

# **Indian Health Service Immunization Interface Stakeholders Webinar**

**Development Status Update  
April 24, 2012**

# Indian Health Service (IHS)

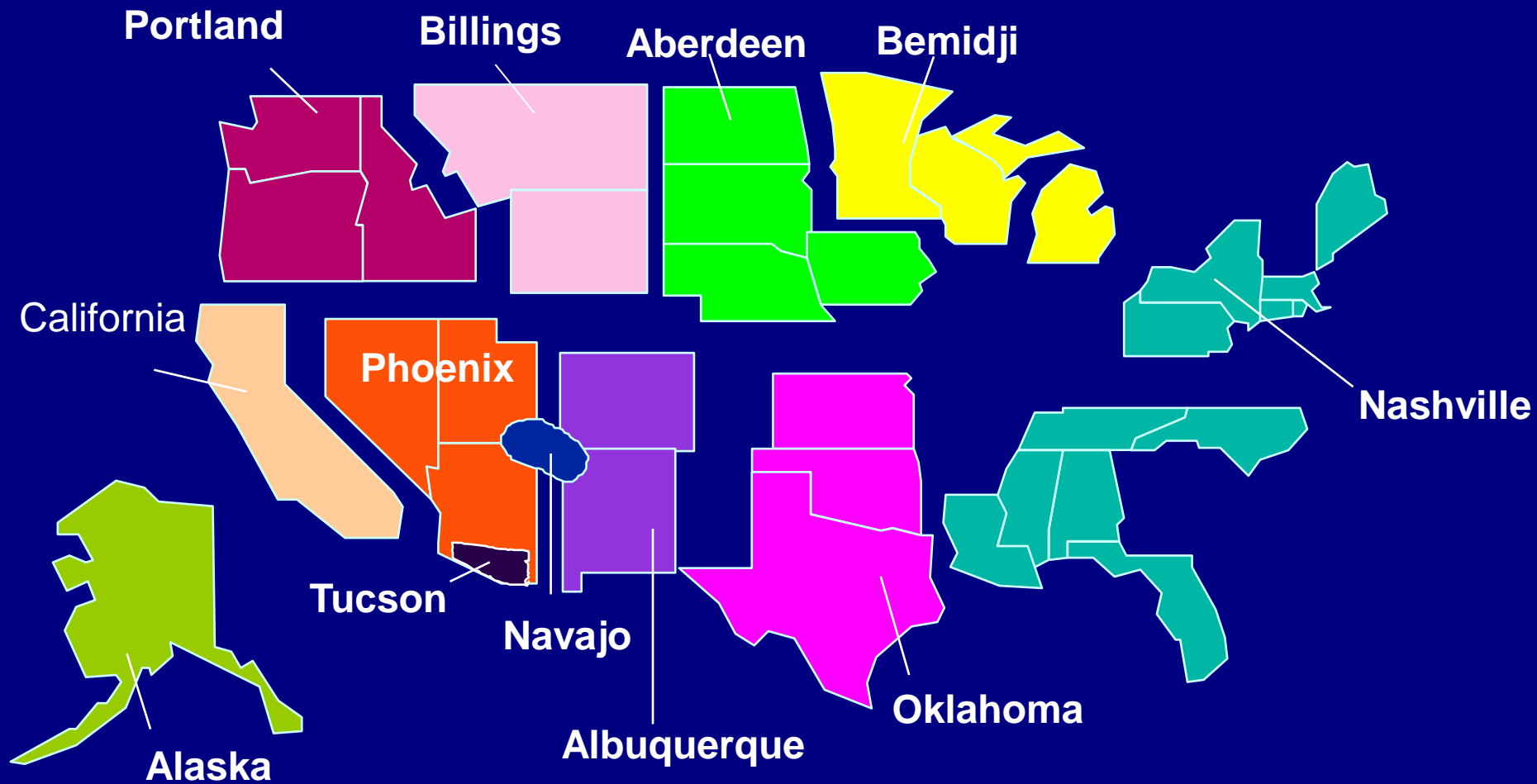
## 2007 U.S. Census:

- AI/AN alone or in combination with other races: 4,429,514 (1.5% of U.S. population)

## Indian Health Service (IHS) system (35 states):

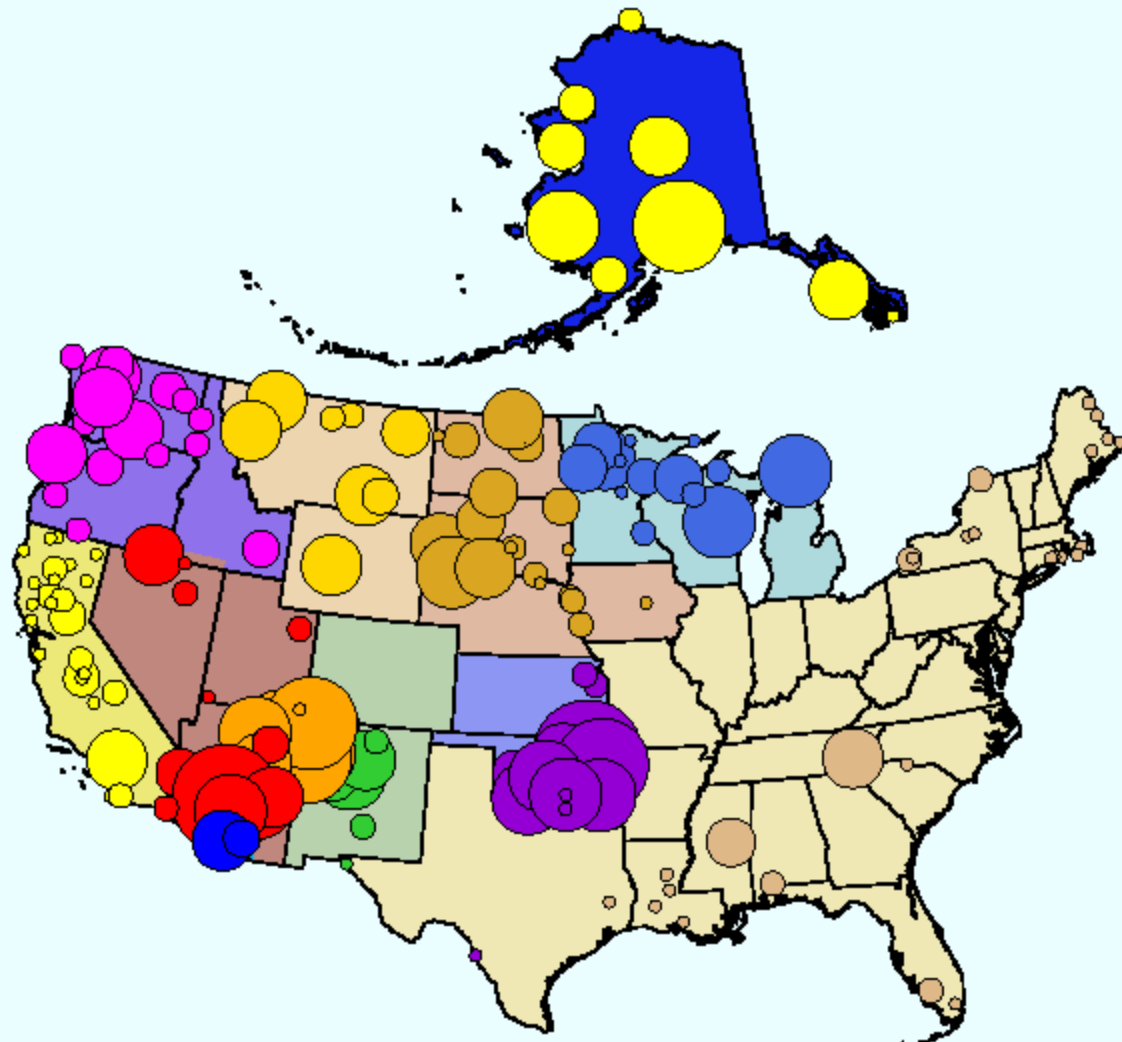
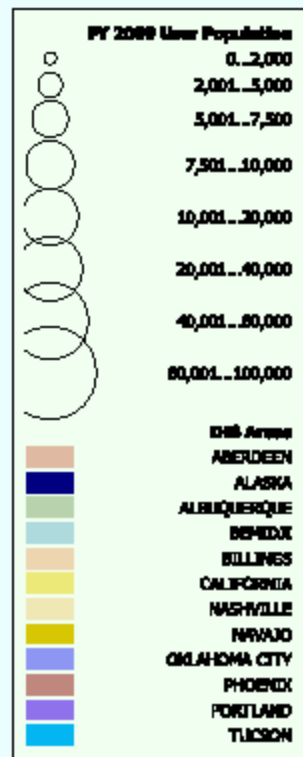
- Federal health care provider for eligible AI/AN
- Eligibility = member of a federally recognized tribe (560+)
- Services via IHS, Tribal and Urban Indian (ITU) facilities
- 1.5 million AI/AN people access IHS-funded services

# Indian Health Service Administrative Regions



User Population: 1.5 Million

# IHS User Populations, FY 2009



# IHS Electronic Health Record

- Resource Patient Management System (RPMS)
- Utilized by all IHS and most tribal and urban Indian health facilities
- Includes immunization component
  - Clinical decision support (forecasting)
  - Coverage reports
  - Reminder/recall lists and letters
  - Bi-directional HL7 interface.

# Background

- Why we participate in IIS projects:
  - IHS sites are independently operated and used at the local level, we need the IIS to exchange information.
  - IHS sites need access to data from other non-IHS institutions.

# Background

- An immunization data exchange interface will link IIS and RPMS systems in up to 34 states
  - 12 Administrative Areas, ~260 RPMS instances
  - Pacific Island and West Virginia RPMS users
- IHS Immunization Interface software: internal call letters BYIM
- National team develops software, primary participants in discovery process, handles HL7 & programming issues
- Area teams (clinical/IT) recruit provider sites, coordinate installations, meetings
- Local teams – primary operators of software, first link in troubleshooting with IIS

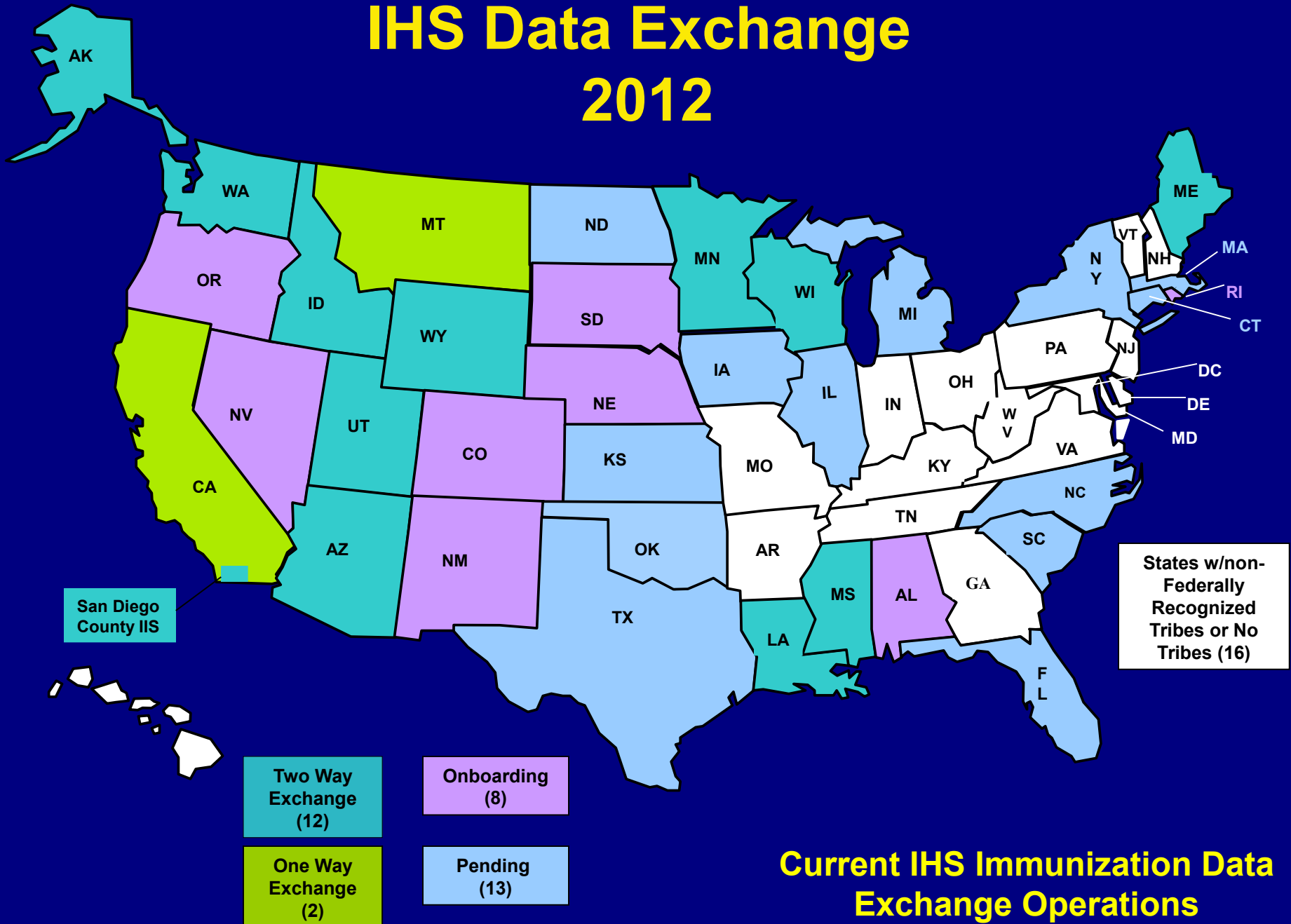
# Background

- IHS sites are located in sovereign nations and operate under local control.
  - Area and national IHS staff members technically assist many of these IHS sites.
  - IHS sites may choose to operate independently and install their own EHR software.
  - IHS sites connect directly and independently to IIS.

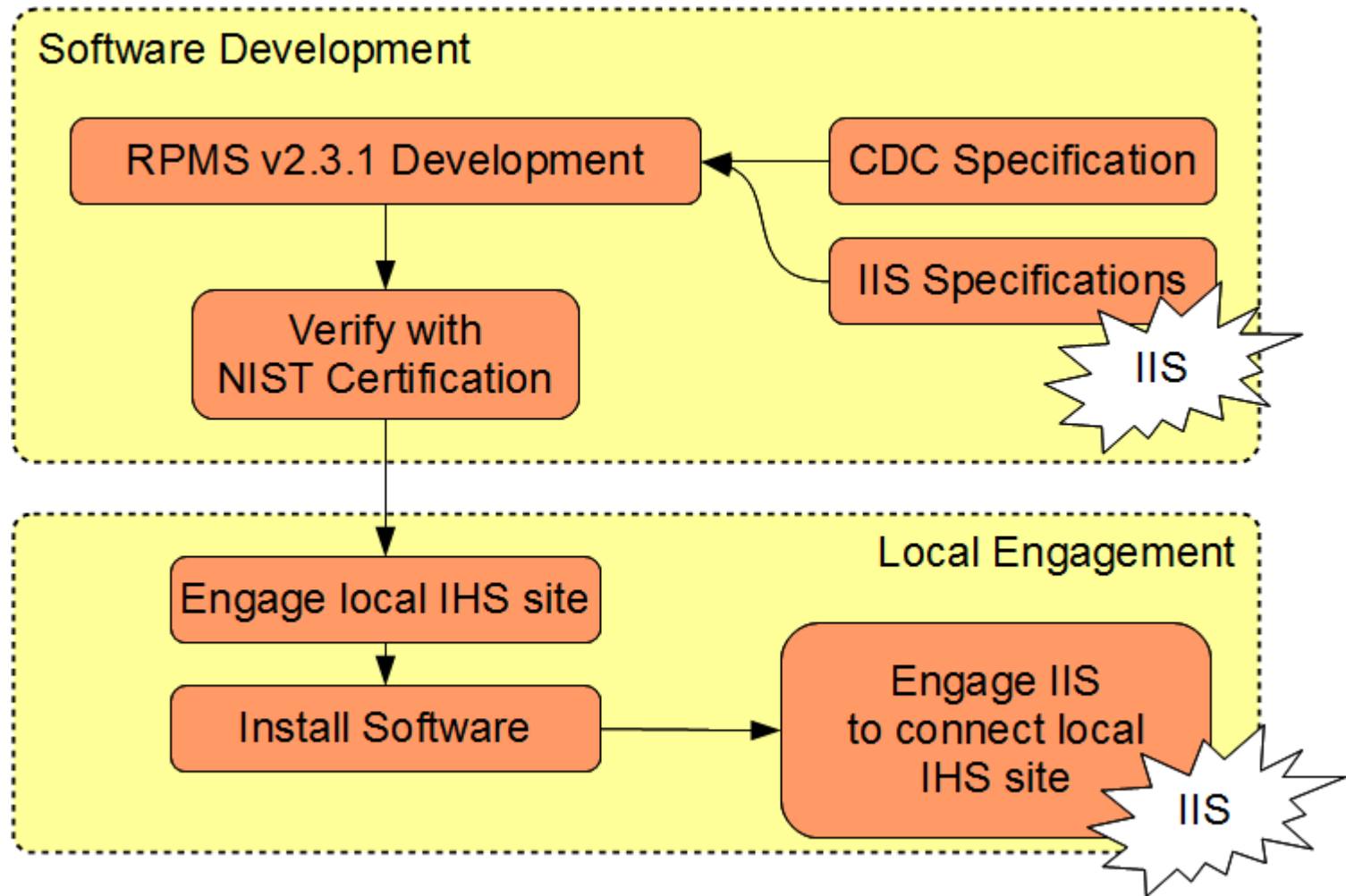




# IHS Data Exchange 2012



# HL7 2.3.1 Process



# Current 2.3.1 Functionality

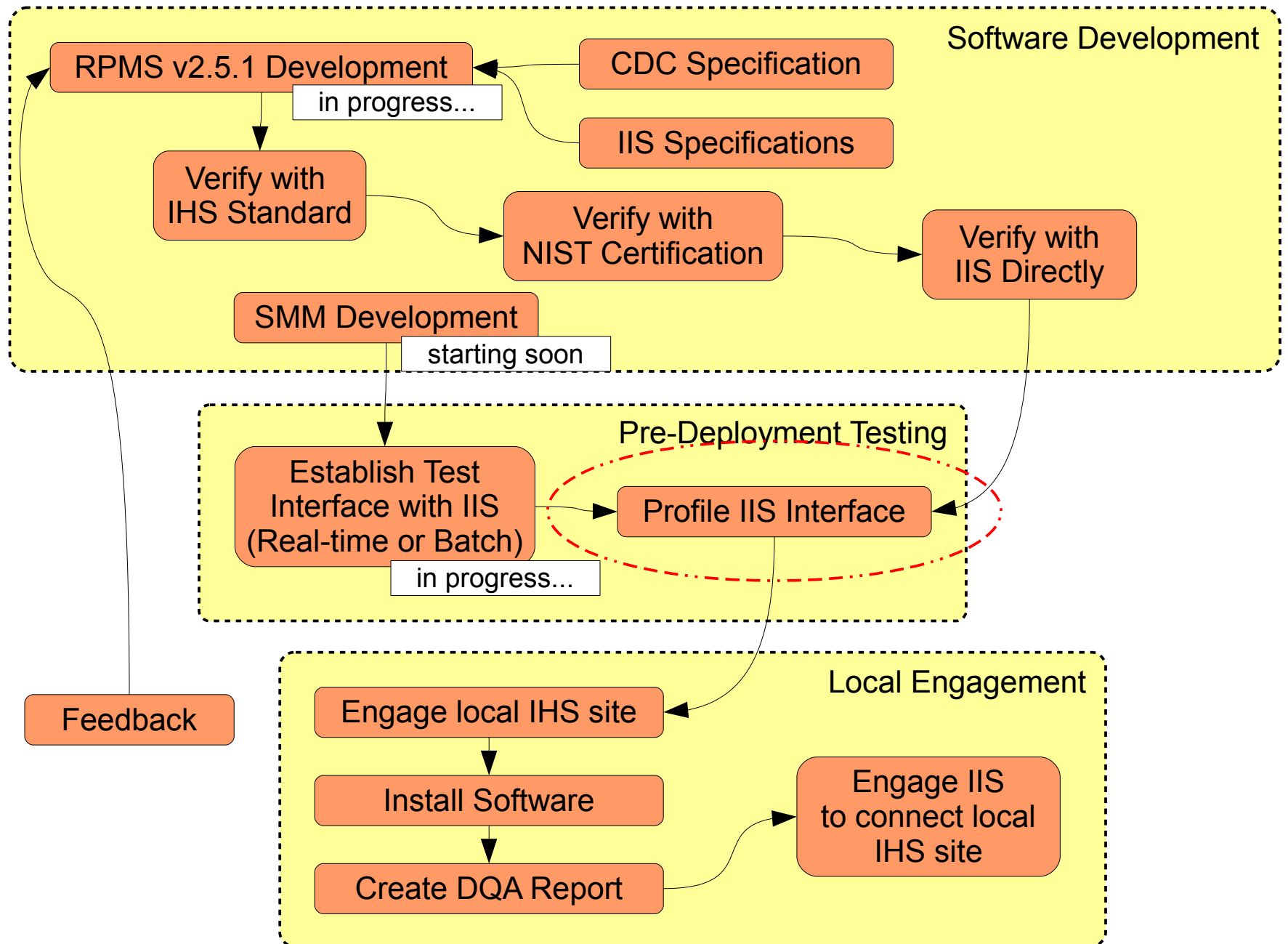
- RPMS BYIM can generate batch VXU messages, in practice exported every day.
- RPMS BYIM can import a batch of VXU messages sent by or downloaded from the IIS.
- Automated transport supported for an HTTPS POST compatible IIS using the STC HL7 Bridge.

# Changes for 2.5.1

- Update VXU message.
- New query support (QBP and VXQ).
- Improved support for real-time messaging.
- Improved message transport to support using new TLEP web service protocol.
- Improved process for testing and integrating with IIS.

# Note: VXU Change Principles

- VXU must conform to CDC standards and NIST certification requirements.
- VXU should support local IIS requirements as far as they are inline with national standards and do not conflict with current practice.
- Current development should aware of local requirements from the beginning.



# IIS Profiling Project

- Review IIS guide and develop a DQA report template.
- Establish test connections to real-time or batch interface.
- Submit several hundred test messages to verify expected responses to known error conditions.
- Develop unified profile representing IIS.

Firefox

Open Immunization Software Project

www.openimmunizationsoftware.org/interfacing/IIS Interface Profiling.ht

DSR US TCH MCIR IHS ImmTrac Local Tracker News Cool Language Bookmarks

## Open Immunization Software - Spring 2012

Home Interfacing Data Quality Forecasting Matching

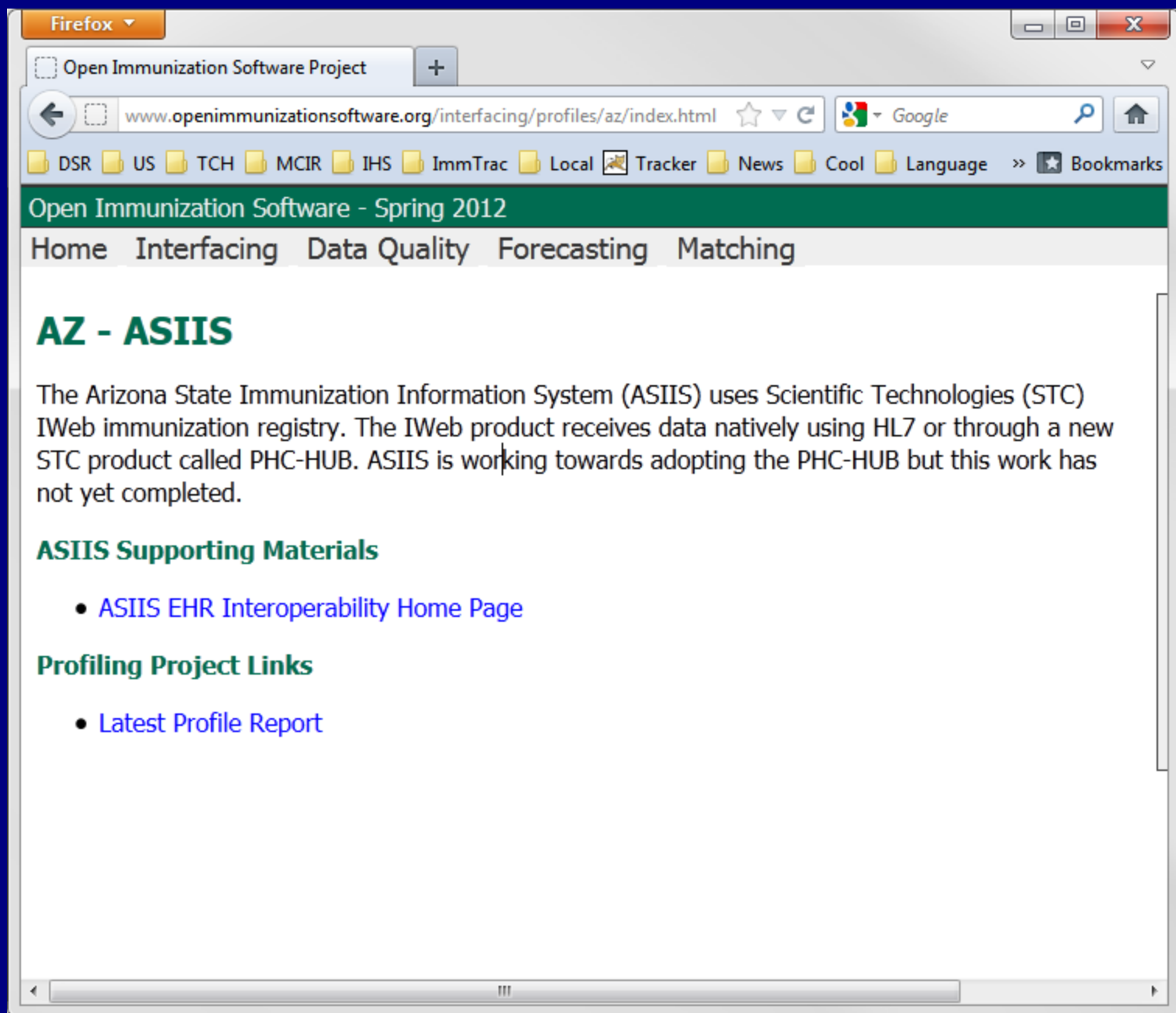
### IIS Interface Profiling Project

Every IIS is free to adapt the CDC immunization guide to meet local requirements. In some cases this is to meet local or state law and regulations. In most other cases the adaptations are to meet IIS specific needs or expectations. These differences make it very hard for a national organization, such as Indian Health Service, to create a standard interface with all IIS. In addition, these differences are hard to see at first and can only be determined after attempting to interface.

To solve this problem OIS is working on a collaborative project with Indian Health Service to create a system for automatically profiling IIS to determine exactly which kind of immunization messages are acceptable and which are not. Below is a summary of the current progress to connect and enlist IIS in this project:

| State or Area | IIS Name | Status      | Transport | Versions | Messages | Notes                    |
|---------------|----------|-------------|-----------|----------|----------|--------------------------|
| Alabama       |          |             |           |          |          |                          |
| Alaska        | VacTrAK  | In Progress |           |          |          |                          |
| Arizona       | ASIIS    | Connected   |           |          |          |                          |
| Arkansas      |          |             |           |          |          |                          |
| California    | CAIR     |             | SFTP      |          |          | One of several in state. |
| Colorado      | CIIS     | Selected    | SFTP      |          |          |                          |
| Connecticut   |          |             |           |          |          |                          |





Firefox

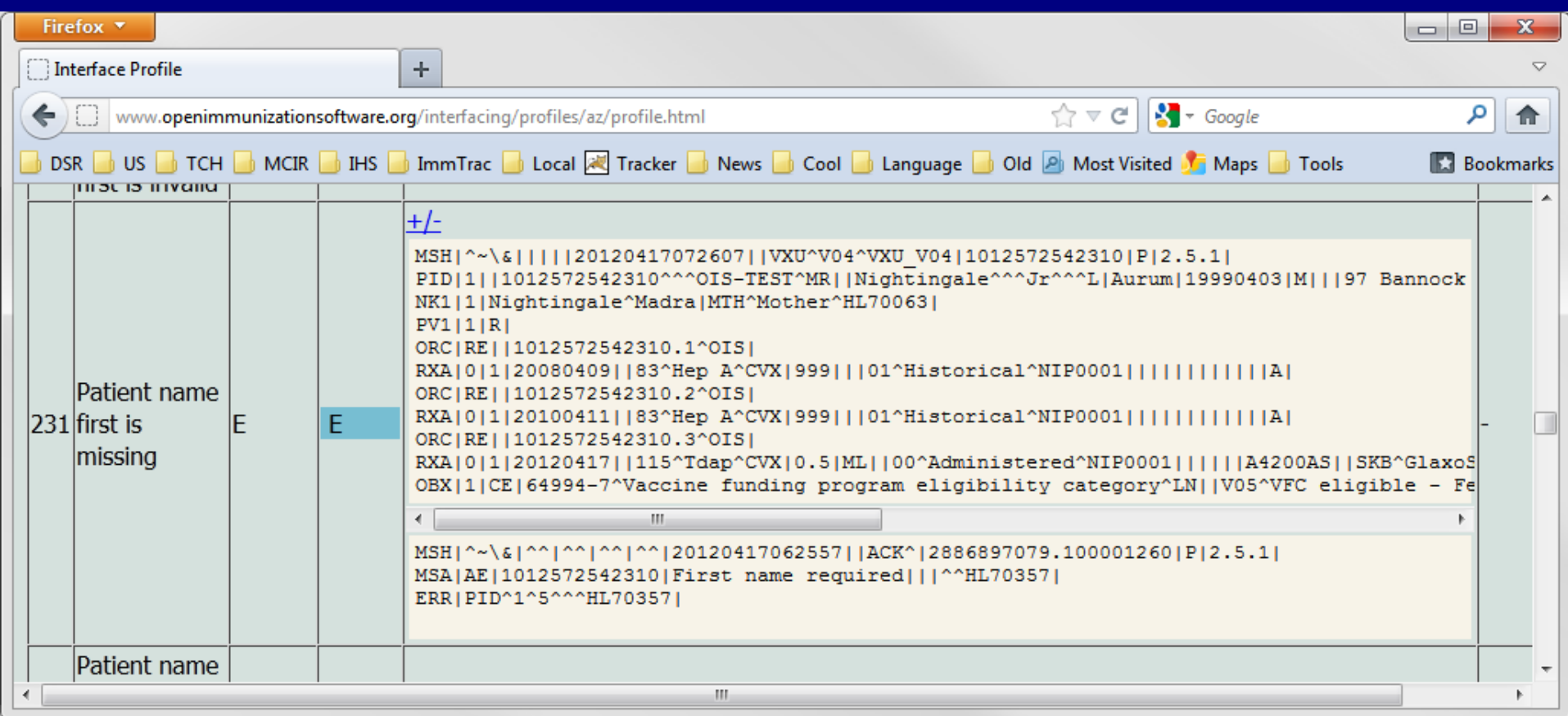
Interface Profile

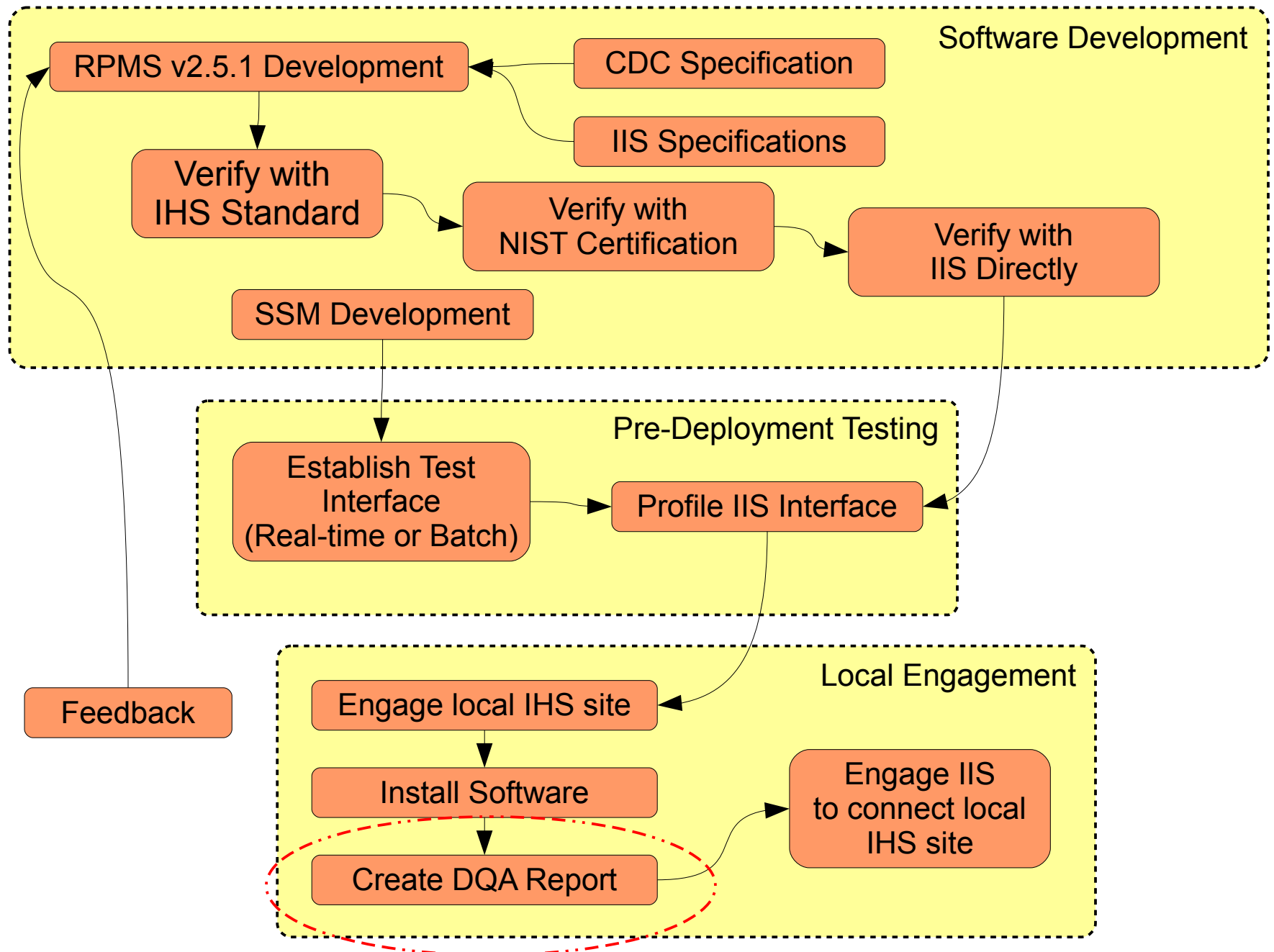
www.openimmunizationsoftware.org/interfacing/profiles/az/profile.html

DSR US TCH MCIR IHS ImmTrac Local Tracker News Cool Language >> Bookmarks

## AZ-ASIIS Profile Report

| #  | Issue   | Expect | Status Is | Text                | Status Not | Text                |
|----|---|--------|-----------|---------------------|------------|---------------------|
| 1  | HL7 segment is unrecognized                         | A      | A         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 2  | HL7 segment is invalid                              | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 3  | HL7 segments out of order                           | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 4  | HL7 MSH accept ack type is deprecated               | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 5  | HL7 MSH accept ack type is ignored                  | S      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 6  | HL7 MSH accept ack type is invalid                  | A      | A         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 7  | HL7 MSH accept ack type is missing                  | A      | A         | <a href="#">+/-</a> | A          | <a href="#">+/-</a> |
| 8  | HL7 MSH accept ack type is unrecognized             | A      | A         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 9  | HL7 MSH accept ack type is valued as always         | A      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 10 | HL7 MSH accept ack type is valued as never          | A      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 11 | HL7 MSH accept ack type is valued as only on errors | A      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 12 | HL7 MSH alt character set is deprecated             | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 13 | HL7 MSH alt character set is ignored                | S      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 14 | HL7 MSH alt character set is invalid                | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 15 | HL7 MSH alt character set is missing                | A      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 16 | HL7 MSH alt character set is unrecognized           | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |
| 17 | HL7 MSH app ack type is deprecated                  | W      | -         | <a href="#">+/-</a> | -          | <a href="#">+/-</a> |





# DQA Report

- Identifies and summarizes data quality issues from the vantage point of a batch.
- Based on requirements and information gathered in IIS profiling project.
- DQA report can be emailed, contains no patient specific information.
- IIS sites will go through data quality process before submitting initial data.

Firefox

Open Immunization Software Project

Data Quality Report

file:///C:/data/work/client/MI MCIR/in/MCIR DQA/receive/MCIR-000 Base Me

Google

DSR US TCH MCIR IHS ImmTrac Local Tracker News Cool Language

Bookmarks

# MCIR DQA Quality Report

| Batch Title | Batch Type | Profile  | File Name                  | Received                 |
|-------------|------------|----------|----------------------------|--------------------------|
| File Import | Submission | HL7 File | MCIR-000 Base Messages.txt | Tue, Apr 3, 2012 3:49 PM |

**Not Ready for Production**

Required fields are not all present, interface is not ready for production.

## Scoring Summary

| DQA Score | Description |
|-----------|-------------|
| 75        | Okay        |

| Measurement     | Score | Description | Weight |
|-----------------|-------|-------------|--------|
| Completeness    | 93    | Excellent   | 50%    |
| - Patient       | 99    | Excellent   | 22%    |
| - Vaccination   | 87    | Good        | 22%    |
| - Vaccine Group | 92    | Excellent   | 5%     |
| Quality         | 70    | Okay        | 40%    |
| - No Errors     | 100   | Excellent   | 28%    |

# Scoring Summary

**DQA Score Description**

75

Okay

| Measurement     | Score | Description | Weight |
|-----------------|-------|-------------|--------|
| Completeness    | 93    | Excellent   | 50%    |
| - Patient       | 99    | Excellent   | 22%    |
| - Vaccination   | 87    | Good        | 22%    |
| - Vaccine Group | 92    | Excellent   | 5%     |
| Quality         | 70    | Okay        | 40%    |
| - No Errors     | 100   | Excellent   | 28%    |
| - No Warnings   | 0     | Problem     | 12%    |
| Timeliness      | 0     | Problem     | 10%    |

## Data Received

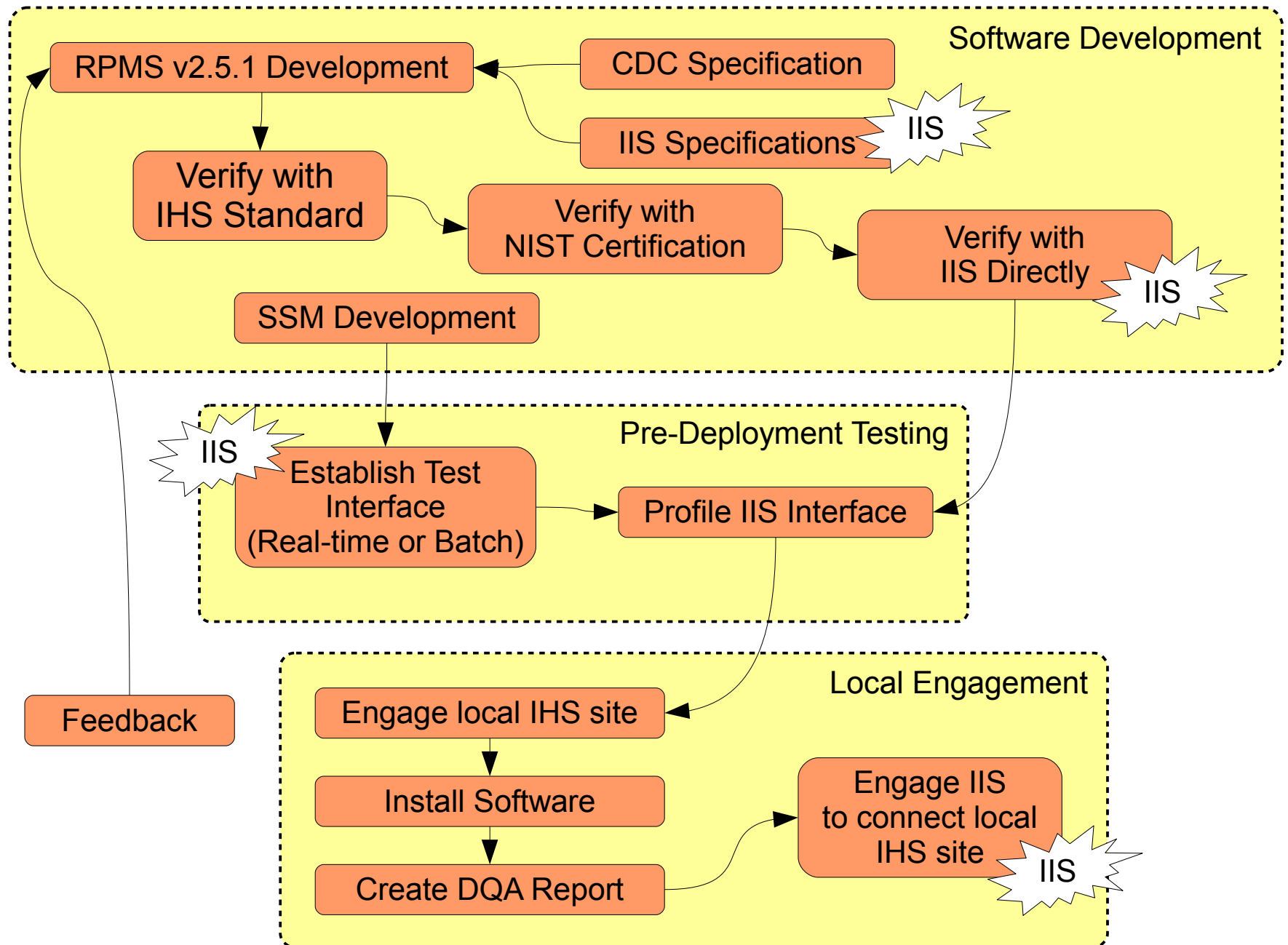
| Received       | Count | Percent |
|----------------|-------|---------|
| Patients       | 100   |         |
| Next-of-Kins   | 100   |         |
| Vaccinations   | 200   |         |
| - Administered | 100   | 50%     |

| Required   | HL7     | Count | Percent | Description | Weight |
|------------|---------|-------|---------|-------------|--------|
| Patient Id | PID-3   | 100   | 100%    | Excellent   | 3.5%   |
| First Name | PID-5.2 | 100   | 100%    | Excellent   | 1.7%   |
| Last Name  | PID-5.1 | 100   | 100%    | Excellent   | 1.7%   |
| Birth Date | PID-7   | 100   | 100%    | Excellent   | 3.5%   |
| Sex        | PID-8   | 100   | 100%    | Excellent   | 1.7%   |
| Address    | PID-11  | 100   | 100%    | Excellent   | 0.7%   |
| - Street   | PID-11  | 100   | 100%    | Excellent   | 1.7%   |
| - City     | PID-11  | 100   | 100%    | Excellent   | 0.4%   |
| - State    | PID-11  | 100   | 100%    | Excellent   | 0.4%   |
| - Zip      | PID-11  | 100   | 100%    | Excellent   | 0.4%   |

| Expected        | HL7     | Count | Percent | Description | Weight |
|-----------------|---------|-------|---------|-------------|--------|
| Middle Name     | PID-5.3 | 88    | 88%     | Good        | 1.5%   |
| Phone           | PID-13  | 100   | 100%    | Excellent   | 1.5%   |
| Mother's Maiden | PID-6   | 100   | 100%    | Excellent   | 1.5%   |

| Recommended       | HL7    | Count | Percent | Description | Weight |
|-------------------|--------|-------|---------|-------------|--------|
| Ethnicity         | PID-22 | 100   | 100%    | Excellent   | 0.7%   |
| Race              | PID-10 | 100   | 100%    | Excellent   | 0.7%   |
| Responsible Party | NK1    | 100   | 100%    | Excellent   | 0.1%   |
| - First Name      | NK1    | 100   | 100%    | Excellent   | 0.3%   |
| - Last Name       | NK1    | 100   | 100%    | Excellent   | 0.3%   |





# IIS - IHS Connecting Points

- Receiving latest IIS HL7 specification and supporting materials.
- Setup process for accepting and responding to review of development messages.
- Provide real-time or batch interface for submitting test messages or files.
- Coordinate during local deployment.

# Development Timelines

Current version: BYIM 2.0\*2

## BYIM 3.0 Development

- Beta testing: May 1 – June 15, 2012
- Release: July 1, 2012

# Open Source Software

- As a by-product of current work, a set of open source tools are available:
  - HL7 Jump: very simple HL7 parser.
  - Data Quality Assurance engine.
  - Simple Message Mover.
  - IIS Web Service support.
- <http://www.openimmunizationsoftware.org/>

# Next Webinar Agenda

- Update on IHS development progress.
- Update on IIS Profiling project.
- Complete field-by-field review of new HL7 2.5.1 message.

# Summary

- Putting in new three step testing process.
- Systematically collecting IIS requirements.
- Profiling IIS HL7 interfaces.
- Adding Data Quality report to our pre-deployment process.
- Create new simple message mover.
- Upgrading to HL7 2.5.1.
- Will support vaccination query.

# Questions