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Certification of Security for Random Number Generator

19 March, 2010

Cigital, Inc., a leading software security consultancy, was contracted on behalf of [PokerStars](#) to evaluate a representative random number generating system consisting of a hardware random number generator (RNG) and related software.

1.0 Testing

Cigital, Inc. obtained random number generation hardware direct from the manufacturer and software source code from PokerStars. Sample output was gathered and tested under controlled conditions at Cigital's labs in Dulles, Virginia, USA. Output of the random number generator was tested using two well-known test suites: [the statistical randomness test suite](#) from the [U.S. National Institute of Standards and Technology \(NIST\)](#) and the [DIEHARD statistical randomness tests](#). Cigital analysts also performed manual review of the source code related to the use of the RNG and its output.

2.0 Findings

Cigital bases its determination on the results of the statistical tests and the inspection of source code. Cigital certifies that the RNG used by PokerStars produces unpredictable and statistically random sequences that are used to generate the hands dealt on [PokerStars.com](#). Cigital found that the PokerStars implementation adheres to current best practices in generating random seed values. Source code analysis did not produce any evidence of improper calculations using the random numbers or misuse that would introduce predictability or bias.

3.0 Validity

This determination of statistical randomness does not extend beyond the software and hardware components examined. These results pertain only to systems composed of the hardware and software that were tested when they are operated in the manner described to Cigital during the evaluation.

4.0 Expiration

This certification expires 31 December, 2012 or when a material change is made to the components of the system that were the subject of this evaluation.

Certification Recorded by:

Paco Hope
Technical Manager, Gaming Services
Cigital, Inc.