

ECOGRA LIMITED

DIRECCIÓN GENERAL DE ORDENACIÓN DEL JUEGO DEFINITIVE FUNCTIONALITY CERTIFICATION REPORT: SLOTS SINGLE LICENSE

FOR

HGMT LTD

PLATFORM TYPES:

DESKTOP WEB ACCESS CLIENT (HTML5)

MOBILE WEB ACCESS CLIENT (HTML5)

ISSUE DATE: 06 May 2022

REPORT CODE: e226546HCKESPM

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1. Identification of the certification

Type of certification report:	Definitive functionality certification report
Report's identification code:	e226546HCKESPM
Related licence:	Not applicable
Licence Holder:	Not applicable
Platform Supplier:	Not applicable
Core Game Supplier(s):	HGMT Ltd
Aggregator:	Not applicable
Aggregation Platform:	Not applicable
Scope of Testing:	Game engine and functional evaluation of new game
Certification entity name and address:	eCOGRA Limited 2/F Berkeley Square House Berkeley Square London W1J 6BD United Kingdom
Authorised signatory name:	Ansonette Rees
Authorised signatory designation:	Quality Directress
Report issue date:	06 May 2022

The definitive functionality certification testing as outlined in this certification report was conducted between 18 April 2022 and 03 May 2022.

I hereby certify that, unless otherwise stated in the sections below, the items listed as tested in this report comply with the relevant requirements of "*Resolution of 6 October 2014, from the directorate general for the regulation of gambling, approving the regulation setting forth the form and content of the final certification report on the technical systems of gambling operators and elaborates on the change management procedure.*

Bradley Khoury
Chief Technical Officer

2. Description of the Object of Certification

eCOGRA was appointed by HGMT Ltd to perform a definitive functionality certification over slot games which will be integrated into an operator's technical gambling system. This functionality certification is solely conducted for the functionality requirements that are the supplier's responsibility. Where controls are beyond the scope/service of the supplier, further testing will need to be done at the operator.

The testing included an evaluation of the following software components:

Company Name of Supplier	Software Element Name	Version	Hash sum (SHA1)
HGMT Ltd	HacksawGaming.Games.ReactionsSlotMachine.dll	N/A	67F263C2DD2F801B4207010EE145D2C77D7E39B8
HGMT Ltd	HacksawGaming.Games.ReactionsSlotMachine.BuffaloStackNSync.dll	N/A	8EA0D8E956854A0530A1B91C70A9585FC8D5BA97

The testing included an evaluation of the technical infrastructure located at the following data processing centres:

Data Processing Centre	Street Number	City	Country	Type	Trade name of the housing supplier (external supplier)
Primary	J.W. Lucasweg 35, 2031 BE Haarlem	Haarlem	The Netherlands	Hosting	Leaseweb Netherlands B.V.
Backup	Malta Datacentre, Triq il-Madliena	Madliena	Malta	Hosting	Melita Ltd, Madliena Street, Madliena, Malta

The following websites and commercial names formed part of the scope of the certification testing:

Website URL	Commercial Name or Trademark	Role of the Operator	Relevant Products Offered	Languages Offered	Certified Access Channels
https://client-stg.hacksawgaming.com/	HGMT Ltd	B2B	Slots	Spanish	Internet (HTML5)

Game, modalities and variants that are within the scope of the certification:

Game Name (Manufacturer)	Commercial Game Name (Operator)	Client Access Application (Technology for Access)
Buffalo Stack'n'Sync	Buffalo Stack'n'Sync	HTML5-Desktop
Buffalo Stack'n'Sync	Buffalo Stack'n'Sync	HTML5-Mobile

3. Executive summary of functionality certification

eCOGRA was appointed by HGMT Ltd to perform a definitive functionality certification over slot games which will be integrated into an operator's technical gambling system. This functionality certification is solely conducted for the functionality requirements that are the supplier's responsibility. Where controls are beyond the scope/service of the supplier, further testing will need to be done at the operator.

3.1 Overall rating of the functionality.

Overall rating of the functionality	Compliant		
Total	**"Compliant"**	**"Does not comply"**	**"Not applicable"**
97	30	0	67

3.2 Table summarising compliance with technical requirements.

Reference	Number of requirements	Number of compliant requirements	Number of non-compliant requirements	Number of non-applicable requirements
Technical requirement areas for single licenses				
Area: Percentage return and prize schedules	3	2	0	1
Area: Random number generator	6	5	0	1
Area: Gaming logic	3	3	0	0
Area: Recording and traceability	4	0	0	4
Area: Terminals and session	13	1	0	12
Area: Communication channels	5	0	0	5
Area: Free gaming applications	1	0	0	1
Area: Graphic interface	7	4	0	3
Area: Behaviour in the event of technical errors	2	1	0	1
Area: Automated gaming activity	1	1	0	0
Area: Replay	1	1	0	0
Area: "Live" gaming	1	0	0	1
Area: Miscellaneous functionalities	5	0	0	5
Area: Progressive jackpots	1	0	0	1
Area: Internal control system	10	0	0	10

Technical requirement areas for Online Slot-machine licences				
Area: Configuration and realisation of the online slot-machine game session.	7	0	0	7
Area: Duties of informing participants in relation to the gambling session intended for online slot-machines	4	0	0	4
Realisation of the gambling activity	12	8	0	4
Area: Duties of informing participants.	10	4	0	6
Area: Promotion of gambling activities	1	0	0	1

3.3 Table summarising specific tests.

3.3.1 Analysis of identity checks and prohibition verifications
Not applicable to single licences.

3.3.2 Analysis of the random number generator	
Please note that the testing below applies to all games, modalities and variants as indicated in Section 2 above:	
Analysis Requirement	**Observation**
Rating	Compliant
Manufacturer	HGMT Ltd
Product and Version	Random Number Generator Version 1.0.4
Digital Fingerprint	HacksawGaming.RNG.dll: 0501D8AEFEB88FA7EF7048418CFFC4A99D88FDD2
Type of RNG	Software RNG.
Random/Pseudo-random	The RNG package is simply a small wrapper around the system's cryptographic RNG capabilities
Shared RNG	RNG instance is not shared with other gaming activities.
Algorithm	The algorithm is based on OpenSSL which is supplied by Microsoft.
Reseeding	*Yes*
Length of space	The Algorithm has a period length greater than 2^19937 - 1
List of statistical tests	The following statistical tests were performed over the RNG: ➢ Chi-Squared test; ➢ Wald Wolfowitz; ➢ Correlation Test; and ➢ Diehard Test Suite.

3.3.3 Percentage return to gamer analysis.		
Please note that the testing below applies to all games, modalities and variants as indicated in Section 2 above:		
Game	**Theoretical Percentage Return to Player**	**Medium Where Theoretical Percentage Return is Published**
Buffalo Stack'n'Sync (Desktop HTML5)	96.36% Feature Spins Bonus Buy: 96.40% Freespins Bonus Buy: 96.46% Stampede Spins Bonus Buy: 96.50%	Game rules
	94.38% Feature Spins Bonus Buy: 94.40% Freespins Bonus Buy: 94.23% Stampede Spins Bonus Buy: 94.38%	
Buffalo Stack'n'Sync (Mobile HTML5)	92.37% Feature Spins Bonus Buy: 92.33% Freespins Bonus Buy: 92.41% Stampede Spins Bonus Buy: 92.47%	
	88.46%	

3.3.4 Analysis of gaming logic and random events.	
Please note that the testing below applies to all games, modalities and variants as indicated in Section 2 above:	
Analysis Requirement	**Observation**
Compliance with specific gaming rules.	Yes
System of risk management for bets with a bookmaker.	Not applicable to this license.
Audit of changes to the configuration through parameters of the risk management system in relation to bets with a bookmaker.	Not applicable to this license.
Audit of changes made on the bets by the operator's staff.	Not applicable to this license.
List of random events.	Game outcomes are only solely dependent on the RNG output and results are not pre-sorted.
Audit of changes in the configuration through gaming logic parameters.	Yes

3.3.5 Measures against fraud and money laundering
Not applicable to single licences.

3.4 Table summarising integration testing.

Reference	Area of requirements	Rating
B.1 Gaming Offering		
B.1.1.	Offering of gaming activities and variants.	Not applicable
B.1.2	Performance of the gaming activity and proper accounting.	Not applicable
B.1.3	Audit trails on participation through channels other than the Internet	Not applicable
B.2 Economic limits on participation		
B.2.1	Economic limits on participation.	Not applicable
B.3. Behaviour in the event of technical errors.		
B.3.1	Loss of communications with the client.	Not applicable
B.3.2	Error in the client.	Not applicable
B.4. Internal control system.		
B.4.1	Integrity of OPT/ORT registers.	Not applicable
B.4.2	Integrity of JUT/JUD registers.	Not applicable

4. Details of compliance with the technical requirements

eCOGRA was appointed by HGMT Ltd to perform a definitive functionality certification over slot games which will be integrated into an operator's technical gambling system. This functionality certification is solely conducted for the functionality requirements that are the supplier's responsibility. Where controls are beyond the scope/service of the supplier, further testing will need to be done at the operator.

Please note that the testing below applies to all games, modalities and variants as indicated in Section 2 above:

Reference	Description	Rating	Observations
Area: Percentage return and prize schedules			
RES_TEC Annex I. 3.1	Basic regulations of the gambling activity.	Compliant	Game rules are provided by the supplier through the gaming interface. Publication of these rules on the operator's website and monitoring/reporting these is not managed by the supplier.
RES_TEC Annex I. 3.3	Return percentage to the participant	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.4	Prize tables	Compliant	Prize tables are provided by the supplier through the gaming interface. Publication of these rules on the operator's website and monitoring/reporting these is not managed by the supplier.
Area: Random number generator			
RES_TEC Annex I. 3.5.1	Functioning of the RNG	Compliant	Refer to RNG report: 21598HCKDGOJ001
RES_TEC Annex I. 3.5.1 (crypto. strong)	Cryptographically strong RNG	Compliant	Refer to RNG report: 21598HCKDGOJ001
RES_TEC Annex I. 3.5.2	Scaling methods	Compliant	Refer to RNG report: 21598HCKDGOJ001
RES_TEC Annex I. 3.5.3	RNG hardware	Not Applicable	The licensee utilises a software RNG.
RES_TEC Annex I. 3.5.4	Faults in the RNG	Compliant	Refer to RNG report: 21598HCKDGOJ001
RES_TEC Annex I. 3.5.5	Reseeding of the RNG	Compliant	Refer to RNG report: 21598HCKDGOJ001
Area: Gaming logic			
RES_TEC Annex I. 3.6.1	Logic independent of the user terminal	Compliant	Refer to RNG report: 21598HCKDGOJ001
RES_TEC Annex I. 3.6.2	Application of the RNG to gambling activities	Compliant	Refer to RNG report: 21598HCKDGOJ001

Reference	Description	Rating	Observations
RES_TEC Annex I. 3.6.3	Game logic controls.	Compliant	Game logic controls are provided by the supplier through the gaming interface. Publication of these rules on the operator's website and monitoring/reporting these is not managed by the supplier.
Area: Recording and traceability			
RD_TEC Article 4.1.a) and c)	Requirements for the Central Gaming Unit. Gaming activities.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 6.1	Recording and traceability	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 6.3	Time source	Not Applicable	Not applicable for slot machine games
RES_TEC Annex I. 7.5	Registration and traceability of international liquidity environment	Not Applicable	Not applicable for slot machine games
Area: Terminals and session			
RES_TEC Annex I. 3.7.1.1	Terminal identification	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.7.1.2	Terminal functionality Traceability of operations.	Compliant	Terminal functionality and the Traceability of operations authorization is not managed by the supplier.
RES_TEC Annex I. 3.7.2.1	Component installation on the user's terminal.	Not Applicable	There are no downloadable elements for the games under review.
RES_TEC Annex I. 3.7.2.2	Disadvantage due to connection quality.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.7.2.3	Information on connection quality.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.7.2.4	Reduced functionality for certain user terminals.	Not Applicable	Publication of these rules on the operator's website and monitoring/reporting these is not managed by the supplier.
RES_TEC Annex I. 3.7.2.5	Minimum resources of the terminal.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.7.3.1	Processing of participant details.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.7.3.2	Physical design	Not Applicable	The provider does not use physical terminals of an accessory nature in the game offer.

Reference	Description	Rating	Observations
RES_TEC Annex I. 3.7.3.3	Terminal integrity.	Not Applicable	The provider does not use physical terminals of an accessory nature in the game offer.
RES_TEC Annex I. 3.7.3.4	Mobile terminals.	Not Applicable	The provider does not use physical terminals of an accessory nature in the game offer.
RES_TEC Annex I. 3.8.1	Disconnection due to inactivity	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.8.2	Record of user sessions.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
Area: Communication channels			
RD_TEC Article 15.1 and 15.2	Gaming activities performed over the Internet	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 3.2	Redirection to the <<.es>> domain name.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RD_TEC Article 16	Gaming activities performed through landline or mobile telephony text messaging services	Not Applicable	The supplier does not offer gaming activities through landline or mobile telephony text messaging.
RD_TEC Article 17	Gaming activities through voice communication services	Not Applicable	The supplier does not offer gaming activities through voice communication services.
RD_TEC Article 18	Gaming activities through audio visual media	Not Applicable	The supplier does not offer gaming activities through audio visual communication media.
Area: Free gaming applications			
RD_COM Article 14.1	Free gambling applications	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
Area: Graphic interface			
LEY_RJU Art. 6.1.a	Subject of the user interface	Compliant	
RES_TEC Annex I. 3.9.1	Gambling details	Compliant	
RES_TEC Annex I. 3.9.2	Participant's data	Compliant	
RES_TEC Annex I. 3.9.3	Prizes	Compliant	
RES_TEC Annex I. 3.9.4	Card games	Not Applicable	No card features are offered in the games under review.
RES_TEC Annex I. 3.9.5	Simulation of real-life features	Not Applicable	There are no simulations of physical devices for the games under review.
RES_TEC Annex I. 3.9.6	Third-party graphic interface	Not Applicable	The supplier does not facilitate the use of third-party interfaces.
Area: Behaviour in the event of technical errors			
RES_TEC Annex I. 3.11	Disabling a gaming activity or a user session	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.

Reference	Description	Rating	Observations
RES_TEC Annex I. 3.12	Incomplete game	Compliant	When re-entering the game after a disconnection, the game continues from the point of disconnection. The scope of assessment is limited to aspects directly managed by the supplier.
Area: Automated gaming activity			
RES_TEC Annex I. 3.13	Automatic gambling.	Compliant	
Area: Replay			
RES_TEC Annex I. 3.14	Move repetition.	Compliant	The player has the option to repeat a game round in the in-game history function, which displays a graphical replay of the game round to the player. Platform functions have not been assessed.
Area: "Live" gaming			
RES_TEC Annex I. 3.19	Real-time gambling	Not Applicable	The games under review are not "live" in nature.
Area: Miscellaneous functionalities			
RES_TEC Annex I. 3.15	Virtual gamers	Not Applicable	The games under review do not involve more than one participant.
RES_TEC Annex I. 3.16	Metamorphosis games.	Not Applicable	The games under review are not metamorphic in nature.
RES_TEC Annex I. 3.17	Absent participant.	Not Applicable	The games under review do not involve more than one participant.
RES_TEC Annex I. 3.18	Hosted multiplayer games.	Not Applicable	The games under review do not involve more than one participant.
RES_TEC Annex I. 3.21	Gambling through pre-recorded communication channels.	Not Applicable	The games under review do not generate outcomes prior to the game round.
Area: Progressive jackpots			
RES_TEC Annex I. 3.20	Jackpots, progressive jackpots and additional prizes	Not Applicable	The games under review do not have jackpots, progressive jackpots or additional prizes.
Area: Internal control system			
RD_TEC Article 13	The internal control system (SCI)	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.2	DGOJ access to storage files.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.3	Data model for the SCI	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.4	Time source of the SCI	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.

Reference	Description	Rating	Observations
RES_TEC Annex I. 5.1.5	Signature, compression and encryption of SCI data	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.6	Efficiency of the data capturer and storage system.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.8	Unavailability of the SCI and suspension of gambling on offer.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.11	Information quality of the SCI.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Annex I. 5.1.14	Location of storage system in Spain.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_MOD Annex I.	Data model for monitoring	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.

Technical Requirements for Slots Single License:

Reference	Description	Rating	Observations
Area: Configuration and realisation of the online slot-machine game session			
OM_AZA Article 12.2.	Monetary limits for participation in the Online Slot-machine game during an online slot-machine game session	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.1.	Configuration and development of slot machines session.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.1.	The operator notifies the participant of approaching limits.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.1.	Compulsive gambling warning on restarting a session within 60 minutes.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.2.	Possibility of restricting future sessions.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.3.	Configuration of warning frequency. Minimum interval.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
RES_TEC Anexo I. 2.1.14	Record of session configurations for slot machine gambling.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
Area: Duties of informing participants in relation to the gambling session intended for online slot-machines			
OM_AZA. Article 8.1.2 i	Balance, wagered total and winnings total.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2 j	History record of sessions, with breakdown.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.2	Periodic warnings for spent time and amount.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 13.2.	Accrediting document at the session's end, with breakdown	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.

Reference	Description	Rating	Observations
Area: Realisation of the gambling activity			
OM_AZA. Article 2.	Definitions.	Compliant	
OM_AZA. Article 6.	Particular rules for "online slot machine" game	Not Applicable	The scope of assessment is limited to aspects directly managed by the Supplier.
OM_AZA. Article 11.	Realisation of the "Online Slot-machine" game.	Compliant	
OM_AZA. Article 12.1	Economic limits on participation in slot machine gaming.	Compliant	
OM_AZA. Article 13.1.	Participation in the "Online Slot-machine" game	Not Applicable	The scope of assessment is limited to aspects directly managed by the Supplier.
OM_AZA. Article 13.3.	Participation in the "Online Slot-machine" game. Session or spin interruption.	Compliant	When re-entering the game after a disconnection, the game continues from the point of disconnection. The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 13.4.	Participation in the game of "Slot machines". Game cancelled.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 14.4.	Limit on games in automatic game.	Compliant	
OM_AZA. Article 14.5.	Minimum duration of spin	Compliant	
OM_AZA. Article 14.6.	Allocation of prizes.	Compliant	
OM_AZA. Article 14.7.	jackpots.	Not Applicable	The game variants tested did not include Jackpots, progressive jackpots, or additional prizes.
OM_AZA. Article 15.	Payment of winnings.	Compliant	The time limit on collection of prizes is not directly managed by the supplier.
Area: Duties of informing participants.			
OM_AZA. Article 8.1.1	Publication of particular rules.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2.a)	Operator and licence details.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2.b)	Claim details.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2.c)	Rules and methods of participation.	Compliant	

Reference	Description	Rating	Observations
OM_AZA. Article 8.1.2.d)	Responsible gambling policies	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2.e)	Theoretical and real RTP for the last 6 months.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.
OM_AZA. Article 8.1.2.f)	Max. and min. amount.	Compliant	
OM_AZA. Article 8.1.2.g)	Method of realisation.	Compliant	
OM_AZA. Article 8.1.2.h)	Description of combinations and winnings.	Compliant	
OM_AZA. Article 8.1.2.k)	Percentage dedicated to the jackpot.	Not Applicable	The games under review do not have jackpots, progressive jackpots or additional prizes.
Area: Promotion of gambling activities			
OM_AZA. Article 9.2	Promotion of gambling activities	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier.

5. Details of the specific analyses

eCOGRA was appointed by HGMT Ltd to perform a definitive functionality certification over slot games which will be integrated into an operator's technical gambling system. This functionality certification is solely conducted for the functionality requirements that are the supplier's responsibility. Where controls are beyond the scope/service of the supplier, further testing will need to be done at the operator.

5.1 Analysis of identity checks and subjective prohibition verifications
Not applicable to single slot licenses**.**

5.2 Analysis of the random number generator	
This analysis shall solely apply for single licences for which a random number generator, or RNG, is used.	
Description of the analyses, assays or tests conducted to verify the RNG's random behaviour and compliance with technical requirements:	The following statistical tests were performed over the RNG: ➢ Chi-Squared test; ➢ Wald Wolfowitz; ➢ Correlation Test; and ➢ Diehard Test Suite.
Detail of the justification of summaries and graphics:	➢ The Chi-Squared value is less than the 95% critical value; ➢ The p-value is within the acceptable range; Data passes the runs up and runs down test.
Detail of the number of simulations conducted:	➢ The sample size consisted of: ➢ Six sets of data of 3,000,000 rows each in the scaled ranges 0-33,0-36, 0-51, 0-66, 0-99, 0-500 and 0-999; Six sets of data of 3,000,000 rows of hexadecimal values.
Detail of the parameters used and the confidence interval:	The parameters used in the scaled ranges data sets (without replacement) were 0-33, 0-36, 0-51, 0-66, 0-99, 0-500 and 0-999 respectively. The hexadecimal values were in the range 0-255, consisting of 2 hexadecimal values per integer and 16 hexadecimal values per row. Both the 95% and 99% confidence interval were evaluated; however, the results were based on the 95% confidence interval
Detail of reseeding procedures and compliance with technical requirements:	OpenSSL is used as the underlying cryptographic RNG and controls the reseeding as well.
Detail of configuration parameters upon which the RNG's functioning depends:	The RNG must be provided a minimum and maximum value for which it generates the random numbers. These parameters then provide the random number event within the required range.
Detail of the configuration values used in the certification tests:	The certification tests included samples of 3 million output values in the following scaled ranges: 0-33, 0-36, 0-51, 0-66, 0-99, 0-500 and 0-999. The hexadecimal values were in the range 0-255, consisting of 2 hexadecimal values per integer and 16 hexadecimal values per row.

5.3 Analysis of the gaming activities' return to gamer.	
The certification entity shall set forth the percentage return to gamer published by the operator for each gaming activity. It shall also verify the site where the aforementioned percentage is published:	Refer to section 3.3.3 "Percentage Return to Gamer Analysis" above for detail requested.
Detail of the configuration parameters which may affect the percentage return to gamer	There are no configurable parameters which may affect the percentage return to gamer. In the unlikely event of any changes to such parameters, this would result in an entirely new game.
Detail of whether the technical gaming system allows for the audit trails of changes made to such parameters to be recorded	Changes to parameters affecting the percentage return to gamer undergo the full Change Management cycle and would be logged through Change Management procedures.

5.4 Analysis of gaming logic and random events.	
The certification entity shall accredit that the performance of the gaming activity complies with the specific rules for each of the gaming variants. The certification entity shall analyse certain aspects of the gaming logic, the random events in the gaming activity, configurations which may be parameterised, the gaming activity's accounting and, in general terms, the capacity to audit any manual changes made to bets or to winners.	
Gaming machines	
Description of the random events in the gaming activity in which the random number generator is involved.	The RNG numbers are used to determine the results of the following events: • Base game spinning of the reels in gaming machines; • Free spins • Bonus rounds; and • Other special game features. None of these events are pre-sorted.
Description of the accounting management of games (including progressive jackpots if applicable):	Not Applicable - The scope of assessment is limited to aspects directly managed by the Supplier.
Description of the internal auditing procedures (logging etc) over amounts wagered, the prizes obtained, the commission fees calculated and the progressive jackpots created or applied.	Not Applicable - The scope of assessment is limited to aspects directly managed by the Supplier.
Auditing of games Explanation of records and audit trails over changes made to applications from the back office or by the operator's personnel:	Not Applicable - The scope of assessment is limited to aspects directly managed by the Supplier.
Detail of controls to prevent unauthorised manipulation of	Not Applicable - The scope of assessment is limited to aspects directly managed by the Supplier.

5.4 Analysis of gaming logic and random events.	
database files including audit/change logs.	
Detail of the location of database files and tables of where the audit logs are kept.	Not Applicable - The scope of assessment is limited to aspects directly managed by the Supplier.
Is the software used to implement the gaming logic configurable? If yes, detail of the value of the configuration parameters connected with the following aspects (Provide the name of the relevant audit log for each parameter as applicable):	
➢ Modes of play:	Not applicable. Gaming modalities are predefined and cannot be configured through the back office.
➢ Game strategy of the bank or level of risk assumed:	Not applicable to slot games.
➢ Maximum amounts:	Not applicable. Maximum amounts are predefined and cannot be configured through the back office.
➢ Rules of play:	Not applicable. The programmed gaming rules are not configurable through the back office.
Details of audit registry for changes to parameters:	Not applicable. The scope of assessment is limited to aspects directly managed by the supplier. Platform and operational functions have not been assessed.

5.5 Measures against fraud and money laundering.
Not applicable to single licenses**.**

6. Details of integration tests

eCOGRA was appointed by HGMT Ltd to perform a definitive functionality certification over slot games which will be integrated into an operator's technical gambling system. This functionality certification is solely conducted for the functionality requirements that are the supplier's responsibility. Where controls are beyond the scope/service of the supplier, further testing will need to be done at the operator.

Area.	**B.1. Gaming offering.**
Test reference.	B.1.1
Name of test.	Offering of gaming activities and variants.
Description of test.	From the gamer interface, access shall be gained to the offering of gaming activities corresponding to the single licence. The available gaming activity offering shall be analysed for each of the different participation applications or terminals. Each of the gaming activities and variants on offer shall be analysed, seeking to verify equivalence with the gaming activities and variants allowed by the basic regulation. Playing the gaming activities is not required to conduct this test, but rather analysing the information posted by the operator, be it informative information or gaming rules.
Expected outcome.	The following information shall be listed in the results: • the commercial name of the gaming activities and variants found • the applications or terminals from which they are available. • Equivalence/relationship with the variants set forth in the basic regulation. • the version of the specific rules assessed. This information shall be compared to the descriptive questionnaire on the licence filled in by the operator.
Type of test.	FUNCTIONAL
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not Applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.1. Gaming offering.
Test reference.	B.1.2
Name of test.	Performance of the gaming activity and proper accounting.
Description of test.	From the gamer interface, the certification entity shall participate in the gaming activity, verifying the following: • the proper accounting of bets, prizes, commission fees or other. • in the case of gaming activities having an operator's commission fee, it shall be verified that the calculation of such fees is in accordance with the specific rules. • an attempt shall be made to take part with an amount exceeding the available balance in the gaming account. In the case of specific gaming activities, the following shall be verified: • As regards betting activities, that wagers cannot be placed at moments not foreseen in the specific rules and, in particular, subsequent to the end of commercialisation, after the event has begun in conventional betting activities, or after the end of the event for live betting. • As regards bingo, that bingo cards cannot be bought outside the commercialisation period or once the game has begun. • As regards poker or casino, that wagers cannot be placed outside the moments designated for placing wagers in the specific rules. • For slot machines, a test will be carried out to make sure that when the slot machine game session ends automatically as soon as the predetermined time is up or as soon as the configured set amount for this session has been reached, the game that is in progress ends in an orderly fashion, and the accounting of such is correct. NOTE: This test shall be repeated for the different participation applications or terminals, as well as for each of the gaming activities, variants or modalities.
Expected outcome.	FUNCTIONAL Conformity of the aforementioned verifications, broken down by each variant analysed. It shall be verified that it is not possible to take part with an amount exceeding the available balance in the gaming account. Likewise, the version of the specific rules assessed shall be stated. TRACEABILITY The tables, files or other elements containing the information shall be stated in the results. An opinion shall be issued on whether the technical gaming system recording system allows one to retrieve information to explain each of the situations, as well as to totally reconstruct what has happened in each of the games.
Type of test.	FUNCTIONAL, TRACEABILITY
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not Applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.1. Gaming offering.
Test reference.	B.1.3
Name of test.	Audit trails on participation through channels other than the Internet
Description of test.	Should they exist, the certification entity shall take part through each of the channels other than the Internet such as, for instance, SMS or by telephone.
Expected outcome.	TRACEABILITY The system's records and audit trails for each of the participation channels used shall be analysed, verifying that in the **case** of SMS and by telephone that the system keeps data on: • date/time of each message sent or call made • telephone number that originated the message or call • contents of the message or call
Type of test.	TRACEABILITY
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.2. Economic limits on participation.
Test reference.	B.2.1
Name of test.	Economic limits on participation.
Description of test.	It shall be verified whether the system complies with economic limits, such as: maximum participation and prize amounts. In order to do so, the certification entity shall participate in the gaming activity and attempt to exceed each of the limits set forth in the gaming activities' Ministerial Orders, as set forth in Section 2, Annex III. The slot machines will be tested to make sure that the system is in line with the established limits when starting the corresponding slot machine game session, both in terms of the financial limit and also the time limit. Moreover, a test will be done to make sure that the amount of money that a player can use in a slot machine game cannot exceed the amount that they have in their gaming account when they start the session on the slot machine, thus increasing the amount of the prize money won in this session.
Expected outcome.	The tests conducted and the results obtained shall be stated.
Type of test.	FUNCTIONAL
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.3. Behaviour in the event of technical errors.
Test reference.	B.3.1
Name of test.	Loss of communications with customers.
Description of test.	Tests shall be conducted to initiate a gaming activity and provoke a loss of communication with the central gaming unit. Communication shall be re-established after 1 minute, 5 minutes and 15 minutes have elapsed (different time intervals). The system's reaction to finalise the gaming activity and its compliance with the provisions set forth in the specific rules shall be analysed. This test shall be performed for each of the terminals, applications or clients, as well as for each of the gaming activities or modalities on offer.
Expected outcome.	Compliance with the specific rules shall be stated. The result obtained as regards the behaviour of each terminal, application or client, as well as for each gaming activity or modality shall be stated. The version of the specific rules analysed shall also be included.
Type of test.	FUNCTIONAL
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.3. Behaviour in the event of technical errors.
Test reference.	B.3.2
Name of test.	Error in the client.
Description of test.	A gaming activity shall be initiated and an unexpected shut down of the client terminal shall be provoked. The terminal shall be started up once again after 1 minute, 5 minutes or 15 minutes have elapsed (different time intervals). The system's reaction to finalise the gaming activity and its compliance with the provisions set forth in the specific rules shall be analysed. This test shall be performed for each of the terminals, applications or clients, as well as for each of the gaming activities or modalities on offer.
Expected outcome.	Compliance with the specific rules shall be stated. The result obtained as regards the behaviour of each terminal, application or client, as well as for each gaming activity or modality shall be stated. The version of the specific rules analysed shall also be included.
Type of test.	FUNCTIONAL
Date/time test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.4. Internal control system.
Test reference.	B.4.1
Name of test.	Integrity of OPT/ORT registers.

Description of test.	The ICS data shall be compared to the data in the operator's information in this test in order to evaluate the Integrity of ICS data.
	
	The following monthly data for each month shall be obtained:
	
	• From the monthly OPT/ORT record:
	  ○ Participation
	  ○ Reimbursement of participation fees
	  ○ Prizes
	  ○ Prizes in kind
	
	This test requires the certification entity to gain access to unencrypted real data. The operator shall provide accurate unencrypted monthly Operator Account total OPT/ORT files to the certification entity, so that it can make sure that these coincide with those that are really stored in the operator's information system.
	
	It shall not be necessary for the certification entity to gain access to any personal data.
	
	Under no circumstances shall it be necessary for the certification entity to know the encryption key.

Expected outcome.	The data from the OPT/ORT files shall be compared with the lists obtained from the technical gaming system's back office. This means that the certification entity has to check the veracity of these lists, as they are the source used to check the integrity of the real data from the ICS. As a result for this test, the certification entity shall include the following: - The conformity of the verifications conducted. - The following OPT/ORT data calculated from each month's monthly data: ○ The quotient between the amount of prizes and the participation amount. (expressed in 4 decimal points). NOTE: Direct turnover figures shall not be included in the result. NOTE: The verifications and calculations shall be done separately in both "EUR" monetary units as well as in any other kind of units, be they bonus points or other.
Type of test.	REAL DATA
Date test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

Area.	B.4. Internal control system.
Test reference.	B.4.2
Name of test.	Integrity of JUT/JUD registers.
Description of test.	In this test the data from the ICS will be compared with the data from the operator's information system to evaluate the integrity of the data from the ICS. The following data will be obtained on a daily basis from the last 5 days prior to the performance of the test: From the JUD / JUT registers: • Number of plays of each kind of game • A random sample of 5 plays will be obtained and will be compared with the data from the operator's information system. For example, the participants, the prizes, the event in the case of bets or the number SMS in the case of a contest. The certification entity has to access accurate real data for this test. The operator must provide accurate JUT / JUD files to the certification entity so that it can make sure that these coincide with those that are really stored in the operator's information system. It shall not be necessary for the certification entity to gain access to any personal data. Under no circumstances shall it be necessary for the certification entity to know the encryption key.
Expected outcome.	The JUT/JUD files shall be compared with the lists obtained from the technical gaming system's back office. This means that the certification entity has to check the veracity of these lists, as they are the source used to check the integrity of the real data from the ICS. As a result for this test, the certification entity shall include the following: - The conformity of the verifications conducted. NOTE: Direct turnover figures shall not be included in the result. NOTE: The verifications and calculations shall be done separately in both "EUR" monetary units as well as in any other kind of units, be they bonus points or other.
Type of test.	REAL DATA
Date test was conducted.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Outcome obtained.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.
Rating.	Not applicable
Observations.	Not applicable as HGMT Ltd is a software provider and all integration test procedures are to be performed at the operator providing the games to players.

7. Description of the location, team and dates of performance of the certification

The certification testing was conducted remotely at the eCOGRA offices during the period 18 April 2022 to 03 May 2022.

The certification team consisted of:

Name	Title
Ansonette Rees	Quality Directress
Bradley Khoury	Chief Technical Officer
Filipe Alves	Project Lead
Bokang Mogaladi	Test Engineer
Paulinah Ndhambi	Test Engineer
Tyrone Rajah	Data Analyst
Josephine Govender	Data Analyst
Ridhwaan Shariff	Data Analyst

8. Description of the environments used in the tests other than those effectively used by the operator for the development of the gaming activities

All tests were conducted on a pre-production environment that emulated the production environment.

Tests Conducted	Environment Tested
All tests of the technical requirements performed within the scope of the current definitive certification have been carried out in a testing environment.	https://client-stg.hacksawgaming.com/ Platform Version: 2.0.0

9. Description of the digital media that will accompany the certification report

List of supporting documentation included in the accompanying digital media file name "Certification Package - HGMT Ltd - Buffalo Stack'n'Sync":

File / Folder Name	Description
e226546HCKESPM - HGMT Ltd ESP Buffalo Stack'n'Sync (5 2022)	Full certification report in digital format.
\Technical requirements	Evidence of assessment on the technical requirements. These shall be grouped together in a folder named "Technical requirements".
\Binaries	Copy of the technical gaming system's software elements, which shall contain a copy of the binary files and software elements of the certified technical system.