

IHE Work Item Proposal (Detailed)

# Proposed Work Item: DAF Whitepaper

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Domain: PCC, ITI and QRPH

# Summary

The problem is to describe a framework of integration profiles and standards that can support query in a modular way, allowing for substitutions in a structured way to support greater levels of interoperability between systems.

System A uses a set of specifications to gather information from System B. System C would like to do the same, but is unable (due to system limitations) to support the stack of standards currently implemented between A and B. Is there a way to promote a framework that allows developers to utilize knowledge of the interactions being executed between A and B to allow for similar transactions between C and B. Is there a module that can be added or changed in B that would allow C to interoperate with it?

The classifications across which the specifications could vary include:

Enterprise Complexity: Intra-enterprise, Cross-enterprise (point-to-point), Multi-enterprise/Federated

Query Targets: Patient or Population of Patients

Query Granularity: Document, content within document, content associated with a predefined query (measure)

Response Granularity: Metadata, Documents, Discrete Clinical Data, Aggregated and Computed Measures

Content: Clinical Data, Patient Demographic Data, Providers

Transport: SOAP/HTTP, REST/HTTP, V2/MLLP, SMTP

The white paper will identify relevant combinations above the above variations, and for those combinations will identify profiles and/or gaps to support:

1. Query Structures
2. Response Structures
3. Interfaces and/or APIs
4. Mechanisms for securing, authenticating and authorizing exchanges between users and/or systems.

It will identify common conceptual and/or platform independent standards and specifications that are used by specifications and/or specification families.

It will describe how a combination of the specifications can be defined at a regional / national level and be tested for conformance.

# Use Cases

Supporting query and response intra-organizationally, or across two or more collaborating organizations, or in a federated environment, to access documents containing a specific kind of data, or data elements meeting a particular criteria, or specific data elements, for a single patient, or to access aggregated data for a patient population.

# Standards and Systems

**Current Profiles:**

Document Content from PCC, QRPH, ITI, LAB, RAD, CARD

Document Query and Exchange: XDM, XDR, XDS, XCA, MHD

Discrete Data Query: QED

Quality Measure Computation and Definition: QME and QMD

Authentication: EUA, XUA, IUA, ATNA

Authorization: XUA, IUA, BPPC

**Systems:**

EHR Systems, Departmental Systems, Quality Management Systems, Health Information Exchanges, Clinical Decision Support Systems

# Technical Approach

The technical approach is intended to show how existing profiles can support a modular approach, and to show the components of this approach in a framework of standards and profiles from IHE, HL7 and others that address the business, information modeling, computational, and engineering requirements at a conceptual, platform independent and platform specific level (c.f., RM/ODP and HL7 SAIF).

# Risks

The most significant risk in this undertaking is being able to address the aggressive deadlines of S&I framework, who would like something in a published form by Q1 of this coming year. We have mitigated this risk by

1. Developing a white paper rather than a profile (there are other reasons this is a white paper as well).
2. Planning for a public comment publication period in February, with updates to occur post comment.

Coordination with S&I Framework will also be an issue. We need to ensure that IHE processes are adhered too, without requiring duplication of effort in order to ensure decisions can be made. We are working with ONC to ensure that these governance issues can be addressed.

We would like to ensure that the S&I Community does not just go on hold while IHE is working on this project.

Another risk is in ensuring that we enable the appropriate audiences to provide feedback on this document international. One mitigation strategy is to extend the public comment period by additional time to support broader reach.

# Open Issues

It is not clear in a white paper how conformance to the framework would be established. We can identify profiles and standards which will provide a solution, and each of those has conformance requirements which can be met. However, we are not clear on how the combination of components could be addressed. We would propose that a sample integration statement would demonstrate how conformance claims can be provided by vendors, without asserting any specific requirements regarding combining actors within this white paper.

# Effort Estimates

Page count: 40-50 pages.

Scope Setting: 5 pages

Framework overview: 5 pages

Explaining how a set of profiles fits into the framework: 15 pages

Requirements mapping into framework: 15 pages

# Discussion

An example of this kind of substitutability being sought after already in this request exists within IHE in at least two profile families. In the XDS family, IHE has specified a comment set of document metadata that is accessible via media or e-mail (XDM), using point-to-point communications (XDR), across enterprises (XDS), federated across multiple exchanges (XCA), and using mobile devices (MHD). These have a common conceptual model for metadata (XDS Metadata), a replaceable query model (MHD vs. XDS/XCA), and support REST and SOAP transports over HTTP.

Similarly, PIX and PDQ have an HL7 Version 2 variant, and a Version 3 variant, and a federated variation in XCPD. These have a common conceptual model for data, a largely harmonized logical model, and replaceable platform dependent layers supporting HL7 Version 2 messaging over MLLP with TLS security, and Version 3 messaging over SOAP with TLS security.

In both profile families, there are similarities in data models, query parameters, and response data that allow for:

* Development of gateways between systems to bridge between protocols
* Reuse of existing messages and models to support different use cases

This white paper would explain how IHE profiles and the standards they rely upon can be used to craft the suggested framework. It builds off of existing IHE work, and will identify existing gaps that may be found. The white paper will NOT address change proposals to existing profiles. Instead, we simply propose that IHE members will guide S&I framework participants through existing IHE CP processes and governance should any necessary changes be found. If there are US specific needs not addressed within IHE profiles and not pertinent to a CP, that work might be guided towards IHE USA and the development of national extensions on existing profiles.

The white paper may also identify gaps in existing IHE specifications, and opportunities for development of new profiles.

A draft of the white paper would be issued for public comment two weeks after the close of the IHE February meeting in Vienna. The final edition would be published around the same time as public comment editions of 2014/2015 profiles are issued for public comment.