US Office of National Coordinator (ONC)
Standards and Interoperability (S&I) Framework
<u>Cross Initiative – S&I Simplification Work Group</u>

Simplification & UCAT Priorities

In collaboration with NIST and AHRQ

12 February 2015

S&I Simplification - Analysis Status - 27 November 2014 - Core Matrix Version 3.2 DRAFT
Incorporation of Use Case Initiatives in S&I Simplification Core Matrix

Initiative	Analysis Type	Initial Analysis Phase - Core Matrix				FHIM Common Data Objects, Elements	AHRQ US Health Information Knowledgebase	Consensus Core Matrix
		Common Requirements	Common Actors, Systems, Roles	Scenarios, Event Steps	Common Actions			
Transitions of Care (TOC)	Retro	COMPLETE	COMPLETE	COMPLETE	COMPLETE	FHIM Mapping in Progress	REGISTERED	v1
Lab Results Interface (LRI)								
Longitudinal Coordination of Care (LCC) 1								v2.1
LCC 2		In Progress						TBD
Lab Orders Interface (LOI)	Retro	COMPLETE	COMPLETE	COMPLETE	COMPLETE	FHIM Mapping in Progress	REGISTERED	v2.1
Provider Directory (PD) - Digital Certificate								
PD - Electronic Address								
esMD 1 - Electronic Submission of Medical Documentation, Provider Profiles Authentication								
esMD 2 - Structured Content of Electronic Medical Documentation Request (eMDR)								
esMD 3 - Author of Record Level 1	Concurrent						Awaiting Tooling	v3
esMD 3 - Author of Record Level 2	Retro							
esMD 3 - Author of Record Level 3	TBD	Future						
Query Health (QH)	Retro	COMPLETE	COMPLETE	COMPLETE	COMPLETE	FHIM Mapping in Progress	REGISTERED	v2.1
Data Segmentation for Privacy (DS4P)								
Public Health Reporting (PHRI)								
HeD 1 - Health eDecisions - Clinical Decision Support (CDS) Artifact Sharing							Awaiting Tooling	v3
HeD 2 - CDS Guidance Service								
Structured Data Capture								
EU/US eHealth Initiative	Concurrent							
DAF 1 - Data Access Framework - Local Access	Retro							
DAF 2 - Targeted Access								
Data Provenance	Concurrent							
RESTful Health Exchange (RHEx)	TBD	TBD						TBD
Automated Blue Button								
Electronic Certificate		N/A				In Progress	REGISTERED	N/A

General Priorities

- Analyze Components from Latest S&I Use Case Requirements
  - Recently Completed: Data Provenance
- S&I Plus Strategy
  - Leverage Opportunities
  - Leverage Standards

S&I Simplification

Leveraging Opportunities

- S&I Use Cases – Buildout
- ISO TC215 and CEN TC251 National Member Bodies (via ISO 19669)
  - Often tied to National HIT Programs
- Federal Health Architecture
  - DoD, VA, IHS, FDA, CMS, HHS, ONC, CDC, NLM, NIH
- NIST: Cross Industry
- Canada Health Infoway
- West Health Institute
- Health Services Platform Consortium (HSPC)
- HL7 Argonaut Project

S&I Simplification

Leveraging Standards

- Via FHIM:
  - HL7 Version 2 Messages
  - HL7 Clinical Document Architecture (CDA) Release 2
    - » Consolidated CDA, Continuity of Care Document (CCD)
  - HL7 Fast Health Interoperable Resources (FHIR)
- Via S&I Simplification Use Case Events/Actions
  - ISO/HL7 10781 EHR System Functional Model R2 Functions
  - ISO/HL7 16527 PHR System Functional Model R1 Functions
  - EHR and PHR System Functional Profiles

ISO 19669

- Re-Usable Component Strategy for Use Case Development
  - Scope: S&I Use Case Simplification <u>Methodology</u>
  - In collaboration with ISO and CEN Appointed Experts
  - Reviewed with ISO TC215 WG1 and CEN TC215 WG1 in Berlin, Oct 2014
    - Experts appointed from Australia, Brazil, Japan, Korea, UK
  - DRAFT in Development
    - Expert review needed

Now
Priorities

1. Build end-to-end demo with NIST and CDC, focused on Immunization Use Case – Rob Snelick, Rob Savage

2. Quantify FHIM data object compilation from S&I Initiatives – Galen Mulrooney, Ioana Singureanu

3. Seek additional Use Case Template examples: blank and completed – Gary Dickinson, et al.

4. Continue development of Use Case Exchange format – Gary Dickinson, Michael Faughn, et al.

Now
Priorities

5. Seek alignment of multiple efforts to catalog S&I data requirements:

   a) S&I Simplification - DESs for TOC/LRI (John Donnelly)

   b) Then CEDD

   c) Now FHIM (Galen Mulrooney/Ioana Singureanu)

   d) Current S&I Initiatives including SDC and DAF (Mark Roche, et al)

   e) AHRQ/USHIK (Robin Barnes and colleagues)

   Or is FHIM the superset = answer?

Use Case Template Examples

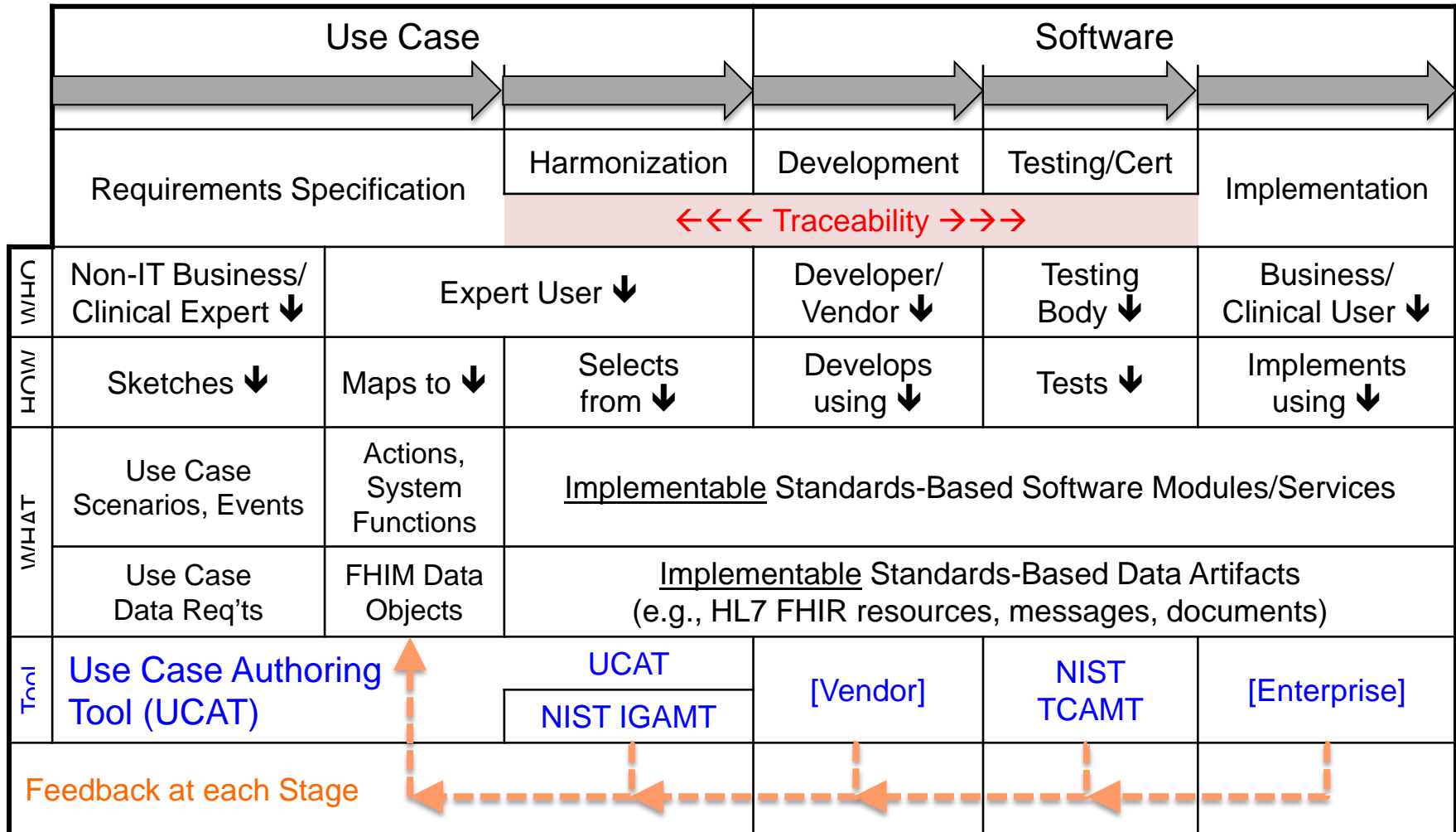| Seeking	Requests to	Status
1) Blank Use Case Requirements Template 2) Template with one or more example Use Case(s) filled in	~~Nancy Orvis, DOD MHS~~	~~Requested~~
	David Bass, VHA	Received
	~~Other FHA Agencies, via FHA HIM~~	~~Requested~~
	ISO TC215 National Member Bodies - Beatriz Leao (Brazil)	Received
	CEN TC215 WG1 – Stephen Kay (UK)	Anticipated
	Canada Health Infoway – Ron Parker	Requested
	Health Services Platform Consortia (HSPC) - Craig Parker, MD, Laura Heerman	Discussed
	West Health Institute – Todd Cooper	Discussed

S&I Simplification – Going External, Going International
Use Case Template

	S&I Framework Use Cases ⬇	Other Use Cases ⬇
	S&I Use Case Template	Basic Use Case Template
Requirements	• Assumptions • Pre/Post Conditions • System Functional Reqt's • Traceability	Same?
Actors, Roles	Person, Organization, System	Mapped to Domain Specific Actors/Roles
Scenarios, Event Steps	• Event Description • Actor, Role • Inputs, Outputs	Same?
Actions	Mapped to EHR/PHR/Other System Functions	Mapped to Domain Specific Actions and Function Set(s)
Data Objects	Mapped to FHIM Data Objects	Mapped to Domain Specific Information Model, Data Objects

Traceability – Anchored by Use Case Authoring Tool (UCAT)
From Sketch to Implementation

	Use Case				Software		
			Harmonization	Development	Testing/Cert		Implementation
	Requirements Specification		←←← Traceability →→→				
WHO	Non-IT Business/ Clinical Expert ↓	Expert User ↓		Developer/ Vendor ↓	Testing Body ↓		Business/ Clinical User ↓
HOW	Sketches ↓	Maps to ↓	Selects from ↓	Develops using ↓	Tests ↓		Implements using ↓
WHAT	Use Case Scenarios, Events	Actions, System Functions	Implementable Standards-Based Software Modules/Services				
	Use Case Data Req'ts	FHIM Data Objects	Implementable Standards-Based Data Artifacts (e.g., HL7 FHIR resources, messages, documents)				
Tool	Use Case Authoring Tool (UCAT)	UCAT / NIST IGAMT		[Vendor]	NIST TCAMT		[Enterprise]
	Feedback at each Stage						

S&I Simplification
Progression Steps*

Steps	Tool	Used to…
S&I Use Case Requirements (UCR) Phase		
A-B	Excel	(Current) Analyze UC Components, Update Core Simplification Matrix
C-D	UCAT	Build Use Case, specify Requirements and Details
E		Render completed Use Case per S&I UCR Template (Word .docx)
F		Identify New Core Component Candidates from this Use Case
G		For FHIM update: identify new UC data objects, elements
H		Output to USHIK: full Use Case
I		Output to NIST Tool Suite (IGAMT/TCAMT): full Use Case
S&I Harmonization Phase		
J-K	IGAMT/UCAT	Develop/manage Implementation Guides for selected standards
NIST-designed Software Testing and Certification		
M-S	IG/TCAMT	Develop/manage software test cases; support testing and validation

* See S&I Simplification – Progression Spreadsheet

S&I Simplification
Convened as S&I Work Group

- **S&I acts as Convening Organization**
  - S&I brings together parties with like interests, invites discourse and development
  - S&I relies on others to be repository of artifacts
    - » As: FHIM, USHIK, VSA, SNOMED, LOINC, CIMI…
  - S&I relies on others to develop and supply tools
    - » As: MDHT, Prometheus, Sparx…
  - S&I will adopt tools widely used by other federal agencies

S&I Framework – Cross Initiative – S&I Simplification
Links

- ## US Office of National Coordinator (ONC) Standards and Interoperability (S&I) Framework Wiki
  - http://wiki.siframework.org
- ## S&I Simplification Wiki
  - http://wiki.siframework.org/Cross+Initiative+-+S%26I+Simplification+WG
  - http://wiki.siframework.org/Use+Case+Simplification+Reference+Materials
- ## Federal Health Information Model (FHIM)
  - http://www.fhims.org
- ## AHRQ/USHIK S&I Pilot Site
  - http://ushik-stg.dcgroupinc.com/mdr/portals/si?system=si&enableAsynchronousLoading=true
- ## HL7 EHR Interoperability Wiki
  - http://wiki.hl7.org/index.php?title=EHR_Interoperability_WG