



# Enight™ v2.1

## HL7 Conformance Statement

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# 1 Introduction

## 1.1 Revision History

Date	Revision	Description
February 10 2025	02	<b>Updated for Ensignt v2.1.1</b> <ul style="list-style-type: none"><li>• Reformatted numbering</li><li>• Moved 'Example' section to the end - section 5.1.5 (now)</li><li>• Added section 5.1.4.4.3 - which now has the definition of the new standardized results (with series and object level details)</li><li>• Added a new example (5.1.5.3) pertaining to changes in 5.1.4.4.3</li></ul>
November 20, 2024	01	Initial release of statement for Ensignt v2.1

## 1.2 Purpose

This document is an HL7 conformance statement describing the message structures supported by Ensignt. The reader should have a working understanding of the HL7 standard, and this document should be read in conjunction with the standard.

## 1.3 Terms and Definitions

Informal definitions are provided for the following terms used in this Conformance Statement.

Term	Definition
HL7	Health Level 7 – a set of standards for the exchange of clinical and administrative information among software applications used in healthcare settings.
MLLP	Minimal Lower Layer Protocol – defines the delimiters used to ensure the correct encapsulation of an HL7 message for exchange among software applications.
ORM	Order Request Message – the HL7 message used to convey the scheduling of orders in a healthcare institution
ORU	Order Request Message – the HL7 message used to convey observation results.
TCP/IP	The Ensign core model performing the anonymization of the study.

## 2 Communication Profiles

### 2.1 TCP/IP Communication

Enlight receives HL7 messages over TCP/IP, using the Minimal Lower-Level Protocol (MLLP).

## 3 Overview

HL7 Message	HL7 version	Sender	Receiver
ORM/ACK - General Order Message (Event O01)	2.3+	No	Yes
ORU/ACK - Unsolicited Observation Message (Event R01)	2.3	Yes	No

## 4 Inbound Messages

### 4.1 Supported Events

#### 4.1.1 Supported ORM Events

The ORM^O01 is the only code supported for an order message. The message is used by Ensign to drive prefetch of relevant prior studies.

Functional Area	Event Code	ORM Trigger Event
ORM	O01	General order message

The following segments are processed when Ensign receives an ORM message:

- PID
- OBR

### 4.2 Attribute Mapping

The following segments and fields are required for Ensign to handle ORM messages for prefetch.

#### 4.2.1 PID Segment Mappings

Field	Field Name	Notes
PID-3	Patient ID	Used to indicate patient for prefetching relevant priors.

#### 4.2.2 OBR Segment Mappings

Field	Field Name	Notes
OBR-5	Priority	Used to indicate a STAT exam for prioritizing prefetch jobs.
OBR-6	Requested Date / Time	Used for estimated exam date/time for scheduling prefetch jobs.
OBR-24	Diagnostic Service Section ID	Used as modality of exam for filtering prior exams for prefetch.

## 5 Outbound Messages

### 5.1 HL7 Standardizes Results Notification Messages

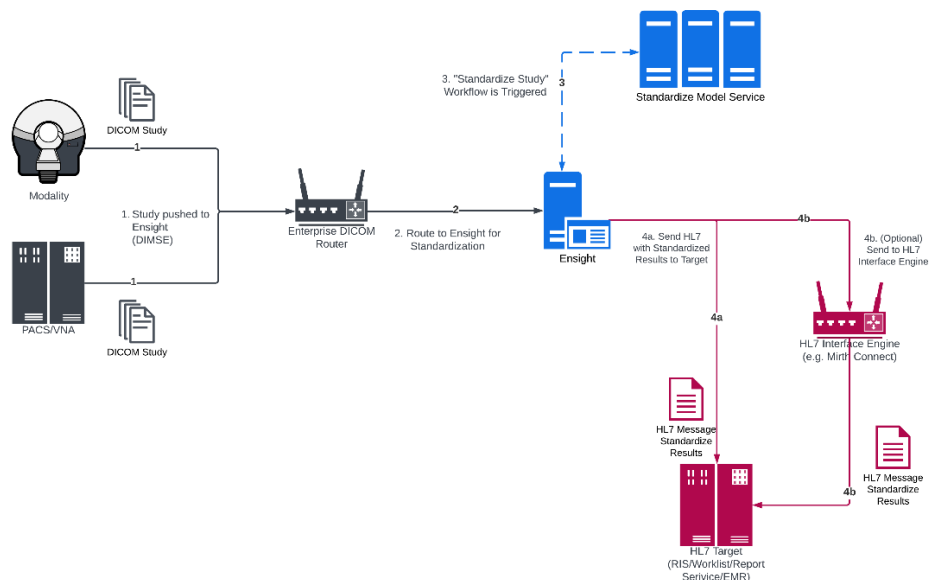
The Unsolicited Observation Message (ORU) is used for transmitting results from standardizing the associated DICOM study.

#### 5.1.1 Trigger Events

Unsolicited Transmission of an observation message – ORU^R01

This message is sent after a DICOM study is pushed into Ensignt, and a Standardization workflow is triggered. If an HL7 template is associated with that trigger, an HL7 message is generated based on the configured templated and sent unsolicited to the configured HL7 endpoint.

#### 5.1.2 Workflow Overview



### 5.1.3 General Message Format

The following table details the general (default) message semantics:

Segments	Segment Name	Reference
MSH	Message Header	See <i>MSH Segment</i>
PID	Patient Identification	See <i>PID Segment</i>
PV1	Patient Visit	See <i>PV1 Segment</i>
OBR	Observations Request	See <i>OBR Segment</i>
OBX	Observation / Result	See <i>OBX Segment</i>

Note 1: The default ORU^R01 message can be adjusted through configuration.

Note 2: PV1 segment should not be used to update any information.

#### 5.1.3.1 MSH Segment

Field	Field Name	Value
MSH-1	Field Separator	
MSH-2	Encoding Characters	^~\&
MSH-3	Sending Application	Ensign
MSH-4	Sending Facility	<i>Configurable</i>
MSH-5	Receiving Application	<i>Configurable</i>
MSH-6	Receiving Facility	<i>Configurable</i>
MSH-7	Date / Time of Message	<i>Time when message is generated</i>
MSH-9.1	Message Type – Message Type	ORU
MSH-9.2	Message Type – Trigger Event	R01
MSH-10	Message Control ID	<i>Generated. Uniquely identifies the message</i>
MSH-11	Processing ID	P
MSH-12	Version ID	2.4



### 5.1.3.2 PID Segment

Field	Field Name	Value
PID-3	Patient ID	<i>Patient ID derived from the DICOM header.</i>
PID-5	Patient Name	<i>Patient Name derived from the DICOM header.</i>
PID-7	Patient Birth Date	<i>Patient Birth Date derived from the DICOM header.</i>
PID-8	Patient Sex	<i>Patient Sex derived from the DICOM header.</i>

### 5.1.3.3 PV1 Segment

Field	Field Name	Value
PV1-1	Set ID	<i>Sequence ID generated by system</i>
PV1-2	Patient Class	I <i>Note: Arbitrary value to adhere to HL7 v2.3 specification. Do not use.</i>

### 5.1.3.4 OBR Segment

Field	Field Name	Value
OBR-1	Set ID	<i>Sequence ID generated by system</i>
OBR-2	Place Order Number	<i>Accession Number derived from the DICOM header.</i>
OBR-3	Filter Order Number	<i>Accession Number derived from the DICOM header.</i>
OBR-8	Observation End Date/Time	<i>Date of Study Standardization</i>
OBR-25	Result Status	F

### 5.1.3.5 OBX Segment

#### 5.1.3.6 OBX – Device Observer UID

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	ST
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	121012
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	Device Observer UID
OBX-3.3	Observation Identifier – Name of Coding System DICOM Coding Scheme Designator	DCM
OBX-8	Observation Value	1.2.826.0.1.3680043.9.7296.00860002304557
OBX-11	Observation Result Status	F

#### 5.1.3.7 OBX – Device Observer Name

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	ST
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	121013
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	Device Observer Name
OBX-3.3	Observation Identifier – Name of Coding DICOM Coding Scheme Designator	DCM
OBX-8	Observation Value	Ensign
OBX-11	Observation Result Status	F

#### 5.1.3.8 OBX – Device Observer Manufacturer

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	ST
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	121014
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	Device Observer Manufacturer
OBX-3.3	Observation Identifier – Name of Coding System	DCM

	DICOM Coding Scheme Designator	
OBX-8	Observation Value	Enlitic
OBX-11	Observation Result Status	F

#### 5.1.3.9 OBX – Study Instance UID

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	ST
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	113014
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	DICOM Study
OBX-3.3	Observation Identifier – Name of Coding System DICOM Coding Scheme Designator	DCM
OBX-8	Observation Value	<i>Study Instance UID derived from the DICOM header.</i>
OBX-11	Observation Result Status	F

#### 5.1.3.10 OBX – Standardized Study Description

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	TX
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	STUDYDESC
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	ENDEX Study Description
OBX-3.3	Observation Identifier – Name of Coding System DICOM Coding Scheme Designator	99ENLITIC
OBX-8	Observation Value	<i>Standardized Study Description</i>
OBX-11	Observation Result Status	F

### 5.1.3.11 OBX – ENDEX Results (JSON-wrapped Results)

Field	Field Name	Value
OBX-1	Set ID	<i>Sequence ID generated by system</i>
OBX-2	Value Type	TX
OBX-3.1	Observation Identifier – Identifier DICOM Code Value	RESULTSJSON
OBX-3.2	Observation Identifier – Text DICOM Code Meaning	ENDEX Results
OBX-3.3	Observation Identifier – Name of Coding System DICOM Coding Scheme Designator	99ENLITIC
OBX-8	Observation Value	<i>A JSON representation of standardized results.</i> See Standardized Result Attributes – JSON Wrapped section (template: {ResultsFullJSON})
OBX-11	Observation Result Status	F

### 5.1.4 Custom Message Format

In lieu of the default HL7 ORM^R01 notification message provided as part of a default installation of Ensign, a site may wish to construct a custom HL7 message using the templating capabilities of the platform.

This section describes available configuration

#### 5.1.4.1 Available Template Variable for Mapping

#### 5.1.4.2 General Attributes

#### 5.1.4.3 DICOM Attributes

Any Patient and Study level attribute from the Study which triggered the workflow is available to be mapped to the outbound HL7 message.

#### 5.1.4.3.1.1 DICOM Attributes – Tag Examples

Template Variable	DICOM Tag	Description
{PatientID}	Patient ID – (0010, 0020)	Example of picking out a Patient/Study-level tag using DICOM Tag keyword
{00100020}	Patient ID – (0010, 0020)	Patient/Study-level tags – tag id-based addition.

#### 5.1.4.3.1.2 DICOM Attributes – Tag Sequence Examples

Template Variable	DICOM Sequence Tag	Description
{ReferencedImageSequence.ReferencedSOPInstanceUID}	<ul style="list-style-type: none"> <li>Referenced Image Sequence – (0008, 1140)</li> <li>Referenced SOP Instance UID – (0008, 1155)</li> </ul>	Example of picking out the first value of Referenced SOP Instance UID tag within Referenced Image Sequence
{ReferencedImageSequence[2].ReferencedSOPInstanceUID}	<ul style="list-style-type: none"> <li>Referenced Image Sequence – (0008, 1140)</li> <li>Referenced SOP Instance UID – (0008, 1155)</li> </ul>	<p>Example of picking out the third value of Referenced SOP Instance UID tag within Referenced Image Sequence.</p> <p>Note: Item indexes follow zero-based numbering. That is, ReferencedImageSequence[2] refers to the third element.</p>
{OriginalAttributesSequence[0].ModifiedAttributesSequence[0].PatientID}	<ul style="list-style-type: none"> <li>Original Attributes Sequence - (0400, 0561)</li> <li>Modified Attributes Sequence - (0400, 0550)</li> <li>PatientID - (0010, 0020)</li> </ul>	Example of picking out a value from a multi-level DICOM Sequence.

#### 5.1.4.4 Standardized Results

The following variables encapsulated various outputs from the Standardization process and can be mapped to the outgoing HL7 message.

#### 5.1.4.4.1 Standardized Result Attributes – General Variables

Template Variable	Output Format	Description
{StandardizedStudyDescription}	String	The standardized study description
{StandardizedSeriesDescriptions}	String List (comma delimited)	List of all standardized series description (Chosen series description corresponds to an Object with the most number of instances)
{OriginalStudyDescription}	String	The original study description
{OriginalSeriesDescriptions}	String List (comma delimited)	List of all original series descriptions
{StandardizedSeriesCount}	Integer String	Number of standardized series
{StandardizedInstanceCount}	Integer String	Number of standardized instances
{ContrastPresent}	Boolean String	True if present, false otherwise
{StudyModalitiesMapped}	String List (comma delimited)	All imaging modalities present in the study after label mapping
{StudyModalityMapped}	String	Inferred imaging modality for the study (always a single modality even for mixed modality studies) after label mapping

#### 5.1.4.4.2 Standardized Result Attributes – Standardized Variables

Template Variable	Output Format	Description
{CdmObjAnatomies}	String List (comma delimited)	Aggregated image object anatomies present in series. Note - aggregation handles multiple objects in a series
{CdmObjAnatomiesMapped}	String List (comma delimited)	Aggregated image object anatomies present in series after label mapping. Note - aggregation handles multiple objects in a series

{CdmObjAnatomiesWithLateralityMapped}	String List (comma delimited)	Aggregated image object anatomies present in series with laterality. Note - aggregation handles multiple objects in a series
{CdmObjImageWeightings}	String List (comma delimited)	MR image weightings aggregated over the series
{CdmObjImageWeightingsMapped}	String List (comma delimited)	MR image weightings aggregated over the series after label mapping
{CdmObjImageWeightingQualifiers}	String List (comma delimited)	MR image weighting qualities aggregated over the series
{CdmObjImageWeightingQualifiersMapped}	String List (comma delimited)	MR image weighting qualities aggregated over the series after label mapping
{CdmObjKernels}	String List (comma delimited)	CT reconstruction kernel
{CdmObjKernelsMapped}	String List (comma delimited)	CT reconstruction kernel after label mapping
{CdmObjModalities}	String List (comma delimited)	Aggregated image object modalities present in series. Note - aggregation handles multiple objects in a series
{CdmObjNumericalSliceDescriptorsMapped}	String List (comma delimited)	CT or MR numerical slice descriptors after label mapping
{CdmObjNumericalSliceThicknessDescriptorsMapped}	String List (comma delimited)	CT or MR numerical slice thickness descriptors after label mapping
{CdmObjSliceDescriptorsMapped}	String List (comma delimited)	CT or MR slice descriptors after label mapping

{CdmObjSliceThicknessDescriptors}	String List (comma delimited)	CT or MR slice thickness descriptors
{CdmObjSliceThicknessDescriptorsMapped}	String List (comma delimited)	CT or MR slice thickness descriptors after label mapping
{CdmObjTypes}	String List (comma delimited)	Aggregated image object types present in series. Note - aggregation handles multiple objects in a series
{CdmObjTypesMapped}	String List (comma delimited)	Aggregated image object types present in series after label mapping. Note - aggregation handles multiple objects in a series
{CdmObjViews}	String List (comma delimited)	Aggregated image object views present in series. Note - aggregation handles multiple objects in a series
{CdmObjViewsMapped}	String List (comma delimited)	Aggregated image object views present in series after label mapping. Note - aggregation handles multiple objects in a series
{CdmStudyAnatomy}	String	Study level anatomy without laterality
{CdmStudyAnatomyAggregated}	String	Aggregation of all image anatomies in the study
{CdmStudyAnatomyMapped}	String	Study level anatomy without laterality after label mapping
{CdmStudyAnatomyWithLateralityMapped}	String	Study level anatomy with laterality after label mapping
{CdmStudyAngiogramFlag}	String	Study level angiogram flag (boolean flag)
{CdmStudyContrastFlag}	String	Study level contrast flag (boolean flag)
{CdmStudyContrastRoute}	String	Study level contrast route



{CdmStudyContrastRouteMapped}	String	Study level contrast route after label mapping
{CdmStudyGroupCount}	String	Number of image object groups inferred in the study
{CdmStudyGroupCountMapped}	String	Number of image object groups inferred in the study after label mapping
{CdmStudyIVContrastDescriptor}	String	Study level IV contrast descriptor
{CdmStudyContrastRouteMapped}	String	Study level contrast route after label mapping
{CdmStudyLaterality}	String	Study level laterality
{CdmStudyModalities}	String	Study level modalities (aggregation of all image modalities in the study)
{CdmStudyModality}	String	Study level modality (inferred modality for the study)
{CdmStudyPhaseCountMapped}	String	Study level phase count after label mapping
{CdmStudyStudyPhaseCount}	String	Study level phase count
{CdmStudyType}	String	Diagnostic/non-diagnostic/unknown
{CdmStudyTypeMapped}	String	Diagnostic/non-diagnostic/unknown after label mapping
{CdmStudyViewCount}	String	Study view count
{CdmStudyViewCountMapped}	String	Study view count after label mapping

#### 5.1.4.4.3 Standardized Result Attributes – JSON Wrapped

The template variables listed in:

- 5.1.4.4.1 Standardized Result Attributes – General Variables
- 5.1.4.4.2 Standardized Result Attributes – Standardized Variables

are also available wrapped in a JSON Object (and serialized to a string) for convenience.

Template Variable	Output Format	Description
-------------------	---------------	-------------

<p>{ResultsShortJson}</p>	<p>JSON String</p>	<p>A JSON object with the following properties:</p> <ul style="list-style-type: none"> <li>• CdmStudyAnatomy</li> <li>• CdmStudyAnatomyAggregated</li> <li>• CdmStudyAnatomyMapped</li> <li>• CdmStudyAnatomyWithLaterality Mapped</li> <li>• CdmStudyAngiogramFlag</li> <li>• CdmStudyContrastFlag</li> <li>• CdmStudyContrastRoute</li> <li>• CdmStudyContrastRouteMapped</li> <li>• CdmStudyGroupCount</li> <li>• CdmStudyGroupCountMapped</li> <li>• CdmStudyIVContrastDescriptor</li> <li>• CdmStudyLaterality</li> <li>• CdmStudyModalities</li> <li>• CdmStudyModality</li> <li>• CdmStudyPhaseCountMapped</li> <li>• CdmStudyStudyPhaseCount</li> <li>• CdmStudyType</li> <li>• CdmStudyTypeMapped</li> <li>• CdmStudyViewCount</li> <li>• CdmStudyViewCountMapped</li> <li>• ContrastPresent</li> <li>• OriginalStudyDescription</li> <li>• StandardizedInstanceCount</li> <li>• StandardizedSeriesCount</li> <li>• StandardizedStudyDescription</li> <li>• StudyModalitiesMapped</li> <li>• StudyModalityMapped</li> </ul>
<p>{EndexResultsStudyObjectJson}</p>	<p>JSON String</p>	<p>A JSON object with the following properties:</p> <ul style="list-style-type: none"> <li>• study <ul style="list-style-type: none"> <li>○ study-level standardized results</li> </ul> </li> <li>• object <ul style="list-style-type: none"> <li>○ object-level (sub-series) standardized results.</li> </ul> </li> </ul>

		See schema definition for {EndxResultsStudyObjectJson}, {EndxResultsStudySeriesJson}, {EndxResultsStudySeriesObjectJson}
{EndxResultsStudySeriesJson}	JSON String	<p>A JSON object with the following properties:</p> <ul style="list-style-type: none"> <li>• study <ul style="list-style-type: none"> <li>○ study-level standardized results</li> </ul> </li> <li>• object <ul style="list-style-type: none"> <li>○ object-level (sub-series) standardized results.</li> </ul> </li> </ul> <p>See schema definition for {EndxResultsStudyObjectJson}, {EndxResultsStudySeriesJson}, {EndxResultsStudySeriesObjectJson}</p>
{EndxResultsStudySeriesObjectJson}	JSON String	<p>A JSON object with the following properties:</p> <ul style="list-style-type: none"> <li>• study <ul style="list-style-type: none"> <li>○ study-level standardized results</li> </ul> </li> <li>• object <ul style="list-style-type: none"> <li>○ object-level (sub-series) standardized results.</li> </ul> </li> </ul> <p>See schema definition for {EndxResultsStudyObjectJson}, {EndxResultsStudySeriesJson}, {EndxResultsStudySeriesObjectJson}</p>

### 5.1.4.4.3.1 JSON Schema – JSON-wrapped ENDEX Results

This is applicable to results generated for templates: {EndexResultsStudyObjectJson}, {EndexResultsStudySeriesJson}, {EndexResultsStudySeriesObjectJson}

```
{
  "$schema": "http://json-schema.org/draft-07/schema#",
  "type": "object",
  "properties":
  "objects":
    "type": "array",
    "items":
      "type": "object",
      "properties":
        "instanceUids":
          "type": "array",
          "items":
            "type": "string"
        }
      },
    "objUid":
      "type": "string"
    },
    "seriesUid":
      "type": "string"
    },
    "standardizedSeriesDescription":
      "type": "string"
    },
    "studyUid":
      "type": "string"
    }
  },
  "required": ["instanceUids", "objUid", "seriesUid", "standardizedSeriesDescription", "studyUid"]
},
"series":
  "type": "array",
  "items":
    "type": "object",
    "properties":
      "originalSeriesDescription":
        "type": "string"
      },
      "standardizedSeriesDescription":
        "type": "string"
      },
      "seriesUid":
        "type": "string"
      },
      "studyUid":
        "type": "string"
      },
      "objUids":
        "type": "array",
        "items":
          "type": "string"
        }
      }
    },
    "required": ["originalSeriesDescription", "standardizedSeriesDescription", "seriesUid", "studyUid", "objUids"]
  },
  "study":
    "type": "object",
    "properties":
      "originalStudyDescription":
        "type": "string"
      },
      "standardizedStudyDescription":
        "type": "string"
      }
    }
  }
}
```

```
    },
    "studyUid":
      "type": "string"
    }
  },
  "required": ["originalStudyDescription", "standardizedStudyDescription", "studyUid"]
}
},
"required": ["study"],
"oneOf": [
  {"required": ["objects"]},
  {"required": ["series"]}
]
}
```

## Property Name Details

Property Name	JSON Type	Description
object	Object	<p>A sub-group of a DICOM Series.</p> <p>ENDEX may choose to logically split (i.e. keep the same Series Instance UID) a DICOM series into multiple objects where each object contains multiple DICOM instances that share anatomy, view, and other properties. For example, a DICOM series that contains multiple views (typically in Xray imaging), or when a LOCALIZER/SCOUT image shares a Series with a volume (e.g. axial stack), may be split into those constituent objects.</p> <p>Contains the following:</p> <ul style="list-style-type: none"> <li>• instanceUids: Array of SOP Instance UIDs which are contained within this object</li> <li>• seriesUid: the Reference Series Instance UID</li> <li>• studyUid: the Reference Study Instance UID</li> <li>• standardizedSeriesDescription: The standardized series description</li> </ul>
series	Object	<p>An analogue to a DICOM series.</p> <p>Even if the DICOM series is split by ENDEX into constituent objects, this series object will attempt to derive a representative summary series description that best applies to all instances of that series.</p> <p>Contains the following:</p> <ul style="list-style-type: none"> <li>• objectUids: Array of SOP Instance UIDs which are contained within this object</li> <li>• seriesUid: the Reference Series Instance UID</li> <li>• studyUid: the Reference Study Instance UID</li> <li>• standardizedSeriesDescription: The standardized series description</li> </ul>
study	Object	<p>An analogue to a DICOM study</p> <p>Contains the following:</p>

		<ul style="list-style-type: none"><li>• studyUid: the Reference Study Instance UID</li><li>• originalStudyDescription</li><li>• standardizedStudyDescription</li></ul>
--	--	--

## 5.1.5 Examples

### 5.1.5.1 Example ORU^R01 for a standardized MR Study

```
MSH|^~\&|Enlight|HOSPITAL_SENDING|MIRTH|HOSPITAL_RECEIVING|202404271330||ORU^R01|22222222|P|2.3
PID|||PID1234||DOE^JOHN^A||19820719|M
PV1|1||
OBR|1|ACC1234|ACC1234|ENDEXRESULTS^Endex Results^99ENLITIC|||||||||||||F
OBX|1|ST|121012^Device Observer UID^DCM||1.2.826.0.1.3680043.9.7296.00860002304557|||||F
OBX|2|ST|121013^Device Observer Name^DCM||Enlight|||||F
OBX|3|ST|121014^Device Observer Manufacturer^DCM||Enlitic|||||F
OBX|4|ST|113014^DICOM Study^DCM||1.2.826.0.1.3680043.9.7296.111.222.333.999|||||F
OBX|5|TX|STUDYDESC^Endex Study Description^99ENLITIC|1|MR ABDOMEN NONCON|||||F
OBX|6|TX|RESULTSJSON^Endex Results
Json^99ENLITIC|1|{"CdmStudyType":"DIAG","CdmStudyModality":"MR","CdmStudyModalities":"MR","CdmStudyAnatomy":"ABDOMEN","CdmStudyLaterality":"UNPAIRED","CdmStudyAngiogramFlag":"F","CdmStudyBinaryContrastFlag":"F","CdmStudyContrastDescriptor":"NonCon","CdmStudyPhaseCount":"0","CdmStudyViewCount":"2","CdmStudyGroupCount":"17","StandardizedSeriesCount":"17","StandardizedInstanceCount":"436","StandardizedStudyDescription":"MR ABDOMEN NONCON","OriginalStudyDescription":"MR ABDOMEN NONCON","ContrastPresent":"false","CdmObjectImageWeightings":"STIR,T1,T2","CdmObjectAnatomies":"ABDOMEN","ObjectMRImageWeightings":"STIR,T1,T2","CdmObjectStandardViews":"CORONAL,SAGITTAL","ObjectMRContrastDescriptors":"NONE","OriginalSeriesDescriptions":"ABDOMEN T1 CORONAL C-THICK,ABDOMEN T2 SAGITTAL C- THICK,ABDOMEN STIR CORONAL C- THICK,ABDOMEN T1 SAGITTAL C-THICK","ObjectAnatomies":"ABDOMEN","StandardizedSeriesDescriptions":"ABDOMEN T1 CORONAL C- THICK,LOCALIZER,ABDOMEN T2 SAGITTAL C-THICK,ABDOMEN STIR CORONAL C- THICK,ABDOMEN T1 SAGITTAL C-THICK","ObjectViews":"CORONAL,SAGITTAL","CdmObjectModalities":"MR","CdmObjectSliceThicknessDescriptors":"THICK","CdmObjectTypes":"SCOUT,VO LUME","ObjectImagePlanes":"CORONAL,SAGITTAL","ObjectModalities":"MR","ObjectMRSliceThicknessDescriptors":"THICK"}|||||F
```

### 5.1.5.2 Example ORU^R01 - Default Custom Message

An example ORU^R01 message (from section Example ORU^R01 for a standardized MR Study) recreated using templated values. For templated variable definitions see: Custom Message Format

```
MSH|^~\&|{{PlatformName}}SendingFacility|{{ReceiverApplication}}ReceivingFacility|{{DateTime}}|ORU^R01|{{MessageControlID}}|P|2.3
PID|||{{PatientID}}|{{PatientName}}|{{PatientBirthDate}}|{{PatientSex}}
PV1|1||
OBR|1|{{AccessionNumber}}|{{AccessionNumber}}|ENDEXRESULTS^Endex Results^99ENLITIC|||||||||||||F
OBX|1|ST|121012^Device Observer UID^DCM||{{PlatformUID}}|||||F
OBX|2|ST|121013^Device Observer Name^DCM||{{PlatformName}}|||||F
OBX|3|ST|121014^Device Observer Manufacturer^DCM||Enlitic|||||F
OBX|4|ST|113014^DICOM Study^DCM||{{StudyInstanceUID}}|||||F
OBX|5|TX|STUDYDESC^Endex Study Description^99ENLITIC|1|{{StandardizedStudyDescription}}|||||F
OBX|6|TX|RESULTSJSON^Endex Results Json^99ENLITIC|1|{{ResultsFullJSON}}|||||F
```

### 5.1.5.3 Example ORU^R01 - Custom Message with Series and Object level Details

The following shows an example of standardized Xray study with 1 series, and multiple views, and includes both summary series details and object (series) details.



### 5.1.5.3.1 Template Definition

```
MSH|^~\&|{PlatformName}|SendingFacility|{ReceiverApplication}|ReceivingFacility|{DateTime}|ORU^R01|{MessageControlID}|P|2.3
PID|||{PatientID}|{PatientName}|{PatientBirthDate}|{PatientSex}
PV1|1||
OBR|1|{AccessionNumber}|{AccessionNumber}|ENDEXRESULTS^Endex Results^99ENLITIC|||||||||||||
OBX|1|ST|121012^Device Observer UID^DCM||{PlatformUID}|||||F
OBX|2|ST|121013^Device Observer Name^DCM||{PlatformName}|||||F
OBX|3|ST|121014^Device Observer Manufacturer^DCM||Enlitic||||F
OBX|4|ST|113014^DiCOM Study^DCM||{StudyInstanceUID}|||||F
OBX|5|TX|STUDYDESC^Endex Study Description^99ENLITIC|1|{StandardizedStudyDescription}|||||F
OBX|6|TX|RESULTSJSON^Endex Results Json^99ENLITIC|1|{EndexResultsStudySeriesObjectson}|||||F
```

### 5.1.5.3.2 Derived Message

#### HL7 Derived Message

```
MSH|^~\&|Ensignt|Enlitic|site|HL7|20250210071001||ORU^R01|1082600356|P|2.3
PID|||7798ee1d783c766bfe5805fda9408e323885e4757613e7a1acf5f5ca79e2a6c||N-2d14e75d1b686ec3f75356316f138b74||20011205|M
PV1|1||
OBR|1|e11063c446bc5394|e11063c446bc5394|ENDEXRESULTS^Endex Results^99ENLITIC|||||||||||||
OBX|1|ST|121012^Device Observer UID^DCM||1.2.826.0.1.3680043.9.7296.00860002304557||||F
OBX|2|ST|121013^Device Observer Name^DCM||Ensignt||||F
OBX|3|ST|121014^Device Observer Manufacturer^DCM||Enlitic||||F
OBX|4|ST|113014^DiCOM Study^DCM||1.2.826.0.1.3680043.9.7296.0001.1254134233496156||||F
OBX|5|TX|STUDYDESC^Endex Study Description^99ENLITIC|1|XR CERVICAL/CHEST/THORACIC||||F
OBX|6|TX|RESULTSJSON^Endex Results
Json^99ENLITIC|1|{"study":{"studyUid":"1.2.826.0.1.3680043.9.7296.0001.1254134233496156","uid":"3e819d802fa4178cfe44d3b8b2663be8965d4905","stan
dardizedStudyDescription":"XR CERVICAL/CHEST/THORACIC","originalStudyDescription":"SPINE
THORACIC","cdmType":"DIAG","cdmModality":"XR","cdmModalities":"XR","cdmAnatomy":"CERVICAL\\E\\CHEST\\E\\THORACIC","cdmAnatomyInference
Map":{"\\E\\chest\\E":["\\E\\part.examinated\\E","\\E\\fusion\\E","\\E\\part\\E","\\E\\X\\E"],\\E\\spine\\E":["\\E\\procedure_step\\E","\\E\\protocol\\E","\\E\\other\\E",
\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\thoracic\\E":["\\E\\procedure_step\\E","\\E\\fusion\\E","\\E\\procedure_step.req\\E",
\\E\\protocol\\E","\\E\\other\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\cervical\\E":["\\E\\vspec\\E","\\E\\fusion\\E",
\\E\\X\\E"]},"cdmLaterality":"UNPAIRED","cdmAngiogramFlag":"F","cdmBinaryContrastFlag":"F","cdmIvContrastDescriptor":"NonCon","cdmStudyIvPhaseCou
nt":"0","cdmContrastRoute":"NONE","cdmAnatomyAggregated":"CERVICAL\\E\\CHEST\\E\\THORACIC","cdmViewCount":"2","cdmGroupCount":"3","uidM
apped":"3e819d802fa4178cfe44d3b8b2663be8965d4905","cdmTypeMapped":"DIAGNOSTIC","cdmModalityMapped":"XR","cdmModalitiesMapped":"XR","cd
mAnatomyMapped":"CERVICAL/CHEST/THORACIC","cdmAnatomyWithLateralityMapped":"CERVICAL/CHEST/THORACIC","cdmLateralityMapped":"","cdmAn
giogramFlagMapped":"","cdmContrastRouteMapped":"NONE","cdmIvContrastDescriptorMapped":"NONCON","cdmStudyIvPhaseCountMapped":"0-
PHASE","cdmViewCountMapped":"2-VIEW","cdmGroupCountMapped":"3-
GROUP","anatomyResults":{"viewResults":{"series":{"seriesUid":"1.2.826.0.1.3680043.9.7296.1254134233496156.1519287858133426","originalSeriesDe
scription":"","objects":{"f4dc27a9a947a55e7bb091429d55de3bba2e7068","1e860b643fd3c348241597ea2c03a8ef50614bbf","00c787461297be5a3bf1f231ffc
a99c267a9b13e","54f684a8d1c2832295d74f4b03332a0686e3a015"},"seriesDescriptionSummaryRefObj":"CHEST
FRONTAL","seriesDescriptionSummaryAggDescs":"CHEST FRONTAL\\F\\CHEST LATERAL\\F\\THORACIC LATERAL\\F\\CERVICAL
LATERAL","seriesDescriptionSummaryAggProps":"CERVICAL\\F\\CHEST\\F\\THORACIC
FRONTAL\\F\\LATERAL","seriesDescriptionSummaryRefObjOrAggDescs":"CHEST FRONTAL\\F\\CHEST LATERAL\\F\\THORACIC LATERAL\\F\\CERVICAL
LATERAL","seriesDescriptionSummaryRefObjOrAggProps":"CERVICAL\\F\\CHEST\\F\\THORACIC
FRONTAL\\F\\LATERAL","modalities":["XR"],"anatomyResults":{"CERVICAL","CHEST","THORACIC"},"viewResults":{"LATERAL","FRONTAL"},"imageWeightings":{"
","imagePlanes":{"","contrasts":{"","standardizedObjectDescriptions":["CHEST FRONTAL","CHEST LATERAL","THORACIC LATERAL","CERVICAL
LATERAL"],"standardizedSeriesDescription":"CERVICAL\\F\\CHEST\\F\\THORACIC
FRONTAL\\F\\LATERAL","maxInstanceReferences":1},"objects":{"objUid":"54f684a8d1c2832295d74f4b03332a0686e3a015","studyUid":"1.2.826.0.1.3680043.
9.7296.0001.1254134233496156","seriesUid":"1.2.826.0.1.3680043.9.7296.1254134233496156.1519287858133426","standardizedSeriesDescription":"CERV
ICAL LATERAL","cdmType":"IMAGE","cdmModality":"XR","cdmAnatomy":"CERVICAL","cdmAnatomyInferenceMap":{"\\E\\spine\\E":["\\E\\procedure_step\\E",
\\E\\protocol\\E","\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\thoracic\\E":["\\E\\procedure_step\\E","\\E\\protocol\\E",
\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\cervical\\E":
["\\E\\fusion\\E"]},"cdmLaterality":"UNPAIRED","cdmBinaryContrastFlag":"F","cdmStandardView":"LATERAL","cdmContrastRoute":"NONE","cdmTypeMapped"
:"IMAGE","cdmAnatomyMapped":"CERVICAL","cdmAnatomyWithLateralityMapped":"CERVICAL","cdmLateralityMapped":"","cdmStandardViewMapped":"LAT
ERAL","instanceUids":["1.2.826.0.1.3680043.9.7296.1254134233496156.4550688971650870"]},"objUid":"1e860b643fd3c348241597ea2c03a8ef50614bbf"},"s
tudyUid":"1.2.826.0.1.3680043.9.7296.0001.1254134233496156","seriesUid":"1.2.826.0.1.3680043.9.7296.1254134233496156.1519287858133426","standar
dizedSeriesDescription":"CHEST LATERAL","cdmType":"IMAGE","cdmModality":"XR","cdmAnatomy":"CHEST","cdmAnatomyInferenceMap":{"\\E\\spine\\E":
["\\E\\procedure_step\\E","\\E\\protocol\\E","\\E\\other\\E","\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\thoracic\\E":
["\\E\\procedure_step\\E","\\E\\protocol\\E","\\E\\other\\E","\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\chest\\E":
["\\E\\fusion\\E"]},"cdmLaterality":"UNPAIRED","cdmBinaryContrastFlag":"F","cdmStandardView":"LATERAL","cdmContrastRoute":"NONE","cdmTypeMapped"
:"IMAGE","cdmAnatomyMapped":"CHEST","cdmAnatomyWithLateralityMapped":"CHEST","cdmLateralityMapped":"","cdmStandardViewMapped":"LATERAL",
"instanceUids":["1.2.826.0.1.3680043.9.7296.1254134233496156.0156046047434458"]},"objUid":"00c787461297be5a3bf1f231ffca99c267a9b13e"},"studyUi
d":"1.2.826.0.1.3680043.9.7296.0001.1254134233496156","seriesUid":"1.2.826.0.1.3680043.9.7296.1254134233496156.1519287858133426","standardizedS
eriesDescription":"THORACIC LATERAL","cdmType":"IMAGE","cdmModality":"XR","cdmAnatomy":"THORACIC","cdmAnatomyInferenceMap":{"\\E\\spine\\E":
["\\E\\procedure_step\\E","\\E\\protocol\\E","\\E\\other\\E","\\E\\procedure_step.req\\E","\\E\\study\\E","\\E\\study.desc\\E","\\E\\X\\E"],\\E\\thoracic\\E":
["\\E\\procedure_step\\E","\\E\\fusion\\E","\\E\\procedure_step.req\\E","\\E\\protocol\\E","\\E\\other\\E","\\E\\study\\E","\\E\\study.desc\\E",
```

