

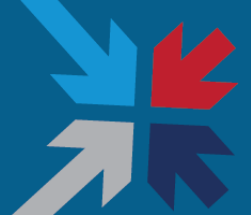
NIEM @ ONC

HHS – ONC
March 24, 2011

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Office of Standards and Interoperability



Agenda

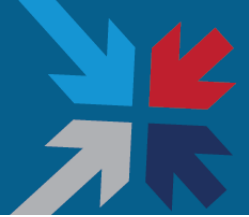


- » Introduction and Background on ONC/Standards and Interoperability
- » Our Interest in NIEM – Standards and Interoperability Framework
- » Challenges of Using NIEM in Healthcare
- » A current Initiative – FHIM and NIEM
- » Q&A

S&I Mission



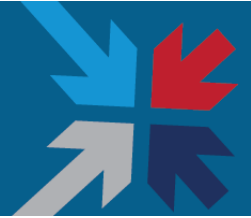
- » Office of the National Coordinator for Health IT - provides counsel to the Secretary of HHS and Departmental leadership for the development and nationwide implementation of an interoperable health information technology infrastructure.
- » The S&I Mission is to:
 - Create a sustainable ecosystem to drive increasing interoperability and standards adoption
 - Transform the standards development process that is led by the industry to solving real world problems
 - Facilitates creation, adoption and dissemination of standards to improve healthcare information exchange



THE ONC STANDARDS AND INTEROPERABILITY FRAMEWORK

An Introduction to S&I Framework
and NIEM

Standards and Interoperability and NIEM



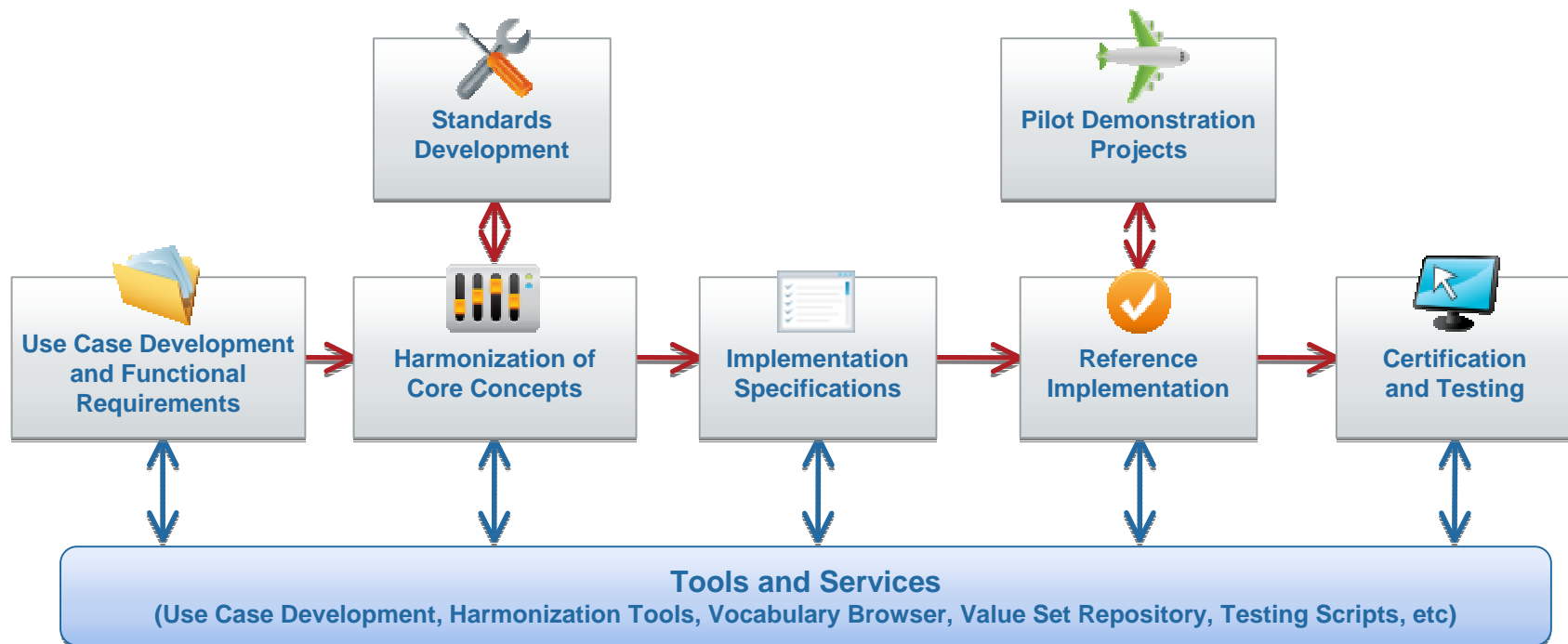
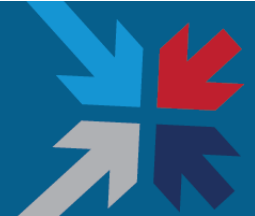
» The ONC S&I Framework *(what is it, why is it, how does it work)*

- Activities and Processes
- National Information Exchange Model
- Information Exchange Package Documentation

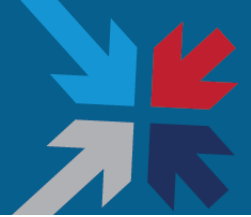
» Model-Centric Specifications *For Healthcare Data Exchange*

- *The Approach – Model Centric Specification*
- *Real World Implementations*

ONC Standards and Interoperability Framework

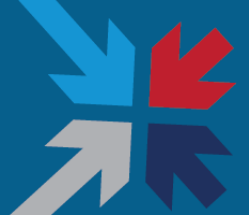


Why do we need an interoperability framework?



- » Move toward more “computational” implementation specifications (IS)
 - Scalable processes
 - Ability to develop tools to increase the efficiency of IS development and maintenance
 - The importance of developing IS that are explicit and subject to less interpretation
- » Link use cases and standards from inception to certification
 - Keep the certification processes tightly linked to the standards and IS processes
 - Support tool development for certification testing
 - Develop the testing for compliance at the same time as developing the standards
- » Integrate multiple SDOs with different expertise across the process
 - Transport packages
 - Vocabulary
 - Value sets
 - Security
- » Provide repeatable mechanisms for harmonization and integration of existing standards across SDOs

National Information Exchange Model Overview



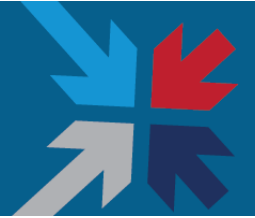
- » The National Information Exchange Model (NIEM) is a Federal, State, Local and Tribal interagency initiative providing a foundation for seamless information exchange.
- » NIEM is a framework to:
 - Bring stakeholders and Communities of Interest together to identify information sharing requirements in day-to-day operational and emergency situations;
 - Develop standards, a common lexicon and an on-line repository of information exchange package documents to support information sharing;
 - Provide technical tools to support development, discovery, dissemination and re-use of exchange documents
 - Provide training, technical assistance and implementation support services for enterprise-wide information exchange.
- » ONC Office of Standards and Interoperability plans build a Health Information Exchange Model (NIEM Health) that is harmonized with NIEM
- » NIEM Health to leverage NIEM conventions and NIEM components where possible

What is an IEPD?

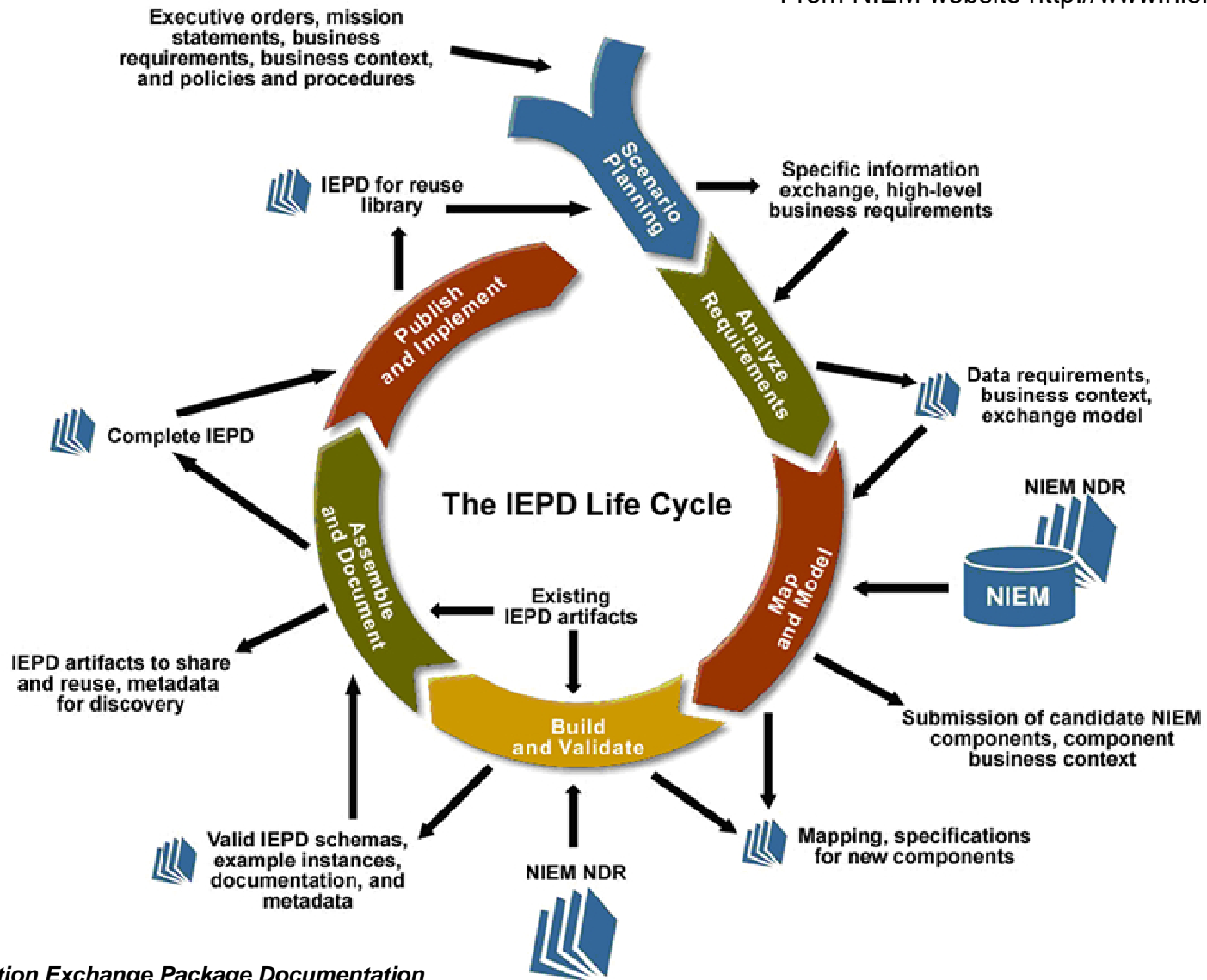


- » An **I**nformation **E**xchange **P**ackage **D**ocumentation (IEPD) is a collection of artifacts that describe the construction and content of an information exchange
 - Developed to provide the business, functional, and technical details of the information exchange through predefined artifacts
 - Created with a core set of artifacts in a prescribed format and organizational structure to allow for consistency
 - Designed to be shared and reused in the development of new information exchanges through publication in IEPD repositories
 - IEPDs contain design specifications for an information exchange but may not include supplementary information such as implementation decisions.

NIEM Process

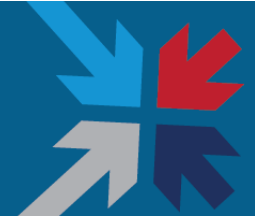


From NIEM website <http://www.niem.gov/index.php>



IEPD: Information Exchange Package Documentation

S&I NIEM Process Outline



Biz scenarios identified by:

- Health community
- ONC
- Federal agencies

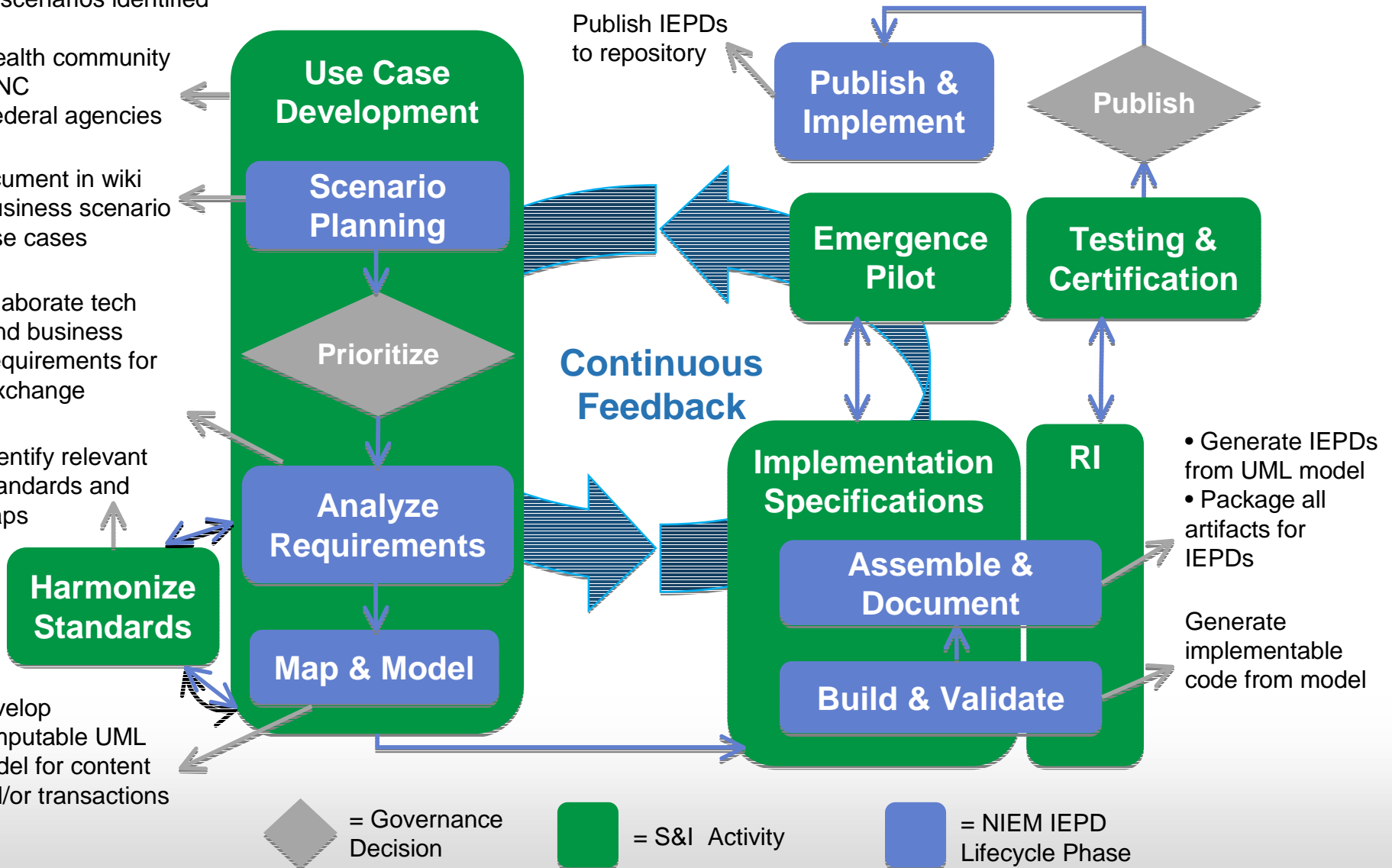
Document in wiki

- Business scenario
- Use cases

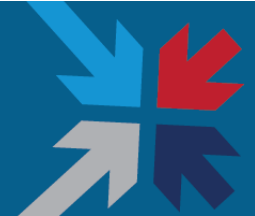
Elaborate tech and business requirements for exchange

Identify relevant standards and gaps

Develop computable UML model for content and/or transactions



The IEPD Artifacts



IEPDs contain both required and recommended artifacts

Required : Bold
Recommended : Italic

Note: Best practices for most organizations include many of the optional artifacts listed here

Scenario Planning

- *Business Process*
- *Use Cases*
- *Sequence Diagrams*

Analyze Requirements

- *Business Rules*
- *Business Requirements*

Map & Model

- *Exchange Content Model*
- *Mapping Document*

Build & Validate

- **Subset Schema**
- **Exchange Schema**
- **XML Wantlist**
- *Constraint Schema*
- *Extension Schema*

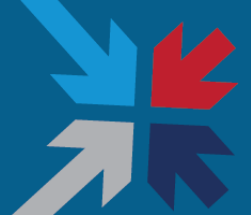
Assemble & Document

- **Main Document**
- **IEPD Catalog**
- **IEPD Metadata**
- *Sample XML Instances*
- *XML Stylesheets*

Publish & Implement

No required artifacts. Publish the IEPD to a repository and implement the exchange

S&I NIEM Harmonization Strategy



- » Federal Health Information Model - FHIM
- » ONC's Office of Interoperability and Standards is building a Health Information Exchange Model (NIEM Health) that is harmonized with NIEM
- » Health and Human Services petal to serve as bridge between NIEM and NIEM Health



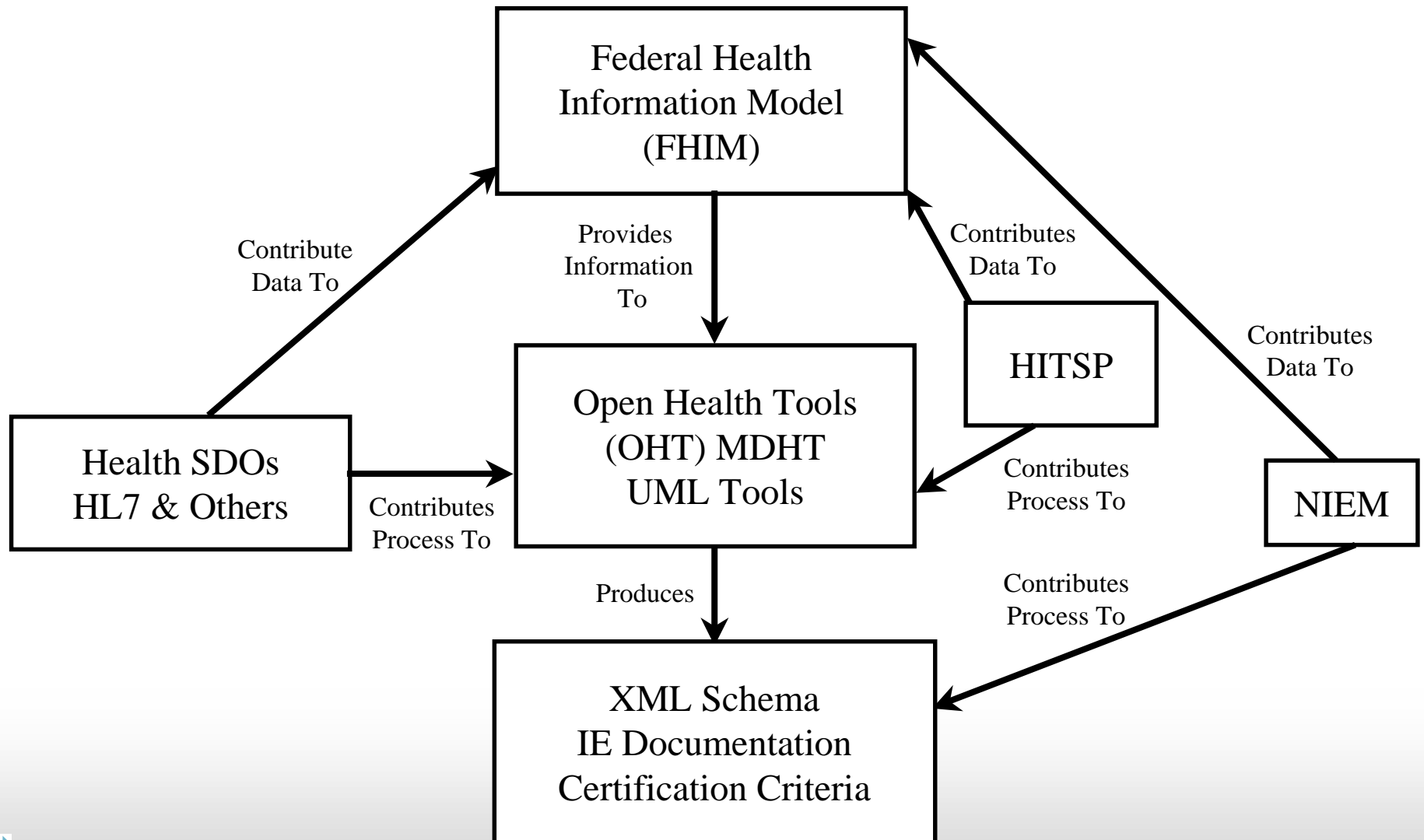
Information Modeling Project/FHIM Work Related to NIEM

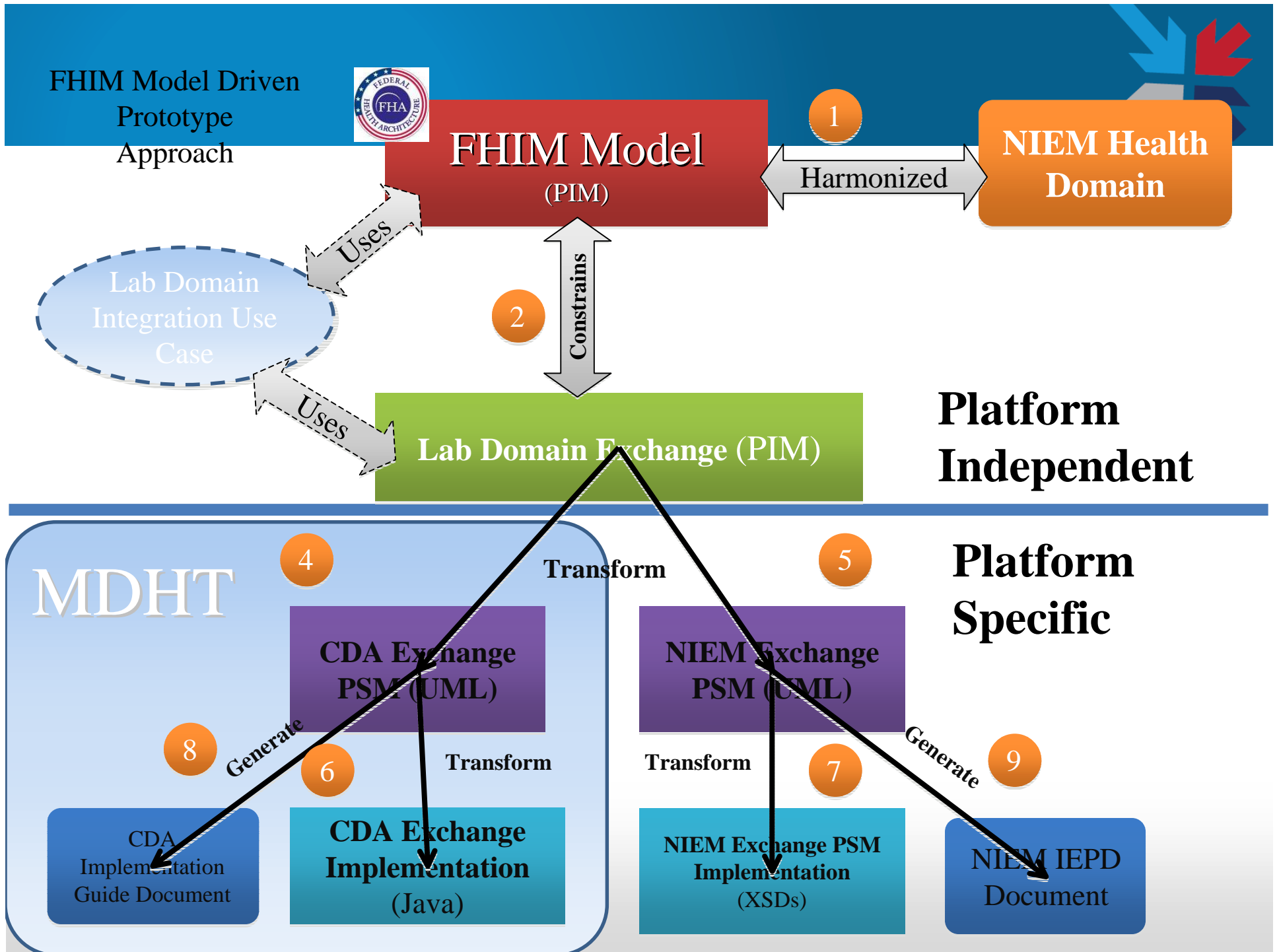


- » Produced high-level prototype to analyze how to integrate FHIM/MDHT/NIEM
- » High-level prototype analysis resulted in the following approach:
 - Incorporate NIEM Core Data that is applicable to health into the FHIM
 - Create a mapping of FHIM data types to NIEM data types
 - Incorporate support for the NIEM naming and design rules into the MDHT
 - When a NIEM compliant information exchange implementation is generated by the MDHT, the MDHT will convert FHIM data types to NIEM data types and apply NIEM naming and design rules

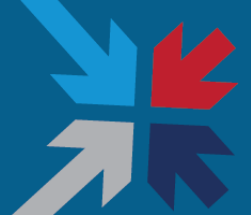


Model Driven Architecture (MDA) View Integration of FHIM, MDHT, NIEM, HITSP and Health SDOs



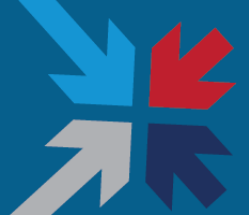


Challenges



- » Established standards, vocabularies and value sets for Healthcare
- » Service Descriptions
- » NIEM Core vs Models
- » IP issues in Healthcare

Q&A



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