GLI Technical Specifications for Random Number Generator Testing

**The manufacturer shall submit all hardware and software necessary for the collection of random data. It is highly recommended that RNG application run on hardware identical to what will be used in the field environment.**

If this is not possible, please contact the laboratory prior to submission to discuss the collection method. The manufacturer shall submit all source code and requisite materials necessary to compile the RNG application and obtain an identical version of the program that was submitted for testing.  If this is not possible, please contact the laboratory prior to submission to discuss the collection method.

The manufacturer shall supply a submission letter that contains the following:

* Game parameters and rules including the number of selections within one game or draw, range and if the numbers are drawn with or without replacement, for example Keno, 20 numbers drawn from 1 through 80 without replacement;
* A description of the RNG including seeding method, frequency and size of the seed, all key functions involved in the RNG process and type and location of the RNG algorithm that is used;
* An explanation of any differences between how the data is drawn for the test application and the production application;
* Software version(s);
* A documented list of changes that have been made to the program since the last version that was submitted for the jurisdiction;
* GLI Verify signatures or equivalent;
* Hardware requirements and specifications;
* Testing expectations;
* Billing expectations;
* Intended RNG report recipients;
* Primary contact(s) and contact information for all questions;

The application used to generate the random data must be as close to the final production application as possible with regard to the RNG implementation.  Therefore, it should use the identical function(s), calls, variables, scaling methodology, etc. as the production software.  The manufacturer shall disclose any differences between the test application and the production application.

***Please note that for games that draw numbers from a very large range, it may take a significant amount of time to generate the data.***

The RNG test software must be capable of generating data for any type of game that the manufacturer intends to submit.

The data may be collected using any suitable method pursuant to the guidelines herein.  There are no specific requirements on the actual method that is used provided that it does not impact the actual RNG generation.  Therefore, the data can be written to a hard drive or other media storage device or it can be collected by an auxiliary utility that is communicating with the application.  Source code and a compiler must be supplied for any auxiliary utilities as well.

The RNG test software must allow the tester to specify the number of plays or draws that will be collected. Typically, this value will be at least 10 million but could be much larger depending on the game design and application. For example, for land-based keno, 21 million draws would be collected. For a land-based 512-stop reel game, approximately 136 million plays would be collected. Please contact the lab for the specific number of plays or draws that will be collected.

The manufacturer shall submit all of the above software and documentation on a physical CD, DVD or other suitable media with every submission.  All additional documentation submitted via email is must be followed-up by a copy on CD or DVD.  A secure, fully electronic submission method is currently under development and should be available in the near future.

The data must be in an ASCII file text file with one play or draw per line, including any bonus numbers.  In the case that there may be a variable amount of numbers or selections as with most card games, the maximum amount of numbers that could possibly be drawn or selected must be provided.  Please see the table below for common games.  It is highly recommended to contact the laboratory prior to submission to confirm the parameters and the format of the data file. Each number must be separated by a space without any leading zeroes or additional characters.  The data must be unsorted.

***It is also recommended to submit a small data sample ahead of the primary submission to verify the format of the data.***

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| **Game Name** | **Selections** | **Range** |
| **Keno** | **20** | **1-80** |
| **Bingo** | **75** | **1-75** |
| **5 Card Draw Poker** | **10** | **1-52** |