SeeBeyond ICAN Suite

HL7 OTD Library User's Guide

Release 5.0

SeeBeyond®

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Introduction

1.1 Overview

The HL7 OTD Library provides HL7 files formatted in Java™ syntax for use with SeeBeyond ICAN Suite's integration applications. An Object Type Definition (OTD) library is a compilation of pre-built message structures for industry-standard formats. The HL7 OTD Library is designed to work in conjunction with the SeeBeyond TCP/IP HL7 eWay Intelligent Adapter, to help the user establish and maintain an efficient and reliable HL7 messaging system.

The HL7 OTD Library supports the following versions of HL7:

- Version 2.1
- Version 2.2
- Version 2.3
- Version 2.3.1
- Version 2.4
- Version 2.5

The SeeBeyond HL7 OTD Library files can be easily modified using eGate's OTD Editor. The editor also allows the user to test the OTDs and verify that all data elements are available and data formats are correct before runtime. The editor also provides a trace of parsing during the unmarshal process to assist with troubleshooting.

For more information on OTDs and the OTD Editor, see the *eGate Integrator User's Guide*.

1.2 Supported Operating Systems

The HL7 OTD Library is available on the following operating systems:

- Windows XP, Windows 2000, and Windows Server 2003
- Solaris 8 and 9
- AIX 5.1L, and 5.2
- HP-UX 11.0, 11i (PA-RISC), and 11i V2 (11.23)

- HP Tru64 5.1A
- Red Hat Linux 8 (Intel)
- Red Hat Linux Advanced Server 2.1 (Intel)

1.3 System Requirements

The HL7 OTD Library has the following system requirements:

- SeeBeyond ICAN eGate Integrator 5.0.3 or above
- A TCP/IP network connection
- Windows 2000 SP3, Windows 2003 Server, or Windows XP (required for the User Interface)
- Microsoft Internet Explorer 6.0 SP1 or above
- The OTD libraries require a significant amount of disk space. The following indicates the size of each HL7 library:
  - HL7 2.1 - 2 MB
  - HL7 2.2 - 6 MB
  - HL7 2.3 - 32 MB
  - HL7 2.3.1 - 36 MB
  - HL7 2.4 - 44 MB
  - HL7 2.5 - 61 MB

The system requirements for the HL7 OTD Library are the same as for eGate Integrator. For more information, refer to the *SeeBeyond ICAN Suite Installation Guide*. It is also helpful to review the **Readme.txt** for any additional requirements prior to installation. The **Readme.txt** is located on the installation CD-ROM.

Overview of HL7

This chapter presents an overview of HL7, the HL7 standard, and its components.

2.1 HL7 Overview

HL7 is a standard for electronic data exchange in the healthcare environment. It standardizes the format and protocol for the exchange of certain key data sets among healthcare computer application systems. HL7 is designed to be flexible, allowing the various systems that send or receive patient information to share and apply data as needed. Because of this diversity in systems (data models, operating systems, communication environments, and so forth) HL7 cannot be a "plug and play" interface standard. Instead HL7's goal is to allow the greatest possible degree of standardization consistent with site variations in the usage and format of certain data elements.

HL7 or Health Level Seven is also the name of an organization consisting of technical committees and special interest groups who's goal is to provide standards for the exchange, management and integration of data that support clinical patient care and the management, transfer and assessment of healthcare services. Specifically, to create flexible, cost effective approaches, standards, guidelines, methodologies, and related services for interoperability between healthcare information systems.

2.2 The HL7 Standard

The HL7 Standard addresses the interfaces among various systems that send or receive healthcare focused information, such as, patient admissions/registration, discharge or transfer (ADT) data, queries, resource and patient scheduling, orders, results, clinical observations, billing, master file update information, medical records, patient referral, and patient care. It does not try to assume a particular architecture with respect to the placement of data within applications but is designed to support a central patient care system as well as a more distributed environment where data resides in departmental systems. Instead, HL7 serves as a way for dissimilar applications and data architectures operating in a heterogeneous system environment to communicate with each other.

2.3   Components of the HL7 Message

An HL7 transaction or message is comprised of a number of components in a defined sequence. This section defines the components of the HL7 transaction.

2.3.1. The HL7 Message

The HL7 message is a unit of data transferred between systems. It consist of a group of segments in a defined sequence. Each message has a message type that defines its purpose. For example an ADT Message type is used to transmit portions of a patient's Patient Administration (ADT) data from one system to another. A three-character code contained within each message identifies its type. A **Trigger Event**, a real-world event such as a patient being admitted, initiates the exchange of messages.

Segments

A segment is a logical grouping of data fields. Segments may occur only once or repeat in a message and may be required or optional. Each segment is given a name. For example, the ADT message may include the following segments: Message Header (MSH), Event Type (EVN), Patient ID (PID), and Patient Visit (PV1). Segments are identified by unique three-character codes known as the Segment IDs.

Fields

A field is a string of characters. HL7 is not concerned with how a system actually stores data within an application. When fields are transmitted, they are sent as character strings. Except where noted, HL7 data fields may take on the null value. Sending the null value, which is transmitted as two double quote marks (""), is different from omitting an optional data field. The difference appears when the contents of a message is used to update a record in a database rather than create a new one. If no value is sent, (i.e., it is omitted) the old value should remain unchanged. If the null value is sent, the old value should be changed to null.

Data field characteristics are as follows:

- **Position**: The ordinal position or sequence of the data field within the segment.

- **Maximum Length**: Maximum number of characters that one occurrence of the data field may occupy.

- **Type of Data**: Restrictions on the contents of the data field. There are a number of data types defined by HL7, for example TX (text data), SN (structured numeric), PT (processing time), DT (date), and so forth.

- **Optionality**: Whether the field is required, optional, or conditional in a segment.

- **Repetition**: Whether the field may or may not repeat, or the number of times the field may repeat.

- **Table**: The manner in which HL7 defines the valid values for tables varies depending on institution, data type, reference, and so forth.

- **ID Number**: Small integer that uniquely identifies the data field throughout the Standard.

- **Name**: Descriptive name for the field.

Message Delimiters

Message delimiters are the specific predefined characters that are used to define the beginning and end of a message component. They are the segment terminator, the field separator, the component separator, subcomponent separator, repetition separator, and escape character.

Data Types

The types of data defined. There are a number of data types defined by HL7, for example TX (text data), SN (structured numeric), PT (processing time), DT (date), and so forth.

Escape Sequences in Text Fields

Escape sequences vary depending on the type of field.

2.4 HL7 Message Sets

HL7 messages are grouped by type or purpose into transaction sets. For example, a Patient Administration (ADT) message is used to transmit patient admittance, transfer, demographic and discharge information. The Patient Administration transaction set includes messages that transmit portions, instances or updates of this data necessary to the participating healthcare system.

Table 1 displays the chapters/transaction sets that are available with the 2.2, 2.3, 2.3.1, 2.4, and 2.5 version of the HL7 Standard.

Table 1   system.

Transaction sets	HL7 V2.2	HL7 V2.3	HL7 V2.3.1	HL7 V2.4	HL7 V2.5
Control Defines the generic rules that apply to all messages (Ch. 2)	Yes	Yes	Yes	Yes	Yes SFT Segment
Control (Ch. 2 continued)					Yes
Patient Administration (Ch. 3)	Yes	Yes	Yes	Yes	Yes
Order Entry (Ch. 4)	Yes	Yes	Yes	Yes	Yes
Query (Ch. 5)	Yes	Yes	Yes	Yes	Yes
Financial Management (Ch. 6)	Yes	Yes	Yes	Yes	Yes
Observation Reporting (Ch. 7)	Yes	Yes	Yes	Yes	Yes
Master File (Ch. 8)	Yes	Yes	Yes	Yes	Yes

Medical Records/Information Management (Ch. 9)		Yes	Yes	Yes	Yes
Scheduling (Ch. 10)		Yes	Yes	Yes	Yes
Patient Referral (Ch. 11)		Yes	Yes	Yes	Yes
Patient Care (Ch. 12)		Yes	Yes	Yes	Yes
Laboratory Automation (Ch. 13)				Yes	Yes
Application Management (Ch. 14)				Yes	Yes
Personnel Management (Ch. 15)				Yes	Yes

Control

The Control chapter (HL7 Standard, **chapter 2**) defines the general rules that apply to all messages, including form used to describe messages, encoding rules for converting abstract messages to string characters, programming procedures for exchanging messages, relationship with lower level protocols, common message segments, and the acknowledgment message that can be used as-is in multiple applications.

SFT - Software Segment

The SFT segment was added to chapter 2 with HL7 version 2.5. This segment provides information regarding the software used as a sending application, primarily for diagnostic purposes.

Control (continued)

Specific to HL7 version 2.5, the Control (continued) chapter (HL7 Standard, **chapter 2a**) lists all of the various HL7 data types, and provides more specific definitions these data types.

Patient Administration

The Patient Administration transaction set (HL7 Standard, **chapter 3**), one of the most commonly used, provides demographic and visit information about patients. The event is transmitted as an unsolicited update or as a response to a record-oriented query.

Order Entry

The Order Entry transaction set (HL7 Standard, **chapter 4**) provides for the transmission of orders for materials or services, and information regarding orders, for specific patients or departments. Order Entry messages include components that specify quantity, timing, billing, start and end date, priority, and so on.

Query

The Query transaction set (HL7 Standard, **chapter 5**) provides requests for specific information with either an immediate or deferred response, depending on the type of query. Newer versions of HL7 include many of the most common queries that are likely to occur in a hospital.

Financial Management

The Financial Management transaction set (HL7 Standard, **chapter 6**) provides for the entry and manipulation of information pertaining to billing accounts, adjustments, payments, charges, insurance, and other related patient billing and A/R information.

Observation Reporting

The Observation Reporting message set (HL7 Standard, **chapter 7**) provides for the transmission of structured patient-oriented clinical information. This includes clinical observations such as clinical laboratory results, the results of imaging studies (excluding images), EKG pulmonary function studies, vital signs, intake and output, measures of patient status and condition, severity and/or frequency of symptoms, drug allergies, diagnostic lists, physician and nursing history, physicals, progress notes, operative notes and so on. Message information is reported in text, numeric or categorical values.

Master File

A master file is a common reference file containing more or less permanent descriptive information about a principal subject. In the healthcare environment, some common master files are doctor, location, system user, patient status, patient type, lab test definition, exam code definition, and charge master files. The Master Files Notification messages (HL7 Standard, **chapter 8**) support the distribution of changes to various master files between systems, by either providing changes to the files or making data available for review and possible inclusion.

Medical Records/Information Management

The Medical Document Management (MDM) transaction set (HL7 Standard, **chapter 9**) provides for the transmission of new or updated documents. MDM messages may contain a description of the status of a document (for example, the document has been dictated and is awaiting transcription) or both the status description and the document itself. A medical document or record is a legal document that serves as an accurate and comprehensive account of healthcare services provided to a patient.

Scheduling

The Scheduling transaction set (HL7 Standard, **chapter 10**) supports the communication of various events in relation to schedules, appointments, services and resources. A schedule controls the dates and times available for the performance of a service and/or the use of a resource. The scheduling set contains three basic types of messages:

- The *Request transaction*, used to request an appointment for services or the use of resources.

- The *Query transaction*, which actively solicits scheduling information between systems.

- The *Unsolicited transaction*, which passively gathers and provides scheduling information between systems.

Scheduling messages may also contain other supporting information, including the reason for the appointment, patient information, person initiating the appointment, and location.

Patient Referral

The Patient Referral transaction set (HL7 Standard, **chapter 11**) provides for patient referral communications between separate healthcare related entities. This includes primary healthcare providers, hospitals, labs, specialists, government agencies, and other healthcare entities. The receiving entity may require billing information, test results, provider information, patient demographics and so forth, calling for multiple inquires and responses. For this reason, the referral set includes the referral, requests for information, and returned patient information.

Patient Care

The Patient Care transaction set(HL7 Standard, **chapter 12**) supports the communication of problem-oriented records which include clinical problems, goals, and clinical pathway information. The **problem** in this case may be a diagnosis or other professional description of healthcare issues affecting a specific patient. **Goals** are objectives to be attained as the result of healthcare intervention applied to an individual. A **pathway** refers to a standardized plan of care by which progress toward an expected outcome is measured.

Laboratory Automation

The Laboratory Automation transaction set (HL7 Standard, **chapter 13**) supports the communication of equipment information, including status, inventory, logs and service, test code settings, response, notification, and comment, as well as specimen status.

Application Management

The Application Management transaction set (HL7 Standard, **chapter 14**) supports the transmission of application management information and application control-level requests.

Personnel Management

The Personnel Management transaction set (HL7 Standard, **chapter 15**) supports the transmission of details regarding education, language, practitioner, and professional affiliations, as well as information on practitioner organization unit, and staff identification.

2.5 Additional Information

For more information regarding HL7, and HL7 standards and versions, visit the HL7 Web site at:

http://hl7.org/

Installation

This chapter contains installation information for the HL7 OTD Library.

Chapter Topics

- **Installing the HL7 OTD Library** on page 15

3.1 Installing the HL7 OTD Library

During the eGate Integrator installation process, the Enterprise Manager, a web-based application, is used to select and upload eWays (eWay.sar files) from the eGate installation CD-ROM to the Repository.

When the Repository is running on a UNIX operating system, eGate and the eWays are installed using the Enterprise Manager from a computer running Windows, connected to the Repository server. For additional proceedures when installing the library on a UNIX system, see **Installing the HL7 OTD Library on UNIX** on page 16

3.1.1. Installing the HL7 OTD Library on an eGate Supported System

The HL7 OTD Library is installed during the installation of the eGate Integrator. The eGate installation process includes the following operations:

- Installing the eGate Repository
- Uploading products to the Repository
- Downloading components (such as eGate Enterprise Designer and Logical Host)
- Viewing product information home pages

Follow the instructions for installing the eGate Integrator in the *SeeBeyond ICAN Suite Installation Guide*, and include the following steps:

1 During the procedures for uploading files to the eGate Repository using the Enterprise Manager, after uploading the **eGate.sar** file, select and upload the appropriate HL7 OTD Libraries from the following files, as well as the Documentation .sar file.

- **HL7OTDLibrary2.1.sar** (to install the HL7 version 2.1 OTD Library)
- **HL7OTDLibrary2.2.sar** (to install the HL7 version 2.2 OTD Library)
- **HL7OTDLibrary2.3.sar** (to install the HL7 version 2.3 OTD Library)

- ◆ **HL7OTDLibrary2.3.1.sar** (to install the HL7 version 2.3.1 OTD Library)

- ◆ **HL7OTDLibrary2.4.sar** (to install the HL7 version 2.4 OTD Library)

- ◆ **HL7OTDLibrary2.5.sar** (to install the HL7 version 2.5 OTD Library)

- ◆ **HL7OTDLibraryDocs.sar** (to install the HL7 OTD Library User's Guide)

2 Continue installing the eGate Integrator as instructed in the *SeeBeyond ICAN Suite Installation Guide*

Installing the HL7 OTD Library on UNIX

When installation the HL7 OTD Library on a UNIX system, files are stored to a UNIX temporary directory during upload. If the upload exceeds the size allowed for this directory the upload will fail, but still report the upload as successful.

To prevent this, clean out the UNIX temporary directory (in most cases **bar/temp**) prior to installing the HL7 OTD Library.

3.1.2. After Installation

Once the Library is installed it must then be incorporated into a Project before it can perform its intended functions. See the *eGate Integrator User's Guide* for more information on incorporating the OTDs into an eGate Project.

3.1.3. Increasing the ICAN Enterprise Designer Heap Size

Due to the size of the HL7 OTD Libraries, the Enterprise Designer **Heap Size** may need to be increased prior to using eGate with the HL7 OTD Library. If the heap size is not increased it may result in a **OutOfMemoryError** message. To increase the heap size from the Enterprise Designer do the following:

1 From the Enterprise Designer Menu bar click **Tools** and select **Options**. The **Options Setup** dialog box appears.

2 Increase the configured heap size for the Enterprise Designer, OTDTester, and JCE Tester to 512 MB as displayed in Figure 1. Click **OK**.

Figure 1 Options Setup - Heap Size
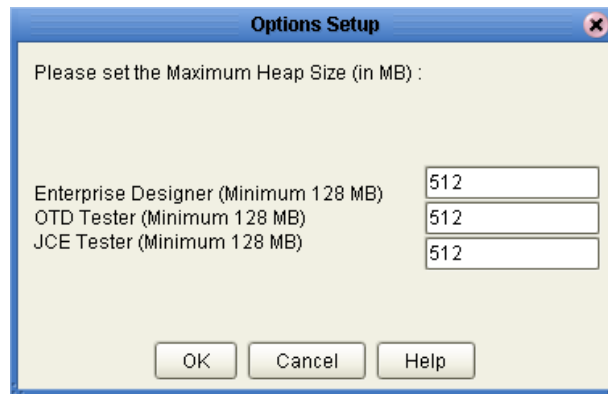
> **3** Close and restart the Enterprise Designer to allow your changes to take effect.

If an **OutOfMemoryError** message occurs while trying to open the Enterprise Designer, the heap size settings may be changed prior to starting the Enterprise Designer. In this case change the settings in the **heapSize.bat** file, located in *<ICAN_Home>***\edesigner\bin** (where *<ICAN_Home>* is the ICAN install directory). Open **heapSize.bat** with a text editor and change the heap size settings from **128** to **512**. Save the file, and restart the Enterprise Designer.

3.2   Adding HL7 Utility Functions

The HL7UtilityFunctions Class contains a number of Java methods that have been exposed to extend the functionality of the HL7 OTDs. These utility functions are available to the Collaborations after the HL7OTDLibraryUtility.jar has been imported to a project.

For information on importing and adding the HL7OTDLibraryUtility.jar or viewing the HL7UtilityFunctions Class Javadoc, see **HL7UtilityFunctions Class and Methods** on page 69

The HL7 OTD Libraries

This chapter describes and provides a cross-reference for the HL7 OTD Libraries and the HL7 OTDs.

4.1 HL7 OTD Libraries

HL7 OTD libraries are arranged by version:

- **HL7 Version 2.5 Library** on page 18
- **HL7 Version 2.4 Library** on page 28
- **HL7 Version 2.3.1 Library** on page 35
- **HL7 Version 2.3 OTD Library** on page 41
- **HL7 Version 2.2 OTD Library** on page 47
- **HL7 Version 2.1 OTD Library** on page 49

4.1.1. HL7 Version 2.5 Library

HL7 2.5 OTD	HL7 Description
HL7_25_ADT_A01	Admit/Visit Notification
HL7_25_ADT_A02	Transfer a Patient
HL7_25_ADT_A03	Discharge/End Visit
HL7_25_ADT_A04	Register a Patient
HL7_25_ADT_A05	Pre-Admit a Patient
HL7_25_ADT_A06	Change an Outpatient to an Inpatient
HL7_25_ADT_A07	Change an Inpatient to an Outpatient
HL7_25_ADT_A08	Update Patient Information
HL7_25_ADT_A09	Patient Departing - Tracking
HL7_25_ADT_A10	Patient Arriving - Tracking
HL7_25_ADT_A11	Cancel Admit/Visit Notification
HL7_25_ADT_A12	Cancel Transfer
HL7_25_ADT_A13	Cancel Discharge/end visit

HL7 2.5 OTD	HL7 Description
HL7_25_ADT_A14	Pending Admit
HL7_25_ADT_A15	Pending Transfer
HL7_25_ADT_A16	Pending Discharge
HL7_25_ADT_A17	Swap Patients
HL7_25_ADT_A18	Merge Patient Information
HL7_25_ADT_A20	Bed Status Update
HL7_25_ADT_A21	Patient Goes on a Leave of Absence
HL7_25_ADT_A22	Patient Returns from a Leave of Absence
HL7_25_ADT_A23	Delete a Patient Record
HL7_25_ADT_A24	Link Patient Information
HL7_25_ADT_A25	Cancel Pending Discharge
HL7_25_ADT_A26	Cancel Pending Transfer
HL7_25_ADT_A27	Cancel Pending Admit
HL7_25_ADT_A28	Add Person or Patient Information
HL7_25_ADT_A29	Delete Person Information
HL7_25_ADT_A30	Merge Person Information
HL7_25_ADT_A31	Update Person Information
HL7_25_ADT_A32	Cancel Patient Arriving - Tracking
HL7_25_ADT_A33	Cancel Patient Departing - Tracking
HL7_25_ADT_A34	Merge Patient Information - Patient ID Only
HL7_25_ADT_A35	Merge Patient Information - Account Number Only
HL7_25_ADT_A36	Merge Patient Information - Patient ID & Account Number
HL7_25_ADT_A37	Unlink Patient Information
HL7_25_ADT_A38	Cancel Pre-Admit
HL7_25_ADT_A39	Merge Patient - Patient ID
HL7_25_ADT_A40	Merge Patient - Patient Identifier List
HL7_25_ADT_A41	Merge Account - Patient Account Number
HL7_25_ADT_A42	Merge Visit - Visit Number
HL7_25_ADT_A43	Move Patient Information - Patient Identifier List
HL7_25_ADT_A44	Move Account Information - Patient Account Number
HL7_25_ADT_A45	Move Visit Information - Visit Number
HL7_25_ADT_A46	Change Patient ID
HL7_25_ADT_A47	Change Patient Identifier List
HL7_25_ADT_A48	Change Alternate
HL7_25_ADT_A49	Change Patient Account Number
HL7_25_ADT_A50	Change Visit Number

HL7 2.5 OTD	HL7 Description
HL7_25_ADT_A51	Change Alternate Visit ID
HL7_25_ADT_A52	Cancel Leave of Absence for a Patient
HL7_25_ADT_A53	Cancel Patient Returns from a Leave of Absence
HL7_25_ADT_A54	Change Attending Doctor
HL7_25_ADT_A55	Cancel Change Attending Doctor
HL7_25_ADT_A60	Update Adverse Reaction Information
HL7_25_ADT_A61	Change Consulting Doctor
HL7_25_ADT_A62	Cancel Change Consulting Doctor
HL7_25_BAR_P01	Add Patient Account
HL7_25_BAR_P02	Purge Patient Accounts
HL7_25_BAR_P05	Update Account
HL7_25_BAR_P06	End Account
HL7_25_BAR_P10	Transmit Ambulatory Payment Classification (APC) Groups
HL7_25_BAR_P12	Update Diagnosis Procedure
HL7_25_BPS_O29	Blood Product Dispense Status Message
HL7_25_BRP_O30	Blood Product Dispense Status Acknowledgment
HL7_25_BRT_O32	Blood Product Transfusion/Disposition Acknowledgement
HL7_25_BTS_O31	Blood Product Transfusion/Disposition Message
HL7_25_CRM_C01	Register a Patient on a Clinical Trial
HL7_25_CRM_C02	Cancel a Patient Registration on Clinical Trial
HL7_25_CRM_C03	Correct/Update Registration Information
HL7_25_CRM_C04	Patient has Gone Off a Clinical Trial
HL7_25_CRM_C05	Patient Enters Phase of Clinical Trial
HL7_25_CRM_C06	Cancel Patient Entering a Phase
HL7_25_CRM_C07	Correct/Update Phase Information
HL7_25_CRM_C08	Patient has Gone Off Phase of Clinical Trial
HL7_25_CSU_C09	Automated Time Intervals for Reporting, Like Monthly
HL7_25_CSU_C10	Patient Completes the Clinical Trial
HL7_25_CSU_C11	Patient Completes a Phase of the Clinical Trial
HL7_25_CSU_C12	Update/Correction of Patient Order/Result Information
HL7_25_DFT_P03	Post Detail Financial Transactions
HL7_25_DFT_P11	Post Detail Financial Transactions - Expanded
HL7_25_EAC_U07	Automated Equipment Command
HL7_25_EAN_U09	Automated Equipment Notification
HL7_25_EAR_U08	Automated Equipment Response
HL7_25_ESR_U02	Automated Equipment Status Request

HL7 2.5 OTD	HL7 Description
HL7_25_ESU_U01	Automated Equipment Status Update
HL7_25_INR_U06	Automated Equipment Inventory Request
HL7_25_INU_U05	Automated Equipment Inventory Update
HL7_25_LSR_U13	Automated Equipment Log/Service Request
HL7_25_LSU_U12	Automated Equipment Log Service Update
HL7_25_MDM_T01	Original Document Notification
HL7_25_MDM_T02	Original Document Notification and Content
HL7_25_MDM_T03	Document Status Change Notification
HL7_25_MDM_T04	Document Status Change Notification and Content
HL7_25_MDM_T05	Document Addendum Notification
HL7_25_MDM_T06	Document Addendum Notification and Content
HL7_25_MDM_T07	Document Edit Notification
HL7_25_MDM_T08	Document Edit Notification and Content
HL7_25_MDM_T09	Document Replacement Notification
HL7_25_MDM_T10	Document Replacement Notification and Content
HL7_25_MDM_T11	Document Cancel Notification
HL7_25_MFN_M01	Master File Notification - Not Otherwise Specified (for backward compatibility only)
HL7_25_MFN_M02	Master File Notification - Staff/Practitioner
HL7_25_MFN_M03	Master File Notification - Test/Observation (for backward compatibility only)
HL7_25_MFN_M04	Master File Notification - Charge Description
HL7_25_MFN_M05	Master File Notification - Patient Location
HL7_25_MFN_M06	Master File Notification - Clinical Study with Phases and Schedules
HL7_25_MFN_M07	Master File Notification - Clinical Study Without Phases but with Schedules
HL7_25_MFN_M08	Master File Notification - Test/Observation (Numeric)
HL7_25_MFN_M09	Master File Notification - Test/Observation (Categorical)
HL7_25_MFN_M10	Master File Notification - Test/Observation Batteries
HL7_25_MFN_M11	Master File Notification - Test/Calculated Observations
HL7_25_MFN_M12	Master File Notification - Additional Basic Observation/Service Attributes
HL7_25_MFN_M13	Master File Notification - General
HL7_25_MFN_M14	Master File Notification - Site Defined
HL7_25_MFN_M15	Master File Notification- Inventory Item
HL7_25_MFQ_M01	Master Files Query - Not Otherwise Specified (for backward compatibility only)
HL7_25_MFQ_M02	Master Files Query - Staff/Practitioner

HL7 2.5 OTD	HL7 Description
HL7_25_MFQ_M03	Master Files Query - Test/Observation (for backward compatibility only)
HL7_25_MFQ_M04	Master Files Query - Charge Description
HL7_25_MFQ_M05	Master Files Query - Patient Location
HL7_25_MFQ_M06	Master Files Query - Clinical Study with Phases and Schedules
HL7_25_MFQ_M07	Master Files Query - Clinical study without phases but with schedules
HL7_25_MFQ_M08	Master Files Query - Test/Observation (Numeric)
HL7_25_MFQ_M09	Master Files Query - Test/Observation (Categorical)
HL7_25_MFQ_M10	Master Files Query - Test/Observation Batteries
HL7_25_MFQ_M11	Master Files Query - Test/Calculated Observations
HL7_25_MFQ_M12	Master Files Query - Additional Basic Observation/Service Attributes
HL7_25_MFQ_M13	Master Files Query - General
HL7_25_MFQ_M14	Master Files Query - Site Defined
HL7_25_NMD_N02	Application Management Data Message
HL7_25_NMQ_N01	Application Management Query Message
HL7_25_OMB_O27	Blood Product Order Message
HL7_25_OMD_O03	Dietary Order
HL7_25_OMG_O19	General Clinical Order Message
HL7_25_OMI_O23	Imaging Order Message
HL7_25_OML_O21	Laboratory Order
HL7_25_OML_O33	Laboratory Order for Multiple Orders Related to a Single Specimen
HL7_25_OML_O35	Laboratory Order for Multiple Orders Related to a Single Container of a Specimen
HL7_25_OMN_O07	Non-Stock Requisition Order
HL7_25_OMP_O09	Pharmacy/Treatment Order
HL7_25_OMS_O05	Stock Requisition Order
HL7_25_ORB_O28	Blood Product Order Acknowledgment
HL7_25_ORD_O04	Diet Order Acknowledgment
HL7_25_ORF_R04	Response to Query; Transmission of Requested Observation
HL7_25_ORG_O20	General Clinical Order Response
HL7_25_ORI_O24	Imaging Order Response Message To Any OMI
HL7_25_ORL_O22	General Laboratory Order Response Message to any OML
HL7_25_ORL_O34	Laboratory Order Response Message to a Multiple Order Related to Single Specimen OML
HL7_25_ORL_O36	Laboratory Order Response Message to a single container of a Specimen OML

HL7 2.5 OTD	HL7 Description
HL7_25_ORM_O01	Pharmacy/Treatment Order Message
HL7_25_ORN_O08	Non-Stock Requisition Acknowledgment
HL7_25_ORP_O10	Pharmacy/Treatment Order Acknowledgment
HL7_25_ORR_O02	General Order Response Message Response to any ORM
HL7_25_ORS_O06	Stock Requisition Acknowledgment
HL7_25_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_25_ORU_R30	Unsolicited Point-Of-Care Observation Message Without Existing Order _ Place An Order
HL7_25_ORU_R31	Unsolicited New Point-Of-Care Observation Message _ Search For An Order
HL7_25_ORU_R32	Unsolicited Pre-Ordered Point-Of-Care Observation
HL7_25_OSQ_Q06	Query for order status
HL7_25_OUL_R21	Unsolicited Laboratory Observation
HL7_25_OUL_R22	Unsolicited Specimen Oriented Observation Message
HL7_25_OUL_R23	Unsolicited Specimen Container Oriented Observation Message
HL7_25_OUL_R24	Unsolicited Order Oriented Observation Message
HL7_25_PEX_P07	Unsolicited Initial Individual Product Experience Report
HL7_25_PEX_P08	Unsolicited Update Individual Product Experience Report
HL7_25_PGL_PC6	Patient Goal Message - Goal Add
HL7_25_PGL_PC7	Patient Goal Message - Goal Update
HL7_25_PGL_PC8	Patient Goal Message - Goal Delete
HL7_25_PIN_I07	Patient Insurance Information - Unsolicited
HL7_25_PMU_B01	Add Personnel Record
HL7_25_PMU_B02	Update Personnel Record
HL7_25_PMU_B03	Delete Personnel Record
HL7_25_PMU_B04	Active Practicing Person
HL7_25_PMU_B05	Deactivate Practicing Person
HL7_25_PMU_B06	Terminate Practicing Person
HL7_25_PMU_B07	Grant Certificate/Permission
HL7_25_PMU_B08	Add Personnel Record - Revoke Certificate/Permission
HL7_25_PPG_PCG	Patient Pathway Message - Pathway (Goal-Oriented) Add
HL7_25_PPG_PCH	Patient Pathway Message - Pathway (Goal-Oriented) Update
HL7_25_PPG_PCJ	Patient Pathway Message - Pathway (Goal-Oriented) Delete
HL7_25_PPP_PCB	Patient Problem Message - Pathway (Problem-Oriented) Add
HL7_25_PPP_PCC	Patient Problem Message - Pathway (Problem-Oriented) Update
HL7_25_PPP_PCD	Patient Problem Message - Pathway (Problem-Oriented) Delete
HL7_25_PPR_PC1	Patient Problem Message - Problem Add

HL7 2.5 OTD	HL7 Description
HL7_25_PPR_PC2	Patient Problem Message - Problem Update
HL7_25_PPR_PC3	Patient Problem Message - Problem Delete
HL7_25_PPT_PCL	Patient Pathway Goal - Oriented Query Response
HL7_25_PPV_PCA	Patient Goal Response
HL7_25_PRR_PC5	Patient Problem Response
HL7_25_PTR_PCF	Patient Pathway Problem - Oriented Response
HL7_25_QBP_Q11	Query by Parameter - Requesting an RSP segment pattern response
HL7_25_QBP_Q13	Query by Parameter - Requesting an RTB - Tabular Response
HL7_25_QBP_Q15	Query by Parameter - Requesting an RDY Display Response
HL7_25_QBP_Q21	Query by Parameter - Get Person Demographics
HL7_25_QBP_Q22	Query by Parameter - Find Candidates
HL7_25_QBP_Q23	Query by Parameter - Get Corresponding Identifiers
HL7_25_QBP_Q24	Query by Parameter - Allocate Identifiers
HL7_25_QBP_Q25	Query by Parameter - Personnel Information by Segment Query
HL7_25_QBP_Q31	Query by Parameter - Dispense History
HL7_25_QBP_Z73	Query by Parameter - Information about Phone Calls
HL7_25_QBP_Z75	Query by Parameter - Tabular Patient List
HL7_25_QBP_Z77	Query by Parameter - Tabular Patient List
HL7_25_QBP_Z79	Query by Parameter - Dispense Information
HL7_25_QBP_Z81	Query by Parameter - Dispense History
HL7_25_QBP_Z85	Query by Parameter - Pharmacy Information Comprehensive
HL7_25_QBP_Z87	Query by Parameter - Dispense Information
HL7_25_QBP_Z89	Query by Parameter - Lab Results History
HL7_25_QBP_Z91	Query by Parameter - Who am I
HL7_25_QBP_Z93	Query by Parameter - Tabular Dispense History
HL7_25_QBP_Z95	Query by Parameter - Tabular Dispense History
HL7_25_QBP_Z97	Query by Parameter - Dispense History
HL7_25_QBP_Z99	Query by Parameter - Who Am I
HL7_25_QCN_J01	Cancel Query/Acknowledge Message
HL7_25_QRY_A19	Patient Query
HL7_25_QRY_PC4	Problem Query
HL7_25_QRY_PC9	Goal Query
HL7_25_QRY_PCE	Pathway (Problem-Oriented) Query
HL7_25_QRY_PCK	Pathway (Goal-Oriented) Query
HL7_25_QRY_Q26	Pharmacy/Treatment Order Response
HL7_25_QRY_Q27	Pharmacy/Treatment Administration Information

HL7 2.5 OTD	HL7 Description
HL7_25_QRY_Q28	Pharmacy/Treatment Dispense Information
HL7_25_QRY_Q29	Pharmacy/Treatment Encoded Order Information
HL7_25_QRY_Q30	Pharmacy/Treatment Dose Information
HL7_25_QRY_R02	Query for Results of Observation
HL7_25_QRY_T12	Document Query
HL7_25_QSB_Q16	Create Subscription
HL7_25_QSB_Z83	ORU Subscription
HL7_25_QSX_J02	Cancel Subscription/Acknowledge Message
HL7_25_QVR_Q17	Query for Previous Events
HL7_25_RAS_O17	Pharmacy/Treatment Administration
HL7_25_RDE_O11	Pharmacy/Treatment Encoded Order
HL7_25_RDE_O25	Pharmacy/Treatment Refill Authorization Request
HL7_25_RDS_O13	Pharmacy/Treatment Dispense
HL7_25_RDY_K15	Display Response in Response to QBP^Q15
HL7_25_RDY_Z80	Retrieve Patient Pharmacy Dispense History Information (Patient, Order Control Code, Medication, Date Range, Quantity Dispensed, and Ordering Provider)
HL7_25_RDY_Z98	Retrieve Patient Pharmacy Dispense History Information (Patient, Medication, Date Range, and How to Sort Response)
HL7_25_REF_I12	Patient Referral
HL7_25_REF_I13	Modify Patient Referral
HL7_25_REF_I14	Cancel Patient Referral
HL7_25_REF_I15	Request Patient Referral Status
HL7_25_RGV_O15	Pharmacy/Treatment Give
HL7_25_RQA_I08	Request for Treatment Authorization Information
HL7_25_RQA_I09	Request for Modification to an Authorization
HL7_25_RQA_I10	Request for Re-submission of an Authorization
HL7_25_RQA_I11	Request for Cancellation of an Authorization
HL7_25_RQC_I05	Request for Patient Clinical Information
HL7_25_RQC_I06	Request/Receipt of Clinical Data Listing
HL7_25_RQI_I01	Request for Insurance Information
HL7_25_RQI_I02	Request/Receipt of Patient Selection Display List
HL7_25_RQI_I03	Request/Receipt of Patient Selection List
HL7_25_RQP_I04	Request for Patient Demographic Data
HL7_25_RRA_O18	Pharmacy/Treatment Administration Acknowledgment
HL7_25_RRD_O14	Pharmacy/Treatment Dispense Acknowledgment
HL7_25_RRE_O12	Pharmacy/Treatment Encoded Order Acknowledgment

HL7 2.5 OTD	HL7 Description
HL7_25_RRE_O26	Pharmacy/Treatment Refill Authorization Acknowledgement
HL7_25_RRG_O16	Pharmacy/Treatment Give Acknowledgment
HL7_25_RSP_K11	Segment Pattern Response in Response to QBP^Q11
HL7_25_RSP_K21	Get Person Demographics Response
HL7_25_RSP_K22	Find Candidates Response
HL7_25_RSP_K23	Get Corresponding Identifiers Response
HL7_25_RSP_K24	Allocate Identifiers Response
HL7_25_RSP_K25	Personnel Information by Segment
HL7_25_RSP_K31	Segment Pattern Response - Pharmacy Dispense Message
HL7_25_RSP_Z82	Segment Pattern Response - Dispense History
HL7_25_RSP_Z84	Segment Pattern Response - Who Am I
HL7_25_RSP_Z86	Segment Pattern Response - Pharmacy Information Comprehensive
HL7_25_RSP_Z88	Segment Pattern Response - Dispense Information
HL7_25_RSP_Z90	Segment Pattern Response - Lab Results History
HL7_25_RTB_K13	Tabular Response - RTB - Tabular response in response to QBP^Q13
HL7_25_RTB_Z74	Tabular Response - Information about Phone Calls
HL7_25_RTB_Z76	Tabular Response - Patient List
HL7_25_RTB_Z78	Tabular Response - Patient List
HL7_25_RTB_Z94	Tabular Response - Dispense History
HL7_25_RTB_Z96	Tabular Response - Dispense History
HL7_25_SIU_S12	Schedule Information Unsolicited - Notification of new appointment booking
HL7_25_SIU_S13	Schedule Information Unsolicited - Notification of Appointment Rescheduling
HL7_25_SIU_S14	Schedule Information Unsolicited - Notification of Appointment Modification
HL7_25_SIU_S15	Schedule Information Unsolicited - Notification of Appointment Cancellation
HL7_25_SIU_S16	Schedule Information Unsolicited - Notification of Appointment Discontinuation
HL7_25_SIU_S17	Schedule Information Unsolicited - Notification of Appointment Deletion
HL7_25_SIU_S18	Schedule Information Unsolicited - Notification of Addition of Service/Resource on Appointment
HL7_25_SIU_S19	Schedule Information Unsolicited - Notification of Modification of Service/Resource on Appointment
HL7_25_SIU_S20	Schedule Information Unsolicited - Notification of Cancellation of Service/Resource on Appointment

HL7 2.5 OTD	HL7 Description
HL7_25_SIU_S21	Schedule Information Unsolicited - Notification of Discontinuation of Service/Resource on Appointment
HL7_25_SIU_S22	Schedule Information Unsolicited - Notification of Deletion of Service/Resource on Appointment
HL7_25_SIU_S23	Schedule Information Unsolicited - Notification of Blocked Schedule Time Slot(s)
HL7_25_SIU_S24	Schedule Information Unsolicited - Notification of Opened (_unblocked_) Schedule Time Slot(s)
HL7_25_SIU_S26	Schedule Information Unsolicited - Notification that Patient did Not Show Up for Schedule Appointment
HL7_25_SQM_S25	Schedule Query Message - Schedule Query Message and Response
HL7_25_SRM_S01	Schedule Request Message - Request New Appointment Booking
HL7_25_SRM_S02	Schedule Request Message - Request Appointment Rescheduling
HL7_25_SRM_S03	Schedule Request Message - Request Appointment Modification
HL7_25_SRM_S04	Schedule Request Message - Request Appointment Cancellation
HL7_25_SRM_S05	Schedule Request Message - Request Appointment Discontinuation
HL7_25_SRM_S06	Schedule Request Message - Request Appointment Deletion
HL7_25_SRM_S07	Schedule Request Message - Request Addition of Service/Resource on Appointment
HL7_25_SRM_S08	Schedule Request Message - Request Modification of Service/Resource on Appointment
HL7_25_SRM_S09	Schedule Request Message - Request Cancellation of Service/Resource on Appointment
HL7_25_SRM_S10	Schedule Request Message - Request Discontinuation of Service/Resource on Appointment
HL7_25_SRM_S11	Schedule Request Message - Request Deletion of Service/Resource on Appointment
HL7_25_SSR_U04	Specimen Status Request Message
HL7_25_SSU_U03	Specimen Status Update Message
HL7_25_TCR_U11	Automated Equipment Test Code Settings Request
HL7_25_TCU_U10	Automated Equipment Test Code Settings Update
HL7_25_VXQ_V01	Query for Vaccination Record
HL7_25_VXR_V03	Vaccination Record Response
HL7_25_VXU_V04	Unsolicited Vaccination Record Update
HL7_25_VXX_V02	Response to Vaccination Query Returning Multiple PID Matches

4.1.2. **HL7 Version 2.4 Library**

HL7 2.4 OTD	HL7 Description
HL7_24_ADT_A01	Admit/Visit Notification
HL7_24_ADT_A02	Transfer a Patient
HL7_24_ADT_A03	Discharge/End Visit
HL7_24_ADT_A04	Register a Patient
HL7_24_ADT_A05	Pre-Admit a Patient
HL7_24_ADT_A06	Change an Outpatient to an Inpatient
HL7_24_ADT_A07	Change an Inpatient to an Outpatient
HL7_24_ADT_A08	Update Patient Information
HL7_24_ADT_A09	Patient Departing - Tracking
HL7_24_ADT_A10	Patient Arriving - Tracking
HL7_24_ADT_A11	Cancel Admit/Visit Notification
HL7_24_ADT_A12	Cancel Transfer
HL7_24_ADT_A13	Cancel Discharge/End Visit
HL7_24_ADT_A14	Pending Admit
HL7_24_ADT_A15	Pending Transfer
HL7_24_ADT_A16	Pending Discharge
HL7_24_ADT_A17	Swap Patients
HL7_24_ADT_A18	Merge Patient Information
HL7_24_ADT_A20	Bed Status Update
HL7_24_ADT_A21	Patient Goes on a Leave of Absence
HL7_24_ADT_A22	Patient Returns from a Leave of Absence
HL7_24_ADT_A23	Delete a Patient Record
HL7_24_ADT_A24	Link Patient Information
HL7_24_ADT_A25	Cancel Pending Discharge
HL7_24_ADT_A26	Cancel Pending Transfer
HL7_24_ADT_A27	Cancel Pending Admit
HL7_24_ADT_A28	Add Person or Patient Information
HL7_24_ADT_A29	Delete Person Information
HL7_24_ADT_A30	Merge Person Information
HL7_24_ADT_A31	Update Person Information
HL7_24_ADT_A32	Cancel Patient Arriving - Tracking
HL7_24_ADT_A33	Cancel Patient Departing - Tracking
HL7_24_ADT_A34	Merge Patient Information - Patient ID Only
HL7_24_ADT_A35	Merge Patient Information - Account Number Only
HL7_24_ADT_A36	Merge Patient Information - Patient ID & Account Number

HL7 2.4 OTD	HL7 Description
HL7_24_ADT_A37	Unlink Patient Information
HL7_24_ADT_A38	Cancel Pre-Admit
HL7_24_ADT_A39	Merge Patient - Patient ID
HL7_24_ADT_A40	Merge Patient - Patient Identifier List
HL7_24_ADT_A41	Merge Account - Patient Account Number
HL7_24_ADT_A42	Merge Visit - Visit Number
HL7_24_ADT_A43	Move Patient Information - Patient Identifier List
HL7_24_ADT_A44	Move Account Information - Patient Account Number
HL7_24_ADT_A45	Move Visit Information - Visit Number
HL7_24_ADT_A46	Change Patient ID
HL7_24_ADT_A47	Change Patient Identifier List
HL7_24_ADT_A48	Change Alternate
HL7_24_ADT_A49	Change Patient Account Number
HL7_24_ADT_A50	Change Visit Number
HL7_24_ADT_A51	Change Alternate Visit ID
HL7_24_ADT_A52	Cancel Leave of Absence for a Patient
HL7_24_ADT_A53	Cancel Patient Returns from a Leave of Absence
HL7_24_ADT_A54	Change Attending Doctor
HL7_24_ADT_A55	Cancel Change Attending Doctor
HL7_24_ADT_A60	Update Adverse Reaction Information
HL7_24_ADT_A61	Change Consulting Doctor
HL7_24_ADT_A62	Cancel Change Consulting Doctor
HL7_24_BAR_P01	Add Patient Account
HL7_24_BAR_P02	Purge Patient Accounts
HL7_24_BAR_P05	Update Account
HL7_24_BAR_P06	End Account
HL7_24_BAR_P10	Transmit Ambulatory Payment Classification (APC) Groups
HL7_24_CRM_C01	Register a Patient on a Clinical Trial
HL7_24_CRM_C02	Cancel a Patient Registration on Clinical Trial
HL7_24_CRM_C03	Correct/Update Registration Information
HL7_24_CRM_C04	Patient has Gone Off a Clinical Trial
HL7_24_CRM_C05	Patient Enters Phase of Clinical Trial
HL7_24_CRM_C06	Cancel Patient Entering a Phase
HL7_24_CRM_C07	Correct/Update Phase Information
HL7_24_CRM_C08	Patient has Gone Off Phase of Clinical Trial
HL7_24_CSU_C09	Automated Time Intervals for Reporting, Like Monthly

HL7 2.4 OTD	HL7 Description
HL7_24_CSU_C10	Patient Completes the Clinical Trial
HL7_24_CSU_C11	Patient Completes a Phase of the Clinical Trial
HL7_24_CSU_C12	Update/Correction of Patient Order/Result Information
HL7_24_DFT_P03	Post Detail Financial Transactions
HL7_24_DFT_P11	Post Detail Financial Transactions - Expanded
HL7_24_DSR_Q03	Deferred Response to a Query
HL7_24_EAC_U07	Automated Equipment Command
HL7_24_EAN_U09	Automated Equipment Notification
HL7_24_EAR_U08	Automated Equipment Response
HL7_24_EQQ_Q04	Embedded query language query
HL7_24_ESR_U02	Automated Equipment Status Request
HL7_24_ESU_U01	Automated Equipment Status Update
HL7_24_INR_U06	Automated Equipment Inventory Request
HL7_24_INU_U05	Automated Equipment Inventory Update
HL7_24_LSR_U13	Automated Equipment Log Service Request
HL7_24_LSU_U12	Automated Equipment Log Service Update
HL7_24_MDM_T01	Original Document Notification
HL7_24_MDM_T02	Original Document Notification and Content
HL7_24_MDM_T03	Document Status Change Notification
HL7_24_MDM_T04	Document Status Change Notification and Content
HL7_24_MDM_T05	Document Addendum Notification
HL7_24_MDM_T06	Document Addendum Notification and Content
HL7_24_MDM_T07	Document Edit Notification
HL7_24_MDM_T08	Document Edit Notification and Content
HL7_24_MDM_T09	Document Replacement Notification
HL7_24_MDM_T10	Document Replacement Notification and Content
HL7_24_MDM_T11	Document Cancel Notification
HL7_24_MFN_M01	Master File Notification
HL7_24_MFN_M02	Staff/Practitioner Master File Message
HL7_24_MFN_M03	Master File Notification - Test/Observation
HL7_24_MFN_M04	Charge Description Master File Message
HL7_24_MFN_M05	Patient Location Master File Message
HL7_24_MFN_M06	Clinical Trials Master File Message (Identifier Code CMA)
HL7_24_MFN_M07	Clinical Trials Master File Message (Identifier Code CMB)
HL7_24_MFN_M08	Master File Notification - Test/Observation (Numeric)
HL7_24_MFN_M09	Master File Notification - Test/Observation (Categorical)

HL7 2.4 OTD	HL7 Description
HL7_24_MFN_M10	Master File Notification - Test/Observation Batteries
HL7_24_MFN_M11	Master File Notification - Test/Calculated Observations
HL7_24_MFN_M12	Master File Notification - Additional Basic Observation/Service Attributes
HL7_24_MFQ_M01	Master Files Query - Not Otherwise Specified (for backward compatibility only)
HL7_24_MFQ_M02	Master Files Query - Staff/Practitioner
HL7_24_MFQ_M03	Master Files Query - Test/Observation (for backward compatibility only)
HL7_24_MFQ_M04	Master Files Query - Charge Description
HL7_24_MFQ_M05	Master Files Query - Patient Location
HL7_24_MFQ_M06	Master Files Query - Clinical Study with Phases and Schedules
HL7_24_NMD_N02	Application Management Data Message (unsolicited)
HL7_24_NMQ_N01	Application Management Query Message
HL7_24_OMD_O03	Diet Order
HL7_24_OMG_O19	General Clinical Order
HL7_24_OML_O21	Laboratory Order
HL7_24_OMN_O07	Non-Stock Requisition Order
HL7_24_OMP_O09	Pharmacy/Treatment Order
HL7_24_OMS_O05	Stock Requisition Order
HL7_24_ORM_O01	Order Message
HL7_24_ORR_O02	Order Response
HL7_24_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_24_OSQ_Q06	Query for Order Status
HL7_24_OUL_R21	Unsolicited Laboratory Observation
HL7_24_PEX_P07	Unsolicited Initial Individual Product Experience Report
HL7_24_PEX_P08	Unsolicited Update Individual Product Experience Report
HL7_24_PGL_PC6	Goal Add
HL7_24_PGL_PC7	Goal Update
HL7_24_PGL_PC8	Goal Delete
HL7_24_PIN_I07	Unsolicited Insurance Information
HL7_24_PMU_B01	Add Personnel Record
HL7_24_PMU_B02	Update Personnel Record
HL7_24_PMU_B03	Delete Personnel Record
HL7_24_PMU_B04	Active Practicing Person
HL7_24_PMU_B05	Deactivate Practicing Person
HL7_24_PMU_B06	Terminate Practicing Person

HL7 2.4 OTD	HL7 Description
HL7_24_PPG_PCG	Pathway (Goal-Oriented) Add
HL7_24_PPG_PCH	Pathway (Goal-Oriented) Update
HL7_24_PPG_PCJ	Pathway (Goal-Oriented) Delete
HL7_24_PPP_PCB	Pathway (Problem-Oriented) Add
HL7_24_PPP_PCC	Pathway (Problem-Oriented) Update
HL7_24_PPP_PCD	Pathway (Problem-Oriented) Delete
HL7_24_PPR_PC1	Problem Add
HL7_24_PPR_PC2	Problem Update
HL7_24_PPR_PC3	Problem Delete
HL7_24_QBP_Q11	Query by Parameter Requesting an RSP Segment Pattern Response
HL7_24_QBP_Q13	Query by Parameter Requesting an RTB - Tabular Response
HL7_24_QBP_Q15	Query by Parameter Requesting an RDY Display Response
HL7_24_QBP_Q21	Get Person Demographics
HL7_24_QBP_Q22	Find Candidates
HL7_24_QBP_Q23	Get Corresponding Identifiers
HL7_24_QBP_Q24	Allocate Identifiers
HL7_24_QBP_Q25	Personnel Information by Segment Query
HL7_24_QBP_Z73	Query by Parameter - Information about Phone Calls
HL7_24_QBP_Z75	Query by Parameter - Tabular Patient List
HL7_24_QBP_Z77	Query by Parameter - Tabular Patient List
HL7_24_QBP_Z79	Query by Parameter - Dispense Information
HL7_24_QBP_Z81	Query by Parameter - Dispense History
HL7_24_QBP_Z85	Query by Parameter - Pharmacy Information Comprehensive
HL7_24_QBP_Z87	Query by Parameter - Dispense Information
HL7_24_QBP_Z89	Query by Parameter - Lab Results History
HL7_24_QBP_Z91	Query by Parameter - Who am I
HL7_24_QBP_Z93	Query by Parameter - Tabular Dispense History
HL7_24_QBP_Z95	Query by Parameter - Tabular Dispense History
HL7_24_QBP_Z97	Query by Parameter - Dispense History
HL7_24_QBP_Z99	Query by Parameter - Who Am I
HL7_24_QCN_J01	Cancel Query/Acknowledge Message
HL7_24_QRY_A19	Patient Query
HL7_24_QRY_PC4	Problem Query
HL7_24_QRY_PC9	Goal Query
HL7_24_QRY_PCE	Pathway (Problem-Oriented) Query
HL7_24_QRY_PCK	Pathway (Goal-Oriented) Query

HL7 2.4 OTD	HL7 Description
HL7_24_QRY_Q01	Query Sent for Immediate Response
HL7_24_QRY_Q02	Query Sent for Deferred Response
HL7_24_QRY_Q26	Pharmacy/Treatment Order Response
HL7_24_QRY_Q27	Pharmacy/Treatment Administration Information
HL7_24_QRY_Q28	Pharmacy/Treatment Dispense Information
HL7_24_QRY_Q29	Pharmacy/Treatment Encoded Order Information
HL7_24_QRY_Q30	Pharmacy/Treatment Dose Information
HL7_24_QRY_R02	Unsolicited Transmission of an Observation Message
HL7_24_QRY_T12	Document Query
HL7_24_QSB_Q16	Create Subscription
HL7_24_QSB_Z83	Create subscription - ORU
HL7_24_QSX_J02	Cancel Subscription/Acknowledge Message
HL7_24_QVR_Q17	Query for Previous Events
HL7_24_RAS_O17	Pharmacy/Treatment Administration
HL7_24_RDE_O11	Pharmacy/Treatment Encoded Order
HL7_24_RDS_O13	Pharmacy/Treatment Dispense
HL7_24_REF_I12	Patient Referral
HL7_24_REF_I13	Modify Patient Referral
HL7_24_REF_I14	Cancel Patient Referral
HL7_24_REF_I15	Request Patient Referral Status
HL7_24_RGV_O15	Pharmacy/Treatment Give
HL7_24_RQA_I08	Request for Treatment Authorization Information
HL7_24_RQA_I09	Request for Modification to an Authorization
HL7_24_RQA_I10	Request for Re-submission of an Authorization
HL7_24_RQA_I11	Request for Cancellation of an Authorization
HL7_24_RQC_I05	Request for Patient Clinical Information
HL7_24_RQC_I06	Request/receipt of Clinical Data Listing
HL7_24_RQI_I01	Request for Insurance Information
HL7_24_RQI_I02	Request/Receipt of Patient Selection Display List
HL7_24_RQI_I03	Request/Receipt of Patient Selection List
HL7_24_RQP_I04	Request for Patient Demographic Data
HL7_24_RQQ_Q09	Event Replay Query
HL7_24_SIU_S12	Schedule Information Unsolicited - Notification of new appointment booking
HL7_24_SIU_S13	Schedule Information Unsolicited - Notification of Appointment Rescheduling

HL7 2.4 OTD	HL7 Description
HL7_24_SIU_S14	Schedule Information Unsolicited - Notification of Appointment Modification
HL7_24_SIU_S15	Schedule Information Unsolicited - Notification of Appointment Cancellation
HL7_24_SIU_S16	Schedule Information Unsolicited - Notification of Appointment Discontinuation
HL7_24_SIU_S17	Schedule Information Unsolicited - Notification of Appointment Deletion
HL7_24_SIU_S18	Schedule Information Unsolicited - Notification of Addition of Service/Resource on Appointment
HL7_24_SIU_S19	Schedule Information Unsolicited - Notification of Modification of Service/Resource on Appointment
HL7_24_SIU_S20	Schedule Information Unsolicited - Notification of Cancellation of Service/Resource on Appointment
HL7_24_SIU_S21	Schedule Information Unsolicited - Notification of Discontinuation of Service/Resource on Appointment
HL7_24_SIU_S22	Schedule Information Unsolicited - Notification of Deletion of Service/Resource on Appointment
HL7_24_SIU_S23	Schedule Information Unsolicited - Notification of Blocked Schedule Time Slot(s)
HL7_24_SIU_S24	Schedule Information Unsolicited - Notification of Opened (_unblocked_) Schedule Time Slot(s)
HL7_24_SIU_S26	Schedule Information Unsolicited - Notification that Patient did Not Show Up for Schedule Appointment
HL7_24_SPQ_Q08	Stored Procedure Request
HL7_24_SQM_S25	Schedule Query Message and Response
HL7_24_SRM_S01	Schedule Request Message - Request New Appointment Booking
HL7_24_SRM_S02	Schedule Request Message - Request Appointment Rescheduling
HL7_24_SRM_S03	Schedule Request Message - Request Appointment Modification
HL7_24_SRM_S04	Schedule Request Message - Request Appointment Cancellation
HL7_24_SRM_S05	Schedule Request Message - Request Appointment Discontinuation
HL7_24_SRM_S06	Schedule Request Message - Request Appointment Deletion
HL7_24_SRM_S07	Schedule Request Message - Request Addition of Service/Resource on Appointment
HL7_24_SRM_S08	Schedule Request Message - Request Modification of Service/Resource on Appointment
HL7_24_SRM_S09	Schedule Request Message - Request Cancellation of Service/Resource on Appointment
HL7_24_SRM_S10	Schedule Request Message - Request Discontinuation of Service/Resource on Appointment

HL7 2.4 OTD	HL7 Description
HL7_24_SRM_S11	Schedule Request Message - Request Deletion of Service/Resource on Appointment
HL7_24_SSR_U04	Specimen Status Request
HL7_24_SSU_U03	Specimen Status Update
HL7_24_SUR_P09	Summary Product Experience Report
HL7_24_TCR_U11	Automated Equipment Test Code Settings Request
HL7_24_TCU_U10	Automated Equipment Test Code Settings Update
HL7_24_UDM_Q05	Unsolicited Display Update Message
HL7_24_VQQ_Q07	Virtual Table Query
HL7_24_VXQ_V01	Query for Vaccination Record
HL7_24_VXU_V04	Unsolicited Vaccination Record Update

4.1.3. HL7 Version 2.3.1 Library

HL7 2.3.1 OTD	HL7 Description
HL7_231_ADT_A01	Admit/Visit Notification
HL7_231_ADT_A02	Transfer a Patient
HL7_231_ADT_A03	Discharge/End Visit
HL7_231_ADT_A04	Register a Patient
HL7_231_ADT_A05	Pre-Admit a Patient
HL7_231_ADT_A06	Change an Outpatient to an Inpatient
HL7_231_ADT_A07	Change an Inpatient to an Outpatient
HL7_231_ADT_A08	Update Patient Information
HL7_231_ADT_A09	Patient Departing - Tracking
HL7_231_ADT_A10	Patient Arriving - Tracking
HL7_231_ADT_A11	Cancel Admit/Visit Notification
HL7_231_ADT_A12	Cancel Transfer
HL7_231_ADT_A13	Cancel Discharge/End Visit
HL7_231_ADT_A14	Pending Admit
HL7_231_ADT_A15	Pending Transfer
HL7_231_ADT_A16	Pending Discharge
HL7_231_ADT_A17	Swap Patients
HL7_231_ADT_A18	Merge Patient Information
HL7_231_ADT_A20	Bed Status Update
HL7_231_ADT_A21	Patient Goes on a Leave of Absence
HL7_231_ADT_A22	Patient Returns from a Leave of Absence

HL7 2.3.1 OTD	HL7 Description
HL7_231_ADT_A23	Delete a Patient Record
HL7_231_ADT_A24	Link Patient Information
HL7_231_ADT_A25	Cancel Pending Discharge
HL7_231_ADT_A26	Cancel Pending Transfer
HL7_231_ADT_A27	Cancel Pending Admit
HL7_231_ADT_A28	Add Person or Patient Information
HL7_231_ADT_A29	Delete Person Information
HL7_231_ADT_A30	Merge Person Information
HL7_231_ADT_A31	Update Person Information
HL7_231_ADT_A32	Cancel Patient Arriving - Tracking
HL7_231_ADT_A33	Cancel Patient Departing - Tracking
HL7_231_ADT_A34	Merge Patient Information - Patient ID Only
HL7_231_ADT_A35	Merge Patient Information - Account Number Only
HL7_231_ADT_A36	Merge Patient Information - Patient ID & Account Number
HL7_231_ADT_A37	Unlink Patient Information
HL7_231_ADT_A38	Cancel Pre-Admit
HL7_231_ADT_A39	Merge Patient - Patient ID
HL7_231_ADT_A40	Merge Patient - Patient Identifier List
HL7_231_ADT_A41	Merge Account - Patient Account Number
HL7_231_ADT_A42	Merge Visit - Visit Number
HL7_231_ADT_A43	Move Patient Information - Patient Identifier List
HL7_231_ADT_A44	Move Account Information - Patient Account Number
HL7_231_ADT_A45	Move Visit Information - Visit Number
HL7_231_ADT_A46	Change Patient ID
HL7_231_ADT_A47	Change Patient Identifier List
HL7_231_ADT_A48	Change Alternate
HL7_231_ADT_A49	Change Patient Account Number
HL7_231_ADT_A50	Change Visit Number
HL7_231_ADT_A51	Change Alternate Visit ID
HL7_231_BAR_P01	Add Patient Account
HL7_231_BAR_P02	Purge Patient Accounts
HL7_231_BAR_P05	Update Account
HL7_231_BAR_P06	End Account
HL7_231_CRM_C01	Register a Patient on a Clinical Trial
HL7_231_CRM_C02	Cancel a Patient Registration on Clinical Trial
HL7_231_CRM_C03	Correct/Update Registration Information

HL7 2.3.1 OTD	HL7 Description
HL7_231_CRM_C04	Patient has Gone Off a Clinical Trial
HL7_231_CRM_C05	Patient Enters Phase of Clinical Trial
HL7_231_CRM_C06	Cancel Patient Entering a Phase
HL7_231_CRM_C07	Correct/Update Phase Information
HL7_231_CRM_C08	Patient has Gone Off Phase of Clinical Trial
HL7_231_CSU_C09	Automated Time Intervals for Reporting, Like Monthly
HL7_231_CSU_C10	Patient Completes the Clinical Trial
HL7_231_CSU_C11	Patient Completes a Phase of the Clinical Trial
HL7_231_CSU_C12	Update/Correction of Patient Order/Result Information
HL7_231_DFT_P03	Post Detail Financial Transactions
HL7_231_DSR_Q03	Post Detail Financial Transactions - Expanded
HL7_231_EDR_R07	Enhanced Display Response
HL7_231_EQQ_Q04	Embedded Query Language Query
HL7_231_ERP_R09	Event Replay Response
HL7_231_MDM_T01	Original Document Notification
HL7_231_MDM_T02	Original Document Notification and Content
HL7_231_MDM_T03	Document Status Change Notification
HL7_231_MDM_T04	Document Status Change Notification and Content
HL7_231_MDM_T05	Document Addendum Notification
HL7_231_MDM_T06	Document Addendum Notification and Content
HL7_231_MDM_T07	Document Edit Notification
HL7_231_MDM_T08	Document Edit Notification and Content
HL7_231_MDM_T09	Document Replacement Notification
HL7_231_MDM_T10	Document Replacement Notification and Content
HL7_231_MDM_T11	Document Cancel Notification
HL7_231_MFN_M01	Master File Notification
HL7_231_MFN_M02	Staff/Practitioner Master File Message
HL7_231_MFN_M03	Master File Notification - Test/Observation
HL7_231_MFN_M04	Charge Description Master File Message
HL7_231_MFN_M05	Patient Location Master File Message
HL7_231_MFN_M06	Clinical Trials Master File Message (Identifier Code CMA)
HL7_231_MFN_M08	Master File Notification - Test/Observation (Numeric)
HL7_231_MFN_M09	Master File Notification - Test/Observation (Categorical)
HL7_231_MFN_M10	Master File Notification - Test/Observation Batteries
HL7_231_MFN_M11	Master File Notification - Test/Calculated Observations
HL7_231_MFQ_M01	Master Files Query - Not Otherwise Specified (for backward compatibility only)

HL7 2.3.1 OTD	HL7 Description
HL7_231_MFQ_M02	Master Files Query - Staff/Practitioner
HL7_231_MFQ_M03	Master Files Query - Test/Observation (for backward compatibility only)
HL7_231_MFQ_M04	Master Files Query - Charge Description
HL7_231_MFQ_M05	Master Files Query - Patient Location
HL7_231_MFQ_M06	Master Files Query - Clinical Study with Phases and Schedules
HL7_231_NMD_N02	Application Management Data Message
HL7_231_NMQ_N01	Application Management Query Message
HL7_231_OMD_O01	Dietary Order
HL7_231_OMN_O01	Non-Stock Requisition Order Message
HL7_231_OMS_O01	Stock Requisition Order Message
HL7_231_ORD_O02	Dietary Order Acknowledgment Message
HL7_231_ORM_O01	Pharmacy/Treatment Order Message
HL7_231_ORN_O02	General Order Acknowledgment Message
HL7_231_ORR_O02	General Order Response Message Response to any ORM
HL7_231_ORS_O02	Stock Requisition Acknowledgment
HL7_231_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_231_OSQ_Q06	Query for Order Status
HL7_231_PEX_P07	Unsolicited Initial Individual Product Experience Report
HL7_231_PEX_P08	Unsolicited Update Individual Product Experience Report
HL7_231_PGL_PC6	Patient Goal Message - Goal Add
HL7_231_PGL_PC7	Patient Goal Message - Goal Update
HL7_231_PGL_PC8	Patient Goal Message - Goal Delete
HL7_231_PIN_I07	Patient Insurance Information - Unsolicited
HL7_231_PPG_PCG	Pathway (Goal-Oriented) Add
HL7_231_PPG_PCH	Pathway (Goal-Oriented) Update
HL7_231_PPG_PCJ	Pathway (Goal-Oriented) Delete
HL7_231_PPP_PCB	Pathway (Problem-Oriented) Add
HL7_231_PPP_PCC	Pathway (Problem-Oriented) Update
HL7_231_PPP_PCD	Pathway (Problem-Oriented) Delete
HL7_231_PPR_PC1	Problem Add
HL7_231_PPR_PC2	Problem Update
HL7_231_PPR_PC3	Problem Delete
HL7_231_PPT_PCL	Pathway (Goal-Oriented) Query Response
HL7_231_PPV_PCA	Goal Response
HL7_231_PRR_PC5	Problem Response
HL7_231_PTR_PCF	Pathway (Problem-Oriented) Query Response

HL7 2.3.1 OTD	HL7 Description
HL7_231_QRY_A19	Patient Query
HL7_231_QRY_PC4	Problem Query
HL7_231_QRY_PC9	Goal Query
HL7_231_QRY_PCE	Pathway (Problem-Oriented) Query
HL7_231_QRY_PCK	Pathway (Goal-Oriented) Query
HL7_231_QRY_Q01	Query Sent for Immediate Response
HL7_231_QRY_Q02	Query Sent for Deferred Response
HL7_231_QRY_R02	Query for Results of Observation
HL7_231_QRY_T12	Document Query
HL7_231_RAR_RAR	Pharmacy Administration Information
HL7_231_RAS_O01	Pharmacy/Treatment Administration Order Message
HL7_231_RDE_O01	Pharmacy/Treatment Encoded Order Message
HL7_231_RDO_O01	Pharmacy/Treatment Order Message
HL7_231_RDR_RDR	Pharmacy/Treatment Dispense Information
HL7_231_RDS_O01	Pharmacy/Treatment Dispense Order Message
HL7_231_REF_I12	Patient Referral
HL7_231_REF_I13	Modify Patient Referral
HL7_231_REF_I14	Cancel Patient Referral
HL7_231_REF_I15	Request Patient Referral Status
HL7_231_RER_RER	Pharmacy/Treatment Encoded Order Information
HL7_231_RGR_RGR	Pharmacy/Treatment Dose Information
HL7_231_RGV_O01	Pharmacy/Treatment Give - Order Message
HL7_231_ROR_R0R	Pharmacy/Treatment Order Response
HL7_231_RQA_I08	Request for Treatment Authorization Information
HL7_231_RQA_I09	Request for Modification to an Authorization
HL7_231_RQA_I10	Request for Re-submission of an Authorization
HL7_231_RQA_I11	Request for Cancellation of an Authorization
HL7_231_RQC_I05	Request for Patient Clinical Information
HL7_231_RQC_I06	Request/Receipt of Clinical Data Listing
HL7_231_RQI_I01	Request for Insurance Information
HL7_231_RQI_I02	Request/Receipt of Patient Selection Display List
HL7_231_RQI_I03	Request/Receipt of Patient Selection List
HL7_231_RQP_I04	Request for Patient Demographic Data
HL7_231_RQQ_Q09	Event Replay Query
HL7_231_RRA_O02	Pharmacy/Treatment Administration Acknowledgment Message
HL7_231_RRD_O02	Pharmacy/Treatment Dispense Acknowledgment Message

HL7 2.3.1 OTD	HL7 Description
HL7_231_RRE_O02	Pharmacy/Treatment Encoded Order Acknowledgment Message
HL7_231_RRG_O02	Pharmacy/Treatment Give Acknowledgment Message
HL7_231_RRO_O02	ORR Message for Pharmacy/Treatment - Order Response
HL7_231_SIU_S12	Schedule Information Unsolicited - Notification of new appointment booking
HL7_231_SIU_S13	Schedule Information Unsolicited - Notification of Appointment Rescheduling
HL7_231_SIU_S14	Schedule Information Unsolicited - Notification of Appointment Modification
HL7_231_SIU_S15	Schedule Information Unsolicited - Notification of Appointment Cancellation
HL7_231_SIU_S16	Schedule Information Unsolicited - Notification of Appointment Discontinuation
HL7_231_SIU_S17	Schedule Information Unsolicited - Notification of Appointment Deletion
HL7_231_SIU_S18	Schedule Information Unsolicited - Notification of Addition of Service/Resource on Appointment
HL7_231_SIU_S19	Schedule Information Unsolicited - Notification of Modification of Service/Resource on Appointment
HL7_231_SIU_S20	Schedule Information Unsolicited - Notification of Cancellation of Service/Resource on Appointment
HL7_231_SIU_S21	Schedule Information Unsolicited - Notification of Discontinuation of Service/Resource on Appointment
HL7_231_SIU_S22	Schedule Information Unsolicited - Notification of Deletion of Service/Resource on Appointment
HL7_231_SIU_S23	Schedule Information Unsolicited - Notification of Blocked Schedule Time Slot(s)
HL7_231_SIU_S24	Schedule Information Unsolicited - Notification of Opened (_unblocked_) Schedule Time Slot(s)
HL7_231_SIU_S26	Schedule Information Unsolicited - Notification that Patient did Not Show Up for Schedule Appointment
HL7_231_SPQ_Q08	Stored Procedure Request
HL7_231_SQM_S25	Schedule Query Message and Response
HL7_231_SRM_S01	Schedule Request Message - Request New Appointment Booking
HL7_231_SRM_S02	Schedule Request Message - Request Appointment Rescheduling
HL7_231_SRM_S03	Schedule Request Message - Request Appointment Modification
HL7_231_SRM_S04	Schedule Request Message - Request Appointment Cancellation
HL7_231_SRM_S05	Schedule Request Message - Request Appointment Discontinuation
HL7_231_SRM_S06	Schedule Request Message - Request Appointment Deletion

HL7 2.3.1 OTD	HL7 Description
HL7_231_SRM_S07	Schedule Request Message - Request Addition of Service/Resource on Appointment
HL7_231_SRM_S08	Schedule Request Message - Request Modification of Service/Resource on Appointment
HL7_231_SRM_S09	Schedule Request Message - Request Cancellation of Service/Resource on Appointment
HL7_231_SRM_S10	Schedule Request Message - Request Discontinuation of Service/Resource on Appointment
HL7_231_SRM_S11	Schedule Request Message - Request Deletion of Service/Resource on Appointment
HL7_231_SUR_P09	Summary Product Experience Report
HL7_231_TBR_R08	Tabular Data Response
HL7_231_UDM_Q05	Unsolicited Display Update Message
HL7_231_VQQ_Q07	Virtual Table Query
HL7_231_VXQ_V01	Query for Vaccination Record
HL7_231_VXR_V03	Vaccination Record Response
HL7_231_VXU_V04	Unsolicited Vaccination Record Update
HL7_231_VXX_V02	Response to Vaccination Query Returning Multiple PID Matches

4.1.4. HL7 Version 2.3 OTD Library

HL7 2.3 OTD	HL7 Description
HL7_23_ADT_A01	Admit/Visit Notification
HL7_23_ADT_A02	Transfer a Patient
HL7_23_ADT_A03	Discharge/End Visit
HL7_23_ADT_A04	Register a Patient
HL7_23_ADT_A05	Pre-Admit a Patient
HL7_23_ADT_A06	Change an Outpatient to an Inpatient
HL7_23_ADT_A07	Change an Inpatient to an Outpatient
HL7_23_ADT_A08	Update Patient Information
HL7_23_ADT_A09	Patient Departing - Tracking
HL7_23_ADT_A10	Patient Arriving - Tracking
HL7_23_ADT_A11	Cancel Admit/Visit Notification
HL7_23_ADT_A12	Cancel Transfer
HL7_23_ADT_A13	Cancel Discharge/End Visit
HL7_23_ADT_A14	Pending Admit
HL7_23_ADT_A15	Pending Transfer

HL7 2.3 OTD	HL7 Description
HL7_23_ADT_A16	Pending Discharge
HL7_23_ADT_A17	Swap Patients
HL7_23_ADT_A18	Merge Patient Information
HL7_23_ADT_A20	Bed Status Update
HL7_23_ADT_A21	Patient Goes on a Leave of Absence
HL7_23_ADT_A22	Patient Returns from a Leave of Absence
HL7_23_ADT_A23	Delete a Patient Record
HL7_23_ADT_A24	Link Patient Information
HL7_23_ADT_A25	Cancel Pending Discharge
HL7_23_ADT_A26	Cancel Pending Transfer
HL7_23_ADT_A27	Cancel Pending Admit
HL7_23_ADT_A28	Add Person or Patient Information
HL7_23_ADT_A29	Delete Person Information
HL7_23_ADT_A30	Merge Person Information
HL7_23_ADT_A31	Update Person Information
HL7_23_ADT_A32	Cancel Patient Arriving - Tracking
HL7_23_ADT_A33	Cancel Patient Departing - Tracking
HL7_23_ADT_A34	Merge Patient Information - Patient ID Only
HL7_23_ADT_A35	Merge Patient Information - Account Number Only
HL7_23_ADT_A36	Merge Patient Information - Patient ID & Account Number
HL7_23_ADT_A37	Unlink Patient Information
HL7_23_ADT_A38	Cancel Pre-Admit
HL7_23_ADT_A39	Merge Patient - Patient ID
HL7_23_ADT_A40	Merge Patient - Patient Identifier List
HL7_23_ADT_A41	Merge Account - Patient Account Number
HL7_23_ADT_A42	Merge Visit - Visit Number
HL7_23_ADT_A43	Move Patient Information - Patient Identifier List
HL7_23_ADT_A44	Move Account Information - Patient Account Number
HL7_23_ADT_A45	Move Visit Information - Visit Number
HL7_23_ADT_A46	Change Patient ID
HL7_23_ADT_A47	Change Patient Identifier List
HL7_23_ADT_A48	Change Alternate
HL7_23_ADT_A49	Change Patient Account Number
HL7_23_ADT_A50	Change Visit Number
HL7_23_ADT_A51	Change Alternate Visit ID
HL7_23_BAR_P01	Add Patient Account

HL7 2.3 OTD	HL7 Description
HL7_23_BAR_P02	Purge Patient Accounts
HL7_23_BAR_P05	Update Account
HL7_23_BAR_P06	End Account
HL7_23_CRM_C01	Register a Patient on a Clinical Trial
HL7_23_CRM_C02	Cancel a Patient Registration on Clinical Trial
HL7_23_CRM_C03	Correct/Update Registration Information
HL7_23_CRM_C04	Patient has Gone Off a Clinical Trial
HL7_23_CRM_C05	Patient Enters Phase of Clinical Trial
HL7_23_CRM_C06	Cancel Patient Entering a Phase
HL7_23_CRM_C07	Correct/Update Phase Information
HL7_23_CRM_C08	Patient has Gone Off Phase of Clinical Trial
HL7_23_CSU_C09	Automated Time Intervals for Reporting, Like Monthly
HL7_23_CSU_C10	Patient Completes the Clinical Trial
HL7_23_CSU_C11	Patient Completes a Phase of the Clinical Trial
HL7_23_CSU_C12	Update/Correction of Patient Order/Result Information
HL7_23_DFT_P03	Post Detail Financial Transactions
HL7_23_DSR_Q03	Deferred Response to a Query
HL7_23_EDR_Q01	Enhanced Display Response
HL7_23_EQQ_Q01	Embedded Query Language Query
HL7_23_ERP_Q01	Event Replay Response
HL7_23_MDM_T01	Original Document Notification
HL7_23_MDM_T02	Original Document Notification and Content
HL7_23_MDM_T03	Document Status Change Notification
HL7_23_MDM_T04	Document Status Change Notification and Content
HL7_23_MDM_T05	Document Addendum Notification
HL7_23_MDM_T06	Document Addendum Notification and Content
HL7_23_MDM_T07	Document Edit Notification
HL7_23_MDM_T08	Document Edit Notification and Content
HL7_23_MDM_T09	Document Replacement Notification
HL7_23_MDM_T10	Document Replacement Notification and Content
HL7_23_MDM_T11	Document Cancel Notification
HL7_23_MFN_M01	Master File Notification
HL7_23_MFN_M02	Staff/Practitioner Master File Message
HL7_23_MFN_M03	Master File Notification - Test/Observation
HL7_23_MFN_M04	Charge Description Master File Message
HL7_23_MFN_M05	Patient Location Master File Message

HL7 2.3 OTD	HL7 Description
HL7_23_MFN_M06	Clinical Trials Master File Message (Identifier Code CMA)
HL7_23_MFN_M07	Clinical Trials Master File Message (Identifier Code CMB)
HL7_23_MFN_M08	Master File Notification - Test/Observation (Numeric)
HL7_23_MFN_M09	Master File Notification - Test/Observation (Categorical)
HL7_23_MFN_M10	Master File Notification - Test/Observation Batteries
HL7_23_MFN_M11	Master File Notification - Test/Calculated Observations
HL7_23_OMD_O01	Dietary Order
HL7_23_OMN_O01	Non-Stock Requisition Order Message
HL7_23_OMS_O01	Stock Requisition Order Message
HL7_23_ORD_O02	Dietary Order Acknowledgment Message
HL7_23_ORM_O01	Pharmacy/Treatment Order Message
HL7_23_ORN_O02	General Order Acknowledgment Message
HL7_23_ORR_O02	General Order Response Message Response to any ORM
HL7_23_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_23_OSQ_Q06	Query Response for Order Status
HL7_23_PEX_P07	Unsolicited Initial Individual Product Experience Report
HL7_23_PEX_P08	Unsolicited Update Individual Product Experience Report
HL7_23_PGL_PC6	Patient Goal Message - Goal Add
HL7_23_PGL_PC7	Patient Goal Message - Goal Update
HL7_23_PGL_PC8	Patient Goal Message - Goal Delete
HL7_23_PIN_I07	Patient Insurance Information - Unsolicited
HL7_23_PPG_PCG	Pathway (Goal-Oriented) Add
HL7_23_PPG_PCH	Pathway (Goal-Oriented) Update
HL7_23_PPG_PCJ	Pathway (Goal-Oriented) Delete
HL7_23_PPP_PCB	Pathway (Problem-Oriented) Add
HL7_23_PPP_PCC	Pathway (Problem-Oriented) Update
HL7_23_PPP_PCD	Pathway (Problem-Oriented) Delete
HL7_23_PPR_PC1	Problem Add
HL7_23_PPR_PC2	Problem Update
HL7_23_PPR_PC3	Problem Delete
HL7_23_PPT_PCL	Pathway (Goal-Oriented) Query Response
HL7_23_PPV_PCA	Goal Response
HL7_23_PRR_PC5	Problem Response
HL7_23_PTR_PCF	Pathway (Problem-Oriented) Query Response
HL7_23_QRY_A19	Patient Query
HL7_23_QRY_PC4	Problem Query

HL7 2.3 OTD	HL7 Description
HL7_23_QRY_PC9	Goal Query
HL7_23_QRY_PCE	Pathway (Problem-Oriented) Query
HL7_23_QRY_PCK	Pathway (Goal-Oriented) Query
HL7_23_QRY_Q01	Query Sent for Immediate Response
HL7_23_QRY_Q02	Query Sent for Deferred Response
HL7_23_QRY_R02	Query for Results of Observation
HL7_23_QRY_T12	Document Query
HL7_23_RAR_RAR	Pharmacy Administration Information
HL7_23_RAS_O01	Pharmacy/Treatment Administration Order Message
HL7_23_RDE_O01	Pharmacy/Treatment Encoded Order Message
HL7_23_RDO_O01	Pharmacy/Treatment Order Message
HL7_23_RDR_RDR	Pharmacy/Treatment Dispense Information
HL7_23_RDS_O01	Pharmacy/Treatment Dispense Order Message
HL7_23_REF_I12	Patient Referral
HL7_23_REF_I13	Modify Patient Referral
HL7_23_REF_I14	Cancel Patient Referral
HL7_23_REF_I15	Request Patient Referral Status
HL7_23_RER_RER	Pharmacy/Treatment Encoded Order Information
HL7_23_RGR_RGR	Pharmacy/Treatment Dose Information
HL7_23_RGV_O01	Pharmacy/Treatment Give - Order Message
HL7_23_ROR_ROR	Pharmacy/Treatment Order Response
HL7_23_RQA_I08	Request for Treatment Authorization Information
HL7_23_RQA_I09	Request for Modification to an Authorization
HL7_23_RQA_I10	Request for Re-submission of an Authorization
HL7_23_RQA_I11	Request for Cancellation of an Authorization
HL7_23_RQC_I05	Request for Patient Clinical Information
HL7_23_RQC_I06	Request/Receipt of Clinical Data Listing
HL7_23_RQI_I01	Request for Insurance Information
HL7_23_RQI_I02	Request/Receipt of Patient Selection Display List
HL7_23_RQI_I03	Request/Receipt of Patient Selection List
HL7_23_RQP_I04	Request for Patient Demographic Data
HL7_23_RQQ_Q01	Event replay query - Sent for Immediate Response
HL7_23_RRA_O02	Pharmacy/Treatment Administration Acknowledgment Message
HL7_23_RRD_O02	Pharmacy/Treatment Dispense Acknowledgment Message
HL7_23_RRG_O02	Pharmacy/Treatment Give Acknowledgment Message
HL7_23_RRO_O02	ORR Message for Pharmacy/Treatment - Order Response

HL7 2.3 OTD	HL7 Description
HL7_23_SIU_S12	Schedule Information Unsolicited - Notification of new appointment booking
HL7_23_SIU_S13	Schedule Information Unsolicited - Notification of Appointment Rescheduling
HL7_23_SIU_S14	Schedule Information Unsolicited - Notification of Appointment Modification
HL7_23_SIU_S15	Schedule Information Unsolicited - Notification of Appointment Cancellation
HL7_23_SIU_S16	Schedule Information Unsolicited - Notification of Appointment Discontinuation
HL7_23_SIU_S17	Schedule Information Unsolicited - Notification of Appointment Deletion
HL7_23_SIU_S18	Schedule Information Unsolicited - Notification of Addition of Service/Resource on Appointment
HL7_23_SIU_S19	Schedule Information Unsolicited - Notification of Modification of Service/Resource on Appointment
HL7_23_SIU_S20	Schedule Information Unsolicited - Notification of Cancellation of Service/Resource on Appointment
HL7_23_SIU_S21	Schedule Information Unsolicited - Notification of Discontinuation of Service/Resource on Appointment
HL7_23_SIU_S22	Schedule Information Unsolicited - Notification of Deletion of Service/Resource on Appointment
HL7_23_SIU_S23	Schedule Information Unsolicited - Notification of Blocked Schedule Time Slot(s)
HL7_23_SIU_S24	Schedule Information Unsolicited - Notification of Opened (_unblocked_) Schedule Time Slot(s)
HL7_23_SIU_S26	Schedule Information Unsolicited - Notification that Patient did Not Show Up for Schedule Appointment
HL7_23_SPQ_Q01	Stored Procedure Request
HL7_23_SQM_S25	Schedule Query Message and Response
HL7_23_SRM_S01	Schedule Request Message - Request New Appointment Booking
HL7_23_SRM_S02	Schedule Request Message - Request Appointment Rescheduling
HL7_23_SRM_S03	Schedule Request Message - Request Appointment Modification
HL7_23_SRM_S04	Schedule Request Message - Request Appointment Cancellation
HL7_23_SRM_S05	Schedule Request Message - Request Appointment Discontinuation
HL7_23_SRM_S06	Schedule Request Message - Request Appointment Deletion
HL7_23_SRM_S07	Schedule Request Message - Request Addition of Service/Resource on Appointment
HL7_23_SRM_S08	Schedule Request Message - Request Modification of Service/ Resource on Appointment

HL7 2.3 OTD	HL7 Description
HL7_23_SRM_S09	Schedule Request Message - Request Cancellation of Service/Resource on Appointment
HL7_23_SRM_S10	Schedule Request Message - Request Discontinuation of Service/Resource on Appointment
HL7_23_SRM_S11	Schedule Request Message - Request Deletion of Service/Resource on Appointment
HL7_23_SUR_P09	Summary Product Experience Report
HL7_23_TBR_Q01	Tabular Data Response
HL7_23_UDM_Q05	Unsolicited Display Update Message
HL7_23_VQQ_Q01	Virtual Table Query
HL7_23_VXQ_V01	Query for Vaccination Record
HL7_23_VXR_V03	Vaccination Record Response
HL7_23_VXU_V04	Unsolicited Vaccination Record Update
HL7_23_VXX_V02	Response to Vaccination Query Returning Multiple PID Matches

4.1.5. HL7 Version 2.2 OTD Library

HL7 2.2 OTD	HL7 Desctiption
HL7_22_ADT_A01	Admit/Visit Notification
HL7_22_ADT_A02	Transfer a Patient
HL7_22_ADT_A03	Discharge/End Visit
HL7_22_ADT_A04	Register a Patient
HL7_22_ADT_A05	Pre-Admit a Patient
HL7_22_ADT_A06	Change an Outpatient to an Inpatient
HL7_22_ADT_A07	Change an Inpatient to an Outpatient
HL7_22_ADT_A08	Update Patient Information
HL7_22_ADT_A09	Patient Departing - Tracking
HL7_22_ADT_A10	Patient Arriving - Tracking
HL7_22_ADT_A11	Cancel Admit/Visit Notification
HL7_22_ADT_A12	Cancel Transfer
HL7_22_ADT_A13	Cancel Discharge/End Visit
HL7_22_ADT_A14	Pending Admit
HL7_22_ADT_A15	Pending Transfer
HL7_22_ADT_A16	Pending Discharge
HL7_22_ADT_A17	Swap Patients
HL7_22_ADT_A18	Merge Patient Information
HL7_22_ADT_A20	Bed Status Update

HL7 2.2 OTD	HL7 Desctiption
HL7_22_ADT_A21	Patient Goes on a Leave of Absence
HL7_22_ADT_A22	Patient Returns from a Leave of Absence
HL7_22_ADT_A23	Delete a Patient Record
HL7_22_ADT_A24	Link Patient Information
HL7_22_ADT_A25	Cancel Pending Discharge
HL7_22_ADT_A26	Cancel Pending Transfer
HL7_22_ADT_A27	Cancel Pending Admit
HL7_22_ADT_A28	Add Person or Patient Information
HL7_22_ADT_A29	Delete Person Information
HL7_22_ADT_A30	Merge Person Information
HL7_22_ADT_A31	Update Person Information
HL7_22_ADT_A32	Cancel Patient Arriving - Tracking
HL7_22_ADT_A33	Cancel Patient Departing - Tracking
HL7_22_ADT_A34	Merge Patient Information - Patient ID Only
HL7_22_ADT_A35	Merge Patient Information - Account Number Only
HL7_22_ADT_A36	Merge Patient Information - Patient ID & Account Number
HL7_22_ADT_A37	Unlink Patient Information
HL7_22_BAR_P01	Add Patient Account
HL7_22_BAR_P02	Purge Patient Accounts
HL7_22_DFT_P03	Post Detail Financial Transactions
HL7_22_DSR_Q03	Deferred Response to a Query
HL7_22_DSR_R03	Display-Oriented Results, Query/Unsol. Update (for Backward Compatibility Only)
HL7_22_MFD_M01	Master Files Delayed Application Acknowledgment - Not Otherwise Specified (for Backward Compatibility Only)
HL7_22_MFD_M02	Master Files Delayed Application Acknowledgment - Staff Practitioner
HL7_22_MFD_M03	Master Files Delayed Application Acknowledgment - Test/ Observation (for Backward Compatibility Only)
HL7_22_MFN_M01	Master File Notification - Master File Not Otherwise Specified
HL7_22_MFN_M02	Staff/Practitioner Master File Message
HL7_22_MFN_M03	Master File Notification - Test/Observation
HL7_22_MFQ_M01	Master Files Query - Not Otherwise Specified (for backward compatibility only)
HL7_22_MFQ_M02	Master Files Query - Staff/Practitioner
HL7_22_MFQ_M03	Master Files Query - Test/Observation (for backward compatibility only)
HL7_22_NMD_N01	Application Management Data Message

HL7 2.2 OTD	HL7 Desctiption
HL7_22_NMQ_N02	Application Management Query Message
HL7_22_ORF_R04	Response to Query; Transmission of Requested Observation
HL7_22_ORM_O01	Pharmacy/Treatment - Order Message
HL7_22_ORR_O02	Pharmacy/Treatment - Order Response
HL7_22_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_22_QRY_A19	Patient Query
HL7_22_QRY_P04	Generate Bill and A/R Statements
HL7_22_QRY_Q01	Query Sent for Immediate Response
HL7_22_QRY_Q02	Query Sent for Deferred Response
HL7_22_QRY_R02	Unsolicited Transmission of an Observation Message
HL7_22_UDM_Q05	Unsolicited Display Update Message

4.1.6. HL7 Version 2.1 OTD Library

HL7 2.1 OTD	HL7 Description
HL7_21_ADT_A01	Admit/Visit Notification
HL7_21_ADT_A02	Transfer a Patient
HL7_21_ADT_A03	Discharge/End Visit
HL7_21_ADT_A04	Register a Patient
HL7_21_ADT_A05	Pre-Admit a Patient
HL7_21_ADT_A06	Change an Outpatient to an Inpatient
HL7_21_ADT_A07	Change an Inpatient to an Outpatient
HL7_21_ADT_A08	Update Patient Information
HL7_21_ADT_A09	Patient Departing - Tracking
HL7_21_ADT_A10	Patient Arriving - Tracking
HL7_21_ADT_A11	Cancel Admit/Visit Notification
HL7_21_ADT_A12	Cancel Transfer
HL7_21_ADT_A13	Cancel Discharge/End Visit
HL7_21_ADT_A14	Pending Admit
HL7_21_ADT_A15	Pending Transfer
HL7_21_ADT_A16	Pending Discharge
HL7_21_ADT_A17	Swap Patients
HL7_21_ADT_A18	Merge Patient Information
HL7_21_ADT_A20	Bed Status Update
HL7_21_ADT_A21	Patient Goes on a Leave of Absence
HL7_21_ADT_A22	Patient Returns from a Leave of Absence

HL7 2.1 OTD	HL7 Description
HL7_21_ADT_A23	Delete a Patient Record
HL7_21_ADT_A24	Link Patient Information
HL7_21_BAR_P01	Add Patient Account
HL7_21_BAR_P02	Purge Patient Accounts
HL7_21_DFT_P03	Post Detail Financial Transactions
HL7_21_DSR_Q03	Deferred Response to a Query
HL7_21_ORM_O01	Pharmacy/Treatment Order Message
HL7_21_ORR_O02	General Order Response Message Response to any ORM
HL7_21_ORU_R01	Unsolicited Transmission of an Observation Message
HL7_21_ORU_R03	Unsolicited Transmission of an Observation Message
HL7_21_QRY_A19	Patient Query
HL7_21_QRY_Q01	Query Sent for Immediate Response
HL7_21_QRY_Q02	Query Sent for Deferred Response
HL7_21_UDM_Q05	Unsolicited Display Update Message

Working With the HL7 OTDs

This chapter provides information on selecting HL7 OTDs in the SeeBeyond Enterprise Designer, and modifying and testing OTDs using the OTD Editor.

Chapter Topics:

- **Modifying an OTD using the OTD Editor** on page 53
- **Using the OTD Tester** on page 65

5.1 Viewing an HL7 OTD with the OTD Editor

The installed HL7 OTD Library is accessed from the SeeBeyond Enterprise Designer. To open an HL7 OTD using the OTD Editor, do the following:

1 From the Enterprise Designer's Project Explorer tree, expand the **OTD Library** node, the **HL7** node, and the node for the appropriate HL7 version (see Figure 2). Only the version or versions you install will be displayed in your build.

Figure 2 Selecting the HL7 OTD from the Project Explorer Tree
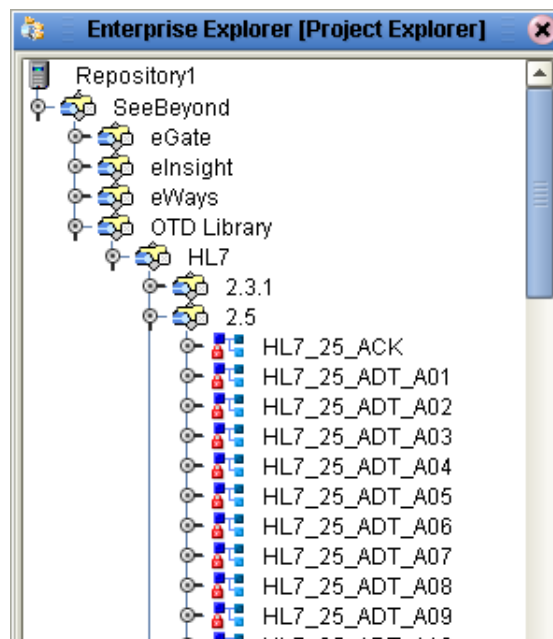
2 If you are opening an OTD to modify it, first right-click that OTD and select **Check Out** from the shortcut menu. The OTD can now be modified using the OTD Editor.

3 Double-click the appropriate OTD (for this example **ADT_A01**). The OTD Editor appears displaying the selected OTD. From the OTD Editor, nodes can be expanded or contracted by single-clicking the icon to its left or by double-clicking the node name (see Figure 3).

Figure 3 The OTD Editor - OTD ADT_A01
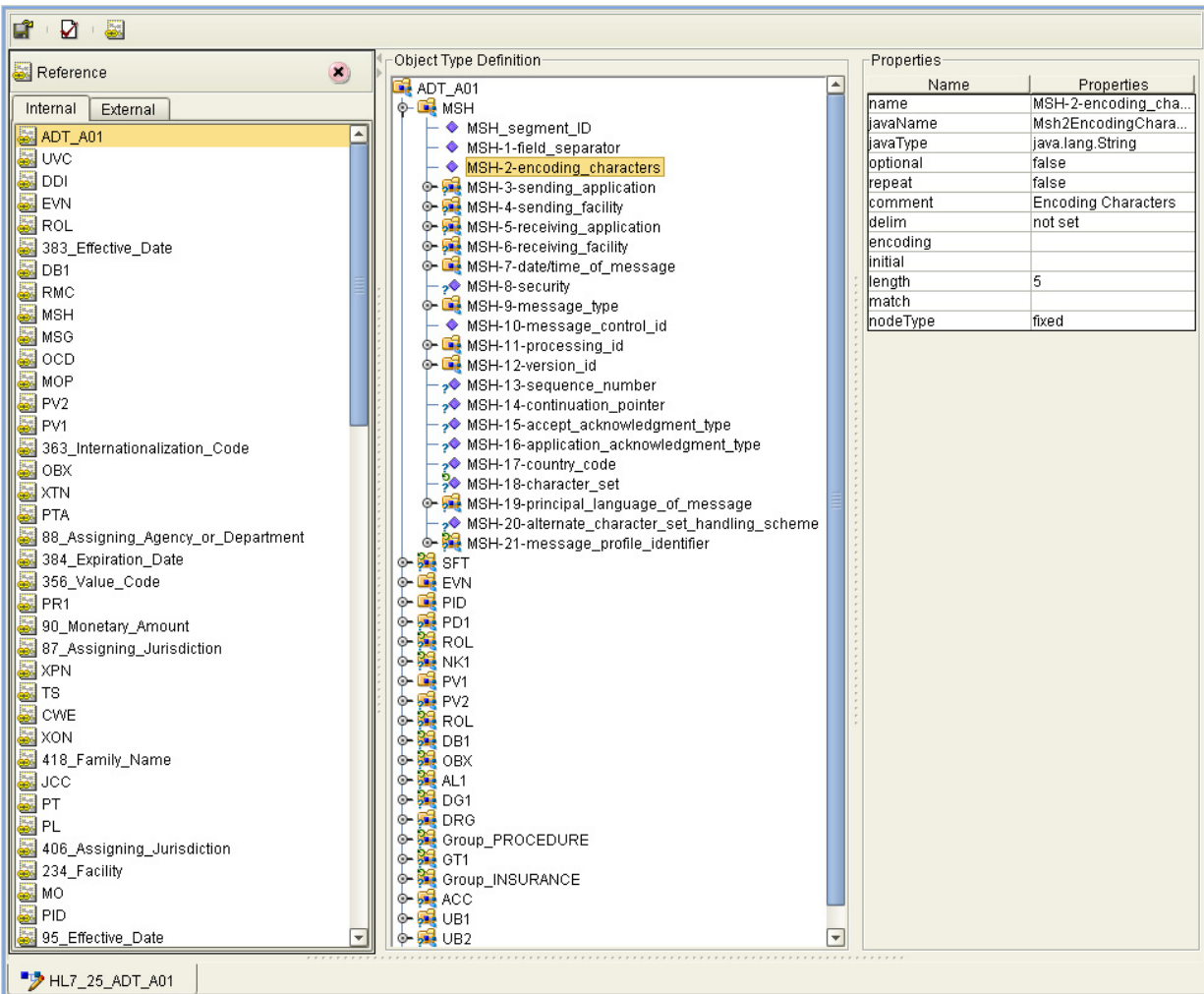
4 OTD properties for any specific node can be viewed and edited from the Properties pane in the upper right section of the OTD Editor. Simply select a node and the nodes properties are displayed in the Properties pane.

5.2 Modifying an OTD using the OTD Editor

The OTD Editor provides many easy to use tools for modifying existing OTDs. Using the editor, you can change delimiters, add or delete nodes, modify the optionality (optional property), cardinality (repeat property), and so forth.

Important: *When modifying an existing OTD, it is recommended that you save the original OTD, and give the modified OTD with a new name.*

OTD Check Out and Check In

To edit an OTD it must first be checked out (unlocked). To check out an OTD, from the Project Explorer tree, right-click the OTD and select **Check Out** from the shortcut menu.

Once an OTD has been edited, check the OTD back in to "lock" the OTD. The checked in OTD cannot be edited until it is once again checked out. To check in an OTD, right click the OTD in the Project Explorer tree and select **Check In** from the shortcut menu. The OTD file icon now appears in the Project Explorer tree as "locked" (The OTD icon includes a red padlock).

5.2.1. Changing the OTD Delimiters

The most common reason to modify an HL7 OTD is to change the its delimiters. Typically, delimiters for all node levels are set (and modified) from the root node. Delimiters that are set from a lower level in the OTD will override any upper level settings for that specific node.

Be aware that the default level 1 delimiter character is a non-ASCII character. Once it has been changed it cannot be typed back in as a character (but can be pasted).

Delimiters are explained in greater detail later in this section (see **Specifying Delimiters** on page 59, but to demonstrate in short, how delimiters are changed, do the following:

1 This example uses the **HL7_25_ADT_A02** OTD. From the OTD Editor, select the root node in the Object Type Definition pane (for this example **ADT_A02**). From the Properties pane, double-click the **delim** properties field. An ellipsis (...) button appears in the field. Click the ellipsis button. The **Delimiter List Editor** appears (see Figure 9).

Figure 4 HL7 OTD Editor - Delimiter List Editor
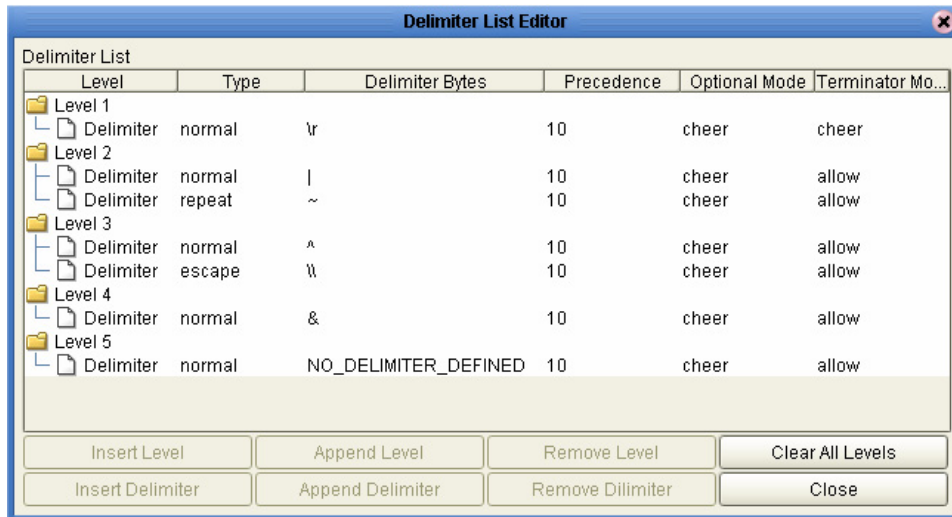
2   Double-clicking a field for any level makes the field editable, or displays a list of options. Double-click the Delimiter Bytes field for level 3 (see Figure 9). Change the current delimiter character to a pound sign (#), **Tab** to the next field, and click **OK**.

The delimiter for all level 3 nodes in the OTD is now a pound sign (#), unless it is specified differently from a more direct level. For example, if you change the delimiter for any specific level 3 node from that node's properties, that value will override the value set from the root node. Figure 5 displays an example of various levels in the Object Type Definition tree, from the root node.

Figure 5 Delimiter Levels From the Root Node
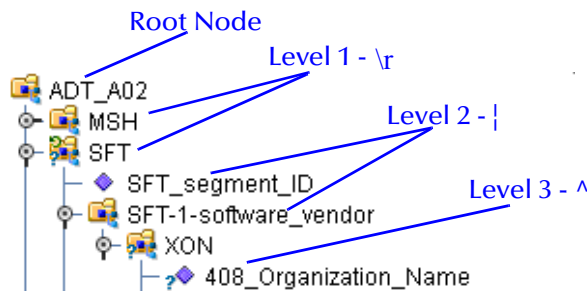
When the Delimiter List Editor is opened from a different level node (for example, a level 3 node), that node appears as level 1 in the editor.

Some HL7 components, such as Name Validity Range in XCN, use sub-subcomponents. To accommodate the sub-subcomponent nodes a delimiter was defined for Level 5. If sub-subcomponent data is used within a project, reassign the Level 5 delimiter to use the correct site-specific value.

Creating a Delimiter List if one is not specified

To specify a different delimiter for a node that gets its delimiter from an upper level node (delimiter property is "not set"), do the following:

1   Select the node, and from the Properties pane double-click the delim Properties

field and click the ellipsis button to open the Delimiter List Editor.

2   Right-click the Delimiter List Editor under the list headers, and select **Add Level To End** from the shortcut menu. Level 1 is added to the Delimiter List Editor.

3   Right-click Level 1 and select **Add Delimiter**. A delimiter is added to level 1.

4   Double-click the Delimiter Bytes field and enter a percent sign (%). **Tab** to the next field (you must Tab to the next field or select another field before closing the editor to save your last change). Click **OK**.

5   The delimiter for that specific node is now **%**, as displayed in the node's **showDelim** field.

OTD Properties

The Object Type Definition pane (center pane) of the OTD Editor displays the nodes, elements, fields of the OTD. When any of these are selected, the item's properties are displayed in the Properties pane.

Figure 6   HL7 OTD Editor - OTD Node Properties
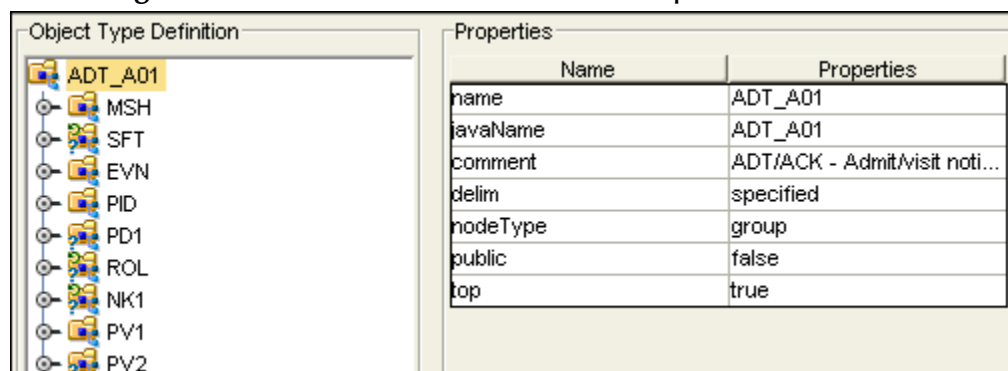
Node Properties

When an HL7 OTD is opened in the OTD Editor, the properties of the root node are displayed in the Properties pane (see Figure 6). The configurable node properties are displayed in Table 2.

Table 2   Node Properties

Name	Description
name	Node display name. This can be a virtually-arbitrary string.
javaName	Property accessor basename. This is normally derived from the display name, modified to suit the restrictions on Java identifiers, and supplied automatically by eGate.
comment	Free-form text (no run-time effect).
delim	Specified delimiter. See **Delimiter Properties** on page 60.
nodeType	Governs the marshal/unmarshal format. See **Specifying the Node Type** on page 58.

Name	Description
public	Reserved for future development
showDelim	If nodeType is delimited.
top	Flag on root node: support marshal/unmarshal (T/F).

Important: *Do not modify the javaName property.*

Element Properties

The set of properties associated with the element level is shown in Figure 7.

Figure 7 OTD Editor - OTD Element Properties
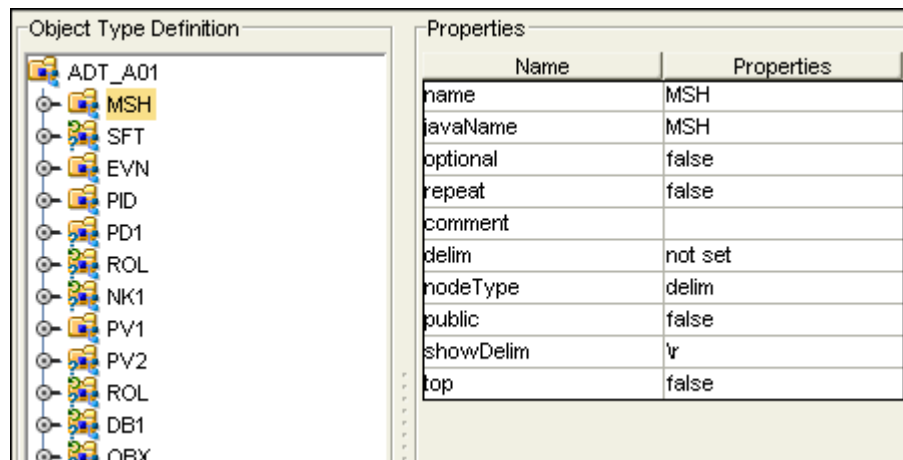
The configurable element properties are displayed in Table 3

Table 3 Element Properties

Name	Description
name	Element display name.
javaName	Property accessor basename.
optional	Flag: Can the element be absent? (T/F) Not applicable to root, or child of a choice Node.
repeat	Flag: Can the node appear multiple times? (T/F) Not applicable to root, or child of a choice Node.
comment	Free-form text (no run-time effect).
delim	Delimiter specification (see **Specifying Delimiters** on page 59).
nodeType	Governs the marshal/unmarshal format.
showDelim	If nodeType is delimited,

Important: *Do not modify the javaName property.*

Field Properties

The set of properties associated with the field level is shown in Figure 8.

Figure 8   OTD Editor - OTD Field Properties
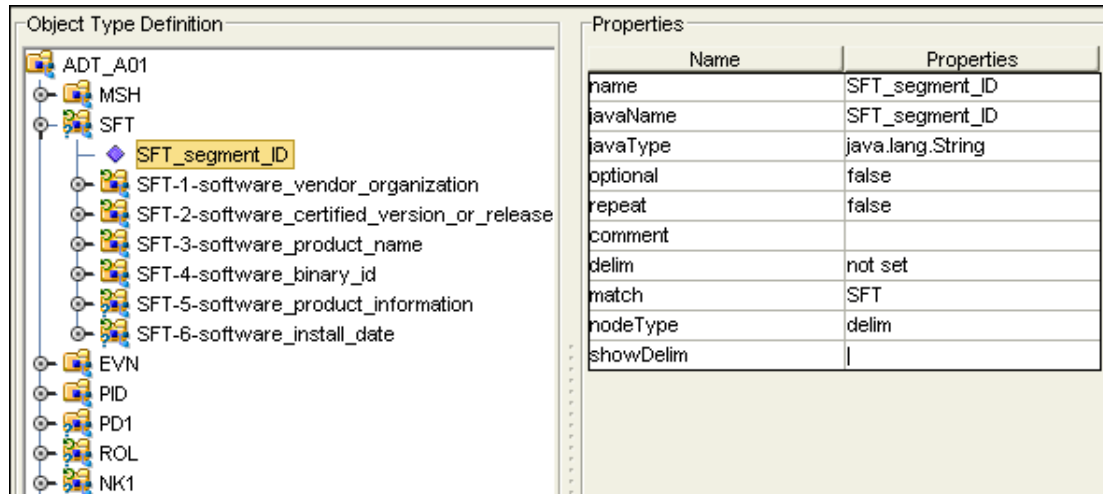
The configurable field properties are displayed in Table 4

Table 4   Field Properties

Name	Description
name	Field display name.
javaName	Property accessor basename.
javaType	Java type: can be either java.lang.String or byte array (byte[]).
optional	Flag: Can the element be absent? (T/F) Not applicable to root, or child of a choice Element.
repeat	Flag: Can the node appear multiple times? (T/F) Not applicable to root, or child of a choice Element.
comment	Free-form text (no run-time effect).
delim	Delimiter specification (see **Specifying Delimiters** on page 59).
match	If **nodeType** is delimited, performs exact match to the data.
nodeType	Governs the marshal/unmarshal format.
showDelim	If **nodeType** is delimited, shows the delimiter.

Important: *Do not modify the javaName property.*

5.2.2 **Specifying the Node Type**

Double-clicking the nodeType properties field activates the field for editing. Click the button to display the selection menu. Descriptions of the property options are listed in Table 5.

Table 5 Node Type Property Options

Option	Description	Element	Field	Internal
alter	Alter (*alternate*) selects one child or the other. One child is always present after the unmarshal operation. Applies only to elements.	Yes	No	choice
array	Array is a delimited structure. If repeated, occurrences are separated by the *repeat* delimiter. The last occurrence may be terminated by a *normal* delimiter.	Yes	Yes	simple or group
delim	Delim (*delimited*) structure. If repeated, occurrences are separated by a *normal* delimiter.	Yes	Yes	simple or group
fixed	Fixed indicates a fixed length, which is specified by non-negative integer (or zero to indicate end of parent node data).	Yes	Yes	simple or group
group	Group provides organizational grouping for purposes such as repetition. Applies only to elements.	Yes	No	group
trans	Trans (*transient*) appears only in an internal tree as a scratch pad field. It does not appear in external data representation, and can only have *trans* nodeTypes as children.	Yes	Yes	choice, simple, or group

Note: *If you move a OTD node, you must reset the nodeType for that node.*

5.2.3 Specifying Delimiters

Any node can define a set of delimiters to be used in the external data representation for itself and its descendents in the hierarchical data structure. If a node defines a delimiter list, this negates any effect of any ancestor's delimiter list on itself and its descendents. The delimiter list is typically specified on the root node.

For example, if you want to parse the following data:

```
a^b|c^d|e
```

you might define an OTD as follows:

- demo-otd
    - element1
        - field1
        - field2
    - element2
        - field3
        - field4
    - field5

The delimiter list for this OTD will be specified on the *demo-otd* element, so that it applies to the entire OTD, and will have two levels:

- Level 1
    - Delimiter |
- Level 2
    - Delimiter ^

Level 1's delimiter applies to the two elements and field5, and level 2's delimiter applies to fields 1 through 4.

Delimiter lists can be much more complex than this very simple example. For instance, you can create multiple delimiters of different types at any given level, and you can specify a delimiter list on any node within the OTD—not only the root node as shown in the example. See **Modifying an OTD using the OTD Editor** on page 53 for a description of the procedure for creating a Delimiter List.

Delimiter Properties

Delimiters are defined using the Delimiter List Editor (see Figure 9).

Figure 9   Delimiter List Editor
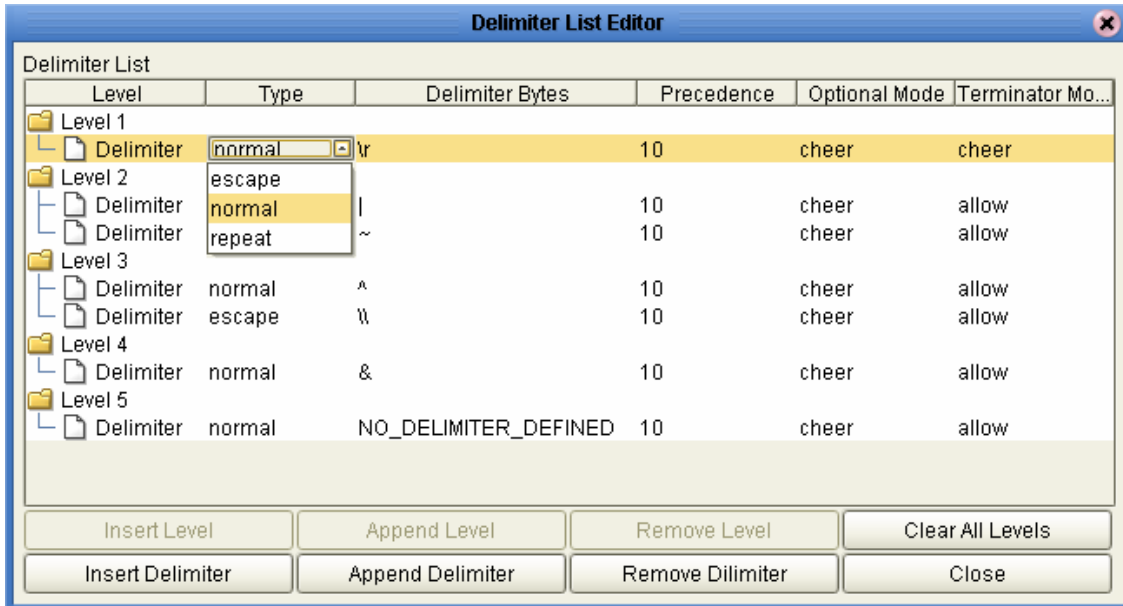
The Delimiter properties and values are displayed in Table 6.

Table 6   Delimiter Properties and Value Options

Property	Option	Description
Level		Child level beneath defining node.
Type	escape	Escape sequence.
	repeat	Array delimiter/separator.
	normal	Terminator.
Delimiter Bytes		Delimiter (single or multiple characters).
Precedence		See **Precedence** on page 64.
Optional Mode	never	Do not allow on input, do not emit on output (empty field between delimiters implies zero length data field).
	allow	Skip empty field if present; if absent, do not delimit on output.
	cheer	Skip empty field if present; if absent, do delimit on output.
	force	Require empty, delimited field on input; always delimit on output.

Table 6   Delimiter Properties and Value Options

Property	Option	Description
Terminator Mode	never	Do not allow on input, do not emit on output (pure separator).
	allow	Allow on input, do not emit on output.
	cheer	Allow on input, always emit on output.
	force	Require on input, always emit on output (pure terminator).

Type **Property -** *Escape* **Option**

An *escape* delimiter is simply a sequence that will be recognized *and ignored* during parsing. Its purpose is to allow the use of escape sequences to embed byte sequences in data that would otherwise be seen as delimiter occurrences.

For example, if there is a normal delimiter "**+**" at a given level, and we define an escape delimiter "**\+**", then **aaa+b\+c+ddd** will parse as three fields: **aaa**, **b\+c**, and **ddd**. If the escape delimiter were not defined, the sequence would then parse as four fields: **aaa**, **b**, **c**, and **ddd**.

If there is *only* an escape delimiter on a given level, however, it presents a *no delimiter defined* situation for **delim** and **array** nodes.

The following escape delimiters are allowed (see Table 7).

Table 7   Escape Delimiters

Delimiter	Description
\b	Backspace
\n	Newline
\r	Carriage return
\t	Tab
\0HH	Hexadecimal number

Terminator Mode **Property**

Consider the tree structure shown in Figure 10, where the node **a** has a pipe (**|**) as its delimiter, the sub-node **b** has a tilde (**~**) as its delimiter, and sub-node **c** has an asterisk (*****) as its delimiter.

Figure 10   Terminal Type Property Example

```
a (|)
 |
 ├── b (*)
 └── c (*)
```
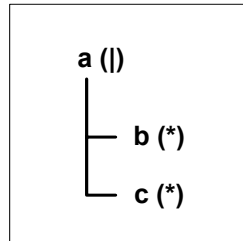
Option	Input	Output
never	**c|**	**c|**
allow	**c|** or **c*|**	**c|**
cheer	**c|** or **c*|**	**c*|**
force	**c*|**	**c*|**

Optional Mode **Property**

Consider the tree structures shown in Figure 11 and Figure 12, where the node **a** has a pipe (**|**) as its delimiter, and the sub-nodes **b**, **c**, and **d** all have asterisks (*****) as their delimiters.

▪ **Example 1:** Sub-node **c** is *optional*. (Sub-node **c** and sub-node **d** must have different values for the *match* parameter.)

Figure 11   Optional Property (Example 1)

```
a (|)
 ├─ b (*)
 ├─ c? (*)
 └─ d (*)
```
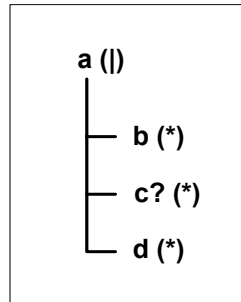
Option	Input	Output
never	**b*d|**	**b*d|**
allow	**b**d|**	**b*d|**
cheer	**b**d|**	**b**d|**
force	**b**d|**	**b**d|**

▪ **Example 2:** Both sub-node **c** and sub-node **d** are *optional*.

Figure 12   Optional Property (Example 2)

```
a (|)
 ├─ b (*)
 ├─ c? (*)
 └─ d? (*)
```
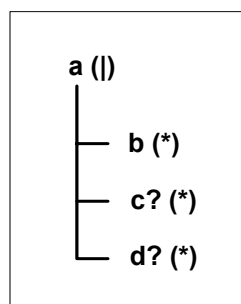
Option	Input	Output
never	**b|**	**b|**
allow	**b|**, **b*|**, or **b**|**	**b|**
cheer	**b|**, **b*|**, or **b**|**	**b**|**
force	**b**|**	**b**|**

Precedence

Precedence (see **Figure 9 on page 60**) indicates the priority of a certain delimiter, relative to the other delimiters. By default, all delimiters are at precedence 10, which means they are all considered the same; fixed fields are hard-coded at precedence 10. Delimiters on parent nodes are not considered when parsing the child fields; only the child's delimiter (or if it is a fixed field, its length).

Changing the precedence of a delimiter will cause them to be applied to the input data-stream in different ways. For example:

- *root node*
    - ◆ element (type delim, delimiter = "^", repeat)
        - ◆ field1 (type fixed, length = 5)
        - ◆ field2 (type fixed, length = 8, optional)

Although this will parse **'abcde12345678^zyxvuABCDEFGH'**, it will *not* parse the text **'abcde^zyxvuABCDEFGH'** even though the second fixed field is optional. The reason is that the element's delimiter is ignored within the fixed field because they have the same precedence. If you want the element's delimiter to be examined within the fixed field data, you must change its precedence, for example:

- *root node*
    - ◆ element (type delim, delimiter = "^", repeat, **precedence = 11**)
        - ◆ field1 (type fixed, length = 5)
        - ◆ field2 (type fixed, length = 8, optional)

This will successfully parse the text **'abcde^zyxvuABCDEFGH'**.

Node Management

The OTD Editor allows you to:

- **Add** nodes and elements to an OTD.
- **Delete** nodes and elements from an OTD.

  When a node is *deleted*, both the node and its associated *children* (data elements) are deleted.

- **Prune** nodes in an OTD.

  When a node is *pruned*, only its associated *children* (data elements) are deleted, while the node itself is preserved. Pruning can only be performed on nodes.

These commands are accessed from the node context menu.

5.3   Using the OTD Tester

The OTD tester provides a facility to verify the correctness of an OTD. This is especially important after an OTD has been modified from the standard message type. The OTD Tester can be used to:

- Prevent data errors at runtime.
- Verify that all required data elements are available.
- Verify that all data formats are correct.
- Test actual data for correctness.

To use the OTD tester

1   Open an OTD.

2   Click the **Tester** icon (see Figure 13).

Figure 13   OTD Tester
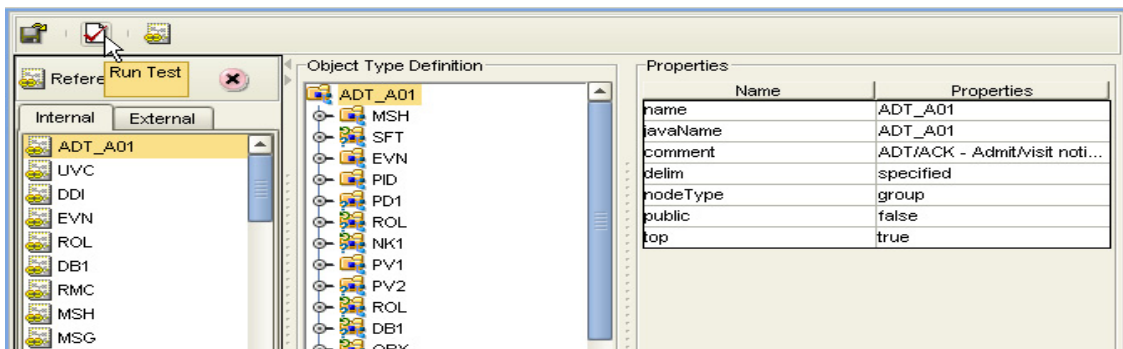
A test panel will appear below the OTD detail area of the editor. Note that there are four data display modes, selectable by tabs (see Figure 14). The Input tab is selected by default.

Figure 14   Test Panel Data Display
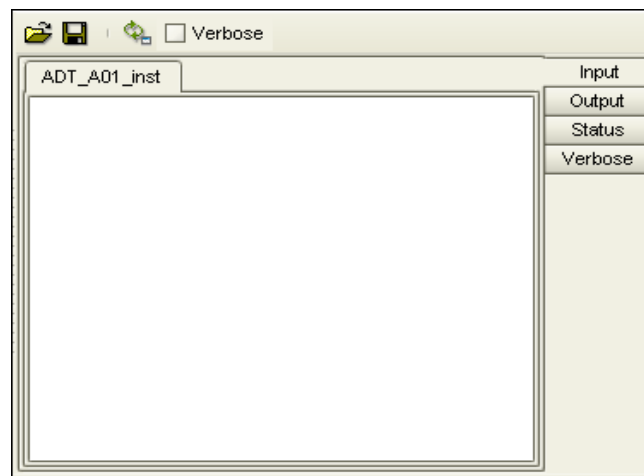
3 You can provide the input test data either by selecting a data file (see Figure 15), or by entering the data manually.

Figure 15 Select Data File
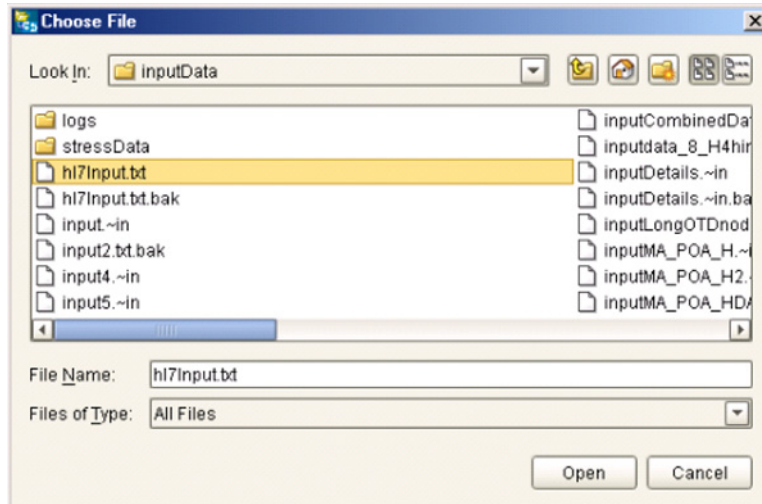
4 Click the **Run Tester** icon (green arrow) to test the selected OTD.

5 Verify the output by checking the values of each element for correctness (see Figure 16).

Figure 16 Object Elements and Values

6 Open the various nodes to see how the data is parsed.

7 Input test data can be saved to a file for re-use by selecting the **Input** data display and clicking the **Save** icon.

8 You can also change your test data in the Input data display, then re-test the OTD by clicking the **Refresh** icon (see Figure 17) to repopulate your OTD object elements with the new values.

Figure 17   Data Display: Refresh Icon
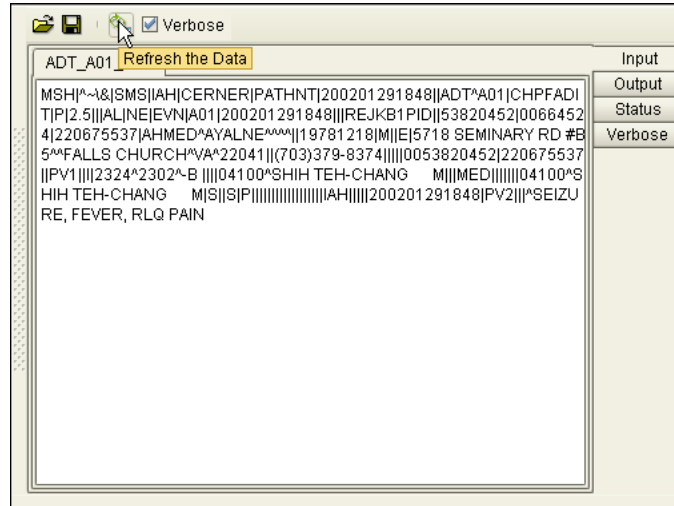
9 If there are errors in your input data, the **Status** data display is automatically invoked, showing the appropriate error messages (see Figure 18).

Figure 18   Status Data Display
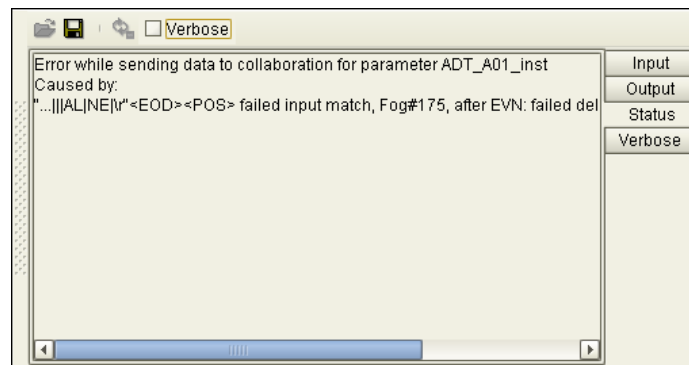
Interpreting Failed Parse Messages Using the Verbose Option

10 The **Verbose** option provides a trace of parsing actions during the *unmarshal* process to aid in debugging the OTD structure. When this option is available, the OTD will activate the **Verbose** check box. Selecting the **Verbose** check box causes parsing information to appear on the **Verbose** data display (see **Figure 19 on page 68**). The format and content of the data display are OTD-specific.

Figure 19   Verbose Data Display
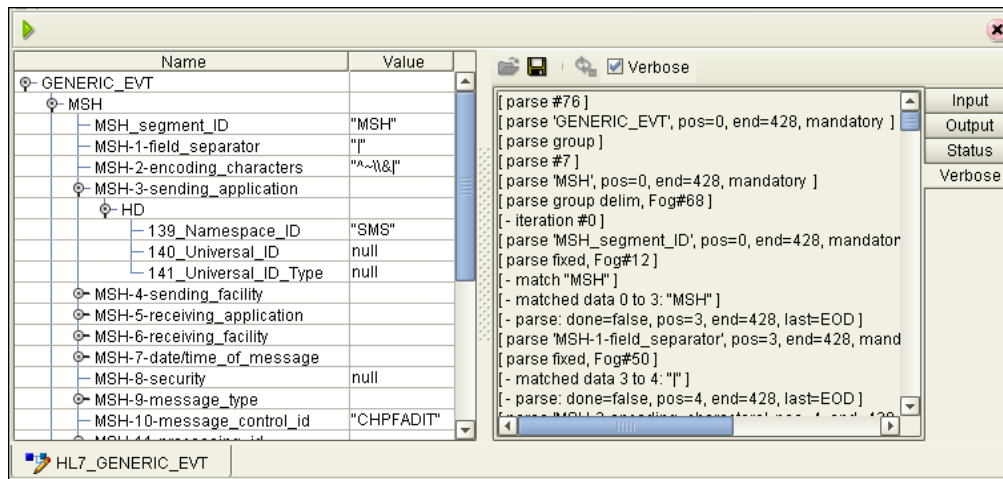
5.3.1. **Additional Information**

For additional information, including information on the following:

- Object Type Definitions Overview
- Using the OTD Wizard
- User-Defined OTDs
- Using the OTD Editor
- Using the OTD Tester

see the *eGate Integrator User's Guide*, and

HL7UtilityFunctions Class and Methods

This chapter contains information for adding and accessing the HL7 Utility Methods.

Chapter Topics

- **HL7 OTD Library Javadoc** on page 69
- **Importing HL7OTDLibraryUtility.jar** on page 69
- **Adding the HL7 Utility Methods to a Collaboration** on page 70

6.1 HL7 Utility Methods

The HL7UtilityFunctions Class contains a number of Java methods that have been exposed to extend the functionality of the HL7 OTDs. These utility functions are available to the Collaborations after the HL7OTDLibraryUtility.jar has been imported to a project. To view a list of the available methods see the HL7 OTD Library Javadoc.

HL7 OTD Library Javadoc

The HL7 OTD Library Javadoc is uploaded with the Library's documentation file (**HL7OTDLibraryDocs.sar**) and downloaded from the **Documentation** tab of the Enterprise Manager. To access the full Javadoc, extract the Javadoc to an easily accessible folder, and double click the **index.html** file.

6.1.1. Adding the HL7 Utility Functions

Adding the HL7 utility functions requires that at least one version of the HL7 OTD Library is installed.

Importing HL7OTDLibraryUtility.jar

1 From the Enterprise Designer's Enterprise Explorer tree, right-click an HL7 project and select **New > File**. The File Import dialog box appears.

2 Click the **Look In** fields down arrow and browse to the following directory:

```
<ICAN_HOME>\edesigner\usrdir\modules\ext\HL7OTDLibrary
```

where <ICAN_HOME> is the directory where the ICAN is installed.

3   From the selection window below the Look In field, select the
HL7OTDLibraryUtility.jar file and click **Select**. The **HL7OTDLibraryUtility.jar** file
is added to the **Selected Import Files** field.

4   Click Import. The **HL7OTDLibraryUtility.jar** file is added to the Enterprise
Explorer tree under the selected project.

Adding the HL7 Utility Methods to a Collaboration

To add the imported HL7 Utility Methods to a Collaboration do the following:

1   From the Collaboration Editor toolbar, click the Import Jar File icon. The Add/
Remove Jar Files dialog box appears displaying all imported .jar Files. Select the
HL7OTDLibraryUtility.jar file and click **Close**.

2   From the **Business Rules** pane of the Collaboration Editor, right click the **receive**
method at the top of the Business Rules tree. From the shortcut menu, select **field**.
The **Create a Field** dialog box appears.

3   Enter the name of the field in the **Field Name** field (for this example,
HL7_Utilities).

4   Enter the Modifier Name and state in the **Modifier** section. If you are unsure of the
appropriate values, leave the default values for Modifier.

5   For **Type** select **Class. From the Find Class** dialog box, select **HL7UtilityFunctions**
as the **Class Name**. Click **OK**.

6   Click OK to close the **Create a Field** dialog box. The field is added to the Business
Rules and the Business Rules Designer. The HL7 Utility methods can be accessed by
right-clicking the new field and clicking **Select a method to call** on the shortcut
menu.

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