BELARUS - MONITORING CENTER FOR GAMING BUSINESS

INDEPENDENT GAME TESTING SUMMARY REPORT

FOR

MAVERICK/ELYSIUM

Spirit Hunters, HTML5-DESKTOP; HTML5-MOBILE, 1.0

CERTIFICATE NUMBER:
E221892MTLBLRM

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SECTION 1. GENERAL INFORMATION

License Holder:	ELYSIUM Studios Maverick Technology Limited The Cube Building LS3, Malta Life Sciences Park San Gwann SGN 3000 Malta
Game Name:	Spirit Hunters
Game ID:	SpiritHunters
Game Type:	Casino Slot
Platform Type:	HTML5-Desktop; HTML5-Mobile
Platform Version:	Linux 3.10.0-957.1.3.el7.x86_64
Platform Supplier:	ELYSIUM Studios Maverick Technology Limited The Cube Building LS3, Malta Life Sciences Park San Gwann SGN 3000 Malta
Channels Tested:	Desktop: Windows 10, Google Chrome Browser Version 98.0.4758.102 (Official Build) (64-bit) Mobile: Redmi 6, Android 9, Redmi 6 Build/PPR1.180610.011; Google Chrome Browser, Version 92.0.4545.131
Scope of Testing:	The Belarus – Monitoring Center for the Gaming Business requirements as stipulated in the Agreement on acknowledging the results of expert examination of gaming software, Annex 1 “The Control Chart of Testing Methods of the Gaming Software, Part 3 and Part 4”
Certification Type:	Initial pre-release testing
Sampling Used for Retesting:	No
Test House:	eCOGRA Limited, trading as ‘eCOGRA’ 2/F Berkeley Square House Berkeley Square London W1J 6 BD United Kingdom
Test House Accreditation:	A UKAS accredited testing laboratory No. 4656

	ISO/IEC 17025:2017, issued by the United Kingdom Accreditation Service
Test Engineers:	Ethic Hadebe; Masego Msomi; Josephine Govender; Tyrone Rajah
Test Supervisor:	Thabang Maganedisa
Request for Report:	17 February 2022
Certificate Date:	24 February 2022
Certificate Number:	e221892MTLBLRM
Result of Testing:	Compliant (Refer to Test Results under Schedule 1)

I hereby certify that the abovementioned game complies with the requirements of The Belarus – Monitoring Center for the Gaming Business requirements as stipulated in the Agreement on acknowledging the results of expert examination of gaming software, Annex 1 "The Control Chart of Testing Methods of the Gaming Software, Part 3 and Part 4" as described in Section 6 of this report.

Gary Lupton-Smith

Technical Services Manager, eCOGRA

SECTION 2. INTRODUCTION

eCOGRA has been appointed by Maverick ELYSIUM to evaluate and certify the following Slot game for compliance with the relevant Belarusian requirements for online games of chance, and to highlight any exceptions identified during testing.

- Spirit Hunters (1.0)

This certification report highlights our key findings as a result of the evaluation conducted on HTML5 (Desktop and Mobile) Linux 3.10.0-957.1.3.el7.x86_64 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 MAVERICK/ELYSIUM during the period 17 February 2022 to 24 February 2022.

Please note that this is an initial certification conducted over Spirit Hunters HTML5 (Desktop and Mobile) and therefore this game certificate does not supersede any previous certifications.

SECTION 3. GAME DESCRIPTION

Spirit Hunters (1.0)

Game Description:

SPIRIT HUNTER is an Asian theme game which DEMANDS THE PLAYERS ENGAGEMENT. With FAT TILES characters, created with astonishing graphics and FREE SPINS and a CRAZY AND PLAYFUL BONUS LEVEL, you will experience a NEW TYPE OF A SLOT GAME!

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 4. PERCENTAGE RETURN TO PLAYER ('RTP')

Game Name	Theoretical RTP %	eCOGRA RTP % Recalculation
Spirit Hunters	96.01%	95.63%

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

SECTION 5. 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	MD5 Hash	Hashing Algorithm of The Republic of Belarus STB 34.101.31-2011
mvgEngineGodot2.yml	N/A	N/A	4f27c7936cc1b242bad459b47cf62208b44dba67	8c0a6046018534201df5db8a5ce13470	f1a2152d90ad4e770ed7d28a98a13baf0c074a6720e7e306777536a28dfc0ddb
mvgEngineGodot3.yml	N/A	N/A	8914afaef6e17a9243dd806c95c6e5ceb8e93e0e	49ff11e9f2b4a30a1a3b77c8de3ca6c0	3d678517d1ae0258eac3b4f69f846fe48a68375fd6de131c0769735ce20efcc5
mvgEngineI.yml	N/A	N/A	1c792b7d94f377e2398879b4c7d0112f63460652	1ca7424a9b3cb4d7d1e8ab5f8f5d4aae	7e4f11436ee70029f030cd04ab369e1603765afd618c4946ee7c85bbe621bc48
mvgEngineII.yml	N/A	N/A	200dce848a47ea31c7ce9b9039674ff66c332607	a1b2991e1b8e7bf21f4bc89412817c49	f359de0f780260c5e8494996bb22ed32fa4e7c89e8ec8b26416ade9f5d42123a
mvgEngineIII.yml	N/A	N/A	fdb2ca393bb9efcf2b985c48c0e36f33271e9ded	5c9cdf1c4ba2e677eddc0fb3544c08cb	42d4a6d058beb9f25d32fdff8ccf0c86176eb3c6bddb7c4045df7f5109b133e9
mvgEngineIX.yml	N/A	N/A	6b7520c5f9d2b730290ad3acd346ddb1393fe0f4	a2e4f98853f418e0656cb0d960dc860d	e63bc5e30e7254b940740bce48b65595279bb3a18e5efbd6586b54cb256f84ce
mvgEngineRoulette1.yml	N/A	N/A	d95fc66af4f3d1041c7a409965464f0a84cb3821	643fe87102073be3531e808bd482447d	d51eebe458c4a133b771bfd94d7f0a01e14d460467fa836f989ba020bc9d9451
mvgEngineUnity1.yml	N/A	N/A	25d3a5b30a9ee45c57de9a1c923a902e5beb7452	b9629b4a26f34a5fe8738a40805429ac	06c92e95a2b0302ad887899aa5e103f731b111d536686f6cbbdcf036aa3a5240

File Name / Identifier	Version Date	Version Number	SHA#1 Hash	MD5 Hash	Hashing Algorithm of The Republic of Belarus STB 34.101.31-2011
mvgEngineV.yml	N/A	N/A	ae94f316bd02cf2944c47e122970c5812b8180a4	d320e3faa487042c14400e61b5cafc00	c79cc75f129464bcebf360ddd7765c1e406caae60e2ff870a5990fd538a14ae2
mvgEngineVII.yml	N/A	N/A	740bc0c8691639bde0f093f8b6ca4bb643bb7901	d23a26b0362df735a654a2409b07ad37	b0bef8a96e66ae1f21981edad5b9ad08bee12df6606ee057c3687846615f1f6f
mvgEngineX.yml	N/A	N/A	79961ce8e324360c7854d6fa78dfc7c4f93a860d	509e7a912e3fb2bad00c7a96baa2fdd7	c31701454a03482433307f254581f24859bd1c143b63314dfb145082763c07ce
mvgEngineXI.yml	N/A	N/A	d8205b0a16d837329a2b24544175d0dbb0b94988	fddc77e69418385601a6857a1ad12083	97e44c60c07bebbef182748a4e19e07182227a34a589be649a7b3da58f98e1d4
mvgEngineXII.yml	N/A	N/A	738f2a5c4e76502edbeb74ebeab41194aefa6b31	fc22e1385d23d4fc32bb13e7c2ba7eb6	a58ef058071f1788b726723e194c8d1de9ac476f904ea13eefa27ed8cc952d12
mvgEngineXIII.yml	N/A	N/A	39a079de0666e55258f5bf44f8a51b0893677e8d	36ebb041846b0ce59363c06ee446ff69	c0ebd93131b9a37cca594058f279c5f5a2ea74991e31c2db541863ee94b18efc
mvgEngineXIV.yml	N/A	N/A	5648260ef5359444ed6acbd27be8dbe0c40fdcd2	b84ca5bdb7dae84a4ec920b78c368496	b846047d9e7bf6678baf6b2789aedf1c25132aec219726c26a7b9e7fb587cb04
mvgEngineXV.yml	N/A	N/A	665449cf532cefc6ce6de0ba7a6646176ee0e042	cff142aa0e8ca73327b4e33f49efe7c6	96d8c2971454580708f9f6bf349e7674ede72cceb437d5674a9a2f056766feb7
mvgEngineXVI.yml	N/A	N/A	521b67b43b2a86959d1f505a90b9a9d2e7c21b80	778f0e43d4459257be4167ac023f961c	a1b1281469e7f022fc47816d4857b840ee6d4b6e539f0426cd422c35e51107da
mvgEngineXVII.yml	N/A	N/A	a16848e96d9726d2f1a01f661de3b8a9d41ff7e5	0bdc5dbced066ef159903fc81c9fed8f	b32d898b9d784af48c78ebf76bad686cc7c25b2c456dabf6fdb73610c0f2aaa5
mvgEngineXVIII.yml	N/A	N/A	c8c52c7cf35abe274c659f6df5b30f880f87ea9c	3ab481cd14f2861bd630374e8a5f7c7e	9301f6b0904d676a124ef95db7917ebde6d0f34b83120757196f8d00b0e68d71

File Name / Identifier	Version Date	Version Number	SHA#1 Hash	MD5 Hash	Hashing Algorithm of The Republic of Belarus STB 34.101.31-2011
testRespin.yml	N/A	N/A	a0a9535b3b166175824f98c7386d4c3f158a62ac	c895fea321d8c73292adbfb963f8887a	ae07d1322effa9608c7bf7ed1ebee92c85f1f90a1908ee3d923d840b89c023b8

Random Number Generator

File Name / Identifier	Version Date	Version Number	SHA#1 Hash	MD5 Hash	Hashing Algorithm of The Republic of Belarus STB 34.101.31-2011
mt19937.go	04/12/2019	2.0	E9439549DA6C39E228DC6573544B7B827E619261	1F4E940A3440E1C30E7A60D7B8FF074E	02e2315f2bddbecbb5b3df7bcef98c17356bfd9a3586b1b802a77bab34c4ec6d

SECTION 6. REVIEW FINDINGS

The key findings of our evaluation of the game for compliance with the relevant sections of the Belarus – Monitoring Center for the Gaming Business requirements as stipulated in the Agreement on acknowledging the results of expert examination of gaming software, Annex 1 "The Control Chart of Testing Methods of the Gaming Software, Part 3 and Part 4" , are as follows:

No	Requirements of the Belarusian Jurisdiction	Assessment	Comments
Part 3	**Requirements for the gaming platform**		
1	**Identification and authentication of participants in gambling in the following ways:**		
1.1	The identification of an individual during his registration as a participant in a gambling game may be carried out by means of the web-ID procedure <*>. In the process of such identification, an individual must hold an identity document in front of a webcam in order to confirm the accuracy of the information submitted by him and to compare his face with a photo posted in an identity document.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
1.2	Identification of an individual during his subsequent access to a virtual gambling establishment can be done using login and password access to a virtual gambling institution, recorded by the gambling organizer when registering an individual as a participant in a gambling game;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
1.3	Identification of an individual during his subsequent access to a virtual gambling establishment can be done using certificates of public keys for verification of electronic digital signature and attribute certificates issued by the Republican Certifying Center of the State Management System for public keys of verification of electronic digital signature of the Republic of Belarus.	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2	**Reservation allows recovery in case of failures, accidents, overloads, emergencies, errors, unauthorized changes to the following information:**		
2.1	copies of documents;		

No	Requirements of the Belarusian Jurisdiction	Assessment	Comments
2.2	data of the gambling participant's action log;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.3	the IP address of the device from which the participant in the game of chance participated in the game of chance;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.4	gambling records (with the exception of online bookmaker and online tote game, provided that the outcome of the betting event depends on the partial or complete coincidence of the forecast with the facts that have been documented);	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.5	**The following information for each participant in the game:**		
2.5.1	unique number of the game account;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.5.2	date and time of registration of the game account;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.5.3	balance of the game account;	Compliant	The scope of assessment is limited to aspects directly managed by the supplier
2.5.4	date and time of each replenishment of the game account;	Compliant	
2.5.5	active bets made by a gambler;	Compliant	
2.5.6	history of bets made by a participant in a game of chance (the date and time of making a bet, the amount of the bet, the type of game of chance, the result of a game of chance, etc.);	Compliant	The scope of assessment is limited to aspects directly managed by the supplier
2.5.7	winnings (returned non-played bets) listed (transferred) to a participant in a game of chance;	Compliant	The scope of assessment is limited to aspects directly managed by the supplier
2.5.8	winnings (returned non-played bets) to be transferred (transferred) to a participant in a game of chance;	Compliant	The scope of assessment is limited to aspects directly managed by the supplier
2.5.9	information on the suspension, non-execution, blocking of the transfer (transfer) of the gain (return of non-playing bets);	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier

No	Requirements of the Belarusian Jurisdiction	Assessment	Comments
2.5.10	bonuses provided by the gambling organizer;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.5.11	the date and time of the last visit to a virtual gambling establishment by a gambling participant;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
2.5.12	other information (if necessary).	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
3	compliance with the functions stipulated in the technical and (or) operational documentation;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
4	determination of the inactivity of a gaming session of a participant in a gambling game and the completion of such a gaming session of a participant in a gambling game after a period of time determined by the organizer of gambling;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
5	the opportunity for a participant in a gambling game to view the history of visits to a virtual gambling establishment;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
6	verification of the functionality of the archive of a virtual gambling establishment and the possibility of its backup;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
7	Providing the gambler, the opportunity to change the password for access to the virtual gambling establishment;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
8	the ability to store copies of documents, data log of the participant's gambling activities, the IP address of the device from which the participant of the gambling took part in the game of chance, gambling records (except for the online bookmaker and the online game of the sweepstakes, provided that the events for which bets are made depends on the partial or complete coincidence of the forecast with the occurred, documented facts);	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
9	**Opportunity for the participant in the game of chance to independently install:**		
9.1	a period of time during which he will be able to participate in gambling games organized and (or) conducted through a virtual gambling establishment	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier

No	Requirements of the Belarusian Jurisdiction	Assessment	Comments
9.2	the maximum amount of cash (electronic money) that can be used to make bets in a virtual gambling establishment;	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
10	**Compliance with the following requirements:**		
10.1	the ability to use technical equipment that registers gambling (with the exception of gambling games conducted in real time using high-resolution video surveillance systems that provide a recording speed of at least 5 frames per second, as well as online bookmaker and online betting game - if the result of the event on which the bets were made depends on the partial or complete coincidence of the forecast with the facts that were documented);	Not Applicable	The scope of assessment is limited to aspects directly managed by the supplier
11	The gaming platform may include a jackpot system or interact with the jackpot systems, provided that they meet the above requirements	Not Applicable	This game does not have a jackpot feature.
Part 4	**Requirements for the gaming program**		
1	A gaming gambling program must ensure compliance with the functions stipulated by the technical and / or operational documentation and exclude non-announced modes of operation.	Compliant	
2	The random number generator included in the gambling game program must generate a uniformly distributed and unpredictable sequence, that is, a sequence in which all elements are collectively independent, uniformly distributed and unpredictable random values with a uniform law of probability distribution.	Compliant	Refer to RNG Report: e2110755MTLBLR
3	Any possible combination of gambling situations in a gambling program that leads to winning or losing in a game must be random.	Compliant	Refer to RNG Report: e2110755MTLBLR
4	After determining the random outcome of gambling, a game program should not generate a secondary alternative that affects the outcome of a gambling game.	Compliant	Refer to RNG Report: e2110755MTLBLR

SCHEDULE 1. GAME TESTING

1. TESTS PERFORMED

Game design testing has included verification of the game mathematics, game artwork, player-facing game rules and the theoretical RTP. Software testing has included evaluation and verification of the software implementation of the game design aspects tested. The game software testing has been conducted on HTML5 (Desktop and Mobile) Linux 3.10.0-957.1.3.el7.x86_64 which is a pre-production environment which is reflective of the live environment, with verification procedures conducted over games rules and the actual RTP, using methods of simulation, emulation and manual testing, and verification of the scaling and mapping used to convert raw RNG output to game outcomes.

The game evaluation included the following tests, amongst others:

- Verification procedures over sufficiency and appropriateness of the client's internal testing conducted over the game under certification;
- Review of game documentation;
- Review of the mapping of the random inputs to game outcomes in accordance with prevailing probabilities and pay tables;
- Evaluation of the pertinent modules of the game source code for mapping of rules and RNG calling;
- Evaluation of game accounting in accordance with game pay tables;
- Inspection of game interface including artwork and graphics, and clear and correct presentation of the game rules;
- Comprehensive operational and functional client-side tests over the game mechanics to ensure that game pay tables, game rules and help files are correctly implemented in the operation of the game;
- Testing of rare outcomes through emulation to ensure that game pay outs, top prizes and jackpot features (if applicable) operate correctly;
- Review of the game design and game mathematics that determine the theoretical RTP%;
- Independent mathematical calculations of RTP% utilising complete, accurate and valid simulated game data output, to verify the theoretical RTP% as per the game mathematics documentation; and
- Game simulation (output) testing to ensure the game outcomes are randomly generated; and the actual RTP is within an acceptable range of the expected RTP.

The RNG utilised in evaluating the game output and games rules has been sufficiently and appropriately tested in a separately issued test house summary report. Please refer to eCOGRA RNG report: e2110755MTLBLR

2. TEST RESULTS

Numerous tests were performed to ensure the game operates in compliance with the requirements of The Belarus – Monitoring Center for the Gaming Business requirements as stipulated in the Agreement on acknowledging the results of expert examination of gaming software, Annex 1 “The Control Chart of Testing Methods of the Gaming Software, Part 3 and Part 4”.