

HL7 v2.5.1 Object Identifiers (OIDs) and Attributes

For SoftLab 4.5 and Related Interfaces

Reference guide

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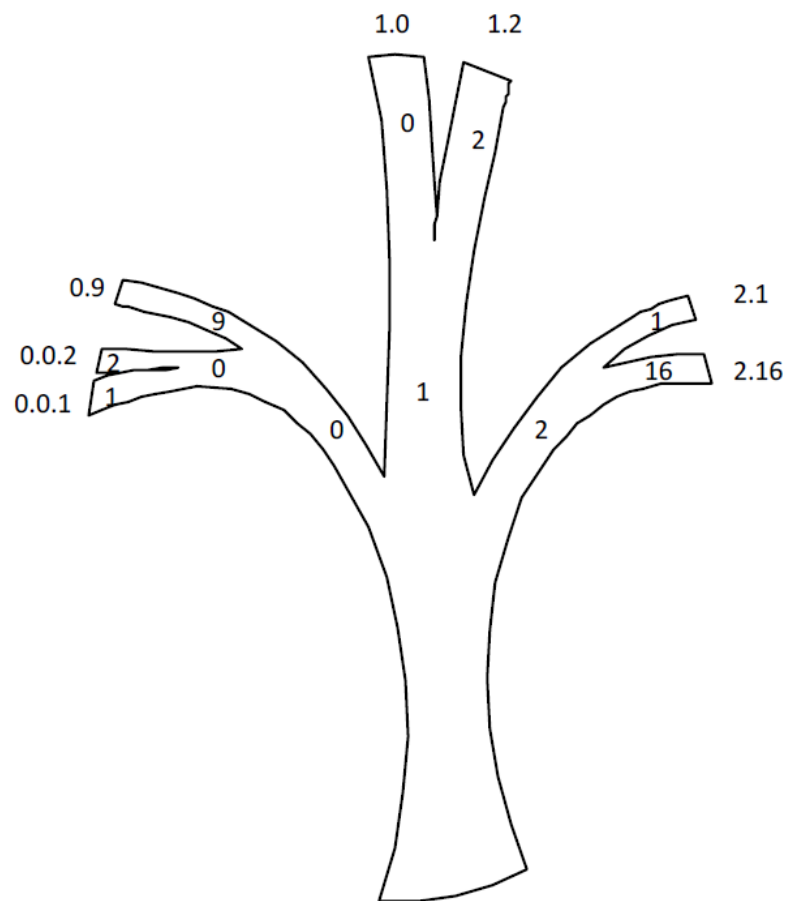
HL7 v2.5.1 Object Identifiers (OIDs) and Attributes

This document contains information and material directly taken from “HL7 Implementation Guidance for Unique Object Identifiers, Release 1,” edited by Boone, Beebe, Dolin, et al., and provided by Health Level Seven International.

The term OID stands for “Object Identifier.” The value of an OID is created by a registration authority, in accordance with the ISO 9834 series of standards. OIDs are used utilized in HL7 documents and messages in order to ensure that identifiers used within the document are globally unique. Vocabulary terminology systems are also identified by OIDs. An OID is produced and managed by the use of a few simple rules. Two OIDs are considered equivalent to one another if they match each other character for character.

As is evident in this figure, the structure of an OID is similar to that of a tree. The branches originating from each fork in the tree are labeled with a non-negative integer. With the exception of the first junction, an unlimited number of branches can originate at each junction. The size of the number that is used to label each branch is also unlimited.

In order to “write out” the path through the tree, the numbers of the branch are listed in order, and separated by periods. Only one path exists to each position in the tree, and there is only one way to write out a label, ensuring the uniqueness of each OID string. The decimals represent the branches of the tree. These branches can be owned by a registration authority; normally known in HL7 vernacular as an "Assigning Authority." If two strings produced by this method are identical, this means the two OIDs are identical.



Provided by Health Level Seven Int.

According to the ISO/IEC specification, there is no limit on the length of an OID, or the size of the numbers used in it. There are, however, a few limitations. The DICOM standard refers to an OID as a UID. It also limits OIDs to 64 characters. There is also a limit on the internal OID representation. The digit sequences between the

decimal points are not bound by the standard, but some implementations of the OID data type use integers incorrectly to represent each branch. This creates a limit of $2^{31}-1$ (slightly over 2 billion) for each branch label.

The following pages contain information regarding OIDs used by SCC.

- **Sending Application (MSH-3)**

- **Purpose**

- Outbound, this OID consists of specific values that represent SoftLab, SoftMic, SoftBank, SoftPath and SoftGene modules. These values are consistent at all clients, and in all interfaces. It is provided by SCC and is assigned for each product in SCC's OID database.

Inbound, it is an identifier of the software that is sending ADT and orders, and is provided by the HIS or EMR vendor.

The Sending Application is the logical opposite of the Receiving Application in MSH-5, so similar values will be used inbound in MSH-3 and outbound in MSH-5.

- **Outbound Setup**

- Defined through the fixed translation table in ESB.

- **Inbound Setup**

- None in SCC systems. SCC does not use or store this data. However, the sender should identify all possible values that might be sent.

- **Sending Facility (MSH-4)**

- **Purpose**

Outbound, this OID is an identifier of the facility, which is considered to be a lab, and is provided by the client. A single client may have several facilities (labs).

Inbound, it is provided by the HIS or EMR vendor, and is an identifier of the facility sending SCC the message. SCC will use the Namespace ID as the HIS# in Multisite tables. SCC uses this OID to derive the Multisite Depot.

The Sending Facility is the logical opposite of the Receiving Facility in MSH-6, so similar values will be used inbound in MSH-4 and outbound in MSH-6.

- **Outbound Setup**

A facility code is defined in Location setup and the same code is entered as the "ID" in the UID table along with its OID attributes.

- **Inbound Setup**

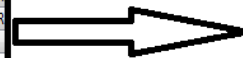
The same code is to be used as the HIS# in Multisite Account Setup and Test Setup tables.

Location Setup - SoftLab - [DALB]

File Edit View Find Setup Tools Help

Keypad Canned Messages Templates of Worksheets Groups of Templates Ph
Specimen Quality Isolation Alert Program Diagnosis Codes R
Specimen Tube Types Location Department Workstation

Location
ID: Name:
Authority: Facility:
Address
Street: Apt.33



Universal Identifiers - Setup

Universal Identifiers His Mappings Snomed CT Loinc

New Clone Edit Save Cancel Delete Print

ID: Namespace ID: Universal ID: Universal ID Type: Find More

ID	Namespace ID	Universal ID	Universal ID Type
FACIL	Facility Name	2.16.840.1.113883.3.3013.99.030	ISO
ELRMSH5	DOHAPP	321784712984718471	ISO
ELRMSH6	DOHFACILITY	74126759825723789	CLIA
ORDNUM	SoftLab_orders	2.16.840.1.113883.3.3013.77.1	ISO

- **Receiving Application (MSH-5)**

- **Purpose**

Outbound, this OID identifies the destination software/recipient of the message. Each interface has a single "target" application. If the destination includes multiple systems, then the third party engine is the logical target application. The engine can then substitute new values per output. It is provided by the other vendor, the engine operator, or the client.

Inbound, it is always a single set of OID attributes representing the SoftLab application, or a standalone module if SoftLab is not installed. It is provided by SCC, a constant value for each product.

For SoftLab, the Namespace ID is "SoftLab" and the OID is "2.16.840.1.113883.3.3013.77.1".

The Receiving Application is the logical opposite of the Sending Application in MSH-3, so similar values will be used inbound in MSH-5 and outbound in MSH-3.

- **Outbound Setup**

The client provides SCC with values. SCC codes values directly into the interface.

- **Inbound Setup**

SCC does not use or store this data, so there is no inbound setup process. However, SCC will provide and document a set of values representing SoftLab (or similar product) for the sender to use.

ID	Namespace ID	Universal ID	Universal ID Type	Description
FACIL	Facility Name	2.16.840.1.113883.3.3013.99.030	ISO	
ELRMSH5	DOHAPP	2.16.840.1.113883.3.3013.99.698	ISO	
ELRMSH6	DOHFACILITY	2.16.840.1.113883.3.3013.99.584	CLIA	
ORDNUM	SoftLab_orders	2.16.840.1.113883.3.3013.77.652	ISO	ORD_number_OID
RRMSH5	recievingApp	2.16.840.1.113883.3.3013.99.250	GUID	pfa value
RRMSH6	recievingFac	2.16.840.1.113883.3.3013.99.326	DNS	pfa value2

- **Receiving Facility (MSH-6)**

- **Purpose**

Outbound, this OID identifies the destination facility/recipient of the message. Each interface has a single "target" facility. If the destination includes multiple facilities, then the third party engine is the logical target application. The engine can then substitute new values per output. It is provided by the other vendor, the engine operator, or the client.

Inbound, it is a value representing the "target" facility (lab) for the message, provided by the client. Messages from different HIS systems may target different facilities in a multisite scenario.

The Receiving Facility is the logical opposite of the Sending Facility in MSH-4, so similar values will be used inbound in MSH-6 and outbound in MSH-4.

- **Outbound Setup**

The client provides SCC with values. SCC codes values directly into the interface, based on the internal mapping table.

- **Inbound Setup**

SCC does not use or store this data, so there is **no inbound setup** process. However, since the values sent here should logically be the same as the values SCC will send in MSH-4, the client should provide a value or values for the sending system(s) to use based on their definitions for MSH-4 in outbound messages.

ID	Namespace ID	Universal ID	Universal ID Type	Description
FACIL	Facility Name	2.16.840.1.113883.3.3013.99.030	ISO	
ELRMSH5	DOHAPP	2.16.840.1.113883.3.3013.99.698	ISO	
ELRMSH6	DOHFACILITY	2.16.840.1.113883.3.3013.99.584	CLIA	
ORDNUM	SoftLab_orders	2.16.840.1.113883.3.3013.77.652	ISO	ORD_number_OID
RRMSH5	redievingApp	2.16.840.1.113883.3.3013.99.250	GUID	pfa value
✓RRMSH6	redievingFac	2.16.840.1.113883.3.3013.99.326	DNS	pfa value2

- **Message Profile Identifier (MSH-21)**

- **Purpose**
This OID identifies the specific message profile that governs the structure of the HL7 message. This is a single value for the interface. For outbound messages, this consists of the same values used in Meaningful Use certification, assigned by default. Inbound, this is provided by the HIS or EMR vendor.
- **Outbound Setup**
SCC will define all attributes (subfields) in ESB.
- **Inbound Setup**
None. SCC does not use or store this data. The sending system should provide such elements, if a message profile is applicable.

- **Patient ID Assigning Authority (PID-3.4)**

- **Purpose**

This OID describes what authority assigned/created the MRN. It is provided by the HIS or EMR for HIS patients and the client for X-MRN patients.

- **Outbound Setup**

SCC sends what is captured and stored in the patient record.

MRN AA attributes need to be received with ADT from the HIS or EMR.

SCC can also generate MRNs. Each “number wheel” that generates an MRN in SCC systems should be identified with a unique AA Namespace and OID. To do this, the client defines AA codes and OID attributes in the UID table for each non-interfaced source of MRNs (for each site, facility, location, or clinic that can generate MRNs from a separate number wheel, as defined in Regions setup). The client then enters the associated ID in Clinic setup by selecting from this list. When an MRN is generated from clinics defined in this way, the AA Namespace ID and OID will be stored with the MRN in the patient record.

- **Inbound Setup**

None. Data received by interface is stored with the MRN.

Full Patient Information - TEST RRAD F MRN: 000011

Demographics | Additional Info | NoK/Contact

General Data

MRN: 000011 AA/AF ☒ Sex: male

Last name: TEST first: RRAD

AA/AF

MRN Assigning Authority:

NSID: MRNAA Name UID type: ISO

UID: 2.16.840.1.113883.3.3013.99.653



Wards/Clinics - SoftLab

File Edit View Find Tools Help

General | Contact Information | Associated Doctors | Report Destination

Ward: ID: Name:

Salesman ID: Area:

Serv Type: License#:

Grouping Information

Facility: Group: Depot:

Facility Name:

Auth. for gen. MRN: MRNAA



Universal Identifiers - Setup

Universal Identifiers | His Mappings | Snomed CT | Loinc

New Clone Edit Save Cancel Delete Print

ID: Namespace ID: Universal ID: Universal ID Type: Find

ID	Namespace ID	Universal ID	Universal ID Type
MRNAA	MRNAA Name	2.16.840.1.113883.3.3013.99.653	ISO

Patient ID Assigning Facility (PID-3.6)

- **Purpose**

This OID describes what facility assigned/created the MRN. It is provided by the HIS or EMR for HIS patients and the client for X-MRN patients.

- **Outbound Setup**

SCC sends what is captured and stored in the patient record.

MRN AF attributes need to be received with ADT from the HIS or EMR.

SCC can also generate MRNs. Each “number wheel” that generates an MRN in SCC systems should be identified with a unique AF Namespace and OID. To do this, the client defines AF codes and OID attributes in the UID table for each non-interfaced source of MRNs (for each site, facility, location, or clinic that can generate MRNs from a separate number wheel, as defined in Regions setup). The client then enters the associated ID in Clinic setup by selecting from this list. When an MRN is generated from clinics defined in this way, the AF Namespace ID and OID will be stored with the MRN in the patient record.

- **Inbound Setup**

None. Data received by interface is stored with the MRN.

The screenshots illustrate the configuration of the MRN Assigning Facility (PID-3.6) in the SCC system. The top left screenshot shows the 'Full Patient Information' form for patient TEST RRAD F, MRN: 000011. The 'AA/AF' checkbox is checked, and the 'MRN Assigning Facility' is set to 'MRNAF'. The top right screenshot shows the 'Wards/Clinics - SoftLab' form, where the 'Facility for generated MRN' is set to 'MRNAF'. The bottom screenshot shows the 'Universal Identifiers - Setup' form, which contains a table of facilities.

ID	Namespace ID	Universal ID	Universal ID Type
MRNAF	MRNAF Name	2.16.840.1.113883.3.3013.99.254	ISO
MRNAA	MRNAA Name	2.16.840.1.113883.3.3013.99.653	ISO

- **Last Update Facility (PID-34)**

- **Purpose**

- This OID identifies the facility that last updated the patient demographics. It's assumed that the rules for this would naturally be the same as for MRN assignment. It is provided by the HIS or EMR for HIS patients and the client for X-MRN patients. Inbound, it serves the same purpose as it does outbound, and is provided by the HIS or EMR vendor.

- **Outbound Setup**

- The same rules apply as for MRN. It is captured either with the ADT, or from Clinic setup when manual edits are performed. No unique setup is required.

- **Inbound Setup**

- None. Data received by the interface is stored in the patient record.

- **Contact Organization Assigning Authority (NK1-13.6)**

- **Purpose**

- This OID describes the authority that assigned the ID representing the business/organization that's listed as a contact. It is provided by the HIS or EMR for HIS patients and the client for X-MRN patients.

- **Outbound Setup**

- None. The values would be posted with ADT for HIS patients. Since the ID for the Contact Organization can be invented by any source at any time, NSID, OID, and OID type must be manually entered any time the Contact Organization is manually entered in SCC systems.

- **Inbound Setup**

- There is no inbound setup process. Data received by the interface is stored in the patient record.

- **Placer Order Number (ORC/OBR-2)**

- **Purpose**

- This OID identifies the creator and source of the Placer (HIS) order number. It is provided by the HIS or EMR vendor.

- **Outbound Setup**

- SCC will send whatever is captured and stored with the Placer Number. Placer Number OID attributes need to be received with Order messages from the HIS or EMR. No setup is required.

- **Inbound Setup**

- None. The data received by interface is stored in genindex.

- **Filler Order Number (ORC/OBR-3)**

- **Purpose**

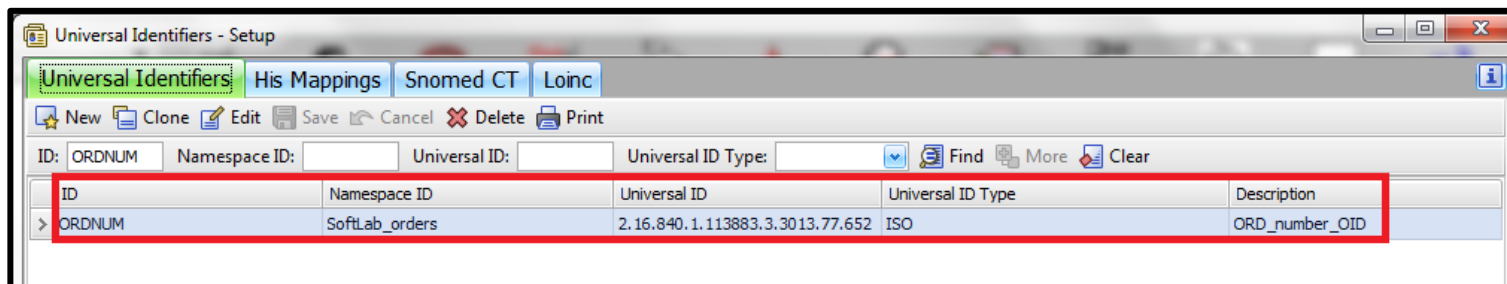
This OID identifies the creator and source of the Filler (LIS) order number. It is provided by SCC, assigned as a unique identifier for each client.

- **Outbound Setup**

SCC staff will define a single entry in the UID table with the ID “ORDNUM”. Client-specific Namespace ID and OID attributes as assigned by SCC will be entered for this code, to be used in populating ORC-3 and OBR-3 by outbound Result Reporting and ELR interfaces.

- **Inbound Setup**

None. This OID should only be returned with NA messages, and OID attributes will not be used.



- **Placer Group Number (ORC-4)**

- **Purpose**

- This OID identifies the creator and source of the Placer group number. It is provided by the HIS or EMR vendor.

- **Outbound Setup**

- The Group number is generally the same as the Placer number.

- **Inbound Setup**

- None. If Aux number is sent here, the data received by interface is stored in genindex.

- **Ordering Facility Assigning Authority(ORC-21.6)**

- **Purpose**

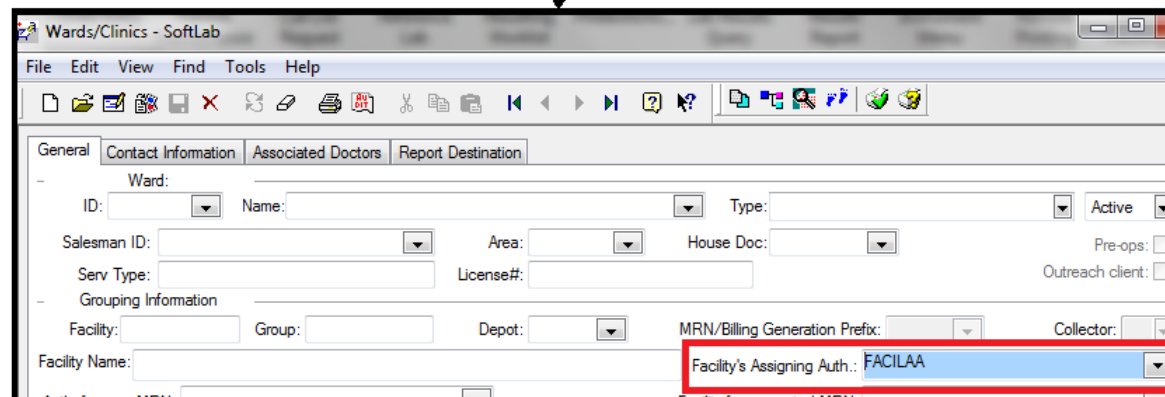
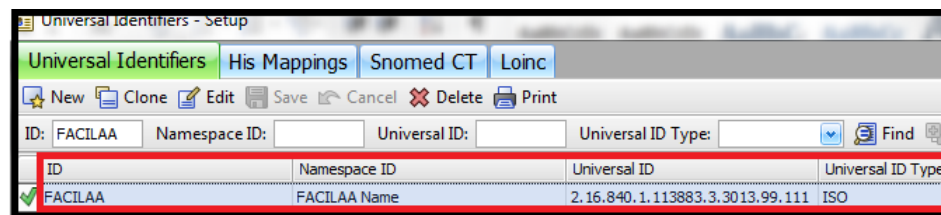
This OID describes the authority that assigned the ID sent in OBR-21.1 representing the Facility that placed the order. It is provided by the client.

- **Outbound Setup**

The client defines AA IDs and OID attributes in the UID table for each authority that assigns Facility IDs in Ward/Clinic setup. Facility IDs are not Ward/Clinic primary IDs. The client then enters AA ID in Clinic setup for the Facility by selecting from this list.

- **Inbound Setup**

None. SCC does not use or store this data.



- **Principal Result Interpreter Assigning Authority (OBR-32.1.9-11)**

- **Purpose**

Outbound, this OID describes the authority that assigned the code representing the user (the user ID) that is sent in OBR-32.1.1. It is provided by the client.

- **Outbound Setup**

The client defines AA IDs and OID attributes in the UID table for each authority that assigns User IDs. Since User IDs are defined in Security, there's probably only one AA. The client then enters AA ID in Security for each user ID that can enter results.

- **Inbound Setup**

N/A

The screenshot shows the 'Security Management' application window. At the top, there are tabs for 'User', 'Role', 'Site', 'Contact', and 'User'. Below these are icons for 'New', 'Clone', 'Edit', 'Save', 'Cancel', and 'Delete'. The main area contains a table with columns 'ID', 'Initials', and 'First Name'. The table has three rows: 'scc', 'scc_al', and 'scc2'. Below the table, there is a form with fields for 'ID', 'Initials', and 'Assigning Authority'. The 'Assigning Authority' field is highlighted with a red box and contains the value 'USERAA'.

ID	Initials	First Name
scc	SCC	SUPER
scc_al	SCC_AL	SUPER_AL
scc2	SCC2	SUPER

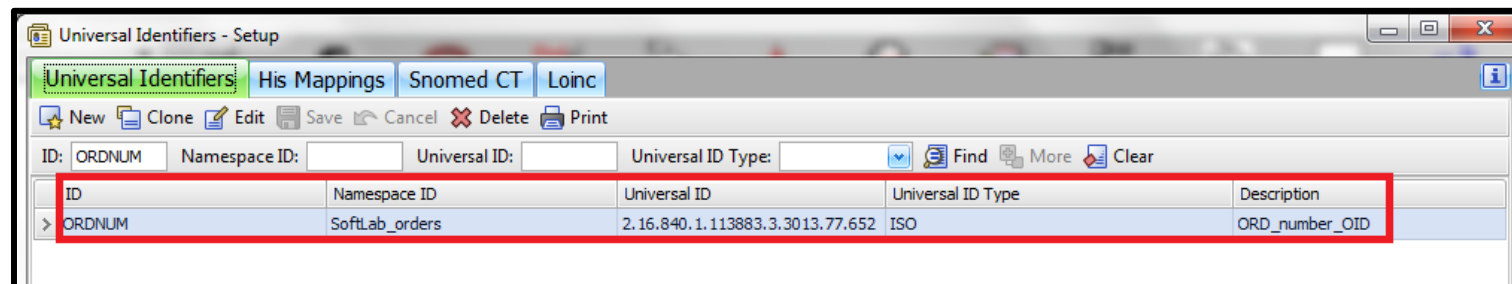
Form fields: ID: scc, Initials: SCC, Assigning Authority: USERAA

The screenshot shows the 'Universal Identifiers - Setup' application window. At the top, there are tabs for 'Universal Identifiers', 'His Mappings', 'Snomed CT', and 'Loinc'. Below these are icons for 'New', 'Clone', 'Edit', 'Save', 'Cancel', 'Delete', and 'Print'. The main area contains a table with columns 'ID', 'Namespace ID', 'Universal ID', and 'Universal ID Type'. The table has two rows: 'USERAA' and 'FACILAA'. The 'USERAA' row is highlighted with a red box.

ID	Namespace ID	Universal ID	Universal ID Type
USERAA	Authority Name	2.16.840.1.113883.3.3013.99.666	ISO
FACILAA	FACILAA Name	2.16.840.1.113883.3.3013.99.111	ISO

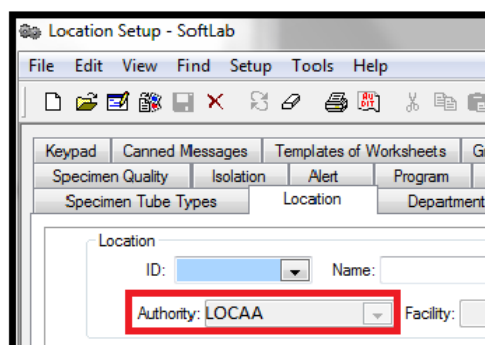
Specimen ID (SPM-2)

- Purpose
Outbound, this OID identifies the creator and source of the Specimen number. It is provided by SCC, assigned in our OID database for each client. Same values are used as for ORC/OBR-3.
- Outbound Setup
Configure the Result Reporting interface to send the same values as for ORC/OBR-3.
- Inbound Setup
N/A



Performing Organization Assigning Authority (OBX-23.6)

- Purpose
Outbound, this OID describes the authority that assigned the ID representing the Location that performed testing. It is provided by the client.
- Outbound Setup
The client defines AA IDs and OID attributes in the UID table for each authority that assigns Location IDs. Since Location IDs are defined in SoftLab, there's probably only one AA. The client then enters AA ID in Location setup for each Location.
- Inbound Setup
N/A



Location Setup - SoftLab

File Edit View Find Setup Tools Help

Keypad Canned Messages Templates of Worksheets Gro

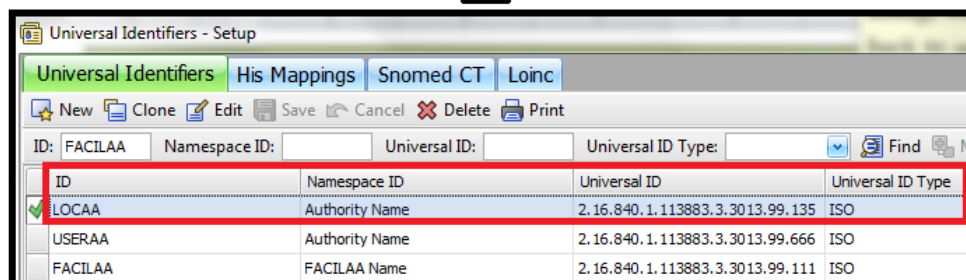
Specimen Quality Isolation Alert Program

Specimen Tube Types Location Department

Location

ID: [dropdown] Name: [text box]

Authority: LOCAA [dropdown] Facility: [text box]



Universal Identifiers - Setup

Universal Identifiers His Mappings Snomed CT Loinc

New Clone Edit Save Cancel Delete Print

ID: FACILAA Namespace ID: [text box] Universal ID: [text box] Universal ID Type: [dropdown] Find Me

ID	Namespace ID	Universal ID	Universal ID Type
LOCAA	Authority Name	2.16.840.1.113883.3.3013.99.135	ISO
USERAA	Authority Name	2.16.840.1.113883.3.3013.99.666	ISO
FACILAA	FACILAA Name	2.16.840.1.113883.3.3013.99.111	ISO

Provider ID Assigning Authority (various HL7 elements)

- Purpose

Outbound, this OID describes the authority that assigned the Doctor ID. It is provided by the client.

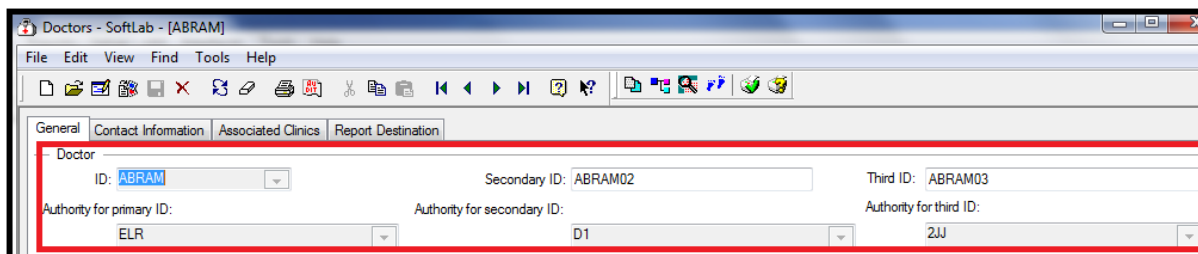
Inbound, it describes the facility that assigned the Doctor ID. It is provided by the HIS or EMR vendor.

- Outbound Setup

The client defines AA IDs and OID attributes in the UID table for each authority that assigns Doctor IDs. Different authorities may represent assignment of the primary (SCC) ID, Secondary ID (HIS code), Third ID (HIS code) and may even represent different HIS systems. The client then enters AA ID in Doctor setup for each code by selecting from this list.

- Inbound Setup

None. SCC does not use or store this data with inbound ADT or order transactions. SCC can post this data to Doctor Setup with inbound MFN messages.



Doctors - SoftLab - [ABRAM]

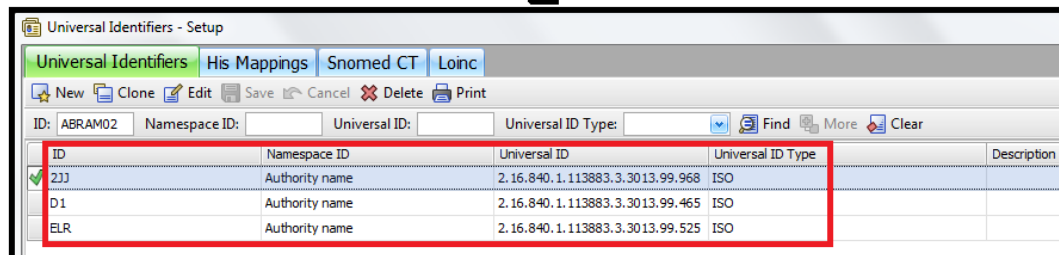
File Edit View Find Tools Help

General Contact Information Associated Clinics Report Destination

Doctor

ID: ABRAM Secondary ID: ABRAM02 Third ID: ABRAM03

Authority for primary ID: ELR Authority for secondary ID: D1 Authority for third ID: 2JJ



Universal Identifiers - Setup

Universal Identifiers His Mappings Snomed CT Loinc

New Clone Edit Save Cancel Delete Print

ID: ABRAM02 Namespace ID: Universal ID: Universal ID Type: Find More Clear

ID	Namespace ID	Universal ID	Universal ID Type	Description
2JJ	Authority name	2.16.840.1.113883.3.3013.99.968	ISO	
D1	Authority name	2.16.840.1.113883.3.3013.99.465	ISO	
ELR	Authority name	2.16.840.1.113883.3.3013.99.525	ISO	

Provider ID Assigning Facility (various HL7 elements)

- Purpose

Outbound, this OID describes the facility that assigned the Doctor ID. It is provided by the client.

Inbound, this OID describes the authority that assigned the Doctor ID. It is provided by the HIS or EMR vendor.

- Outbound Setup

The client defines AF IDs and OID attributes in the UID table for each authority that assigns Doctor IDs. Different authorities may represent assignment of the primary (SCC) ID, Secondary ID (HIS code), Third ID (HIS code) and may even represent different HIS systems. The client then enters AF ID in Doctor setup for each code by selecting from this list.

- Inbound Setup

None. SCC does not use or store this data with inbound ADT or order transactions. SCC can post this data to Doctor Setup with inbound MFN messages.

Doctors - SoftLab - [ABRAM]

File Edit View Find Tools Help

General Contact Information Associated Clinics Report Destination

Doctor

ID: ABRAM Secondary ID: ABRAM02 Third ID: ABRAM03

Authority for primary ID: ELR Authority for secondary ID: D1 Authority for third ID: 2J

Facility for primary ID: MRNAF Facility for secondary ID: ELRMSH6 Facility for third ID: ELRMSH5



Universal Identifiers - Setup

Universal Identifiers His Mappings Snomed CT Loinc

New Clone Edit Save Cancel Delete Print

ID: MRNAF Namespace ID: Universal ID: Universal ID Type: Find More

ID	Namespace ID	Universal ID	Universal ID Type
> MRNAF	MRNAF Name	2.16.840.1.113883.3.3013.99.254	ISO
> ELRMSH6	DOHFACILITY	2.16.840.1.113883.3.3013.99.584	CLIA
> ELRMSH5	DOHAPP	2.16.840.1.113883.3.3013.99.698	ISO

Works Cited

Health Level Seven International. *HL7 Implementation Guidance for Unique Object Identifiers*. Release 1. Ed. Boone, Beebe, Dolin, et al. 2011