eCOGRA LIMITED

GAMBLING COMMISSION (GREAT BRITAIN)

TESTING REPORT
RANDOM NUMBER GENERATOR

FOR

GAMES GLOBAL OPERATIONS LIMITED

REPORT REFERENCE NUMBER: **e222502GGLGBR**

REPORT ISSUE DATE: **17 MARCH 2022**

CONFIDENTIAL

IMPORTANT DISCLAIMER

This report is supplied on the basis that it is for the sole use of the parties listed and to whom it is addressed, and exclusively for the objectives set out herein.

No party, other than those specified, may rely on this report for any purpose whatsoever.

eCOGRA Limited ('eCOGRA') does not accept any liability or responsibility towards any third party to whom this report is shown or into whose hands it may fall.

This report should not be relied upon for any assurances in relation to third parties and/or activities which are not covered by the certifiable regulatory requirements or compliance standards of the jurisdiction, regulatory authority or compliance entity or system for whose purposes this report is stated to have been prepared. All such other parties and activities are outside the scope of this report and have therefore not been reviewed by eCOGRA.

The nature, timing and extent of testing conducted for the purpose of the certification is considered sufficient and appropriate based on the applicable certifiable regulations and professional judgement applied to the associated risk of non-compliance. The certification of compliance should not be construed to imply any warranty over the functionality, quality or performance of the subject of certification. eCOGRA reserves the right to withdraw this certificate if any non-compliances are subsequently detected by or reported to eCOGRA.

CONFIDENTIALITY NOTICE

This document is proprietary to eCOGRA and contains confidential information of commercial value to eCOGRA, the disclosure of which to third parties could adversely affect the business affairs of eCOGRA.

This information is supplied in confidence to you, on the strict condition that no part of it is disclosed to any third party, in particular to any person or organisation that may be in competition with eCOGRA without the prior written approval of eCOGRA.

Table of Contents

Section 1. Introduction

Games Global Operations Limited requested eCOGRA to evaluate the Random Number Generator (RNG) to be utilised for the offering of online gambling products against the relevant regulatory requirements for the jurisdiction as listed below. The Random Number Generator used for the gambling applications is Software based.

Section 2. General Information

Client name:	Games Global Operations Limited
Client address:	55 Athol Street Douglas Isle of Man IM1 1LA
Client contact person:	Kimberley Broad
Client e-mail address:	Kimberley.Broad@gamesglobal.com
Product name:	Random Number Generator
Supplier:	Apricot Investments Limited
Product description:	The RNG is an industrial strength software random number generator which uses MD5 and RC4 as the basis for generating the random numbers within a given range. The pooled RNG contains multiple instances of the RNG algorithm which enhances the state of unpredictability.
Product version:	35.0.0.2982
RNG type:	Software
Jurisdiction:	Great Britain
Assessment standards and criteria:	Remote Gambling and Software Technical Standards ("RTS") – February 2021, Level 1 testing against RTS 7A and 7B. Testing Strategy for Compliance with Remote Gambling and Software Technical Standards - February 2021.
Accredited body full name:	eCOGRA Limited
Accredited body legal form:	Private Company
Accredited body managing address:	2nd Floor Berkeley Square House, Berkeley Square, London, W1J 6BD, United Kingdom
Accredited body accreditations held:	An Accredited Testing Body No. 4656. ISO/IEC 17025:2017, Issued by The United Kingdom Accreditation Service (Issue: 027, Issue Date: 25 February 2022).

Accredited body experience:	19 years' testing and inspection of Online Gambling Systems; 6 years' auditing and certifying Information Security Management Systems; 7 years' of Risk and Vulnerability analyses.
Accredited body representative:	Bradley Khoury
Accredited body contact email:	info@ecogra.org
Accredited body contact number:	Tel: +44 20 7887 1480
Date of testing and inspection:	07 March 2022 - 17 March 2022
Place of testing:	The Accredited Body's premises.
Report type:	Testing Report
Report reference number:	e222502GGLGBR
Report issue date:	17 March 2022
Assessment result:	Compliant
Accredited body report approval:	

I hereby certify that the abovementioned RNG complies with the requirements of RTS 7A and RTS 7B of the UKGC's Remote Gambling and Software Technical Standards – February 2021, as described in Section 4 of this report.

Bradley Khoury
Chief Technical Officer and Director
eCOGRA

Section 3. Testing Work – Qualifications and Experience

3.1. Testing Supervisors

Name:	Gary Lupton-Smith
Education/Qualification:	Bachelor of Commerce
Date Obtained:	1991
Other Relevant Qualifications:	Certified Information Systems Auditor (CISA)
Date Obtained:	2000
Number of Years' Experience in Testing and Inspection of Online Gaming Systems:	14 years

3.2. Testing Assessors

Name:	Tyrone Rajah
Position:	Team Lead
Name:	Manny De Abreu
Position:	Data Specialist
Name:	Sphamandla Langa
Position:	Analytical Specialist
Name:	Janine Odayan
Position:	Senior Data Analyst
Name:	Stephen Coombe
Position:	Data Analyst
Name:	Josephine Govender
Position:	Data Analyst
Name:	Jaquelene Krishen
Position:	Data Analyst
Name:	Ridhwaan Shariff
Position:	Data Analyst

Section 4. Software Details

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

File Name	Version	Binary MD5 Sum	SHA1 Hash
MGS.RNG.dll	35.0.0.657	145958ebd913692b1c8fc1a88181c4a1	e25f39d91c2abc5eaa91aa0162bf0e6794f090f5
MGSRng9-x86.dll	35.0.0.657	c1d95b5950524beab1c437b6d6eaef63	8c919e39efce797791f4cc66ce26a0fee8495185
MGSRng9-x64.dll	35.0.0.657	689374ca6578f57e63abfdca133ca67f	81719b4a2029aac1ee881c3008da44584d786538
MGSRng9.dll	34.0.0.553	3e953c4d36eb90d5a1da57e494a33b60	19d180b655523da419c7abb17699d8ffcd40424d
MGSRngInterop.dll	35.0.0.13747	fdd5070cc7d81efc0f6207722d15871e	e1988d0c8b67e0911220338123e178666a1f9eb0
MGS.Random.Factory.dll	35.0.0.2982	637c30b75b1c7bfe82edfe9ab9ce82ae	afc5305a9e778e6f08b0ec13a894d64f4bf09d39
MGS.Random.Interfaces.dll	35.0.0.2982	3b7245d8d959363cb00873d4a32b59e2	22ad704efba7190f4c034e8572231c9862d36c8e
MGS.Random.Pool.dll	35.0.0.2982	f9f23cca9a691691bdcd24c825e66e4e	e8585e6ef2dafc8b9c46b080f2f5993ed6ee152e

Section 5. Assessment results

Testing procedures were performed against certifiable sections of the following laws and regulations of the Remote Gambling and Software Technical Standards, as applicable to the components relevant to the products within scope:

- Remote Gambling and Software Technical Standards ("RTS") – February 2021, Level 1 testing against RTS 7A and 7B.
- Testing Strategy for Compliance with Remote Gambling and Software Technical Standards - February 2021.

Different values used in the "Assessment Result" column is described as follows:

- **Compliant**: The components within the assessment scope conform to the assessment standards and criteria.
- **Not Applicable**: The requirement is not applicable for the assessment of conformance. Refer to comments for further information.
- **Out of Scope**: The requirement for the assessment of conformance cannot be evaluated at this stage due to the current scope of testing/inspection or limitation of the test/inspection environment. Refer to comments for further information.
- **Compliant with Observation**: The components within the assessment scope conform to the assessment standards and criteria with certain limitations or an area of moderate risk of potential non-compliance identified. Refer to comments for further information.

RTS Requirement	RTS Implementation Guidance	Testing Applied	Assessment	Comments
RTS 7 – Generation of random outcomes *(Aim: To ensure that games and other virtual events operate fairly)*				
RTS requirement 7A Random number generation and game results must be 'acceptably random'. Acceptably random here means that it is possible to demonstrate to a high degree of confidence that the output of the RNG, game, lottery and virtual event outcomes are random, through, for example, statistical analysis using generally accepted tests and methods of analysis. Adaptive behaviour (i.e. a compensated game) is not permitted. Where lotteries use the outcome of other events external to the lottery, to determine the result of the lottery (for example, using numbers from the National Lottery) the outcome must be	**RTS implementation guidance 7A** a. RNG's should be capable of demonstrating the following qualities: i. the output from the RNG is uniformly distributed over the entire output range and game, lottery, or virtual event outcomes are distributed in accordance with the expected/theoretical probabilities ii. the output of the RNG, game, lottery, and virtual event outcomes should be unpredictable, for example, for a software RNG it should be computationally infeasible to predict what the next number will be without complete knowledge of the algorithm and seed value iii. random number generation does not reproduce the same output stream (cycle), and that two instances of a RNG do not produce the same stream as each other (synchronise) iv. any forms of seeding and re-seeding used do not introduce predictability v. any scaling applied to the output of the random number generator maintains the qualities above.	Refer to "1. Tests Performed" under "Schedule 1 – RNG Testing" below.	Compliant	The compliance assessment is based on a limited scope of testing which includes the assessment of the RNG as a standalone component without integration with any games. Further testing may be required in individual game assessments to validate full compliance of this requirement for each applicable game.

RTS Requirement	RTS Implementation Guidance	Testing Applied	Assessment	Comments
unpredictable and externally verifiable.	c. For games or virtual events that use the laws of physics to generate the outcome of the game (mechanical RNGs), the mechanical RNG used should be capable of meeting the requirements in a. where applicable and in addition: i. the mechanical pieces should be constructed of materials to prevent decomposition of any component over time (e.g. a ball shall not disintegrate) ii. the properties of physical items used to choose the selection should not be altered iii. players should not have the ability to interact with, come into physical contact with, or manipulate the mechanics of the game. d. Restricting adaptive behaviour prohibits automatic or manual interventions that change the probabilities of game outcomes occurring during play. Restricting adaptive behaviour is not intended to prevent games from offering bonus or special features that implement a different set of rules, if they are based on the occurrence of random events.			
RTS requirement 7B As far as is reasonably possible,	**RTS implementation guidance 7B** a. Games should implement the rules as	Refer to individual game certification.	Compliant (as stipulated in	The compliance assessment is based on a limited scope of

RTS Requirement	RTS Implementation Guidance	Testing Applied	Assessment	Comments
games and events must be implemented fairly and in accordance with the rules and prevailing payouts, where applicable, as they are described to the customer.	described in the rules available to the customer before play commenced. b. The mapping of the random inputs to game outcomes should be in accordance with prevailing probabilities, pay tables, etc. c. When random numbers, scaled or otherwise, are received, e.g. following a game requesting a sequence of random numbers, they are to be used in the order in which they are received. For example, they may not be discarded due to adaptive behaviour. d. Numbers or sequences of numbers are not to be discarded, unless they fall outside the expected range of numbers required by the virtual event – such an occurrence should result in an error being logged and investigated.		individual game certifications)	testing which includes the assessment of the RNG as a standalone component without integration with any games. Further testing may be required in individual game assessments to validate full compliance of this requirement for each applicable game.

Schedule 1. RNG Testing

1. Tests Performed

An overview of the assessment approach of the Random Number Generator (RNG) is outlined below. We evaluated the RNG to ensure that it meets the relevant certifiable requirements. The scope of the evaluation consisted of an assessment of the following aspects:

Documentation	The RNG documentation is reviewed to allow for understanding the implementation of the RNG in the gaming system. Research is conducted on the RNG algorithm/hardware to ensure that there are no widely known weaknesses within the RNG under review.
Functionality	This involves an understanding of how random numbers received, following a call to the RNG requesting a sequence of random numbers, and how they are used. They must be used in the order in which they are received.
Source Code	The source code is reviewed to ensure that the implementation of the RNG is in accordance with the RNG documentation provided by the client. A walkthrough is conducted to show the nature of calls to the RNG as well as how the results are utilised.
Seeding and Reseeding	This involves gaining an understanding of the norms of initialisation of the RNG, including seeding sources which are verifiable sources of entropy. The seeding and reseeding used should not introduce predictability.
Mapping and Scaling	Any scaling applied to the output of the random number generator maintains uniform distribution over the entire output range. It should be ensured that game event outcomes are distributed in accordance with the expected/theoretical probabilities.
Security of RNG	Understanding the security of generated numbers during transmission between the RNG server and the gaming server.
Monitoring of RNG	Understanding the systems in place to monitor functionality of the RNG during live use, with the purpose of identifying early detection of irregularities in RNG output.
Cryptographic Strength	Review published documentation on the RNG algorithm. Evaluation of the algorithm, period length and seeding/re-seeding characteristics of the RNG and established that it contains features associated with cryptographically strong RNGs to ensure the sequence of random values generated cannot be predicted or reliably reproduced.

Test Suites	The test suite used to perform the evaluation consisted of the following: • Chi-Squared Tests; • Wald-Wolfowitz (or Runs) Tests; • Correlation and Serial Correlation; • Expected probabilities for shuffle decks; and • Diehard Test Suite. Process and analyse six sets of output generated data logs (180 files) consisting of scaled ranges, shuffled decks and hexadecimal values for Diehard Test Suite. Application of numerous mathematical and statistical tests to verify: • the variation in the data is due to random chance; • the results are within the acceptable parameters to demonstrate statistical independence; • the results calculate the correct standard deviations from their expected values; and • the results of the output values are unpredictable.

2. TEST RESULTS

1. Recognised statistical and mathematical tests were performed to certify the RNG operated in compliance with the requirements and general advice on technical requirements and accreditation of bodies for anyone who is to check, test and certify gaming activities. This included tests for probability (to ensure the expected number of occurrences), randomness (so that one cannot predict the following occurrence 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 are a pass at a 95% confidence level.

2. OUTPUT BASED TESTING ON SCALED RANGES: 0-33, 0-36, 0-51, 0-66, 0-99, 0-500, 0-999

a. OUTPUT BASED TESTING ON SCALED RANGES RESULTS

OUTPUT BASED TESTING				CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
				Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
Test Number	Sample Size	Test Range	DoF	P-value	P-value	P-value	P-value	P-value	P-value
1	3 000 000	0-33	33	0.3959	0.7969	0.5781	0.3003	0.3870	0.7886
2	3 000 000	0-36	36	0.5125	0.7293	0.0115	0.6808	0.4078	0.9782
3	3 000 000	0-51	51	0.3869	0.4858	0.5580	0.6838	0.8164	0.2914
4	3 000 000	0-66	66	0.0849	0.7131	0.9743	0.2569	0.4581	0.7501
5	3 000 000	0-99	99	0.9812	0.3354	0.2899	0.7703	0.5467	0.8270
6	3 000 000	0-500	500	0.7247	0.7815	0.8173	0.9292	0.2056	0.6666
7	3 000 000	0-999	999	0.8174	0.8231	0.3071	0.2980	0.1355	0.3134

b. SCALED DATA RANDOMNESS TEST SUCCESS (✓) OR FAILURE (×) SUMMARY

OUTPUT BASED TESTING				CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
				Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
Test Number	Sample Size	Test Range	DoF	P-value	P-value	P-value	P-value	P-value	P-value
1	3 000 000	0-33	33	✓	✓	✓	✓	✓	✓
2	3 000 000	0-36	36	✓	✓	✓	✓	✓	✓
3	3 000 000	0-51	51	✓	✓	✓	✓	✓	✓
4	3 000 000	0-66	66	✓	✓	✓	✓	✓	✓
5	3 000 000	0-99	99	✓	✓	✓	✓	✓	✓
6	3 000 000	0-500	500	✓	✓	✓	✓	✓	✓
7	3 000 000	0-999	999	✓	✓	✓	✓	✓	✓

2. OUTPUT BASED TESTING ON SHUFFLED DECKS

a. OUTPUT BASED TESTING ON SHUFFLED DECKS RESULTS

OUTPUT BASED TESTING				CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
				Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
Test Number	Sample Size	Test Range	DoF	P-value	P-value	P-value	P-value	P-value	P-value
1	3 000 000	5 Card Hands	8	0.4322	0.8136	0.8584	0.3669	0.4293	0.3142
2	3 000 000	7 Card Hands	9	0.4536	0.6023	0.6709	0.4944	0.5552	0.2590
3	3 000 000	5-7 Card Multiples Combinations	17	0.5937	0.7207	0.8179	0.3708	0.5027	0.4956
4	3 000 000	5-7 Card Suit Combinations	29	0.6160	0.4013	0.3100	0.6431	0.6259	0.5035

b. SHUFFLED DECKS RANDOMNESS TEST SUCCESS (✓) OR FAILURE (×) SUMMARY

OUTPUT BASED TESTING				CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
				Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
Test Number	Sample Size	Test Range	DoF	P-value	P-value	P-value	P-value	P-value	P-value
1	3 000 000	5 Card Hands	8	✓	✓	✓	✓	✓	✓
2	3 000 000	7 Card Hands	9	✓	✓	✓	✓	✓	✓
3	3 000 000	5-7 Card Multiples Combinations	17	✓	✓	✓	✓	✓	✓
4	3 000 000	5-7 Card Suit Combinations	29	✓	✓	✓	✓	✓	✓

3. DIEHARD TESTS

a. DIEHARD TEST RESULTS

DIEHARD TEST		CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
Test Name	**Sample Size**	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 1**	**Sample 2**	**Sample 3**
BIRTHDAY SPACINGS TEST	48 000 000	0.1481	0.0152	0.1421	0.0026	0.1952	0.0023
OVERLAPPING 5-PERMUTATION TEST	48 000 000	0.5260	0.4354	0.0297	0.2678	0.1143	0.1126
THE BITSTREAM TEST	48 000 000	0.0879	0.0933	0.0756	0.1319	0.1217	0.0062
COUNT-THE-1's TEST bytes	48 000 000	0.0283	0.0194	0.0600	0.0804	0.0159	0.0324
MINIMUM DISTANCE TEST	48 000 000	0.4930	0.6828	0.3209	0.5342	0.1494	0.5528
SQEEZE TEST	48 000 000	0.0107	0.0482	0.3010	0.8047	0.5686	0.1215
RUNS TEST	48 000 000	0.0722	0.2900	0.0652	0.6049	0.1480	0.3856
CRAPS TEST	48 000 000	0.2929	0.3844	0.6670	0.2457	0.1013	0.2106

b. DIEHARD TESTS SUCCESS (✓) OR FAILURE (×) SUMMARY

DIEHARD TEST		CLIENT GENERATED DATA			eCOGRA GENERATED DATA		
Test Name	**Sample Size**	**Sample 1**	**Sample 2**	**Sample 3**	**Sample 1**	**Sample 2**	**Sample 3**
BIRTHDAY SPACINGS TEST	48 000 000	✓	✓	✓	✓	✓	✓
OVERLAPPING 5-PERMUTATION TEST	48 000 000	✓	✓	✓	✓	✓	✓
THE BITSTREAM TEST	48 000 000	✓	✓	✓	✓	✓	✓
COUNT-THE-1's TEST bytes	48 000 000	✓	✓	✓	✓	✓	✓
MINIMUM DISTANCE TEST	48 000 000	✓	✓	✓	✓	✓	✓
SQEEZE TEST	48 000 000	✓	✓	✓	✓	✓	✓
RUNS TEST	48 000 000	✓	✓	✓	✓	✓	✓
CRAPS TEST	48 000 000	✓	✓	✓	✓	✓	✓

4. SERIAL CORRELATION TESTS

a. SERIAL CORRELATION TEST RESULTS:

	CLIENT GENERATED DATA					ECOGRA GENERATED DATA				
	DECK 1					DECK 1				
	Col 1	Col 2	Col 3	Col 4	Col 5	Col 1	Col 2	Col 3	Col 4	Col 5
LAG 1	0.2446	0.7632	0.7093	0.7386	0.0318	0.4126	0.0370	0.9985	0.3612	0.3114
LAG 2	0.3871	0.2914	0.6091	0.5821	0.0999	0.5756	0.1134	0.9636	0.6334	0.3795
LAG 3	0.4765	0.4807	0.7835	0.7682	0.0698	0.7739	0.2236	0.5375	0.3976	0.4950
LAG 4	0.6383	0.4780	0.8302	0.8873	0.0997	0.8072	0.2529	0.6497	0.5549	0.5702
LAG 5	0.7693	0.6187	0.9154	0.6835	0.0885	0.8169	0.3623	0.3289	0.3589	0.6495
LAG 6	0.6727	0.6050	0.6362	0.3054	0.1028	0.8836	0.4846	0.3725	0.4760	0.7530
LAG 7	0.6147	0.7103	0.7441	0.2973	0.1147	0.9068	0.2777	0.3987	0.3881	0.2029
LAG 8	0.6540	0.7819	0.8197	0.2645	0.1297	0.6608	0.3516	0.4558	0.4836	0.2805
LAG 9	0.7228	0.7327	0.8677	0.3453	0.1362	0.6481	0.4124	0.5568	0.5838	0.3475
LAG 10	0.7772	0.8092	0.8517	0.3158	0.1448	0.7335	0.3256	0.6015	0.6345	0.4089

b. SERIAL CORRELATION TEST SUCCESS (✓) OR FAILURE (×) SUMMARY

	CLIENT GENERATED DATA					ECOGRA GENERATED DATA				
	DECK 1					DECK 1				
	Col 1	Col 2	Col 3	Col 4	Col 5	Col 1	Col 2	Col 3	Col 4	Col 5
LAG 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

5. CORRELATION TESTS

a. CORRELATION TEST RESULTS: Sample 1

	CLIENT GENERATED DATA							eCOGRA GENERATED DATA						
Range	**0-33**	**0-36**	**0-51**	**0-66**	**0-99**	**0-500**	**0-999**	**0-33**	**0-36**	**0-51**	**0-66**	**0-99**	**0-500**	**0-999**
LAG 1	0.9661	0.4347	0.9263	0.6656	0.3199	0.6201	0.1594	0.7766	0.6918	0.1431	0.4180	0.6163	0.2994	0.4037
LAG 2	0.6674	0.6958	0.2838	0.7422	0.1104	0.8280	0.3495	0.5364	0.5355	0.3278	0.1405	0.2823	0.5689	0.6703
LAG 3	0.8465	0.5943	0.0635	0.8829	0.2203	0.8267	0.5419	0.1138	0.6628	0.5153	0.1352	0.3337	0.5715	0.8437
LAG 4	0.7008	0.6418	0.0934	0.1982	0.3532	0.9226	0.4986	0.1996	0.8112	0.4631	0.2344	0.4421	0.7347	0.6725
LAG 5	0.2289	0.7740	0.1589	0.2987	0.4840	0.9157	0.4931	0.2872	0.3011	0.5273	0.3353	0.5869	0.7350	0.5445
LAG 6	0.3017	0.8665	0.2404	0.3856	0.5968	0.5330	0.3355	0.4008	0.3188	0.6055	0.4392	0.7062	0.7669	0.6010
LAG 7	0.3445	0.8787	0.2612	0.2289	0.5244	0.2722	0.1402	0.4581	0.4231	0.7122	0.5401	0.7418	0.8252	0.7011
LAG 8	0.3878	0.9199	0.2989	0.3105	0.3824	0.3200	0.1681	0.5524	0.4917	0.6545	0.6468	0.6172	0.8830	0.7824
LAG 9	0.4722	0.8416	0.3891	0.3947	0.4364	0.3237	0.2196	0.5529	0.5902	0.6098	0.6677	0.5620	0.7044	0.7814
LAG 10	0.5319	0.8930	0.4609	0.4104	0.5312	0.3991	0.1842	0.6334	0.6618	0.6450	0.6825	0.6404	0.6922	0.7880

b. CORRELATION TEST SUCCESS (✓) OR FAILURE (×) SUMMARY

	CLIENT GENERATED DATA							eCOGRA GENERATED DATA						
Range	**0-33**	**0-36**	**0-51**	**0-66**	**0-99**	**0-500**	**0-999**	**0-33**	**0-36**	**0-51**	**0-66**	**0-99**	**0-500**	**0-999**
LAG 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAG 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓