



GLI®

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Identification Code of the Report  
Issuance Date

MO-246-PPD-23-07-385  
22 September 2023

<b>Type of Evaluation Report</b>	Final Functionality Evaluation Report – Singular License for Slots		
<b>Evaluating Entity:</b>	GLI Europe B.V.		
<b>Dates of Performance of the Evaluation Work:</b>	23 August 2023 / 30 August 2023		
<b>Jurisdiction:</b>	Spain Online Law 13/2011, of May 27, on Gambling Regulation. Royal Decree 958/2020, of 03 November, on commercial communications of gambling activities. Royal Decree 1613/2011, of November 14, expanding on Law 13/2011, dated May 27, on Gambling Regulation, with respect to the technical requirements for gambling activities. Resolution of 06 October 2014 of the Gaming Regulation Board passing the provision developing the technical specifications of gaming, traceability and security which have to be fulfilled by technical gaming systems of a non-reserved nature forming the object of licenses granted under the Gaming Regulation Act nº 13/2011 of 27 May. Resolution of 06 October 2014 of the gaming regulation board passing the data model of the monitoring system of information corresponding to the gaming operations registers. Resolution of 06 October 2014 by the General Gambling Control Directorate approving the provisions establishing the models for preliminary certification reports for technical projects and the model for the internal control system certification report, presented by applicants for general and single licenses for the operation and marketing of gambling. Resolution of 06 October 2014, of the General Gambling Control Directorate, approving the regulation establishing the format and content of the definitive certification report for gaming operators' technical systems and extending the procedure for change management. Resolution of December 29, 2017, the directorate-general of regulation of gaming agreeing to authorize a liquidity modality different from that proper to the participation of players with Spanish user registration for the game of online poker, and modifying certain decisions on the gaming activities provided for in the gaming regulation act nº 13/2011 of 27 May. Decision of 31 October 2018 of the Directorate-General for the Regulation of Gambling modifying certain decisions on gaming activities provided for in the Gambling Regulation Act nº 13/2011 of 27 May. Order HAP/1370/2014, dated 25 July, by which the Basic Regulation of the chance machines gaming is approved.		
<b>Technical Standards for Testing:</b>	GLI Italy B.V. - Filiale italiana (Sede di Padova) Via Ampezzon, 4/G 35010 Villanova di Camposampiero – PD Italy		
	GLI Europe B.V.		
	GLI UK Gaming Ltd Llys Helyg Ffordd y Llyn, Parc Menai Bangor Gwynedd LL57 4EZ United Kingdom		
	GLI Africa (Pty) Ltd Ground Floor, 7 River Road River View Park, Janadel Avenue Halfway Gardens Midrand, South Africa		
	GLI Italy B.V. - Filiale italiana (Sede di Bologna) Via Maestri del Lavoro, 3 40138 Bologna – BO Italy		
	Arrise Solutions (Malta) Limited Block E, Falcon House High Street, Sliema SLM 1544 Malta		
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<b>Evaluating Laboratories:</b>			
<b>Evaluation Report Recipient:</b>			
<b>Software Supplier:</b>			
<b>Submitting Party:</b>			
<b>Product Name:</b>	Big Bass Crash		

GLI's Internal information:  
Modified 13 February 2023

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**Description of the Product Evaluated:** Big Bass Crash  
Evaluation requested on 09 August 2023.  
**Internal File Number:** MO-246-PPD-23-07-385  
**Testing Result:** Compliant

If you should have any questions regarding this information, please feel free to contact our office.

Identification details of the person signing the Evaluation Report:  
Martin Britton  
Managing Director



## [2] Description of the object of evaluation

GLI tested Arrise Solutions (Malta) Limited Singular License - Slots Technical System for regulatory compliance against the current Spanish standards (listed on page 1 of this report).

- For Arrise Solutions (Malta) Limited' **Big Bass Crash**, the game type evaluated is Slots.
- This report is for **Arrise Solutions (Malta) Limited**.
- **Arrise Solutions (Malta) Limited** acts as a B2B software provider to third party operators.
- The game is accessible via the Internet (HTML5).

The gaming offer under the scope of evaluation is the following:

Game Name (Used by Manufacturer)	Version	Clients Evaluated	
		HTML5 Desktop	HTML5 Mobile
Big Bass Crash	1.66.123	X	X



## [2] Description of the object of evaluation

For version-control of the **Big Bass Crash** GLI gathered Secure Hash Algorithm One (SHA-1) checksums of the following software files:

File Name	Location	SHA-1 Checksum	Manufacturer	Version	Critical	DPC
<b>Big Bass Crash V1.66.123</b>						
SpacemanFirstLevelRngConfiguration	Server	8DB017E2163384EF1A8AEFCEACCB72F4AF5F8BC3	Arrise Solutions (Malta) Limited	1.66.123	Yes	①② ③④
SpacemanSecondLevelRngConfiguration	Server	868735FD0446E6F561C41AAA9328D1CFCC8BF23D	Arrise Solutions (Malta) Limited	1.66.123	Yes	①② ③④
/bea/domains/casino/servers/Casino/upload/CasinoEAR/app/GameServer-X.XX.XX.war/WEB-INF/lib/critical.jar/com/extremelivegaming/game/critical/BetCodeVO.class	Server	1E0C535C5357F06538B84B936AA34670D86BB931	Arrise Solutions (Malta) Limited	1.66.123	Yes	①② ③④
/bea/domains/casino/servers/Casino/upload/CasinoEAR/app/GameServer-X.XX.XX.war/WEB-INF/lib/critical.jar/com/extremelivegaming/game/critical/ResultCodeVO.class	Server	F7FF44C528A4C6F22A90E936CC299C497045D6B3	Arrise Solutions (Malta) Limited	1.66.123	Yes	①② ③④
/bea/domains/casino/servers/Casino/upload/CasinoEAR/app/GameServer-X.XX.XX.war/WEB-INF/lib/critical.jar/com/extremelivegaming/game/critical/SpaceManRNGObject.class	Server	D060B63B5707666CE67386EB89E95C311BFA2EBF	Arrise Solutions (Malta) Limited	1.66.123	Yes	①② ③④

① Netgroup A/S  
Store Kongensgade 40H  
1264 Copenhagen  
Denmark

② Amazon AWS Clonshaugh,  
Saint Joseph, Clonshaugh Rd, Clonshagh,  
Dublin 17, Ireland

③ Leaseweb (Iron Mountain)  
J.W. Lucasweg 35, 2031 BE  
Haarlem  
Netherlands

④ Amazon AWS  
Frankfurt  
Germany



## [2] Description of the object of evaluation

For version-control of the **Big Bass Crash** GLI gathered Secure Hash Algorithm One (SHA-1) checksums of the following software files:

Random Number Generator, version 2.0						
dh-rng-1.0.0.jar	RNG Server	B33E33DA96C37C0EB2D02B3FBF439685FCDA876C	PragmaticPlay Ltd.	2.0	Yes	①② ③④

① Netgroup A/S  
Store Kongensgade 40H  
1264 Copenhagen  
Denmark

② Amazon AWS Clonshaugh,  
Saint Joseph, Clonshaugh Rd, Clonshagh,  
Dublin 17, Ireland

③ Leaseweb (Iron Mountain)  
J.W. Lucasweg 35, 2031 BE  
Haarlem  
Netherlands

④ Amazon AWS  
Frankfurt  
Germany

### [3] Executive summary of the functionality evaluation

#### [3.1] GLOBAL CLASSIFICATION OF FUNCTIONALITY

Global classification of functionality	Compliant
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#### [3.2] SUMMARY TABLE OF COMPLIANCE WITH TECHNICAL REQUIREMENTS

Technical requirements for singular licenses	Number of requirements	Number of compliant requirements	Number of non-compliant requirements	Number of non-applicable requirements
Area: Percentage return and prize tables	3	3	0	0
Area: Random number generator (RNG)	6	0	0	6
Area: Game logic	3	3	0	0
Area: Registration and traceability	4	1	0	3
Area: Terminals and session	13	8	0	5
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	2	0	0
Area: Automatic game	1	1	0	0
Area: Repetition of the play	1	1	0	0
Area: "Live" games	1	0	0	1
Area: Various functionalities	5	0	0	5
Area: Progressive jackpots	1	0	0	1
Area: Internal control system	10	0	0	10



### [3] Executive summary of the functionality evaluation

#### [3.2] SUMMARY TABLE OF COMPLIANCE WITH TECHNICAL REQUIREMENTS

Technical requirements for singular licenses for “Slots”	Number of requirements	Number of compliant requirements	Number of non-compliant requirements	Number of non-applicable requirements
Area: Configuration and game session development designed for slot machines	7	0	0	7
Area: Obligations of information to participants regarding the game session designed for slot machines	4	0	0	4
Area: Development of the game	12	6	0	6
Area: Obligations to provide information to the participants	10	3	0	7
Area: Promotion of the games	1	0	0	1

### [3] Executive summary of the functionality evaluation

#### [3.3] SUMMARY TABLE OF SPECIFIC ANALYSES:

##### [3.3.2] ANALYSIS OF THE RANDOM NUMBER GENERATOR

The **Random Number Generator, version 2.0** has been previously approved in the final functionality evaluation report issued by GLI Europe B.V (report number: RN-400-PPL-22-02-385\_1, dated 24 January 2023).

##### [3.3.3] ANALYSIS OF THE PERCENTAGE OF RETURN TO THE PLAYER

Published percentage of return to the player for the game.	<b>Big Bass Crash</b>	
	<b>Published RTP</b>	<b>GLI's RTP</b>
	95.50%	95.50%
	<p>GLI has confirmed that the published RTP values (shown) either:</p> <p>a) lie within expected statistical limits of equivalent values computed from simulated test data, or</p> <p>b) match those derived analytically from a mathematical model of the game.</p> <p>The RTP% is published in the game rules for the game.</p>	

##### [3.3.4] ANALYSIS OF THE LOGIC OF THE GAME AND THE RANDOM EVENTS

Compliance with particular rules of the game.	Yes
Risk management system for straight bets.	N/A - No straight bets game.
Audit of changes in the configuration by means of parameters of the risk management system for straight bets.	N/A - No straight bets game.
Audit of changes on bets made by the operator's personnel.	Yes
List of random events.	SpaceManRNGObject firstLevelRNGObject = new SpaceManRNGObject(); SpaceManRNGObject secondLevelRNGObject = new SpaceManRNGObject();
Audit of changes in the configuration by means of parameters of the logic of the game.	No. Game logic can't be changed since a change in the game logic will lead to changes in critical files and a substantial change to the Singular License.



### [3] Executive summary of the functionality evaluation

#### [3.4] SUMMARY TABLE OF THE INTEGRATION TESTS

Area and requirement	Classification
B.1 Range of games offered	
B.1.1. Range of games offered and game variants.	Not applicable*
B.1.2. Execution of the game and correct accounting.	Not applicable*
B.1.3. Trace of the participation for channels other than Internet.	Not applicable*
B.2 Economic limits on participation	
B.2.1. Economic limits on participation.	Not applicable*
B.3. Behaviour in response to technical errors	
B.3.1. Loss of communication 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 records.	Not applicable*
B.4.2. Integrity of JUT/JUD records.	Not applicable*

\* Arrise Solutions (Malta) Limited does not work as an operator. This will be tested by the operator.

#### [4] Details on compliance with the technical requirements

The rating and remarks listed in the table below are applicable to all games, variants and access channels except otherwise indicated in the remarks field.

Area and reference of the requirement	Rating	Remarks
<b>Area: Percentage return and prize tables</b>		
RES_TEC Annex I. 3.1. Basic gaming regulation.	Compliant	
RES_TEC Annex I. 3.3. Percentage return to participant.	Compliant	
RES_TEC Annex I. 3.4. Prize tables.	Compliant	
<b>Area: Random number generator (RNG)</b>		
RES_TEC Annex I. 3.5.1. Functioning of the RNG.	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
RES_TEC Annex I. 3.5.1. Functioning of the RNG. (cryptographically strong RNG)	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
RES_TEC Annex I. 3.5.2. Scaling methods.	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
RES_TEC Annex I. 3.5.3. RNG Hardware.	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
RES_TEC Annex I. 3.5.4. Errors in the RNG	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
RES_TEC Annex I. 3.5.5. Reseeding of the RNG.	Not applicable	The RNG has been approved in the report RN-400-PPL-22-02-385_1.
<b>Area: Game logic</b>		
RES_TEC Annex I. 3.6.1. Logic independent from the user terminal.	Compliant	
RES_TEC Annex I. 3.6.2. Application of the RNG in the games.	Compliant	
RES_TEC Annex I. 3.6.3. Controls of the game logic.	Compliant	
<b>Area: Registration and traceability</b>		
RD_TEC Article 4.1.a) and c) Requirements of the Central Gaming Unit.	Compliant	
RES_TEC Annex I. 6.1. Registration and traceability.	Not applicable	This is not applicable to the game in scope.
RES_TEC Annex I. 6.3. Time source.	Not applicable	This is not applicable to the game in scope.
RES_TEC Annex I. 7.5. Registration and traceability in international liquidity environment.	Not applicable	This is not applicable to the game in scope.
<b>Area: Terminals and session</b>		
RES_TEC Annex I. 3.7.1.1. Identification of terminals.	Not applicable	This is an operator's responsibility.
RES_TEC Annex I. 3.7.1.2. Functionality of the terminal. Operations' traceability.	Compliant	
RES_TEC Annex I. 3.7.2.1. Installation of components in the user's equipment.	Compliant	

#### [4] Details on compliance with the technical requirements

The rating and remarks listed in the table below are applicable to all games, variants and access channels except otherwise indicated in the remarks field.

Area and reference of the requirement	Rating	Remarks
<b>Area: Terminals and session</b>		
RES_TEC Annex I.3.7.2.2. Disadvantage due to connection quality.	Compliant	
RES_TEC Annex I.3.7.2.3. Information on connection quality.	Compliant	
RES_TEC Annex I.3.7.2.4. Reduced functionality for certain terminals.	Compliant	
RES_TEC Annex I. 3.7.2.5. Minimum terminal resources.	Compliant	
RES_TEC Annex I. 3.7.3.1. Management of participants' data	Not applicable	No operator terminals.
RES_TEC Annex I. 3.7.3.2. Physical design.	Not applicable	No operator terminals.
RES_TEC Annex I. 3.7.3.3. Terminal integrity.	Not applicable	No operator terminals.
RES_TEC Annex I. 3.7.3.4. Mobile terminals.	Not applicable	No mobile physical terminals of ancillary nature are offered.
RES_TEC Annex I. 3.8.1. Disconnection due to inactivity.	Compliant	
RES_TEC Annex I. 3.8.2. Registration of the user sessions.	Compliant	
<b>Area: Communication channels</b>		
RD_TEC Article 15.1 and 2. Gaming activities undertaken via the Internet.	Not applicable	This will be evaluated during the integration with a concessionaire.
RES_TEC Annex I. 3.2. Redirection to “.es” domain.	Not applicable	This will be evaluated during the integration with a concessionaire.
RD_TEC Article 16. Gaming activities undertaken via texting using fixed or mobile phones.	Not applicable	No gaming activities undertaken via texting using fixed or mobile phones are available.
RD_TEC Article 17. Gaming activities using voice communication services.	Not applicable	No gaming activities undertaken via texting using fixed or mobile phones are available.
RD_TEC Article 18. Gaming activities using audiovisual communication media.	Not applicable	No gaming activities undertaken via texting using fixed or mobile phones are available.
<b>Area: Free gaming applications</b>		
RD_COM Article 14.1. Free gaming applications.	Not applicable	This is an operator's responsibility.
<b>Area: Graphic interface</b>		
LEY_RJU Article 6.1.a. Theme of the user interface.	Compliant	
RES_TEC Annex I. 3.9.1. Data of the game.	Compliant	
RES_TEC Annex I. 3.9.2. Data of the participant.	Compliant	
RES_TEC Annex I. 3.9.3. Prizes.	Compliant	
RES_TEC Annex I. 3.9.4. Card games.	Not applicable	No cards games are present in this evaluation.
RES_TEC Annex I. 3.9.5. Simulation of elements from real life.	Not applicable	No elements from real life are simulated.
RES_TEC Annex I. 3.9.6. Graphic interface of third parties.	Not applicable	No graphic interface from third parties are present.

#### [4] Details on compliance with the technical requirements

The rating and remarks listed in the table below are applicable to all games, variants and access channels except otherwise indicated in the remarks field.

Area and reference of the requirement	Rating	Remarks
<b>Area: Behaviour in the event of technical errors</b>		
RES_TEC Annex I. 3.11. Disabling of a game or a user session.	Compliant	
RES_TEC Annex I. 3.12. Incomplete game.	Compliant	
<b>Area: Automatic game</b>		
RES_TEC Annex I. 3.13. Autoplay.	Compliant	
<b>Area: Repetition of the play</b>		
RES_TEC Annex I. 3.14. Game replay.	Compliant	
<b>Area: "Live" games</b>		
RES_TEC Annex I. 3.19. "Live" gaming.	Not applicable	No live games are in scope.
<b>Area: Various functionalities</b>		
RES_TEC Annex I. 3.15. Virtual players.	Not applicable	No virtual players are available in the games offered.
RES_TEC Annex I. 3.16. Metamorphic games.	Not applicable	No metamorphic games offered.
RES_TEC Annex I. 3.17. Participant in "absent" status.	Not applicable	No multi participant game.
RES_TEC Annex I. 3.18. Multi-participant games with host.	Not applicable	No multi participant game.
RES_TEC Annex I. 3.21. Games over "delayed" communication channels.	Not applicable	No multi participant game.
<b>Area: Progressive jackpots</b>		
RES_TEC Annex I. 3.20. Jackpots, progressive jackpots and additional prizes.	Not applicable	No jackpots or progressive jackpots are present.
<b>Area: Internal control system</b>		
RD_TEC Article 13. Internal control system.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.2. DGOJ access to the vault.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.3. ICS data model.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.4. ICS time source.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.5. Signing, compression and encryption of the ICS data.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.6. Performance of the grabber and vault.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.8. Unavailability of the ICS and suspension of the gaming offer.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.11. Quality of ICS data.	Not applicable	This will be checked during the integration with the operator.
RES_TEC Annex I. 5.1.14. Vault location in Spain.	Not applicable	This will be checked during the integration with the operator.
RES_MOD Annex I. Data model for monitoring.	Not applicable	This will be checked during the integration with the operator.

#### [4] Details on compliance with the technical requirements

The rating and remarks listed in the table below are applicable to all games, variants and access channels except otherwise indicated in the remarks field.

Area and reference of the requirement	Rating	Remarks
<b>Area: Configuration and development of the slot machine gaming session</b>		
OM_AZA Article 12.2. Economic limits to participation in the game of slot machines in the slot machines gaming session.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 14.1. Configuration and development of a slot machines gaming session.	Not applicable	This is an operator's responsibility.
OM_AZA Article 14.1. Operator's forewarning the participant of the closeness to reaching the limits.	Not applicable	This is an operator's responsibility.
OM_AZA Article 14.1. Warning on compulsive gambling in the restarting of a session within the 60 minutes following the end of the session	Not applicable	This is an operator's responsibility.
OM_AZA Article 14.2. Ability to restrict access to future sessions.	Not applicable	This is an operator's responsibility.
OM_AZA Article 14.3. Configuration of warning frequency. Minimum Interval.	Not applicable	This is an operator's responsibility.
RES_TEC Annex I. 2.1.14. Registration of the configuration of the session dedicated to playing slot machines.	Not applicable	This is an operator's responsibility.
<b>Area: Obligations of information to participants regarding the game session designed for slot machines</b>		
OM_AZA Article 8.1.2.i. Balance, sum of bets and sum of prizes.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.j. Session history, breakdown.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.2. Periodical warning regarding time spent and amount spent.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 13.2. Breakdown document at the end of the session.	Not applicable	This is an operator's responsibility.
<b>Area: Game development</b>		
OM_AZA Article 2. Definitions.	Compliant	
OM_AZA Article 6. Particular rules for the game of slot machines.	Not applicable	This will be evaluated during the integration with the operator.
OM_AZA Article 11. Conduct of the game.	Compliant	
OM_AZA Article 12.1. Economic limits to participation in the game of slot machines.	Not applicable	This is an operator's responsibility.
OM_AZA Article 13.1. Participation in the game.	Not applicable	This will be evaluated during the integration with the operator.
OM_AZA Article 13.3. Participation in the game. Interruption of a session or a game.	Not applicable	This will be evaluated during the integration with the operator.
OM_AZA Article 13.4. Participation in the game. Cancelled game.	Not applicable	This will be evaluated during the integration with the operator.
OM_AZA Article 14.4. Game's limit in autoplay mode.	Compliant	

#### [4] Details on compliance with the technical requirements

The rating and remarks listed in the table below are applicable to all games, variants and access channels except otherwise indicated in the remarks field.

Area and reference of the requirement	Rating	Remarks
<b>Area: Game development</b>		
OM_AZA Article 14.5. Minimum duration of a game.	Compliant	
OM_AZA Article 14.6. Assignment of prizes.	Compliant	
OM_AZA Article 14.7. Progressive Jackpots.	Not applicable	No progressive Jackpots are linked to the game in scope.
OM_AZA Article 15. Payment of winnings.	Compliant	
<b>Area: Information requirements to participants</b>		
OM_AZA Article 8.1.1. Specific rules publication.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.a. Operator information and enabling titles.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.b. Information in the complaints handling system.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.c. Rules and ways of participation.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.d. Responsible Gaming policies.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.e. Theoretical RTP% and actual RTP% in the last 6 months.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.f. Minimum and Maximum prize of a game.	Not applicable	This will be evaluated during the integration with operator.
OM_AZA Article 8.1.2.g. Ways to conduct the game.	Compliant	
OM_AZA Article 8.1.2.h. Description of winning combinations and prizes.	Compliant	
OM_AZA Article 8.1.2.k. Contribution to progressive jackpot.	Not applicable	No jackpots or progressive jackpots are present.
<b>Area: Promotion of games</b>		
OM_AZA Article 9.2. Promotion of the games.	Not applicable	This will be evaluated during the integration with operator.

## [5] Details on the specific analyses

### [5.2] ANALYSIS OF THE RANDOM NUMBER GENERATOR

The **Random Number Generator, version 2.0** has been previously approved in the final functionality evaluation report issued by GLI Europe B.V (report number: RN-400-PPL-22-02-385\_1, dated 24 January 2023).

### [5.3] ANALYSIS OF THE RETURN TO THE PLAYER IN THE GAMES

Description of the percentage of return to the player:

#### Big Bass Crash

Published RTP	GLI's RTP
95.50%	95.50%

GLI has confirmed that the published RTP values (shown) either:

- lie within expected statistical limits of equivalent values computed from simulated test data, or
- match those derived analytically from a mathematical model of the game.

All the Return to Player (RTP) percentages can be found in the game rules of the game.

The following game:

- **Big Bass Crash V1.66.123**

Invoke the RNGs just once in order to get a scaled single number that will be mapped to the various reels set to determine the outcome. This invocation is made through the following modules:

- `SpaceManRNGObject firstLevelRNGObject = new SpaceManRNGObject();`
- `SpaceManRNGObject secondLevelRNGObject = new SpaceManRNGObject();`

Then, based on the result, the prizes are calculated depending on the Player's bet according to the specific game rules.

Source code has been reviewed and checked against the artwork. Furthermore, all scenarios have been emulated to verify correct payout and behaviour.

## [5] Details on the specific analyses

### [5.4] ANALYSIS OF THE LOGIC OF THE GAME AND RANDOM EVENTS

Source code has been reviewed and checked against the artwork. Furthermore, all scenarios have been emulated to verify correct payout and behaviour.

Random outcomes are determined in the following methods:

#### 1) *SpaceManRNGCache.java*:

```
package com.extremelivegaming.cache.local;

import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import javax.naming.NamingException;
import javax.sql.DataSource;

import org.apache.logging.log4j.LogManager;
import org.apache.logging.log4j.Logger;

import com.extremelivegaming.api.certification.Certified;
import com.extremelivegaming.api.certification.CertifiedMethod;
import com.extremelivegaming.game.critical.SpaceManRNGObject;
import com.extremelivegaming.homes.LookUpConstants;

@LCLocalCache
@Certified
public class SpaceManRNGCache {
    private static final Logger logger = LogManager.getLogger(SpaceManRNGCache.class);

    private static int firstLevelRNGMaxWeight = 0;
    private static Map<Integer, List<SpaceManRNGObject>> cache = new HashMap<>();
    private static Map<Integer, Integer> firstLevelRNGMap = new HashMap<>();
    @CertifiedMethod(fileName = "SpacemanFirstLevelRngConfiguration", operatorGameId = "1301")
    public static Map<Integer, Integer> getFirstLevelRNGMap() {
        return firstLevelRNGMap;
    }

    public static void load() {
        DataSource db = null;
        cache = new HashMap<>();
        try {
            db = (DataSource) LookUpConstants.getInitialContextStatic().lookup(LookUpConstants.JDBCINDI);
        } catch (NamingException ne) {
            logger.error("lookup failed SpaceManRNGCache ", ne);
        }
    }
}
```



## [5] Details on the specific analyses

### [5.4] ANALYSIS OF THE LOGIC OF THE GAME AND RANDOM EVENTS

```
final String queryString = "select multiplier,firstlevelmin,firstlevelmax,secondlevelmin,secondlevelmax from spacemanrngconfig order by multiplier";
Connection conn = null;
PreparedStatement stmt = null;
ResultSet rs = null;
try {
    conn = db.getConnection();
    stmt = conn.prepareStatement(queryString);
    rs = stmt.executeQuery();
    int mappingIndex = 1;
    while (rs.next()) {
        SpaceManRNGObject firstLevelRNGObject = new SpaceManRNGObject();
        SpaceManRNGObject secondLevelRNGObject = new SpaceManRNGObject();
        firstLevelRNGObject.setMinValue(rs.getInt(2));
        firstLevelRNGObject.setMaxValue(rs.getInt(3));
        if (firstLevelRNGMap.get(firstLevelRNGObject.getMinValue()) == null) {
            for (int i = firstLevelRNGObject.getMinValue(); i < firstLevelRNGObject.getMaxValue(); i++) {
                firstLevelRNGMap.put(i, mappingIndex);
            }
        } else {
            mappingIndex--;
        }
        if (firstLevelRNGMaxWeight < rs.getInt(3)) {
            firstLevelRNGMaxWeight = rs.getInt(3);
        }
        List<SpaceManRNGObject> secondLevelRngList = null;
        if (cache.get(mappingIndex) == null) {
            secondLevelRngList = new ArrayList<>();
        } else {
            secondLevelRngList = cache.get(mappingIndex);
        }
        secondLevelRNGObject.setMinValue(rs.getInt(4));
        secondLevelRNGObject.setMaxValue(rs.getInt(5));
        secondLevelRNGObject.setMultiplier(rs.getDouble(1));
        secondLevelRngList.add(secondLevelRNGObject);
        cache.put(mappingIndex, secondLevelRngList);
        mappingIndex++;
    }
}
```

## [5] Details on the specific analyses

### [5.4] ANALYSIS OF THE LOGIC OF THE GAME AND RANDOM EVENTS

```
        } catch (SQLException e) {
            logger.error("SpaceMan RNG read failed ", e);
        } catch (Exception e) {
            logger.error("SpaceMan RNG read failed unknown error ", e);
        } finally {
            try {
                rs.close();
            } catch (Exception e) {
                logger.error("Cant close rs", e);
            }
            try {
                stmt.close();
            } catch (Exception e) {
                logger.error("Cant close stmt", e);
            }
            try {
                conn.close();
            } catch (Exception e) {
                logger.error("Cant close conn", e);
            }
        }
    }

    @CertifiedMethod(fileName = "SpacemanRngConfiguration", operatorGameId = "1301")
    public static Map<Integer, List<SpaceManRNGObject>> getSpaceManRNGMap() {
        return cache;
    }

    public static int getFirstLevelRNGMaxWeight() {
        return firstLevelRNGMaxWeight;
    }
}
```

## [6] Detail of the integration tests

### B. SINGULAR LICENCES

#### B.1. Range of games offered.

Area	Range of games offered.
Reference of the test	B.1.1
Name of the test	Range of games offered and game variants.
Description of the test	Not applicable.
Expected result	<p>The result will give a list, with the following information:</p> <ul style="list-style-type: none"> <li>- The commercial name of the games and variants found.</li> <li>- The applications or terminals from which they are available.</li> <li>- Their correspondence with the variants in the basic regulations.</li> <li>- The version of the particular rules assessed.</li> </ul> <p>This information shall be cross-checked against the descriptive licence questionnaire filled in by the operator.</p>
Type of test	FUNCTIONAL
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.

## [6] Detail of the integration tests

### B. SINGULAR LICENCES

#### B.1. Range of games offered.

Area	Range of games offered.
Reference of the test	B.1.2
Name of the test	Execution of the game and correct accounting.
Description of the test	Not applicable.
Expected result	<p><b>FUNCTIONAL</b> Compliance in the tests described above, broken down for each variant analysed. It shall be checked that it is not possible to stake a greater amount than the amount available in the gaming account. Also, the version of particular rules shall be indicated.</p> <p><b>TRACEABILITY</b> The result shall describe the tables, files or others containing the information. A judgement shall be issued over whether the gaming technical system's recording system permits the retrieval of information to explain every one of the situations, and also to totally reconstruct what happened in every game.</p>
Type of test	FUNCTIONAL, TRACEABILITY
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.

## [6] Detail of the integration tests

### B. SINGULAR LICENCES

#### B.1. Range of games offered.

Area	Range of games offered.
Reference of the test	B.1.3
Name of the test	Trace of the participation via channels other than Internet.
Description of the test	Not applicable.
Expected result	<p>TRACEABILITY</p> <p>The system records and logs of each of the participation channels used shall be analysed, checking that in the case of SMS and telephone, the system stores the detail of:</p> <ul style="list-style-type: none"> <li>- Date/time of each message or call made.</li> <li>- Telephone number originating the message or call.</li> <li>- Contents of message or call.</li> </ul>
Type of test	TRACEABILITY
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.



## [6] Detail of the integration tests

### B. SINGULAR LICENSES

#### B.2. Financial limits.

Area	Economic limits on participation.
Reference of the test	B.2.1
Name of the test	Financial limits.
Description of the test	Not applicable.
Expected result	A statement shall be made of the tests performed and the result obtained.
Type of test	FUNCTIONAL
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.

## [6] Detail of the integration tests

### B. SINGULAR LICENSES

#### B.3. Behaviour in response to technical errors.

Area	Behaviour in response to technical errors.
Reference of the test	B.3.1
Name of the test	Loss of communication with the client.
Description of the test	Not applicable.
Expected result	Compliance with the particular rules shall be indicated. The result shall show the behaviour observed for each terminal, application or client and for each game or modality. The version of particular rules analysed shall also be included.
Type of test	FUNCTIONAL
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.



## [6] Detail of the integration tests

### B. SINGULAR LICENSES

#### B.3. Behaviour in response to technical errors.

Area	Behaviour in response to technical errors.
Reference of the test	B.3.2
Name of the test	Error in the client.
Description of the test	Not applicable.
Expected result	Compliance with the particular rules shall be indicated. The result shall show the behaviour observed for each terminal, application or client and for each game or modality. The version of particular rules analysed shall also be included.
Type of test	FUNCTIONAL
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.



## [6] Detail of the integration tests

### B. SINGULAR LICENSES

#### B.4. Internal control system.

Area	Internal control system.
Reference of the test	B.4.1
Name of the test	Integrity of OPT/ORT records.
Description of the test	Not applicable.
Expected result	<p>The data in the OPT/ORT files will be cross-checked against the listings obtained from the gaming technical system back office. The certifying body must satisfy itself of the accuracy of these listings, given that they are the source used to cross-check the integrity of ICS real data.</p> <p>As a result of this test, the certifying body must include:</p> <ul style="list-style-type: none"> <li>- The compliance of the tests carried out.</li> <li>- The following OPT/ORT data, calculated from the monthly data, for each month: The ratio between the winnings amount and the stake amount (expressed to 4 decimal places).</li> </ul> <p>Note: The result shall not directly include turnover.</p> <p>Note: The checks and calculations shall be carried out separately, in EUR monetary units and in any other unit, whether bonus points or others.</p>
Type of test	REAL DATA
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.

## [6] Detail of the integration tests

### B. SINGULAR LICENSES

#### B.4. Internal control system.

Area	Internal control system.
Reference of the test	B.4.2
Name of the test	Integrity of JUD/JUT records.
Description of the test	Not applicable.
Expected result	<p>The data in the JUT/JUD files will be cross-checked against the listings obtained from the gaming technical system back office. The certifying body must satisfy itself of the accuracy of these listings, given that they are the source used to cross-check the integrity of ICS real data.</p> <p>As a result of this test, the certifying body must include:</p> <ul style="list-style-type: none"> <li>- The compliance of the tests carried out.</li> </ul> <p>Note: The result shall not directly include turnover.</p> <p>Note: The checks and calculations shall be carried out separately, in EUR monetary units and in any other unit, whether bonus points or others.</p>
Type of test	REAL DATA
Date/time the test is performed	Not applicable.
Result obtained	Not applicable.
Classification	Not applicable.
Comments	Not in scope of this evaluation.



## [7] Description of the place, equipment and dates of performance of the evaluation process

Place: GLI Italy B.V. - Filiale italiana (Sede di Padova), Via Ampezzon, 4/G, 35010 Villanova di Camposampiero – PD, Italy.

Place: GLI Europe B.V., Diakenhuisweg 29-35, 2033 AP, Haarlem, The Netherlands.

Place: GLI UK Gaming Ltd, Llys Helyg, Ffordd y Llyn, Parc Menai, Bangor, Gwynedd, LL57 4EZ, United Kingdom (Math only).

Place: GLI Africa (Pty) Ltd, Ground Floor, 7 River Road, River View Park, Janadel Avenue, Halfway Gardens, Midrand, South Africa.

Place: GLI Italy B.V. - Filiale Italiana (Sede di Bologna) Via Maestri del Lavoro, 3, 40138 Bologna BO, Italy.

Equipment: Google Chrome Version 116.0.5845.141 (Official Build) (64-bit).

Workstation OS: Windows 10 Enterprise

Evaluation period: 23 August 2023 / 30 August 2023

### [7.1] INTERNAL METHODS USED REFERENCE:

- WI-EN-477
- WI-EN-013
- SOP-MA
- WI-EN-010
- PC-TC-001
- WIP 24
- WI-EN-023
- WI-MA-002
- WI-EN-052



## [8] Description of any environments used in the tests different from that actually used by the operator for the execution of the gaming activity

The game content for **Big Bass Crash** was tested in a test environment which is a copy of the production environment. GLI has identified all critical files and documented as such in the report.



## [9] Description of the digital support which will accompany the evaluation report

To the submitter of this report, a DVD (Reference number: MO-246-PPD-23-07-385) with the below listed documents is provided:

- Complete evaluation report
- Evidence of evaluation of the technical requirements placed in the "Technical Requirements" folder
- Binaries