

# HITSP Retrieve Existing Data Capability

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HITSP/CAP123



Healthcare Information Technology Standards Panel

*Submitted to:*

**Healthcare Information Technology Standards Panel**

*Submitted by:*

**Capabilities Team**



## DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
0.0.1	Review Copy	Capabilities Team	November 9, 2009
0.0.2	Review Copy	Selected Perspective, Domain and/or Tiger Team Reviewers	January 18, 2010
1.0	Released for Implementation	Selected Perspective, Domain and/or Tiger Team Reviewers	January 25, 2010



## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>5</b>
1.1	Capability Overview .....	5
1.2	Scope .....	6
1.3	Copyright Permissions .....	6
1.4	Reference Documents .....	6
1.5	Guidance For Use of a Capability.....	6
<b>2.0</b>	<b>REQUIREMENTS ANALYSIS.....</b>	<b>8</b>
2.1	Introduction.....	8
2.2	Requirements.....	8
2.2.1	Information Exchanges.....	8
<b>3.0</b>	<b>EXTERNAL CAPABILITY OPTIONS .....</b>	<b>10</b>
3.1	Security and Privacy .....	10
<b>4.0</b>	<b>DESIGN SPECIFICATION .....</b>	<b>11</b>
4.1	Requirements Mapped to Constructs .....	11
4.1.1	Constructs.....	11
4.2	Constraints and Assumptions.....	12
4.3	Specified Interfaces by System Role .....	12
<b>5.0</b>	<b>STANDARDS .....</b>	<b>13</b>
5.1	Standards Used.....	13
5.1.1	Regulatory Guidance.....	13
5.1.2	Selected Standards.....	13
5.1.3	Informative Reference Standards .....	14
5.2	Standards Gaps and Overlaps .....	14
<b>6.0</b>	<b>APPENDIX .....</b>	<b>15</b>
<b>7.0</b>	<b>DOCUMENT UPDATES.....</b>	<b>16</b>
7.1	November 9, 2009 .....	16
7.2	January 18, 2010.....	16
7.3	January 25, 2010.....	16



## FIGURES AND TABLES

Figure 2-1 System Role Interface Diagram.....	9
Table 1-1 Capability Reader's Guide.....	5
Table 1-2 Reference Documents .....	6
Table 2-1 Section 2.0 Reader's Guide.....	8
Table 2-2 Capability System Roles .....	8
Table 2-3 Supported Information Exchanges .....	8
Table 3-1 Section 3.0 Reader's Guide.....	10
Table 4-1 Section 4.0 Reader's Guide.....	11
Table 4-2 Information Exchanges Mapped to Constructs .....	11
Table 4-3 Context .....	12
Table 4-4 Clinical Data Consumer System Role Mapped to HITSP Construct Interfaces .....	12
Table 4-5 Clinical Data Source System Role Mapped to HITSP Construct Interfaces .....	12
Table 4-6 Implementation Conditions.....	12
Table 5-1 Section 5.0 Reader's Guide.....	13
Table 5-2 Regulatory Guidance .....	13
Table 5-3 Selected Standards.....	13
Table 5-4 Informative Reference Standards.....	14
Table 5-5 Information Exchange Requirements (IER) and Associated Standards Gaps.....	14
Table 5-6 Information Exchange Requirements and Associated Standards Overlaps .....	14



## 1.0 INTRODUCTION

This Healthcare Information Technology Standards Panel (HITSP) document is divided into Requirements Analysis, External Capability Options, Design Specifications and Standards sections which may be used by analysts, architects and implementers. Analysts refer to this document to determine if the Capability satisfies their requirements. Architects and system implementers refer to this document as the architectural specifications for a system design, while software developers will use a Capability as the source of the design for interoperable information exchange. The Appendix lists requirements satisfied by this Capability.

All sections may be useful to analysts and architects. However as shown in Table 1-1, different readers may find specific sections of greater interest and utility. This table is provided as an aid to readers to assist them in identifying sections to focus on. Readers are encouraged to review all sections of this document to further their understanding of HITSP's work.

**Table 1-1 Capability Reader's Guide**

Document Section	Section Number	Intended Audience	Information Contained
Section 2.0 Requirements	2.1 Introduction	Policy Managers Policy Analysts Executive Leadership	Provides an overview of the requirements which this Capability addresses, and identifies the system roles supported by the Capability
	2.2 Requirements	Program Managers Policy Analysts Executive Leadership Architects Business Analysts	Defines the actual information exchanges supported by the Capability in terms of exchange actions and exchange content. It shows how these roles can be assigned at a higher level to real world systems, such as an Electronic Health Record
Section 3.0 External Capability Options	3.1 Security and Privacy	Policy Analysts Architects Business Analysts Developers	Defines the integrated and optional security and privacy functions supported by the Capability
Section 4.0 Design Specification	4.1 Requirements Mapped to Constructs	Program Managers Architects Business Analysts Developers	Maps the information exchanges developed in requirements to the actual HITSP construct used by the Capability to support the exchange
	4.2 Constraints and Assumptions	Business Analysts Developers	Lists the context that is necessary to use the Capability, including assumptions, pre-conditions, post-conditions and triggers
	4.3 Specified Interfaces by System Role	Business Analysts Developers	Identifies the constructs and their interfaces assigned to each system role. It also lists the implementation conditions for use
Section 5.0 Standards	5.1 Standards Used	Program Managers Policy Analysts Architects Business Analysts Developers	Lists regulatory guidance, selected standards and informative references used by the Capability and all its supporting constructs
	5.2 Standards Gaps and Overlaps	Program Managers Policy Analysts Architects Business Analysts Developers	Identifies gaps or overlaps in standards to implement the Capability including a plan to resolve issues

### 1.1 CAPABILITY OVERVIEW

This Capability supports queries for clinical data (e.g., common observations, vital signs, problems, medications, allergies, immunizations, diagnostic results, professional services, procedures and visit history).



## 1.2 SCOPE

A Capability enables business and policy requirements for a business need to be implemented through information exchanges specified in HITSP constructs. The objective of a Capability 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 and specifying the use of HITSP constructs sufficiently for implementation. A Capability supports stakeholder requirements and business processes and includes information content, infrastructure, security and privacy. The design of Capabilities leverages existing HITSP constructs and communication methodologies. As new constructs become available, the scope of this Capability may be extended.

The scope of this Capability is to support dynamic queries for clinical data, including vital signs, problems, medications, immunizations, diagnostic results, procedures and visit history. A wide variety of systems often needs access to dynamic clinical information stored and maintained in an EHR system or other clinical data repository. This Capability makes the information widely available to other systems within and across enterprises to support provision of better clinical care. The information made available by this Capability can be used to support clinical care, quality reporting, financial transactions, public health reporting, clinical trials, drug interaction checking, and patient qualification for various protocols.

## 1.3 COPYRIGHT PERMISSIONS

### COPYRIGHT NOTICE

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## 1.4 REFERENCE DOCUMENTS

This section provides a list of key reference documents and background material.

A list of key reference documents and background material is provided in the table below. HITSP-maintained reference documents can be retrieved from the [HITSP Web Site](#).

**Table 1-2 Reference Documents**

Reference Document	Document Description
<a href="#">HITSP Acronyms List</a>	Lists and defines the acronyms used in this document
<a href="#">HITSP Glossary</a>	Provides definitions for relevant terms used by HITSP documents
<a href="#">TN900 - Security and Privacy</a>	TN900 is a reference document that provides the overall context for use of the HITSP Security and Privacy constructs
<a href="#">TN901 - Clinical Documents</a>	TN901 is a reference document that provides the overall context for use of the HITSP Care Management and Health Records constructs
<a href="#">TN903 - Data Architecture</a>	TN903 is a reference document that provides the overall context for use of the HITSP Data Architecture constructs
<a href="#">TN904 - Harmonization Framework and Exchange Architecture</a>	TN904 is a reference document that provides the overall context for use of the HITSP Harmonization Framework and Exchange Architecture

## 1.5 GUIDANCE FOR USE OF A CAPABILITY

NOTE: For questions related to details on HITSP Capabilities and HITSP System Roles, please refer to HITSP/TN904 Harmonization Framework and Exchange Architecture Technical Note.



To use a HITSP Capability, a HITSP Interoperability Specification or an implementation conformance statement must assign specific systems to one or more HITSP Capability System Roles and identify how the HITSP Capability Options are to be addressed. In order to assign systems to HITSP System Roles, the reader uses Table 2-3 Supported Information Exchanges to determine what systems can support the specific information exchanges required. For an example of how HITSP System Roles and systems are mapped, readers can consult a HITSP Interoperability Specification Table 3-3 Orchestration of Capabilities by System. In the case of an Implementation Guide, systems can be assigned to HITSP System Roles using a similar methodology.

The use of a HITSP Capability implies that these specific rules will be followed:

- For each HITSP Capability System Role listed in Table 2-2 Capability System Roles, the defined responsibilities of that HITSP Capability System Role are supported. Responsibilities for the HITSP Capability System Role are defined as support for the HITSP Construct interfaces listed in Section 4.3 Specified Interfaces by System Role. Support implies that the system assigned to the HITSP Capability System Role makes the associated HITSP construct interfaces available for use by other systems. For those HITSP construct interfaces in Section 4.3 that have associated content optionality, the HITSP Capability System Role must comply with the optionality condition listed in Table 4-6 Implementation Conditions.
- Responsibilities also include the constraints and assumptions associated with use of a Capability, as outlined in Table 4-3 Context. For those Capabilities with Section 3.2 options, the following
  1. Each topology option listed in Table 3-2 Topology Related Options should be supported by the implementation
  2. Each content import option listed in Table 3-3 Content Import Options should be supported by the implementation
  3. Each document content option listed in Table 3-4 Document Content Options should be supported by the implementation



## 2.0 REQUIREMENTS ANALYSIS

The following table is provided as an aid to readers to assist them in identifying the parts of this section to focus on. Readers are encouraged to review all sections of this document to further their understanding of HITSP's work.

**Table 2-1 Section 2.0 Reader's Guide**

Document Section	Number	Intended Audience	Contained Information
Section 2.0 Requirements	2.1 Introduction	Policy Managers Policy Analysts Executive Leadership	Provides an overview of the requirements which this Capability addresses. It lists, describes and diagrams the external interfaces and relates these to the system roles supported by the Capability. It shows how these roles can be assigned at a higher level to real world systems, such as an EHR
	2.2 Requirements	Program Managers Policy Analysts Executive Leadership Architects Business Analysts	Defines the actual information exchanges supported by the Capability in terms of exchange actions, exchange content, constraints mapped to the initiating and responding system roles that participate in these exchanges

### 2.1 INTRODUCTION

Table 2-2 summarizes the system roles of the Capability. Section 2.2 identifies how these system roles participate in the set of information exchanges.

**Table 2-2 Capability System Roles**

System Role	System Role Definition
Clinical Data Consumer	The system which requests existing clinical data on a patient.
Clinical Data Source	The system which responds to a request for existing clinical data on a patient

### 2.2 REQUIREMENTS

#### 2.2.1 INFORMATION EXCHANGES

Table 2-3 defines each of the Information Exchanges supported by this Capability in terms of the Exchange Action (EA) or Exchange Content (EC) used.

**Table 2-3 Supported Information Exchanges**

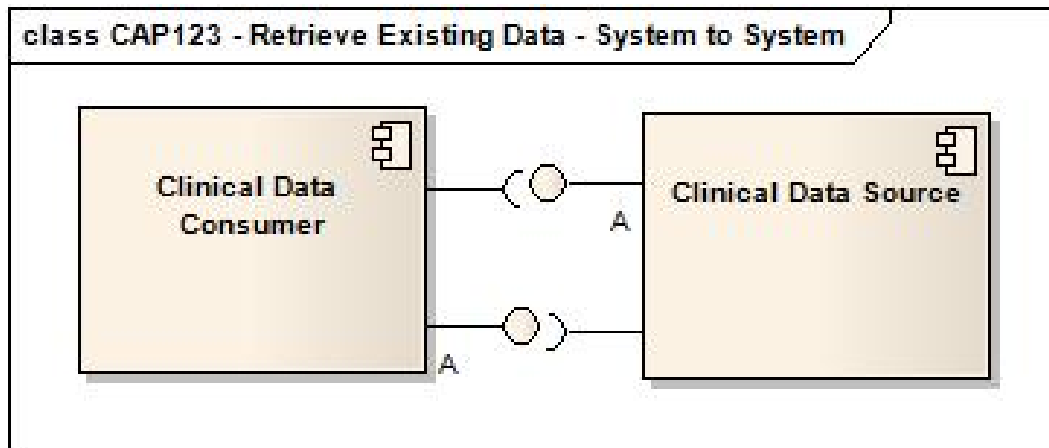
Information Exchange Identifier	Exchange Action	Exchange Content
A	Request & Response	Query for Existing Data

Figure 2-1 identifies how this Capability supports various system roles within multiple system architectures. For example, either an Electronic Health Record (EHR) system or a Health Information Exchange (HIE) might fill a document repository system role in an information exchange). In an implementation architecture, system roles may be combined locally (e.g., Hospital EHR System) and in others, the system roles may be provided by multiple-distributed trusted third parties (e.g., pharmacies within an HIE).





Figure 2-1 System Role Interface Diagram



## 3.0 EXTERNAL CAPABILITY OPTIONS

The following table is provided as an aid to readers to assist them in identifying the parts of this section to focus on. Readers are encouraged to review all sections of this document to further their understanding of HITSP's work.

**Table 3-1 Section 3.0 Reader's Guide**

Document Section	Section Number	Intended Audience	Information Contained
Section 3.0 External Capability Options	3.1 Security and Privacy	Policy Analysts Architects Business Analysts Developers	Defines the integrated and optional Security and Privacy functions supported by the Capability

This section is primarily for architects, engineers and analysts. It allows those who consider using this Capability to evaluate and/or constrain the options that are externally made available for the Capability implementers.

Interoperability among system roles defined by this Capability often requires the selection of consistent options.

### 3.1 SECURITY AND PRIVACY

The application of Security and Privacy is highly influenced by the security and privacy policies. The HITSP Security and Privacy Technical Note (HITSP/TN900) provides a detailed discussion of the security and privacy constructs, including consideration and appropriate context for needed security and privacy related policy decisions. Security and privacy constructs are integrated comprehensively into the Service Collaborations. The actual constructs used and the way in which the constructs are used is dependent on the policies and physical setting. Conformance claims are against the security and privacy constructs that are chosen to enforce the policies.



## 4.0 DESIGN SPECIFICATION

The following table is provided as an aid to readers to assist them in identifying the parts of this section to focus on. Readers are encouraged to review all sections of this document to further their understanding of HITSP's work.

**Table 4-1 Section 4.0 Reader's Guide**

Document Section	Number	Intended Audience	Information Contained
Section 4.0 Design Specification	4.1 Requirements Mapped to Constructs	Program Managers Architects Business Analysts Developers	Maps the information exchanges developed in requirements to the actual HITSP construct used by the Capability to support the exchange
	4.2 Constraints and Assumptions	Business Analysts Developers	Lists the context that is necessary to use the Capability, including assumptions, pre-conditions, triggers and post-conditions and triggers
	4.3 Specified Interfaces by System Role	Business Analysts Developers	Identifies the constructs and their interfaces assigned to each system role. It also lists the implementation conditions for use

### 4.1 REQUIREMENTS MAPPED TO CONSTRUCTS

#### 4.1.1 CONSTRUCTS

Table 4-2 defines each of the Information Exchanges supported by this Capability in terms of the Exchange Action (EA) or Exchange Content (EC) used and any constraints applied to the Information Exchange with specific initiating and/or responding system interfaces. This provides the traceability of Capability interface to information exchange.

**Table 4-2 Information Exchanges Mapped to Constructs<sup>1 2</sup>**

Information Exchange Identifier	Exchange Type	Construct Identifier	Description
A – Request and Respond Query for Existing Data	Action	HITSP/SC113 –Query for Existing Data	The HITSP Query for Existing Data Service Collaboration provides the Capability to query and retrieve data from another clinical system, and the Capability to respond to same queries. It applies the necessary Security and Privacy constructs and supports all the queries found in HITSP/TP21
	Action and Content	HITSP/TP21 – Query for Existing Data	The HITSP Query for Existing Data Transaction Package is based on the IHE Query for Existing Data Integration Profile (QED) which supports dynamic queries for clinical data, including vital signs, problems, medications, immunizations, diagnostic results, procedures and visit history. A wide variety of systems often needs access to dynamic clinical information stored and maintained in an EMR system or other clinical data repository. The construct makes the information widely available to other systems within and across enterprises to support provision of better clinical care

<sup>1</sup>Content Modules and Terminology Components are not listed here because they are referenced by other constructs; but, do not provide an interface.

<sup>2</sup>See HITSP/TN903 Data Architecture, which discusses how content modules and terminology components are referenced by other constructs; but, they do not provide an interface.



## 4.2 CONSTRAINTS AND ASSUMPTIONS

Table 4-3 specifies the context that must be provided in order to use the Capability, identifying any assumptions, pre-conditions, post-conditions, and triggers relevant for use of the Capability.

**Table 4-3 Context**

Assumptions, Pre-conditions, Post-conditions, and Triggers	Type of Context
No Applicable Context	

## 4.3 SPECIFIED INTERFACES BY SYSTEM ROLE

This section specifies the HITSP Capability interfaces in terms of the System Roles identified in Table 2-2 Capability's System Roles.

Table 4-4 specifies interfaces for the first system role as defined in Table 2-2 .

**Table 4-4 Clinical Data Consumer System Role Mapped to HITSP Construct Interfaces**

Construct Interface	Interface Type	T/TP/SC or Content	T/SC/Content Optionality
Request Existing Patient Data	Initiating	HITSP/TP21 - Query for Existing Data	C123[101]
Request Existing Patient Data	Initiating	HITSP/SC113 - Query for Existing Data	R

Optionality Legend: "R" for Required, "O" for Optional, or "C" for Conditional

Table 4-5 specifies interfaces for clinical data source system roles as defined in Table 2-2.

**Table 4-5 Clinical Data Source System Role Mapped to HITSP Construct Interfaces**

Construct Interface	Interface Type	T/TP/SC or Content	T/SC/Content Optionality
Respond to Existing Patient Data	Responding	HITSP/TP21 - Query for Existing Data	R
Respond to Existing Patient Data	Responding	HITSP/SC113 - Query for Existing Data	R

Optionality Legend: "R" for Required, "O" for Optional, or "C" for Conditional

Table 4-6 specifies optionality conditions referenced in Table 4-4 through Table 4-5 above.

**Table 4-6 Implementation Conditions**

Condition ID	Condition Description
C123[101]	Shall support at least one of the following interface options: Vital Signs, Problems and Allergies, Diagnostic Results, Medications, Immunizations, or Professional Services



## 5.0 STANDARDS

The following table is provided as an aid to readers to assist them in identifying the parts of this section to focus on. Readers are encouraged to review all sections of this document to further their understanding of HITSP's work.

**Table 5-1 Section 5.0 Reader's Guide**

Document Section	Number	Intended Audience	Contained Information
Section 5.0 Standards	5.1 Standards Used	Program Managers Policy Analysts Architects Business Analysts Developers	List regulatory guidance, selected standards and informative references used by the Capability and all its supporting constructs
	5.2 Standards Gaps and Overlaps	Program Managers Policy Analysts Architects Business Analysts Developers	Identifies gaps or overlaps in standards to implement the Capability including a plan to resolve issues

### 5.1 STANDARDS USED

#### 5.1.1 REGULATORY GUIDANCE

Table 5-2 lists any regulatory guidance that determines or constrains use of standards.

**Table 5-2 Regulatory Guidance**

Regulation	Description
No applicable regulatory guidance	

#### 5.1.2 SELECTED STANDARDS

Table 5-3 lists the standards selected as relevant to this Capability.

**Table 5-3 Selected Standards**

Standard	Description
Health Level Seven (HL7) Version 3.0 Infrastructure Management - Query Infrastructure, Release 2 DSTU Ballot 1 - September 2008	Query Infrastructure domain specifies the formation of information queries and the responses to these queries to meet the needs of healthcare applications using the HL7 version 3 messaging standard. For more information visit <a href="http://www.hl7.org">http://www.hl7.org</a>
Health Level Seven (HL7) Version 3.0 Standard: Transport Specification - Web Services Profile, Release 2 Committee Ballot 1 - May 2008	The Web Services Profile for HL7 promotes the use of Web Services to exchange HL7 messages and to ease interoperability between implementations. The profile focuses on basic Web services protocols and technologies like SOAP (Simple Object Access Protocol) and WSDL (Web Services Description Language), which lay the groundwork for more complex interactions based on higher-level Web services specifications. For more information visit <a href="http://www.hl7.org">http://www.hl7.org</a>
Integrating the Healthcare Enterprise (IHE) Patient Care Coordination (PCC) Technical Framework Supplement 2008 – 2009, Draft for Trial Implementation, August 22, 2008	The Query for Existing Data Profile (QED) supports dynamic queries for clinical data, including vital signs, problems, medications, immunizations, diagnostic results, procedures and visit history. This profile makes the information widely available to other systems within and across enterprises to support provision of better clinical care. The QED profile leverages the existing content modeling defined previously in other IHE document profiles and the HL7 CCD Implementation Guide to deliver information that is semantically equivalent as a web service using the IHE ITI web services and HL7 web services guidelines. For more information visit <a href="http://www.ihe.net">http://www.ihe.net</a>



Standard	Description
Organization for the Advancement of Structured Information Standards (OASIS) Simple Object Access Protocol (SOAP) Version 1.1, 1.2	SOAP is a protocol specification for invoking methods on servers, services, components and objects. SOAP codifies the existing practice of using XML and HTTP as a method invocation mechanism. The SOAP specification mandates a small number of HTTP headers that facilitate firewall/proxy filtering plus an XML vocabulary that is used for representing method parameters, return values, and exceptions." {DevelopMentor} SOAP consists of three parts: an envelope that defines a framework for describing what is in a message and how to process it, a set of encoding rules for expressing instances of application-defined data types, and a convention for representing remote procedure calls and responses. For more information visit <a href="http://www.oasis-open.org">www.oasis-open.org</a>

### 5.1.3 INFORMATIVE REFERENCE STANDARDS

Table 5-4 includes reference standards that inform the overall semantic interoperability.

**Table 5-4 Informative Reference Standards**

Standard	Description
World Wide Web Consortium (W3C) Web Services Description Language (WSDL) v1.1	WSDL is an XML-based language that provides a model for describing Web services. It is also an XML-based service description on how to communicate using web services. The WSDL defines services as collections of network endpoints, or ports. WSDL specification provides an XML format for documents for this purpose. For more information visit <a href="http://www.w3.org/">http://www.w3.org/</a>

## 5.2 STANDARDS GAPS AND OVERLAPS

Table 5-5 identifies the information exchange requirements and known standards gaps, along with the recommended resolutions to the gaps.

**Table 5-5 Information Exchange Requirements (IER) and Associated Standards Gaps**

IER Gap Description	Responsible HITSP TC	Design Approach	Required Standards Now Unavailable for Constructs	SDO Working on Unavailable Standards	Expected Availability
None					

Table 5-6 lists any standards overlaps and describes plans to resolve each of the overlaps.

**Table 5-6 Information Exchange Requirements and Associated Standards Overlaps**

IER Number	Summary Description	Standard Overlap	Recommended Resolution
None			



## 6.0 APPENDIX

This section may include additional materials referenced throughout this document, such as requirements analysis tables and figures. If the Capability is yet to be implemented, it may contain the candidate standards, for Tier 2 evaluations.

- HITSP/IS06 – Quality
- HITSP/IS10 – Immunizations and Response Management
- HITSP/IS11 – Public Health Case Reporting



## 7.0 DOCUMENT UPDATES

This section provides the history of changes made to this document.

### 7.1 NOVEMBER 9, 2009

No changes. This is the first published version of the document.

### 7.2 JANUARY 18, 2010

Conversion of document to the latest Capability Template Version 2.3.

Comments from IRT review addressed.

### 7.3 JANUARY 25, 2010

Upon approval by the HITSP Panel on January 25, 2010, this document is now Released for Implementation.

