GLI®

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Report Type:	AUDIT REPORT
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Evaluated by:	GLI UK Gaming Ltd Llys Helyg, Parc Menai, Bangor LL57 4EZ, United Kingdom
Recipient:	Evolution Malta Holding Limited Level 1, The Centre, Tigne Point, Sliema, Malta, TPO 0001
Jurisdiction:	United Kingdom
Regulatory Document:	UK_AGTA Annual Games Testing Audit Template - June 2018 (September 2016, Updated June 2018)
Supplier:	Evolution Gaming Malta Limited Level 1, The Centre, Tigne Point, Sliema, Malta, TPO 0001
Submitting Party:	Evolution Malta Holding Limited Level 1, The Centre, Tigne Point, Sliema, Malta, TPO 0001
Evaluation Period:	02 March 2020 - 18 May 2020
Reference:	SY/246/EVL/20/001/UK/AGTA/01
Result:	Non-conformities and observations are listed below.
Findings:	Compliant: **13** Observation: **6** Minor Non-Conformity: **10** Major Non-Conformity: **4**
Authorised by:	Andrew Rosewarne Director

Worldwide Locations

World Headquarters
Lakewood, New Jersey

International Offices
GLI Africa
GLI Asia
GLI Australia Pty Ltd
GLI Austria GmbH
GLI Europe BV
GLI UK
GLI Italy
GLI South America

North American Offices
Colorado
Nevada
British Columbia

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Audit Company

GLI UK Gaming Ltd (GLI UK) is approved by the UK Gambling Commission (UKGC) and accredited to ISO/IEC 17020 and ISO/IEC 17025 by the United Kingdom Accreditation Service (UKAS) to undertake compliance testing of all categories of gaming. GLI UK is an approved testing facility for a number of regulators and jurisdictions worldwide. Certifications for these authorities extend beyond gaming compliance to include Information Security Management Systems (ISMS) audits, vulnerability scanning and penetration testing, reviews of Anti-Money Laundering (AML) controls and Annual Games Testing Audits (AGTA).

GLI UK's audit team comprises certified auditors trained to CISA, CISSP, CEH, BS ISO/IEC 27001:2005 and BS ISO/IEC 27001:2013 (ISO 27001) and the company has been performing audits since 2011.

Definitions

This report uses the following categories for the compliance assessments of each area evaluated.

Organisations are found to be Conforming or Non-conforming with requirements.

Conforming requirements will be found to be as follows:

- **Compliant** On the basis of the documentation and evidence that has been evaluated, the auditor is satisfied that the auditee conforms with the stated requirement.
- **Observation** On the basis of the documentation and evidence that has been evaluated, the auditor is satisfied that the auditee conforms with the stated requirement; however, the auditor has noticed an opportunity for improvement, or a "value add" potential process improvement that may further enhance the effectiveness of the auditee's processes or systems.

Non-conforming requirements will be graded as follows:

- **Minor Non-conformity** One or more weaknesses have been identified by the auditor that may lead to a major finding if not addressed, and/or which have otherwise raised potential cause for concern.
- **Major Non-conformity** A fundamental failing has been identified by the auditor that means that the overall system is ineffective. A major finding may also be issued for controls that are not implemented correctly, or if insufficient or inadequate evidence has been provided within the audit period.

The auditee will be asked by the auditor to provide a root cause analysis of the findings, and to provide a correction and corrective action(s) as appropriate to the type, severity, and grading of the finding.

Caveats

The findings presented in this document are a summary of the auditing work undertaken. All efforts have been made, within the time available, to ensure that the audit was as exhaustive as possible, within the team's remit and to the requested scope, in order to make an informed judgement as to the company's level of compliance (or non-compliance). The auditing team takes on trust that all communications and documents received are accurate and truthful, and that there has been no intention to deceive or subvert the assessment of compliance.

Quality Control

The monitoring of this audit was the responsibility of the management of GLI UK and every effort has been made to ensure the accuracy of the information contained in this report. If errors or omissions are discovered, please contact GLI UK with details as soon as possible. GLI UK reserves the right to revise and reissue this report if additional information is presented or discovered.

Auditor Information

Auditing activity on this project was carried out by the following certified auditor:

- **Lee Brookes** - Author, an information technology services professional with more than 6 years experience in fintech services. Lee's career includes technical support, quality assurance and technical analysis roles.
- **Deiniol Hughes** - Approver (ISO27001 Lead Auditor IBITGQ-ISO27001-756842), an assurance and information systems professional with more than 7 years experience in regulatory testing, information system controls, audit and governance. Deiniol's career includes technical project management and other roles including data analysis, change management and technical review of clients platforms and games.

GLI UK has determined that the above auditor has no direct commercial relationships with the audited Licensee and attests to the auditors' independence.

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Test Item Details

Selected Evidence

The following is a non-exhaustive list of evidence that was submitted for audit.

File name	SHA-1 checksum
1.213.1_STS Bet Limited - LCA - 28 August 2019 (1).pdf	a2d70e4f4eb2410a7b7f22dad3fd738d09721e07
AGTA 2020 change log (1).xlsx	30830d05969b8fd0d1de339b6c517e8f191a08ae
CM.zip	943907478f61a848852feec8678dd4ff4c10d52c
Change Management policy.pdf	33cc46d4b6c36d9de3c1f34b9c3e3503b8028dc0
GamesRegister.csv	70035f7de8a405395b5fde5d97778c188538e540
MDI 02-08 J19080765_G002_Super Sic Bo_REV.1.pdf	98e22354d5815e6ff37d5eca1d0a69071e080eb8
New game feature certification-v2-20200513_150105.pdf	5694686810a856abe4ecf8ef50d49e71418700d3
New game feature certification.pdf	667bfea70dea3566d71aa0e58f93a966ba65dedb
OneDrive_1_3-10-2020.zip	232ce08c3dd248c9bac990c8310b1eac434ce706
OneDrive_1_3-11-2020 (2).zip	e3855146661bc7035edbaccf1ebaf030118398e5
OneDrive_1_3-26-2020.zip	1d8501b14b53293187a6e6919a4817f2f28fa1da
OneDrive_1_3-27-2020.zip	f3bf400eaf08ebe1a9a6f0484558652ff3d4ff13
OneDrive_1_3-31-2020 (1).zip	d196921681057b01be1b8d4459e9080c5f9c140f
OneDrive_1_3-31-2020.zip	c9a24684ab0d639762fd6f972b21a490dea188e0
OneDrive_1_4-2-2020.zip	c5e27433a661a44e06650bf28006a2253ad9a6f3
OneDrive_1_5-5-2020.zip	eccabad494d95295fcdcfef6272d32e682618d18
RGS.zip	8ba4c69fbee35a598401834248df1b83254978d0

Executive Summary

This report summarises the findings of the licensee's Annual Games Testing Audit (AGTA). The audit was conducted remotely during the period 02 March 2020 to 18 May 2020.

This report includes the auditors' analyses of the licensee's compliance with the UKGC's required controls and a management response from the licensee.

During the audit, the licensee demonstrated its commitment to the requirements of the UKGC in relation to good software development practices and performance monitoring of active games.

Audit Scope

The subject of this audit is the games in the scope of the company's operating licence, and the effectiveness of its controls and monitoring systems during the preceding 12 months. The audit was conducted remotely using Skype, e-mail and screen sharing sessions.

Company Information

Evolution Gaming Malta Limited is licensed and regulated in the United Kingdom by the UKGC under licence number 39002. Evolution Malta Holding Limited is licensed and regulated in the United Kingdom by the UKGC under licence number 41655.

Organisation

The Licensee's business address is:

Evolution Malta Holding Limited,
Level 1,
The Centre,
Tigne Point,
Sliema
TPO 0001,
Malta

Evolution Gaming Malta Limited
Level 1,
The Centre,
Tigne Point,
Sliema
TPO 0001,
Malta

Evidence Sources

Sources from which evidence was gathered during the audit included:

- Documentation
- Interviews with key staff, via emails and online meetings
- Directed screen sharing sessions
- Analysis of transaction-by-transaction game records

The following games were selected for inspection (for the purposes of RTP monitoring analysis):

- 2 Hand Casino Hold'em
- Dual Play American Roulette
- Dual Play Baccarat
- Free Bet Blackjack
- Lightning Roulette
- Monopoly Live
- Roulette
- Super Sic Bo
- Top Card
- Ultimate Texas Holdem

Documentation

Policies and Procedures

The following key documents were provided:

Name	Version
Change Management policy 2020.pdf	v1.0
AGTA 2020 change log.xlsx	v1.0
critical assets register 6.20200323.112623-d4bbd9b7.xlsx	v6.20200323.112623-d4bbd9b7
Access Control Policy.pdf	v1.0
GamesRegister.csv	v1.0
RTP Monitoring and Analysis-v1-20200108_130134.pdf	v1-20200108_130134
EVO Engineering Organization structure-v30-20200428_124332.pdf	v30-20200428_124332
Evolution Latvia Organizational Chart-v12-20200430_134451.pdf	v12-20200430_134451
HOWTO_ Regression & Device test-v73-20200505_125108.pdf	v73-20200505_125108.pdf
Separate release process-v13-20200505_125956.pdf	v13-20200505_125956
Testing Contracts between teams-v62-20200505_125233.pdf	v62-20200505_125233
Standard Build Pipelines-v26-20200505_131828.pdf	v26-20200505_131828
Standard Platform - everything you need to know about operations of your application-v43-20200505_131835.pdf	v43-20200505_131835
Coding guidelines-v109-20200422_131511.pdf	v109-20200422_131511

Interviews

Interviews were conducted with the following staff:

- Jevgēņijs Bačkovs - Acting Compliance Manager
- Andrejs Jegorovs - Compliance Specialist

The Personal Management License (PML) holders are:

- Jesper von Bahr - Director of Mergers & Acquisitions
- Karl Jacob Kaplan - Chief Finance Officer
- Aksel Sebastian Johannisson Mahlqvist - Chief Commerical Officer
- Martin Carlesund - Group Chief Executive Officer
- Julien Whyte - Senior Group Compliance Manager
- David Craelius - Group Chief Technology Officer

Overview of Audit Findings

Evolution Gaming Malta Limited is regulated in the United Kingdom by the Gambling Commission under licence number 39002. Evolution Malta Holding Limited is regulated in the United Kingdom by the Gambling Commission under licence number 41655.

The company's licences entitle the operator to manufacture, supply, install and adapt gambling software for electronic devices or websites. It allows such activities to be done by remote means (for example sending software updates online via file transfer protocol).

Software Development

Policies, Procedures & Methodology

The Licensees documentation and procedures contain the skeleton for a good change management process, in practise the processes are not as airtight as possible with opportunities present for single end-to-end deployment being achievable. Documentation specifically surrounding what constitutes a Major / Minor change and how these changes should be handled is not present. Documentation covering access control between team members and the restrictions enforced on the source code repository has not been covered in the Licensees document titled 'Access Control Policy.pdf'.

Roles & Responsibilities

It is apparent that each of the organisation's teams have a clear understanding of what they are responsible for and how to perform the roles they have been assigned. The Change management plan does not currently have a PML listed as a member of the team who takes responsibility for the document and processes within.

Tools & Utilities

All tools and services are considered to be of an appropriate industry standard. Change requests are tracked within a project management tool, in this case JIRA and Confluence which are used for document storage. The source code repository in use is GitLab with Jenkins used for code deployment. Testing staff utilise SBT for automated testing and Slimdown for creating isolated test environments.

Internal Testing

Extensive testing is performed, the Licensee utilises five separate environments, these are CIT (Component integration testing), UAT, Certification, preproduction and production. Manual testing is performed alongside automated regression testing, where code quality tools are used to ensure the code is of suitable standard.

Change Management

The change management procedures covering the development and maintenance of the gambling platform requires improvements, the UKGC requirement for a Major and Minor flag to be associated with changes is not present in any of the RFC reviewed or documented within the 'Change Management policy.pdf'. The policy states there is no distinction between minor or major and that changes are 'Just a regular change'. The is a Major Non-Conformity and impacts several of the UKGC AGT audit requirements as the classification of changes cannot be tracked neither can the assurance that Major changes are being correctly tested for compliance.

Change Classification

The RTS requirements for change classification have been followed correctly and thus is a Major Non-Conformity.

Management Oversight

The overall responsibility of the change management plan and day to day compliance is held by consensus of Head of Information Security, Chief Architect and Head of Production Operations. The Licensee has provided a full list of PML holders and none of the license holders are listed within the change management policy as taking responsibility.
As the UKGC requirement requires a PML to be responsible the Auditor recommends that at least one PML takes responsibility. Arguably the plan as it stands is the responsibility of qualified persons, yet Evolution is not a small scale operator and thus a PML would be required to be fully compliant.

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Game Performance Monitoring Provisions

Aside from the lack of data although we have been provided with documents and information around RTP & performance monitoring, the client uses game outcome analysis for their main game performance monitoring. This is in line with the UKGCs recommendations for live dealer games.

Remote Games Register

The licensee has demonstrated that they understand how to update the Remote Games Register (RGR) and that it is being kept up to date. An export from the remote games register has also been provided by the licensee which matches the entries within the licensee's internal logs.

Assessment

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
1. Development Processes	1.1	Source code control – Is there a secure register to store source code? Are there defined access controls and do developers use uniquely identifiable login credentials?	GitLab is the source code control tool in use, GitLab requires users to log in with uniquely identifiable login credentials.	✔			
1. Development Processes	1.2	Does the source code register record a time stamped log of all access and modification made to source code?	GitLab records a time stamped log of all access and medications made to source code.	✔			
1. Development Processes	1.3	Can updates made to critical source code be tracked, and can previous versions of code be reproduced (either via the source code register or other robust means)?	Gitlab is auditable, changes and commits to source code can be tracked and previous versions of code can be reproduced.	✔			
1. Development Processes	1.4	Have appropriate segregation of duties controls been implemented for source code control as well as in the various development and testing environments to ensure any incompatible functions are not held by one individual, or where they are then adequate mitigating controls are in place?	The licensee utilises five separate environments, these are CIT (Component integration testing), UAT, Certification, preproduction and production. An access policy has been provided by the licensee that covers overall good practise within the office environment.			✘	
1. Development Processes	1.5	Are the build processes and system architecture such that software updates are as best as possible modular in nature to minimise the impact on earlier versions?	The licensee has provided a component asset register that lists separate components for each game entry. GitLab is used for storing the source code which has the capabilities of rolling back to previous code deployments. Breaking a system down to logical components as such allows modifications to be pushed to the production environment without unnecessarily modifying other assets.	✔			
2. Documentation	2.1	Is critical gambling software accompanied by up-to-date design and technical documentation to support and explain the software's function?	No technical documentation has been provided to explain software functionality.			✘	

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
2. Documentation	2.2	Does the source code contain sufficient commenting to explain file/class/function purpose?	The source code provided contains sufficient commenting to explain the file/class/function of the codes purpose.	✔			
2. Documentation	2.3	Is source code sufficiently legible and structured to permit static code analysis and for the review of its functionality to be conducted with confidence?	The source code samples provided for review are sufficiently legible and well structured.		✔		
2. Documentation	2.4	Do development processes require for changes to critical game aspects to be peer reviewed by an equally qualified but independent staff member? Is there evidence to support this process?	The 'Change Management policy.pdf' states code reviews are mandatory.			✘	
2. Documentation	2.5	Documentation created by development team/s includes the published version. Any updates are recorded accurately and a new version of the document is generated. Sign off is visible in the document.	The version control system in use for documentation has not been provided, no versioning, time stamp or sign off is visible within the document provided for review.				✘
2. Documentation	2.6	Documentation created by QA Manager, Test Leads, Testers includes the published version. Any updates are recorded accurately and a new version of the document is generated. Sign off is visible in the document.	Documentation provided as evidence of quality assurance testing being commenced shows test results being retained between versions of deployed code. The evidence provided for review was minimal and did not show in detail what testing is performed and what procedures members of the QA team follow.			✘	
3. Internal Testing and Software Migration Processes	3.1	Is the environment that is utilised for development isolated from the testing environment?	The licensee utilises five separate environments, these are CIT (Component integration testing), UAT, Certification, preproduction and production.	✔			

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
3. Internal Testing and Software Migration Processes	3.2	Do separate staff to those that developed perform the testing (in an agile development environment testing staff may be within the same team as developers testing iteratively alongside them)?	The licensee demonstrated how JIRA is used as a project management system. Whilst demonstrating the system to the auditor a change request was displayed that had been raised and deployed to the production environment without any authorisation being required. The same change request lacked any quality assurance verification as seen in other tickets demonstrated to the auditor. The licensee confirmed that QA members can write code in some scenarios as per the statement within the change management document provided.			✗	
3. Internal Testing and Software Migration Processes	3.3	Is outsourced development monitored, controlled and reviewed periodically? Is the current process adequate?	The licensee does not have any outsourced development.	✓			
3. Internal Testing and Software Migration Processes	3.4	Do testing staff perform an independent assessment of changes made by the developers in order to verify that all changes appear relevant and have been documented in the change documentation?	The licensee has provided evidence to show that quality assurance staff are performing assessments of the changes and that they are recorded. However, during a supervised session a change request was shown that lacked any quality assurance verification flag. Along with the lack of a Major / Minor flag being present against the change requests it's not possible to confirm that changes are being correctly classified and where applicable verified externally by an ATF.			✗	
3. Internal Testing and Software Migration Processes	3.5	For aspects of the RTS that can be tested in-house is there evidence of testing and compliance signoff?	Evidence has been provided in the form of QA scripts that show Compliance is being checked during testing. A detailed document titled 'HOWTO_ Regression & Device test-v73-20200505_125108.pdf' has also been provided outlining the process to be followed. Test results are recorded and a sample was provided for review.			✗	

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
4. Change Management	4.1	Is there a documented change management plan which covers gambling software development?	The licensees change management policy does cover gambling software development and defines the states that change requests can be in during the project management workflow process. Change logs are auto generated as is the component asset register that integrates with GIT to obtain the most recent checksum from the production environment. The defined method for classifying a change as a major or minor is not present and a statement confirming all changes are classed 'standard' changes is present.			✖	
4. Change Management	4.2	Is responsibility for the plan held with a PML holder (or in the case of a small scale operator the relevant qualifying person)?	The change management policy is defined by consensus of Head of Information Security, Chief Architect and Head of Production Operations.		✔		
4. Change Management	4.3	Is there signed authorisations obtained before proceeding through each critical gateway?	The licensee has demonstrated change requests that have shown evidence of authorisation being required but they have also shown another ticket where no authorisation was required in both JIRA and Git for a change to be progressed through the workflow and committed to the production environment.			✖	

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
5. Major Minor Updates to Gambling Software	5.1	Verify that for each RNG/game change, the change documentation records: • unique change ID • game number/RNG identifier • delivery channel(s) • description of change • whether the modification is classified as major or minor • justification for classification • for minor changes: confirmation they have been internally tested and the changes documented • for major changes: confirmation of adequate external testing house assessment • relevant manager's authorisation for change • other particulars as required by the licence holder's internal change management requirements. Were all sampled changes compliant with the above?	The project management system being used for tracking all change requests is JIRA. Unique change IDs, descriptions and delivery channels are present against the requests reviewed. No flag or method was demonstrated to show what was classed a Major or Minor change and thus the samples where not deemed to be compliant. Exported change logs provided for the audit also lacked a field to indicate what change was classified as a Major and thus required additional ATF testing.				✖
5. Major Minor Updates to Gambling Software	5.2	For a sample of minor changes, review in more detail to form an independent opinion as to whether the changes were minor in nature. This should involve comparing the change documentation and technical design specifications against the game source code.	As per the findings for requirement 5.1 it has not been possible to fulfil this requirement due to the lack of the key Major / Minor classification.				✖
5. Major Minor Updates to Gambling Software	5.3	Outline the review process followed to sample the above, including the total number of changes made during the period (both major and minor), total number of games, and a rationale for the sample size selected. Summarise the results of the review including any suggested improvements.	As per the findings for requirement 5.1 it has not been possible to fulfil this requirement due to the lack of the key Major / Minor classification.				✖

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
6. Performance Monitoring Processes and Sample	6.1	Describe the performance monitoring process in place for the gambling software under review.	RTP Monitoring and Analysis-v1-20200108_130134.pdf Describes the processes in place	✔			
6. Performance Monitoring Processes and Sample	6.2	Are the responsibilities for monitoring (particularly in B2B / B2C arrangements) outlined in contractual arrangements or similar?	The licensees SLA document provided for review titled '1.213.1_STS Bet Limited - LCA - 28 August 2019 (1).pdf' states Evolution will take responsibility for RTP monitoring and will comply with applicable laws such as the UKGC requirements.	✔			
6. Performance Monitoring Processes and Sample	6.3	Frequency of measurements and data set sample sizes: Is the frequency of monitoring adequate to identify faults in a timely manner? Is the volume trigger for each measurement adequate to ensure the sample size is appropriate and refreshed over time?	The Auditor noted that RTP monitoring is conducted every month; however, carrying out RTP monitoring every month is considered too infrequent to identify issues with performance. The licensee did confirm that its RTP monitoring is a supplementary monitoring tool which is used in parallel with other statistical analysis methods, to which the licensee run on a more frequent basis. The documentation provided to the auditor details several reports that are checked hourly, daily and weekly to ensure the performance of a game is within expected statistical limits. The licensee provided examples of these reports for the audit.		✔		
6. Performance Monitoring Processes and Sample	6.4	Volatility – Does game volatility form part of the measuring calculations and is it from the designed volatility as contained in the supporting maths and par sheet for the game?	Volatility forms part of the analysis. It appears to be measured at 99% confidence, however it was not possible to confirm this has been implemented correctly in the screenshots from the dashboard supplied – performance is indicated by the use of green and red flags.		✔		
6. Performance Monitoring Processes and Sample	6.5	Granularity of measurements – Are the game transactions segregated to isolate the base game performance from progressive jackpots (if applicable)? Does the measuring divide game data into the different available bet levels and channels?	Each bet type is monitored separately as demonstrated in the screenshots supplied, however it is not clear how different stake level are handled (i.e. are they just added together or scaled appropriately?)		✔		

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
6. Performance Monitoring Processes and Sample	6.6	Review the retained evidence for some recent measurement calculations, recalculate the actual performance (RTP) and see that for the volume of play sampled the actual and expected RTP are within acceptable tolerances in accordance with the game's volatility.	The Auditor required transactional data in order to recalculate each game's RTPs. Samples of transactional data were provided to the Auditor for three independent days distributed throughout the audit period, along with reports corresponding to the data were also provided for comparison. Due to the reports typically being used for monthly reporting, the client felt they would not be entirely accurate when used in this manner. The Auditor was able to match the data for some games taking into account some rounding and minor deviations when running the comparison. However, some games were observed to return a considerably larger deviation.			✖	
6. Performance Monitoring Processes and Sample	6.7	Provide approximate statistics for how many measurements were made for the year under review. Note: Any instances where the measurements indicated a potentially faulty game; and Any special investigations initiated from escalated customer (player or B2C) complaints comparing a specific customer's activity against the overall game's design and aggregated activity.	Examples of escalation and the measures taken are provided in the Margin documents. Also included in the screenshots (RTP_exception_investigation.png & RTP_exception_escalation.png) both screenshots included decriptions and documented results from investigations This should be compliant but as no data was provided to confirm the flags in the screenshots are correct it could be marked as an observation. The margin documents contain a lot of information and form a monthly assessment of game performance. (also correctly identified as GGR – gross gaming revenue as opposed to RTP)	✔			
6. Performance Monitoring Processes and Sample	6.8	If not already addressed above provide any other observations on the adequacy of performance monitoring including recommended improvements.	Aside from the lack of data; Although we have been provided with documents and information around RTP & performance monitoring, the client uses game outcome analysis for their main game performance monitoring. This is in line with the UKGCs recommendations for live dealer games, and it would have been helpful to include this in the evidence submitted to the audit instead of just the RTP based items.		✔		

Section	Subsection	Requirement	Finding	Compliant	Observation	Minor Non-Conformity	Major Non-Conformity
7. Remote Game Register	7.1	The Remote Games Register is utilised to inform the Commission of newly released games and RNGS. The Operator will need to perform a demonstration of the journeys (Add, Withdraw, reinstate and bulk processing entries) in the Remote Games Register.	The licensee demonstrated how they would add, withdraw, reinstate and bulk update the remote games register successfully.	✔			
7. Remote Game Register	7.2	Demonstrate that providers (B2Cs) supplied with games developed by the operator are given the relevant information to complete their own games registers.	Evolution have provided the document titled 'New game feature certification-v2-20200513_150105.pdf' that outlines the process followed to inform operators of new RGR entries.	✔			
7. Remote Game Register	7.3	Demonstrate that the Register is kept up to date with internal logs. Compare operator's records against what the commission holds.	The licensee has provided internal logs that are up to date with the entries present within the remote games register.	✔			

Management Response

Reference	Control	Status
1.4	1. Development Processes	**Minor Non-Conformity**

Finding
The licensee utilises five separate environments, these are CIT (Component integration testing), UAT, Certification, preproduction and production. An access policy has been provided by the licensee that covers overall good practise within the office environment.

Recommendation
The licensee did not provide sufficient information on access restrictions within the production environment outlining how source code control is monitored and governed. The 'Access Policy' provided details how unattended workstations should auto log off after a set period of time and that users must follow the policy. The document lacks any information surrounding source code access rites , segregation for access between environment and any restrictions between reading/ writing to the repositories.

Management Response
Version control is used within documents throughout the business, but as a result of this audit it has become clear this principle is not being followed completely in all departments. Evolution will create and distribute a version control policy for the Development and other relevant teams. Policies will then be assessed as part of normal internal annual audit procedures to ensure version control information is present.

Resolution Date	Q4 2020

Reference	Control	Status
2.1	2. Documentation	**Minor Non-Conformity**

Finding
No technical documentation has been provided to explain software functionality.

Recommendation
The Auditor recommends that the licensee provided up to date technical documentation during annual AGTA audits moving forward ensuring software function and component interaction is defined.

Management Response
High level architecture plan was provided during the audit to explain software functinality. Also, every critical asset ticket does contain a brief description of its function and interaction, which was shown during the audit. However, associated documentation does not provide this information for each asset, and as such Evolution will work to include such information in other areas for future audits.

Resolution Date	Q4 2020

Reference	Control	Status
2.3	2. Documentation	**Observation**

Finding
The source code samples provided for review are sufficiently legible and well structured.

Recommendation
No supporting evidence has been provided to outline the process for development to follow or the tools in use when performing code quality analysis. The Auditor recommends that polices are created and supplied to the development team to ensure the same practise is followed by all. It would also be advised that the tools and software in use for source code analysis are listed within the same document.

Management Response
Code review guidelines are actually in place in the Engineering team. The guidelines will be reviewed as part of standad annual internal assessments and the auditor's comments will be in mind. Additionally, these guidelines can be provided to the auditor.

Resolution Date	N/A

Reference	Control	Status
2.4	2. Documentation	**Minor Non-Conformity**

Finding
The 'Change Management policy.pdf' states code reviews are mandatory.

Recommendation
The licensees documentation touches upon code reviews being required but no further information on the proficiency of the reviewer required to perform the task. The document does mention that for a large part of the development team the process is enforced by software however as above no further information has been provided detailing how this would function.

Management Response
Evolution will update the Change Management Policy currently in use to better reflect the issue raised by the auditor.

Resolution Date	Q3 2020

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Reference	Control	Status
2.5	2. Documentation	**Major Non-Conformity**

Finding
The version control system in use for documentation has not been provided, no versioning, time stamp or sign off is visible within the document provided for review.

Recommendation
No evidence of document version control has been provided or documented within any policy. The Auditor recommends that each exported document include a version number, time stamp/ date of release, document owner and approval sign off.

Management Response
All document version updates are being tracked using the Confluence WIKI versioning tools. The information presented to the auditor here included PDFs exported from the WIKI, which although being recorded on the system, does not include the version information required within the exported document. Evolution will look to include adequate document versioning for future exports of information from this source.

Resolution Date	Q4 2020

Reference	Control	Status
2.6	2. Documentation	**Minor Non-Conformity**

Finding
Documentation provided as evidence of quality assurance testing being commenced shows test results being retained between versions of deployed code. The evidence provided for review was minimal and did not show in detail what testing is performed and what procedures members of the QA team follow.

Recommendation
The Auditor recommends that a quality assurance policy is created to cover what process the quality assurance team members must follow and how it varies between manual and automated tests. Details on what testing is performed would also be beneficial for an external review in the future including examples of any checklists being used.

Management Response
Evolution will create and distribute a QA policy. With regards to what testing performed, testing is being tracked using the JIRA plugin, Zephyr, which stores and manages test cases. This tool allows traceability of the game/feature version history.

Resolution Date	Q4 for QA policy

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Reference	Control	Status
3.2	3. Internal Testing and Software Migration Processes	**Minor Non-Conformity**

Finding
The licensee demonstrated how JIRA is used as a project management system. Whilst demonstrating the system to the auditor a change request was displayed that had been raised and deployed to the production environment without any authorisation being required. The same change request lacked any quality assurance verification as seen in other tickets demonstrated to the auditor. The licensee confirmed that QA members can write code in some scenarios as per the statement within the change management document provided.

Recommendation
The Auditor recommends that the licensee enforces stop gates that require quality assurance and applicable authorisation to be logged against each change request before it progresses through the project management workflow. The Auditor would also advise that statements such as the following from the 'Change Management policy.pdf' are expanded upon to ensure it is clear how the teams are separate and restricted to roles applicable to their titles. 'QA engineer - The person who ensures the quality of the software. QA engineer may also write the code as developer does, but usually it is more quality assurance oriented and less the functionality of the software itself.'

Management Response
Evolution will update the Change Management Policy currently in use to better reflect the issue raised by the auditor.

Resolution Date	Q3 2020

Reference	Control	Status
3.4	3. Internal Testing and Software Migration Processes	**Minor Non-Conformity**

Finding
The licensee has provided evidence to show that quality assurance staff are performing assessments of the changes and that they are recorded. However, during a supervised session a change request was shown that lacked any quality assurance verification flag. Along with the lack of a Major / Minor flag being present against the change requests it's not possible to confirm that changes are being correctly classified and where applicable verified externally by an ATF.

Recommendation
Uable to confirm due to no major flag in use.

Management Response
To clarify - Flags are in use. Major changes are subject to an entirely different change procedure within the JIRA ticketing system. All other changes, not classed as major, are classed as minor and handled using a different JIRA change request type of their own. As such, a change can be understood as major or minor according to the change request type. If it is one category in the JIRA system then it is minor, if another, then it is handled as major. This request type is easily seen in the request header information in all cases. In any case, Evolution will implement a new process within JIRA to directly show the change as major or minor in a dedicated field. The CM policy will also be reviewed to accomodate the other comments raised by the auditor here.

Resolution Date	Q4 2020

Reference	Control	Status
3.5	3. Internal Testing and Software Migration Processes	**Minor Non-Conformity**

Finding
Evidence has been provided in the form of QA scripts that show Compliance is being checked during testing. A detailed document titled 'HOWTO_ Regression & Device test-v73-20200505_125108.pdf' has also been provided outlining the process to be followed. Test results are recorded and a sample was provided for review.

Recommendation
The Auditor recommends that quality assurance flags are present on all change requests with a reference to the testing results. Several RFCs have been provided that do show 'QA Verified' but a lot also lack this flag. It is not clear without a Major /Minor classification if all changes have been tested in house or if external testing has also occurred as per the UKGC requirements for Major changes.

Management Response
Approaches towards flagging tickets as "QA verified" differ between departments, based on the type of task being performed. Evolution will develop a standardised approach to flag tickets as QA verified when applicable.

Resolution Date	Q4 2020

Reference	Control	Status
4.1	4. Change Management	**Minor Non-Conformity**

Finding
The licensees change management policy does cover gambling software development and defines the states that change requests can be in during the project management workflow process. Change logs are auto generated as is the component asset register that integrates with GIT to obtain the most recent checksum from the production environment. The defined method for classifying a change as a major or minor is not present and a statement confirming all changes are classed 'standard' changes is present.

Recommendation
The Auditor recommends that the licensee reviews all documentation related to gambling software development to ensure a clear and concise method of defining and classifying major and minor changes is documented.

Management Response
Documentation in relation to major changes is in place. However, it is agreed with the auditor that updates are necessary to provide more detail on differentiation between major and minor changes.

Resolution Date	Q3 2020

Reference	Control	Status
4.2	4. Change Management	**Observation**

Finding
The change management policy is defined by consensus of Head of Information Security, Chief Architect and Head of Production Operations.

Recommendation
The licensee has provided a full list of PML holders and none of the license holders are listed within the change management policy as taking responsibility. As the UKGC requirement requires a PML to be responsible the Auditor recommends that at least one PML takes responsibility. Arguably the plan as it stands is the responsibility of qualified persons yet Evolution is not a small scale operator and thus a PML would be required to be fully compliant.

Management Response
All persons involved in this policy are under the control of, and report directly to, the PML holder for technical subjects, David Craelius. However, to better reflect the auditor's recommendation details will be more clearly described in the policy document.

Resolution Date	N/A

Reference	Control	Status
4.3	4. Change Management	**Minor Non-Conformity**

Finding
The licensee has demonstrated change requests that have shown evidence of authorisation being required but they have also shown another ticket where no authorisation was required in both JIRA and Git for a change to be progressed through the workflow and committed to the production environment.

Recommendation
The Auditor recommends that critical gateways are enforced to ensure no end-to-end deployment can occur from just one individual and that access restrictions are put in place to ensure authorisation from the relevant team member is required before the request for change can progress.

Management Response
Information on the approval of a merge request in GIT was provided during the session with the auditor. However, the associated JIRA ticket did indeed not have enough information to show that the request had already been approved in GIT. In practise, evidence can be presented for authorisation for all changes, either within the JIRA ticket or GIT. There is a discrepancy here, in that it is not always obvious that the authorisation has been given, but processes ensure authorisation must be given, no end-to-end deployment can occur from just one individual. To better comply with this issue in future audits, Evolution will ensure procedures are updated to make sure sign-off has occurred across all relevant tickets for a given change, so that the evidence is immediately apparant of the authorisation without tracking it through the other systems.

Resolution Date	Q4 2020

Reference	Control	Status
5.1	5. Major Minor Updates to Gambling Software	**Major Non-Conformity**

Finding
The project management system being used for tracking all change requests is JIRA. Unique change IDs, descriptions and delivery channels are present against the requests reviewed. No flag or method was demonstrated to show what was classed a Major or Minor change and thus the samples where not deemed to be compliant. Exported change logs provided for the audit also lacked a field to indicate what change was classified as a Major and thus required additional ATF testing.

Recommendation
The Auditor recommends that the licensee introduces the use of a Major / Minor flag on all changes moving forward and that documentation is updated to ensure it is clear to all team members what constitutes a Major or Minor change and the requirements that are applicable to each. At present the 'Change Management policy.pdf' shows the following statement for a distinction between change classes. 'It's important to note that from the CI/CD process perspective there is no distinction between minor or major changes. It's just a regular change.'

Management Response
To clarify - All major changes receive assessment by an ATF, and as such are subject to an entirely different change procedure. All other changes, not requiring ATF involvement, are then classed as minor and are handled using a specific JIRA change request type. As such, a change can be understood as major or minor according to the change request type. If it is one category in the JIRA system then it is minor, if another, then it is handled as major. In any case, Evolution will implement a new field within JIRA to directly show the change as major or minor. The CM policy will also be reviewed to accomodate the other comments raised by the auditor here.

Resolution Date	**JIRA field - Q4 2020 CM Policy - Q3 2020**

Reference	Control	Status
5.2	5. Major Minor Updates to Gambling Software	**Major Non-Conformity**

Finding
As per the findings for requirement 5.1 it has not been possible to fulfil this requirement due to the lack of the key Major / Minor classification.

Recommendation
The Auditor recommends that the licensee introduces the use of a Major / Minor flag on all changes moving forward.

Management Response
As per response for 5.1

Resolution Date	**Q4 2020**

Reference	Control	Status
5.3	5. Major Minor Updates to Gambling Software	**Major Non-Conformity**
Finding		
As per the findings for requirement 5.1 it has not been possible to fulfil this requirement due to the lack of the key Major / Minor classification.		
Recommendation		
The Auditor recommends that the licensee introduces the use of a Major / Minor flag on all changes moving forward.		
Management Response		
As per response for 5.1		
Resolution Date	**Q4 2020**	

Reference	Control	Status
6.3	6. Performance Monitoring Processes and Sample	**Observation**
Finding		
The Auditor noted that RTP monitoring is conducted every month; however, carrying out RTP monitoring every month is considered too infrequent to identify issues with performance. The licensee did confirm that its RTP monitoring is a supplementary monitoring tool which is used in parallel with other statistical analysis methods, to which the licensee run on a more frequent basis. The documentation provided to the auditor details several reports that are checked hourly, daily and weekly to ensure the performance of a game is within expected statistical limits. The licensee provided examples of these reports for the audit.		
Recommendation		
The Auditor suggests that in preparation of future audits, the licensee should provide evidence from all methods of game performance monitoring and not just the RTP related ones as this will enable the Auditor to assess the client's efforts appropriately.		
Management Response		
This will be discussed internally and processes developed to adhere to the auditor's advice on this point.		
Resolution Date	**N/A**	

Reference	Control	Status
6.4	6. Performance Monitoring Processes and Sample	**Observation**
Finding		
Volatility forms part of the analysis. It appears to be measured at 99% confidence, however it was not possible to confirm this has been implemented correctly in the screenshots from the dashboard supplied – performance is indicated by the use of green and red flags.		
Recommendation		
It was not possible to confirm this has been implemented correctly in the screenshots from the dashboard supplied		
Management Response		
The system in place works well for us, but the comments will be taken on board and alternative display methods will be discussed.		
Resolution Date	**N/A**	

Reference	Control	Status
6.5	6. Performance Monitoring Processes and Sample	**Observation**

Finding
Each bet type is monitored separately as demonstrated in the screenshots supplied, however it is not clear how different stake level are handled (i.e. are they just added together or scaled appropriately?)

Recommendation
The Auditor recommends improving the supporting documentation to elaborate on how stake types are handled.

Management Response
This will be discussed internally to address whether the information can be elaborated on.

Resolution Date	N/A

Reference	Control	Status
6.6	6. Performance Monitoring Processes and Sample	**Minor Non-Conformity**

Finding
The Auditor required transactional data in order to recalculate each game's RTPs. Samples of transactional data were provided to the Auditor for three independent days distributed throughout the audit period, along with reports corresponding to the data were also provided for comparison. Due to the reports typically being used for monthly reporting, the client felt they would not be entirely accurate when used in this manner.

The Auditor was able to match the data for some games taking into account some rounding and minor deviations when running the comparison. However, some games were observed to return a considerably larger deviation. |

Recommendation
The Auditor noted that although there is evidence that RTP monitoring is being applied correctly. It is recommended that for future audits, it would be beneficial for the licensee to provide a full month of transactional logs, along with the corresponding monthly reports the RTP assessment.

The licensee should also include the generated reports from the games monitoring analysis, for the same period for the games in scope to be more reflective of their monitoring practices. |

Management Response
Logs will be produced as requested for future audits and in accordance with the advice provided.

Resolution Date	Q4 2020

Reference	Control	Status
6.8	6. Performance Monitoring Processes and Sample	**Observation**

Finding
Aside from the lack of data; Although we have been provided with documents and information around RTP & performance monitoring, the client uses game outcome analysis for their main game performance monitoring. This is in line with the UKGCs recommendations for live dealer games, and it would have been helpful to include this in the evidence submitted to the audit instead of just the RTP based items.

Recommendation
The Auditor recommends that in future audits all data is provided for review to meet the UKGC requirements in full.

Management Response
Evolution Gaming is happy to comply with the auditor's requests.

Resolution Date	N/A

END OF REPORT

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