

HEALTH IT
STANDARDS TESTING INFRASTRUCTURE

Immunization Test Suite Quick Reference Guide for SOAP Envelope and SOAP Connectivity

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NIST Immunization Test Suite Tool Overview

Tool Key Capabilities

SOAP Envelope Testing	The SOAP Envelope Testing ensures SOAP envelopes are correctly formed, validating the conformance of the messages to the requirements in the SOAP and Transport specifications. <i>This is not used for ONC certification testing.</i>
SOAP Connectivity Testing	The SOAP Connectivity Testing evaluates valid SOAP connectivity, the ability to send and receive SOAP messages, validating the conformance of the messages to the requirements in the SOAP and Transport specifications. <i>This is not used for ONC certification testing.</i>
Context-Free Testing	Provides a simple and convenient method for testing immunization messages structure and most vocabulary. Validation is performed on messages with or without a SOAP wrapper.
Context-Based Testing ONC Certification	Context-based testing provides, in addition to HL7 Context-free validation, message validation associated with a given test script that includes data for a specific test scenario where the context is known by the validation tool. It also validates messages with a SOAP wrapper.
Isolated Testing	Isolated testing provides a simulated operational environment that allows validation at the functional level in addition to context and context-free testing, where Test Agents simulate the functions of an EHR-S or IIS.

Environment: The NIST IZ Test Suite is currently only accessible as a web application.

Supported Browsers: Firefox, Chrome, Safari, and Edge

URL: <https://hl7v2-iz-r1-5-testing.nist.gov/iztool/#/home>

Tool Access and Navigation

Objectives

- Establish access to the NIST IZ Test Suite tool (web application).
- Locate the Navigation Bar.
- Locate relevant documentation.
- Locate the Test Suite.

Informative Reference

- The NIST IZ Test Suite is accessible through the following URL:
<https://hl7v2-iz-r1-5-testing.nist.gov/iztool/#/home>
- This displays the NIST IZ Test Suite's Welcome Screen, which is indicated by the **'Home'** tab.
- The **'Documentation'** tab contains relevant downloadable User, Documentation, Resources/Artifacts, and Notations.

- 1 The tool's Navigation Bar is located along the top. The options are **'Home'**, **'SOAP Envelope'**, **'SOAP Connectivity'**, **'HL7 Context-free'**, **'HL7 Context-based'**, **'Transport Settings'**, **'Documentation'**, **'About'**, and **'Preferences'**.

The Welcome Screen is located under the **'Home'** tab.

- 2 Scrolling down the Welcome Screen gives other useful information, such as the NIST IZ Test Suite:
- Components;
 - Focus of Each Testing Stage;
 - Testing Stage Benefits; and
 - Testing Types.

NIST Immunization Test Suite 1.1.1

Home SOAP Envelope SOAP Connectivity HL7 Context-free HL7 Context-based Transport Settings Documentation About Preferences

Welcome to the NIST Immunization Test Suite!

Supporting

The NIST Immunization Test Suite supports a broad range of testing in support of the Immunization Community, including transport, messaging (content), and functional.

- CDC SOAP Validation
- HL7 V2.5.1 Immunization Message Implementation Guide Release 1.5
- EHR and IIS Functional Capabilities (2016)
- 2015 ONC Health IT Certification

2015 ONC Health IT Certification

Start Testing

The NIST Immunization Test Suite is the test tool used for certifying ONC 2015 Edition Health IT Modules. The capability used for ONC Certification can be accessed by navigating to the ONC 2015 Test Plan found on the HL7 Context-based tab. The ONC 2015 Test Plan is used to certify Modules for the §170.315(f)(1) Transmission to Immunization Registries ONC criterion.

Have a Question?

A Google Group (HL7v2 Immunization Testing) has been established for discussion/questions about the Implementation Guide, testing tool, and testing issues. No membership is required. A Google account is required for posting. **Note:** The same Google Group is being used for submitting questions/comments related to the 2014 and 2015 Editions of the NIST Certification Test Tool and general Immunization related topics. **When**

Supported Browsers

The following browsers are supported:

- Chrome (Recommended)
- Firefox (Recommended)
- Safari
- IE 9 and 10

SOAP Envelope Start Testing

SOAP Connectivity Start Testing

HL7 Context-free Start Testing

HL7 Context-based Start Testing

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SOAP Envelope Testing

SOAP Envelope Testing Workflow

The screenshot shows the SOAP Envelope Testing Workflow interface. The top navigation bar includes links for Home, SOAP Envelope (highlighted with a yellow background and a blue circle with the number 1), SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, About, and Preferences. Below the navigation bar, there are two tabs: Test Selection and Test Execution. The Test Selection tab is active, showing a list of Test Cases on the left and the details of the selected Test Case on the right.

1 Select the 'SOAP Envelope' tab.

2 Select a Test Case

3 The 'Test Story' is displayed once a Test Case is selected..

The available Test Cases are listed within the 'Test Cases' selection area. They are grouped by the action/role of the System Under Test by 'Generic', 'Receiver', and 'Sender'.

TestCase: Generic - SOAPENV_1_Min_Test

Download Package Load Test Case

Test Story Message Content Testing Instructions

Description

This test evaluates the capability of a technology to generate a message envelope conforming to the minimal requirements of the SOAP 1.2 standard.

Test Objectives

The generated SOAP message will demonstrate these minimal capabilities:

- element Envelope with child element Body as defined by the SOAP 1.2 standard
- user-chosen (conformant) XML content within Body (including no content) is permitted
- optional SOAP 1.2 elements (e.g. Header) are permissible but not required

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings 6 Documentation 7 About

Test Selection Test Execution

Test Cases

- Generic
 - SOAPENV_1_Min_Test
 - Sender(Initiator)
 - SOAPENV_1_ConnectivityMessage_Req
 - SOAPENV_2_SubmitSingleMessage_Req
 - Receiver(Responder)
 - SOAPENV_1_ConnectivityMessage_Resp
 - SOAPENV_2_SubmitSingleMessage_Resp
 - SOAPENV_3_MessageTooLarge_Fault
 - SOAPENV_4_Security_Fault
 - SOAPENV_5_UnsupportedOperation_Fault
 - SOAPENV_6_Unknown_Fault

TestCase: Generic - SOAPENV_1_Min_Test

Download Package Load Test Case

Test Story Message Content Testing Instructions

SOAP Message

SOAP Part

SOAP Envelope

SOAP Header

Action	http://tempuri.org/IService/MyOperation
ActivityId	43ffa660-a0c6-4249-bb36-648b73a06213

SOAP Body

MyOperation

MyValue Some Value

4 Selecting 'Message Content' displays the XML 'Content'.

7 Selecting 'Load Test Case' confirms Test Case selected and allows testing to proceed.

5 Selecting 'Testing Instructions' displays the step-by-step testing 'Instructions'.

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings 6 Documentation 7 About

Test Selection Test Execution

Test Cases

- Generic
 - SOAPENV_1_Min_Test
 - Sender(Initiator)
 - SOAPENV_1_ConnectivityMessage_Req
 - SOAPENV_2_SubmitSingleMessage_Req
 - Receiver(Responder)
 - SOAPENV_1_ConnectivityMessage_Resp
 - SOAPENV_2_SubmitSingleMessage_Resp
 - SOAPENV_3_MessageTooLarge_Fault
 - SOAPENV_4_Security_Fault
 - SOAPENV_5_UnsupportedOperation_Fault
 - SOAPENV_6_Unknown_Fault

TestCase: Generic - SOAPENV_1_Min_Test

Download Package Load Test Case

Test Story Message Content Testing Instructions

SOAP 1.2

Technical Requirements

System Under Test

Tester

SOAP Message

Copy & Paste

Validation

Test Tool

Validation Report

Tester

6 Click 'Download Package' to save a .docx copy of the the Test Case components to use for referencing off-line.

The downloaded 'Test Package' document includes information for only the specific Test Case selected.

SOAP Validation

The screenshot displays the NIST SOAP Validation tool interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, and About. The main content area is titled 'Generic / SOAPENV_1_Min_Test'. On the left, a 'SOAP Tree' panel shows a hierarchical view of the message structure, including Envelope, Header, Action, ActivityId, and Body. A callout (9) explains that this tree is populated by message content segments and can be expanded or collapsed. The central 'SOAP Envelope' field contains an XML message. A callout (8) notes that an HL7 message with a SOAP wrapper can be inserted here. Above this field is a 'Validate' button, which is highlighted by callout (10) as the button to click for performing message validation. Below the XML field, the 'SOAP Validation Result' section shows counts for Errors, Warnings, and Alerts. Callout (11) explains that this section displays the outcome of validation testing, including the type and quantity of notifications and metadata links.

8 Insert a HL7 message with a SOAP wrapper in the 'SOAP Envelope' field. This can be loaded using the folder button or populated with sample data by clicking 'Load Example'.

9 The 'Tree Representation' is populated by message content segments within the 'SOAP Envelope' field. Up/down arrows expand and collapse sections.

10 With message inserted, click 'Validate' to perform message validation against the Test Case.

11 The 'SOAP Validation Result' field displays the outcome of validation testing of the message against the Test Case. The type and quantity of notifications are represented within the respective field. Additional metadata links notifications to specific message lines/segments.

SOAP Validation Report

The screenshot shows the SOAP Validation Report application interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, About, and Preferences. The main content area displays the 'Generic / SOAPENV_1_Min_Test' test case. A callout 12 points to the 'Report' tab, stating: 'To review the executed validation testing results for a Test Case, click the 'Report' tab.' Below the tabs, there are icons for saving the report in PDF, Word, XML, and HTML formats. Callout 13 points to these icons, stating: 'The 'Message Validation Report' can be saved locally for offline viewing by clicking the an icon. The savable formats are PDF, Microsoft Office Word, XML, and HTML.' The 'Message Validation Report' section shows a summary table with the following data:

Summary	
Errors	0
Affirmatives	0
Warnings	0
Ignored	0
Alerts	0

Callout 14 points to the summary table, stating: 'The 'Message Validation Report' provides granularity for auditing and accountability purposes with Date and Time of test execution.'

The footer contains the NIST logo, application information (Date: 04/01/2016 13:39:51, Application Version: 1.2.0, Resource Bundle Version: 1.2.0), supported browsers (Firefox, Chrome, Safari, IE 9 and 10), and external links (Disclaimer, Privacy/Policy, Website Administrator). The iTL logo is also present.

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SOAP Connectivity Testing

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

The screenshot displays the NIST Immunization Test Suite 1.3.0 web application. The interface includes a top navigation bar with links for Home, SOAP Envelope, SOAP Connectivity, HLT Context-free, HLT Context-based, Transport Settings, Documentation, and About. Below this is a secondary navigation bar with Test Selection and Test Execution tabs.

On the left, a 'Test Cases' sidebar lists various test cases under 'Sender (Initiator)' and 'Receiver (Responder)' categories. A callout box labeled '1' points to the 'SOAPCON_1_BasicMessage_ConnectivityRequest' test case, with the instruction 'Select Sender Test Case'.

The main content area shows the details for the selected test case, 'Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest'. It includes tabs for Test Story, Message Content, Test Data Specification, and Testing Instructions. A callout box labeled '2' points to the 'Load Test Case' button, with the instruction 'Select Load Test Case'.

The 'Test Story' tab is active, displaying a description of the test and its objectives. The description states: 'This test evaluates the capability of a sender (initiator) technology to connect to a specified web service - a NIST Test Agent representing an Immunization Information System (IIS) - and transmit a message that conforms to the SOAP 1.2 standard and CDC WSDL 1.0 which is used to verify the accessibility of the IIS.' The test objectives are listed as follows:

- The sender (initiator) technology will demonstrate the ability to:
 - Connect to a web service endpoint specified by the NIST test tool and transmit a SOAP message with a Body element containing:
 - the element `connectivityTest`, as defined in the CDC WSDL 1.0
 - user-chosen, non-empty, conformant string value for the child element of `connectivityTest`: `echoBack`

The footer of the application contains the NIST logo, application information (Date: 05/05/2016 15:14:02, Application Version: 1.3.0, Resource Bundle Version: 1.3.0), supported browsers (Firefox, Chrome, Safari, IE 9 and 10), external links (Disclaimer, Privacy Policy, Website Administrator), and the iTL Information Technology Laboratory logo.

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

NIST Immunization Test Suite 1.4.0-SNAPSHOT

Home 1 SOAP Envelope 2 SOAP Connectivity 3 ☒ HL7 Context-free 4 ☒ HL7 Context-based Documentation About Hello Guest

Test Selection Test Execution Current Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

Sender(Initiator) / SOAPCON_1_BasicMessage_ConnectivityRequest

Please collect and validate your incoming/outgoing messages in the 1 SOAP Envelope

4 Connect your system to the NIST Endpoint (below) and transmit a *connectivityTest* message to the Tool
After receiving a response message from the Tool, select 'Soap Envelope' (above) to validate all messages sent & received

Configuration Information

Field	Value	Comments
NIST Endpoint	http://hit-dev.nist.gov:8098/tztool/ws/fisService	This is the destination's endpoint
NIST Endpoint WSDL	http://hit-dev.nist.gov:8098/tztool/ws/fisService.wsdl	This is the destination's wsdl

3 Optionally select *End Point* to view the tool's SOAP WSDL



Application Information

Date: 08/08/2016 16:23:40, Application Version: 1.4.0-SNAPSHOT Resource Bundle Version: 1.4.0-SNAPSHOT



Supported Browsers

Firefox, Chrome, Safari, IE 9+

External Links

[Disclaimer](#) | [Privacy Policy](#) | [Website Administrator](#)

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

The screenshot displays the SOAP Envelope tool interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. The current test case is SOAPENV_1_ConnectivityMessage_Request. The sender is identified as SOAPENV_1_ConnectivityMessage_Request. The interface features a SOAP Tree on the left, a SOAP Envelope editor in the center, and a SOAP Validation Result section at the bottom. A callout box labeled '5' points to the SOAP Tree, indicating where to paste the message. Another callout box labeled '6' points to the 'Validate' button, indicating where to click to validate the message.

Sender(Initiator) / SOAPENV_1_ConnectivityMessage_Request

Validation Report

SOAP Tree

- Envelope
 - Header
 - Body
 - connectivityTest
 - echoBack

SOAP Envelope

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header />
3   <Body>
4     <connectivityTest xmlns="urn:cdc:iisb:2011">
5       <echoBack>Hello world!</echoBack>
6     </connectivityTest>
7   </Body>
```

6 'Validate' Sent Message

5 Paste the message sent/received that you wish to validate

SOAP Validation Result

0 Errors 0 Warnings 0 Alerts

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

NIST Immunization Test Suite 1.4.0-SNAPSHOT

Home 1 SOAP Envelope 2 SOAP Connectivity 3 ☒ HL7 Context-free 4 HL7 Context-based Documentation About Hello Guest

Test Selection Test Execution Current Test Case: SOAPCON_1_BasicMessage_ConnectivityRequest

1 Select Sender Test Case

Test Cases

- Sender(Initiator)
 - SOAPCON_1_BasicMessage_ConnectivityRequest
 - SOAPCON_3_SubmitSingleMessage_Message**
- Receiver(Responder)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

Download Package Load Test Case

2 'Load Test Case'

Test Story Message Content Test Data Specification Testing Instructions

Description

This test evaluates the capability of a sender (initiator) technology to connect to an immunization information system (IIS) and to generate and transmit a message conforming to the SOAP 1.2 standard and CDC WSDL 1.0 that may be used for transporting an HL7 message to an immunization information system (IIS).

Test Objectives

The body of the SOAP message must contain:

- the element submitSingleMessage, as defined in the CDC WSDL 1.0
- the hl7Message element set to a single HL7 v2 message (properly formatted for inclusion within XML, e.g. CDATA)
- the tool-assigned string values for the username, password and facilityID elements

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

NIST Immunization Test Suite 1.3.0

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings 6 Documentation 7 About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Sender(Initiator) / SOAPCON_3_SubmitSingleMessage_Message

Incoming SOAP Envelope

Validate Download **Receive**

1

3 Select 'Receive'

Outgoing SOAP Envelope

Validate Download

1

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

NIST National Institute of Standards and Technology U.S. Department of Commerce

Application Information
Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version: 1.3.0

Supported Browsers
Firefox, Chrome, Safari, IE 9 and 10

External Links
Disclaimer | Privacy Policy | Website Administrator

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SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

Receiver Configuration Panel

NOTE: Once the tool displays the elapsed time waiting for the message, your system (the SUT) may transmit the submitSingleMessage Request message

Details of the incoming test message from the SUT, and the outgoing response message from the Tool will be displayed in the Log panel (below)

NIST Immunization Test Suite 1.3.0

Receiver Configuration Panel

Start Stop
Time Elapsed (seconds)

5 Select 'Start'

Assigned Sender Information

Username
vendor_4371_44
This is the username assigned to you to use in your message

Password
vendor_4371_44
This is the password assigned to you to use in your message

FacilityID
vendor_4371_44
This is the facilityID assigned to you to use in your message

Endpoint
http://hl7v2-iz-r1.5-testing.nist.gov/iztool/ws/izService

WSDL
http://hl7v2-iz-r1.5-testing.nist.gov/iztool/ws/izService.wsdl

Log

4 The Assigned Sender Information (Username/Password/FacilityID) must be used by your system (the SUT) to construct the SOAP message that it transmits to the Tool's Endpoint (shown below)

SOAP Connectivity Tests (Sender)

Test Case: SOAPCON_3_SubmitSingleMessage_Message

NIST Immunization Test Suite 1.1.1

Home SOAP Envelope SOAP Connectivity HLT Context-free HLT Context-based Transport Settings Documentation About

Test Selection Test Execution Current Test Case: SOAPCON_3_SubmitSingleMessage_Message

Sender (Initiator) / SOAPCON_3_SubmitSingleMessage_Message

Incoming SOAP Envelope

Validate Download Receive

```
1 <env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope"
2   xmlns="http://www.w3.org/2003/05/soap-envelope">
3   <env:Header/>
4   <env:Body>
5     <submitSingleMessage xmlns="urn:code:isab:2011">
6       <username>vendor_16_992</username>
7       <password>vendor_16_992</password>
8       <facilityID>vendor_16_992</facilityID>
9       <hl7Message>
10        <hl7?><hl7?>Test ZHR Application[X68] NIST Test Is Reg 201207010822||VXU_V04*VXU_V04|NIST-IR-60
11        FID||NM-99922""NIST MP1NM|Montgomery Lewis""|2010822|M
12        GNC SE|2-783276 NDA
13        RXA||20110219||118"SFV"CVX|999||01"Historical information - source unspecified"NIP001
14      </hl7Message>
15    </submitSingleMessage>
16  </env:Body>
17 </env:Envelope>
```

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

Outgoing SOAP Envelope

Validate Download

```
1 <env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
2   <env:Header/>
3   <env:Body>
4     <ns2:submitSingleMessageResponse xmlns:ns2="urn:code:isab:2011">
5       <ns2:returnMsg?><?xml:base? SOAP_SENDER_APP|NIST_SENDER_FAC|GENERIC|GENERIC|20120701082240-0500||ACK*V04*A
6       M8A|AA|NIST-10100414678909|</ns2:return?>
7     </ns2:submitSingleMessageResponse>
8   </env:Body>
9 </env:Envelope>
```

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

NIST National Institute of Standards and Technology U.S. Department of Commerce

Application Information Date: 09/11/2016 17:11:28, Application Version: 1.1.1 Resource Bundle Version: 1.1.1

Supported Browsers Firefox, Chrome, Safari, IE 8 and To

External Links Disclaimer | Privacy Policy | Website Administrator

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6 View the Validation Result panes for the displayed Incoming SOAP Envelope (i.e. the message transmitted from the SUT) and the displayed Outgoing SOAP Envelope (the response message from the Tool)

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

NIST Immunization Test Suite 1.4.0 SNAPSHOT

The screenshot displays the NIST Immunization Test Suite web application interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. The current test case is SOAPCON_3_SubmitSingleMessage_Message. The left sidebar shows a tree of test cases under 'Test Cases', with 'SOAPCON_1_BasicMessage_ConnectivityResponse' selected under the 'Receiver(Responder)' category. A callout box labeled '1' points to this selection with the text 'Select Receiver Test Case'. The main content area shows the details for the selected test case, including a 'Test Story' tab, a 'Description' section, and a 'Test Objectives' section. A callout box labeled '2' points to the 'Load Test Case' button in the top right corner of the main content area with the text 'Load Test Case'.

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

Download Package Load Test Case

Test Story Message Content Test Data Specification Testing Instructions

Description

This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive a request message from a sender (initiator) technology, and to generate and transmit an appropriate response message, in order to verify the accessibility of an Immunization Information System (IIS).

Test Objectives

The receiver (responder) technology will demonstrate the ability to:

- Receive a SOAP message with the Body element containing the element connectivityTest and corresponding child element echoBack, as defined in the CDC WSDL 1.0
- Transmit a SOAP response message to the sender (initiator) which contains
 - the element connectivityTestResponse as defined in the CDC WSDL 1.0
 - the child element return as defined in the CDC WSDL 1.0, with a string value containing the string received in the echoBack element in the request message

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

The screenshot displays the 'SOAPCON_1_BasicMessage_ConnectivityResponse' test case in a web application. The interface includes a top navigation bar with links like Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Documentation, and About. Below this, a breadcrumb trail shows 'Test Selection' > 'Test Execution' > 'Current Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse'. The main area is titled 'Receiver(Responder) / SOAPCON_1_BasicMessage_ConnectivityResponse' and features an 'Outgoing SOAP Envelope' section with buttons for 'Validate', 'Download', 'Configure', and 'Send'. A SOAP XML snippet is shown, with a callout (3) pointing to the 'Configure' button, stating: 'Select Configure to enter the Receiver Configuration Panel and input the SOAP Endpoint information for your system (SUT)'. A callout (5) points to the 'Send' button, stating: 'Select 'Send' to transmit a test message from the Tool to your receiving system (SUT)'. A 'Receiver Configuration Panel' is shown as a modal window with an 'Endpoint' field containing 'SUT Endpoint' and 'Save'/'Cancel' buttons. A callout (4) points to the 'Save' button, stating: 'Click 'Save' when finished.' Below the XML, a 'Validation Result' section shows '0 Errors', '0 Warnings', '0 Alerts', and '0 Affirmatives'. A table with columns 'Path', 'Description', and 'Line #' is also visible.

Home SOAP Envelope SOAP Connectivity HL7 Context-free HL7 Context-based Documentation About Hello Guest

Test Selection Test Execution Current Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

Receiver(Responder) / SOAPCON_1_BasicMessage_ConnectivityResponse

Outgoing SOAP Envelope Validate Download Configure Send

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header />
3   <Body>
4     <connectivity/Test xmlns="http://hl7.org/fhir/2011">
5       <echoBack>Hello world!
6     </connectivity/Test>
7   </Body>
8 </Envelope>
```

3 Select Configure to enter the Receiver Configuration Panel and input the SOAP Endpoint information for your system (SUT).

5 Select 'Send' to transmit a test message from the Tool to your receiving system (SUT)

Receiver Configuration Panel

Endpoint

SUT Endpoint

Save Cancel

4 Click 'Save' when finished.

Validation Result

0 Errors 0 Warnings 0 Alerts 0 Affirmatives

Path	Description	Line #
------	-------------	--------

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line #
------	-------------	--------

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_1_BasicMessage_ConnectivityResponse

The screenshot displays the NIST Immunization Test Suite 1.1.1 interface. The top navigation bar includes links for Home, SOAP Envelope, SOAP Connectivity, HL7 Context-free, HL7 Context-based, Transport Settings, Documentation, and About. The current test case is 'SOAPCON_1_BasicMessage_ConnectivityResponse'.

The interface is divided into two main sections: 'Outgoing SOAP Envelope' and 'Incoming SOAP Envelope'. Each section contains a text area for the XML message and a 'Validation Result' table below it.

Outgoing SOAP Envelope:

```
<?xml version="1.0" encoding="UTF-8"?><Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
  <Header/>
  <Body>
    <connectivityTest xmlns="urn:code:lisb:2011">
      <echoBack>518+690=1208</echoBack>
    </connectivityTest>
  </Body>
</Envelope>
```

Validation Result:

Path	Description	Line
------	-------------	------

Incoming SOAP Envelope:

```
<S:Envelope xmlns:S="http://www.w3.org/2003/05/soap-envelope">
  <S:Body>
    <connectivityTestResponse xmlns="urn:code:lisb:2011">
      <return>Hello World
      You are connected to the webservice.
      You submitted: 518+690=1208</return>
    </connectivityTestResponse>
  </S:Body>
</S:Envelope>
```

Validation Result:

Path	Description	Line
------	-------------	------

The bottom of the interface includes the NIST logo, application information (Date: 03/11/2016 17:11:28, Application Version: 1.1.1, Resource Bundle Version: 1.1.1), supported browsers (Firefox, Chrome, Safari, Edge), external links (Disclaimer, Privacy Policy, Website Administrator), and the NIST Information Technology Laboratory logo.

6

Once the Tool sends the test message to the SUT and a response is received, Validation occurs automatically. The results are displayed for both Outgoing and Incoming SOAP messages

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

[Home](#) [1 SOAP Envelope](#) [2 SOAP Connectivity](#) [3 HL7 Context-free](#) [4 HL7 Context-based](#) [5 Transport Settings](#) [Documentation](#) [About](#) [Preferences](#)

[Test Selection](#) [Test Execution](#) [Current Test Case: SOAPCON_2_SubmitSingleMessage_Response](#)

Test Cases

Sender(Initiator)

SOAPCON_1_BasicMessage_ConnectivityRequest

SOAPCON_3_SubmitSingleMessage_Message

Receiver(Responder)

SOAPCON_1_BasicMessage_ConnectivityResponse

SOAPCON_2_SubmitSingleMessage_Response

SOAPCON_3_FaultDetection-Generation_AuthenticationFault

SOAPCON_4_FaultDetection-Generation_MessageSizeFault

SOAPCON_5_FaultDetection-Generation_UnsupportedDoc_Fault

1

Select Receiver Test Case

Test Case: SOAPCON_2_SubmitSingleMessage_Response

[Download Package](#) [Load Test Case](#)

Test Story

Message Content

Test Data Specification

Testing Instructions

Description

This test evaluates the capability of a receiver (responder) technology conforming to the SOAP 1.2 standard and CDC WSDL 1.0 to receive and respond appropriately.


Test Objectives

The receiver (responder) technology will demonstrate the ability to:





- Receive a SOAP message with the Body element containing submitSingleMessage, as defined in the CDC WSDL 1.0, and arbitrary conforming values for all child elements: username, password, facilityID, and hl7Message
- Transmit a SOAP response message to the sender (initiator) that contains the element submitSingleMessageResponse, as defined in the CDC WSDL 1.0 with the return child element containing a valid HL7 message

2


'Load Test Case'

**NIST**
National Institute of
Standards and Technology
U.S. Department of Commerce

Application Information
Date: 05/05/2016 15:14:02, Application Version: 1.3.0 Resource Bundle Version: 1.3.0

Supported Browsers
 Firefox,  Chrome,  Safari,  IE 9 and 10

External Links
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SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

Home SOAP Envelope SOAP Connectivity HL7 Context-free HL7 Context-based Transport Settings Documentation About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_2_SubmitSingleMessage_Response

Receiver(Responder) / SOAPCON_2_SubmitSingleMessage_Response

Outgoing SOAP Envelope

Validate Download Configure Send

```
1 <?xml version='1.0' encoding='UTF-8'?>
2 <Envelope xmlns='http://www.w3.org/2003/05/soap-envelope'>
3   <Header />
4   <Body>
5     <submitSingleMessage xmlns='urn:edc:isb:'>
6       <username>???

3 Select 'Configure'


```

Incoming SOAP Envelope

Validate Download

```
1
```

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------



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SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

The screenshot displays the NIST SOAP Connectivity Test interface. The top navigation bar includes 'Home', 'SOAP Envelope', and 'SOAP Connectivity'. The 'SOAP Connectivity' tab is active, showing 'Test Selection' and 'Test Execution' options. The current test case is 'SOAPCON_2_SubmitSingleMessage_Response'. The 'Receiver(Responder)' section is selected, showing an 'Outgoing SOAP Envelope' with XML code. A 'Receiver Configuration Panel' modal is open, containing fields for 'Username', 'Password', 'FacilityID', and 'Endpoint'. A yellow callout box with a blue circle containing the number '4' points to the configuration fields. The callout text reads: 'Receiver Configuration Panel Enter your system (SUT) SOAP Endpoint and the credentials (Username/Password/FacilityID) required for systems to transmit to your site. (The NIST Tool will use this information in order to build a submitSingleMessage message and transmit it to your system (SUT)) Press Save when finished.' The modal has 'Save' and 'Cancel' buttons at the bottom. The background interface shows a 'Validation Result' section with tabs for 'Errors', 'Warnings', 'Alerts', and 'Affirmatives', and a table with columns 'Path', 'Description', and 'Line #'. The 'Errors' tab is selected, showing 0 errors.

Receiver Configuration Panel

Username
Password
FacilityID
Endpoint

SUT Endpoint

Save Cancel

Receiver Configuration Panel
Enter your system (SUT) SOAP Endpoint and the credentials (Username/Password/FacilityID) required for systems to transmit to your site. (The NIST Tool will use this information in order to build a *submitSingleMessage* message and transmit it to your system (SUT))
Press Save when finished.

Validation Result
Errors Warnings Alerts Affirmatives

Path	Description	Line #
------	-------------	--------

SOAP Connectivity Tests (Receiver)

Test Case: SOAPCON_2_SubmitSingleMessage_Response

NIST Immunization Test Suite 1.3.0

Home 1 SOAP Envelope 2 SOAP Connectivity 3 HL7 Context-free 4 HL7 Context-based 5 Transport Settings Documentation About Preferences

Test Selection Test Execution Current Test Case: SOAPCON_2_SubmitSingleMessage_Response

Receiver(Responder) / SOAPCON_2_SubmitSingleMessage_Response

Outgoing SOAP Envelope

Validate Download Configure Send

```
1 <?xml version="1.0" encoding="UTF-8"?><Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header/>
3   <Body>
4     <submitSingleMessage xmlns="urn:cdci:isab:2011">
5       <username>good</username>
6       <password>good</password>
7       <facilityId>1234</facilityId>
8       <hl7Message>MSH|^~\&||Test EHR Application|X68||NIST Test Iz Reg|201207010822||VXU^V04^
9     </submitSingleMessage>
10  </Body>
11 </Envelope>
```

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

Incoming SOAP Envelope

Validate Download

```
1 <Envelope xmlns="http://www.w3.org/2003/05/soap-envelope">
2   <Header/>
3   <Body>
4     <submitSingleMessageResponse xmlns="urn:cdci:isab:2011">
5       <return>MSH|^~\&||NIST Test Iz Reg|Test EHR Application|X68|20160816132256.056-0400||AC
6       MSA|AA|NIST-IZ-007.00
7     </return>
8   </submitSingleMessageResponse>
9   </Body>
10 </Envelope>
```

Validation Result

Errors Warnings Alerts Affirmatives

Path	Description	Line
------	-------------	------

NIST National Institute of Standards and Technology U.S. Department of Commerce

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Once the Tool sends the test message to the SUT and a response is received, Validation occurs automatically. The results are displayed for both Outgoing and Incoming SOAP messages