing how the software and hardware are integrated, if requested;
- c) Program block diagrams and flow charts for the progressive gaming device, if requested;
- d) All progressive jackpot features;
- e) The number of levels of progressive jackpots;
- f) The types of systems it is capable of handling (Stand-Alone, Linked, Multi-site, Random, etc.);
- g) The rules for winning each progressive jackpot;
- h) Each progressive parameter and description (max values, increment rates, etc.); and
- i) The Random Access Memory (RAM) clearing methods.

Note: In some cases, BCLC and/or the ATF may have the wording on the Progressive Display translated to the English language or have the manufacturer supply an independent translator.

2.2.8 Software Programming Requirements and Compilation

The following items shall appear in all source code or related modules:

- a) Module Name;
- b) Brief description of module function;
- c) Edit History, including who modified it, when, and why;
- d) Source code comments in an informative and useful manner;
- e) All source code submitted shall be correct, complete, and able to be compiled. The result of the compiled object code shall be identical to that in the storage media submitted for evaluation.

Note: The addition of 'Date' and 'Time' stamps may cause additional differences in a compiled version. It is the manufacturer's responsibility to provide BCLC and/or the ATF with a method to compensate for, or resolve these differences.

2.2.9 Program Storage Media

On the program medium that is submitted and subsequently placed in the field, each program shall be uniquely identified by the following:

- a) Program ID Number;
- b) Manufacturer;
- c) Version number;
- d) Type and size of media (unless located on the media as purchased unused from the supplier);
- e) Location of installation in the associated hardware, if potentially confusing; and
- f) A unique signature. For medium other than Erasable Programmable Read Only Memory (EPROM), a hashing algorithm shall be used.

2.2.10 Documentation needed for Submissions of Modifications

For any updated submission (e.g. a revision to an existing hardware or software that is currently under review, certified, or has been reviewed and not certified), the following information shall be required to process the submission, see also **Section 2.2.5 Submission Letter Requirements**. This process is intended to speed the administrative burden of modification submissions. All modifications will require review and re-testing to verify compliance with the applicable requirements set forth in this TSD, as per **Section 1.1.1 General Statements I**:

- a) Modification of Hardware. Each hardware submission shall:
 - i. Identify the individual items being submitted (including part number);
 - ii. Identify the previously approved hardware version;
 - iii. Explain what component it is modifying and how it was modified;
 - iv. Supply a complete set of schematics, diagrams, data sheets, etc. describing the modification along with the reason for the change(s); and
 - v. Provide the updated or new device, a description and the method of connection to the original progressive gaming device.
- b) Modification of Software Functions or To Correct Software Error. The submitter should use the same requirements as **Section 2.2.7 Progressive Software** above, except where the documentation has not changed. In that case, a resubmission of identical documents is not required. In addition, the submission shall include:
 - i. A description of the software change;
 - ii. Identification of the previously approved version;
 - iii. The modules affected; and
 - iv. The new source code for the entire program. Source code is required for the entire program to check compile and source code integrity.

Note: The source code may be reviewed, compiled and studied either at the BCLC testing facilities, or at the ATF's facilities, or both, at the discretion of BCLC.

Note: Where BCLC and/or the ATF has been previously supplied with the information on a

previous submission, submission of duplicate documentation is NOT required, provided that the previous information is referred to by the submitting party and those documents are easily located at BCLC's facilities and/or the ATF's facilities. Every effort shall be made to reduce the redundancy of submission information.

3 Progressive Component Requirements

3.1 Introduction

3.1.1 General Statement

This section shall govern the requirements for all progressive gaming device components submitted for review.

3.2 Hardware and Player Safety

3.2.1 General Statement

Electrical and mechanical parts and design principals of the progressive gaming device may not subject a player to any physical hazards. BCLC and the ATF shall NOT be responsible for Safety and EMC testing, as it is the responsibility of the manufacturer of the goods to obtain the appropriate Underwriters Laboratory (UL) / Canadian Standards Association (CSA) certification. Such Safety and EMC testing is required under Provincial and Municipal regulations and should be researched accordingly by those parties who manufacture said devices. BCLC and the ATF shall not be responsible for, nor be liable for, these matters.

3.3 Environmental Effects on Progressive Integrity

3.3.1 Game Integrity Standard

BCLC and/or the ATF will perform certain tests to determine whether or not outside influences affect game fairness to the player or create cheating opportunities. A progressive gaming device shall be able to withstand the following tests, resuming game play without operator intervention:

- a) Electro-magnetic Interference. Progressive gaming devices shall not create electronic noise that affects the integrity or fairness of the neighbouring associated equipment.
- b) Electro-static Interference. Protection against static discharges requires that the progressive gaming device's hardware be earthed in such a way that static discharge energy shall not damage or inhibit the normal operation of the electronics or other components within the progressive gaming device. Progressive gaming devices may exhibit temporary disruption when subjected to a significant electro-static discharge greater than human body discharge, but they shall exhibit a capacity to recover and complete any interrupted function without loss or corruption of any control or data information associated with the progressive gaming device. The tests will be conducted with a severity level of up to 40KV air discharge.
- c) Radio Frequency Interference (RFI). Progressive gaming devices shall not divert from normal operation by the application of RFI at a frequency range from 27 to 1000 MHZ with a field strength of 3 volts per meter (Note: This rule may be waived where the mode of communication of the part being tested is via radio frequency transmission).
- d) Magnetic Interference. Progressive gaming devices shall not be adversely affected by Magnetic Interference. The manufacturer should supply any documentation if the progressive gaming device has had Magnetic Interference testing against any recognized standard.

3.4 Progressive Meter/Display Requirements

3.4.1 General Statement

One or more progressive gaming device(s) shall be linked, directly or indirectly, to a mechanical,

electrical, or electronic device, including the video display, if applicable, that shows the payoff which increments at a set rate of progression as credits are wagered. This device is the Progressive Meter. For games that have progressives such as 'Mystery Jackpot', the payoff does not have to be displayed to the player although; there should be an indication as to this type of feature on the game.

3.4.2 Progressive Displays

A Progressive Meter shall be visible to all players who are playing a progressive gaming device, which may potentially win the progressive amount if the progressive jackpot combination appears, except for 'mystery jackpots.' A player shall know that he is playing a progressive game and not have to play the max bet amount to find out. The above are parameters that are verified on-site prior to implementation. The following rules apply to all Progressive Meter displays:

- a) The progressive meter shall display the current total of the progressive jackpot in the monetary value or credits (the monetary value may vary for Multi-Site Progressive Displays.) Because the polling cycle does cause a delay, the jackpot meter need not precisely show the actual monies in the progressive pool at each instance, see also **Section 3.4.3 Types of Updating Displays**. This rule does not apply to 'Mystery Jackpots.'

Note: Any EGD that has a feature that doubles, or triples, etc. any win shall have a sign that states the progressive award will not be doubled or tripled if won during the feature, if this is the intention.

3.4.3 Types of Updating Displays

The use of odometer and other "paced" updating displays are allowed. The progressive meter shall display the winning value within 30 seconds of the jackpot being recognized by the central progressive computer system. In the case of the use of paced updating displays, the system jackpot meter shall display the winning value after the jackpot broadcast is received from the central progressive computer system. Working together with BCLC, GPEB shall set the rule for the length of time allowed before the progressive must shut down.

3.4.4 Progressive Display Digital Limitations

If the progressive meter(s) progresses to its maximum display amount, the meter shall freeze and remain at the maximum value until awarded to a player. This can be avoided by setting the jackpot limit in accordance with the digital limitations of the sign.

3.4.5 Alternating Displays

If this rule prescribes multiple items of information to be displayed on an EGD or progressive meter, it is sufficient to have the information displayed in an alternating fashion.

3.5 Progressive Controller Requirements

3.5.1 General Statement

Any progressive gaming device shall meet the game standards set forth in this TSD and TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues. The requirements of this section are intended to apply equally to one progressive gaming device linked to a progressive controller or is internally controlled, as well as several progressive gaming devices linked to one progressive controller within one gaming venue or multiple gaming venues.

3.5.2 Progressive Controller Description

A progressive controller is all of the hardware and software that controls all communications among the EGDs that calculates the values of the progressives and displays the information within a progressive gaming device link (if applicable – progressive gaming device(s) may be internally controlled) and the associated progressive meter. This equipment includes but is not limited to Personal Computer (PC)-based computers, wiring, and collection nodes, etc.

3.5.3 Setting the Jackpot Amounts

The method by which system jackpot parameter values are modified or entered is to be secure. All progressive gaming devices or any approved progressive system component shall display, upon request, the following information for each progressive prize offered (if applicable):

- a) CURRENT VALUE: current prize amount;
- b) OVERFLOW: amount exceeding limit;
- c) HITS: number of times this progressive was won;
- d) WINS: total value of wins for this progressive or a history of the last 25 progressive hits;
- e) BASE: starting value;
- f) LIMIT: jackpot limit value (if the Jackpot is capped at a maximum limit, this standard does not require to add the overflow amounts to the next starting value and will be determined on a venue-by-venue basis);
- g) INCREMENT: percentage increment rate;
- h) SECONDARY INCREMENT: percentage increment rate after limit is reached;
- i) HIDDEN INCREMENT: percentage increment rate for the reserve pool (the next base amount shall be computed or posted to advise the player of this contribution);
- j) RESET VALUE: the amount the progressive resets to after the progressive is won; and
- k) The participating EGDs.

3.5.4 Progressive Controller Program Interruption

After a program interruption (e.g. power down), the software shall be able to recover to the state it was in immediately prior to the interruption occurring.

3.5.5 Progressive Resumption

On program resumption, the following procedures shall be performed as a minimum requirement:

- a) Any communications to an external device shall not begin until the program resumption routine, including self-tests, is completed successfully;
- b) Progressive gaming device control programs shall test themselves for possible corruption due to failure of the program storage media. The authentication may use the checksum; however, it is preferred that the Cyclic Redundancy Check (CRC) calculations are used as a minimum (at least 16 bit). Other test methodologies shall be acceptable if at a comparable level of integrity; and
- c) The integrity of all critical memory shall be checked.

3.5.6 Communications for Signalling of a Jackpot

There shall be a secure, two-way communication protocol between the main game processor board and progressive. In addition, the progressive gaming device shall be able to:

- a) Send to the EGD the amount that was won for metering purposes; and
- b) Constantly update the progressive display as play on the link is continued.

3.5.7 Monitoring of Credits Bet

During the 'Normal Mode' of progressive gaming devices, the progressive controller shall continuously monitor each device on the link for credits bet and shall multiply the same by the rate of progression and denomination in order to determine the correct amounts to apply to the progressive jackpot. This shall be 99.99% accurate.

3.5.8 Access to the Progressive Controller

Each progressive controller used with a progressive gaming device shall be housed in a secure environment allowing only authorized accessibility. Access to the controller must conform to BCLC Internal Control procedures (as approved by GPEB).

3.5.9 Progressive Controller Required Meters

The progressive controller or other approved progressive gaming device component shall keep the following information in non-volatile memory, which shall be displayed on demand. Additionally, meters shall be 99.99% accurate:

- a) The number of progressive jackpots won on each progressive level if the progressive display has more than one (1) winning amount;
- b) The cumulative amounts paid on each progressive level if the progressive display has more than one (1) winning amount;
- c) The maximum amount of the progressive payout for each level displayed;
- d) The minimum amount of the progressive payout for each level displayed;
- e) The rate of progression for each level displayed; and

3.5.10 Controller and Display Functions during Progressive Jackpot Win

When a progressive jackpot is recorded on an EGD, which is attached to the progressive controller, the progressive controller shall allow for the following to occur on the device and/or progressive display:

- a) Display of the winning amount;
- b) Display of the EGD identification that caused the progressive meter to activate if more than one (1) EGD is attached to the controller;
- c) The progressive controller shall automatically reset to the reset amount and continue normal play; and
- d) The new progressive values that are current on the link.

3.5.11 Progressive Jackpot Amount

The initial amount of a progressive jackpot shall begin at or above an award for that particular EGD that makes the entire meter payout greater than the minimum percentage requirement, see also **Section 4.4.1 Software Requirements for Percentage Payout** in TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues.

3.5.12 Progressive Controller Error Conditions

When a controller error occurs, it is preferred that it alternates the displays, or equivalent, between the current amount and an appropriate error message that is visible to all players, or can alert the gaming venue to the error condition. If the following events occur, the game that is using the progressive is to be disabled, and an error shall be displayed on the progressive meter, other approved progressive system component or EGD:

- a) During a 'communication failure', see also **Section 4.2.8 Communication Failure**;
- b) When there have been multiple communication errors;
- c) When a controller checksum or signature has failure;
- d) When a controller's RAM or PSD (program storage device) mismatch or failure occurs;
- e) When the current amount is larger than the limit, see also **Section 3.5.14 Jackpot Limits**;
- f) When the jackpot configuration is lost or is not set;
- g) If there has been an unreasonable amount of credits bet (an unreasonable amount of credits bet is defined by the progressive set up which is based on the number of bets and number of machine(s)); or
- h) If the game meters are validated against the controller's meters (via communications between the game board and controller) and they do not reconcile.

3.5.13 Transferring of Progressive Jackpot

The progressive controller shall have a secure means of transferring a progressive jackpot and/or prizes to another progressive controller or other approved progressive gaming device component. Transferring of progressive jackpots must meet BCLC Internal Control Procedures (as approved by GPEB).

3.5.14 Jackpot Limits

The controller may be configured with a limit on the jackpot of a progressive gaming device, if the limit imposed is greater than the jackpot payout on the progressive gaming device at the time the limit is imposed. This limit shall be posted on or near the device or devices to which the limit applies.

3.5.15 Time Limits

The progressive controller may have the ability to set time limits that limit the time the progressive is available.

3.6 Progressive Jackpots

3.6.1 General Statement

A Progressive Jackpot is an award for a winning or non-winning (e.g. mystery jackpot) play of the game, as defined in **Section 1.5.1** of this TSD. A bonus game where certain circumstances are required to be satisfied, prior to awarding a fixed bonus prize, is not a progressive gaming device and is not subject to these procedures.

3.6.2 Swapping Progressive Levels

For progressives offering multiple levels of awards, the player must always be paid the higher progressive amount, if a particular combination is won that should trigger the higher paying award. This may occur when a winning combination may be evaluated as more than one of the available payable combinations (i.e., a Flush is a form of a Straight Flush and a Straight Flush is a form of a Royal Flush). Therefore, there may be situations where the progressive levels shall be swapped to ensure the player is being awarded the highest possible progressive value based on all combinations the outcome may be defined as.

3.6.3 EGD Requirements when any Progressive is Awarded

When a progressive prize has been awarded, the EGD or other approved progressive component shall perform the following:

- a) An appropriate message shall be displayed;
- b) Unless the prize is transferred to the player's credit meter the software and game shall lockup until the award has been paid by the attendant; and
- c) All progressive related meters must be updated, see also TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues, **Section 4.10.7 Electronic Accounting and Occurrence Meters**.

Note: In the case of a player winning a 'Mystery Jackpot', there must be a light or an alarm so the player doesn't abandon the machine, not knowing they've won an award.

3.6.4 Progressive Gaming Device Metering Requirements

The EGD is required to update its electronic meters to reflect the winning progressive jackpot amount consistent with these procedures and the electronic accounting meter requirements in **Section 4** of TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues. Progressive wins may be added to the credit meter if either:

- a) The credit meter is maintained in monetary value or credits;
- b) The progressive meter is incremented to whole credit amounts; or
- c) The prize, in monetary value, is converted to credits on transfer to the player's credit meter in a manner that does not mislead the player. The conversion from monetary value to credits must always round up.

Note: All submissions under this TSD must take into account that all winners of jackpots in excess of \$9,999.99, in gaming venues in British Columbia, are required under the Proceeds of Crime (Money Laundering) and Terrorist Financing Act/Regulations to complete a Large Cash Transaction and Foreign Exchange Record (LCTR) at the time of the win.

3.7 Progressive Awards Paid Over Time

3.7.1 Notice of Payment Over Time

Any EGD which offers a progressive award paid over time shall comply with the display and sign

requirements, as well as BCLC Internal Control Procedures (as approved by GPEB), except that the display or sign need not include the cash equivalent value. In addition, clear and conspicuous notice of the following shall be provided to all players:

- a) That the displayed jackpot will be paid over time and not in one lump sum; and
- b) The period of time covering the payments.

3.8 Progressive Percentage Requirements and Odds

3.8.1 General Statement

The rules within this section shall not supersede the Percentage Return to Player (%RTP) and Odds rules outlined in the TGS1 – Technical Gaming Standards for Electronic Gaming Devices (EGDs) in Gaming Venues.

3.8.2 Linked Gaming Device Odds

Each device on the link shall have the same probability of winning the progressive, adjusted for the denomination played. For instance, the probability shall remain the same for multiple denomination games based, on the monetary value of the wager (e.g.1. A two (2) coin \$1 game has the probability of one (1) in 10,000 and a two (2) coin, \$2 game on the same link has the probability one (1) in 20,000.)

4 Multiple Site Progressive Requirements

4.1 Introduction

4.1.1 General Statement

In addition to **Sections 1, 2 and 3** of this TSD, this section shall set forth the technical requirements for “Multi-Site Progressive Gaming Devices.” Multi-site progressive gaming devices are interconnected in more than one Gaming Venue. The purpose of a Multi-site progressive system is to offer a common progressive jackpot (system jackpot) at all participating locations.

4.1.2 Phases of Approval

GPEB approval of a "Multi-Site" system may be certified in two phases:

- a) Initial laboratory testing, where the integrity of the EGD(s) in conjunction with a progressive gaming device will be tested in a laboratory setting with the equipment assembled; and
- b) On-site verification where the progressive communications and set up are tested on the gaming venue floor prior to implementation.

4.2 Multi-Site Central Progressive Computer System Requirements

4.2.1 General Statement

Any Gaming Venue Service Provider seeking approval to participate in a Multi-site progressive slot system shall adhere to BCLC Internal Control Procedures (as approved by GPEB).

4.2.2 Location of Central Progressive Computer System

The office containing the central progressive computer system shall be equipped with a surveillance system that must meet BCLC Internal Control Procedures (as approved by GPEB).

4.2.3 Method of Communication for Multi-Site Gaming Devices

The method of communication shall be a non-shared, dedicated line or equivalent. Dial-tone systems may be used as long as devices at the local site would not be able to be disabled from another outside line or manipulated by any other means. When the method of communication is a shared line, appropriate encryption and security must be in place to avoid corruption or compromise of data.

4.2.4 Data Collection Requirement

Multi-site systems shall ensure that security information and the amounts wagered information is communicated, at least once every 15 seconds for terrestrial lines (dedicated phone lines), and a reasonable amount of time for Radio Frequency, from each participating progressive gaming device to the central progressive computer system.

4.2.5 Multi-Site Encryption Method

All Multi-Site property systems shall utilize an encryption method that has been approved by both BCLC and GPEB. Such encryption method shall include the use of different encryption “keys” or “seeds” so that encryption can be changed in a real-time fashion.

4.2.6 Multi-Site Monitoring and Other On-Line System Requirements

The on-line provision is to be able to monitor the meter readings and error events of each participating progressive gaming device regardless of any outside MCS. Therefore, the on-line security system requirement when progressive gaming devices are in play is not altered in any way.

4.2.7 Central Progressive Computer System Power Supply

The central progressive computer system site shall be equipped with non-interruptible power supply that will allow the central progressive computer system to conduct an orderly shut down if the power is lost. Should the system utilize hard disk peripherals, the central progressive computer system shall be capable of on-line data redundancy.

4.2.8 Communication Failure

An EGD shall disable itself and suspend play if communication is lost to the local collection unit and security hub. The EGD may resume play only when communication to the local hub is restored. If the communication is lost between the local hub and the central progressive computer system, the EGD may continue to play. However, once communications are re-established, the system wide totals are to be updated; notwithstanding this rule if the communication is lost for more than 24 hours and the site must be shut down.

4.2.9 Central Progressive Computer System Required Reports

Any "Multi-Site" system shall supply, as requested, the following reports:

- a) PROGRESSIVE SUMMARY: A report indicating the amount of, and basis for, the current jackpot amount (the amount currently in play);
- b) AGGREGATE REPORT: A report indicating the balancing of the system with regard to system wide totals; and
- c) PAYOFF REPORT: A report that will clearly demonstrate the method of arriving at the payoff amount. This will include the credits contributed beginning at the polling cycle, immediately following the previous jackpot and will include all credits contributed up to and including the polling cycle which includes the jackpot signal.

Note: Credits contributed to the system after the jackpot occurs in real-time, but during the same polling cycle, shall be deemed to have been contributed to the progressive amount prior to the jackpot. Credits contributed to the system subsequent to the jackpot message being received, as well as credits contributed to the system before the jackpot message is received by the system, but registered after the jackpot message is received at the system, will be deemed to have been contributed to the progressive amount of the next jackpot, if applicable.

4.2.10 Multi-Site System Meter Readings

All meter reading data shall be obtained in real time in an on-line, automated fashion. When requested to do so, the system shall return meter readings on all EGDs attached to the system. The meter readings shall be identical to the meter information retained in the EGD(s) accounting meters. Manual reading of meter values may not be substituted for these requirements. The

meter, in either credit or monetary value, required is as follows:

- a) Credits Bet shall be defined as all amounts wagered.

Note: The purpose of the above credits bet meter reading is to verify and compare the progressive amount(s) in conjunction with the rate of progression.

4.2.11 Multi-Site System Door Monitoring

The Multi-Site Progressive system shall have the ability to monitor entry into the front door of the progressive gaming device and report it to the MCS IMMEDIATELY.

4.2.12 Jackpot Win during Poll Cycle

If a jackpot is recognized in the middle of a System-Wide Poll Cycle, the overhead display may contain a value less than the aggregated jackpot amount calculated by the central progressive computer system. The credit values from the remaining portion of the poll cycle will be received by the central progressive computer system but not the local site, in which case the jackpot amount paid will always be the higher of the two reporting amounts.

4.3 Multi-Site Progressive Procedures

4.3.1 General Statement

Procedures shall be developed, implemented and documented for the following. These reports shall adequately document the procedures, be generated and retained:

- a) Reconciliation of meters and jackpot payouts;
- b) Collection drop of EGD funds;
- c) Jackpot verification and payment procedures as set forth in BCLC Internal Control procedures (as approved by GPEB).
- d) System maintenance;
- e) System accuracy;
- f) System security;
- g) System failures including:
 - i. The local hub;
 - ii. The central progressive computer system;
 - iii. Failures in communications; and
 - iv. Backup and recovery.

4.4 Multi-Site Jackpots

4.4.1 Multiple Jackpots during the Same Polling Cycle

When multiple jackpots occur, where there is no definitive way of knowing which jackpot occurred first, they will be deemed to have occurred simultaneously; and therefore, the gaming venue shall follow procedures for payment of the jackpot as set forth in BCLC Internal Control procedures (as approved by GPEB). In addition, if there is a communication failure as described in **Section 4.2.8 Communication Failure**, a winning player wagering at a non-updated site may also be eligible to a jackpot amount.