



HITSP

Healthcare Information Technology Standards Panel

Capabilities and Service Collaborations

Implications on Work Processes

IRT TC Members

Charles Parisot (co-chair)

Steve Hufnagel (co-chair)

David Tao

Durwin Day

IRTbStaff Members

Bob Yench

Ed Larsen

Gene Ginther

Jack Corley

Capability

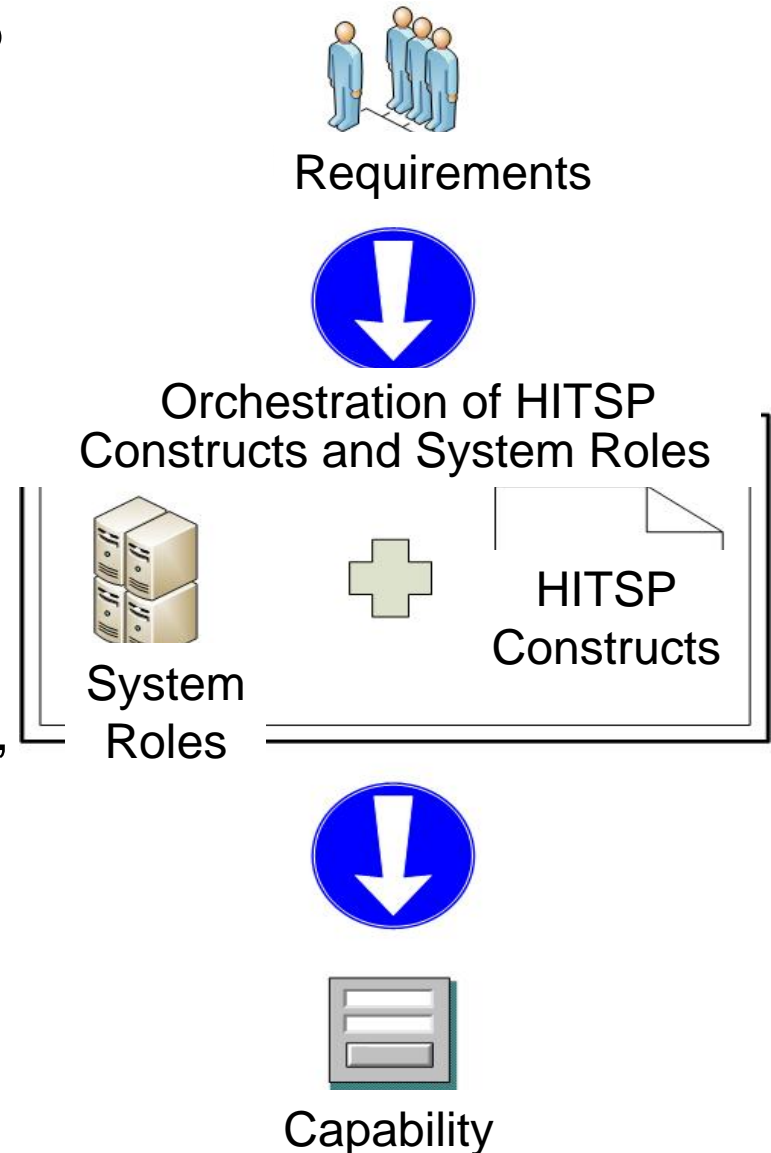
**Created To Simplify Design and Use Of
HITSP Specifications
For ARRA Efforts And Beyond**

A new concept - HITSP Capability

- ❑ Provides the ability for two or more systems to address a business need for interoperable information exchange.
- ❑ The objective is to provide the bridge between the business, policy and implementation disciplines by:
 - Defining a set of information exchanges at a level relevant to policy and business decisions
 - Supporting stakeholder requirements and business processes by including information content, infrastructure, Security, Privacy
 - Specifying the use of HITSP constructs sufficiently for implementation.
 - Including constraints and operating on specific network topologies (contexts)
- ❑ Capabilities have topology and other options (e.g., point-to-point, portable media, system-to-HIE, HIE-to-HIE).

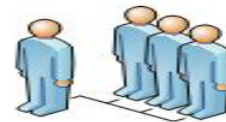
What is a capability?

- ❑ Capabilities are specified using HITSP Constructs.
- ❑ As part of the HITSP Tiger Team effort addressing ARRA, Capabilities are meant to clearly state what types of data HITSP can and cannot “exchange”
- ❑ During the ARRA Tiger Team effort, no new standards were selected, and no new constructs were specified to build capabilities



What is an example of a capability?

- ❑ Requirement: An organization wants to exchange a prescription with an ambulatory organization.
- ❑ The diagram on the right shows how Capability 117 was assembled to support this requirement.

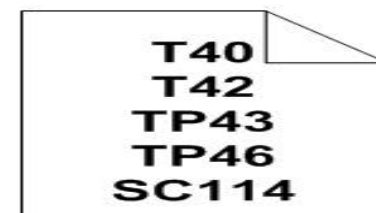


I want to exchange a prescription with an Ambulatory of Long-Term Care (LTC) Organization



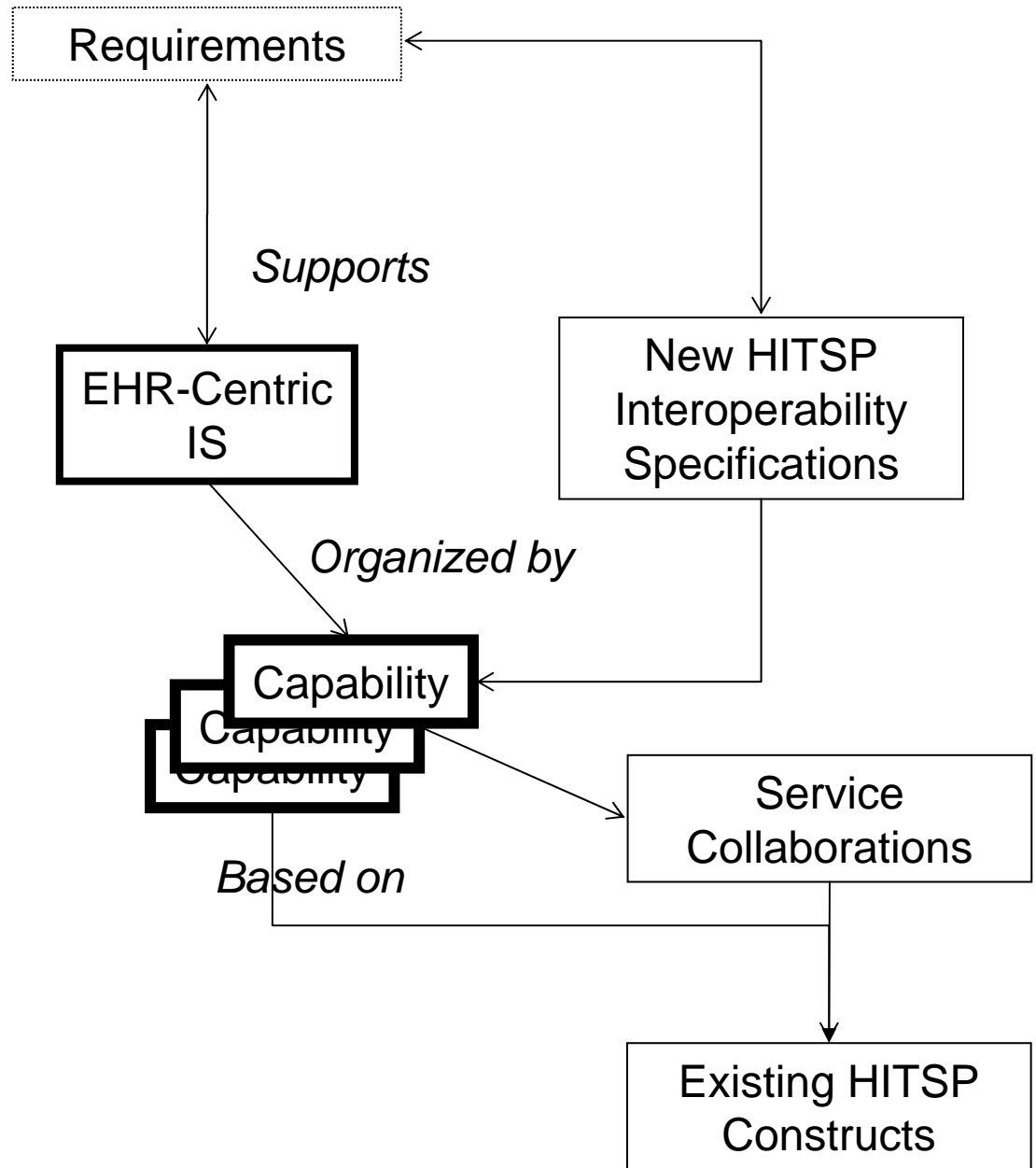
System Roles

- Medication Order Prescriber
- Medication Order Filler
- Health Plan
- Health Information Exchange (HIE)



CAP117 – Communicate Ambulatory and Long Term Care Prescription

Any IS can be assembled using capabilities

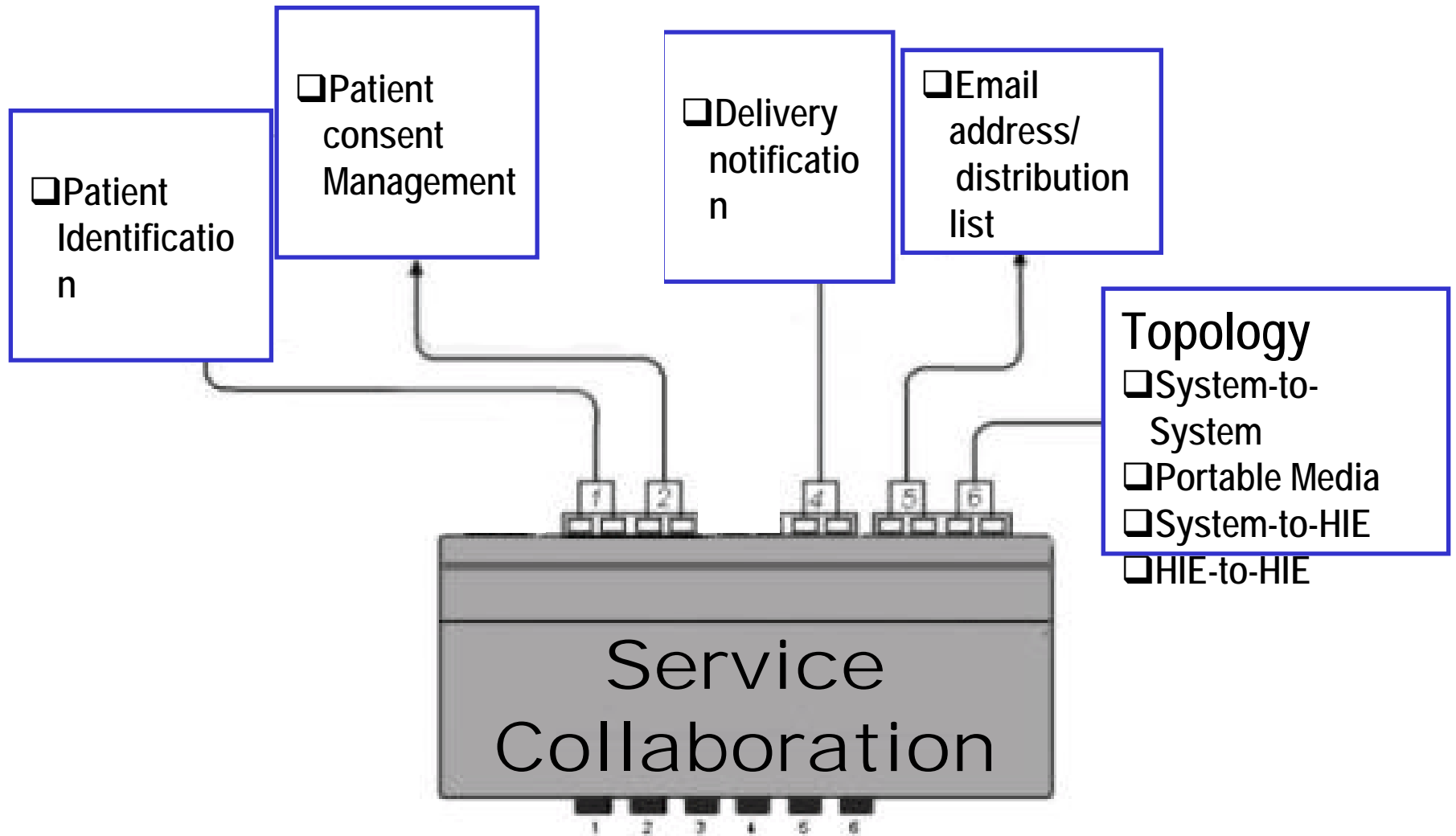


Service Collaborations

Additional Keys To Simpler Definition and Implementation Of HITSP Specifications

Service Collaboration (SC)

- ❑ An SC defines a standards-based secure infrastructure needed for interoperable information exchanges.
- ❑ The SC infrastructure includes a secure transport mechanism with topology choices and, as needed:
 - Patient Identification resolution;
 - Patient consent management;
 - Email address lookup (including, if appropriate, distribution lists);
 - Delivery notification.
- ❑ An SC uses HITSP Transactions, Transaction Packages, Components, and other SCs to specify the secure infrastructure.
- ❑ An SC does not specify the content of the information exchange, although it may include information to support the exchange (e.g., authorization information)

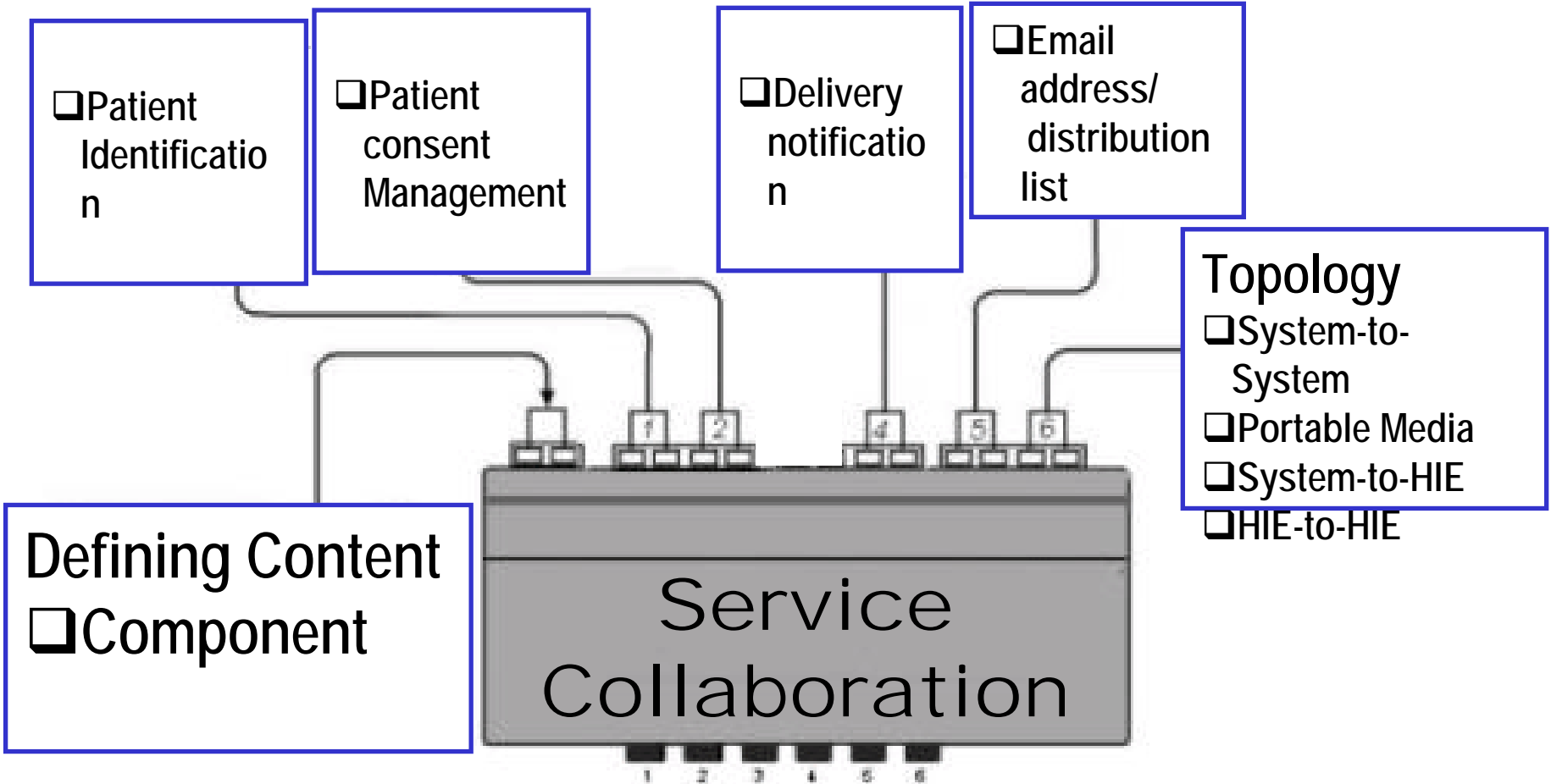


Standards-based Secure Infrastructure Needed for Interoperable Information Exchanges

Service Collaborations

- SC108 - Access Control
- SC109 - Security Audit
- SC110 - Patient Identification Management
- SC111 - Knowledge and Vocabulary
- SC112 - Healthcare Document Management
- SC113 - Query for Existing Data
- SC114 - Administrative Transport to Health Plan
- SC115 - HL7 Messaging
- SC116 - Emergency Message Distribution Element

Capability



Marrying Content Definition with Secure Infrastructure for a set of Interoperable information exchanges

Security and Privacy Functions Embedded in Capabilities

Security and Privacy Functions	CAP 117	CAP 118	CAP 119	CAP 120	CAP 121	CAP 122	CAP 123	CAP 124	CAP 125	CAP 126	CAP 127	CAP 128	CAP 129	CAP 130	CAP 131	CAP 132	CAP 133	CAP 135	CAP 136	CAP 137	CAP 138	CAP 139	CAP 140	CAP 141	CAP 142	CAP 143
Manage Consent Directives	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Access Control	Y	Y	Y	Y	Y		Y	O	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Secured Communication Channel	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Security Audit	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Entity Identity Assertion	Y	Y	Y	Y	O		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Document Integrity	O	O	O	O	O				O		O	O	O				O								O	O
Non-Repudiation of Origin		O											O	O			Y						O			O
De-identification	O	O	O	O	O		O		O		O	O	O		Y		O			Y		O	O		O	O

Existing HITSP Capabilities – Clinical Operations

Clinical Operations

Communicate Ambulatory and Long Term Care Prescription - CAP117

Communicate Hospital Prescription - CAP118

Communicate Clinical Referral Request - CAP121

Retrieve Genomic Decision Support - CAP125

Communicate Lab Results Message - CAP126

Communicate Lab Results Document - CAP127

Communicate Imaging Information - CAP128

Retrieve and Populate Form - CAP135

Communicate Encounter Information Message - CAP137

Existing HITSP Capabilities – Public Health and Emergency Response; Administration and Finance

Public Health and Emergency Response

Communicate Quality Measure Data - CAP129

Communicate Quality Measure Specification - CAP130

Update Immunization Registry - CAP131

Retrieve Immunization Registry Information - CAP132

Communicate Immunization Summary - CAP133

Communicate Emergency Alert - CAP136

Communicate Resource Utilization - CAP139

Administration and Finance

Communicate Benefits and Eligibility - CAP140

Communicate Referral Authorization - CAP141

Existing HITSP Capabilities - Security, Privacy, and Infrastructure

Security, Privacy, and Infrastructure

Communicate Structured Document - CAP119

Communicate Unstructured Document - CAP120

Retrieve Medical Knowledge - CAP122

Retrieve Existing Data - CAP123

Establish Secure Web Access - CAP124

Retrieve Pseudonym - CAP138

Retrieve Communications Recipient - CAP142

Manage Consumer Preference and Consents - CAP143

Capabilities and ISs - comparison

- ❑ Capabilities deal with System Roles, ISs deal with specific Systems and assign what system roles the Systems serve.
- ❑ When composing capabilities
 - If possible, compose Capability by using Service Collaborations and Components.
 - For cases when a Service Collaboration is not appropriate, Transactions and Transaction Packages may be used in conjunction with Service Collaborations and Components.

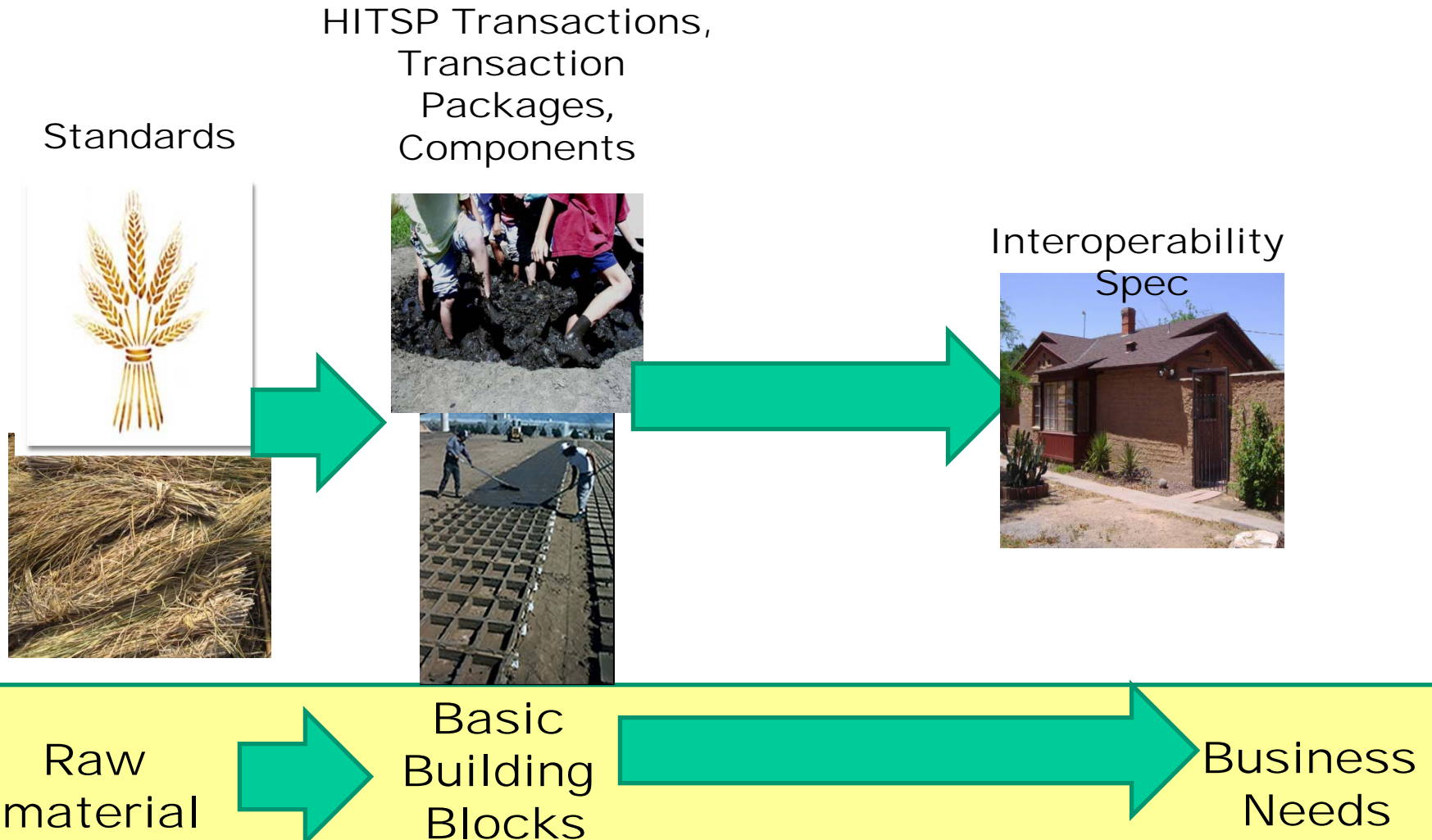
Capabilities and IS – requirements analysis

- ❑ Discussed similarities between requirements analysis for IS and for Capabilities – requirements analysis documented in appendix for both.
 - In an IS, the appendix associates requirements to Information Exchange Requirements
 - ❑ IERs identify initiating and responding systems, exchange action, exchange content, and qualifiers
 - ❑ Requirements are expressed as events/actions for use case and typically expressed as functional requirements for extensions/gaps
 - In a Capability, the appendix associates requirements to Information Exchanges - Information Exchanges currently identify exchange action, exchange content, and qualifier.
- ❑ One step in IS Design process would be to assign IS requirements to Capabilities
 - so far this involves identifying system roles as generalizations of the systems identified in the IS.

Implications for HITSP Work Process

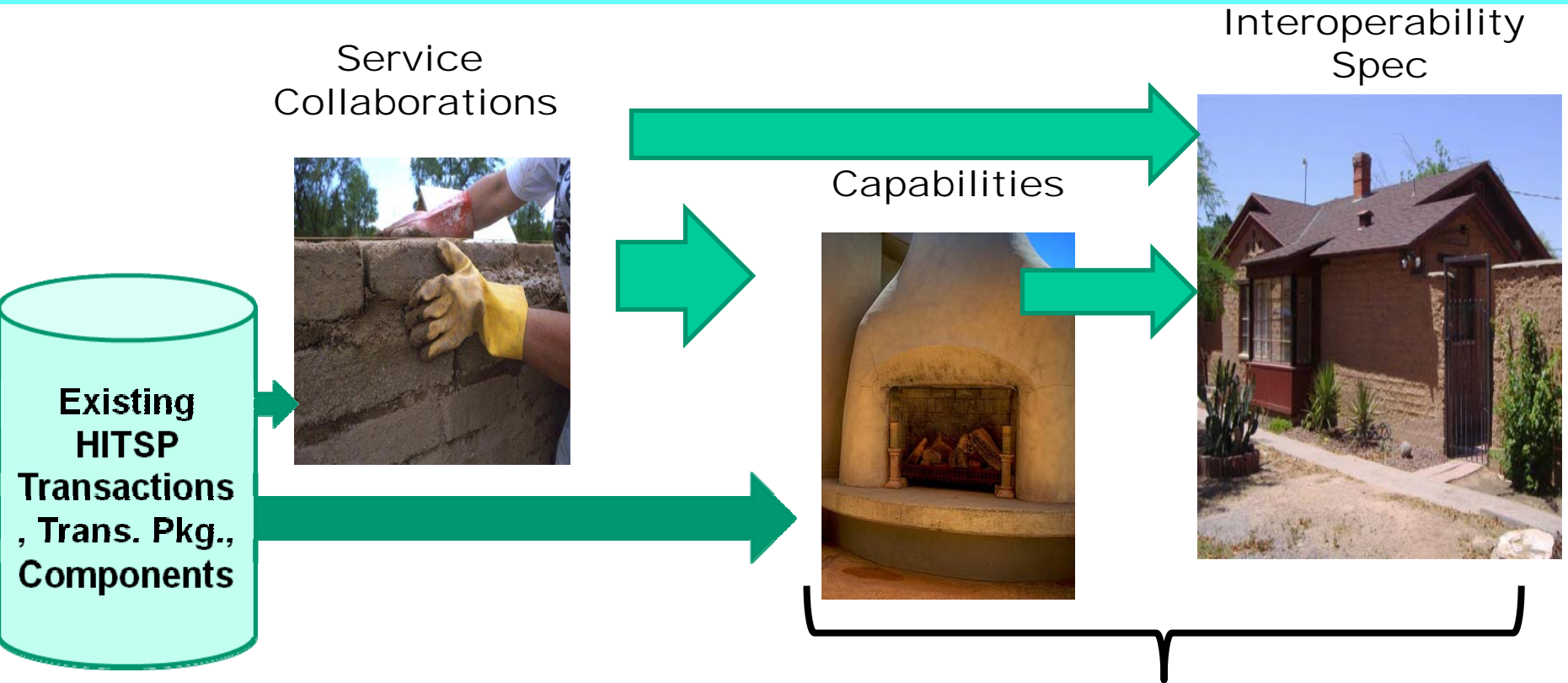
Old HITSP Approach

Process: HITSP TCs assemble technical constructs to address events and actions identified in Use Case as needed to meet business needs



ARRA Impact- Use Service Collaborations and Capabilities, Changing Level We Work At

Process: HITSP TCs identify and assemble secure infrastructure and capabilities to address Harmonization Request business needs

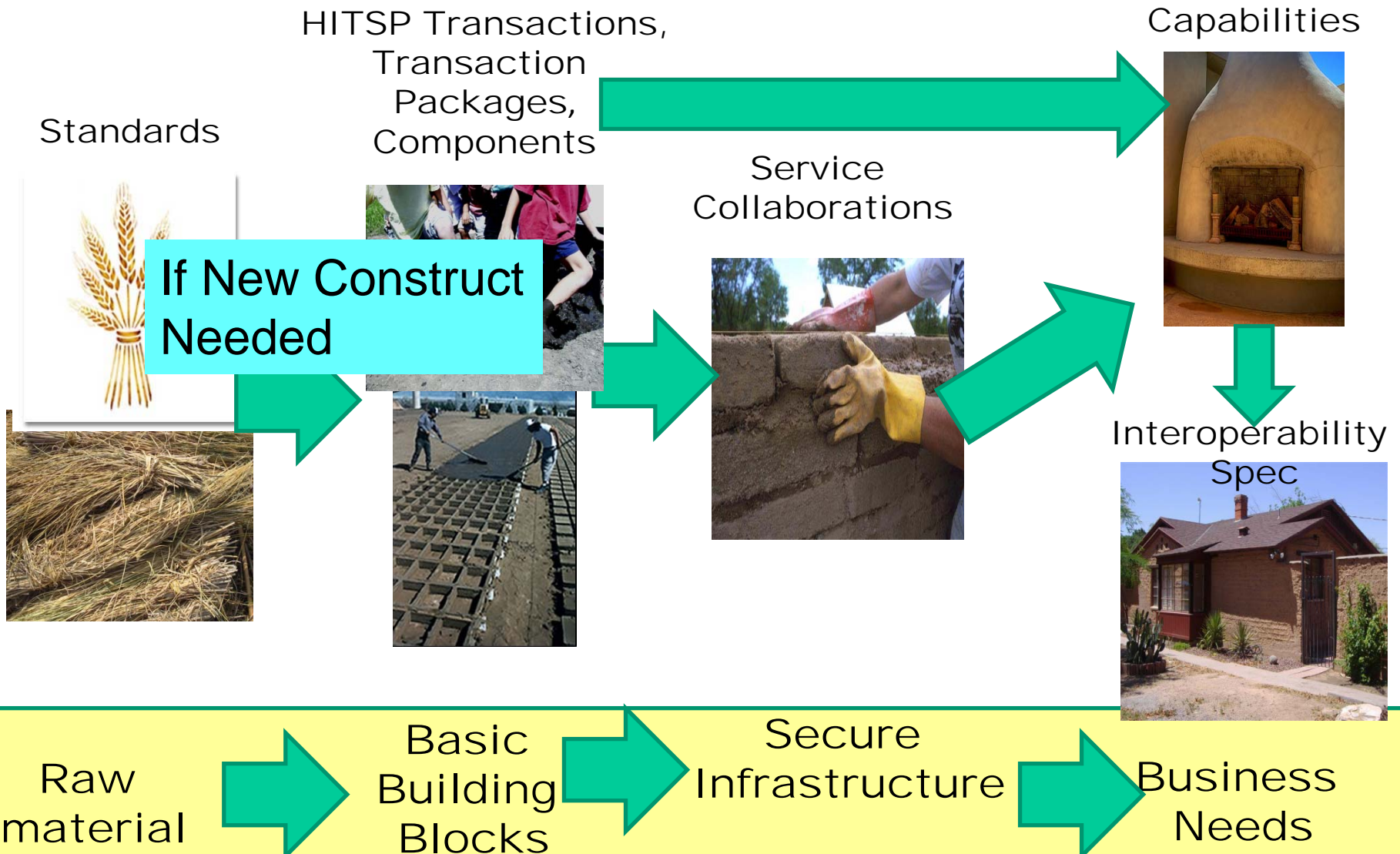


Secure Infrastructure Specification

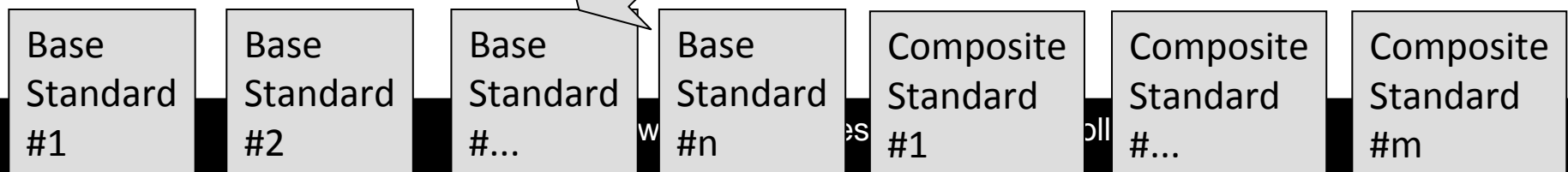
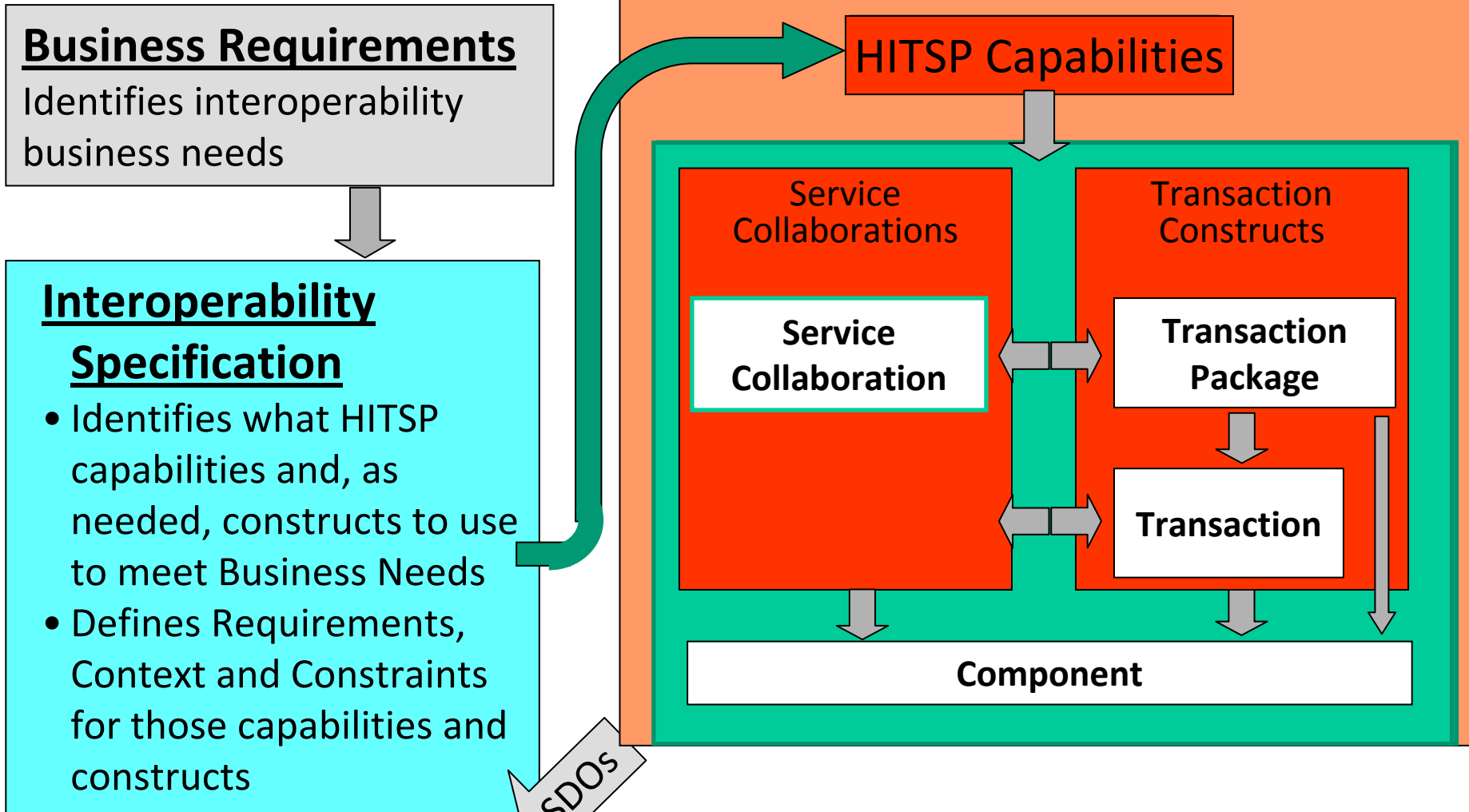


Specification addressing a Business Need

Service Collaborations and Capabilities – Develop New Technical Constructs as Needed



The Refined HITSP Framework



Needs for the Future

- ❑ Rationalize and Minimize the Number of Capabilities and Service Collaborations
 - Review process
 - Need for a consistent approach to generalizing vs specializing (e.g., CAP119 vs the more granular CDA-based capabilities for Lab, Immunization, etc.)
- ❑ Change management process in case constructs (e.g., capabilities, Service Collaborations, ...) are deprecated or split or combined
- ❑ Improve and Accelerate the Stakeholder Input and Validation Process