



STANDARD SERIES

GLI-28:

Player User Interface Systems

Version 1.0

February 14, 2011



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ABOUT THIS STANDARD

This Standard has been produced by **Gaming Laboratories International, LLC** for the purpose of providing independent certifications to suppliers under this Standard and complies with the requirements set forth herein.

A supplier should submit equipment with a request that it be certified in accordance with this Standard. Upon certification, Gaming Laboratories International, LLC will provide a certificate of compliance evidencing the certification to this Standard.

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CHAPTER 1

1.0 MINIMUM TECHNICAL STANDARDS FOR PLAYER USER INTERFACE (PUI) SYSTEMS

1.1 Introduction

1.1.1 General Statement. Gaming Laboratories International, LLC (GLI) has been testing gaming equipment since 1989. Over the years, we have developed numerous standards for jurisdictions all over the world. In recent years, many jurisdictions have opted to ask for technical standards without creating their own standards. In addition, with technology changing frequently, new technology is not being incorporated quickly enough into existing standards due to the long process of administrative rulemaking. This document, *GLI Standard 28*, will set forth the Technical Standards for Player User Interface Systems.

1.2 Definitions

1.2.1 *Content* - All Images, graphics, text, applications and messages displayed on the Game Monitor to the player.

1.2.2 *Content Service* - A “content service” is defined as the process that serves the content.

1.2.3 *Game Monitor* – The approved video monitor or monitor(s) that were originally submitted with a gaming device prototype certification including approved modifications. A gaming device may have more than one Game Monitor.

1.2.4 Game Window - Separate from the system window, it displays the underlying base game content controlled by the gaming device and transmitted by the gaming device's main processor board and displayed on one or more game monitors on the gaming device. A System Window may share the same display devices as the Game Window.

1.2.5 System Window – Separate from the game window, it displays the underlying content which is controlled and sent from an outside system and/or associated components that is displayed in one or more display areas on the gaming device. System Window(s) may share the same display devices as the Game Window.

1.2.6 Player User Interface (PUI) Systems – All hardware and software associated with serving content to the System Window.

1.2.7 Resized Window – A game window that is reduced in size such that the system window does not obstruct any of the game window.

1.2.8 Overlay Window – A system window that is designed to obstruct some or all, of the game window when present.

CHAPTER 2

2.0 SUBMISSION REQUIREMENTS

2.1 System Supplier Submission to the Lab

2.1.1 General Statement. The following items are required to accompany a PUI System submission:

1. A request letter that includes the requested jurisdictions;
2. The PUI System that operates the System Window functions shall be submitted along with all supporting operators' manuals and technical specifications. If the PUI System is comprised of components from various manufacturers, then each manufacturer shall submit their own component which may be done independently;
3. The supporting documents must include all possible functional options, system capabilities, communication protocols used, and display recall information;
4. Video mixing hardware and software with the exception of equipment that was previously submitted and approved under this standard;
5. Source code for any re-mapping of the Game Window display program or component;
6. Software verification procedures and tools, if other than an industry standard tool; and
7. The PUI System supplier shall supply the needed tools to validate the requirements of this standard, if required.

CHAPTER 3

3.0 DISPLAY REQUIREMENTS

3.1 System Window Requirements

3.1.1 System Window Initiation – Player A System Window on the gaming device may be displayed, initiated or retracted at the request of the player at any time. In the case of resized and overlay windows, the system window must provide the ability for the player or an attendant to retract the window; for example, during the diagnoses of a tilt condition. Player initiated system window requests include, but are not limited to, a button press, player card insertion, pressing of an on-screen icon or any other method of identifying a player has initiated activity at the gaming device.

3.1.2 System Window Initiation – System In instances where the game window is being resized, the System Window on the gaming device may be displayed, initiated or retracted by the system at any time. In instances where the system window is being used as an overlay of the game window, the system window may be displayed, initiated or retracted at any time provided the system preemptively notifies the player discreetly moments before launching the system window and provides the player an opportunity to decline the launching of the system window. This does not preclude the ability for the System Window and Game Window to communicate internally or for the System Window to overwrite some portion of the Game Window to allow functions that require more screen space (i.e. virtual keyboards), as intended by game design. In such a case it should be clear that the System Window is an overlay of the Game Window and on player or attendant request the System Window closes. Any such overlay shall also include a time-out that reverts control back to the Game Window after a period of no System Window activity.

3.2 Systems Window Functions

3.2.1 Any resizing or overlay of the Game Window display must be mapped accurately to reflect the revised display and touch screen.

3.2.2 The PUI System shall not alter the content, play, color or functionality of the Game Window unless specifically submitted, reviewed and approved on a per game program basis. This clause does not preclude the System Window capabilities described in 3.1.2.

3.2.3 The PUI System shall be able to monitor and recall whether a system window was open at a specific time interval. Please note, This is not to indicate that the recall must display the entire sequence of information exactly as that seen by the player

CHAPTER 4

4.0 SECURITY REQUIREMENTS FOR PLAYER USER INTERFACE SYSTEMS USED IN NON-MARKETING APPLICATIONS

4.1 Hardware and Protocol Requirements

General Note: This section will only be applied in cases where the PUI system is intended to be used with advanced content including; but not limited to, secondary wagering games.

4.1.1 Where parts of the PUI System are placed on or inside the gaming device the hardware requirements found in GLI-11 shall apply, where applicable. These components shall be considered a critical component that must reside in a secure area. The control program of these components located inside of the gaming device cabinet must provide for the ability to perform internal integrity checks utilizing checksums, CRCs or the equivalent.

4.1.2 A PUI System which has a hardware component located inside the gaming device cabinet shall be able to detect the following error conditions, and for unrecoverable errors it shall either electrically remove itself from all circuits it is intercepting and restore base game display and touchscreen functionality; or cause the gaming device to lock up, illuminate the tower light or sound an audible alarm, and require attendant intervention:

- i. Software failure of the internal PUI System component;
- ii. Unintended disruption of Game Window video or touchscreen from the internal PUI System component;
- iii. Changes in the firmware (software) version of the approved connected peripheral components;
and
- iv. Any other critical hardware or software malfunction.