

NSI XML Retail Accounting Reports Validation Specification

May 22, 2007
Revision 1.0

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1. Overview

1.1 Introduction

The objective of the North American Association of State and Provincial Lotteries (NASPL) Standards Initiative Certification and Verification Program is to encourage and facilitate the adoption and implementation of NASPL Standards Initiative (NSI) Best Practices and Technical Standards in lotteries, lottery industry vendors, and other lottery industry expert organizations that provide software, hardware, or services to lotteries. The program provides formal recognition of an Organization's conformance to an industry Best Practice or Technical Standard. The Certification Program is for vendors and other organizations that wish to demonstrate and receive recognition for the conformance of their business practices and technologies to the NSI Best Practices and Technical Standards, whereas the Verification Program is the parallel program providing the means for lotteries to demonstrate conformance in the areas applicable to lotteries.

This document, the NSI XML Retail Accounting Reports Validation Specification, defines:

- **The Validation Environment**, which is comprised of:
 - The actual software and related equipment, if any, that comprise the technology
 - Additional gaming system or back office components that interface to the technology and therefore must themselves be NSI certified or verified
 - Ancillary components that do not represent XML Retail Accounting Reports technology and therefore need not be NSI certified or verified
- **The Validation Harness**, which is a specific software implementation within the Validation Environment that may include the capacity to generate, convert and format the Validation Data for the specific test and to capture, convert and format the Validation Results to be included in the Validation Report.
- **Data Formats** for the submission of expected results.
- **The Submission Guidelines** for:
 - The Validation Report, which is comprised of:
 - Validation Results
 - A description of the Validation Environment
 - Optional additional supporting information concerning the Validation Results.
 - Optional interpretation of the Validation Results.
 - Documentation of the Validation Harness:
 - Validation Harness Design Specification
 - Validation Harness Source Code

This document is intended primarily for the technical resources of an Organization that would like to certify or verify one or more of their technologies against the XML Retail Accounting Reports Technical Standard. The collective policy represented by both the general NSI Certification/Verification Policy document and the NSI Policy Supplement for XML Retail Accounting Reports Certification/Verification - in conjunction with the Certification/Verification Agreement and applicable Trademark

License Agreement - constitutes the set of requirements and obligations for achieving certification/verification.

1.2 Scope

NSI XML Retail Accounting Reports certification/verification covers the following NSI Technical Standard: XML Retail Accounting Reports in the Lottery Industry.

A candidate for XML Retail Accounting Reports certification or verification is classified as either an XML Retail Accounting Report Producing Application or an XML Retail Accounting Report Consuming Application. This document is focused on certification/verification of these applications, which consists of:

- **XML Retail Accounting Report Producing Application** This technology type comprises software that is used to transform data produced by a Lottery Gaming System or Back Office System into an XML format compliant with the NSI XML Retail Accounting Reports Standard.
- **XML Retail Accounting Report Consuming Application** This technology type comprises software that is used to translate compliant XML data provided by XML Retail Accounting Report Producing Applications into an automated or manual entry for use in a retailer's accounting system.

1.3 Terminology and Definitions

Refer to the general NSI Certification/Verification Policy document.

1.4 Referenced Documents

This document should be used in conjunction with the general NSI Certification/Verification Policy document and the NSI Policy Supplement for XML Retail Accounting Reports Certification/Verification. It is not intended for stand-alone use.

2. Validation Environment

This section describes what a Validation Environment must accomplish in order to successfully validate the XML Retail Accounting Reports entity to achieve certification or verification against the XML Retail Accounting Reports Technical Standard. An overview of the process for certification/verification can be found in the NSI Policy Supplement for XML Retail Accounting Reports Certification/Verification.

In general, test environments attempt to recreate an actual operational environment with defined monitoring points. These monitoring points become the basis for demonstrating conformance. Specifically, the validation approach for the XML Retail Accounting Reports Technical Standard utilizes an automated process to evaluate the validation results submitted by an Organization that produces XML Retail Accounting Reports. This automated evaluation necessarily imposes some requirements on the design of the Validation Environment, as detailed in the sections that follow.

Certification or verification of an application that consumes the XML Retail Accounting Reports does not produce a file for automated comparison. Rather, the monitoring point is defined to provide confirmation that data has been correctly interpreted.

As part of the Applicant's submission for certification or verification, the Applicant will be required to include a document describing the Validation Environment that was used.

2.1 General Design Considerations

For both technology types, the design of the Validation Environment must maintain the integrity of all source files as well as the capture of the monitored results of the technology. In creating the Validation Environment for the XML Retail Accounting Reports Technical Standard, Applicants must utilize the actual software and related equipment, if any, that comprise the technology. This software and equipment must be configured in a manner consistent with an actual operational environment with the appropriate monitoring points established per the Validation Harness Specification.

2.2 Design Considerations by Technology Type

2.2.1 XML Retail Accounting Report Producing Applications

The source of the original data is the key starting point for XML Retail Accounting Report Producing Applications. This is generally a Gaming System, but can also be a Back Office system.

Because the source systems are generally designed to prevent any addition or import of sales data, the test environment will need to incorporate a means of generating sales and other retailer activity consistent with the specific source system. The range and parameters for generating this data will be provided by the Certification and Verification Authority based on the applicant's submission. The parameters will include:

- The number and types of Retailers in the test set
- The number and range of transactions
- The number of invoice cycles

The applicant will utilize this data to design the test script used to generate the needed data within their source system.

After the data source is complete, the applicant will produce the XML files compliant with the standard. To facilitate automated validation, the actual results from the source system will be entered or in some means processed by the applicant into a separate XML Schema detailed in Section 4.1. This is formatted data to be used to validate the XML file.

2.2.2 XML Retail Accounting Report Consuming Applications

In designing the validation environment for XML Retail Accounting Report Consuming Applications, the applicant should plan on utilizing two components that will be provided by the Certification and Verification Authority. These are:

- An XML file containing sample data compliant with the Standard
- An XML Retail Accounting Report Consuming Application Toolkit

The sample data will be based on the applicant's submission and provide the range and type of data that an applicant can expect to receive from a compliant Lottery. The Toolkit will aid in confirming that the sample data is correctly processed by the applicant's accounting system and supporting systems.

The applicant's design should begin with the receipt of the sample XML compliant file. This file will then be processed by the applicant's system(s) to be imported into the applicant's accounting system.

Once the data is in the accounting system, the design must include a monitoring point to display or report the resulting accounting transaction. The applicant can then

process the original sample file with the XML Retail Accounting Report Consuming Application Toolkit to produce a report template consistent with a standard accounting entry that can be reconciled to the results in the applicant's accounting system. This completed reconciliation report will be submitted with the Validation Report.

3. Validation Harness Specification

The Validation Harness is a specific software implementation within the Validation Environment that may include the capacity to create, convert and format the Validation Data for the specific test and to capture, convert and format the Validation Results to be included in the Validation Report.

3.1 XML Retail Accounting Report Producing Applications

If all data creation and modifications are performed as part of the technology no additional documentation is required. If, however, auxiliary software is used to generate data or modify the data in any way for testing purposes, this software must be documented and the source file included. This includes any software or processing that is used to map or convert native data into formatted data.

3.2 XML Retail Accounting Report Consuming Applications

Validation for XML Retail Accounting Report Consuming Applications utilizes the XML Retail Accounting Report Consuming Application Toolkit as a means to reconcile actual test results to expected test results. No specialized capture software is required.

4. Data Formats

The only additional data format is required for XML Retail Accounting Report Producing Applications. This format is used to enter the expected results of a test separate from the actual testing environment for an automated comparison of expected vs. actual results.

4.1 Validation Source Data Format for XML Retail Accounting Report Producing Applications

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="FileRecap">
    <xs:complexType>
      <xs:attribute name="SubmittedBy" type="xs:string"/>
      <xs:attribute name="SubmittedDate" type="xs:date"/>
    </xs:complexType>
  </xs:element>
  <xs:element name="InvoiceSummary">
    <xs:complexType>
      <xs:attribute name="TotalCountInvoices" type="xs:integer"/>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```

    <xs:attribute name="TotalCountLocation" type="xs:integer"/>
    <xs:attribute name="TotalCountLineItems" type="xs:integer"/>
    <xs:attribute name="TotalNetSales" type="xs:decimal"/>
    <xs:attribute name="TotalGrossSales" type="xs:decimal"/>
  </xs:complexType>
</xs:element>
<xs:element name="ActivitySummary">
  <xs:complexType>
    <xs:attribute name="TotalCountInvoices" type="xs:integer"/>
    <xs:attribute name="TotalCountLocation" type="xs:integer"/>
    <xs:attribute name="TotalCountLineItems" type="xs:integer"/>
    <xs:attribute name="TotalNetSales" type="xs:decimal"/>
    <xs:attribute name="TotalGrossSales" type="xs:decimal"/>
  </xs:complexType>
</xs:element>
<xs:element name="MiscellaneousTransactionsSummary">
  <xs:complexType>
    <xs:attribute name="TotalCountMiscellaneousTransactions"
type="xs:integer"/>
  </xs:complexType>
</xs:element>
</xs:schema>

```

5. Submission Guidelines

This section defines the documentation to be submitted to the Certification and Verification Authority by the applicant:

- The Validation Report, including the Validation Results and a description of the Validation Environment
- Validation Harness Documentation, comprising the Design Specification and the Source Code

The applicant will prepare the documentation for submission as described in this section and will upload the files to the Certification and Verification Authority via the web-based certification/verification system during the appropriate step in the certification/verification process, as described in the NSI Guide Supplement for XML Retail Accounting Reports Certification/Verification.

5.1 Validation Report

The Validation Report comprises at least two discrete documents (see below) and therefore must be submitted as a single file in a standard document archive format (zip or tar/gzip). The documents that must be included in the Validation Report archive file are:

- Validation results as defined in 5.1.1 below
- A document containing a description of the Validation Environment consistent with the considerations detailed in Section 2 above. This description should be presented in the format described in the appropriate subsection of Section 5.1.2 below.

Additional documents that may optionally be included in the Validation Report archive file are:

- Additional supporting information concerning the Validation Results.
- Interpretation of the Validation Results.

5.1.1 Validation Results

5.1.1.1 XML Retail Accounting Report Producing Applications

XML Retail Accounting Report Producing Applications require three files as part of the Validation Results. These are:

- Native Data is the resulting data set from the submitter's source system consolidated into a single file in a standard document archive format (zip or tar/gzip)
- Formatted Data is validation data from the applicant's source system. It must be submitted consistent with the schema defined in 4.1 above in a file named ValidationSource.xml.
- XML Data is a file or files that comply with the XML Standard. Results should be combined into one file that is named ValidationResults.xml.

5.1.1.2 XML Retail Accounting Report Consuming Applications

The validation process will result in a reconciliation report template that the applicant must complete as part of the validation process. The completed template will confirm that the resulting accounting transaction from the applicant's accounting system matches with the expected results in the template. This will be submitted as a single file name ValidationResults.pdf and submitted to the Certification Authority as part of the Validation Report.

5.1.2 Validation Environment Description

This section defines how to submit a detailed description of the Validation Environment. The Validation Environment description consistent with Section 2 above should be consolidated into a single PDF file named ValidationEnvironment.pdf and submitted to the Certification and Verification Authority as part of the Validation Report.

5.1.2.1 XML Retail Accounting Report Producing Applications

The relationship between the originating system and the XML Retail Accounting Report Producing Application needs to be clearly documented. The applicant must include any specific hardware requirements or software environments within this description. The description will include information about the native data.

All test scripts used must be submitted as part of the design documentation.

The applicant must include details about the source of the formatted data in the design documentation including any processing of native data to meet the required schema of the formatted data.

Finally the design must document any additional handling of the compliant XML file prior to the availability of the file to XML Retail Accounting Report Consuming Applications, consistent with a live environment.

5.1.2.2 XML Retail Accounting Report Consuming Applications

Design documentation must include all software and hardware involved in processing the XML compliant file including any software separate from the retailer's accounting system that manipulates the XML data prior to entry into the accounting system.

5.2 Additional supporting information concerning the Validation Results

The Applicant may optionally submit additional supporting information concerning the validation process and the Validation Results that were captured as output. This information should be consolidated into a single PDF file named SupportingInformation.pdf and submitted to the Certification and Verification Authority as part of the Validation Report.

5.2.1 Interpretation of the Validation Results

The Applicant may optionally submit additional information concerning the interpretation of the Validation Results. This information should be consolidated into a single PDF file named ResultsInterpretation.pdf and submitted to the Certification and Verification Authority as part of the Validation Report.

5.3 Validation Harness Design Documentation

5.3.1 Validation Harness Design Specification

In addition to the Validation Report, the Applicant must submit a specification of the design of the Validation Harness that was used to accept input into and capture output from the technology. If this specification comprises more than one file, all the documents must be submitted as a single file in a standard document archive format (zip or tar/gzip).

5.3.2 Validation Harness Source Code

In addition to the Validation Report, the applicant must submit the source code for the Validation Harness that was used to accept input into and capture output from the technology. If this source code comprises more than one file, all the files must be submitted as a single file in a standard document archive format (zip or tar/gzip).