

NEMSiS 3

Schematron / Validation

Rules Update

Version 3.4.0 CR1
January 2015

Agenda

1. Candidate Updates
 - Schematron Guide
 - Documentation/Dictionary
 - National Schematron Rules
2. Public Comment Period

Primer

NASEMSO.org > [Councils](#) > [Data Managers](#) > [Documents & Resources](#)

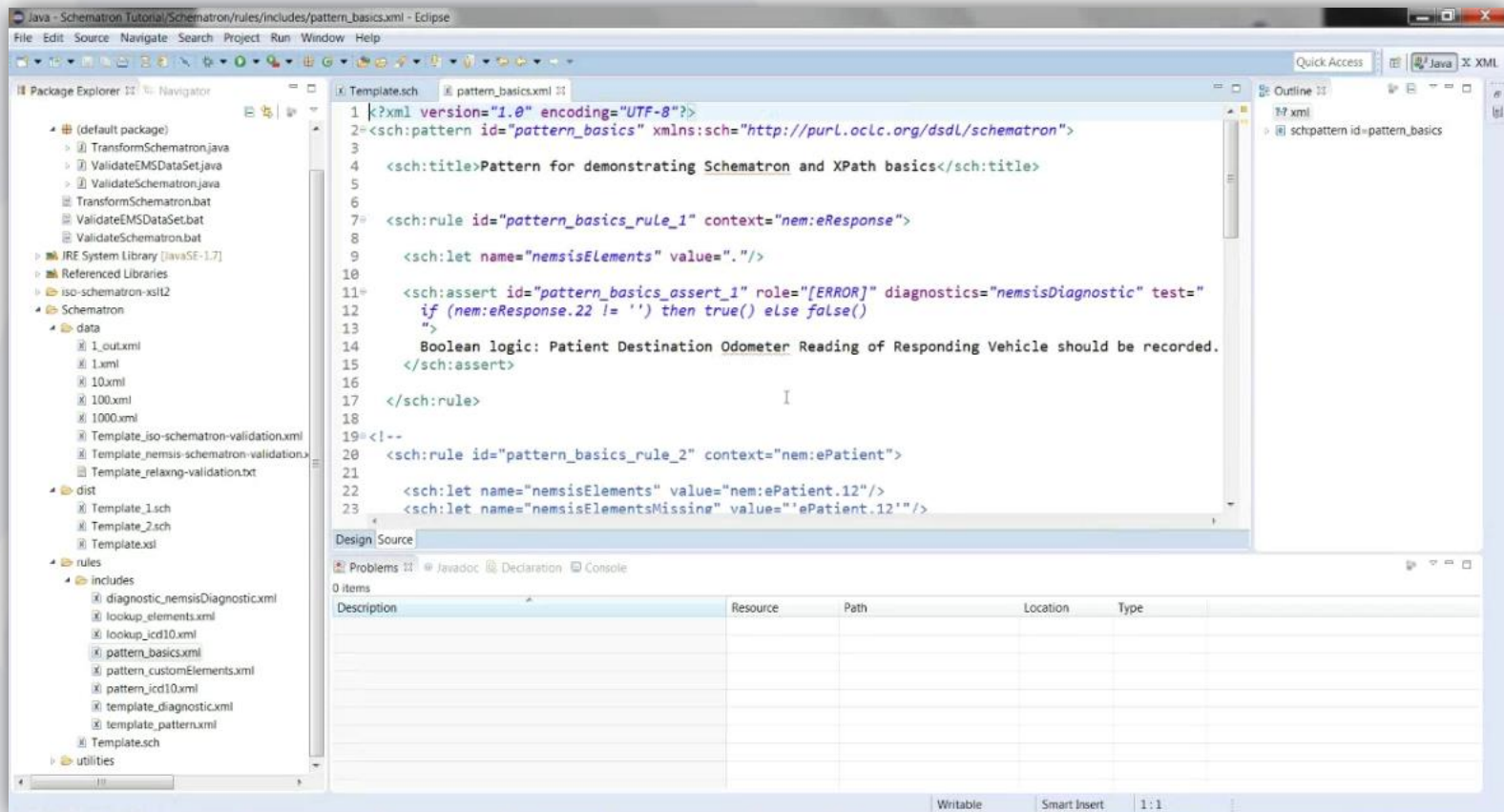
Data Validation in the NEMSiS XML Standard

Using the XML Schema
and Schematron

Joshua Legler
November 2013

Tech Tutorial

NEMSiS.org > V3 > Downloads > Schematron



The screenshot shows the Eclipse IDE with the following content:

Package Explorer:

- (default package)
 - TransformSchematron.java
 - ValidateEMSDataset.java
 - ValidateSchematron.java
 - TransformSchematron.bat
 - ValidateEMSDataset.bat
 - ValidateSchematron.bat
- JRE System Library [JavaSE-1.7]
- Referenced Libraries
 - iso-schematron-xslt2
- Schematron
 - data
 - 1_out.xml
 - 1.xml
 - 10.xml
 - 100.xml
 - 1000.xml
 - Template_iso-schematron-validation.xml
 - Template_nemis-schematron-validation.xml
 - Template_relaxng-validation.txt
 - dist
 - Template_1.sch
 - Template_2.sch
 - Template.xml
 - rules
 - includes
 - diagnostic_nemisDiagnostic.xml
 - lookup_elements.xml
 - lookup_icd10.xml
 - pattern_basics.xml
 - pattern_customElements.xml
 - pattern_icd10.xml
 - template_diagnostic.xml
 - template_pattern.xml
 - Template.sch
 - utilities

pattern_basics.xml:

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <sch:pattern id="pattern_basics" xmlns:sch="http://purl.oclc.org/dsdl/schematron">
3
4   <sch:title>Pattern for demonstrating Schematron and XPath basics</sch:title>
5
6
7   <sch:rule id="pattern_basics_rule_1" context="nem:eResponse">
8
9     <sch:let name="nemisElements" value="."/>
10
11     <sch:assert id="pattern_basics_assert_1" role="[ERROR]" diagnostics="nemisDiagnostic" test="
12       if (nem:eResponse.22 != '') then true() else false()
13     ">
14       Boolean logic: Patient Destination Odometer Reading of Responding Vehicle should be recorded.
15     </sch:assert>
16
17   </sch:rule>
18
19   <!--
20   <sch:rule id="pattern_basics_rule_2" context="nem:ePatient">
21
22     <sch:let name="nemisElements" value="nem:ePatient.12"/>
23     <sch:let name="nemisElementsMissing" value="'ePatient.12'"/>
  
```

Outline:

- pattern_basics.xml
 - sch:pattern id=pattern_basics

Problems Table:

Description	Resource	Path	Location	Type
0 items				

Bottom status bar: Writable | Smart Insert | 1:1

CANDIDATE UPDATES

Download

NEMSIS.org

Latest News

NHTSA / NEMSIS Version 3.4.0 CR 1 (Candidate Release for Review)

The NEMSIS Technical Assistance Center is pleased to announce the NEMSIS Version 3.4.0 candidate release is available for review.

The review period is open through January 31, 2015.

There are multiple resources available in the v3.4.0 CR1 zip file, including XSDs and Data Dictionaries (Web Version and PDF) for the Full EMS and DEM (Agency information) DataSets plus those for CAD and Medical Device. [Please access the updated documents here.](#)

Also available for review is the v3.4.0 candidate national Schematron file in a ZIP archive file. This file contains:

dist: National Schematron files (plus ".xml" versions for documentation viewing)

documentation: Schematron Guide, Change Log

utilities/html: HTML documentation interface files

[Please access the candidate national Schematron files here.](#)

We look forward to your review! Comments should be submitted via the NEMSIS TAC Version 3 jforum. Log in and post your Review for Accuracy comments in "v3.4.0 CR 1 Review" section. [jforum link](#). Comments can be submitted through January 31, 2015.

We would like to thank the many dedicated EMS stakeholders that have spent significant time, providing their expertise and recommended revisions to the NEMSIS Version 3 Standard. Through your efforts the NEMSIS standard is a success nationally!



Schematron Guide

NEMSiS TAC Whitepaper

NEMSiS V3 Schematron Guide

Date

November 23, 2011 (Final)
January 17, 2014 (Rewritten – Candidate Release 1)
March 3, 2014 (Updated)
December 30, 2014 (Updated)

Authors

Joshua Legler – NEMSiS Consultant
Shaoyu Su – NEMSiS Software Developer
N. Clay Mann – NEMSiS P.I.

Contributors

Aaron Hart, Chris Morgan, Mike Darvill,
and René Nelson – ZOLL
Adam Voss – TriTech Software Systems
David Saylor – Beyond Lucid Technologies

Kashif Khan and Troy Whipple – ImageTrend
Lindsey Narloch – State of North Dakota
Mark Potter – Medusa
Patrick Sennett – Good Samaritan Hospital

Documentation/Dictionary

NEMSiS Schematron Business Rules
Version: 3.4.0.150105_cr1



Overview

Schema

DEMDDataSet

Phases

Patterns

nemSch_consistency_dAgency.13
nemSch_consistency_dAgency.13_dAgency.26

nemSch_consistency_dAgency.ServiceGroup
nemSch_consistency_dAgency.ServiceGroup_dAgency.06
nemSch_consistency_dAgency.ServiceGroup_dAgency.07

nemSch_consistency_nilNvPn
nemSch_nilNvPn_customResults
nemSch_nilNvPn_eExam.AssessmentGroup
nemSch_nilNvPn_Pn_medication_procedure
nemSch_nilNvPn_Pn
nemSch_nilNvPn_nil
nemSch_nilNvPn_Nv

nemSch_sequence_dAgency.AgencyYearGroup
nemSch_sequence_dAgency.AgencyYearGroup_dAgency.15

nemSch_uniqueness_DEMDDataSet
nemSch_uniqueness_DEMDDataSet_dAgency.AgencyYearGroup
nemSch_uniqueness_DEMDDataSet_dConfiguration.11
nemSch_uniqueness_DEMDDataSet_dConfiguration.16

nemSch_uniqueness_NvPn
nemSch_uniqueness_NvPn_customResults
nemSch_uniqueness_NvPn_eExam.AssessmentGroup
nemSch_uniqueness_NvPn_Nv
nemSch_uniqueness_NvPn_Pn

Diagnostics

nemisDiagnostic

NEMSiS

Schematron Business Rules

DEMDDataSet

Version: 3.4.0.150105_cr1

NEMSiS National ISO Schematron file for DEMDataSet

www.NEMSiS.org

National Rules

This year's focus:

Constraints that are stated or implied in the Data Dictionary but cannot be enforced using XSD.

National Rules

Demographics and PCR's:

- When a repeatable element is recorded as “None,” no other value should be recorded.
- When a repeatable element has a Not Value or Pertinent Negative, no other value should be recorded.

National Rules

Demographics:

- EMS Agency Census Tracts should belong to a county in the state with which they are grouped.
- Statistical Calendar Year should be in the past.
- When Organizational Type is “Fire Department,” Fire Department ID Number should be recorded.

National Rules

PCRs:

- Date/times should be no later than the current date/time.
- When Age is recorded, Age Units should be recorded.
- When Mass Casualty Incident is "Yes", Triage Classification for MCI Patient should be recorded.
- (Incident/Destination) County should belong within the (Incident/Destination) State.
- When a symptom or impression is injury-related, Possible Injury should be "Yes."
- When Possible Injury is "Yes," but a patient is not treated, injury elements are not required.

National Rules

PCRs:

- When Cardiac Arrest is “Yes,” Cardiac Rhythm on Arrival at Destination should be recorded.
- When Type of CPR Provided contains “Compressions...,” Resuscitation Attempted By EMS should contain “Initiated Chest Compressions.”
- When Type of CPR Provided contains “Ventilation...,” Resuscitation Attempted By EMS should contain “Attempted Ventilation.”
- When Medication Dosage is recorded, Medication Dosage Units should be recorded.

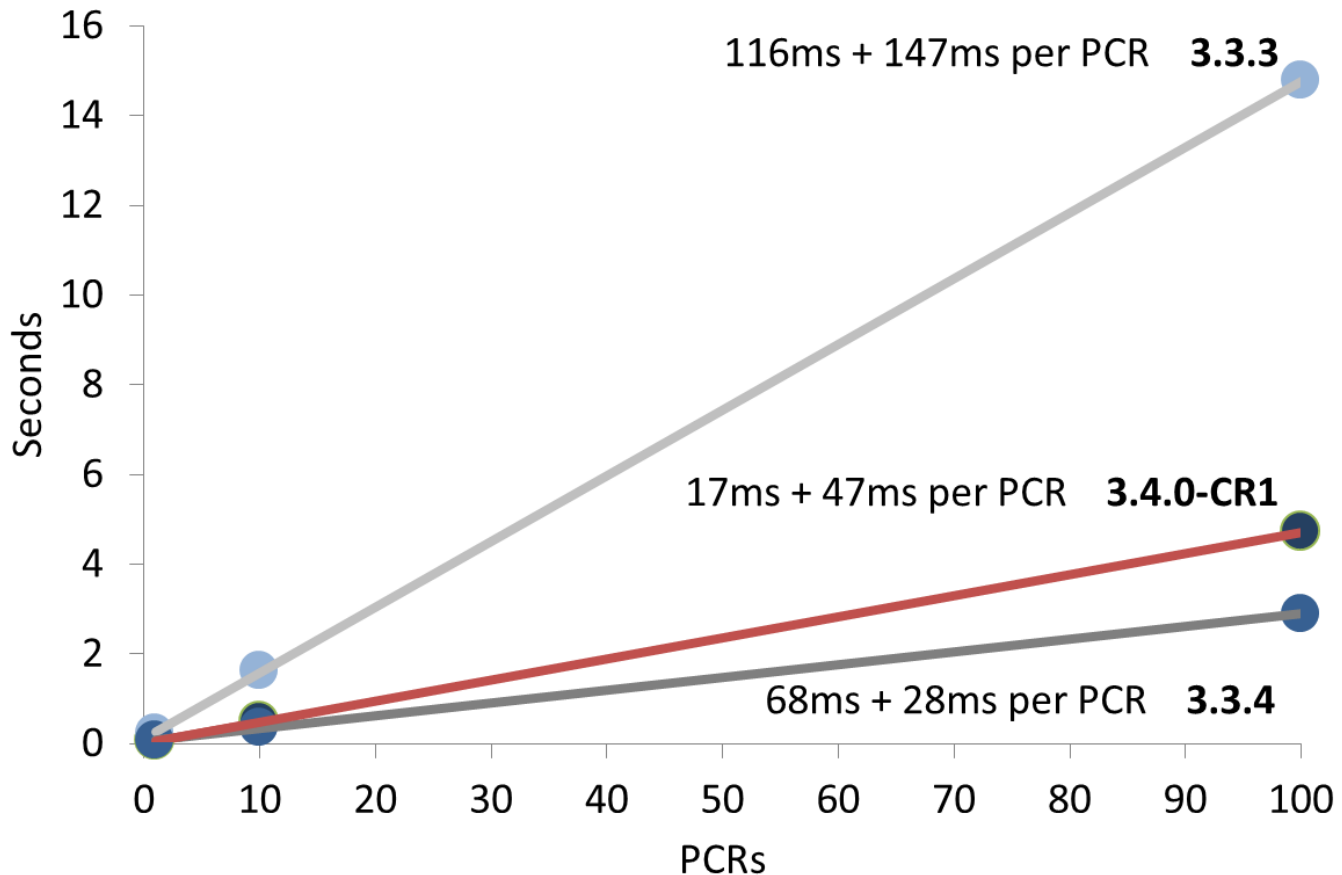
National Rules

PCRs:

- More elements are added to the list of required elements based on Incident/Patient Disposition.
- When Type of Destination is “Hospital-Non-Emergency Department Bed,” Hospital In-Patient Destination should be recorded.
- When Type of Destination is “Hospital” or “Freestanding ED,” Hospital Capability should be recorded.
- When Type of Destination is not “Hospital” or “Freestanding ED,” the following should be “Not Applicable:” Hospital In-Patient Destination, Hospital Capability

Performance

Schematron Performance: PCRs



Schematron Development Kit

- Will be updated when 3.4.0 is final

PUBLIC COMMENT PERIOD

Public Comment

Go to <https://www.nemsis.org/jforum/>

Sign in and go to
[v3.4.0 CR1 Schematron Review](#)

Or follow the link currently on the NEMSiS
home page