Collaborative End-to-End Immunization Project
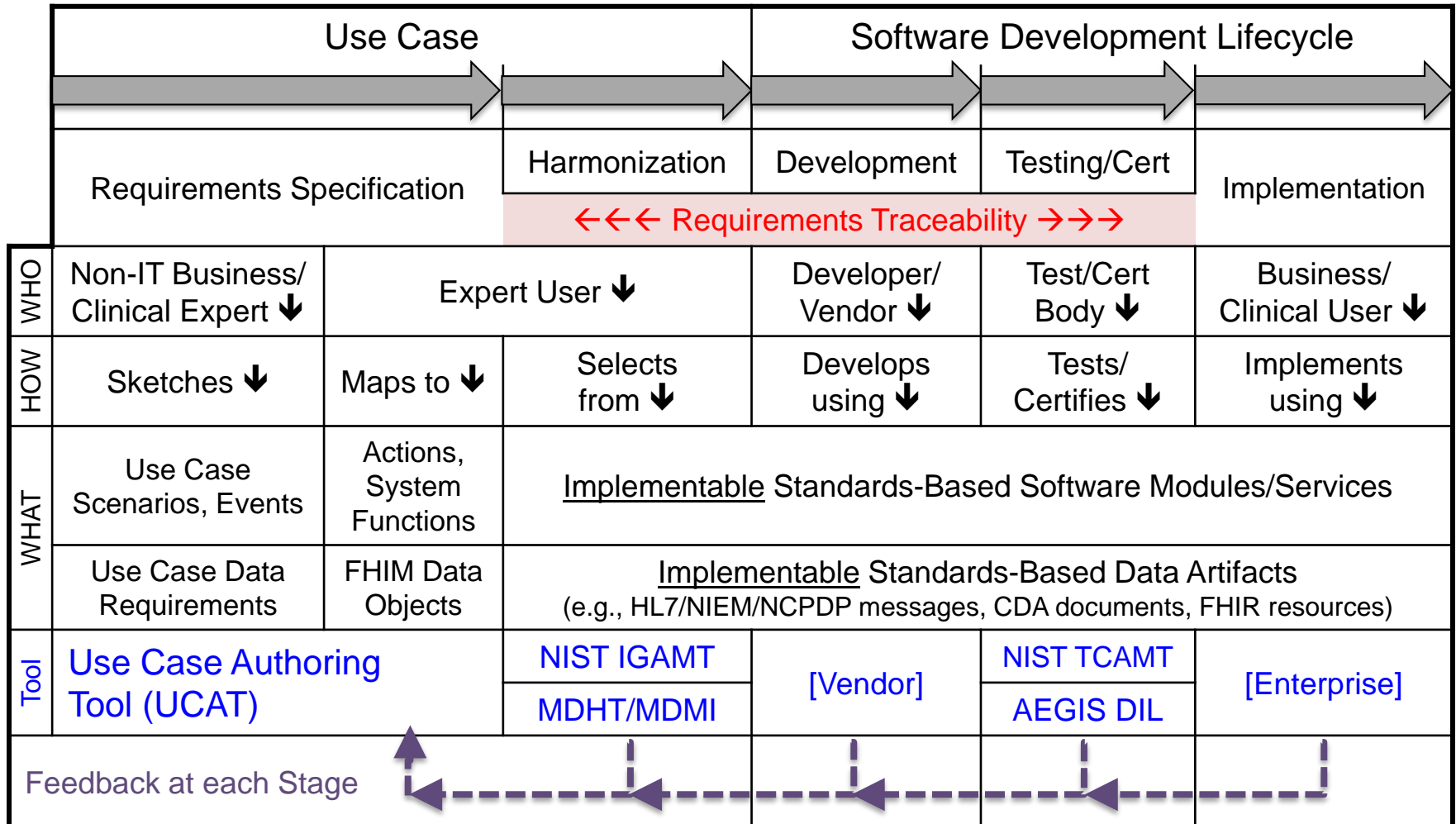
Gary L. Dickinson
Co-Chair, HL7 EHR WG
29 February 2016

From Sketch to Implementation

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

Objectives

- Show end-to-end progression of software development process, from use case to standards + implementation guides, testing, certification and implementation

- Showcase tools supporting each phase
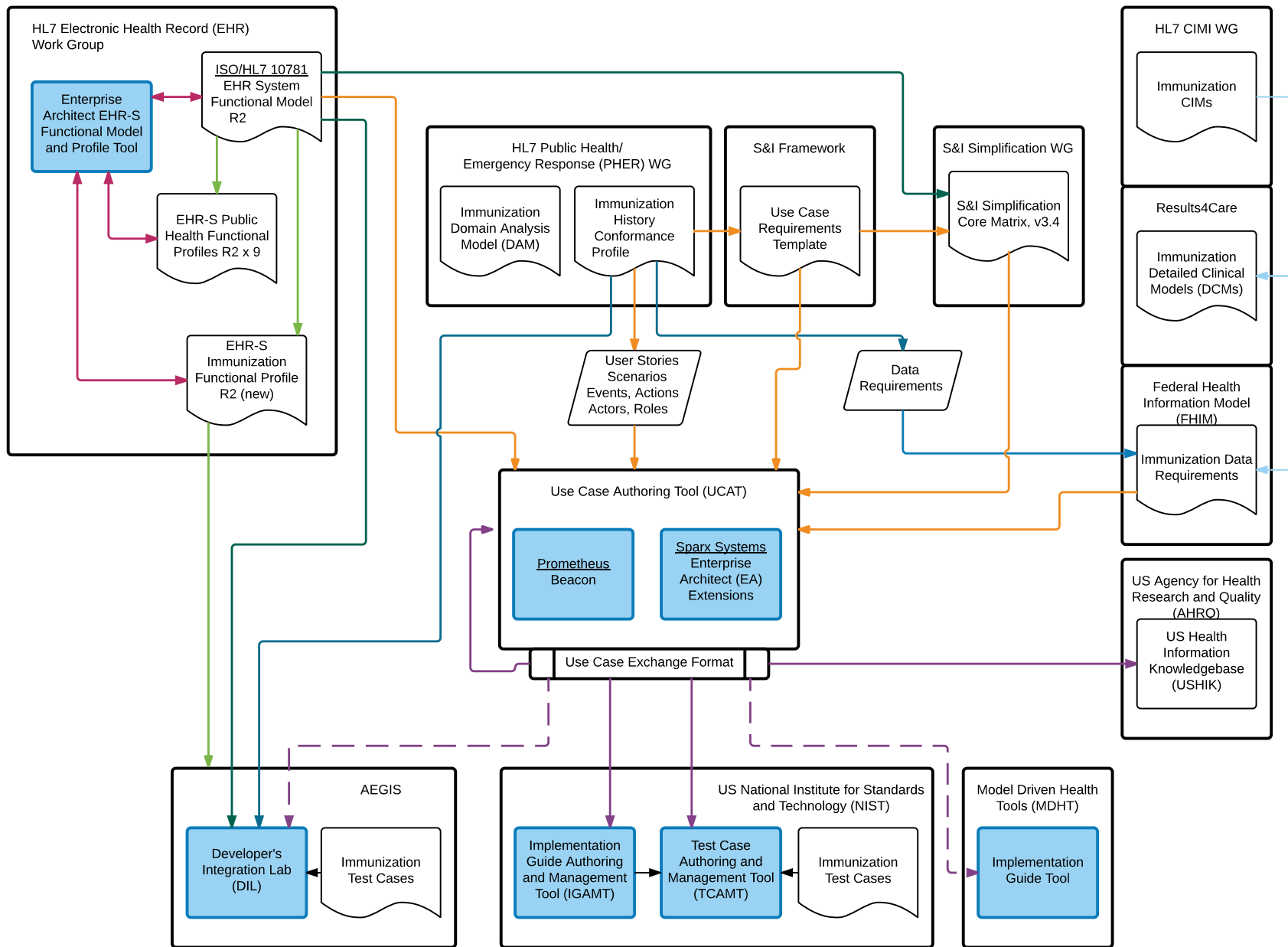
- Focus on Immunization Use Case(s)

Objectives

- Builds on substantial existing work
  - "Ready" resources: standards, models, guides, templates, tools and processes
  - Emphasizes the "whole" being a "sum of the parts"
  - Focuses on end-to-end continuity for software development
  - Includes traceability of requirements
- This is an open project
  - All are welcome to participate or observe

End-to-End

What	Who	How (Tools)
Immunization Functional Profile, based on EHR-S FM R2	HL7 EHR WG HL7 PHER WG?	HL7 EHR-S FM/FP Tool
Immunization Use Case(s) • User Stories • Scenarios, Events, Actions • Actors and Roles • Data Requirements	HL7 PHER WG? NIST FHIM CIMI?	UCAT(s) FHIM Tools
Implementation Guides	NIST MDHT?	IGAMT (NIST) MDHT Tools
Software Development	(Vendors, developers)	
Test Cases	NIST, AEGIS	TCAMT (NIST) DIL (AEGIS)
Testing (then Certification)	AEGIS	
Implementation	(Providers, users)	

Collaborative End-to-End Immunization Project Contributors - DRAFT - 29 February 2016

Organization	Status	Contribution	Status	Individual(s)	Tool
Health Level Seven (HL7) Electronic Health Record (EHR) Work Group	HL7 Sponsor - PSS in draft	EHR System Functional Model R2	Ready		HL7 EA-based EHR-S FM/FP Tool
		EHR-S Public Health Functional Profiles x 9	Ready	John Ritter, Hetty Khan	
		EHR-S Immunization Functional Profile	Preliminary	TBD	
		EHR-S FM/FP Developer Tool in Enterprise Architect (EA)	Ready	Anneke Goosen Michael Van Der Zel	
Standards and Interoperability (S&I) Framework	N/A	Use Case Requirements Template (blank)	Ready	N/A	MS Word
S&I Simplification WG	Confirmed	S&I Simplification Core Matrix v3.4	Ready	Gary Dickinson, Steve Hufnagel, Ed Larsen	MS Excel
Results4Care	Confirmed	Detailed Clinical Models (DCMs) for Immunization	Ready	William Goosen	None
HL7 Public Health/ Emergency Response (PHER) WG	HL7 Co-Sponsor - awaiting PSS	Immunization Domain Analysis Model (DAM)	Ready	John Roberts, Noam Arzt	None
		Immunization History Conformance Profile • User Story, Use Case Scenario, Events, Actions, Actors/Roles, Data Requirements	Ready		None
HL7 Clinical Information Modeling Initiative (CIMI) WG	Invited	CIMI Immunization Clinical Model(s)	Ready?	Steve Hufnagel	None
Federal Health Information Model (FHIM)	Confirmed	FHIM Immunization Model(s) • Immunization Data Requirements	Ready?	Galen Mulrooney	FHIM
Prometheus	Invited	Beacon Use Case Authoring Tool (UCAT)	Ready	Art Greisser	Beacon (UCAT)
Sparx Systems	Invited	EA-based Use Case Authoring Tool (UCAT)	Ready	J.D. Baker	EA (UCAT)
National Institute for Standards and Technology (NIST)	Confirmed	Immunization Test Cases	Ready	Kevin Brady, Rob Snelick	
		Implementation Guide Authoring and Management Tool (IGAMT)	Ready		NIST IGAMT
		Test Case Authoring and Management Tool (TCAMT)	Ready?		NIST TCAMT
Model Driven Health Tools (MDHT)	Invited	Implementation Guide Tool	TBD	Dave Carlson	MDHT
AEGIS	Confirmed	Immunization Test Cases	Ready	Mario Hyland	AEGIS DIL
		Developers Integration Lab (DIL)	Ready		
US Agency for Health Research and Quality (AHRQ)	Invited	US Health Information Knowledgebase (USHIK)	Ready	Matthew Chudy, Chuck Penoza	USHIK
US Centers for Disease Control and Prevention (CDC) Immunization Team	Observer				
US Office of National Coordinator	Observer				

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Starter Set
Reference Materials

- HL7 Immunization History Conformance Profile
  - https://www.hl7.org/documentcenter/public_temp_62632384-1C23-BA17-0C90EC8520184267/implement/conformanceTesting/Send%20Immunization%20History%20Conformance%20Profile%20v0.4%20(Test%20Case%201%20Only).pdf

- CDC/NIST Immunization Testing Tool
  - http://hl7v2-iz-testing.nist.gov/mu-immunization/

- HL7 Testing Partner – AEGIS
  - http://www.hl7.org/implement/conformanceTesting.cfm

Starter Set
Reference Materials

- ## HL7 EHR System Functional Model R2
  - http://www.hl7.org/implement/standards/product_brief.cfm?product_id=269

- ## HL7 EHR-S Public Health Functional Profile R2 (9 public health domains – developed in partnership with US Centers for Disease Control and Prevention (CDC))
  - http://www.hl7.org/implement/standards/product_brief.cfm?product_id=278

Starter Set
Reference Materials

- 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

- Prometheus

  - https://prometheuscomputing.com/beacon

  - https://prometheuscomputing.com/company_site/blogs/5

- Sparx Systems

  - http://www.sparxsystems.com

Contact

- ## Gary Dickinson
  - ### Director, Healthcare Standards, CentriHealth
  - ### Co-Chair, HL7 EHR Work Group
  - ### gary.dickinson@ehr-standards.com