July 8, 2009
Version 1.1

HITSP Retrieve Value Set Transaction

HITSP/T66

Submitted to:

Healthcare Information Technology Standards Panel

Submitted by:

Security, Privacy and Infrastructure Domain Technical Committee
(Formerly Security and Privacy Technical Committee)

DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
	Template V2.4	Project Team	July 31, 2008
0.0.1	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	September 26, 2008
0.0.2	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	December 10, 2008
1.0	Released for Implementation	Security, Privacy and Infrastructure Domain Technical Committee	December 18, 2008
	Template V2.5	Project Team	June 30, 2009
1.0.1	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	June 30, 2009
1.1	Released for Implementation	Security, Privacy and Infrastructure Domain Technical Committee	July 8, 2009

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1.0 INTRODUCTION

1.1 OVERVIEW

The HITSP Retrieve Value Set Transaction is used to transform human or computer vocabularies. For example, it can be used to convert the initial capture of a human-readable concept into a computer vocabulary captured in a document or message that will be communicated. It may also be used in the reverse, to take computer vocabulary and convert to human-readable form.

1.2 COPYRIGHT PERMISSIONS

1.3 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. These documents can be retrieved from www.hitsp.org.

Table 1-1 Reference Documents

Reference Document	Document Description
HITSP Acronyms List	Lists and defines the acronyms used in this document
HITSP Glossary	Provides definitions for relevant terms used by HITSP documents
TN900 - Security and Privacy	TN900 is a reference document that provides the overall context for use of the HITSP Security and Privacy constructs

1.4 CONFORMANCE

This section describes the conformance criteria, which are objective statements of requirements that can be used to determine if a specific behavior, function, interface, or code set has been implemented correctly.

1.4.1 CONFORMANCE CRITERIA

In order to claim conformance to this construct specification, an implementation must satisfy all the requirements and mandatory statements listed in this specification, the associated HITSP Interoperability Specification, its associated construct specifications, as well as conformance criteria from the selected base and composite standards. A conformant system must also implement all of the required interfaces within the scope, subset or implementation option that is selected from the associated Interoperability Specification.

Claims of conformance may only be made for the overall HITSP Interoperability Specification or Capability with which this construct is associated.

1.4.2 CONFORMANCE SCOPING, SUBSETTING AND OPTIONS

A HITSP Interoperability Specification must be implemented in its entirety for an implementation to claim conformance to the specification. HITSP may define the permissibility for interface scoping, subsetting or implementation options by which the specification may be implemented in a limited manner. Such scoping, subsetting and options may extend to associated constructs, such as this construct. This construct must implement all requirements within the selected scope, subset or options as defined in the associated Interoperability Specification to claim conformance.

2.0 TRANSACTION DEFINITION

2.1 CONTEXT OVERVIEW

This construct is used to transform human or computer vocabularies. For example, it can be used to convert the initial capture of a human-readable concept into a computer vocabulary captured in a document or message that will be communicated. It may also be used in the reverse, to take computer vocabulary and convert to human-readable form. This helps to present data in a normalized way for end-use (e.g., display, analysis, and generating claim) so that it holds consistent meaning, whether it is derived from multiple sources, or not.

The key capabilities of the construct are as follows:

- Retrieve and resolve a value set with the appropriate terminology or code system
- Retrieve a value set with an appropriate map from one terminology to another

The selected standards for this construct are the Integrating the Healthcare Enterprise (IHE) Sharing Value Sets (SVS) Integration Profile, and Health Level 7 (HL7) Common Terminology Services (CTS) Release 1. These standards were selected to ensure that the interdependent relationship between the two standards is flexible and complementary.

Text from IHE SVS begins here:

> The Sharing Value Sets (SVS) Integration Profile provides a means through which healthcare systems producing clinical or administrative data, such as diagnostic imaging equipment, laboratory reporting systems, primary care physician office EMR systems, or national healthcare record systems, can receive a common, uniform nomenclature managed centrally. Shared nomenclatures are essential to achieving semantic interoperability.
>
> This profile describes a mechanism for retrieving a Value Set from a Value Set Repository by a Value Set Consumer. A single Value Set Repository can be accessed by many Value Set Consumers, establishing a domain for consistent and uniform nomenclature. It supports automated loading of Value Sets in the Value Set Consumers, reducing the burden of manual configuration, and allowing a single application design to operate in a variety of different domains (e.g., international).

Text from IHE SVS ends here

HITSP combines the U.S. Department of Health and Human Services (HHS)[1] definition of Value Set with the IHE[2] definition of Value Set as follows:

> A Value Set is a collection of concepts drawn from one or more vocabulary code systems and grouped together for a specific purpose. A Value Set is a uniquely identifiable set of valid concept representations. A Value Set may be a simple flat list of concept codes drawn from a single code system, or it might be constituted by expressions drawn from multiple code systems (a code system is a system consisting of designations and meanings, for example LOINC, SNOMED-CT, ICD-10, or ISO 639 Language Codes).

The HL7 Common Terminology Services (HL7 CTS) Release 1 defines an Application Programming Interface (API) that can be used when accessing terminological content. This API Interface can be implemented either locally or as part of a Service Oriented Architecture (SOA) to provide a standardized interface to access terminological content across multiple systems. The Common Terminology Services

[1] Value Set Definition – National Center for Public Health Informatics, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services - 2008

[2] Glossary, Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) Supplement 2008-2009 Sharing Value Sets (SVS)

specification was developed as an alternative to a common data structure. Instead of specifying what an external terminology must look like, HL7 has chosen to identify the common functional characteristics that an external terminology must be able to provide.

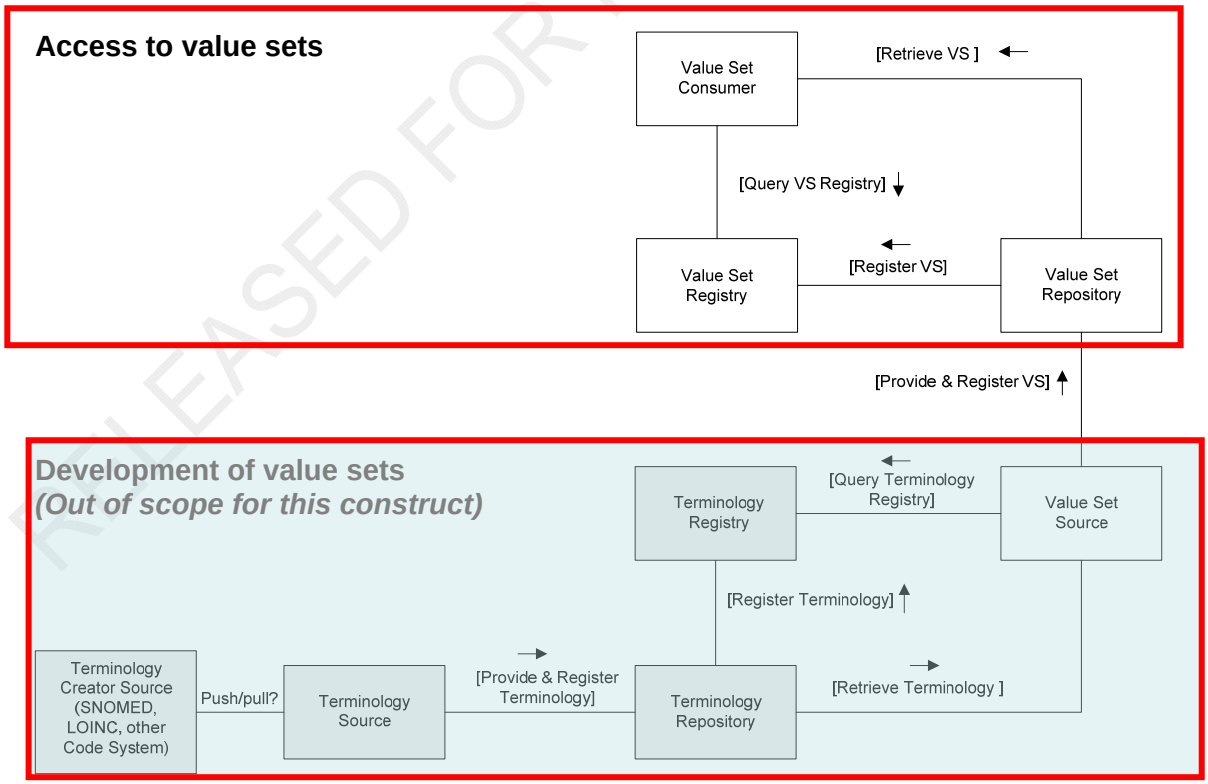
HL7 CTS Release 1 is an API specification that defines a value set and a vocabulary specification model. For value set communication, the HL7 CTS Release 1 standard focuses on specifying the expected behaviors and parameters when requesting and retrieving value sets between a Value Set Consumer and a Value Set Repository. The standard provides input parameters and the expected outputs. The Value Set Consumer and Value Set Repository interfaces from IHE SVS shall be used to access terminology content (see Table 2-2 for interface descriptions). Specifically, an implementation of HL7 CTS Release 1 API shall obtain its Value Sets from the Value Set Repository in accordance with the IHE SVS Integration Profile. A system using this construct can choose to directly use the IHE SVS Integration Profile, or use the constrained HL7 CTS Release 1 standard.

The following scenarios are provided as examples for the specific uses of this construct:

- When reporting public health cases, the reporting entity might need to identify the terminology set being used in the report being submitted to the receiving entity (Public Health Case Reporting Use Case)
- When exchanging quality-related indicators, the submitter of quality indicators will need to identify and specify the terminology being used to codify the quality data (Quality Use Case)
- When submitting biosurveillance data, the submitter may need to identify and communicate to the receiver the terminology being used in the communication message (Biosurveillance Use Case)

The focus and scope of this construct is on the access to Value Sets, and not their development. Figure 2-1 below depicts the current scope of the construct. The Value Set Consumer and Value Set Repository interfaces are further described in Section 2.1.2, and their interactions are shown in Section 2.1.3.

Figure 2-1 Overview of Construct Scope (modified from IHE SVS figure 21.3-2)



Note that the interface to HL7 CTS Release 1 is through the Value Set Consumer. The following sections of this specification will focus on the interaction between the Value Set Consumer and the Value Set Repository interfaces from the IHE SVS Integration Profile.

2.1.1 TRANSACTION CONSTRAINTS

Table 2-1 Transaction Constraints

Constraint
An implementation of HL7 CTS R1 API shall obtain its Value Sets from the Value Set Repository in accordance with the IHE SVS Profile

2.1.2 INTERFACES

Table 2-2 Interfaces

Interface	Description	Used in Component/ Standard	Transaction/Content	T/C Optionality [3]
Value Set Consumer	An interface that receives a specific, new, or updated terminology based on its OID, and possibly its version if the latter is available	IHE SVS	Retrieve value set	R
Value Set Repository	An interface that has the role of providing the Resolved Value Sets	IHE SVS	Retrieve value set	R

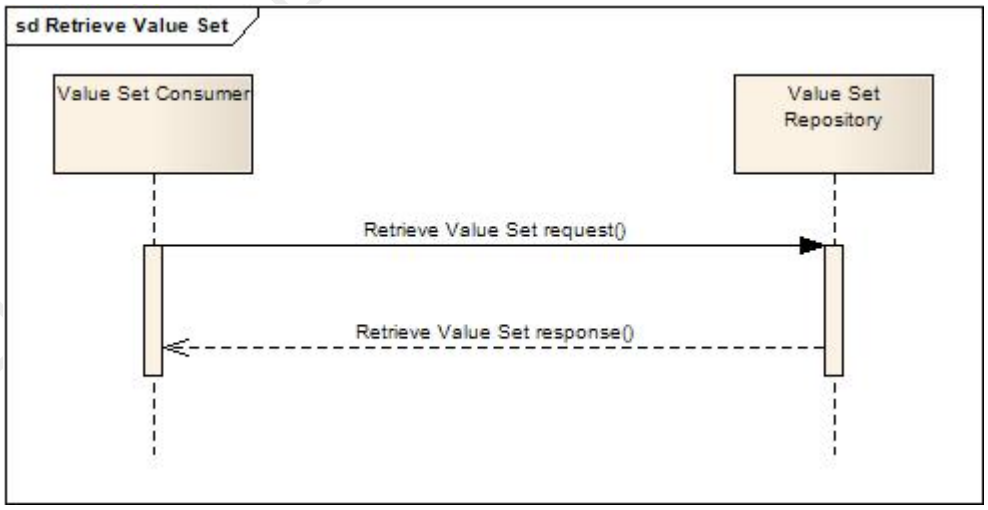
Implementation Constraints

Table 2-3 Interface and Transaction/Content Constraints

Constraint Code	Constraint Description
No applicable implementation constraints	NA

2.1.3 INTERFACE INTERACTIONS

Figure 2-2 Retrieve Value Set



The pre-conditions for this transaction are specified in Section 2.1.4 below. The interface interaction starts with the need for a value set. The Value Set Consumer then retrieves a resolved value set from the Value

[3] Optionality = "R" for Required, "R2" for Required if Known, "O" for Optional, or "C" for Conditional

Set Repository. The IHE SVS Integration Profile provides further detail of the specific message semantics, and expected actions of the interfaces.

2.1.4 PRE-CONDITIONS

Table 2-4 Pre-conditions

Pre-condition
It is expected that the security framework under which this Transaction operates is in accordance with the Interoperability Specification that references this construct. Therefore all applicable HITSP Security and Privacy constructs are implemented as required
The creation of a value set (vocabulary maintenance) is completed as part of policy and human process, and black-box behavior
There is a Value Set Identity (OID), which is available in the Value Set Repository
The Value Set Consumer shall know every OID for every value set it is about to retrieve

2.1.4.1 PROCESS TRIGGERS

Table 2-5 Process Triggers

Process Trigger
There is a need for a Value Set

2.1.5 POST-CONDITIONS

Table 2-6 Post-conditions

Post-condition
The requested Value Set has been retrieved

2.1.5.1 REQUIRED OUTPUT

Table 2-7 Required Output

Required Output	Format/Usage
Value Set table	IHE SVS

2.1.6 DATA FLOWS

No applicable data flows.

2.2 LIST OF HITSP CONSTRUCTS

Table 2-8 List of HITSP Constructs

Construct Name	Description	Transaction/Content
No applicable HITSP constructs		

2.2.1 CONSTRUCT DEPENDENCIES

Table 2-9 Construct Dependencies

Construct	Depends On (Name of Component that it depends on)	Dependency Type (Pre-condition, post-condition, general)	Purpose (Reason for this dependency)
No applicable dependencies			

2.2.2 ADDITIONAL CONSTRAINTS ON REQUIRED CONSTRUCTS

Table 2-10 Additional Constraints on Required Constructs

Data Element	Construct	Constraint	Constraint Type (Pre-condition, post-condition, general)	Purpose (Reason for this constraint)
No applicable constraints				

2.3 STANDARDS

2.3.1 REGULATORY GUIDANCE

Table 2-11 Regulatory Guidance

Regulation	Description
No applicable regulatory guidance	

2.3.2 SELECTED STANDARDS

Table 2-12 Selected Standards

Standard	Description
Health Level Seven (HL7) Common Terminology Services (CTS) Release 1	The HL7 Common Terminology Services (HL7 CTS) defines an Application Programming Interface (API) that can be used when accessing terminological content. The CTS specification was developed as an alternative to a common data structure. Instead of specifying what an external terminology must look like, HL7 has chosen to identify the common functional characteristics that an external terminology must be able to provide. As an example, an HL7 compliant terminology service will need to be able to determine whether a given concept code is valid within the particular resource. Instead of describing a table keyed by the resource identifier and concept code, the CTS specification describes an Application Programming Interface (API) call that takes a resource identifier and concept code as input and returns a true/false value. Each terminology developer is free to implement this API call in whatever way is most appropriate or them It describes a set of API calls that represent the core functionality that will be needed by basic HL7 Version 3 applications. For more information visit www.hl7.org
Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) Supplement 2008-2009 Sharing Value Sets (SVS) Integration Profile	The Sharing Value Sets (SVS) Integration Profile provides a means through which healthcare systems producing clinical or administrative data, such as diagnostic imaging equipment, laboratory reporting systems, primary care physician office EMR systems, or national healthcare record systems, can receive a common, uniform nomenclature managed centrally. Shared nomenclatures are essential to achieving semantic interoperability. For more information visit ww.ihe.net

2.3.3 INFORMATIVE REFERENCE STANDARDS

Table 2-13 Informative Reference Standards

Standard	Description
No applicable informative reference standards	

3.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

No additional information at this time.

4.0 DOCUMENT UPDATES

The following section provide the details of updates made to this document.

4.1 DECEMBER 10, 2008

The changes in this construct address the following comments received during the Public Comment and Inspection Testing period (September 29 – October 24, 2008).

- 5599

Minor editorial changes were made to this construct.

4.2 DECEMBER 18, 2008

Upon approval by the HITSP Panel on December 18, 2008, this document is now Released for Implementation.

4.3 JUNE 30, 2009

Minor editorial changes were made to this document. Removed boilerplate text for simplification. The term “actor” was replaced with “interface”.

4.4 JULY 8, 2009

Upon approval by the HITSP Panel on July 8, 2009, this document is now Released for Implementation.