

#### RANDOMNESS EVALUATION REPORT

FOR

NG ENTERTAINMENT LTD. APED, HTML5-DESKTOP, 1.0

**CONFIDENTIAL**CERTIFICATE NUMBER: E226641NTGMLTM

### Malta Gaming Authority - Randomness Evaluation Report NG Entertainment Ltd.

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# $\label{eq:main_def} \textbf{Malta Gaming Authority - Randomness Evaluation Report} \\ \textbf{NG Entertainment Ltd.}$

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### MALTA GAMING AUTHORITY - RANDOMNESS EVALUATION REPORT

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#### **SECTION 1. GENERAL INFORMATION**

| License Holder: | NG Entertainment Ltd. |
|-----------------|-----------------------|
|                 |                       |

97 Windsor Street

Sliema SLM 1853 Malta

Game Name: Aped

Game Type: Slot

Platform Type: HTML5-Desktop

Game Version: 1.0

Applicable Technical Standards: Licensing requirements of the Malta Gaming Authority ('MGA')

Subsidiary Legislation 438.04 Remote Gaming Regulations Third Schedule, Regulation 25

Testing Laboratory: eCOGRA Limited

2/F Berkeley Square House

Berkeley Square London W1J 6 BD United Kingdom

Test Engineers: Joanne Johnson; Gift Sebonyane; Tyrone Rajah; Manny De Abreu

Supervisor: Filipe Alves

Request for Report: 03 May 2022

Report Date: 13 May 2022

Certificate Number: e226641NTGMLTM

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

The test results obtained for NG Entertainment Ltd.'s Aped HTML5-Desktop 1.0 game produced statistically acceptable random numbers that were free of any significant statistical bias or predictability.

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Bradley Khoury

**Chief Technical Officer** 



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#### **SECTION 2. INTRODUCTION**

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

> Aped (1.0) - NG Entertainment Ltd.

This certification report highlights our key findings as a result of the evaluation conducted on HTML5-Desktop, 1.0, which is the pre-production environment which is essentially the same as the live environment. The testing was conducted on the aforementioned platform established at NG Entertainment Ltd. during the period 03 May 2022 to 13 May 2022.

Please note that this is an initial certification conducted over Aped, HTML5-Desktop, 1.0 and therefore this game certificate does not supersede any previous certifications.



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#### **SECTION 3. RNG COMPONENTS**

The Random Number Generator (RNG) as detailed in Section 2 and used by NG Entertainment Ltd. in their Aped 1.0 product was previously certified by GLI (Refer to RNG report: 413/19/001/UK/RTS/02). The scope of eCOGRA's randomness testing was limited to testing the randomness of the game output of the Aped 1.0 game.

| Software Provider:         |   |
|----------------------------|---|
| Software Provider Address: |   |
| Product Name:              |   |
| Product Description:       |   |
| Jurisdiction:              |   |
| Jurisdiction address:      | Refer to GLI RNG report: 413/19/001/UK/RTS/02 |
| Test entity:               |   |
| Test entity address:       |   |
| Date:                      |   |
| Approval:                  |   |



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#### **SECTION 4. TEST RESULTS**

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



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#### **SECTION 5. GAME DESCRIPTION**

Aped (1.0)

#### **Game Description:**

Aped is played with 5 fixed paylines, consisting of Go Ape Free Spins, #WAGMI Multiplier Chart and a Bonus 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.



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

| Game Name | Theoretical RTP % | eCOGRA RTP % Recalculation |  |
|-----------|-------------------|----------------------------|--|
| Anad      | 94.23%            | 94.34%                     |  |
| Aped      | Buy Bonus: 94.74% | Buy Bonus: 94.83%          |  |

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



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#### **SECTION 7. GAME SOFTWARE DETAILS**

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

#### **Game Files**

| File Name / Identifier    | Version<br>Date | Version<br>Number | SHA-1 Hash Sum                           |
|---------------------------|-----------------|-------------------|--|
| configurationAPED.txt     | 02/05/2022      | 1.0               | C954A9F4CB257B4C9A7E3417A3D8C4B4B45EEB6F |
| line wins handler.inc.php | 20/01/2020      | 1.0               | 4265BFE2ACF6549D2A8C2708DDCCC26E6657D396 |



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#### **SECTION 8. REVIEW FINDINGS**

| Re  | mote Gaming Regulations  | Rating                | Comments  |
|-----|--|-----------------------|---|
| Thi | rd Schedule - Regulation 25 - Technical require  | nent for gaming syste | m   |
| 1.  | The gaming system must:  |                       |   |
|     | <ul> <li>a. faithfully follow the game rules<br/>published by the operator; and</li> </ul>   | Compliant             |   |
|     | <ul> <li>b. provide over time no more than the<br/>expected house advantage to the<br/>operator.</li> </ul>  | Trot applicable       | Not applicable to this game type.   |
| 2.  | Both the gaming and financial transactions must be congruent and secure.   | Not applicable        | The scope of assessment is limited to aspects directly managed by the supplier. |
| 3.  | The gaming system must satisfy the following of  | riteria for randomnes | s, following Schneier:  |
|     | <ul> <li>a. the data must be randomly generated,<br/>passing appropriate statistical tests of<br/>randomness;</li> </ul>   | -                     | Refer to RNG certificate:<br>413/19/001/UK/RTS/02                               |
|     | <ul> <li>the data must be unpredictable, i.e. it must be computationally infeasible to predict what the next number will be, given complete knowledge of the algorithm or hardware generating the sequence, and all previously generated numbers;</li> </ul> |                       | Refer to RNG certificate:<br>413/19/001/UK/RTS/02                               |
|     | c. the series cannot be reliably reproduced, i.e. if the sequence generator is activated again with the same input (as exactly as is reasonably possible) it will produce two completely unrelated random sequences.   |                       | Refer to RNG certificate:<br>413/19/001/UK/RTS/02                               |
| 4.  | The outcome of any game event, and the return to the player, must be independent of the CPU, memory, disk or other components used in the playing device used by the player.   |                       | Refer to RNG certificate:<br>413/19/001/UK/RTS/02                               |
| 5.  | The game or any game event outcome must not be affected by the effective bandwidth, link utilisation, bit error rate or other characteristic of the communication channel between the gaming system and the playing device used by the player.               |                       |   |



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| Rei | mote Gar | ming Regulations   | Rating               | Comments                                |
|-----|----------|--|----------------------|---|
| Thi | rd Sched | ule - Regulation 25 - Technical requirem                                 | ent for gaming syste | em                                      |
| 6.  |          |  |                      |   |
|     | a page ( | directly accessible from the current page                                | via a hyperlink:     |   |
|     | a.       | the name of the game;  | Compliant            |   |
|     | b.       | restrictions on play;  | Compliant            |   |
|     | C.       | instructions on how to play, including                                   | Compliant            | Wallet functionality is not directly    |
|     |          | a pay-table for all prizes and special                                   |                      | managed by the supplier.                |
|     |          | features;  |                      |   |
|     | d.       |  | Compliant            |   |
|     | e.       | unit and total bets permitted;   | Compliant            |   |
|     | f.       | the rules of the game.   | Compliant            |   |
| 7.  |          | ncial reports produced by the gaming                                     | Not applicable       | The scope of assessment is limited to   |
|     | -        | must be congruent with gaming  |                      | aspects directly managed by the         |
|     |          | tion reports and conversely:   |                      | supplier.                               |
|     |          | d that all such reports shall be readily ely available to the Authority. |                      |   |
| 8.  |          | ning system must:  | Not applicable       | The scope of assessment is limited to   |
| 0.  | a.       | be capable of producing monthly  | Пос аррпсавле        | aspects directly managed by the         |
|     | a.       | auditable and aggregate financial  |                      | supplier.                               |
|     |          | statements of gaming transactions,                                       |                      | supplier.                               |
|     |          | and  |                      |   |
|     | b.       | calculate accurately all taxation and                                    | Not applicable       | The scope of assessment is limited to   |
|     |          | other monies due to the Authority.                                       |                      | aspects directly managed by the         |
|     |          | ,  |                      | supplier.                               |
| 9.  | The gan  | ning system must maintain information a                                  | bout all games playe | ed, including:                          |
|     | a.       | the identity of the player;  | Not applicable       | The scope of assessment is limited to   |
|     |          |  |                      | aspects directly managed by the         |
|     |          |  |                      | supplier.                               |
|     | b.       | the time the game began as recorded                                      | Compliant            | The recording of the results within the |
|     |          | on the game's server;  |                      | gambling system are not managed by      |
|     |          |  |                      | the supplier.                           |
|     | c.       | the balance on the player's account at                                   | Not applicable       | The scope of assessment is limited to   |
|     |          | the start of the game;   |                      | aspects directly managed by the         |
|     |          |  |                      | supplier.                               |
|     | d.       | 1 0 1  | Compliant            | The recording of the results within the |
|     |          | stamped by the games server);  |                      | gambling system are not managed by      |
|     |          |  |                      | the supplier.                           |
|     | e.       | the game status (in progress,  | Not applicable       | The scope of assessment is limited to   |
|     |          | complete, etc.);   |                      | aspects directly managed by the         |
|     |          |  |                      | supplier.                               |
|     | f.       | the result of the game (time stamped                                     | Compliant            | The recording of the results within the |
|     |          | by the games server);  |                      | gambling system and account             |
|     |          |  |                      | functionality are not managed by the    |
|     |          |  |                      | supplier.                               |



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| Remote Gaming Regulations |  | Rating         | Comments   |  |
|---------------------------|--|----------------|--|--|
| Third Sched               | Third Schedule - Regulation 25 - Technical requirement for gaming system   |                |  |  |
| g.                        | the time the game ended as recorded by the games server;   | Not applicable | The scope of assessment is limited to aspects directly managed by the supplier.                                    |  |
| h.                        | the amount won or lost by the player; and  | Compliant      | The recording of the results within the gambling system and account functionality are not managed by the supplier. |  |
| i.                        | the balance on the player's account at the end of the game.  | Not applicable | The scope of assessment is limited to aspects directly managed by the supplier.                                    |  |
| 10. The gan               | 10. The gaming system must maintain information about significant events as follows:   |                |  |  |
| a.                        | large wins;  | Not applicable | The scope of assessment is limited to aspects directly managed by the supplier.                                    |  |
| b.                        | transfers of funds in excess of such<br>amount as the Authority may from<br>time to time direct by notice in writing<br>to the operator; | Not applicable | The scope of assessment is limited to aspects directly managed by the supplier.                                    |  |
| C.                        | changes made by the operator to game parameters.   | Not applicable | The scope of assessment is limited to aspects directly managed by the supplier.                                    |  |
| specifie                  | riations to any of the requirements of in this Schedule shall be submitted to thority for its approval by notice in                      | Not applicable | No variations identified for the product under certification.  |  |