

RANDOMNESS EVALUATION REPORT

FOR

HGMT LTD
BUFFALO STACK'N'SYNC, HTML5-DESKTOP; HTML5-MOBILE, 1.0.0

CONFIDENTIAL
CERTIFICATE NUMBER: e226529HCKMLTM

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SECTION 1. GENERAL INFORMATION

License Holder:	HGMT Ltd 1st Floor, Suite 3, Central Business Centre, Mdina Road, Zebbug, ZBG 9015, Malta
Game Name:	Buffalo Stack'n'Sync
Game Type:	Slot
Platform Type:	HTML5-Desktop; HTML5-Mobile
Game Version:	1.0.0
Applicable Technical Standards:	Licensing requirements of the Malta Gaming Authority ('MGA') Subsidiary Legislation 438.04 Remote Gaming Regulations Third Schedule, Regulation 25
Testing Laboratory:	eCOGRA Limited 2/F Berkeley Square House Berkeley Square London W1J 6 BD United Kingdom
Test Engineers:	Bokang Mogaladi; Paulinah Ndhambi; Tyrone Rajah; Josephine Govender; Ridhwaan Shariff
Supervisor:	Filipe Alves
Request for Report:	18 May 2022
Report Date:	06 May 2022
Certificate Number:	e226529HCKMLTM

In our opinion the game listed as tested in this report complies with the relevant sections of the licensing requirements of the Malta Gaming Authority ('MGA').

The test results obtained for HGMT Ltd's Buffalo Stack'n'Sync HTML5-Desktop; HTML5-Mobile 1.0.0 game produced statistically acceptable random numbers that were free of any significant statistical bias or predictability.



Bradley Khoury,
Chief Technical Officer

SECTION 2. INTRODUCTION

eCOGRA has been appointed by HGMT Ltd to evaluate and certify the following Slot game for compliance with the relevant licensing requirements Subsidiary Legislation 438.04 Remote Gaming Regulations, Third Schedule, Regulation 25 of the Malta Gaming Authority ('MGA').

- Buffalo Stack'n'Sync (1.0.0) - HGMT Ltd

This certification report highlights our key findings as a result of the evaluation conducted on HTML5-Desktop; HTML5-Mobile, 2.0.0, which is the pre-production environment which is essentially the same as the live environment. The testing was conducted on the aforementioned platform established at HGMT Ltd during the period 18 April 2022 to 03 May 2022.

Please note that this is an initial certification conducted over Buffalo Stack'n'Sync, HTML5-Desktop; HTML5-Mobile, 1.0.0 and therefore this game certificate does not supersede any previous certifications.

SECTION 3. RNG COMPONENTS

The Random Number Generator (RNG) as detailed in Section 2 and used by HGMT Ltd in their Buffalo Stack'n'Sync 1.0.0 product was previously certified by Trisigma B.V. (Refer to RNG report: 3s.17.966_MT.R0). The scope of eCOGRA's randomness testing was limited to testing the randomness of the game output of the Buffalo Stack'n'Sync 1.0.0 game.

Software Provider:	Please refer to Trisigma B.V. RNG Certificate: 3s.17.966_MT.R0
Software Provider Address:	
Product Name:	
Product Description:	
Jurisdiction:	
Jurisdiction address:	
Test entity:	
Test entity address:	
Date:	
Approval:	

SECTION 4. TEST RESULTS

Numerous recognised statistical and mathematical tests were performed on a 1,000,000 rows of sample data, provided by HGMT Ltd, of the game output to verify the RNG operates in a random and fair manner. This included tests for probability (to ensure the expected number of occurrences), randomness (so that the following occurrence cannot be predicted with any degree of certainty) and uniformity (to determine that each possible outcome is equally likely over the long-term). The acceptance criteria for the statistical tests is a pass at a 95% confidence level.

SECTION 5. GAME DESCRIPTION

Buffalo Stack'n'Sync (1.0.0)

Game Description:
The great buffalo, soaring eagles and grass swaying in the wind. These are the iconic themes of the Great Plains of North America, the essence of which is captured in this re-imagining of the classic Vegas slot. Buffalo Stack'n'Sync™ is a 5x4 grid slot with two awesome bonus games and a max win of up to 10,000x!

Further details regarding the betting characteristics, features and detailed game rules can be found in the game instructions which can be provided upon request.

SECTION 6. PERCENTAGE RETURN TO PLAYER ('RTP')

Game Name	Theoretical RTP %	eCOGRA RTP % Recalculation
Buffalo Stack'n'Sync	96.36% Feature Spins Bonus Buy: 96.40% Freespins Bonus Buy: 96.46% Stampede Spins Bonus Buy: 96.50%	97.17% Feature Spins Bonus Buy: 96.12% Freespins Bonus Buy: 96.52% Stampede Spins Bonus Buy: 96.63%
	94.38% Feature Spins Bonus Buy: 94.40% Freespins Bonus Buy: 94.23% Stampede Spins Bonus Buy: 94.38%	94.07% Feature Spins Bonus Buy: 94.55% Freespins Bonus Buy: 94.41% Stampede Spins Bonus Buy: 94.18%
	92.37% Feature Spins Bonus Buy: 92.33% Freespins Bonus Buy: 92.41% Stampede Spins Bonus Buy: 92.47%	92.22% Feature Spins Bonus Buy: 93.04% Freespins Bonus Buy: 92.12% Stampede Spins Bonus Buy: 92.38%
	88.46%	89.42%

The Theoretical RTP percentage indicated in the table above is extracted from the game documentation as provided by HGMT Ltd. eCOGRA recalculated the RTP percentage by performing additional independent mathematical calculations on the output of simulation game data.

SECTION 7. GAME SOFTWARE DETAILS

The scope of the game evaluation and certification applies solely to the critical game files, game versions and associated hashes provided in the tables below:

Game Files

File Name / Identifier	Version Date	Version Number	SHA-1 Hash Sum
HacksawGaming.Games.ReactionsSlotMachine.dll	N/A	N/A	67F263C2DD2F801B4207010EE145D2C77D7E39B8
HacksawGaming.Games.ReactionsSlotMachine.BuffaloStackNSync.dll	N/A	N/A	8EA0D8E956854A0530A1B91C70A9585FC8D5BA97

SECTION 8. REVIEW FINDINGS

Remote Gaming Regulations	Rating	Comments
Third Schedule - Regulation 25 - Technical requirement for gaming system		
1. The gaming system must:		
a. faithfully follow the game rules published by the operator; and	Compliant	
b. provide over time no more than the expected house advantage to the operator.	Not applicable	Not applicable to this game type.
2. Both the gaming and financial transactions must be congruent and secure.	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
3. The gaming system must satisfy the following criteria for randomness, following Schneier:		
a. the data must be randomly generated, passing appropriate statistical tests of randomness;	Compliant	Refer to RNG certificate: 3s.17.966_MT.R0
b. the data must be unpredictable, i.e. it must be computationally infeasible to predict what the next number will be, given complete knowledge of the algorithm or hardware generating the sequence, and all previously generated numbers;	Compliant	Refer to RNG certificate: 3s.17.966_MT.R0
c. the series cannot be reliably reproduced, i.e. if the sequence generator is activated again with the same input (as exactly as is reasonably possible) it will produce two completely unrelated random sequences.	Compliant	Refer to RNG certificate: 3s.17.966_MT.R0
4. The outcome of any game event, and the return to the player, must be independent of the CPU, memory, disk or other components used in the playing device used by the player.	Compliant	Refer to RNG certificate: 3s.17.966_MT.R0
5. The game or any game event outcome must not be affected by the effective bandwidth, link utilisation, bit error rate or other characteristic of the communication channel between the	Compliant	

Remote Gaming Regulations	Rating	Comments
Third Schedule - Regulation 25 - Technical requirement for gaming system		
gaming system and the playing device used by the player.		
6. The gaming system must be able to display for each game the following information on the current page or on a page directly accessible from the current page via a hyperlink:		
a. the name of the game;	Compliant	
b. restrictions on play;	Compliant	
c. instructions on how to play, including a pay-table for all prizes and special features;	Compliant	
d. the player's current account balance;	Compliant	Testing limited to the functions managed by the supplier.
e. unit and total bets permitted;	Compliant	Testing limited to the functions managed by the supplier.
f. the rules of the game.	Compliant	
7. All financial reports produced by the gaming system must be congruent with gaming transaction reports and conversely: Provided that all such reports shall be readily and freely available to the Authority.	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
8. The gaming system must: a. be capable of producing monthly auditable and aggregate financial statements of gaming transactions, and	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
b. calculate accurately all taxation and other monies due to the Authority.	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.

Remote Gaming Regulations	Rating	Comments
Third Schedule - Regulation 25 - Technical requirement for gaming system		
9. The gaming system must maintain information about all games played, including:		
a. the identity of the player;	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
b. the time the game began as recorded on the game's server;	Compliant	The recording of the results within the gambling system are not managed by the supplier.
c. the balance on the player's account at the start of the game;	Compliant	The recording of the results within the gambling system and account functionality are not managed by the supplier.
d. the stakes placed in the game (time stamped by the games server);	Compliant	The recording of the stakes placed within the gambling system and account functionality are not managed by the supplier.
e. the game status (in progress, complete, etc.);	Not applicable	The scope of assessment is limited to aspects directly managed by the supplier.
f. the result of the game (time stamped by the games server);	Compliant	The recording of the results within the gambling system and account functionality are not managed by the supplier.
g. the time the game ended as recorded by the games server;	Compliant	The recording of the results within the gambling system are not managed by the supplier.
h. the amount won or lost by the player; and	Compliant	The recording of the results within the gambling system and account functionality are not managed by the supplier.
i. the balance on the player's account at the end of the game.	Compliant	The recording of the results within the gambling system and account functionality are not managed by the supplier.

Remote Gaming Regulations	Rating	Comments
Third Schedule - Regulation 25 - Technical requirement for gaming system		
10. The gaming system must maintain information about significant events as follows:		
a. large wins;	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
b. transfers of funds in excess of such amount as the Authority may from time to time direct by notice in writing to the operator;	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
c. changes made by the operator to game parameters.	Not applicable	The certification testing included in this report is limited to relevant game requirements that can be assessed at game supplier level. The certification testing excludes the assessment of compliance against any requirements where the game functionality or information is not directly managed by the game supplier.
11. Any variations to any of the requirements specified in this Schedule shall be submitted to the Authority for its approval by notice in writing.	Not applicable	No variations identified for the product under certification.