



Gaming System Report

Report issued to	Sean O’Hagan, Chief Executive Officer Tap50:50 Event Consultants Ltd. 808 King Street Saskatoon, Saskatchewan S7K0N7 CANADA
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Gaming System Manufacturer Contact Details	Tap50:50 Event Consultants Ltd. 808 King Street Saskatoon, Saskatchewan S7K0N7 CANADA
Gaming System Details	Tap50:50 Raffle Manager with Associated Components
eclipse Compliance Testing Report Reference Information	Review and analysis of the <i>Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119 and Counterfoil Printer v1.3.1</i> , developed by Tap50:50 Event Consultants Ltd.
Report Number	NA_TAP50E_4649-01_PA

1. INTRODUCTION

eclipse Compliance Testing has conducted a review and examination of the *Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119 and Counterfoil Printer v1.3.1*, developed by Tap50:50 Event Consultants Ltd. Our evaluation of the *Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119 and Counterfoil Printer v1.3.1*, was conducted for compliance with the following industry standards and jurisdictional requirements:

- AGLC Technical Gaming Standards for Electronic Raffle Systems, document titled **Electronic Raffle Standards Document (ERSD) Version1.0**, revised on July, 2018.

2. OVERVIEW OF TESTSCOPE

2.1 System Components

The following components of the submitted system and software, that aid in the sale of raffle tickets, have been reviewed against the aforementioned technical standards:

Software Component	Location	Version
<i>Electronic Raffle Manager</i>	Remote Server	2.00
<i>Raffle Sales Unit (RSU)</i>	Local	2.051119
<i>Tap5050SaaS (Counterfoil Print Manager)</i>	Local	1.3.1

The *Tap50:50 Electronic Raffle Management System* is stored on a remote database server and served to users using a public facing web server, utilizing commercially available server hardware and networking equipment. The current architecture has a backup web server and a backup database server as well as RAID storage for the live database, the backup database, and the live Apache reverse proxy server. In addition, the main raffle data is stored on a RAID 10 Network Storage Device, to which the web server does not have direct access. All servers utilize Oracle's Red Hat Linux v6 operating system. All production servers utilize RAID 10 with hot swappable drives and feature redundant power supplies.

The Tap 50:50 servers are locked in their own rack and are housed at an Internet Data Center (IDC), which incorporates the following features to minimize disruption of service:

- Temperature controlled server room
- Independent backup generator power
- Fire retardant protection systems
- Two separate internet backbones

Please note: The Tap 50:50 server hardware was not reviewed in the current lab environment, as the servers are installed within a secure Internet Data Center (IDC), and thus, were not provided for review.

Logical access controls are implemented to provide a secure networking environment. The *Tap 50:50 Raffle System* utilizes a firewall, which only allows secure SSL connections, and enforces SSL protocol to provide end-to-end confidentiality. The operating system on the TAP 50:50 servers incorporates disk encryption as a standard option.

2.2 System Software Information

The *Tap 50:50 Raffle Manager* software is housed on the hard disk drives of the Tap 50:50 servers. The *RSU* software is housed on the *RSU*, and data is stored on the Tap 50:50 servers. The files pertaining to system operation, integrity, and outcome determination have been listed below:

Software Component	Version	Software Signatures
<i>Electronic Raffle Manager</i>	2.00	*ADD19FA3697FE673CF9F6C01715181F7
<i>Raffle Sales Unit (RSU)</i>	2.051119	**599A32E51D126679
<i>Tap5050SaaS.exe (Counterfoil Print Manager)</i>	1.3.1	†5AA1CCE761AA014A21043894D60097D8B1A34A35
<i>Application Checksum Management</i>	1.2	*B8138B3C15C507A2804A36B539956738

* MD5 signature included above has been obtained using the *Tap 50:50 Application Checksum Management Program*.

** MD5 signature was obtained on the *RSU* using a built-in Hashing Program, which displays the first 16 digits of the checksum value.

† SHA1 signature included above has been obtained using a built-in Hashing Program.

To obtain the signature for the *Electronic Raffle Manager*, the following should be performed:

- Access the Tap 50:50 hashing program login page by opening a web browser and entering the URL for the hashing program (The URL for the hashing program can be obtained by contacting Tap50:50 Event Consultants Ltd);
- Gain access to the hashing program by using credentials obtained from the manufacturer, Tap50:50 Event Consultants Ltd;
- After gaining access to the hashing program, select “*Electronic Raffle Manager*” from the available drop down box options;
- After the “*Electronic Raffle Manager*”, from the available drop down box options, has been selected, the signature for the *Electronic Raffle Manager* will be displayed under “Current APP Checksum”.

Please Note: TAP 50:50 is willing to provide login information to regulators with their own login information for this HASHing application which they would be able to use at any time.

The Tap 50:50 hashing program calculates a MD5 checksum value of the *Electronic Raffle Manager* housed on the hard disk drives of the Tap 50:50 servers. This value is a unique “signature” for the software examined. Should any of the files which comprise the *Electronic Raffle Manager* be altered in any way, the MD5 checksum values displayed within the hashing program will change.

To obtain the signature for the *Raffle Sales Unit (RSU)*, the following should be performed:

- Log into the *Raffle Sales Unit* using a Login ID and Password supplied by the manufacturer, Tap 50:50 Event Consultants Ltd;
- Upon successful login on the “Welcome Operator to Tap5050” screen of the *RSU*, navigate to the “Menu Options” by pressing the green “ENTER” button on the *RSU*;

- While the “Menu Options” screen is displayed, select the “Admin” option by pressing the number four (4) button from the available drop down box options;
- On the “ADMIN” screen, select the “Inspect Terminal” option by pressing the number six (6) button on the *RSU* keypad;
- Enter the “Admin Password” of the *RSU* provided by the manufacturer, Tap50:50 and press the “ENTER” button on the *RSU*, at which point the “Verify Software” options will be displayed;
- Press the “Verify Software” option by pressing the number one (1) button on the *RSU* keypad to display calculated hashed checksum of the software currently installed on the *RSU*.

To obtain the signature for the *Counterfoil Printer* software, the following should be performed:

- Log into the Local Client Computer on the local network using a Login ID and Password supplied by the manufacturer, Tap 50:50 Event Consultants Ltd;
- Navigate to the file named Tap5050SaaS.exe, and double click on the file to execute;
- The “Tap5050SaaS [About]” window will appear with the current version of counterfoil printer software, the site, Schema, and the SHA1 hashed checksum value of the printer software.

2.3 Hashing Software Verification Information

eclipse Compliance Testing has verified that the *Tap 50:50 Raffle Application Hashing Program* operates as intended, and the information obtained through this procedure has not been compromised.

To ensure that the version of the *Tap 50:50 Application Hashing Program* is identical to the one used during our testing, a signature of the **Hash** program should be obtained and verified using the **FileCheck** program. The **FileCheck** results of the critical files that comprise the *Tap 50:50 Raffle System Hash* program is as follows:

File Name	Size (bytes)	CRC-32 Checksum
TS_CHANGE_PREF.txt	3,396	AA75E53A
TS_CHANGE_PREF_UTIL.plb	20,658	B339949B
TS_CHANGE_PREF_UTIL.sql	7,226	1FFB3B2A
TS_CHANGE_STORE.txt	3,582	3B63CE3C
TS_CHANGE_UTIL.plb	31,708	CEE5CAB4
TS_CHANGE_UTIL.sql	7,252	ABED646C

2.4 Random Number Generator Details

eclipse Compliance Testing has evaluated the *Tap 50:50* Random Number Generator (RNG) using industry-accepted statistical analyses. We have found that the RNG being utilized with the *Tap50:50 Raffle System* satisfies industry-accepted standards for each of the following statistical tests for randomness: Chi-Squared, Runs Test, and Serial Correlation. Reports on our evaluation of the RNG have been provided to Tap50:50 Event Consultants Ltd. under separate cover (report number NA_TAP50E_4166-01_RN).

3. SYSTEM OPERATION

The *Tap 50:50 Raffle Sales Unit (RSU)* is used to facilitate the sale of raffle tickets through a secure wireless internet connection, which contains the means for accessing the *Tap 50:50 Electronic Raffle Manager*. Persons wishing to purchase raffle tickets must purchase tickets from a cashier operating the *RSU*. Patrons must specify the quantity of raffle tickets to be purchased with the cashier. Upon completing the purchase of raffle tickets, the *RSU* will print a bearer ticket, which contains the raffle ticket draw numbers that were purchased, and other required sales and tracking information.

Additionally, an associated standalone counterfoil printer prints a separate counterfoil ticket for each of the raffle draw numbers purchased, which includes an associated unique "Prnt#". All printer counterfoil tickets have the same shape, size dimensions, and weight. The unique "Prnt#" is used to validate a winning draw number when Counterfoil tickets are used. Counterfoils are utilized for manual draw raffles that do not use the *Tap 50:50 RNG* for determining winning raffle tickets.

The *Tap 50:50 Electronic Raffle Manager* is capable of generating various accounting and system reports which include:

- **Production Reports**
 - Sales by Terminal – Displays sales information for specific terminals and raffles.
 - Sales by Volunteer Report – Displays ticket sales for a specific raffle per volunteer.
 - Sales by Ticket Series – Displays Net Sales and Ticket Bundle sales per ticket series.
- Void Overview Report – Displays the voids that were made for all raffles per charity.
- Volunteer Safety Report – Graphically displays how close a volunteer is to reaching the maximum set dollar value before their terminal must be reset by a system administrator and money is collected.
- Daily Sales Report (Multi-Day Raffles) – Displays a graph and chart of sales per day over a date/time range for a selected raffle.

3.1 Outcome Determination

Winning raffle tickets are determined randomly by the charitable organization, by utilizing a random function on the *Tap 50:50 Raffle Management System*, or by printing counterfoil raffle tickets for a manual draw method. The ticket selection process includes selecting a raffle ticket for each available prize(s), from all raffle tickets purchased from the applicable charity. Patrons can look up the outcome of the raffle via the charity's website. Any winning ticket holders will be awarded their prize upon ticket validation.

4. NOTEWORTHY ITEMS FOR CONSIDERATION

The following items of note have been listed below for consideration by the regulatory body. These items of note were discovered during the review and analysis undertaken by **eclipse Compliance Testing** to determine compliance with the aforementioned technical standards:

- Section 3.2.8 Counterfoils, of the document titled **Electronic Raffle Standards Document (ERSD) Version 1.0**, revised in July 2018 states: *“The ERS must generate a unique counterfoil for each ticket number. A counterfoil must be printed or entered electronically according to the type of draw to be conducted. Printed counterfoils must be the same size, shape, and weight. All counterfoils must have an equal chance of being selected. Counterfoils must include the following information, at a minimum:*
 - a) *the name, address, and telephone number of the ticket purchaser provided during the online purchase;*
 - b) *license number;*
 - c) *ticket number;*
 - d) *issued date and time in 24 hour format showing hours and minutes; and*
 - e) *an optional barcode.”*

The system reviewed at the time of testing did not include the name, address, or telephone number of the ticket purchaser provided during the online purchase.

However, the system does include a unique reference number which can be traced back to this information and a unique print confirmation number in order to prevent counterfeiting of counterfoils. Tap 50:50 believes that increasing the recognizability of individual counterfoils in this manner is potentially compromising to the integrity of a manual draw raffle as recognition of a counterfoil creates more opportunities for dishonest printing practices by a print manager, as the information is in digital form, which could be easily replicated outside the system.

This should be taken under consideration by the AGLC to determine compliance with the aforementioned technical standards.

- Section 3.5.3 Multiple Prize Draws, of the document titled **Electronic Raffle Standards Document (ERSD) Version1.0**, revised in July 2018 states: *“An ERS conducting an electronic draw with ticket numbers eligible for multiple prizes must be capable of re-entering the previously drawn ticket numbers for non-identical prizes. The ERS may be configured to remove a ticket number from selection once it is drawn if the subsequent draw(s) are for an identical prize. All eligible tickets must be available for selection for the grand prize.”*

The system reviewed at the time of testing was not capable of re-entering the previously drawn ticket numbers for non-identical prizes, for an electronic draw with ticket numbers eligible for multiple prizes.

For RNG draws, by default all prior draws are entered into the grand prize draw, but are excluded from all other draws. However, the TAP 50:50 system does allow an administrator to add a draw to the system one at a time, and therefore allows each participant to be included in each draw if desired.

Tap 50:50 is registering to provide raffle services for raffles that will be using a manual draw process, all tickets will be eligible for all prizes if desired. This should be taken under consideration by the AGLC to determine compliance with the aforementioned technical standards.

- Section 4.7.6 Counterfoils, of the document titled **Electronic Raffle Standards Document (ERSD) Version1.0**, revised on July, 2018 states: *“The ERS must generate a unique counterfoil for each ticket number. A counterfoil must be printed or entered electronically according to the type of draw to be conducted. Printed counterfoils must be the same size, shape, and weight. All counterfoils must have an equal chance of being selected. Counterfoils must include the following information, at a minimum:*
 - a) event location;*
 - b) license number;*
 - c) issued date and time (in 24 hour format showing hours and minutes);*
 - d) value or cost of the bearer ticket; and*
 - e) Unique ticket number and optional barcode.”*

The system reviewed at the time of testing did not include all of the required information on a printed counterfoil ticket. However, all of the required information is stored for each printed counterfoil ticket, and available on the system. This should be taken under consideration by the AGLC to determine compliance with the aforementioned technical standards.

- Section 5.1.8 Virus Protection, of the document titled **Electronic Raffle Standards Document (ERSD) Version1.0**, revised on July, 2018 states: *“The ERS must have virus protection software”*.

The system reviewed at the time of testing did not include virus protection software. The manufacturer Tap50:50 Event Consultants Ltd., has indicated that virus scanners and/or detection programs will not be used due to the current system architecture and security technologies currently in place. It is their position that virus protection software on Linux servers introduces potential performance issues, and are unnecessary unless those servers are being used to check emails, visit websites from untrusted sources, or transferring and storing questionable files. The manufacturer, Tap50:50 Event Consultants Ltd., has stated that these type of activities are not being done on the system. This should be taken under consideration by the AGLC to determine compliance with the aforementioned technical standards.

5. FINDINGS AND CONCLUSION

Based upon our review of the *Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119, Counterfoil Printer v1.3.1* software and the associated source code, we have determined that the game outcome is based upon revealing the contents of raffle tickets.

Therefore, **eclipse Compliance Testing** has established the following findings of fact:

1. Raffle tickets are purchased by patrons through an *RSU*, which communicates to the online charity raffle system.
2. The *Tap50:50 Electronic Raffle Manager* with *RSU* operates as described by the manufacturer, Tap50:50 Event Consultants Ltd.
3. System functionality has been found to be fair to the patron inasmuch that there were no “Reflexive Software” algorithms discovered during our source code review, and each patron has an equal opportunity of winning a prize.
4. The remote server system which houses the *Tap50:50 Raffle Management System* maintains all data generated via the *RSU*. Several accounting and system reports can be generated via the *Tap50:50 Raffle Manager*, which is included within this evaluation.
5. Mechanisms for verifying the *Tap50:50 Raffle Management System, RSU* software, and *Counterfoil Printer* software exist. **eclipse Compliance Testing** has utilized the Tap 50:50 Hashing program, to obtain the software signatures listed within section 2.2 System Software Information for the *Raffle Manager* component. **eclipse Compliance Testing** has verified that the MD5 function, included within the Tap 50:50 hashing program, operates as described by the manufacturer, Tap50:50 Event Consultants Ltd. **eclipse Compliance Testing** has verified the MD5 software signature obtained for the *RSU* via a built-in Hashing Program, which displays the first 16 digits of the MD5 checksum value. **eclipse Compliance Testing** has also verified the SHA1 software signature obtained for the *Counterfoil Printer* via a built-in Hashing Program, which hashes and displays the SHA1 checksum value.

Based upon our review and examination, we have determined that, with note to the item listed in section 4. NOTEWORTHY ITEMS FOR CONSIDERATION, which should be taken under consideration by the regulatory body for determination of compliance, **eclipse Compliance**

Testing certifies that the *Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119* and *Counterfoil Printer v1.3.1* software, submitted by Tap50:50 Event Consultants Ltd. is compliant with the previously listed technical standards.

6. TERMS AND CONDITIONS

It should be noted that all findings and conclusions of fact have been derived from actual game play, visual observations, and the review of the submitted source code. **eclipse Compliance Testing** has performed extensive research and analysis to determine the findings previously mentioned. However, we realize that not all information may have been disclosed or provided for our review. If any parties dispute our findings, or may present evidence or information contrary to our findings, we would welcome the addition of this information for our consideration. In such an instance, we reserve the right to amend or revise this document.

This document is NOT an approval letter, nor an expression of any opinion as to whether tested products should be approved. Approval of the *Tap50:50 Electronic Raffle Manager v2.00 with Raffle Sales Unit (RSU) v2.051119* and *Counterfoil Printer v1.3.1* software can only be granted by the regulatory body, who may rely upon our findings in their determination.

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Should you have any questions, or require any additional information, please feel free to contact our office at (440) 914-TEST (8378).

Sincerely,



Nick Farley
President

AP
NF/sc/jw