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COMPLIANCE TESTING

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NFA

Gaming System Report

Report issued to	Sean O'Hagan, Chief Executive Officer Tap50:50 Event Consultants Ltd. 808 King Street Saskatoon, Saskatchewan S7K0N7 CANADA
Date of issue	January 14, 2016
Gaming System Manufacturer Contact Details	Tap50:50 Event Consultants Ltd. 808 King Street Saskatoon, Saskatchewan S7K0N7 CANADA
Gaming System Details	Tap50:50 Raffle System E-Commerce App
Eclipse Compliance Testing Report Reference Information	Review and analysis of the *Tap50:50 Raffle System E-Commerce Application*, developed by Tap50:50 Event Consultants Ltd.
Report Number	NA_TAP50E_2789-02_PA

1. INTRODUCTION

ECLIPSE Compliance Testing has conducted a review and examination of the *Tap50:50 Raffle System E-Commerce Application,* developed by Tap50:50 Event Consultants Ltd. Our evaluation of the *E-Commerce Application* was conducted for compliance with industry standards and jurisdictional requirements. This document outlines our findings and conclusions of the compliance with the document titled **On-Line Raffle Ticket Sales** regarding technical gaming integrity requirements in Saskatchewan, issued by the Saskatchewan Liquor and Gaming Authority (SLGA).

2. OVERVIEW OF TESTSCOPE

2.1 System Components

The following components of the submitted software, that aid in the sale of raffle ticket(s) through the Internet. The *Tap 50:50 Raffle System E-Commerce Application* has been reviewed against the aforementioned technical standards:

Software Component	Location	Version
E-Commerce Application	Remote Server	1.0

Integrity, Impartiality & Independence

The *Tap 50:50 Raffle System E-Commerce Application* 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, was not provided for review. The server environment, as reported, met SLGA's Online Raffle Ticket Sales requirements.

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 incorporate disk encryption as a standard option.

The *Tap 50:50 Raffle System E-Commerce Application* utilizes Stripe, a third party payment processing service, to provide secure and efficient payment processing. Stripe, a payment processing service, manages all payment transactions for the *E-Commerce Application*. Tap 50:50 does not retain any credit card information, and uses a token system for re-purchases.

All player locations are verified and validated using the Maxmind.com third-party service when using the *Tap 50:50 Raffle System E-Commerce Application.* Maxmind.com provides location information for the ecommerce system, and if unavailable, a redundant backup geo-location service is used. Geonames (http://geonames.org) provides a browser based geo-location service that utilizes the users IP address and nearby router information to provide the location of the user.

2.2 System Software Information

The *Tap 50:50 Raffle System E-Commerce Application* software is housed on the hard disk drives of the Tap 50:50 servers. The files pertaining to system operation, integrity, and outcome determination have been listed below.

Software Component	Version	*MD5 Signature
E-Commerce Application	1.0	ACC633264F291C8D53E7C9FB06A53CD2

*The signature included above has been obtained using the *Tap 50:50 Application Hashing Program.* To obtain the signature for the *E-Commerce Application*, 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 "eCommerce App" from the available drop down box options;

- After the "eCommerce App", from the available drop down box options, has been selected, the signature for the *E-Commerce Application* will be displayed under "Current APP Checksum";

- TAP 5050 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 *E-Commerce Application* 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 *E-Commerce Application* be altered in any way, the MD5 checksum values displayed within the hashing program will change.

2.3 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 E-Commerce Application* 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 numbers NA-TAP50E-2783-RN and NA-TAP50E-2788-RN).

3. SYSTEM OPERATION

The *Tap 50:50 Raffle System E-Commerce Application* is used to facilitate the sale of raffle tickets through the Internet via charitable websites, which contain a means for accessing the *Tap 50:50 E-Commerce Application*. Persons wishing to purchase raffle tickets must first select the raffle ticket charity, and must specify the quantity of raffle tickets to be purchased. Upon completing the selection of raffle tickets, the patron must accept the raffle terms and conditions before the purchase can be completed.

Upon accepting the raffle's terms and conditions, a first-time user is required to register and activate a user account by validating their email address through a secure validation process. After account validation has been established the patron will provide their payment method to complete the raffle ticket purchase.

The *E-Commerce Application* will then display a confirmation page, which offers the patron the opportunity to review and confirm their raffle ticket purchase order. Raffle tickets that are purchased will be emailed to the patron's registered email address. In addition, at the time of ticket selection, the patron has the option to also have their raffle tickets mailed to their registered address for an additional charge.

After completing the raffle ticket confirmation, the *E-Commerce Application* displays a message to the patron indicating that the raffle ticket purchase has been completed, and will display a summary of the total quantity and price of raffle tickets purchased. Following the purchase summary, a listing of all raffle tickets purchased, including bundle reference numbers and serial numbers for the tickets will be displayed to the patron.

3.1 Outcome Determination

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

Please note that a report on the review and analysis of the *Tap 50:50 Raffle Management System* will be issued under a separate cover.

4. EXCEPTIONS AND NOTEWORTHY ITEMS FOR CONSIDERATION

The following item of note has been listed below for consideration by the Saskatchewan Liquor and Gaming Authority. This item of note was discovered during the review and analysis undertaken by ᴇᴄʟɪᴘꜱᴇ Compliance Testing to determine compliance with the aforementioned technical standards:

- Section 4.04 Network Security Management, Section 4 (e) of the document titled On-Line Raffle Ticket Sales, "Virus scanners and/or detection programs should be installed on all pertinent information systems. These programs should be updated regularly to scan for new strains of viruses".

The system reviewed at the time of testing did not include Virus scanners and/or detection programs. 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 scanners on Linux servers introduce 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. All of which, they report, are not done. This should be taken under consideration by the Saskatchewan Liquor and Gaming Authority to determine compliance with the aforementioned technical standards.

5. FINDINGS AND CONCLUSION

Based upon our review of the *Tap50:50 Raffle System E-Commerce Application* 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 the internet via an online charity raffle system.

2. The *Tap50:50 Raffle System E-Commerce Application* 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 System E-Commerce Application* maintains all data generated via the *E-Commerce Application*. Several accounting and system reports can be generated via the *Tap50:50 Raffle Management System* which is not included within this evaluation. A report on our evaluation of the *Raffle Management System* will be provided under separate cover.

5. A mechanism for verifying the *Tap50:50 Raffle System E-Commerce Application* software exists. **eclipse** Compliance Testing has utilized the Tap 50:50 Hashing program, to obtain the software signatures listed within section 2.2 System Software Information. **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.

With note to item 5 above, and the item listed within section 4. EXCEPTIONS AND NOTEWORTHY ITEMS FOR CONSIDERATION, which should be taken under consideration for compliance, **eclipse** Compliance Testing certifies that the *Tap50:50 Raffle System E-Commerce Application version 1.0*, 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 Raffle System E-Commerce Application* can only be granted by the Saskatchewan Liquor and Gaming Authority, who may rely upon our findings in their determination.

This document has been prepared by **eclipse** Compliance Testing for Regulatory Authorities addressed hereto, for the benefit of Tap50:50 Event Consultants Ltd. Distribution of this document is limited exclusively to **eclipse** Compliance Testing, Tap50:50 Event Consultants Ltd. and the Regulatory Agency(ies) addressed herein. This report shall not be reproduced, except in full, without the written approval of **eclipse** Compliance Testing. Authorized parties may download an authentic electronic copy of this report from the *Reports* section of the **eclipse** Compliance Testing website (www.eclipsetesting.com). Only authorized copies of this report received from **eclipse** Compliance Testing are considered to be authentic. Upon request by an authorized party, **eclipse** Compliance Testing will send this report via email as directed. **eclipse** Compliance Testing takes precautionary measures to secure the PDF document, but **eclipse** Compliance Testing does not send the email via any encrypted methodology.

The submitting party has provided suitable information indicating that it is in good standing with the jurisdiction referenced herein. **eclipse** Compliance Testing makes no judgment on the submitting party's license status or suitability for licensure. The information contained herein pertains merely to the submitting party's product compliance.

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/jw/sc