GAMING LABORATORIES AUSTRALIA

SA Casino TITO Standard Version 2.3

Version 2.3

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1. Introduction

This standard sets out a list of functional requirements for Ticket-In Ticket-Out (TITO) operation in Skycity Casino, South Australia, relevant to the current gaming operation of X-Series based gaming machines in the Adelaide Casino.

GLI has reviewed and used portions from the following standards. We acknowledge and thank the authors of these documents.

- Queensland TITO Minimum Technical Requirements v1.1.2:
  Queensland Office of Liquor and Gaming Regulation
- GTA Ticket Printer Specifications V4.20 for Implementing Ticket In/Ticket Out (TITO) Approved Poker Machines in NSW
  NSW Independent Liquor and Gaming Authority
- GLI – 16. Cashless systems in casinos, v2.0
  Gaming Laboratories International

2. Purpose

The purpose of this standard is to:

- Provide a high standard for the functional operation and requirements of TITO in Skycity Casino, South Australia relevant to security, integrity, auditability, and player fairness
- Ensure TITO operation meets the requirements of the *Casino Act 1997* (SA)

3. Intended audience

This standard is intended for the following audiences:

- Manufacturers and suppliers of gaming machines and equipment
- Manufacturers and suppliers of TITO systems and subsidiary equipment
- Accredited Testing facilities
- The Adelaide Casino
- The South Australian Regulator

4. Scope

The following areas are within the scope of this functional standard:

- TITO system backend servers and database
- Gaming Machines with TITO integration
- Automated Table Games with TITO integration
- Table games with TITO integration
- Cash Redemption Terminals for TITO
- Cashier Terminals relevant to TITO operation

The following areas are outside the scope of this functional standard:

- Physical installation of the TITO System
- Information Security requirements for the TITO system
- Location and placement of TITO System components
- Casino policies and procedures for physical record keeping e.g. redeemed tickets
- Casino policies and procedures for money laundering and transactions

5. Terminology

The following terminology is used in this standard:

TITO-Enabled Device	A device such as a Gaming Machine, Automated Table Game, Cash Redemption Terminal or Cashier Terminal which is configured to issue tickets or accept tickets for redemption, or do both.
TITO Peripheral	Hardware by which a TITO-Enabled Device conducts a TITO transaction.
TITO System	Collectively refers to the entire TITO system including TITO-Enabled Devices and the TITO Host backend.
TITO Host	The core backend servers and database of the TITO system.

6. TITO Ticket Requirements

The format of TITO tickets is described in the document “GTA Ticket Printer Specifications V4.20 for Implementing Ticket In/Ticket Out (TITO) Approved Poker Machines in NSW” available from the NSW Independent Liquor and Gaming Authority. Where possible TITO tickets should follow the format specified in the above document.

6.1. Tickets must include at least the following information at a minimum:

6.1.1. Tickets must be printed with a heading that uniquely identifies the ticket for TITO purposes, e.g. the words “CASH OUT TICKET”.

6.1.2. Ticket must include venue information regarding where the ticket was printed e.g. “Venue: Venue Name details”.

6.1.3. Tickets must include ID information of the TITO-Enabled Device which issued the ticket e.g. “GMID: Device ID”.

6.1.4. Tickets must include information of the software of the TITO-Enabled Device which issued the ticket.

6.1.5. Tickets must include a unique ticket identifier number in a readable format in at least 2 places on the ticket.

6.1.6. Tickets must include the unique ticket identifier number in a machine readable format, such as a Barcode.

6.1.7. Tickets must include the date and time of printing.

6.1.8. Tickets must be labelled with the value in dollars and cents, e.g. “Amount: $1,234.56” in at least 2 places on the ticket.

6.1.9. Tickets must include the cash amount of the ticket in words.

6.1.10. Tickets must include space for a responsible gambling message, either printed by the issuing TITO-Enabled Device or pre-printed on the ticket. It is acceptable to print this message on the front or rear face of the ticket.

6.2. Tickets may contain location information of the TITO-Enabled Device which issued the ticket, e.g. house/bank number.

6.3. Tickets must be designed to be durable for their expected lifespan and provide clear legibility of text when the ticket is printed.

6.4. If the ticket is vulnerable to environmental conditions, it is preferable for the ticket to include applicable storage and handling instructions, e.g. “Do not store in direct sunlight”. It is acceptable for such instructions to be pre-printed on the ticket. It is acceptable for such instructions to be on the rear face of the ticket.

6.5. Tickets must not contain any form of promotional or advertising information.
6.6. Example of a ticket:

7. General TITO Requirements

7.1. TITO Peripherals must be integrated into and be controlled by a TITO-Enabled Device, which is able to at a minimum:

7.1.1. enable or disable the activity of the TITO Peripheral at appropriate times (e.g. when credits are being accepted or paid out by the TITO-Enabled Device);

7.1.2. validate the firmware of the TITO Peripheral; and

7.1.3. manage and diagnose faults and the status of any faults in the TITO Peripheral.

7.2. The installation of a TITO Peripheral in a TITO-Enabled Device must not void the regulatory compliance of the TITO-Enabled Device into which it is installed.

7.3. Where banknote acceptors are used on an Automated Table Game or a Gaming Machine as TITO Peripherals for accepting and validating tickets, the banknote acceptor must be configured so that it cannot accept banknotes. A secure method of disabling the acceptance of banknotes must be provided to ensure that it is not possible to reset the banknote acceptor configuration so as

to allow acceptance of banknotes.

7.4. It must be possible to enable or disable TITO functionality on a TITO-Enabled Device.

7.5. TITO Systems must use an approved communication protocol to communicate with TITO-Enabled Devices.

7.6. Communication protocols used in the TITO System must implement a means of error checking.

7.7. Communication protocols used in the TITO System must implement a 2-way handshaking process between the initiating TITO-Enabled Device and the TITO Host for the redemption of tickets.

7.8. Communication protocols used in the TITO System must be robust and able to handle incomplete, misrouted, duplicated, altered in transit, or unauthorised TITO transactions.

7.9. TITO Peripherals such as Ticket Printers and Ticket Acceptors must be installed safely and securely to prevent injuries to patrons or attendants using the TITO-Enabled Devices.

7.10. TITO-Enabled Devices must automatically abort a Ticket In or Ticket Out transaction if connection to the TITO Host is detected as lost.

7.11. TITO operation across a TITO System must be transaction-based.

7.12. TITO Systems must use a database or similar managed information system for the storage of TITO data.

7.13. Each TITO transaction on the TITO System must be allocated a unique sequence number.

7.14. Each TITO transaction on the TITO System must have a time-date stamp.

7.15. TITO-Enabled Devices and the TITO System must be configured to ensure synchronicity of time-date data used to time-date stamp TITO transactions.

7.16. TITO-Enabled Devices should not allow TITO operation until they have time-date synchronised with the TITO System.

7.17. TITO-Enabled Devices may have a configurable Maximum Ticket In Limit where tickets having a cash value in excess of the Maximum Ticket In Limit are rejected.

7.18. Tickets which have a cash value in excess of the Maximum Ticket In Limit may be redeemed at TITO-Enabled Devices authorised to redeem high cash value tickets, such as Cashier terminals.

7.19. TITO-Enabled Devices may have a configurable **Maximum Ticket Out Limit** restricting the cash value of tickets that TITO-Enabled Devices can issue.

7.20. TITO-Enabled Devices may have a configurable **Minimum Ticket In Limit** where tickets having a cash value of less than the Minimum Ticket In Limit cannot be redeemed by some or all of the TITO-Enabled Devices.

7.21. TITO-Enabled Devices may have a configurable **Minimum Ticket Out Limit** which define the minimum cash value that tickets can be issued by particular TITO-Enabled Devices.

7.22. Where a TITO-Enabled Device is a distributed component of the TITO Host, e.g. Cashier Terminal, then the Minimum Ticket in and Minimum Ticket Out Limits for TITO-Enabled Devices may be configured on a TITO System level.

7.23. TITO-Enabled Devices may have a configurable **Ticket Out Authorisation Limit** where attendant authorisation is required before printing and issuing tickets that have a cash value exceeding the Ticket Out Authorisation Limit.

7.24. TITO Systems must have a configurable **Ticket Expiry** time which defines the period of time from the time of ticket issue to the time that tickets may be redeemed by the TITO System before they are considered void.

7.25. In addition to 7.24, TITO Systems may have an additional configurable **Ticket Floor Expiry time** which defines the period of time from the time of ticket issue to the time that tickets may be redeemed by a Gaming Machine or an Automated Table Game.

7.26. TITO Systems which span multiple venues must have a configurable **Ticket Scope** which defines or restricts whether tickets issued at one venue can be redeemed at another venue.

7.27. Ticket Expiry, Ticket Floor Expiry, and Ticket Scope limits must be configurable on a TITO System or a TITO Host level.

7.28. TITO-Enabled Devices which issue and/or accept tickets on the TITO System must provide accurate and accountable logging for tickets printed, accepted and rejected.

7.29. EGM-based TITO-Enabled Devices must comply with the applicable technical requirements defined under the current Australian New Zealand Gaming Machine National Standards and other applicable technical standards.

7.30. EGM-based TITO-Enabled Devices must comply with the applicable technical requirements of the communication protocol used for TITO operation.

7.31. EGM-based TITO Systems must comply with the applicable technical requirements for Ticket In / Ticket Out as listed in the South Australian Appendix to the Australian/New Zealand Gaming Machine National Standard.

7.32. TITO-Enabled Devices must be able to recover when printing of a ticket fails or is interrupted by a fault.

8. Ticket-In Process

8.1. Credits must only be registered for valid tickets.

8.2. Tickets may only be accepted when the TITO-Enabled Device is in an active state and able to receive and credit tickets.

8.3. If the TITO-Enabled Device is active then a ticket may be inserted at any time in accordance with the applicable requirements for insertion in the Australian New Zealand Gaming Machine National Standards.

8.4. TITO-Enabled Devices may automatically reject inserted tickets when it can detect that the connection to the TITO Host is down.

8.5. The TITO System must verify the Unique Ticket Identifier printed on the ticket, and if valid, request and wait for authorisation from the TITO Host for the ticket.

8.6. A TITO-Enabled Device must only redeem valid tickets that have been authenticated by the TITO Host.

8.7. If a TITO-Enabled Device is not able to receive and process tickets, the inserted ticket must be ejected back to the player.

8.8. If an inserted ticket is detected as invalid by a TITO-Enabled Device then the ticket must be ejected back to the player.

8.9. A TITO-Enabled Device must not accept another ticket until the current ticket in transaction has been completed i.e. either approved or rejected.

8.10. A TITO-Enabled Device must be able to notify the TITO System if an error occurs during the ticket-in validation process e.g. a timeout, ticket jam, or other fault.

8.11 Where possible, TITO-Enabled Devices must have ability to hold a ticket in escrow if the TITO Host requests additional time to authenticate the ticket. TITO-Enabled Devices that are not able to hold a ticket in escrow may eject the inserted ticket back to the player if requested to hold the ticket in escrow.

8.12. If the ticket is approved by the TITO Host, the TITO-Enabled Device must retain the ticket and add the cash amount of the inserted ticket to the credit meter (or equivalent) of the TITO-Enabled Device, and notify the TITO System of the applicable ticket in meter and status updates.

8.13. TITO-Enabled Devices must provide visual or audio feedback to players that the ticket has been accepted and redeemed.

8.14. A Ticket In transaction is considered complete when the TITO Host has authorised the Ticket In request from the TITO-Enabled Device, TITO meters are successfully transmitted to the TITO Host, and ticket stacking by the TITO-Enabled Device is complete.

8.15. The TITO-Enabled Device must have a method to display a clear and legible message with the reason for a rejected ticket for a reasonable period of time.

8.16. The TITO System must support the following rejected reasons as a minimum:

8.16.1. Ticket System Unavailable

8.16.2. Ticket Expired/Too Old

8.16.3. Ticket Amount Too Large

8.16.4. Ticket-Invalid

8.16.5. Ticket Not Found

8.16.6. Ticket Already Redeemed

8.16.7. Other Reason – See Operator

8.17. If the TITO-Enabled Device is not able to read the Unique Ticket Identifier on the ticket prior to being interrupted, the TITO-Enabled Device must simply eject the ticket back to the patron.

8.18. The TITO System must ensure that tickets can only be redeemed once.

8.19. TITO- Enabled Devices that can accept and redeem tickets must maintain a log of the last 35 accepted or rejected tickets. The log must include the following details for each record as a minimum: Time and Date, Amount, Unique Ticket Identifier and whether the ticket was accepted or rejected.

9. Ticket-Out Process

9.1. The functionality of Ticket-Out is equivalent to a player pressing collect and collecting credits from a gaming machine. The TITO-Enabled Device will send the system a Unique Ticket Identifier and ticket information which the TITO System will retain and use in the future for ticket redemption.

9.2. Tickets issued by TITO-Enabled Devices must have a Unique Ticket Identifier which is used by the TITO system to uniquely identify tickets.

9.3. The TITO Host must be able to cater for the scenario when multiple TITO-Enabled Devices create identical Unique Ticket Identifiers.

9.4. A ticket can be redeemed for cash or inserted into a TITO-Enabled Device with ticket acceptance, in order to transfer the cash value of the ticket to the credit meter (or equivalent) of the TITO-Enabled Device.

9.5. A ticket is printed by the TITO-Enabled Device when a player presses collect or similar on the TITO-Enabled Device subject to any TITO limits for printed tickets.

9.6. A TITO-Enabled Device must not print a ticket with a cash value that exceeds the configured Maximum Ticket Out Limit, if such a limit is supported.

9.7. A TITO-Enabled Device must wait for attendant authorisation before printing a ticket with a cash value that exceeds the configured Ticket Out Authorisation Limit, if this limit is supported.

9.8. TITO-Enabled Devices must provide feedback or messages to players while a ticket is being printed and issued, e.g. “Printing ticket...please wait” during printing and “Please collect your ticket” when printing is complete.

9.9. A Ticket Out transaction is considered complete when the ticket has been printed and ticket meters and ticket information are successfully transmitted to the TITO System.

9.10. A ticket must only be printed out when the TITO-Enabled Device is actively connected to the TITO System.

9.11. TITO-Enabled Devices must be able to notify the TITO System of faults if they occur and interrupt the ticket out process.

9.12. TITO-Enabled Devices must be able to resume and recover upon any interruption during the ticket out process.

9.13. The TITO System must be able to cater for the potential of orphaned tickets after any interruption, where the ticket has been printed with a Unique Ticket Identifier but does not exist in the TITO database.

9.14. TITO-Enabled Devices that are able to issue tickets must maintain a log of the last 35 issued tickets. The log must include the following details for each record as a minimum: Time & Date, Amount, and Unique Ticket Identifier.

9.15. The TITO system must be able to cater for the scenario of partially printed tickets where a fault has occurred during printing but the complete Unique Ticket Identifier is not clearly visible on the ticket.

10. Cash Redemption Terminals

10.1. Cash Redemption Terminals may issue tickets, redeem tickets, or do both.

10.2. Cash Redemption Terminals may accept banknotes for the purpose of issuing tickets.

10.3. Cash Redemption Terminals must communicate in a secure and approved manner with the TITO System using an approved protocol.

10.4. Cash Redemption Terminals must have sufficient security provisions relative to the amount of cash stored in the terminal.

10.5. Cash Redemption Terminals may have configurable limits for ticket in and ticket out relevant to TITO-Enabled Devices as defined in this document.

10.6. In situations where a Cash Redemption Terminal has insufficient funds to completely pay out a ticket, the Cash Redemption Terminal may issue a ticket equivalent to the remaining cash value, which may be redeemed at a cashier desk.

10.7. Cash Redemption Terminals must have the facility to display device software and firmware version for the purpose of software verification.

10.8. Cash Redemption Terminals must facilitate or allow software signatures to be generated for critical software for the purpose of software verification.

10.9. Cash Redemption Terminals that are able to issue tickets must maintain a log of the last 35 issued tickets. The log must include the following details for each record as a minimum: Time & Date, Amount, and Unique Ticket Identifier.

10.10. Cash Redemption Terminals that can accept and redeem tickets must maintain a log of the last 35 accepted or rejected tickets. The log must include the following details for each record as a minimum: Time & Date, Amount, Unique Ticket Identifier and whether the ticket was accepted or rejected.

11. Cashier Terminals

11.1. The TITO System may provide Cashier Terminals as an interface to the TITO Host to allow authorised staff to perform TITO operations.

11.2. Cashier Terminals may issue tickets, redeem tickets, or do both.

11.3. Cashier Terminals must communicate in a secure and approved manner with the TITO Host using an approved protocol.

11.4. Access to the TITO functions provided by Cashier Terminals must be restricted with account and password control.

11.5. Access to the TITO functions provided by Cashier Terminals may be further restricted and enabled according to staff tiers and privilege levels.

11.6. Cashier Terminals may have configurable limits for ticket in and ticket out relevant to TITO-Enabled Devices as defined in this document. TITO Limits for Cashier Terminals may be implemented on a system level across all Cashier Terminals.

11.7. The TITO System must be able to record all Ticket-Out transactions performed on each Cashier Terminal. The record must include every new entry that has been printed and include the following details as a minimum: Time & Date, Amount, and Unique Ticket Identifier, Staff Member Identifier.

11.8. The TITO System must be able to record all Ticket-In transactions performed on each Cashier Terminal. The record must include every new entry that has been verified by the ticket-in system and include the following details as a minimum: Time & Date, Amount, Unique Ticket Identifier, and Staff Member Identifier.

12. TITO Host System Requirements

12.1. The TITO Host System must be of a robust design, able to withstand failures without loss of data.

12.2. There must be some form of redundancy to allow gaming to continue in the event of a TITO Host System failure.

12.3. The TITO Host System database that holds the TITO Data of the TITO system must be secure, fault tolerant and have redundant data storage.

12.4. The TITO Host System must have built in redundancy for critical components.

12.5. The TITO Host System must be able to recover back to an operational state without loss of TITO data following an interruption or outage.

12.6. The TITO Host System must provide accountable, transparent and auditable recording and reporting of transactions to enable the accurate calculation and reporting of gaming revenue, player payments, taxation and any other TITO related financial information required for a venue to comply with its regulatory obligations.

12.7. The TITO Host System must provide reporting and record keeping for liability for unclaimed and expired tickets.

12.8. The TITO Host System must have the ability to record and report on all TITO transactions and TITO activity on the system, including, but not limited to issued tickets, redeemed tickets, and expired tickets.

12.9. The TITO Host System must have the required capacity to be able to store all TITO data for period of time necessary in accordance with relevant legislation.

12.10. The TITO Host System must provide secure access to and storage of TITO data to prevent and unauthorised manipulation of TITO data.

12.11. The TITO Host System must be able to correctly handle the situation when duplicate ticket Unique Ticket Identifiers are created by 2 different TITO-Enabled Devices.

12.12. Where applicable, caching of Unique Ticket Identifier across components of the TITO System components must be robust and designed to propagate to the TITO Host without risks of errors, intercept, or tampering.

12.13. The TITO Host System must be under version control.

12.14. The TITO Host System must be under regulatory approval control in line with applicable legislation.

12.15. TITO Host software must be auditable by allowing software signatures to be calculated for controlled files.