NEMSIS v3 Compliance

November 8, 2013

Resources

Sample Test Package: http://nemsis.org/v3/becomingCompliant/complianceProcess.html

Version 3.3.3

Web Service Online Validator:
https://www.nemsis.org/NemsisV3ValidatorV3.3.3/NemsisWsService?wsdl

NEMSIS TAC Compliance Web Service:
https://www.nemsis.org/NemsisV3ComplianceTestV3.3.3/NemsisWsService?wsdl

Testing Prerequisites

All software seeking NEMSIS V3 compliance must first submit a Demographic and EMS dataset to the NEMSIS v3 web service and pass both the XSD and Schematron validation.
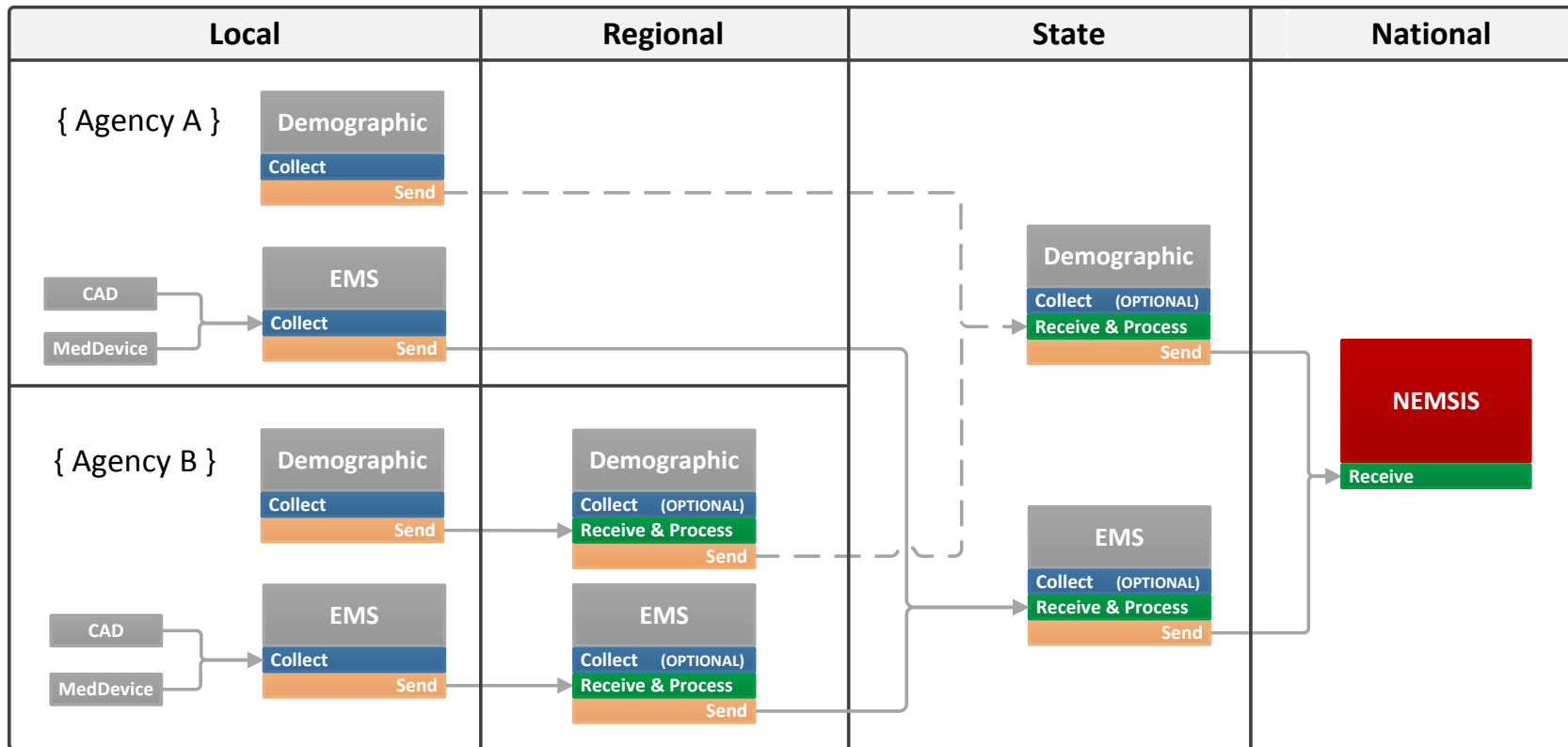
Overview

Products seeking NEMSIS v3 compliance must be in final form, ready-for-market, installation ready, and versioned. The NEMSIS TAC will install a product on a test server, request administrative rights to a web application, or (if necessary) travel to test a more complex application. The NEMSIS v3 compliance process will be tailored to address the following requirements:

1. Collect Data
2. Receive and Process Data
3. Send Data
4. Web Service Communication
5. Demographic Submission
6. Software Upgrade/Updates

Refer to the Data flow diagram 1.1 below for sections that are required for compliance at the local, regional, and state level. Option items for testing will have the text "(optional)" next them.

Data Flow Diagram 1.1

Local	Regional	State	National

{ Agency A }

Demographic
Collect
Send

EMS
Collect
Send

CAD
MedDevice

{ Agency B }

Demographic
Collect
Send

EMS
Collect
Send

CAD
MedDevice

Demographic
Collect   (OPTIONAL)
Receive & Process
Send

EMS
Collect   (OPTIONAL)
Receive & Process
Send

Demographic
Collect   (OPTIONAL)
Receive & Process
Send

EMS
Collect   (OPTIONAL)
Receive & Process
Send

NEMSIS
Receive

Collect Data

Products that **Collect Data** must demonstrate the implementation of all NEMSIS v3 Demographic and EMS dataset elements, processing a CAD and MedDevice dataset, implementation of custom elements, application of business logic at record finalization, and XML representation of the Demographic and EMS dataset.

Test Package

Test Cases	Format
Demographic dataset	Hand Written (non-clinical) *
EMS dataset	Hand Written (non-clinical) *
CAD & MedDevice dataset	XML (non-clinical)
Business Logic	Schematron
Custom Element	Hand Written

* Expected output xml files contained in Sample Test Package

Pre-Testing Check List

Use the sample test package as referenced in the Resources section at the beginning of this document to assist in reviewing the following items

1. Ensure the full NEMSIS v3 Demographic standard is implemented in the user interface.
2. Ensure the full NEMSIS v3 EMS standard is implemented in the user interface.
3. Ensure the implementation of custom elements as provided in the test cases.
4. Ensure the implementation of Schematron for business logic.
5. Ensure the ability to process multiple Schematron files.
6. Ensure the use of Schematron for business rules when a Demographic record is finalized.
7. Ensure the use of Schematron for business rules when an EMS record is finalized.
8. Ensure the processing of a NEMSIS v3 CAD & MedDevice dataset populates the EMS event.

Testing Check List

1. **Software Access:** Provide access to the NEMSIS TAC so that they may enter clinical test cases

2. **Custom Element Implementation:** The directory *Custom Elements* in the test package contains custom elements that need to be implemented. Insure the export includes the custom elements and is valid against the current NEMSIS v3 standard. This means the customConfiguration and customResults section are appropriately populated.

3. **Schematron Rules:** The directory *Schematron* in the sample test package contains Schematron files which need to be configured in the application.

4. **Demographic and EMS Test Cases:** Enter all test cases in both the *Demographic* and *EMS* directories in the test package and insure that the export is valid against the current NEMSIS v3 standard. The information in the HTML files must be entered manually and will be compared to the xml version. These cases must remain in the product for the NEMSIS TAC to review for compliance testing. The NEMSIS TAC will be submitting these to the NEMSIS web service.

5. **CAD and Medical Device:** Import all test case files in both the *CAD* and *Medical Device* directories in the test package, insure they populate an EMS record, and insure the export is valid against the current NEMSIS v3 standard. These cases must remain in the product for the NEMSIS TAC to review for compliance testing. The NEMSIS TAC will verify the import and export of the files and submitting these to the NEMSIS web service.

Receive and Process Data

Products that **Receive and Process Data** must demonstrate the capability of receiving and processing the NEMSIS v3 Demographic and EMS dataset. Processing a dataset includes structure validation and business rules validation of a dataset received. A sample test package will be provided prior to testing.

Test Package

Test Cases	Format
Demographic dataset	Xml (non-clinical)
EMS dataset	Xml (non-clinical)
Business Logic	Schematron

Pre-Testing Check List

Use the sample test package as referenced in the Resources section at the beginning of this document to assist in reviewing the following items

1. Ensure the client is able to properly interoperate the status codes in NEMSIS v3 Web Service standard is implemented. Reference the **Web Service Communication** section for details.
2. Ensure the ability to receive Demographic and EMS data.
3. Ensure the ability to send Demographic and EMS data.
4. Ensure the implementation of Schematron for business logic.
5. Ensure the ability to process multiple Schematron files.

Testing Check List

1. **Schematron Rules:** The directory *Schematron* in the test package contains Schematron files which need to be configured in the application.

2. **Web Service Account:** Provide the NEMSIS TAC with a web service account for receiving test cases. These test cases will be submitted to the NEMSIS TAC's web service for review.

3. **Test Case Submission:** The NEMSIS TAC will be submitting Demographic and EMS test cases to the application's web service. Review the section **Demographic Submission** section for handling modifications to a previous Demographic submission.

Send Data

Products that **Send Data** must demonstrate the capability of sending the NEMSIS v3 Demographic and EMS datasets. State level products must also demonstrate the capability of submitting a NEMSIS v3 Demographic and EMS dataset that contains National elements only.

Test Package
1. The export from the Demographic and EMS dataset test cases from the **Collect Data** or **Receive and Process Data** process will be utilized

Pre-Testing Check List
1. Ensure the Demographic export from **Collect Data** or **Receive and Process Data** process is a valid XML file and submits to the NEMSIS v3 web service
2. Ensure the EMS export from **Collect Data** or **Receive and Process Data** process is a valid XML file and submits to the NEMSIS v3 web service
3. If the Product functions at the state level, ensure that submission of National only elements is also implemented for the Demographic and EMS dataset
4. Ensure the client is able to properly interoperate the status codes in NEMSIS v3 Web Service standard is implemented. Reference the **Web Service Communication** section for details
5. Review **Demographic Submission** section for additional items

Testing Check List
1. **Prerequisites**: Complete the **Collect Data** or **Receive and Process Data** process because these test cases will be used in this process

2. **Demographic and EMS Submissions:** Provide a mechanism to the NEMSIS TAC for submitting test cases to the NEMSIS TAC's compliance web service. If the Product functions at the state level, the NEMSIS TAC will also verify the Product's implementation for submitting the Demographic and EMS dataset that contains National elements only

3. **Demographic and EMS Submission Validation:** The NEMSIS TAC will be validating the test cases entered by comparing the Product's export to the expected XML output files.

4. **Demographic Record Updates:** The NEMSIS TAC will complete the process for the **Demographic Updates (Collect Data)** or **Demographic Updates (Receive and Process Data)**

Web Service Communication

Products receiving and processing data must implement the NEMSIS v3 Web Service standard. The web service must implement HTTPS communication channel, SOAP protocol, and status codes listed in the table below. A sample test package will be provided prior to testing. The

Category	Status Code	Meaning
PrivilegeErrorCodes	-1	Invalid username and/or password
	-2	Permission denied to the client for the operation
	-3	Permission denied to the client for that organization
SubmitDataProcessCodes	-12	XML file failed XML Schema validation
	-13	XML file failed schematron rule(s) validation
	1	XML file passed XML Schema and Schematron validation
ResultPendingCode	0	Process is not finished for an attempted operation
QueryLimitCodes	51	Successful operation of QueryLimit

Test Package

Test Cases	Format
Demographic dataset	XML
EMS dataset	XML

Pre-Testing Check List

1. Ensure HTTPS communication channel and SOAP protocol is implemented
2. Ensure a "PrivilegeErrorCode" is returned when the account (username, password, and organization) is not allowed access to the service and the "requestHandle" is null
3. Ensure the "SubmitData" function is implemented
   a. The server responds with a unique "requestHandle" and "statusCode"
4. Ensure the "RetrieveStatus" function is implemented
   a. The server echos the "requestHandle" and a "statusCode" of -12, -13, 1, or 0
5. Ensure the "QueryLimit" function is implemented
   a. The server returns the "limit" in kilobytes and a "statusCode" of 51 or 0

Testing Check List

1. **Web Service Account:** The Product will need to provide the NEMSIS TAC with the URL of their web service and an account

2. **Request Validation:** The NEMSIS TAC will submit a "QueryLimit", "Submitdata", "RetrieveStatus" request to the Product's web service

Demographic Submission (Collect Data)

Products that **Collect Data** must demonstrate submission, within 24 hours, of the Demographic dataset when a new demographic record is entered or when an element listed as "mandatory" or "required" is modified.

Pre-Testing Check List

1. Ensure a process is triggered for submitting the Demographic dataset when a demographic element is entered or updated
2. Ensure this process occurs for elements listed as "mandatory" or "required"
3. Ensure the process exports the Demographic dataset within 24 hours of being triggered
4. Ensure the attribute "timestamp" is populated with the date and time the demographic dataset was generated

Testing Check List

1. **Prerequisites**: Complete the **Collect Data** process
2. **Demographic Updates:** The NEMSIS TAC will update a demographic element that is "mandatory" or "required" and verify the submission of the Demographic dataset to the NEMSIS v3 Compliance Web Service

Demographic Submission (Receive and Process Data)

Products **Receive and Process Data** must demonstrate submission, within 24 hours, of the Demographic dataset when receiving demographic dataset when record or update to an element listed as "mandatory" or "required" modified.

Pre-Testing Check List

1. Ensure a process is triggered for submitting the Demographic dataset when a demographic dataset is received with new demographic records or changes to a demographic current record
2. Ensure this process occurs for elements listed as "mandatory" or "required"
3. Ensure the process exports the Demographic dataset within 24 hours of being triggered

Testing Check List

1. **Prerequisites**: Complete the **Receive and Process Data** process

2. **Demographic Updates:** The NEMSIS TAC will update a demographic element that is "mandatory" or "required" and verify the submission of the Demographic dataset to the NEMSIS v3 Compliance Web Service

Software Updates/Upgrades

Software is considered compliant only for the version being tested. Any version changes require re-evaluation by the NEMSIS TAC. All software changes (e.g. release notes, bug fixes, etc) must be provided to the NEMSIS TAC to determine what components need testing to certify the new release of software as compliant.

Compliance Document Change Log

May 25, 2012

August 13, 2013

September 25, 2013
- Update to **Data Flow Diagram 1.1**
- **Check List** section changed to **Pre-Testing Checklist**

October 09, 2013
- Web Service Communication section **Pre-Testing Checklist** and **Process** updated