

HL7 Conformance Statement

syngo.via

VB50A

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1 Introduction

1.1 Purpose

This document gives a compact view to the HL7 interface provided by syngo.via. The HL7 interface of syngo.via is based on the requirements and suggestions of the IHE Framework [1], in regard to supported message types.

Hint: Messages, that do not 100% comply to the definition of IHE, but contain the minimum required information as per definition of syngo.via, are nevertheless processed. Please refer to Chapter 6 “Required attributes” for the list of mandatory information.

1.2 Audience

This document is intended for hospital staff, health system integrators, software designers or implementers. It is assumed that the reader has a working understanding of HL7 and IHE.

1.3 Definitions, Terms and Abbreviations

1.3.1 Abbreviations

HL7	Health Level Seven
IHE	Integrating the Healthcare Enterprise
ISR	Imaging Service Request
OEM	Original Equipment Manufacturer
RIS	Radiology Information System
RP	Requested Procedure
SPS	Scheduled Procedure Step

1.3.2 Definition and Terms

HL7	HL7 is a standard for information exchange between medical applications. It is an abbreviation of "Health Level Seven", 7th OSI layer protocol for the health environment. (OSI = Open Systems Interconnect, a model to describe defined layers in a network operating system). The HL7 protocol defines the format and the content of the messages that applications have to pass to one another under various conditions (e.g. to pass the message between applications / systems that a patient has been admitted in a hospital).
IHE	Integrating the Healthcare Enterprise is an initiative designed to stimulate the integration of the information systems that support modern healthcare institutions.
ISR	An Imaging Service Request includes pertinent specific and general information. Each instance of an Imaging Service Request carries the information common to one or more Requested Procedures requested at the same moment. For further information please refer to [3].

- RP A Requested Procedure is an instance of a Procedure of a given Procedure Type. An instance of a Requested Procedure includes all of the items of information that are specified by an instance of a Procedure Plan that is selected for the Requested Procedure by the imaging service provider. For further information please refer to [3].
- SPS A Modality Scheduled Procedure Step is an arbitrarily defined scheduled unit of service, that is specified by the Procedure Plan for a Requested Procedure. A Modality Scheduled Procedure Step prescribes the Protocol which may be identified by one or more protocol codes. A Modality Scheduled Procedure Step involves equipment (e.g. imaging Modality equipment, anesthesia equipment, surgical equipment, transportation equipment), human resources, consumable supplies, location, and time (e.g. start time, stop time, duration). For further information please refer to [3].

1.4 References

- [1] IHE Radiology Framework, Vol. I – IV, http://www.ihe.net/Technical_Frameworks
- [2] HL7 Standard, chapter 2 “Control”, <http://www.hl7.org/>
- [3] DICOM Standard, 2011, <http://medical.nema.org/>

1.5 Revision History

Version	Date	Author	Change and Reason
REUSE	20.07.2020	Rita Mena	Reuse from VA30A
0.1	21.07.2020	Miklos Muhi	New template applied, version VA50A, Revision history added
1.0	22.07.2020	Miklos Muhi	Review findings incorporated
2.0	03.08.2020	Miklos Muhi	Version corrected

2 General Information

Siemens Healthineers offers advanced RIS, PACS, and Processing features for all imaging needs in radiology and cardiology.

syngo.via, on which this Conformance Statement focuses, provides a set of interfaces for tight integration with radiology information systems.

- An OEM interface is used to realize frontend integration (remote image callup).
- For backend communication there is a bi-directional interface available, where the HL7 interface comprises the RIS to syngo.via communication parts. Furthermore syngo.via is informed about new procedures via DICOM Modality Worklist service.

3 Overview

syngo.via supports the following features in regards to the HL7 communication:

- Patient Update / Merge (ADT^A08, ADT^A40 or ADT^A34)
- Report Export (ORU^R01)
- Report Import (ORU^R01) for the option syngo.via WebReport

For the definition of these interfaces, IHE was used as a basis, therefore syngo.via expects the Patient Update or Merge messages from the Information System to be compliant to IHE semantics. The structure of the Report Export message syngo.via is sending out is geared to those definitions as well. The structure of the Report Import message is aligned with the SINR profile, but other forms are also supported.

For an overview about all supported IHE actors/profiles, please take a look at the IHE Integration Statement published at www.siemens.com/ihe.

3.1 Supported Messages

The table below provides an overview about all HL7 messages that are supported by syngo.via as receiving application.

Table 1: Overview of supported HL7 messages

Message	Description	Segment Composition
Inbound Messages		
ADT^A08	Patient Update	MSH, EVN, PID, [MRG], [PV1]
ADT^A40	Patient Merge	MSH, EVN, PID, [MRG], [PV1]
ADT^A34	Patient Merge – Patient ID only	MSH, EVN, PID, [MRG], [PV1]
ORU^R01	Unsolicited Transmission of an observation to be transferred to syngo.via WebReport	MSH, PID, OBR, {OBX}, [PV1]
Outbound Messages		
ORU^R01	Unsolicited Transmission of an observation	MSH, PID, OBR, {OBX}

3.2 ACK/NACK Behavior

If a message is sent to syngo.via which is not supported (e.g. ORU) or a mandatory attribute is missing (e.g. Patient Name), syngo.via nevertheless replies with an HL7 ACK in order to avoid blocking the connection. The message is stored within the backlog of the HL7 gateway. (see Table 12 for a list of required attributes which are expected by syngo.via)

4 Implementation Details

4.1 HL7 Version

Generally syngo.via will expect HL7 version 2.3.1 as this version is required by IHE Radiology Framework. But messages based on version 2.4 and 2.5 will also be processed.

4.2 Configuration

4.2.1 Minimal Layer Protocol

The syngo.via HL7/XML interface uses HL7's Minimal Layer Protocol (MLP) protocol over TCP/IP to receive and send messages. Briefly, message body is encoded using transaction framing with 0xB start and 0x1C+0xD end.

TXS	TX Body												TXE	
0xB	A	B	C	D	E	...							0x1C	0xD

Figure 1: Encoding message using MLP

Such encoded transactions are then sent to (or received from) a TCP/IP port at the syngo.via HL7/XML interface.

4.2.2 Sending Messages to Product

MLP encoded HL7 messages have to be sent to the port 9973 at the syngo.via HL7/XML interface. No additional configuration needs to be done on the syngo.via HL7/XML interface if the port is 9973. Note that the TCP/IP connection is permanent and the interface port is blocked as long as the IS is connected to it (dedicated connection).

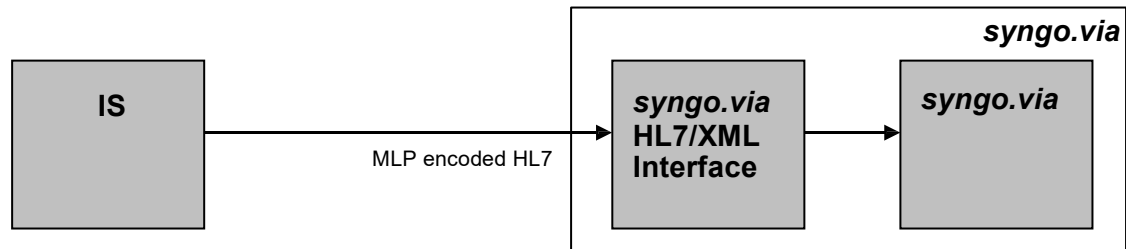


Figure 2: Sending HL7 to syngo.via HL7/XML interface

4.2.3 Sending Messages out of Product

MLP encoded HL7 messages are sent to the receiving port of the Information System. This port needs to be configured within the syngo.via HL7/XML interface. Additionally to the Port configuration the IP address of the receiving system needs to be set on the syngo.via HL7/XML interface. Note that the TCP/IP connection is permanent and the interface port is blocked as long as the IS is connected to it (dedicated connection).

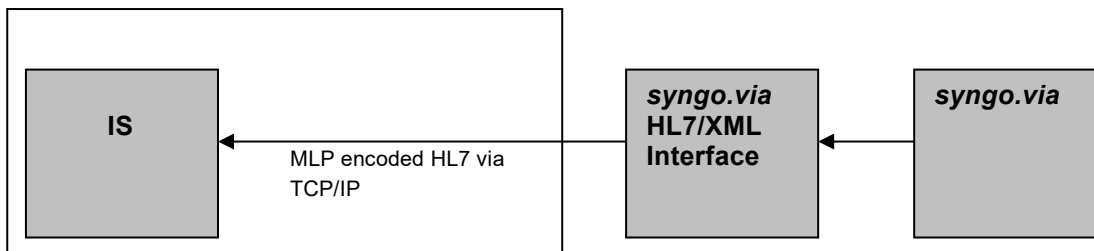


Figure 3: Sending HL7 out of syngo.via

4.2.4 Patient ID Matching

If objects are either created or updated at the RIS, syngo.via tries to find a matching existing patient and Requested Procedure (RP). If it finds either of that, it performs an update rather than creating a new record.

To match a patient, a configurable combination of the following fields is used.

- Patient ID (PID-3.1) (mandatory)
- Assigning Authority (PID-3.4)
- Patient Name (PID-5)
- Patient Date of Birth (PID-7)

The patient is by default identified through Patient ID and Assigning Authority/Issuer of Patient ID. If the latter is not set and no default value is set for Assigning Authority/Issuer of Patient ID the above mentioned configuration is applied for patient identification.

4.2.5 Supported Charactersets

UTF-8 is the de-facto standard encoding for v2 messages in North America, in Europe it's ISO 8859-1 (Latin-1). UTF-8 is the commonly used encoding for UNICODE. Note that UNICODE is an example of a character set, it is not a character encoding. Use "UNICODE UTF-8" in MSH.18 and you're all set.

5 Inbound Messages

5.1 Patient Update / Merge

The Patient information Update and Patient Merge messages trigger changes to patient information, including demographics, patient identification, patient location/class changes, and patient merges. These changes may occur at any time for a patient record. These messages are used for both inpatients (i.e., those who are assigned a bed at the facility) and outpatients (i.e., those who are not assigned a bed at the facility) if the patient has been previously registered.

5.1.1 Patient Information Update – ADT^A08

Changes to patient demographics and account information (e.g. change in patient name, patient address, etc.) shall trigger an ADT^A08 Update Patient message.

The table below indicates the message semantics of the ADT^A08 message:

Table 2: Message semantics of ADT^A08 according to IHE		
ADT^A08	Segment Name	Chapter in HL7
MSH	Message Header	2
EVN	Event Type	3
PID	Patient Identification	3
PV1	Patient Visit	3
[[OBX]]	Observation/results	7
[[AL1]]	Allergy	3

syngo.via tries to find the patient and

- erases values of attributes where the message contains a null value (two adjacent quotation marks "")
- ignores empty attributes
- updates the below specified attributes (with a non-null value)

Table 3: Attributes to be updated by a received ADT^A08 message				
Attribute	DICOM Tag Number	Part of DICOM Module	DICOM Value Representation	HL7
Patients Name*	(0010,0010)	Patient Identification / Patient	PN	ADT PID: 5
Patients Sex	(0010,0040)		CS	ADT PID: 8
Patients BirthDate	(0010,0030)		DA	ADT PID: 7
Patients BirthTime	(0010,0032)		TM	ADT PID: 7

Other Patient Names	(0010,1001)		PN (VM 1-n)	ADT PID: 9
Ethnic Group	(0010,2160)		SH	ADT PID: 10
Allergies	(0010,2110)	Patient Medical	LO	ADT AL1: 3

* Patient Name is expected in DICOM format.

If the patient is not found, syngo.via stores the update information. Imaging data which enters the system afterwards and match the patient demographics within the update message, gets updated while receiving/importing.

Note: this patient update message can be used to update only non-key attributes. To change a key attribute, a “Patient Merge – ADT^A40” or a “Patient Merge (Patient ID Only) – ADT^A34” message has to be issued by the sending application.

5.1.2 Patient Merge – ADT^A40

A Patient Merge triggered by an ADT^A40 message indicates that a merge has been done at the internal identifier level. That is, PID-3-patient ID identifier has been merged with MRG-1 Patient ID.

Note: Be aware that the RIS has to send all the attributes which are configured in syngo.via to identify a patient in order to merge the patient.

The table below indicates the message semantics of the ADT^A40 message:

Table 4: Message semantics of ADT^A40 according to IHE

ADT^A40	Patient Administration Message	Chapter in HL7
MSH	Message Header	2
EVN	Event Type	3
PID	Patient Identification	3
MRG	Merge Information	3
[PV1]	Patient Visit	3

There are two use cases for the patient merge message:

1. Merging of two patient object branches into a single one
In this case the PID and MRG segments represent two existing patients in the database. After finding the target patient and merge patient (MRG segment), all RPs from the merge patient are moved to the target patient. See Table 6 for an explanation which attributes are changed in this case.
2. Update patient’s key attributes
the target patient (PID segment) is not found. Only the merge patient (MRG segment) exists. A new patient is created with the key attributes from PID segment and all other fields are populated from the existing merge patient in database. All RPs from the merge patient are moved to the new patient. See Table 5 for an explanation which Patient’s key attributes are changed in this case.

Patients get identified by a configurable combination of fields. The MRG segment only provides the patient name and patient id. Therefore, the syngo.via can only process the message in case the merge patient gets identified unambiguously using these fields.

If the patient with the correct patient identification does not exist, syngo.via modifies only the patient identification attributes:

Table 5: Attributes which get updated based on Patient Merge

Attribute	DICOM Tag Number	Part of DICOM Module	DICOM Value Representation	HL7
Patients Name	(0010,0010)	Patient Identification / Patient	PN	ADT PID: 5
Patients ID	(0010,0020)		LO	ADT PID: 3
Issuer Of Patient ID	(0010,0021)		LO	ADT PID: 3

If the patient with the correct patient identification already exists, syngo.via copies the following attributes from that patient:

Table 6: Attributes which get updated during Patient Merge

Attribute	DICOM Tag Number	Part of DICOM Module	DICOM Value Representation	HL7
Patients Name	(0010,0010)	Patient Identification / Patient	PN	ADT PID: 5
Patients ID	(0010,0020)		LO	ADT PID: 3
Issuer Of Patient ID	(0010,0021)		LO	ADT PID: 3
Other Patient IDs	(0010,1000)		LO (VM 1-n)	ADT PID: 3
Other Patient Names	(0010,1001)		PN (VM 1-n)	ADT PID: 9
Patient Birth Date	(0010,0030)		DA	ADT PID: 7
Patient Birth Time	(0010,0032)		TM	ADT PID: 7
Patients Sex	(0010,0040)		CS	ADT PID: 8
Ethnic Group	(0010,2160)		SH	ADT PID: 10

5.1.3 Patient Merge (Patient ID Only) – ADT^A34

Although IHE specifies, that the ADT^A40 message shall be used for Patient Merge messages, several older systems still use the ADT^A34 ("Merge patient information - patient ID only") message for this purpose.

The difference between the ADT^A40 and the older ADT^A34 is, that the A40 deals with the Patient Identifier List, whereas the ADT^A34 only supports the Patient ID.

syngo.via also supports the ADT^A34 message in order to enhance the interoperability to older RIS as those systems more often support the retired ADT^A34 and do not support the ADT^A40.

The table below indicates the message semantics of the ADT^A34 message:

Table 7: Message semantics of ADT^A34

ADT^A34	ADT Message	Chapter in HL7
MSH	Message Header	2
EVN	Event Type	3
PID	Patient Identification	3
[PD1]	Patient Additional Demographic	3
MRG	Merge Information	3

Hint: syngo.via treats and analyzes the ADT^A34 in the same way as the ADT1^A40.

5.2 Report Import

The ORU message is used for receiving results from other systems and forwarding these results to syngo.via WebReport. With the OBX and the OBR segments, one can construct almost any clinical report as a three-level hierarchy, with the Patient Context within the PID segment at the upper level, an order record within the OBR segment at the next level and one or more observation records within the OBX at the bottom.

5.2.1 Unsolicited Report – ORU^R01

Table 8: General message semantics of ORU^R01 (tags in use)

ORU^R01	Unsolicited Observation Message	Segment used within syngo.via ORU msg	Chapter in HL7
MSH	Message Header	Yes	2
{ [PID	Patient Identification	Yes	2
OBR	Observations Report ID	Yes	7
{ [OBX]	Observation/Result	Yes	7

The other tags are not used in the ORU messages by syngo.via.

5.2.1.1 Identifying Information

The table below indicates the message semantics of the ORU^R01 message:

Table 9: Attributes used to identify the patient the report belongs to by a received ORU^R01 message

Attribute	DICOM Tag Number	Part of DICOM Module	DICOM Value Representation	HL7
Patients Name*	(0010,0010)	Patient Identification / Patient	PN	ORU PID:5
Patient ID	(0010,0020)		LO	ORU PID:3
Patients BirthDate	(0010,0030)		DA	ORU PID:7
Patients Sex	(0010,0040)		CS	ORU PID:8

Accession Number	(0008,0050)	Imaging Service Request	SH	ORU OBR:3
Procedure Description	(0032,1060)	Requested Procedure Module	LO	ORU OBR:4

5.2.1.1.1 Result Status

The result status (OBR-25) attribute is aggregated across all available OBX-11 segments. In case multiple OBX-11 segments are available, all of those need to be filled with

- F (meaning: “Final: The report has been finalized in the IS)

in order for the report to be treated as finalized by syngo.via WebReport.

5.2.1.1.2 Report Content

The report in plain text format is conveyed within the OBX2-5 Observation Value.

Information about the observation date will be read from OBR-7 Observation Date/Time. It is assumed that this value correlates with the DICOM Study Date (0008,0020). The report date will be read from OBR-22 Results rpt/status chng - date/time. The reason for study will be read from OBR-31.2 and the reading radiologist will be taken from OBR-32 Principal Result Interpreter.

5.2.1.1.3 Example Report

```
MSH|^~\&|RAD|BMH|||301203140327||ORU^R01|RMS|P|2.3.1|<x0D>
PID|1||000999888777|001010126512|LASTNAME1 MIDDLENAM^FIRST^^^|<x0D>
OBR||00003^001|36494140|ULT4476814 ^OB LIMITED FOR VIABL SNGL OR MUL|||2
01003150319|||||||^^^ |067900^DOCTORLN1^FIRSTNM^^^MD|||||3012031403
27|||F||1^^^^^S^^STAT||||^OB US TO RULE IN PREGNANCY|000000&UNASSIGNED&
DOCTOR&&&&|<x0D>
```

OBX|5|TX|36494140&BODY||*****

FINAL

*****~REASON FOR EXAM: OB US TO RULE IN PREG-

NANCY~DIAGNOSIS: . .~COMMENTS: OB US TO RULE IN PREGNANCY ~ACC#: 12341234~PROCEDURE: ULT

9876- OB LIMITED FOR VIABL SNGL OR MUL - Jul 11 2009 ~***

Anywhere Memorial Hospital

~1234 South Sealevel Blvd., Whitest

Beach, TX 12345 Phone: (123) 456-7890 ~Ext 9999

-----~Pat. Name: LASTNAME1 MIDDLENAM, FIRST

Study Date: 07/11/2009 3:21am~Pat. No: 999888777

Referring MD: DOCTORLN1, FIRS

TNM~LMP: Unknown

Sonographer: SMITHY~NA by US: 08.9 weeks

DOB, Age: 05/05/1990, 19~

GA Selected: 08.9 weeks ~(So-

nographic)~

EDD: 10/18/2010~-----

-----~MEASUREMENTS \T\ FETAL AGE

FETAL GROWTH

EVALUATION~Measurement GA Range Source % for 08.9 Ratios~-----

-----~Sac 3.6 cm 08.7 wk (07.8-09.6) Hellman

Sac 38%~CRL 2.5 cm 09.2 wk (08.5-09.9) Hadlock CRL 65%~GA for sonogram 08.9 wk (08

.1-09.8)~based on (Sac,CRL) Avg

-----~CLINICAL SUMMARY~Fetus Number:single~Fetal Heart Rate: 170

bpm~Yolk Sac seen:yes~Ovaries: wnl~Fibroid seen:NONE~IMPRESSION:~ RADIOLOGIST DICTATED REPORT:

\E\ ~DOCTOR UNASSIGNED~~~Report Dictated by DOCTOR UNASSIGNED on: Jul 11 2009 3:23A~Tran-

scribed by: on Jul 11 2009 3:23A~|||||F|<x0D>

Report in plain text

6 Outbound Messages

6.1 Report Export

The ORU message is used for transmitting results to other systems. With the OBX and the OBR segments, one can construct almost any clinical report as a three-level hierarchy, with the Patient Context within the PID segment at the upper level, an order record within the OBR segment at the next level and one or more observation records within the OBX at the bottom. The message is encoded using the UTF8 encoding.

6.1.1 Unsolicited Report – ORU^R01

Table 10: General message semantics of ORU^R01

ORU^R01	Unsolicited Observation Message	Segment used within syngo.via ORU msg	HL7 Chapter
MSH	Message Header	Yes	2
{ [PID	Patient Identification	Yes	3
[PD1]	Additional Demographics	No	3
{{NK1}}	Next of Kin/Associated Parties	No	3
{{NTE}}	Notes and Comments	No	2
[PV1	Patient Visit	No	3
[PV2]]]	Patient Visit – Additional Info	No	3
{{ORC}	Order common	No	4
OBR	Observations Report ID	Yes	7
{{NTE}}	Notes and comments	No	2
[CTD]	Contact Data	No	11
{ [OBX]	Observation/Result	Yes	7
{{NTE}}}	Notes and comments	No	2
{{FT1}}	Financial Transaction	No	6
{{CTI}}}	Clinical Trial Identification	No	7
[DSC]	Continuation Pointer	No	2

6.1.1.1 Observation value encoding into HL7:

The syngo.via Report is generated in an XML format prior to being sent to the internal HL7 engine.

For the report in plain text (OBX2-5) the tabs are converted to spaces (0x20) and the linefeed character (0x0A) is replaced with a value of \.br\ by the internal HL7 engine to indicate new lines within the formatted report for the HL7 output.

For the CDA report the study related DICOM attributes are available in the Body section of the CDA within the “DICOM Object Catalog”.

6.1.1.1.1 Result Status

The result status (OBR-25) attribute is filled with

- P (meaning: "Preliminary: A verified early result is available, final results not yet obtained)

For compatibility reasons the information is also transferred in OBX1-11.

6.1.1.1.2 Report Content

The message contains the:

- report in plain text format is conveyed within the OBX2-5 Observation Value
- the report in PDF format is encoded as Base64 string within the OBX3-5 Observation Value
- the structured finding and study information in CDA format is sent within the OBX4-5 Observation Value

6.1.1.1.3 Example Report

```
MSH|^~\&syngo.via|syngo|ANY RIS|RIS|201310100812||ORU^R01|2|P|2.3.1|||UNICODE UTF-8
```

PID	1	99001	RCTest_001	19611212	F	OBR 1	1234 ^	RCTest
Study	001	20100910132420				1234	000001	123223 20131007101515

MR;SR|P| || || ||reason|&&Dr1

OBX	1	CE	&IMP	1						P
-----	---	----	------	---	--	--	--	--	--	---

```
OBX|2|FT|&BODY|2|Diagnostic Imaging Report|.br\\|.br\\|.br|+-----+
-+\\.br\\F\\Name:           \\F\\RCTest_001,
\\F\\|.br|+-----+-----+-----+-----+
+.br\\F\\Patient ID: \\F\\99001          \\F\\   \\F\\Sex:    \\F\\female
\\F\\|.br|+-----+-----+-----+-----+
+.br\\F\\Birth Date: \\F\\12/12/1961      \\F\\   \\F\\Age:    \\F\\48 years
\\F\\|.br|+-----+-----+-----+-----+
+.br\\|.br\\Request And Procedure\\.br|+-----+
-+\\.br\\F\\Requested Procedure:    \\F\\req proc
\\F\\|.br|+-----+-----+-----+-----+
+.br\\F\\Accession Number:        \\F\\1234
\\F\\|.br|+-----+-----+-----+-----+
+.br|+-----+-----+-----+-----+
+.br\\F\\                \\F\\9/10/2010
\\F\\|.br\\F\\Study Date and Time:    \\F\\ at
\\F\\|.br\\F\\                \\F\\13:24:20
\\F\\|.br|+-----+-----+-----+-----+
+.br\\F\\Study Description:        \\F\\RCTest Study
```

Report in plain text

[illegible]


```

+.br\\F\[1] Distance Line                                \F\7.75 cm
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\br\Impression\br\\br\+-----+-----+-----+-----+
-----+.br\\F\Reading Physician:      \F\ \F\, Dr1
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\br\Findings Details\br\\br\+-----+-----+-----+
-----+.br\\F\Finding [1] Distance Line:
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\F\Value \F\7.75 cm
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\F\
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\F\
[Fmg]
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\F\
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\F\
\F\\br\+-----+-----+-----+-----+-----+-----+
+.br\\| | | | |P

```

OBX|3|FT|&BODY|3|JVBERi0xLjUNCjUgMCBvYmoNCjw8L1R5cGUgL1BhZ2UvUGFyZW50IDMgMCBSL0NvbnRlbnR-
zIDYgMCBSL011ZG1hQm94IFswIDAgNjEyIDc5Ml0| | | | |P

Report in PDF (Base64 encoding, truncated sample)

OBX|4|FT|&BODY|1|<?xml version="1.0" encoding="UTF-8"?><ClinicalDocument xmlns="urn:h17-
org:v3" xmlns:voc="urn:h17-org:v3/voc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-in-
stance"><!-- *****--><!-- CDA Header
--><!-- *****--><typeId root="2.16.840.1.113883.1.3" exten-
sion="POCD_HD000040" /><templateId root="2.16.840.1.113883.10.20.6" /><id
root="2.16.840.1.113883.19" extension="20131007081515" /><code code="18748-4" codeSys-
tem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Diagnostic Imaging Report"
/><title>CDA report</title><effectiveTime value="20100910132420" /><confidentialityCode
code="N" codeSystem="2.16.840.1.113883.5.25" /><languageCode code="en-US" /><recordTar-
get><patientRole><id root="1.2.840.113619.2.62.994044785528.10" extension="99001" /><addr
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latedDocument><!-- *****--><!--

Report in CDA (truncated sample)

6.1.1.2 Observation request segment

OBR segment includes the following fields:

Table 11: Fields of OBR segment

HL7	Meaning
OBR-3	Accession number
OBR-18	Accession number
OBR-19	Study ID
OBR-21	Requested Procedure ID (if available) or Preformed Procedure ID
OBR-24	Modality
OBR-31	reason of requested procedure

7 Required attributes

Following fields are required by syngo.via.

The attributes marked as required are checked when ADT or ORU messages enter the system and if not present or exceeding the acceptable length, they are stored within the backlog of the HL7/XML interface of syngo.via.

7.1 ADT

Table 12: required fields of ADT messages

HL7	Meaning	Required
MSH-07	Date/Time Of Message	
MSH-09	Message Type	Yes
MSH-10	Message Control ID	
MSH-12	Version ID	Yes
PID-03.01	Patient Identifier List / ID	Yes (max. 64 char)
PID-04	Alternate Patient ID	
PID-05	Patient Name	Yes (max. 64 char)
PID-07	Date Of Birth	
PID-08	Administrative Sex	
PID-09	Patient Alias	
PID-18.01	Patient Account Number / ID	
PID-18.04	Patient Account Number / Assigning Authority	
MRG-01.01	Prior Patient Identifier List	Yes (max. 64 char)
MRG-04.01	Prior Patient ID	
MRG-07	Prior Patient Name	
PV1-02	Patient Class	
PV1-03	Assigned Patient Location	
PV1-06	Prior Patient Location	
PV1-08	Referring Doctor	
PV1-15	Ambulatory Status	

PV1-19	Visit Number	
PV1-21	Charge Price Indicator	
PV1-44	Admit Date and Time	
PV1-45	Discharge Date and Time	

7.2 ORU

Table 13: required fields of ORU (Report Import) messages

HL7	Meaning	Required
MSH-07	Date/Time Of Message	
MSH-09	Message Type	Yes
MSH-10	Message Control ID	
MSH-12	Version ID	Yes
PID-03.01	Patient Identifier List / ID	Yes (max. 64 char)
PID-04	Alternate Patient ID	
PID-05	Patient Name	Yes (max. 64 char)
PID-07	Date Of Birth	
PID-08	Administrative Sex	
OBR-03.01	Filler Order Number	Yes (max. 16 char)
OBR-04	Universal Service ID	
OBR-07	Observation Date/Time	Strongly Recommended
OBR-22	Results rpt/status chng - date/time	Strongly Recommended
OBR-25	Result Status	Yes
OBR-31.2	Reason For Study	Strongly Recommended
OBR-32	Principal Result Interpreter	Strongly Recommended
OBX-02	Value Type	Yes
OBX-05	Observation Value	Yes (max. 655236*1)

¹ The length of the observation value field is variable, depending upon value type. See *OBX-2-value type*.

OBX-11	Observation Result Status	Yes
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