



HITSP

Healthcare Information Technology Standards Panel

REPORT and RECOMMENDATIONS Related to the HITSP FRAMEWORK

Framework Review Working Group

January 20, 2009



The Framework Review Working Group

- ❑ Authorized by the HITSP Board September 29, 2008
 - Strategic and technical objectives and rationale contained in the **MEANS - A Multi-Enterprise Architecture of Networked Services Standards**
 - Delivered Interim Report on November 15
- ❑ Co-Chairs
 - Elliot Sloane, IHE
 - John Quinn, HL7
- ❑ Participants represented key stakeholders
 - TC Leadership and Program Management
 - NHIN projects
 - Federal Agencies
 - Standards Organizations



Definitions and Scope

- ❑ The Working Group defined a Service from several perspectives. Essentially *“a Service is an abstract specification that explicitly defines both the static (“payload”) and dynamic (“functional and behavioral”) semantics necessary to unambiguously specify a testable, enforceable contract between two enterprise-level components.”*
- ❑ Services (and SOA) are not technology per se. Rather, they are frameworks for approaching the problem of how to design distributed capabilities (information and functionality sharing). They are not equivalent to Web Services although Web Services, as well as other enterprise architectures can be used for the actual implementation of the services.
- ❑ This Working Group was not tasked with specifying the adoption of a formal SOA, but rather with determining if and how HITSP’s current harmonization framework and documentation could be modified to better support the use of services, i.e., creating a “services aware framework” that will be more readily implemented and maintained in the future.



A simple service model based on views and layers

	Business	Information	Behavior	Technical
Logical Design / Functional (Platform Independent)	Use Case Requirements, Interoperability Specification, Governance	Information Model Semantic Content and Structure Data Requirements	Information Exchanges and Interface Design	
Technical Design (Platform Bound)		Data Elements, Sections (Components)	Orchestration and Interface Realization (Transactions)	Technical Implementation Profile

The Working Group believes that HITSP is chartered to define interoperability in a concrete sense (implementable and testable “on the wire”).

The Working Group recommends that HITSP Services be specified and require conformance at the Technical Design level with a limited choice of transport alternatives as necessary.



The HITSP IS provides “orchestration” of constructs

- ❑ The Working Group recommends that HITSP continue to use an Interoperability Specification to select and constrain services as it does with existing constructs and to provide traceability to business requirements.

- ❑ Service constructs should be designed so that they may be invoked outside the context of a HITSP Interoperability Specification (IS) according to rules (framework/orchestration) yet to be developed.
 - Others may provide their own orchestration of HITSP Services if useful to them outside the context of a HITSP defined IS/Use Case.

- ❑ While our preference is that any new IS would only use services to avoid confusing different types of abstractions, this may not be feasible during a transition period.



Relationship to Current HITSP Constructs

- ❑ The Working Group observed that what Nationwide Health Information Network (NHIN) called a service was much like what HITSP called a construct, particularly Transactions (T) and Transaction Packages (TP). Some used the same underlying standards or profiles.
- ❑ The Working Group also recommends that HITSP modify existing Transactions and Transaction Packages to be documented as services according to a transition plan and schedule.
- ❑ The Working Group believes that HITSP Components will be used by both existing Transactions and Transaction Packages and by Services. Components are essentially the content payload of the transactions and services.



Types of Services

- The Working Group recommends that there should be two types of HITSP services: atomic and composite.
 - An atomic service presents a single interface with a single service description that does not use or interact with other services
 - A Composite Service also presents a single interface to the service consumer with a single service description which is an aggregation of two or more atomic or other composite services.



Categories of Services

- The Working Group has evaluated several services categorization methods and believes this will be useful in defining atomic and composite services.

Proposal for HITSP Framework Restructuring	HL7 SAEAF	HSSP Practical Guide	NHIN	Canada Health Infoway
Communications	Core		Security	HIAL* Communications
Common Infrastructure	Infrastructure	Technical/ Infrastructure	Common Messaging Platform	HIAL Common
Business	Business Process	Business		EHR Data and Services
Domain	Capability	Health Care Unique	Content (CDA r2)	

*Health Information Access Layer

- The Working Group has not determined which might best serve HITSP needs.



Prioritization of Services

- The Working Group recognizes the benefits of prioritization that focuses first on commonly reused constructs as Composite Services in order to benefit the development of new or extended ISs.
 - As an example HITSP/TP13 Manage Sharing of Documents Transaction Package could be part of a document management services pattern that grouped TP13, HITSP/T31 Document Reliable Interchange Transaction and HITSP/T33 Transfer of Documents on Media Transaction along with the Security/Privacy constructs and patient ID constructs (HITSP/TP22 Patient ID Cross-Referencing Transaction Package and HITSP/T23 Patient Demographics Query Transaction) as a document sharing service.



Proposed Service Template

The Working Group agreed that a service template must contain a description of its interface, its content, behaviors and conformance criteria.

1.0 INTRODUCTION

1.1 Abstract

1.2 Source

1.3 Classification and Categorization

2.0 FUNCTIONAL DESCRIPTION

2.1 Commissioning/consumer Actor and Service Provider Interaction

2.2 Core Operation

2.3 Scenario(s)

2.4 Context for Use (e.g., framework)

2.4.1 Assumptions.

2.4.2 Dependencies

2.4.3 Pre-conditions

2.4.4 Triggers

2.4.5 Post-conditions

3.0 DYNAMIC BEHAVIORS (INTERACTIONS/EXCHANGES)

- Semantic Content Requirements (Data elements and structure)

4.0 IMPLEMENTATION MODEL(S)

4.1 Mapping of Actors (see Table 3.2.3-1 from IS01)

4.2 Interaction Patterns Implementation

4.2.1 Input

4.2.2 Output

5.0 TECHNICAL IMPLEMENTATION

5.1 Overview

5.2 Rules for Implementing

6.0 CONFORMANCE

7.0 STANDARDS

8.0 REFERENCE DOCUMENTS

9.0 DOCUMENT UPDATE



Proposed Changes to Service Aware IS and Harmonization Framework

- ❑ Primary simplification occurs in Section 3 Design
 - IS calls the service and provides necessary content to interface
 - Only provides pre-conditions, triggers, post-conditions and constraints where Service offers options

- ❑ The Working Group recommends that the Framework be changed to add definitions of Services and to show parallel use of traditional Transaction/Transaction Package constructs and atomic and composite services



Governance

- ❑ The Working Group's broad definition of Governance is the task of coordinating and documenting the intra- and inter-organizational communications, intra- and inter-organizational technical/semantic agreements, and the intra- and inter-service-processes that control the reliable use of services between collaborating entities.
- ❑ Not all aspects of such a broad Governance fall within HITSP's charter. HITSP must certainly plan, develop, and sustain a formal internal governance process to manage its development, publication and distribution and maintenance of its services by the Technical Committees for our stakeholders.



Governance Issues

- ❑ The Working Group recognized that services have to be extensible from the beginning. Change management must be built in. Older versions must degrade gracefully when they do not understand a newer version's interface message.
- ❑ HITSP will need to support two environments: greenfields where systems do not exist and transitions where interoperability is added to legacy systems.



HITSP needs a 2009 Transition Plan for Services

- ❑ HITSP needs to carefully identify candidate extensions for trial as services based solutions – we need to prove this works before moving all IS and Constructs to the revised framework
- ❑ In order to implement a services aware IS, it is desirable if not necessary to have key constructs available as services
- ❑ A tenant of transition is that relevant constructs would need to support both a traditional IS and a services interface
- ❑ HITSP needs to evaluate how adding Services, based on existing constructs, will impact the formal acceptance and recognition process of ONC and the Secretary of Health and Human Services.



Other Governance Issues and Recommendations

- ❑ HITSP should use the Joint HITSP-NHIN working group to harmonize services between the two programs.
- ❑ This Services Governance function will assist HITSP and the NHIN bridge service aware interoperability solutions with the relatively large national legacy infrastructure that persists in many physician practices and hospitals.
- ❑ Services Governance may itself support all of the existing and emerging HITSP tasks. As such, it must itself be reasonably light-weight and flexible to avoid adding cost and inertia to HITSP's evolution.
- ❑ The service specification process needs to be embodied within the existing TC structure. Service Governance must be a HITSP function involving all stakeholders.



References

The actual report and all reference documents are available in the Foundations Framework Review Working Group Folder at:

<http://publicaa.ansi.org/sites/apdl/Documents/Forms/AllItems.aspx?RootFolder=%2fsites%2fapdl%2fDocuments%2fStandards%20Activities%2fHealthcare%20Informatics%20Technology%20Standards%20Panel%2fStandardization%20Committees%2fFoundations%2fFoundations%20Framework%20Review&View=%7b21C60355%2dAB17%2d4CD7%2dA090%2dBABEEC5D7C60%7d>

