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

Simplification & UCAT Priorities

In collaboration with NIST and AHRQ

10 July 2014

S&I Simplification - Analysis Status - 1 July 2014 - Core Matrix Version 3.1 DRAFT
Incorporation of Use Case Initiatives in S&I Simplification Core Matrix

| Initiative | Analysis Type | Initial Analysis Phase - Core Matrix | | | | FHIM | AHRQ | Consensus Core Matrix |
		Common Requirements	Common Actors, Systems, Roles	Scenarios, Event Steps	Common Actions	Common Data Objects, Elements	US Health Information Knowledgebase	
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	In Progress						
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

  - Data Access Framework

- Solicit/Compare Use Case Templates (S&I plus)

  – Identify Core Use Case Template

  – Revise UCAT Requirements?

- Leverage Opportunities

Leveraging Opportunities

- S&I Use Cases – Buildout
- ISO and CEN National Members (via ISO 19669)
  - Often tied to National HIT Programs
- Federal Health Architecture
  - US Federal Agencies
- NIST: Cross Industry
- Canada Health Infoway
- West Health Institute
- Health Services Platform Consortium (HSPC)

S&I Simplification

Leveraging HL7 Standards

- Via FHIM:
  - Version 2 Messages
  - Clinical Document Architecture (CDA) Release 2
    » Consolidated CDA, Continuity of Care Document
  - Fast Health Interoperable Resources (FHIR)

- Via Use Case Events/Actions
  - EHR System Functional Model R2 Functions
  - PHR System Functional Model R1 Functions
  - EHR and PHR System Functional Profiles

- Results4Care FM/FP EA-based Tooling (HL7 contract)

S&I Simplification – Going International

ISO 19669

- Re-Usable Component Strategy for Use Case Development

  - Approved as New Work Item Proposal: April 2014

  - Scope: S&I Use Case Simplification <u>Methodology</u>

  - In collaboration with ISO and CEN Appointed Experts

  - Initial Example:

    - EU/US eHealth Cooperation Initiative Interoperability Use Case (S&I Framework project)

In Context of FHA UCAT Introduction (12 Aug/9 Sep)

Priorities

1. Ensure the latest/greatest FHIM updates - now covering ~90% of S&I data requirements across most all Initiatives - are released and fully incorporated in the two UCATs.

2. Allow FHA agencies time to submit their use case templates with examples so that the UCAT developers can speak to how they might deal with variances from the S&I Use Case Requirements Template (the current basis for UCAT design and functionality).
   – Nancy Orvis (DOD MHS): expected
   – David Bass (VHA): RECEIVED

3. Allow UCAT developers time to refine their products.
   – Updated S&I Use Case Requirements Template
   – User-Friendly Front-End Improvements

In Context of FHA UCAT Introduction (12 Aug/9 Sep)

Priorities

4.   Allow time for our Use Case Exchange schema to be documented and reviewed - by the UCAT developers (Art/J.D.), FHIM leads (Galen/ Ioana), NIST leads (Kevin Brady/Rob Snelick), AHRQ/USHIK (Robin Barnes and team).

5.   Allow time to present our S&I Simplification and UCAT strategy to Steve Posnack. We seek to get the S&I Simplification methodology (including the FHIM and UCATs) mainstreamed in current S&I Initiative(s) - possibly EU/US or Data Provenance.

6.   Allow time to review (and harmonize?) 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/Ioana), d) current S&I Initiatives including EU/US, SDC and DAF (Mark Roche, et al), e) AHRQ/USHIK (Robin Barnes and colleagues).

Use Case Template Examples

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

Core Use Case Template

- Is there a Basic UC Template – based on S&I Simplification Components?
  - Requirements: Assumptions, Pre/Post Conditions, System Functional Requirements
  - Actors, Systems, Roles
  - Scenarios, Events
    » Actions linked to System Functions
    » ONC MU Stage 3 Direction: Privacy, Security, Interoperability, Quality Indicators
  - Data Objects and Elements
    » Mapped to FHIM, CDEs
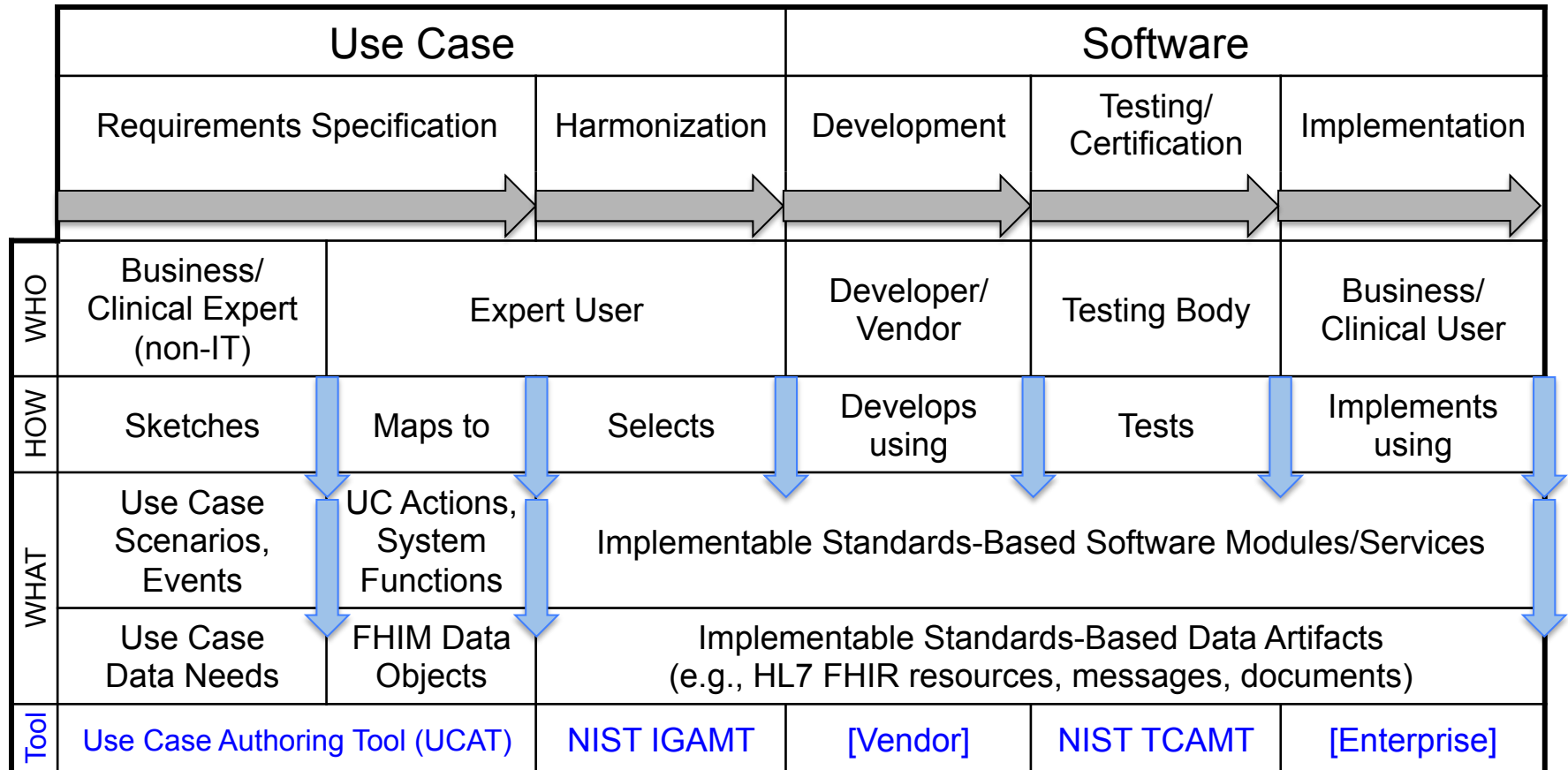
S&I Simplification

Basic Use Case

	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 • Actions	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

Progression – Anchored by Use Case Authoring Tool (UCAT)

From Sketch to Implementation

Use Case			Software		
Requirements Specification		Harmonization	Development	Testing/ Certification	Implementation
WHO Business/ Clinical Expert (non-IT)	Expert User		Developer/ Vendor	Testing Body	Business/ Clinical User
HOW Sketches	Maps to	Selects	Develops using	Tests	Implements using
WHAT Use Case Scenarios, Events	UC Actions, System Functions	Implementable Standards-Based Software Modules/Services			
Use Case Data Needs	FHIM Data Objects	Implementable Standards-Based Data Artifacts (e.g., HL7 FHIR resources, messages, documents)			
Tool Use Case Authoring Tool (UCAT)	NIST IGAMT		[Vendor]	NIST TCAMT	[Enterprise]

Requirements   ←←← Traceability →→→   Implementation

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

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, HSPC…
  - 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