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| Certification Report. | Pragmatic Play Game Conformity Assessment Report – Bingo 50 |
| Report Identification | PPL-NL-210526-04-GC-R1 |
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| Signature |  |
| UKAS ISO/IEC 17025 and ISO/IEC 17020 Accreditation No: | 9263 |
| Dates of testing | May 10, 2021 to May 14, 2021 |
| Date of issue of Certification Report | May 26, 2021 |
| Report prepared for | Pragmatic Play Ltd 144 Tower Road, Sliema - SLM 1604 Malta |
| Jurisdiction | Netherlands Gambling Authority (Ksa: Kansspelautoriteit) |
| Technical Standard used for testing | Remote Gambling conformity assessment scheme, version 1.3, March 2021 |

Gaming Associates

1 Notations

1.1 Confidentiality

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This document, its themes, and ideas are strictly confidential and may not be used in any manner other than its expressed purpose, without the written permission of the author. The document is for Pragmatic Play and Netherlands Gambling Authority (Ksa: Kansspelautoriteit) to advise the compliance status of Pragmatic Play's game, Bingo 50, against Dutch Technical Standards.

The documents are copyright.

1.2 Disclaimer

ga has reported on what it has discovered through evaluation of the Bingo 50 game.

2 Administration

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2.2 Version

| Version | Description | Date |
|---------|---------------------------|------------|
| V0.1 | Initial draft – MSID | 2021-05-17 |
| V0.2 | Reviewed & Updated – WKAS | 2021-05-18 |
| V0.3 | QA-UVAS | 2021-05-20 |
| V1.0 | Issued to Pragmatic Play | 2021-05-26 |

3 Executive summary

3.1 Introduction

Pragmatic Play Ltd (Pragmatic Play) has requested Gaming Associates (**ga**) to test their game, Bingo 50, against requirements of Netherlands Gambling Authority (Ksa: Kansspelautoriteit) Remote Gambling conformity assessment scheme, version 1.3, March 2021.

This report presents the results of testing performed by **ga** for the Bingo 50 game against Ksa requirements. Hashes of game are listed in Annex A of this report.

3.2 Scope of evaluation

Pragmatic Play's game, Bingo 50, has been tested against the following requirements of Ksa conformity assessment scheme:

- ♣ Section 3.2.3 - Quality management system
- ♣ Section 3.2.4 - Gambling technology
- ♣ Section 3.2.5 - Addiction prevention

3.3 Assessment plan

Game assessment plan including information such as assessment methods used, assessment activities performed, and findings is provided in Annex B.

3.4 Test summary

Below is a summary of the information about the game.

| Game Name | Game Type | Channels (game clients) | Jackpot | Game version | Return to Player (RTP%) |
|-----------|--------------|----------------------------|---------|--------------|----------------------------|
| Bingo 50 | Lottery game | Desktop and Mobile | No | N/A | 70.00% |

3.5 Conclusions and recommendations

Pragmatic Play's game, Bingo 50, complies with the requirements of Ksa Remote Gambling conformity assessment scheme.

ga recommends Bingo 50 to be approved for use in Ksa approved platform production systems.

4 Test Results

This section summarises the results of the tests performed on Pragmatic Play's game, Bingo 50. The tables in the following sub-sections provide the compliance status of the game against Ksa requirements as per scope of testing. Different values used in the compliance status column are described as follows:

Compliant: The game complies with the requirement.

Pending: The requirement could not be verified at the time of game evaluation.

Acknowledged: The requirement is only a statement or information.

N/A: The requirement is not applicable to the game.

Out of scope: The requirement cannot be evaluated at this stage due to the current scope of testing or limitation of test environment.

4.1 Section 3.2.3 - Quality management system

| Ksa Requirement | Compliance Status |
|--|-------------------|
| 92 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 6.1.2.1, SCP.02.03.EN.1.1 6.1.2.2, SCP.02.03.EN.1.1 5.1.2.5) | |
| 1. The gambling system shall allow the customer to complete any incomplete games. | N/A |
| 2. The gambling system shall ensure that all incomplete games are accounted for, and that the customer knows the status of these games and his or her stake. | N/A |
| 5.1.2.5 The rules shall address how interruptions of ongoing games are handled. | Compliant |
| 93 - Regulations number Decree: R3.5 (DK REF: SCP.02.03.EN.1.1 4.2.2.2) | |
| The gambling system shall clearly display the customer's possible stake, actual stake and, if relevant, a conversion from currency to bet denomination (in a manner that makes it easy to infer the rate of exchange). | Compliant |
| 94 - Regulations number Decree: R3.5 (DK REF: SCP.02.03.EN.1.1 4.2.2.1) | |
| The gambling system shall clearly display the bet denomination or currency of the game. | Compliant |

4.2 Section 3.2.4 - Gambling technology

Regulations 95 and 97 to 114 of this section relate to RNG which has been evaluated separately and a separate report ("RNG Report "RN-330-PPL-21-01-609 - PragmaticPlay RNG.pdf", issue date 30 April 2021.") has been issued.

| Ksa Requirement | Compliance Status |
|--|-------------------|
| Regulations 95 and 97 to 114 – RNG requirements | Compliant |
| 96 - Section number Decree and Regulations number Decree: B4.2.3, R3.2.1. (DK REF: SCP.01.03.EN.1.1 3.2.2.1) | |
| Games without stakes (free games, games for fun, trial games etc.) shall present the chance of winning in a correct and balanced way so as not to create an impression that the chance of winning is bigger than it actually is in games with stakes. | Compliant |
| 115 - Regulations number Decree: R3.2.1 (DK NL: SCP.01.03.EN.1.1 3.2.1.1) | |
| Games shall be independent of the characteristics of the customer's equipment and/ or communication channel. | Compliant |
| 116 - Regulations number Decree: R3.2.1 (DK NL: SCP.01.03.EN.1.1 3.2.3.1) | |
| Games shall give customers fair expectations of their chances of winning by correctly presenting all outcomes and/or events on which the games are based. Guidance: concepts such as "nearmiss" are not regarded to be fair in this connection. | Compliant |
| 117 - Regulations number Decree: R3.2.1 (117 - Regulations number Decree: R3.2.1) | |
| Games shall give a fair impression of whether a customer is able to affect the outcome. Guidance: Games which give the customers the impression that they have control over the outcome of the game when they do not (i.e. the result is completely random) are not permitted. | Compliant |
| 118 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.2.3.3) | |

| Ksa Requirement | Compliance Status |
|---|-------------------|
| <p>The gambling system shall ensure that all games which are being presented as being based on random outcomes actually have the same likely chance of producing a given combination each time the game is played.</p> <p>Guidance: the return to player shall not be manipulated by the system or by manual interference to maintain a constant return to player to the player.</p> <p>Guidance: the games are not allowed to adjust to the behavior of the player</p> | Compliant |
| 119 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.2.3.4) | |
| <p>Games which involve the simulation of a physical object (dice, roulette wheels, etc.) shall provide true and fair outcomes in accordance with expectations to this physical object.</p> <p>Guidance: if a game is presented as a direct or indirect simulation of a physical object, the simulation shall be identical with the expected behavior of the physical object.</p> | N/A |
| 120 - Regulations number Decree: R3.2.1 (DK NL: SCP.01.03.EN.1.1 3.3.3.1) | |
| <p>The gambling system shall ensure that the actual funds transferred to a jackpot correspond to what is stated in the rules governing the jackpot in question.</p> <p>Guidance: if there is a maximum amount on a jackpot, all further contributions after this maximum has been reached shall be credited to another pool (see below for details).</p> | N/A |
| 121 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.3.3.2) | |
| <p>The gambling system shall ensure that the return to player corresponds to what the customer has been led to expect, irrespective of the game unit stake.</p> | N/A |
| 122 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.3.3.3) | |
| <p>If a minimum stake is required for a customer to trigger a jackpot, the basic game (ex Jackpot) shall have the stated return to player.</p> | N/A |
| 123 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.3.3.4) | |
| <p>The gambling system shall ensure that all customers who contribute to a jackpot have a chance of winning the jackpot while playing the game in question.</p> | N/A |
| 124 - Regulations number Decree: R3.2.1 (DK REF: SCP.01.03.EN.1.1 3.3.3.5) | |
| <p>The gambling system shall ensure that the likely chance of winning the jackpot is linearly proportional to the customer's contribution to the jackpot.</p> | N/A |
| 125 - Regulations number Decree: R3.2.1 (DK NL: SCP.02.03.EN.1.1 5.2.1.1) | |
| <p>Game symbols applied in live casino games shall be automatically registered by 'studio technology'.</p> | N/A |
| 126 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 5.2.1.2) | |
| <p>Game symbols applied in live casino games shall be reported to the gambling system</p> | N/A |
| 127 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 5.2.1.3) | |
| <p>Game rules for live casino games shall be programmed into the gambling system.</p> | N/A |
| 128 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 5.2.3.1) | |
| <p>The live casino gaming components of the gambling system shall include video surveillance.</p> | N/A |
| 129 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 5.2.4.1) | |
| <p>There shall be formal physical access control to the live casino game studio and the adjoining facilities.</p> | N/A |
| 130 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.1.2) | |
| <p>All participants playing against one of the licensee's customers shall be connected to a gambling operator and unequivocally identifiable by the licensee.</p> <p>Guidance: this does not prevent any player from being anonymous to other players</p> | Out of Scope |
| 131 - Regulations number Decree: R3.2.2 (DK NL: SCP.02.03.EN.1.1 5.1.1.3) | |
| <p>As referred to in 5.1.1.1, data shall be kept within the licensee's gambling system.</p> | Out of Scope |
| 132 - Regulations number Decree: R3.2.2 (DK NL: SCP.02.03.EN.1.1 5.1.1.4) | |
| <p>The gambling system shall include steps to prevent the customers from playing against themselves.</p> | N/A |
| 133 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.1.5) | |
| <p>The gambling system shall have methods for discovering whether the same equipment is being used by one or more participants in the peer to peer system at the same time.</p> | N/A |
| 134 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.1.6) | |
| <p>The gambling system shall, as far as possible, include a limitation so that the same equipment is not being used by one or more participants in the peer to peer system at the same time</p> | N/A |
| 135 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.3.1) | |
| <p>The gambling system shall have technical methods for disclosing suspicious circumstances on an ongoing basis (realtime).</p> | N/A |
| 136 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.3.2) | |

| Ksa Requirement | Compliance Status |
|--|-------------------|
| The gambling system shall be capable of analysing suspicious events and use this as a basis for generating reports. | N/A |
| 137 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.3.3) | |
| The gambling system shall have technical methods to support the rules (5.1.2.4) regarding the customer's use of add-on applications for automation of games | N/A |
| 138 - Regulations number Decree: R3.2.2 (DK REF: SCP.02.03.EN.1.1 5.1.1.1) | |
| The gambling system shall keep a log of all participants in the games of the licensee. | N/A |
| 139 - Regulations number Decree: R3.2.3 (DK REF: SCP.02.03.EN.1.1 4.3.1.4) | |
| The game rules shall not change during the actual game. | N/A |
| 140 - Regulations number Decree: R3.4.2 (DK REF: SCP.02.03.EN.1.1 4.3.1.1) | |
| All games shall have associated rules and instructions covering all aspects of the game. | Compliant |
| 141 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.1.2) | |
| The game rules (see 4.3.1.1) shall be true and fair and unambiguous. | Compliant |
| 142 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DE nomenkader: SCP.02.03.EN.1.1 – 4.3.1.3) | |
| The game rules shall be available to the customer through the same medium and on the same unit as that used for the actual game. | Compliant |
| 143 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DE nomenkader: SCP.02.03.EN.1.1 – 4.3.1.4) | |
| The game rules shall not change during the actual game | N/A |
| 144 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.1.5) | |
| Games shall always be arranged in accordance with the current game rules | Compliant |
| 145 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.2.1) | |
| Written instructions shall be in Danish and be both grammatically and syntactically correct. Guidance: This does not prevent translation of written instructions into other languages. | Compliant |
| 146 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.2.2) | |
| The base version language is Danish (if several languages are used) | Compliant |
| 147 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.2.4) | |
| All playing information shall be given to the customer in the language chosen by the customer. Game rules and instructions shall be the same in all language versions. | Compliant |
| 148 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.2.6) | |
| Game rules and instructions shall be available without it being necessary to place a stake. | Compliant |
| 149 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.2.7) | |
| Game rules and instructions shall be available during the entire game. Guidance: Playing instructions shall be visible and readily accessible in all situations. Guidance: When a game temporarily changes character when it is played, the game rules and instructions shall be changed correspondingly. | Compliant |
| 150 - Section number Decree: B4.34.1, B4.34.2, B4.38.1 (DK REF: SCP.02.03.EN.1.1 – 4.3.3.1) | |
| The gambling system shall inform the customer of the theoretical return to player when using an optimal game strategy and it shall be clear which game options are not parts of an optimal game strategy. The information shall be available in the game rules for each game. Guidance: When a progressive prize is offered, it shall be implemented in a manner ensuring, that the theoretical minimum return to player is correctly displayed to the customer. | Compliant |
| 151 - Regulations number Decree: R3.2.1 (DK REF: SCP.02.03.EN.1.1 5.2.1.4) | |
| The gambling system shall be capable of analysing live casino games with a view to mapping irregularities and deviations and use this as a basis for generating reports | N/A |

4.3 Section 3.2.5 - Addiction prevention

| Ksa Requirement | Compliance Status |
|---|-------------------|
| 152 - Section number Decree and Regulations number Decree: 9 (DK REF: SCP.02.03.EN.1.1 4.2.1.1, 4.2.1.2, 4.2.1.3, 4.2.1.4, 4.2.1.5 & 4.2.1.6 = SCP02.01.EN.1.3. 4.2.1.1, 4.2.1.2, 4.2.1.3, 4.2.1.4, 4.2.1.5 & 4.2.1.6) | |
| 4.2.1.1. The gambling system shall ensure that rules and instructions (including restrictions for games and how the customer plays) are easily available from all game pages related to the game. | Compliant |
| 4.2.1.2. The gambling system shall ensure that the name of the game is shown on all pages related to the game. Guidance: the game name may be visible in the title bar of the window or the tab in which the game is running. | Compliant |

| Ksa Requirement | Compliance Status |
|--|-------------------|
| 4.2.1.6 The gambling system shall display a clock that allows the customer to see how much time he or she spends. The clock shall be visible for the customer at all times, and it shall not be based on the customer's equipment. | N/A |
| 153 - Regulations number Decree: R4.4 (DK NL: SCP.02.03.EN.1.1 3.4.2.6, 3.4.2.7, 3.4.2.8 & 3.4.2.9 = SCP02.01.EN.1.3. 3.4.2.6, 3.4.2.7, 3.4.2.8 & 3.4.2.9) | |
| 3.4.2.6 The gambling system shall have an auditable log which shows all amounts deposited. This log shall, as a minimum, include the following information: | Out of Scope |
| • date and time; | |
| a. payment channel | |
| b. customer; | |
| c. amount; | |
| d. type of transaction (i.e. 'deposit') | |
| The gambling system shall be able to generate reports which clearly show all deposited funds. | |
| The gambling system shall be able to generate reports which clearly show all amounts that have been deposited to the customer's accounts categorised by payment channel. | |
| The gambling system shall be able to generate reports which accurately show all rejected attempts to deposit funds. | |

4.4 Return to Player

The Client has provided Mathematical treatise of the game which included calculation of theoretical RTP. **ga** performed independent calculations and confirmed the theoretical RTP provided in mathematical treatise and advertised in game rules. No issues were found.

The theoretical return to player (RTP) of Bingo 50 game has been verified to be 70.00%

A game simulator was run by **ga** to simulate play of 1 Million rounds of the game to calculate the actual RTP. The actual RTP for 1 Million game rounds of the game is: 70.00%

For a very high number of game rounds i.e. the long-term actual RTP value gets very close to the theoretical RTP.

5 References

1. Netherlands Gambling Authority (Ksa: Kansspelautoriteit) Remote Gambling conformity assessment scheme, version 1.3, March 2021
2. Prize calculation “bingo-generator-logic.docx”, no version, no date.
3. RNG Report “RN-330-PPL-21-01-609 - PragmaticPlay RNG.pdf ”, issue date 30 April 2021.
4. Game specification “PGW Bingo Game design specification doc - PragmaticPlay.pdf”, no version, no date.
5. Game Simulation “Simulation for GA (bingo90, rtp70) with jp.xls”, no version, no date.
6. RTP Management Policy “Pragmatic Play_Bingo_RTP Management Policy.pdf”, no version, no date.

Annex A : SHA1 hashes of game

| Game Name | Critical Component | SHA-1 Hashes |
|-----------|-------------------------------------|---|
| Bingo 50 | <i>bingo-core-logic-1.2.4.4.jar</i> | <i>0fabab505a83933526dc1f8a66f71bb4cb70d28</i> |
| | <i>bingo-jackpot-logic-1.2.jar</i> | <i>e0b2108733adf8e8e75006ae6dc730e573f66b78</i> |
| RNG | <i>dh-mg-1.0.0.jar</i> | <i>b33e33da96c37c0eb2d02b3fbf439685fcda876c</i> |

Annex B : Game assessment plan

The assessment plan for evaluation of online games is described below:

| ONLINE GAME ASSESSMENT PLAN | | | | |
|--|---|---|---|---|
| Assessment item: Online game | | Game name: Bingo 50 | | |
| Game type: Lottery game | | Channels (Game clients): Desktop and mobile | | |
| Jackpot: No | | Game version: N/A | | |
| Jurisdiction: Netherlands | | Technical Standard: Remote Gambling conformity assessment scheme, version 1.3, March 2021 | | |
| Assessor/s: Moona Siddiqui, Wajahat Kashan | | | | |
| Test environment and access method: Supplied by client and accessed remotely from our white-listed IPs | | | | |
| Test procedures for all game related Ksa requirements: Netherlands testing procedures v1.0 | | | | |
| ASSESSMENT MATRIX | | | | |
| Ksa requirements | A | B | C | D |
| Regulations 92 to 94 – Quality management system | x | | x | |
| Regulations 95 and 97 to 114 – RNG requirements | | x | x | x |
| Regulations 96, 115 to 151 – Gambling technology (game requirements such as game rules, artwork, game functionality, return to player, game information recording, and jackpot) | x | x | x | x |
| Regulations 152, 153 – Addiction prevention | x | | x | |
| Game elements | A | B | C | D |
| Game rules | x | x | x | |
| Artwork | x | | | |
| Game functionality | x | x | x | |

| | | | | |
|---|---|---|---|---|
| Return to player | | x | x | x |
| Game information | x | | x | |
| KEY: A: Functional testing B: Source code review C: Documentation review D: Calculation/Simulation | | | | |
| Assessment methods: | Assessment instruments required for each method | | | |
| 1. Functional testing 2. Source code review 3. Documentation review 4. Calculation/Simulation | 1. Test environment, test procedures 2. Game source code 3. Game submission including specifications, maths, rules, help files 4. Game maths, game simulator | | | |
| Place or Context for assessment to occur (onsite/remote): Performed remotely | | | | |
| Materials/resources/any documents needed for assessment: 1. Test environment 2. Documentation (game rules, help files, maths) 3. Game source code 4. Game simulator for actual RTP calculation 5. Supervised build (remote) to verify source code and binaries used for game and to obtain hashes for future verification | | | | |
| Special arrangements for assessment: 1. Test environment and simulator supplied by the client 2. Remote session for supervised build | | | | |
| Assessment result: COMPLIANT | | | | |
| Non-conformities (provide a summary and reference to details): None | | | | |
| Reports generated for this assessment: 1. Game Conformity Assessment report 2. Summary of the Assessment report | | | | |

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