

ONC Standards & Interoperability (S&I) Framework  
Cross Initiative Subgroup

# Use Case Simplification

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## S&I Framework – Use Case Simplification

### Intent

- To identify a core set of constructs broadly applicable to (and re-usable in subsequent specification of) Use Cases.
  - Core: Common Base/Foundation, agreed by Consensus
  - Constructs: Reference-able Components (THINK: Define-able and Catalog-able Components)
  - Applicable: Selectable, Re-usable

## S&I Framework – Use Case Simplification Follows NIST Hierarchy

1. Use Case; comprises
2. One or more Scenario(s); each comprising
3. One or more Event(s); each comprising
4. One or more Action(s).

Use Case Scenarios describe (resolve to) a set and sequence of Actions: a progression of steps.

## S&I Framework – Use Case Simplification

# Simplification Analysis...

- Followed patient, process (work) and information flows.
- Found commonalties and patterns of repetition.
- Noted that Events resolved to Actors taking Actions.
- Noted that Actors and Actions were often repeated across Use Case Scenarios and Events.
- Found that Use Case Event/Actions relied on certain Data Element Sets (DESs) as Input: i.e., information necessary to undertake Event/Action.
- Found that Event/Actions were likely to create or update certain DESs as Output, i.e., as evidence of Action(s) taken.
- Noted that certain DESs were repeated and threaded through Use Case Scenarios and Events.

## S&I Framework – Use Case Simplification

# Core Matrix and Componentization

- With these commonalities and repetition patterns in mind, we:
  - Developed the Use Case Simplification Core Matrix; and
  - Identified Core Components (candidates for re-use).

# S&I Framework – Use Case Simplification

## Core Matrix

Matrix Tab	Describes...
Key	<ul style="list-style-type: none"> <li>Matrix Detail</li> </ul>
Assertions and Requirements	<ul style="list-style-type: none"> <li>Rationale, Purpose to Satisfy</li> <li>Applicability to System Actors</li> </ul>
Scenarios (in context of TOC + LRI User Stories)	<ul style="list-style-type: none"> <li>Actors – Patient, Provider, System</li> <li>Stepwise Events and related Actions</li> <li>Data Element Sets required as Input to or produced as Output from Events/Actions</li> </ul>
Common Actors	<ul style="list-style-type: none"> <li>Items typical to or recurring in Use Case Scenarios</li> </ul>
Common Actions	
Common Data Element Sets	

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## Componentization and Re-Use Candidates

	Component	Detail	Links to
Why	Requirements	Assertion, Rationale Requirement ID Requirement Statement Applicability to System Actor	
Who	Actors	Actor ID, Description	
What/How – Process	Actions	Action ID, Category, Description	<ul style="list-style-type: none"> <li>• Requirements Fulfilled by Action</li> <li>• Data Element Sets Accessed, Captured or Updated by Action</li> <li>• EHR or PHR System Functions Likely Invoked by Action</li> </ul>
What – Information	Data Element Sets	Data Element Set ID, Description	• Elements Included
	Elements	Element ID, Description, Data Type, Range, Format, Unit of Measure, Value Set, Coding Scheme, as applicable	

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## Vision

- Broadly stated, Components are Requirements, Actions, Actors, Data Element Sets and Data Elements. These are things we:
  - Find in common across Use Cases, Scenarios and Events;
  - Might assemble or build a new Use Case from.
- Components are both:
  - Horizontal (part of the common base);
  - Vertical (specific to a Use Case).
- Sometimes components are:
  - Incorporated directly in the Use Case;
  - Referenced (e.g., as assumptions or pre/post-conditions).
- Any component created for a particular Use Case may be added to the common base and re-used thereafter.




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### Next Steps/Needs...

- Process to
  - Identify Common Component Instances
  - Approve (Reach Consensus)
- Component Libraries (Catalogs)
  - Tools to Create, Update, Access Components
- Use Case Builder
  - Tools to Create New or Re-Purpose Existing Use Cases and Scenarios
  - Using Previously Catalogued Components
  - Capturing New Components
    - Use Case Specific or Candidates for Common Base


# S&I Framework – Use Case Simplification

## Data Drill Down

		Data Drill-Down	Sub Work Group
<div> <div>Use Case Requirements</div> <div>Abstract (Conceptual)</div> <div>Harmonization</div> <div>Specific (Implementable)</div> </div> 		Identify Common Use Case Components Across Use Cases, Scenarios, User Stories	UC Simplification UCS Core Matrix
		Identify Common Data Element Sets (DES) Across Use Cases, Scenarios, User Stories	UCS Core Matrix DES
		Identify DES Elements	DES
		Analyze DES/Element Alignment Across Use Cases, Scenarios, User Stories, HITSP C154, CDA Consolidation, Applicable Implementation Guides	DES
		Detail Element Properties ID, Description, Data Type, Range, Format, Unit of Measure, Value Set, Coding Scheme...	DES <i>TOC Stds Analysis</i> <i>LRI IG Analysis</i>
		Identify Applicable Standards	<i>TOC Stds Analysis</i> <i>LRI IG Analysis</i>
		Identify/Assert Implementation Guidance	<i>TOC Stds Analysis</i> <i>TOC CIM</i> <i>LRI IG Analysis</i>

# S&I Framework – Use Case Simplification

## Action Drill Down

		Action Drill-Down	Sub Work Group
<div> <div>Use Case Requirements</div> <div>Harmonization</div> </div> <div>  </div>	Abstract (Conceptual)	Identify Common Use Case Components Across Use Cases, Scenarios, User Stories	UC Simplification UCS Core Matrix
		Identify Common Actions	UCS Core Matrix
		Detail Action Properties ID, Description, Requirements Satisfied, DES Input/Output, System Functionality needed to take Action...	UCS Core Matrix, in part
	Specific (Implementable)	Identify Applicable Standards, Profiles Including EHR/PHR System Functional Models/Profiles, SOA Modules, Integration Profiles	<i>TOC Stds Analysis LRI...</i>
		Identify/Assert Implementation Guidance Including Conformance/Certification Criteria For System Functionality	<i>TOC Reference Implementation LRI...</i>

## S&I Framework – Use Case Simplification Info and Contacts

- Documents, Membership, Meetings at Wiki:  
<http://wiki.siframework.org/Cross+Initiative+-+UCR+-+Use+Case+Simplification+SWG>
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