

S&I Simplification  
Use Case Automation Proposal

9 December 2015

# Use Case Automation

	UCATs
<u>Use Case Authoring Tools (UCATs)</u> For the Use Case Requirement and Harmonization phases	<ul style="list-style-type: none"><li>• Prometheus Beacon</li><li>• Sparx Enterprise Architect extensions</li></ul>
<u>End-to-End Strategy</u> From use case development to harmonization to software development, testing/certification and implementation	...support use case development and harmonization
<u>Building on S&amp;I Use Case Template</u> Most all S&I Initiatives use a common Word document template to detail each Use Case (known as the S&I Use Case Template).	...capture, retain and render all Sections of the S&I Use Case Template
<u>Capture, Catalog and Re-Use Use Case Components</u> <ul style="list-style-type: none"><li>• Requirements –Assumptions, Pre and Post Conditions, System Requirements</li><li>• Actors and Roles</li><li>• Scenarios, Events, Actions</li><li>• Data Objects and Elements</li></ul>	...capture, catalog and re-use Use Case Components

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	UCATs
<p><u>Use Case Development</u> Each use case initiative starts by selecting from the master catalog of existing Components to support their specific needs. They may select Components with or without modification. (A modified Component is a new Component instance.) Each initiative may specify new Components, specific to their needs and intended use. New Components which are candidates for re-use may be registered in master catalog.</p>	<p>...support use case development</p>
<p><u>Federal Health Information Model (FHIM)</u> Most all S&amp;I Initiative data requirements are now captured in the FHIM. Through the FHIM, we can link to implementable standards-based data artifacts, such as HL7 v2 messages, CDA/CCDA documents and FHIR resources</p>	<p>...import FHIM release(s) ...link use case data requirements to FHIM data objects and elements</p>

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	UCATs
<p><u>AHRQ/USHIK</u> Based on long-term collaboration with the AHRQ/USHIK team, many of the S&amp;I Use Cases have been captured in USHIK, including both completed use case templates (Word documents) along with re-usable Components (as designated by S&amp;I Simplification)</p>	<p>...export complete use case to USHIK based on Use Case Exchange Format</p>
<p><u>NIST</u> Based on long-term collaboration with NIST. NIST is interested in use of the S&amp;I Simplification methodology and UCATs cross-industry beyond the health/healthcare domain. Our progression shows export of S&amp;I use cases to NIST tools for Implementation Guide Authoring and Management (IGAMT) and Test Case Authoring and Management (TCAMT).</p>	<p>...export complete use case to NIST IGAMT/TCAMT based on Use Case Exchange Format</p>

# Use Case Automation

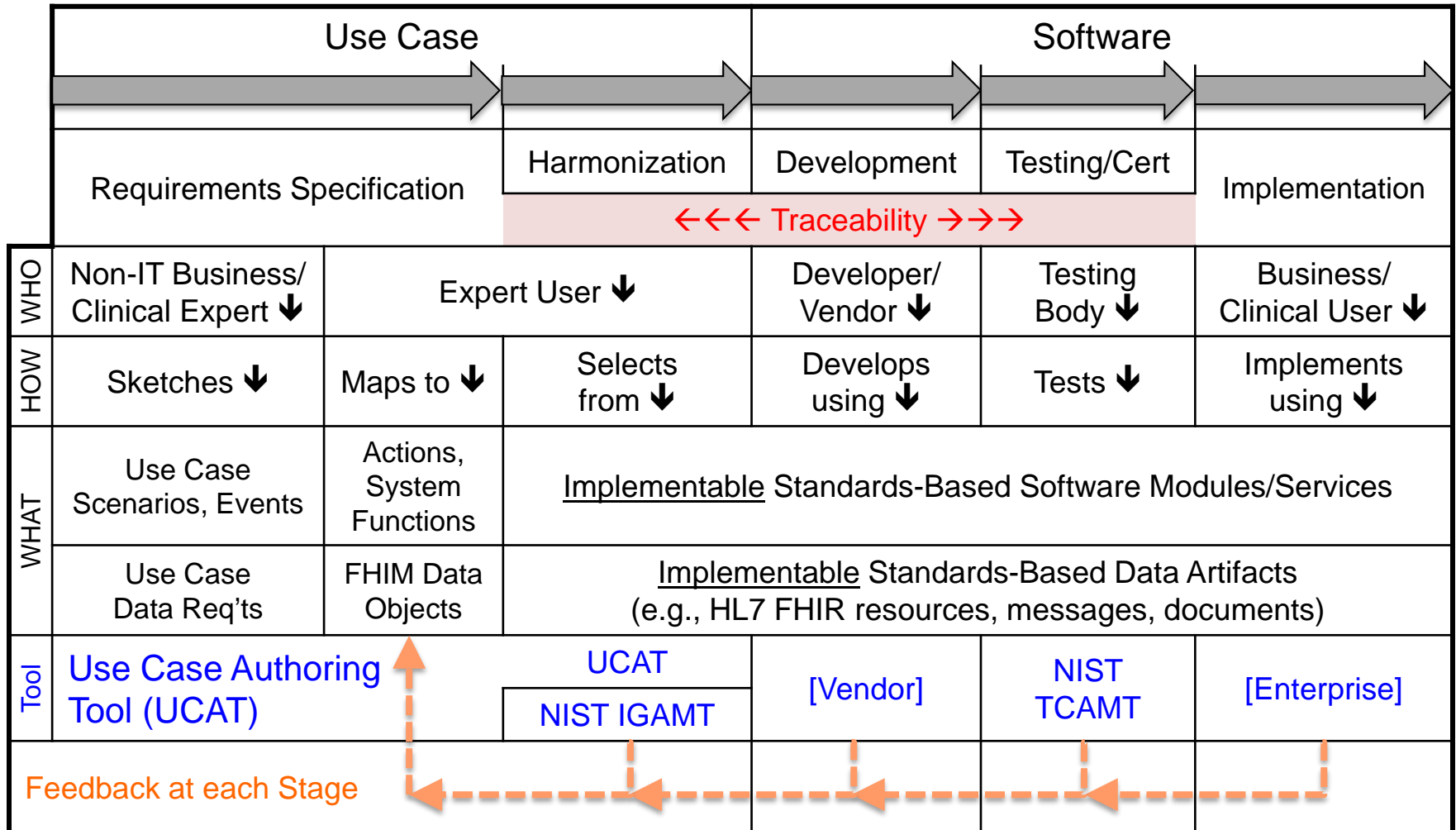
	UCATs
<p><u>Requirements Traceability</u> The S&amp;I Simplification approach allows requirements traceability through the progression: from use case to harmonization to software development to testing/certification to implementation. Does the software product to be tested, certified and ultimately implemented meet the requirements specified?</p>	<p>...support requirements traceability</p>
<p><u>Feedback Loop</u> As requirements are supplemented and refined through the progression, feed back to (update) Initiative requirement set accordingly.</p>	<p>...support feedback/update to base requirements (post facto)</p>
<p><u>ISO/HL7 EHR and PHR System Functional Models</u> (ISO 10781 and ISO 16527 respectively) Use case events and actions are linked to EHR/PHR system functions.</p>	<p>...link use case scenarios, events and actions to EHR/PHR system functions</p>

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	UCATs
<u>Software Module Library</u> (Future – possibly with HSPC or others) Linking to a library of implementable software modules (which fulfill specific functional requirements)	...may support linkage to software module library
<u>Use Case Exchange Format</u> Ability to transfer complete use case specifications: <ul style="list-style-type: none"><li>• Between UCATs</li><li>• From UCAT to USHIK</li><li>• From UCAT to NIST IGAMT and TCAMT</li></ul>	...(will) import/export complete use cases according to Use Case Exchange Format
<u>Use beyond S&amp;I and beyond the Healthcare Domain</u> <ul style="list-style-type: none"><li>• May be secondary to ONC but</li><li>• Is a primary objective for NIST and UCAT developers</li></ul>	...may support alternative use case formulations and methodologies

## S&I Simplification

# From Sketch to Implementation



# UCAT Tool Developers

- Prometheus Beacon Use Case Editor
  - Art Griesser, Lead
  - [a.griesser@prometheuscomputing.com](mailto:a.griesser@prometheuscomputing.com)
  - <https://prometheuscomputing.com/beacon>
- Sparx Enterprise Architect Extensions
  - J.D. Baker, Lead
  - [jbaker@sparxsystems.com](mailto:jbaker@sparxsystems.com)
  - <http://www.sparxsystems.com>



# 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.dcgrouppinc.com/mdr/portals/si?system=si&enableAsynchronousLoading=true>
- HL7 EHR Interoperability Wiki
  - [http://wiki.hl7.org/index.php?title=EHR\\_Interoperability\\_WG](http://wiki.hl7.org/index.php?title=EHR_Interoperability_WG)

# Contact

- Gary L. Dickinson
  - Director, Healthcare Standards, CentriHealth
  - Lead, S&I Framework, S&I Simplification Work Group
  - Co-Chair, HL7 EHR Work Group
  - +1-951-536-7010
  - [gary.dickinson@ehr-standards.com](mailto:gary.dickinson@ehr-standards.com)