

NSI Policy
Supplement for XML Retail Accounting Reports
Certification/Verification

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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 by 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 is a supplement to the general NSI Certification/Verification Policy document. Whereas the general NSI Certification/Verification Policy document defines the generic NSI certification/verification policies, this document, the NSI Policy Supplement for XML Retail Accounting Reports Certification/Verification, defines the specific policy elements that pertain only to the XML Retail Accounting Reports certification/verification. In conjunction with the general NSI Certification/Verification Policy document, this document defines the policies that govern the operation of the NSI XML Retail Accounting Reports Certification and Verification Program.

These policies define what can be certified/verified, what it means to be certified/verified, and the process for achieving and maintaining certification/verification. These policies also define the obligations on Organizations, including a requirement for an Organization to warrant and represent that its Certified/Verified Entity meets the applicable Conformance Requirements, which include conformance to the applicable NSI Best Practice(s) or Technical Standard(s) as interpreted by the NSI from time to time.

This document, along with the general NSI Certification/Verification Policy document, is intended primarily for Organizations that would like to certify or verify one or more of their technologies. This collective policy represented by both documents - in conjunction with the Certification/Verification Agreement and applicable Trademark License Agreement - constitutes the set of requirements and obligations for achieving certification/verification. Buyers intending to procure from Organizations with Certified/Verified Entities, and other stakeholders who want assurance of an Organization's capabilities, will also find this document useful for understanding what they can expect from a Certified/Verified Entity.

1.2 Scope

XML Retail Accounting Reports certification/verification covers the design, implementation, and use of one of the following types of application software:

- **XML Retail Accounting Report Producing Application**

A software application that produces reports conforming to the XML Retail Accounting Reports Technical Standard. Certification/verification encompasses

the generation of conformant accounting information in a specified operating environment.

The author of this software application may be either a vendor or a lottery; thus a vendor may sponsor certification or a lottery may sponsor verification for an XML Retail Accounting Report Producing Application.

- **XML Retail Accounting Report Consuming Application**

A software application that makes use of reports conforming to the XML Retail Accounting Reports Technical Standard. Certification encompasses the extraction of conformant accounting information in a specified operating environment.

The author of this software application may be either a retailer or a third-party vendor of such software and both are eligible to sponsor certification for an XML Retail Accounting Report Consuming Application.

In addition, verification is available to lotteries for:

- **Lottery Procurement Practice: XML Retail Accounting Reports**

A lottery business practice to procure certified solutions when requesting lottery-retail accounting related products in RFPs. Verification for a Lottery Procurement Practice encompasses a review of the language used in those RFPs requesting XML Retail Accounting Reports technology to ensure the language requires the successful bidder to obtain XML Retail Accounting Reports Certification.

The policies for Lottery Procurement Practice verification are contained in the NSI Policy Supplement for Lottery Procurement Practice Verification.

XML Retail Accounting Reports certification and verification covers the following NSI Technical Standard:

- XML Retail Accounting Reports in the Lottery Industry

Conformance Requirements have been defined for the following XML Retail Accounting Reports areas in which *NSI certification* is currently available:

- XML Retail Accounting Report Producing Application
- XML Retail Accounting Report Consuming Application

Conformance Requirements have been defined for the following XML Retail Accounting Reports areas in which *NSI verification* is currently available:

- XML Retail Accounting Report Producing Application
- Lottery Procurement Practice: XML Retail Accounting Reports

1.2.1 Scope of certification of XML Retail Accounting Report Producing Applications and XML Retail Accounting Report Consuming Applications

A Certified/Verified Entity must be defined so as to clearly identify the scope of the entity covered by certification or verification. For an XML Retail Accounting Report Producing Application or XML Retail Accounting Report Consuming Application, the scope of the Certified/Verified Entity is defined in the Conformance Statement. Certification/verification thus means that the Organization guarantees conformance

for the entity as defined in the Conformance Statement and operating in the specified operational environment.

An XML Retail Accounting Report Producing Application or XML Retail Accounting Report Consuming Application is defined in terms of its constituent components.

As part of completing the Conformance Statement Questionnaire, the Applicant must list every component that is impacted by the XML Retail Accounting Reports Technical Standard and should include the release number and version for each component.

These components could consist of one or more from the following non-exhaustive list:

- Hardware
- Drivers (software or hardware or both)
- Application software
- Interfaces (hardware or software)
- Protocol engines
- Data processing algorithms
- Firmware
- Software libraries
- Software objects
- System software
- Compilers
- Data translators
- Other

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 is not intended for stand-alone use.

For details on Lottery Procurement Practice verification, please consult the NSI Policy Supplement for Lottery Procurement Practice Verification

The following documents should be consulted for more detailed information on the Validation Process for XML Retail Accounting Report Producing Applications and XML Retail Accounting Report Consuming Applications:

- NSI XML Retail Accounting Reports Validation Specification
- NSI Guide Supplement for XML Retail Accounting Reports Certification/Verification

2. Certification/Verification Process Workflow

This section defines the process an Organization must follow to achieve certification/verification against the NSI XML Retail Accounting Reports Technical Standard. The parties involved in the process are:

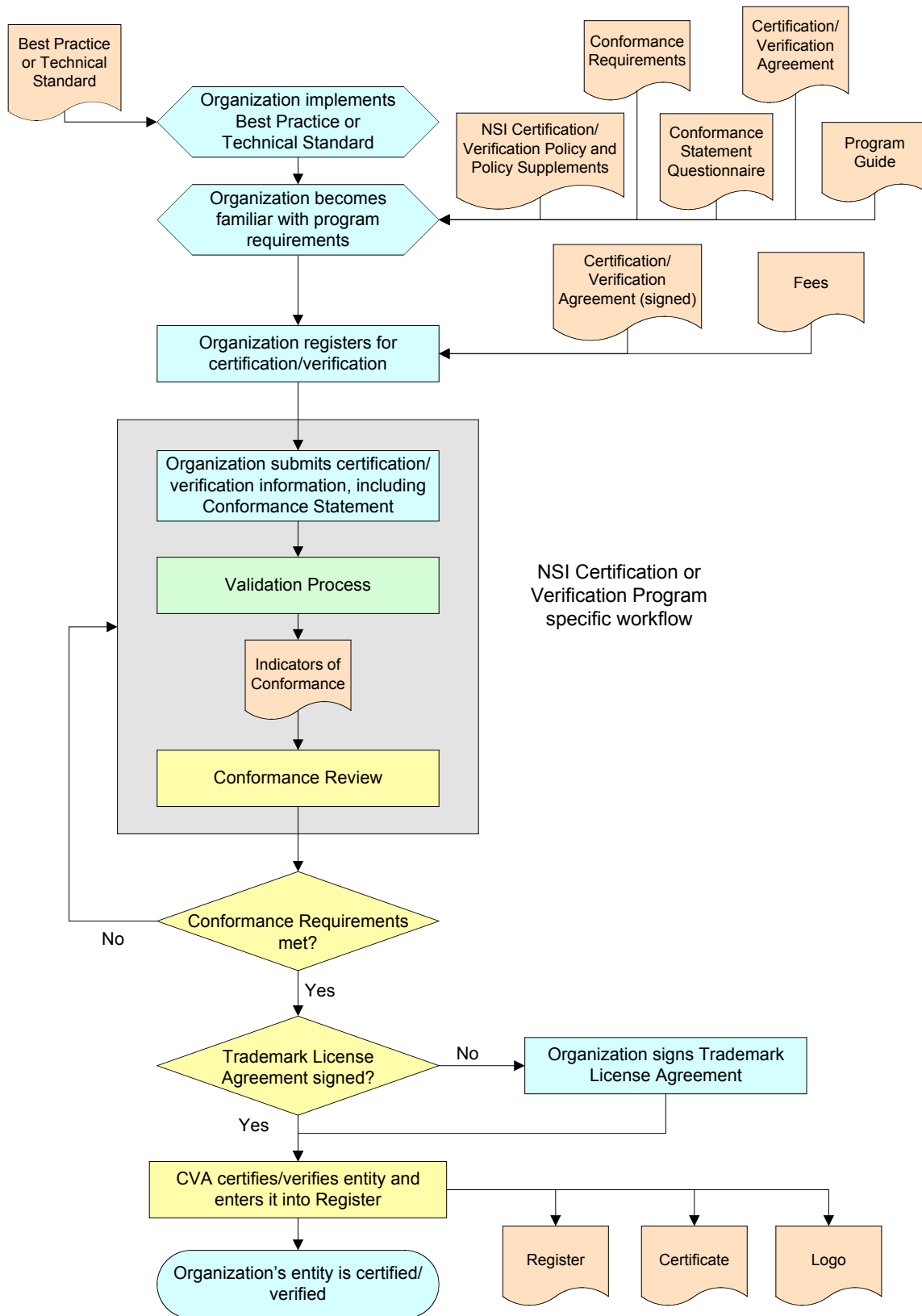
- Organization

- Certification and Verification Authority
- Specification Authority
- Validation Method Maintenance Authority

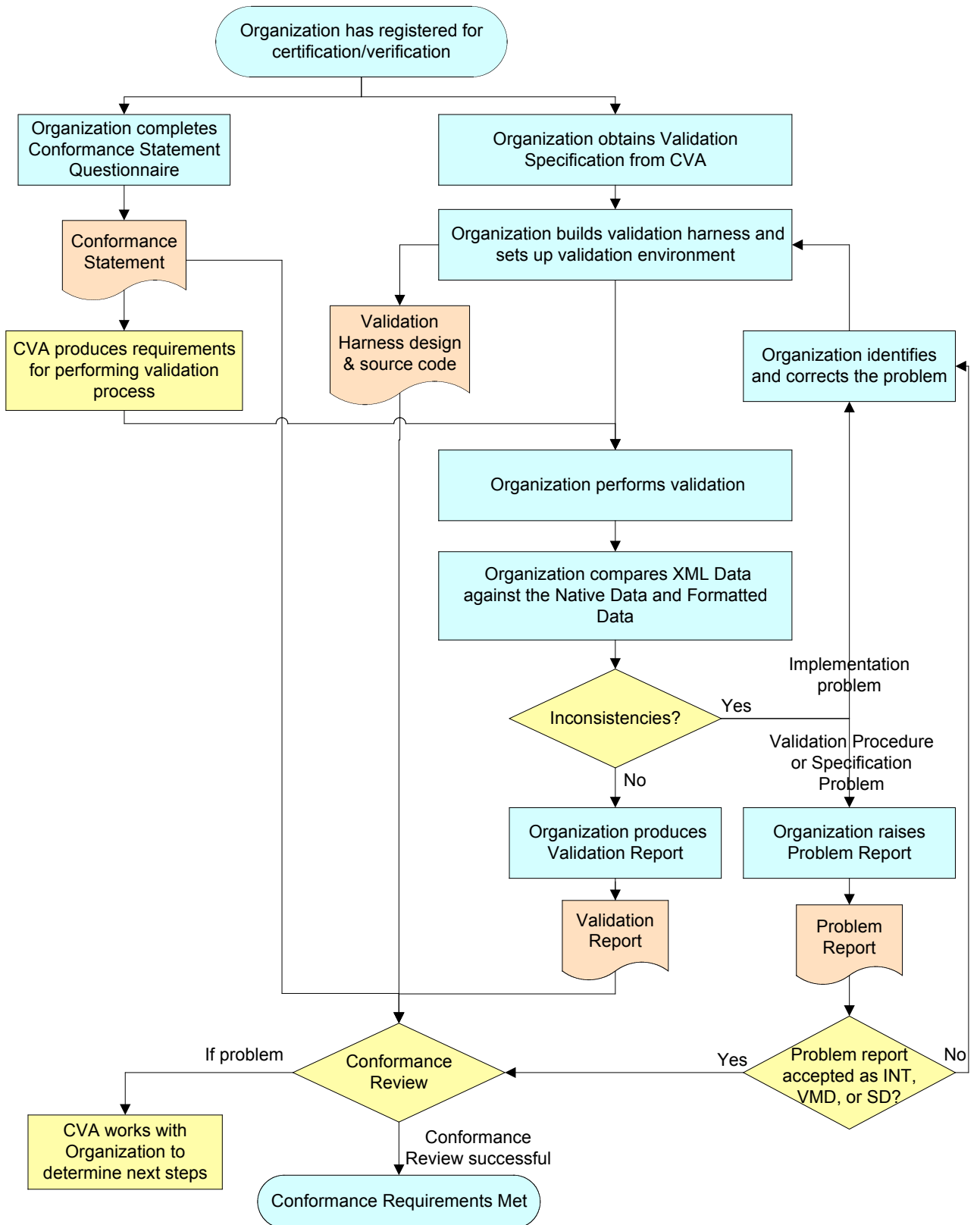
The following diagrams show the overall certification/verification workflow and the workflows specific to XML Retail Accounting Reports Certification/Verification. In addition to the general workflow diagram, there is a separate diagram for each of the technologies covered by this program:

- XML Retail Accounting Report Producing Application Workflow
- XML Retail Accounting Report Consuming Application Workflow

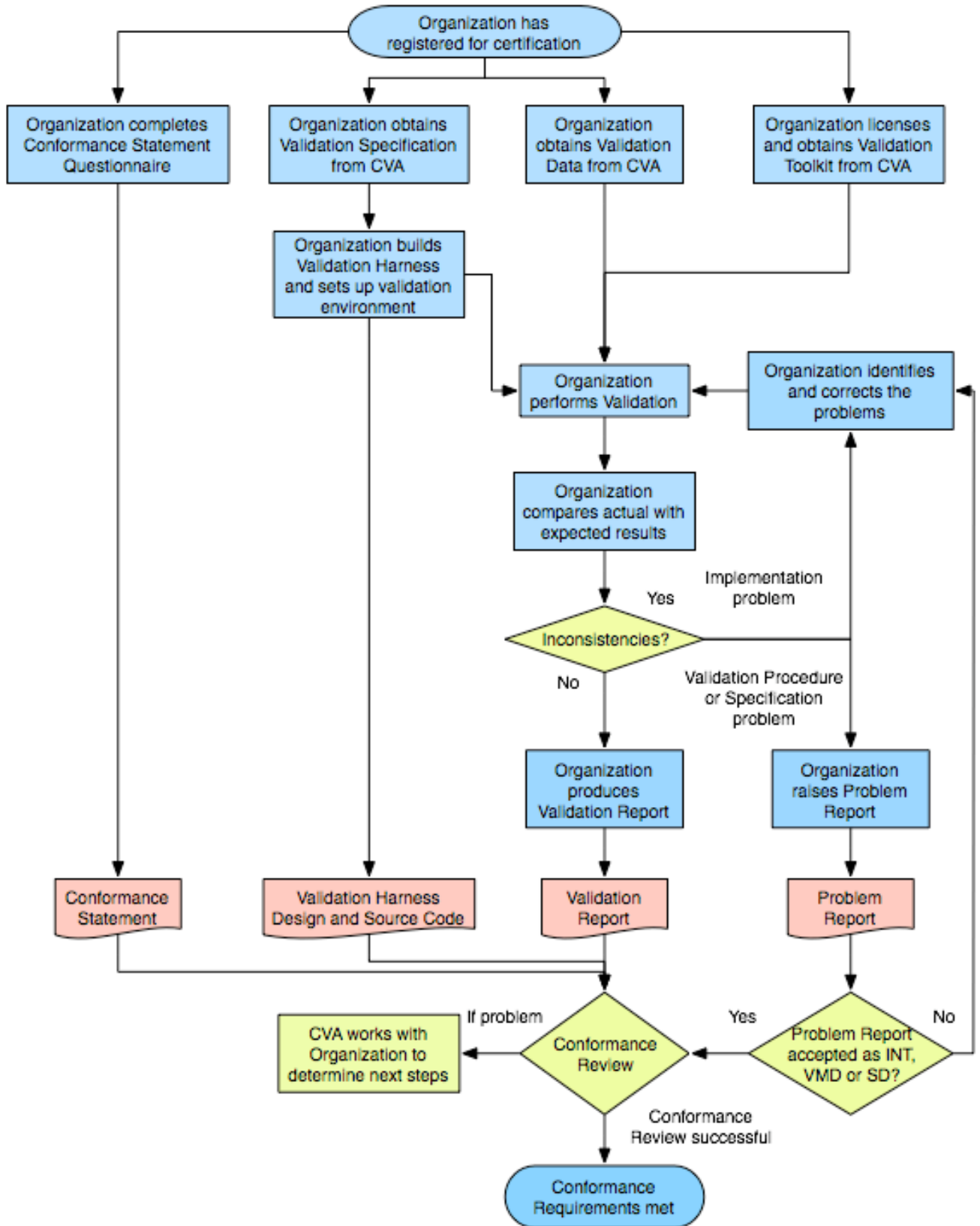
NSI Certification/Verification Process



XML Retail Accounting Report Producing Application Workflow



XML Retail Accounting Report Consuming Application Workflow



3. Validation Process and Conformance Review

All NSI Certification and Verification Programs require the completion of a Conformance Statement Questionnaire (CSQ) in order to produce a Conformance Statement that is specific to the business practice or technology. This process is described in detail in the general NSI Certification/Verification Policy document.

Described below are the specific processes, methods, and policies by which conformance is demonstrated and validated for each of the following technologies, based on the Validation Method and Conformance Review defined in the appropriate sub-section:

- XML Retail Accounting Report Producing Applications
- XML Retail Accounting Report Consuming Applications

The NSI XML Retail Accounting Reports Validation Specification defines:

- The requirements for the Validation Environment that the Applicant will need to set up and the Validation Harness that the Applicant will need to design and implement in order to validate its ability to generate or use the XML data conforming to the XML Retail Accounting Reports Technical Standard.
- A set of validation instructions for executing the validation process
- The requirements for submission of the Validation Report and supporting documentation.

3.1 XML Retail Accounting Report Producing Applications

3.1.1 Validation Method for XML Retail Accounting Report Producing Applications

This validation method is defined in the NSI XML Retail Accounting Reports Validation Specification. This document specifies requirements for:

1. The Validation Environment
2. The Validation Harness
3. Validation Data and Validation Results
4. Submission of the Validation Report and Validation Harness Documentation

3.1.1.1 Validation Environment

The Applicant will set up a validation environment, in conformance with the Validation Specification, which may include the use of additional back office system components to facilitate the validation. The responsibility for ensuring that the validation environment is adequate for the purpose rests entirely with the Applicant.

3.1.1.2 Validation Harness

The Applicant will design, implement and run their own validation harness, in conformance with the Validation Specification, to format the accounting and invoicing transaction data for submission to the Certification and Verification Authority. The validation harness will ensure an orderly translation from the Native Data to the Formatted Data, and ultimately to the XML Data (see Section 3.1.1.3 below for further information on these data types). It is the responsibility of the Applicant to

thoroughly test the validation harness to ensure that Formatted Data is a true rendition of the Native Data used during the Applicant's validation process and is formatted according to the Validation Specification requirements for submission.

3.1.1.3 Validation Data and Validation Results

Once the Applicant has registered for certification/verification, the Certification and Verification Authority will provide the Applicant with the requirements for performing the validation process, including the required number and type of accounting or invoicing transactions to be processed during validation. The transaction requirements will ensure that the boundary conditions within the XML Retail Accounting Reports Technical Standard and all the options for which support is claimed in the Conformance Statement are sufficiently exercised.

The Applicant should follow the validation procedures defined in the Validation Specification.

The following types of data must be produced and submitted to the Certification and Verification Authority, in a format that is syntactically and semantically identical to the requirements identified in the Validation Specification:

- Native Data: This is the internal representation of the data within the XML Retail Accounting Report Producing Application. This data may be in a format that is application specific and not readily interpreted by a third party without documentation.
- Formatted Data: This is the Native Data described above, re-formatted and mapped to the data dictionary defined in the XML Retail Accounting Reports Technical Standard, as specified in the Validation Specification.
- XML Data: This data is in the XML format defined in the XML Retail Accounting Reports Technical Standard, and may be produced through a conversion process used by the Applicant to convert the Native Data to XML.

The Applicant should compare the XML Data against the Formatted Data and Native Data to identify any inconsistencies. The Applicant must resolve any such inconsistencies by revising the application or its set-up, fixing the validation harness, or by means of an approved Problem Report (see the general NSI Certification/Verification Policy document).

3.1.1.4 Submission of the Validation Report and Supporting Documentation

When the validation process is complete, the Applicant must submit the following files to the Certification and Verification Authority for analysis:

1. A completed Validation Report, including:
 - The Native Data used by the Applicant during the validation process.
 - The Formatted Data, which may be proprietary in nature. The Formatted Data should correspond to the Native Data items and XML Data and should be formatted according to the Validation Specification. Supporting documentation that describes how the translation from Native Data to Formatted Data was accomplished should also be submitted.
 - XML Data generated from the Native Data and formatted according to the Validation Specification, and which demonstrates conformance with the XML Retail Accounting Reports Technical Standard.
2. Documentation for the Validation Harness:

- The design documentation for the Validation Harness that was used to produce the Native, Formatted, and XML Data.
- A copy of the source code for the Validation Harness software.

3.1.2 Conformance Review for XML Retail Accounting Report Producing Applications

The Certification and Verification Authority will review all certification/verification information submitted by the Organization, along with any applicable Interpretations, System Deficiencies, or Validation Method Deficiencies, to validate that the evidence indicates that the technology meets the applicable Conformance Requirements.

The Certification and Verification Authority will evaluate the XML Data to insure accuracy and conformance with the XML Retail Accounting Reports Technical Standard has been demonstrated. To be conformant:

- The XML Data must be consistent with the Native Data used to produce it.
- The XML Data must be determined to be well-formed.

It is worth noting that the XML Retail Accounting Reports Technical Standard relies on an underlying standard, the Extensible Markup Language (XML) 1.0 standard. As such, the requirements of the XML standard must also be met. Traditionally, a data set or schema is considered XML conformant if it is well-formed, thus meeting the well-formedness constraints in the XML standard. While we do not specifically test the submitted XML Data for well-formedness, as a byproduct of verifying the XML Data against the XML Retail Accounting Reports Technical Standard will be a confirmation that the XML Data is also well-formed.

3.2 XML Retail Accounting Report Consuming Applications

3.2.1 Validation Method for XML Retail Accounting Report Consuming Applications

This validation method is defined in the NSI XML Retail Accounting Reports Validation Specification. This document specifies requirements for:

1. The Validation Environment
2. The Validation Harness
3. Validation Materials
4. Submission of the Validation Results

3.2.1.1 Validation Environment

The Applicant will set up a validation environment in conformance with the Validation Specification. The responsibility for ensuring that the Validation Environment is adequate for the purpose rests entirely with the Applicant.

3.2.1.2 Validation Harness

The Applicant will design, implement and run their own Validation Harness, in conformance with the Validation Specification, to format the accounting and invoicing transaction data for use with the Validation Toolkit.

3.2.1.3 Validation Materials

Once the Applicant has registered for certification, the Certification and Verification Authority will provide access to the following materials to facilitate the validation:

- Validation Data

A set of validation data, in the form of a number of XML data sets that conform to the XML Retail Accounting Reports Technical Standard. This data is designed to exercise all the boundary conditions within the XML Retail Accounting Reports Technical Standard and all the options for which the Applicant has claimed support in the Conformance Statement.

- Validation Toolkit

The validation toolkit will consist of a set of utilities, together with documentation on their use, that facilitate the comparison of actual and expected results from the validation process and generation of a template for reporting this comparison. This toolkit will be made available by the Certification and Verification Authority, subject to a set of terms and conditions for its use.

3.2.1.4 Submission of Validation Results

At the completion of the validation process, it is the responsibility of the Applicant to examine the expected results generated by the Validation Toolkit and compare them against the results obtained during the validation process to identify any inconsistencies. The organization must resolve any such inconsistencies either by revising the application or its set-up, by fixing the validation harness, or by means of an approved Problem Report (see the NSI Certification/Verification Policy).

When satisfied that any inconsistencies have been resolved and that the XML Retail Accounting Report Consuming Application conforms to the XML Retail Accounting Reports Technical Standard, the Applicant must submit:

- A completed Validation Report, including the results of the comparisons as captured in the reporting template generated by the Validation Toolkit, along with any supporting information and results interpretation.

3.2.2 Conformance Review for XML Retail Accounting Report Consuming Applications

The Certification and Verification Authority will review all certification information submitted by the Organization, along with any applicable Interpretations, System Deficiencies, or Validation Method Deficiencies, to validate that the evidence indicates that the technology meets the applicable Conformance Requirements.

4. Archiving Certification or Verification Materials

By default, the Certification and Verification Authority will maintain the archive for all certification or verification materials submitted in conjunction with a new or updated certification or verification, as described in the general NSI Certification/Verification Policy document.

5. Certification/Verification Requirements for Modifications of a Certified/Verified Entity

This section defines the requirements for maintaining certification or verification when there are changes to any of the elements upon which a technology's certification or verification was based.

The following table summarizes the types of modifications that may occur in relation to a Certified/Verified Entity:

Section	Type of Modification	Validation Requirement	Certification/Verification Requirement
5.1	Material Changes to a Certified/Verified Entity	Full Validation Process	Certification/Verification Information update
5.2	Non-material change to the Conformance Statement of a Certified/Verified Entity	None	Certification/Verification Information update
5.3	Material Change in Scope of Certified/Verified Entity	Full Validation Process	New Certification/Verification
5.4	Re-Badged or OEM'ed Certified/Verified Entity	Reference to previous validation results	New Certification/Verification
5.5	Administrative Changes	None	Conformance Statement update
5.6	Other Variants	As determined by Certification and Verification Authority	As determined by Certification and Verification Authority

5.1 Material Changes to a Certified/Verified Entity

Modifications may be made to a Certified/Verified Entity, for example to upgrade a technology in a given deployment or to modify a technology. The nature of the modifications will determine the impact on the technology's certification or verification.

The scope of an XML Retail Accounting Report Producing Application or XML Retail Accounting Report Consuming Application is defined by the constituent components identified on the Conformance Statement (see Section 1.2.1). This section covers

material changes to the components identified on the Conformance Statement. Changes to the defined scope of the technology are covered in Sections 5.2 and 5.3.

A material change is one that may affect the technology's conformance to the Technical Standard or that may affect the outcome of the validation process. It is the responsibility of the Organization to ensure that the technology remains conformant and thus to determine whether a modification constitutes a material change. It is good practice for an Organization, as part of its normal quality assurance activities, to regression test modified versions of a technology. Regression testing should include utilizing the applicable NSI XML Retail Accounting Reports Validation Methods to help the Organization ensure continued conformance to the Technical Standard.

For clarification, a material change includes, but is not limited to, a change that may:

- Impact the behavior of the currently supported mandatory and optional features of the Technical Standard
- Add or remove support for optional features of the Technical Standard
- Have a direct or indirect impact on the results of validation

The following do not constitute a material change under this definition and thus do not require revalidation:

- Changes outside the scope of certification/verification, i.e., changes that do not affect any of the components identified on the Conformance Statement.
- Changes to any of the components identified on the Conformance Statement representing functionality entirely outside the scope of the Technical Standard, AND which are entirely decoupled from the technology that implements the Technical Standard.

If a modification to a technology involves a material change, then the Organization must perform a revalidation of the technology in order for the entity to remain certified or verified. It is the responsibility of the Organization to submit the revalidation results to the Certification and Verification Authority for conformance review prior to the final release of the modified technology.

In order to update the applicable Register entry to reflect the modified release of the technology, the Organization must complete a new registration indicating that it is for a new release of an existing Certified/Verified Entity. The Organization must also provide a new Validation Report. If the result of the conformance review is a success, the Certification and Verification Authority will update the Conformance Statement and applicable Register entry for the technology to reflect the modified release, and issue a new Certificate.

5.2 Non-material change to the Conformance Statement of a Certified/Verified Entity

If an Organization wishes to change information on the Conformance Statement and there is no material change to the Certified/Verified Entity, the certification or verification may be amended upon request to the Certification and Verification Authority.

The Organization will be required to provide a written statement to the Certification and Verification Authority indicating that there have been no material changes to the technology.

The Certification and Verification Authority will then update the Conformance Statement and, if appropriate, update the applicable Register and issue a new Certificate.

5.3 Material Change in Scope of Certified/Verified Entity

The scope of an XML Retail Accounting Report Producing Application or XML Retail Accounting Report Consuming Application is defined by the constituent components identified on the Conformance Statement (see Section 1.2.1). If an Organization makes a material change to a Certified/Verified Entity and in doing so alters the set of components that define the technology, the modified technology is considered a new release for the purposes of certification/verification and is subject to the full validation and certification/verification process.

A change in scope that does not involve a material change to the technology is covered in Section 5.2.

To achieve certification or verification for the modified technology, the Organization must complete a new registration and submit a new Conformance Statement and Validation Report. Upon successful completion of the certification/verification process, the Certification and Verification Authority will create a new entry in the applicable Register for the modified technology and issue a new Certificate. The entry for the original Certified/Verified Entity will remain in the applicable Register unchanged, unless the Organization explicitly requests to have it deleted.

5.4 Re-Badged or OEM'ed Certified/Verified Entity

If technically identical Certified/Verified Entities are to be provided by more than one Organization, each Organization will have to register for certification, in order to have their technology listed in the applicable Register. Since the new Organization assumes the warranty for the technology, a re-badged or OEM'ed technology provided by that Organization constitutes a new Certified/Verified Entity. Such a technology will not require revalidation, but reference must be provided to the validation results of the existing Certified/Verified Entity to which it is technically identical, and with the agreement of the Organization responsible for originally registering the existing technology.

In this case, the new Organization must complete a new registration, indicating that the technology is identical to an existing Certified/Verified Entity. The new Organization must submit the following:

- A Conformance Statement that is technically identical to that of the existing Certified/Verified Entity, apart from the technology name and Organization information
- A written statement indicating that the re-badged or OEM'ed technology is indeed technically identical to the existing Certified/Verified Entity
- A reference to the validation results from the original certification or verification of the existing Certified/Verified Entity
- A signed notification from the Organization that registered the existing Certified/Verified Entity authorizing the validation results from the original certification or verification to be referenced for the new certification or verification

If all requirements are met, the Certification and Verification Authority will update the applicable Register to reflect the re-badged or OEM'ed technology and issue a new Certificate.

5.5 Administrative Changes

If an Organization wishes to make changes to the Conformance Statement that do not have a material affect on the conformance of the Certified/Verified Entity, the

Organization must notify the Certification and Verification Authority within 30 calendar days of such change occurring. The Certification and Verification Authority will update the Conformance Statement to reflect the requested changes.

For other administrative changes, such as those to the designated certification/verification contacts, an Organization may request such changes at any time by sending an email to the Certification and Verification Authority.

5.6 Other Variants

Except where specifically stated in this document, any other change to any of the elements upon which a Certified/Verified Entity's certification or verification was based must be communicated to the Certification and Verification Authority within 30 calendar days of such change occurring. If the Certification and Verification Authority believes that the change may have a material affect on the conformance of the technology to the NSI XML Retail Accounting Reports Technical Standard, the technology will be subject to the full validation and certification/verification process, or any subset thereof, as deemed appropriate by the Certification and Verification Authority.

6. Renewal

6.1 Duration of Certification/Verification

Certification/verification is valid for a specific period of time from the date on which the Certification and Verification Authority provides written notice to the Organization that certification or verification has been achieved, unless certification or verification is subsequently revoked. This period is subject to the Certification/Verification Requirements for Modifications of a Certified/Verified Entity defined in Section 5.

The last day of this period is referred to as the renewal date and represents the date on which the certification or verification will cease to be valid, unless the Organization renews the certification or verification.

The duration of certification/verification for specific Certified/Verified Entities is as follows:

Certified/Verified Entity	Duration of Certification/Verification
XML Retail Accounting Report Producing Application	Two (2) years
XML Retail Accounting Report Consuming Application	Two (2) years

6.2 Renewal Process

An Organization with a Certified/Verified Entity is required to renew the certification or verification on or before the renewal date. Renewal will be performed in accordance with the renewal process defined in Section 9 of the general NSI Certification/Verification Policy document.

Whether renewal requires revalidation or not is dependent upon changes in the Certified/Verified Entity, changes in the validation methodology, and any Interpretations that have been granted since the previous certification or verification.

Thus, at the time of renewal, the Certification and Verification Authority will evaluate the effect of any such changes and based on the evaluation will define the requirements for renewal, including whether revalidation is required. For example, a material change in an XML Retail Accounting Report Producing Application or XML Retail Accounting Report Consuming Application will require revalidation. The Certification and Verification Authority will not unreasonably request that a Certified/Verified Entity be revalidated.

If revalidation is required, the Certification and Verification Authority will notify the Organization of the specific requirements. If revalidation is not required, the only requirement on the Organization is to register for renewal and pay the certification/verification renewal fee.