

HL7 Specification

Revision 10.0

2007/08/22

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1 Update History

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
2002/07/23	1.23	3.02		<ol style="list-style-type: none"> 1. It is possible to define values for HL7 fields and ENDOBASE service parameters and to map these within the mapping tool described in chapter „HL7 Value Translation“. 2. Chapter „Update History“ inserted 3. Chapter „Scheduling of Examinations“ inserted
2002/08/01	1.23	3.02		<ol style="list-style-type: none"> 1. Chapter „Insert of Patients by Patient ID“ moved to chapter „Incoming Messages/ General/ Insert of Patients by Patient ID “ 2. Chapter „Update of Patients by Patient ID“ moved to chapter „Incoming Messages/ General/ Update of Patients by Patient ID “ 3. Chapter „Handling of Admission Number“ moved to chapter „Incoming Messages/ Receiving Patient Administration Messages (ADT)/ Handling of Admission Number “ 4. Chapter „Handling of Home Doctor“ moved to chapter „Incoming Messages/ Receiving Patient Administration Messages (ADT)/ Handling of Home Doctor “ 5. Chapter „Insert, Update of Examination by HL7_ORDER_ID“ moved to chapter „Incoming Messages/ Receiving Scheduling of Examinations Messages/ Insert, Update of Examination by HL7_ORDER_ID “ 6. Chapter „Sending Query Message QRY A19“ moved to chapter „Outgoing Messages/ Sending Query Message (QRY A19)“ 7. Chapter „Sending Diagnosis, Procedure and Billing Codes (PCI Codes)“ moved to chapter „Outgoing Messages/ Sending Diagnosis, Procedure and Billing Codes (PCI Codes)“ 8. Chapter „Sending Reports“ moved to chapter „Outgoing Messages/ Sending Reports (ORU R01)“
2002/08/29	1.24	3.02		<ol style="list-style-type: none"> 1. It is possible to define one HL7 server for each outgoing message type as described in chapter „TCP/IP Transfer Mode“
2002/09/13	1.25	3.03		<ol style="list-style-type: none"> 1. Chapter „Other Transmission Errors“ added
2002/10/23	1.28	3.03		<ol style="list-style-type: none"> 1. Start-up behaviour changed as described in chapter „Error Handling“ 2. Logging of database errors changed as described in chapter „Database-related Errors“
2003/01/29	1.30	3.1		<ol style="list-style-type: none"> 1. There are two new options „send RTF link“ and „send PDF link“ for sending reports as described in chapter „OBX – Observation/Result Segment“ and chapter „Sending Report Text And/Or Report Reference Pointer And/Or Images And/Or Structured Report And/Or RTF link And/Or PDF link“
2003/02/03	1.31	3.1		Connecting behaviour to listening port changed as described in chapter „TCP/IP Transfer Mode“

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
2003/03/06	1.31	3.1		Connecting behaviour to sending port changed as described in chapter „TCP/IP Transfer Mode“
2003/05/05	1.31	3.2		<ol style="list-style-type: none"> 1. Format of local paths in OBX segment as described in chapter „Sending Report Text And/Or Report Reference Pointer And/Or Images And/Or Structured Report And/Or RTF Link And/Or PDF Link (Optional)“ 2. ADT A11, ADT A23, SIU, SRM messages added in chapter „Incoming Messages“ 3. Chapter „Actions Related to Message Types And Event Types“ added 4. Chapter „Insert of Patients by Patient ID“ added 5. Chapter „Update of Patients by Patient ID“ added 6. Chapter „Deletion of Patients by Patient ID“ added 7. SIU message type added to chapter „Receiving Scheduling of Examinations Messages“ 8. Chapter „Insert of Examinations by Order ID“ added 9. Chapter „Update of Examinations by Order ID“ added 10. Chapter „Deletion of Examinations by Order ID“ added 11. Message type ADT A23 added to chapter „ADT A02 – Transfer Patient, ADT A23 – Delete Patient Record“ 12. Chapter „ADT A11 – Cancel Admit/Visit Notification“ added 13. New SRM Sxx events added to chapter „SRM S01 – Request New Appointment Booking ...“ 14. Chapter „SIU S12 – Notification of New Appointment Booking ...“ added 15. SIU message type mappings added to chapter „Structure of Supported Segments of Incoming Messages“ 16. Chapter „SCH – Schedule Activity Information Segment“ added 17. TQ field type added to chapter „Supported Field Types“ 18. Chapter „Sending RTF/PDF Link (Optional)“ added 19. Chapter „Cancel Admit/Visit Notification ADT A11“ added 20. Chapter „Delete Patient Record ADT A23“ added 21. Chapter „Notification of New Appointment Booking SIU S12“ added
2003/07/30	1.32	4.0.x		<ol style="list-style-type: none"> 1. New handling of acknowledgements on QRY messages added to chapter „Acknowledgements“ 2. Default mapping changed in chapter „Structure of Supported Segments of Outgoing Messages“, subchapters „FT1 – Financial Transaction Segment“, „DG1 – Diagnosis Segment“, „PR1 – Procedures Segment“, „OBR – Observation Request Segment“, „OBX – Observation/Result Segment“

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
2003/09/16	1.32	4.0.x		<ol style="list-style-type: none"> 1. Required fields added to chapter "Receiving Scheduling of Examinations Messages", subchapter "Receiving SRM, SIU Messages" 2. Segment AIS changed from optional to mandatory in chapter "Structure of Incoming Messages", subchapters "SRM S01...", "SIU S12..." 3. Field "Requested Start Date/Time Range" changed from optional to required in chapter "ARQ – Appointment Request Segment" 4. Field "Appointment Timing Quantity" changed from optional to required in chapter "SCH – Schedule Activity Information Segment" 5. Correction of "Notification of New Appointment Booking SIU S12", MSH segment.
2004/03/25	1.34	4.5		<ol style="list-style-type: none"> 1. Chapter "Merge of Patients by Patient ID" added to chapter "Incoming Messages/ General". 2. Chapter "Merge of Persons by Patient ID" added to chapter "Incoming Messages/ General". 3. Chapter "Merge of Visits by Visit Number" added to chapter "Incoming Messages/ General". 4. Message types ADT A18, A30, A34, A36, A42, A45, A47, A50 added to chapter "Structure of Incoming Messages". 5. Segment MRG added to chapter "Structure of Segments For Incoming Messages". 6. Message types ADT A18, A30, A34, A36, A42, A45, A47, A50 added to chapter "Message Examples". 7. Changed default mapping for incoming messages (PID-5-6, PV1-17-6, PV1-50-4-1, IN1-3-1). 8. Comment about reference pointers to files in EB3_SPOOL directory added to chapter "OBX – Observation/Result Segment"
Rev. 1.3 2004/08/04	1.35	5.0		Added new department field to incoming and outgoing messages

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
Rev. 1.4 2004/09/21	1.36	5.5	UAF	1.1.1.1 Default mapping changed for ORU R01 message

(see section 6.2.3.12 “

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Order Control	Mapped: Fixed Value (defin BAR/DFT/ORM/OR
2	EI	O	N	Placer Order Number	
2-1	ST			Entity Identifier	Mapped: ORM: Lab Reques EXAM_LAB
9	TS	O	N	Date/Time of Transaction	Mapped: ORM: Lab Reques EXAM_LAB
10	XCN	O	N	Entered By	
10-1	ST			ID Number	Mapped: ORM:Examiner --> WORKEP
10-2	ST			Family Name	Mapped: ORM:Examiner --> WORKEP
10-3	ST			Given Name	Mapped: ORM:Examiner --> WORKEP
10-6	ST			Prefix	Mapped: ORM:Examiner --> SALUTAT

ORC-1: Order Control NW
new order

1. OBR – Observation Request Segment”)
2. Default mapping changed for SIU message (see section 6.2.6.16 “SCH – Schedule Activity Information Segment”)
3. Behaviour of sending PCI codes changed. (see section 6.2.1.2 “Sending Diagnosis, Procedure and Billing Codes (PCI Codes)(BAR P01 or DFT P03)”)
4. Default mapping changed for DFT message (see section 6.2.3.7 “FT1 – Financial Transaction Segment”)

Rev. 1.4 2004/11/26	1.36	5.5	HH	Slight changes of section 6.2.6.22 “MRG – Merge Patient Information Segment”
Rev. 1.4 2004/12/16	1.36	5.5	HH	<ol style="list-style-type: none"> 1. Added new section 6.2.8 “Used Escape Sequences” 2. Windows XP Professional SP2 supported (instead of SP1/1a)

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
Rev. 1.4 2004/12/30	1.36	5.5	HH	1.1.1.2 Default mapping of field OBR-22 changed from GetReportByKey to GeReportDataByKey (see section 6.2.3.13 "

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Order Control	Mapped: Fixed Value (defin BAR/DFT/ORM/OR
2	EI	O	N	Placer Order Number	
2-1	ST			Entity Identifier	Mapped: ORM: Lab Reques EXAM_LAB
9	TS	O	N	Date/Time of Transaction	Mapped: ORM: Lab Reques EXAM_LAB
10	XCN	O	N	Entered By	
10-1	ST			ID Number	Mapped: ORM:Examiner --> WORKER
10-2	ST			Family Name	Mapped: ORM:Examiner --> WORKER
10-3	ST			Given Name	Mapped: ORM:Examiner --> WORKER
10-6	ST			Prefix	Mapped: ORM:Examiner --> SALUTAT

ORC-1: Order Control NW
new order

Rev. 1.4 2005/01/06	1.36	5.5	HH	OBR – Observation Request Segment") Missing information about PDF/RTF report export files added in section 6.2.1.3 "Sending Reports (ORU R01)".
Rev. 1.4.1 2005/01/28	1.36	5.5	HH	Minor changes
Rev. 1.4.2 2005/03/09	1.36	5.5	HH	Layout
Rev. 1.4.3 2005/03/09	1.36	5.5	KK	Copyright → Olympus Medical Systems
Rev. 1.4.3 2005/08/04	1.36	5.5	KK	Layout title page
Rev. 1.5 2005/08/05	1.37	5.5	UAF	Mapping service names changed to displayed default alias names.
Rev. 1.5.1 2005/08/18	6.0	6.0	HH	Minor changes

Revision / Date	HL7 Setup Vers.	ENDO BASE Vers.	Who	Changes
Rev. 7.0 2006/12/21	7.0	7.0	UAF	<ol style="list-style-type: none"> 1. Anatomic graphic and video added to report options in section 6.2.3.13.5 "Sending Report with Variable Options (Default)". 2. Section 6.2.7.1 "ENDOBASE IV Field Types" added. 3. HL7 field types table moved to section 6.2.7.2 "HL7 Field Types". 4. Section 6.2.7.3 "Data Compatibility" added. 5. Reference to section 6.2.7 "Supported Field Types" added to section 5 "Flexible Mapping".
Rev. 7.5 2007/02/23	7.5	7.5	UAF	<ol style="list-style-type: none"> 1. Update from Endobase to Endobase IV. 2. Minor changes to section 3.2 "TCP/IP Transfer Mode". 3. Section 4.5 "Request for Laboratory Tests and Receiving of Laboratory Test Results" added. 4. Event O01 added to section 6.1 "Events For Outgoing Messages". 5. Section 6.2.1.4 "Sending Requests for Laboratory Tests (ORM O01)" added. 6. Section 6.2.2.5 "ORM O01 – General Order Message" added. 7. Default mapping for outgoing ORM O01 added. 8. Section 6.2.3.11 "ORC – Common Order Segment" added. 9. Default mappings for CC handling added to section 6.2.3.12 "OBR – Observation Request Segment". 10. New actions added to section 6.2.4.1.1 "Actions Related to Message Types and Event Types". 11. Section 6.2.4.4 "Receiving Laboratory Results (ORU R01)" added. 12. Section 6.2.5.14 "ORU R01 – Unsolicited Transmission of an Observation Result" added. 13. Default mapping for incoming ORU R01 added. 14. Section 9.5 "General Order ORM O01 (Request for Laboratory Test Results)" added. 15. Section 9.26 "Unsolicited Transmission Of Observation ORU R01 (Laboratory Test Result)" added.
Rev. 10 2007/08/22	10.0	10.0	UAF	<ol style="list-style-type: none"> 1. Default mappings for repeatable fields added to sections 6.2.3.5 "PID – Patient Identification Segment", 6.2.3.6 "PV1 – Patient Visit Segment", 6.2.3.10 "IN1 – Insurance Segment", 6.2.3.12 "OBR – Observation Request Segment".

2 Supported HL7 Standard Versions

ENDOBASE IV HL7 Service creates and sends messages according to Health Level Seven, Version 2.3 1997, Final Standard

3 Communication Modes

3.1 General Description

HL7 Service is developed to work under one of the following operating systems

- Windows 2000 Professional (Service Pack 4)
- Windows XP Professional (Service Pack 2)
- Windows Server 2003 (Service Pack 1)

All required settings are done with the HL7 Service Administration Tool which is part of the HL7 Service Installation package and are stored into Windows registry. Installation must be done by a user who has administrative permissions on the respective machine.

ENDOBASE IV HL7 Service works with two different transfer modes:

Socket communication based on TCP/IP protocol

File based communication where files are transferred to dedicated directories

The respective mode is selected in the HL7 Service Administration Tool.

It is possible to select one mode for all incoming HL7 messages and one mode for each type of outgoing messages.

Files based communication is not supported for sending queries (QRY) and received their results (ADR).

According to HL7 Standard, messages are composed out of segments which are delimited by defined terminators. The following two delimiters are defined for segments and messages:

<CR> (0x0D)	Segment terminator which indicates End of Segment
<LF> (0x0A)	Message delimiter which indicates End of Message

It is required that message delimiters are not included in any part of the message but at the end. It is also required that no other characters are sent after the message delimiter.

HL7 Service can work in inhomogeneous networks e.g. it supports the communication with UNIX-based HL7 servers.

3.2 TCP/IP Transfer Mode

TCP/IP transfer is a port-based transportation mode which requires that HL7 Service is connected to an exclusive port of the machine where it is installed. To establish a TCP/IP connection, the IP-address and the specified port are required. It is required that every server or client that communicates with the HL7 Service opens a Listening Socket which port number is known by the HL7 Service to receive data from it.

Sender and receiver application must use the same connection for sending data to one another. The connection is opened by the receiver.

It is possible to define different HL7 servers with different IP-addresses and different port numbers for outgoing messages, one for each message type that can be sent by HL7 Service. It is also possible to configure each message type to be sent or not. If a message type is configured not to be sent, the connection to the respective HL7 Server is not established.

When HL7 Service is started, it opens its own listening port and connects to the HL7 servers by trying to open the ports of the respective server applications. Connections are kept until either the HL7 Service or the HL7 server applications are stopped. When the transmission of a message has failed due to transmission errors, HL7 Service tries to reconnect to the respective HL7 server. Messages of the respective type can be sent, after the reconnection process has been successfully finished. The sending of all other message types, especially queries, are not affected by the reconnecting process on another socket.

When a HL7 server connects to the listening port of HL7 Service, an existing connection to this port is closed regardless of the current activity on this port and a new connection is established. This behaviour implies that exactly one HL7 server should be connected to the listening port of HL7 Service.

3.2.1 Naming Conventions

In a network, each machine is identified by a unique IP-address. The communication with a HL7 server is only possible when its respective IP-address is stored in the Windows Registry of the machine where ENDOBASE IV HL7Service is installed.

3.2.2 Port Numbers

Ports are identified by uniquely given numbers. It is possible to select port numbers between 100 and 65535. It is recommended to use a port which number is higher than 6000. It is possible to define different ports for outgoing messages, one for each outgoing message type.

3.2.3 Minimal Lower Layer Protocol (MLLP)

HL7 Service supports the MLLP for network environments. The Start and End Block characters can be freely defined according to the settings of the connected HL7 server. It is possible to define different sequences, one for all incoming message types, and one for each outgoing message type.

Each Block character is defined by its hexadecimal value according to the following convention:

Each byte value is embedded in square brackets ("`<>`"). Hexadecimal values are represented with the prefix 0x or 0X and have to be between 00 and FF (decimal 255).

Example:

`<0x0B>` (decimal 11)
`<0x1C>` (decimal 28)
`<0x0D>` (decimal 13)

Characters can be concatenated.

Example:

`<0x1C><0x0D>`

Default Setting for HL7 Service:
<0x0B> as Start Block
<0x1C><0x0D> as End Block

3.2.4 Acknowledgements

HL7 Service can be configured to send and receive acknowledgement messages. Either original acknowledgement mode rules (i.e. MSH-15 and MSH-16 are empty) or enhanced acknowledgement mode is supported.

When enhanced mode is used, i. e. when accept acknowledgement or application acknowledgement is set in the HL7 Service Administration Tool, it is possible to choose the events on which acknowledges are expected (always, on success, on error, or never), and which acknowledgement codes are sent (accept, reject, error).

Acknowledgement messages are sent on the same connection the incoming HL7 message has been received.

The default setting is accept acknowledgement mode. Acknowledges are always sent. It is possible to configure an ACK message as the response to an outgoing QRY message rather than an ADR A19 message. In this case, the ADR A19 message is expected to be received directly after the ACK message. The situation that an ADR A19 message is received without a prior ACK message is handled as an error condition. The acknowledgement of query responses (ADR A19) can be separately set.

3.3 File Based Transfer Mode

At this mode, HL7 messages are stored as ASCII streams into files. Those files are stored into specified directories which have to be accessed by all communicating applications.

Normally, each application has one directory for incoming messages specified. Each application is responsible for reading, updating and deleting files in its incoming directory.

Those directories are set in the HL7 Service Administration Tool when the file-based mode is selected. The files themselves are passed from one machine to another according to the transmission rules of the respective network.

When file-based transfer mode is active, it is not possible to send QRY A19 messages and receive ADR A19 messages and to send and receive ACK messages.

4 Patient Data Transfer Modes

4.1 General

The HL7 Service supports two patient data transfer modes, the query mode that expects a user request of a patient query (QRY A19 message), and the unsolicited message mode which means that ENDOBASE IV imports patient data from the HL7 server without prior request. Both modes can be used simultaneously.

4.2 Query Mode

When the ENDOBASE IV HL7 button is pressed, a patient query message (QRY A19) is sent to the connected HL7 server. The HL7 Service is then waiting for the query response message (ADR A19), decodes it and sends it back to the ENDOBASE IV application where the result is immediately displayed.

Patient Data can be requested by Patient ID, Admission Number or a combination of Last Name, First Name and Date of Birth.

If the sending of the query failed, an error message would be immediately displayed. When the response is not received during a defined period of time, an error message box is displayed instead of the query result. While waiting for the query response, other messages can be received by the HL7 Service. They are processed after the query response has been received or a timeout error occurred.

4.3 Unsolicited Message Mode

HL7 Service receives unsolicited messages from the HL7 server, decodes them and puts the results into the ENDOBASE IV database. The received patient data are then available in the patient data list of ENDOBASE IV.

4.4 Scheduling of Examinations

HL7 service supports the messages ORM O01, SRM S01 to S11 and SIU S12 to S22 for handling requests to schedule examinations. HL7 service decodes the unsolicited messages and writes the result into ENDOBASE IV database. The received data for scheduling of one or more examinations are then available in the ENDOBASE IV scheduler.

4.5 Request for Laboratory Tests and Receiving of Laboratory Test Results

HL7 Service supports the message type ORM O01 for sending out requests for laboratory tests and the message type ORU R01 for receiving the related test results. Each test request must be provided with a unique identifier that must be returned by the laboratory system to assign the result to the requested test.

5 Flexible Mapping

Together with HL7 Service the HL7 Mapping tool is provided to assign fields of HL7 messages to ENDOBASE IV database fields.

The database is accessed by reading OUT Services and writing IN Services. Each service normally has several parameters which can be mapped to HL7 fields.

The service names are translated into descriptive alias names which are displayed in the HL7 Mapping tool and can be found in the file

"\\<Computer Name>\EB3_FILE\EB3_RESOURCE\HL7ServiceAlias.txt".

A HL7 field may be mapped to exactly none or one OUT Service parameter and exactly none or one IN Service parameter. It is possible to map another HL7 field to an already mapped OUT Service parameter, but is not possible to do the same on IN Service parameters.

Under these rules, assignments can be freely made between HL7 fields and ENDOBASE IV database fields, but certain default mappings are recommended.

If default mappings were changed, the data compatibility between ENDOBASE IV database fields and HL7 fields as described in section 6.2.7 "Supported Field Types" should be considered.

If nothing else is mentioned, the default mapping is described in this document. Exception to that rule is the description of OBX segment for outgoing messages.

Actual configurations may differ from the mapping descriptions in this document.

Examples:

- The ENDOBASE IV database field „Examination Date“ is sent in field no. 14 „Date/Time of the Observation“ of the OBX segment of outgoing ORU messages.
- The HL7 field no. 8 „Sex“ of the PID segment of an incoming ADT message is stored in the ENDOBASE IV database field „Patient Gender“

5.1 Value Translation

It is possible to define one or more values for each HL7 field as well as for each ENDOBASE IV IN or OUTservice parameter. Each HL7 field value can be mapped to any EBIII service parameter value for incoming messages (e.g. ADT A01) and for outgoing messages (e.g. ORU R01) vice versa.

That makes it possible to handle values that are different e.g. from one hospital to another or from one country to another.

Example:

- The value „F“ (Female) is defined in HL7 for field no. 8 „Sex“ of the PID segment. The value „2“ (Female) is defined in ENDOBASE IV for database field „Patient Gender“.
When „F“ imported as content of PID-8 from HL7 message, it is converted to „2“ before being written to ENDOBASE IV database.

6 Supported HL7 Events and Messages

6.1 Events For Outgoing Messages

The following events are supported by the actual ENDOBASE IV HL7 implementation:

HL7 Event	Name	Description
A19	Patient Query	ENDOBASE IV determines a need for Patient Administration data about a patient and sends a query to the HL7 server. Only immediate mode is supported.
O01	General order	ENDOBASE IV sends a request for results of laboratory tests to the HL7 server
P01	Add patient account	ENDOBASE IV sends diagnosis and procedure codes to the HL7 server.
P03	Post detail financial transactions	ENDOBASE IV sends diagnosis, procedure, and billing codes to the HL7 server
R01	Unsolicited transmission of an observation message	ENDOBASE IV sends patient reports to the HL7 server

6.2 Messages

The following messages are implemented in the HL7 Service. Their structure is described according to notation of the HL7 standard. Segments that are received from unsolicited messages but are not expected will be ignored.

6.2.1 Outgoing Messages

ENDOBASE IV is able to send the following HL7 messages to the HL7 server:

HL7 Message	HL7 Event	Name	Description
ACK	Any	General acknowledgement	ENDOBASE IV sends acknowledgement to HL7 server indicating that message has been successfully received.
QRY (ADT)	A19	Patient Query	ENDOBASE IV determines a need for Patient Administration data about a patient and sends a query to the HL7 server. Only immediate mode is supported.
BAR	P01	Add patient account	ENDOBASE IV sends diagnosis and procedure codes to the HL7 server.
DFT	P03	Post detail financial transactions	ENDOBASE IV sends diagnosis, procedure and billing codes to the HL7 server
ORM	O01	General order	ENDOBASE IV sends a request for results of laboratory tests to the HL7 server
ORU	R01	Unsolicited transmission of an observation message	ENDOBASE IV sends patient reports to the HL7 server

6.2.1.1 Sending Query Message (QRY A19)

Pressing the HL7 button in Patient Data will lead to produce and send a HL7 QRY A19 message from ENDOBASE IV HL7 Service to HL7 server. The HL7 Service waits for an ADR (ADT) A19 message. After having received it, parses it and creates an ENDOBASE IV response file to display the result on screen. HL7 Service will send an ACK message to the HL7 server if ADR acknowledgement is enabled and requested by the HL7 server.

6.2.1.2 Sending Diagnosis, Procedure and Billing Codes (PCI Codes)(BAR P01 or DFT P03)

Selecting the Code Administration module will lead you to a form where you are able to enter PCI codes. Pressing the OK button will lead the HL7 Service to send a Post Detail Financial Transaction Message (DFT P03) and/or an Add Patient Account Message (BAR P01) depending on which message type is administered to be sent in HL7 Administration tool. If only BAR P01 is set to be sent, no billing codes will be sent at all. If only DFT P03 is set to be sent, diagnosis, procedure, and billing codes will be sent in this message. If both message types are sent, diagnosis and procedure codes will be sent in BAR P01 message, billing codes will be sent in DFT P03 message. The BAR P01 and/or DFT P03 message will contain all PCI codes from tabs which codes should be sent via HL7, linked to the selected examination at the moment the message will be created, even if no code is selected at all. Therefore, no update or cancellation messages are sent.

6.2.1.3 Sending Reports (ORU R01)

When a report is created and authenticated in the Report Writer module, ENDOBASE IV stores the report into the database and HL7 Service sends an Unsolicited Transmission Of An Observation Message (ORU R01) to the HL7 server. In this case, the HL7 field OBR-25 (Result Status) and the field OBX-11 (Observ Result Status) are set to the value „F“ (Final result). The HL7 field OBX-3-2 (Observation Identifier.Text) will be set to the primary number of the report in ENDOBASE IV REPORT_VER_TBL.

The same happens when an existing report is modified and authenticated, again, i.e. the modified report is sent. In this case, the HL7 field OBR-25 and the field OBX-11 are set to the value „C“ (Correction to result). The HL7 field OBX-3-2 will be set to the primary number of the original unchanged report stored in the ENDOBASE IV database field REPORT_VER_TBL.PARENT_P, then.

The following data can be sent within an ORU message:

1. complete unformatted report text (ASCII),
2. structured report (ASCII), i. e. different parts of the report are separately sent corresponding to the different areas (tabs) of the structured terminology or text blocks used in ENDOBASE IV,
3. reference pointers (path and filename) of examination images selected for a report,
4. reference pointer to the report file (Star Office format, encrypted),
5. reference pointer to exported reports in PDF and/or RTF format.

It is configurable which data should actually be sent. Any combination is possible.

6.2.1.4 Sending Requests for Laboratory Tests (ORM O01)

When laboratory tests are added to, modified or deleted from an examination in Post Examination module, ENDOBASE IV stores the requested tests into the database and HL7 Service sends a General Order Message (ORM O01) to the HL7 Server. The message must contain an ORC and an OBR segment for each requested test. One of the segments must contain a unique placer order number (ORC-2 or OBR-2) to assign the result of the test later on.

The ORM O01 message will contain all requested tests which should be sent via HL7, linked to the selected examination at the moment the message will be created, even if no test is selected at all. Therefore, no update or cancellation messages are sent.

6.2.2 Structure of Outgoing Messages

The structures of messages depend on the mapping described in chapter „Flexible Mapping“ and can be changed. In the following, the message structures are described according to the default mapping.

6.2.2.1 ACK – General Acknowledgement

Structure:

MSH	Message Header
MSA	Message Acknowledgement

6.2.2.2 QRY (ADT) A19 – Patient Query

Structure:

MSH Message Header
QRD Query Definition

6.2.2.3 BAR P01 –Add Patient Account

Structure:

MSH Message Header
EVN Event Type
PID Patient Information
[PV1] Patient Visit
[{ DG1 }] Diagnosis
[{ PR1 }] Procedures
[IN1] Insurance

6.2.2.4 DFT P03 – Post Detail Financial Transaction

Structure:

MSH Message Header
EVN Event type
PID Patient Information
[PV1] Patient Visit
{ FT1 Financial Transaction
 [{ PR1 }] Procedure
}
[{ DG1 }] Diagnosis
[IN1] Insurance

6.2.2.5 ORM O01 – General Order Message

Structure:

MSH Message Header
PID Patient Information
[PV1] Patient Visit
{ ORC Common Order
 OBR Order Detail
}

6.2.2.6 ORU R01 – Unsolicited Transmission of an Observation Message

Structure:

MSH Message Header
PID Patient Information
[PV1] Patient Visit
OBR Observations Report ID
{ OBX } Observation Result

6.2.3 Structure of Supported Segments of Outgoing Messages

The following tables show the structure of supported segments of outgoing messages.

The following abbreviations are used:

SEQ	Position of field in segment
DT	Data type of field; Refer to chapter "Supported Field Types"
R/O/C	Optionality of field (R: required; O: optional; C: conditional)
RP	Repeatability flag (Y: repeatable; N: not repeatable). In this implementation, repeatable fields are actually not repeated. When incoming messages include repeated fields, only the first field is processed. The following repeated items are ignored.
ENDOBASE IV	Hardcoded content of field or ENDOBASE IV mapped database fields or registry keys. The notation used is the same as in HL7 Mapping tool. Only default mapping is described. Due to chapter „Flexible Mapping“ it is possible to change assignments according to actual requirements. Besides, it is possible to map other fields in other segments than described below due to special requirements.

In addition, there are tables that show the default value translations between EBIII values and HL7 values. The following abbreviations are used:

SEQ	Position of field in segment related to this value translation
DT	Data type of field; Refer to chapter "Supported Field Types"
Element Name	Meaning of the field which are the values related to
EBIII Value	Values defined in ENDOBASE IV which are translated
<*>	Translation used for any other values but the defined ones
HL7 Value	Values defined in HL7 which are result of translation
Comment	Description of the specified value

Fields that are not mentioned in the below tables are not filled in. Empty fields at the end of a segment are truncated.

Segments that contain only empty fields are removed and not sent at all.

6.2.3.1 MSH – Message Header Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ST	R	N	Field separator	Hardcoded:
2	ST	R	N	Encoding characters	Hardcoded: ^~\&
3	HD	O	N	Sending application	
3-1	ID			Namespace ID	<HL7Admin: ENDOBASE IV.Sending Application Name>
3-2	ID			Universal ID	<HL7Admin: ENDOBASE IV.Sending Application Name>
3-3	ID			Universal ID type	Hardcoded: GUID
5	HD	O	N	Receiving application	
5-1	ID			Namespace ID	<HL7Admin: HL7 Server.Query/Message Application Name>
5-2	ID			Universal ID	<HL7Admin: HL7 Server.Query/Message Application Name>
5-3	ID			Universal ID type	Hardcoded: GUID
7	TS	O	N	Date/Time of message	Hardcoded
9	CM	R	N	Message type	See below
9-1	ID			Message Type	
9-2	ID			Trigger Event	
10	ST	R	N	Message control ID	Hardcoded: GUID
11	PT	R	N	Processing ID	
11-1	ID			Processing ID	Hardcoded: P
12	ID	R	N	Version ID	Hardcoded: 2.3
15	ID	O	N	Accept acknowledgement type	See below
16	ID	O	N	Application acknowledgement type	See below

MSH-9:

Message type:	ACK	General Acknowledgement
	QRY	Patient Query Message
	BAR	Add/Change Billing Account Message
	DFT	Detail Financial Transaction Message
	ORM	General Order Message
	ORU	Observation Result Unsolicited Message
Trigger event:	Axx	Trigger event of acknowledged message
	A19	Patient Query
	O01	General Order
	P01	Add Patient Account
	P03	Post Detail Financial Transaction
	R01	Unsolicited Transmission Of An Observation Message

MSH-15, MSH-16:

<empty>	Original acknowledgement mode rules
AL	Always
NE	Never
SU	Success Only
ER	Error Only

6.2.3.2 MSA – Message Acknowledgement Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Acknowledgement code	See below
2	ST	R	N	Message control ID	Hardcoded: ID of message to acknowledge

MSA-1: AA Application Accept
 CA Commit Accept
 AR Application Reject
 AE Application Error
 CR Commit Reject
 CE Commit Error

6.2.3.3 EVN – Event Type Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Event Type Code	As MSH-9-2
2	TS	R	N	Date/Time Of Event	Hardcoded
6	TS	O	N	Event Occurred	Hardcoded

6.2.3.4 QRD –Original-style Query Definition Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	TS	R	N	Query date/time	hardcoded
2	ID	R	N	Query format code	hardcoded: R
3	ID	R	N	Query priority	hardcoded: I
4	ST	R	N	Query ID	
7	CQ	R	N	Quantity limited request	
7-1	NM			Quantity	Mapped: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES. VALUE_04
7-2	CE			Units	
7-2-1	ID			Identifier	Mapped: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES. VALUE_05
7-2-2	ST			Text	Mapped: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES. VALUE_06
8	CM	R	Y	Who subject filter	Hardcoded
8-1	ST			ID Number	Patient ID or Admission Number (depending on settings in ENDOBASE IV Administration)
8-2	ST			Family Name	
8-3	ST			Given Name	
8-4	ST			Middle Name	
8-15	TS			Date Of Birth	
9	CE	R	Y	What subject filter	
9-1	ID			Identifier	Mapped: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES. VALUE_03

QRD – 2: R Response is in record-oriented format
 QRD – 3: I Immediate
 QRD – 7: Quantity 10240
 Units.Identifier CH
 Units.Text Characters
 QRD – 9: Identifier: DEM Demographics

6.2.3.5 PID – Patient Identification Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID	Hardcoded
3	CX	R	Y	Patient ID (Internal ID)	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORM: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
3-1	ST			ID	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.PATIENT_ID DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.PATIENT_ID ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.PATIENT_ID ORU: Patient Data --> ORU. PATIENT_TBL.PATIENT_ID
5	XPN	R	Y	Patient name	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORM: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
5-1	ST			Family Name	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.LAST_NAME DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.LAST_NAME ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.LAST_NAME ORU: Patient Data --> ORU. PATIENT_TBL.LAST_NAME
5-2	ST			Given Name	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.FIRST_NAME DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.FIRST_NAME ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.FIRST_NAME ORU: Patient Data --> ORU. PATIENT_TBL.FIRST_NAME
5-3	ST			Middle Name	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.MIDDLE_NAME DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.MIDDLE_NAME ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.MIDDLE_NAME ORU: Patient Data --> ORU. PATIENT_TBL.MIDDLE_NAME
6	XPN	O	N	Mother's maiden name	
6-1	ST			Family Name	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_NAME DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_NAME ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_NAME

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					ORU: Patient Data --> ORU. PATIENT_TBL.BIRTH_NAME
7	TS	O	N	Date of birth	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTHDAY DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTHDAY ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTHDAY ORU: Patient Data --> ORU. PATIENT_TBL.BIRTHDAY
8	IS	O	N	Sex	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.GENDER DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.GENDER ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.GENDER ORU: Patient Data --> ORU. PATIENT_TBL.GENDER
10	IS	O	N	Race	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY ORU: Patient Data --> ORU. PATIENT_TBL.NATIONALITY
11	XAD	O	Y	Patient address	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORM: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
11-1	ST			Street Address	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.STREET_NUMBER DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.STREET_NUMBER ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.STREET_NUMBER ORU: Patient Data --> ORU. PATIENT_TBL.STREET_NUMBER
11-3	ST			City	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.CITY DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.CITY ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.CITY ORU: Patient Data --> ORU. PATIENT_TBL.CITY
11-5	ST			Zip or Postal Code	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.ZIP_CODE DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.ZIP_CODE ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.ZIP_CODE ORU: Patient Data --> ORU. PATIENT_TBL.ZIP_CODE

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
13	XTN	O	Y	Phone number – home	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORM: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
13-1	TN			Telephone Number	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.HOME_TEL DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.HOME_TEL ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.HOME_TEL ORU: Patient Data --> ORU. PATIENT_TBL.HOME_TEL
14	XTN	O	Y	Phone number – business	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORM: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
14-1	TN			Telephone Number	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.OFFICE_TEL DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.OFFICE_TEL ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.OFFICE_TEL ORU: Patient Data --> ORU. PATIENT_TBL.OFFICE_TEL
19	ST	O	N	SSN Number patient	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.SSN DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.SSN ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.SSN ORU: Patient Data --> ORU. PATIENT_TBL.SSN
23	ST	O	N	Birth place	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_PLACE DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_PLACE ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.BIRTH_PLACE ORU: Patient Data --> ORU. PATIENT_TBL.BIRTH_PLACE
28	CE	O	N	Nationality	
28-2	ST			Text	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.NATIONALITY ORU: Patient Data --> ORU. PATIENT_TBL.NATIONALITY
29	TS	O	N	Patient death date	Mapped:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
				and time	BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.DATE_OF_DEATH DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.DATE_OF_DEATH ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.DATE_OF_DEATH ORU: Patient Data --> ORU. PATIENT_TBL.DATE_OF_DEATH
30	ID	O	N	Patient death indicator	Mapped: BAR: Patient Data --> BAR/ DFT/ORM. PATIENT_TBL.CAUSE_OF_DEATH DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.CAUSE_OF_DEATH ORM: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.CAUSE_OF_DEATH ORU: Patient Data --> ORU. PATIENT_TBL.CAUSE_OF_DEATH

PID-8: U Unknown
 M Male
 F Female

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
8	IS	Sex	0	U	Unknown
			1	M	Male
			2	F	Female

6.2.3.6 PV1 – Patient Visit Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID – Patient Visit	Hardcoded
8	XCN	O	Y	Referring Doctor	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
8-1	ST			ID Number	Mapped: BAR: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO DFT: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO
8-2	ST			Family Name	Mapped: BAR: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME DFT: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME
8-3	ST			Given Name	Mapped: BAR: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME DFT: Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME
8-6	ST			Prefix	Mapped: BAR: Referring Doctor --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION DFT: Referring Doctor --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION
17	XCN	O	Y	Admitting Doctor	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
17-1	ST			ID Number	Mapped: BAR: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO DFT: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO
17-2	ST			Family Name	Mapped: BAR: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME DFT: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME
17-3	ST			Given Name	Mapped: BAR: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME DFT: Home Doctor --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME
17-6	ST			Prefix	Mapped: BAR: Home Doctor --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION DFT: Home Doctor --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION
19	CX	O	N	Visit Number	
19-1	ST			ID	Mapped: BAR: Examination Data --> BAR/DFT/ORM. PATIENT_ADMISSION_TBL.ADMISSION_NO DFT: Examination Data --> BAR/DFT/ORM. PATIENT_ADMISSION_TBL.ADMISSION_NO ORM: Examination Data --> BAR/DFT/ORM. PATIENT_ADMISSION_TBL.ADMISSION_NO ORU: Patient Data --> ORU. PATIENT_ADMISSION_TBL.ADMISSION_NO

6.2.3.7 FT1 – Financial Transaction Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID - Financial transaction	Hardcoded
2	ST	O	N	Transaction ID	Mapped: DFT: Examination Data --> BAR/DFT/ORM. EXAM_TBL.EXAM_NO
4	TS	R	N	Transaction Date	Mapped: DFT:PCI Codes --> BAR/DFT. EXAM_TBL.EXAM_DATE_STARTTIME
6	IS	R	N	Transaction Type	Mapped: DFT:PCI Codes --> BAR/DFT. PCI_CODES_TABS.NAME
7	CE	R	N	Transaction Code	
7-1	ST			Identifier	Mapped: DFT:PCI Codes --> BAR/DFT. PCI_CODES.PCI_CODE
7-2	ST			Text	Mapped: DFT:PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION
10	NM	O	N	Transaction Quantity	Mapped: DFT:PCI Codes --> BAR/DFT. EXAM_PCI_CODES_LINK.QUANTITY
12	CP	O	N	Transaction Amount Extended	
12-1-1	NM			Quantity	Mapped: DFT: PCI Codes --> BAR/DFT. PCI_CODES.PRICE
13	CE	O	N	Department Code	
13-1	ST			Identifier	Mapped: DFT:Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUE.VALUE_01
16	PL	O	N	Assigned Patient Location	
16-1	IS			Point Of Care	Mapped: DFT:Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.PAGER
20	XCN	O	N	Performed by Code	
20-1	ST			ID Number	Mapped: DFT:Examiner --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO
20-2	ST			Family Name	Mapped: DFT:Examiner --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME
20-3	ST			Given Name	Mapped: DFT:Examiner --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME
20-6	ST			Prefix	Mapped: DFT:Examiner --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION
21	XCN	O	N	Ordered by Code	
21-1	ST			ID Number	Mapped: DFT:Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO
21-2	ST			Family Name	Mapped: DFT:Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME
21-3	ST			Given Name	Mapped: DFT:Referring Doctor --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME
21-6	ST			Prefix	Mapped: DFT:Referring Doctor --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION
21-9-1	IS			Assigning Authority.	Mapped:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
				Namespace	DFT:Referring Doctor --> BAR/DFT/ORM. INSTITIUTION_TBL.INSTITIUTION

FT1 – 13: Identifier: ENDOBASE IV

6.2.3.8 DG1 – Diagnosis Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID diagnosis	Hardcoded
2	ID	R	N	Diagnosis coding method	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES_TABS.NAME DFT: PCI Codes --> BAR/DFT. PCI_CODES_TABS.NAME
3	CE	O	N	Diagnosis code	
3-1	ST			Identifier	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES.PCI_CODE DFT: PCI Codes --> BAR/DFT. PCI_CODES.PCI_CODE
3-2	ST			Text	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION DFT: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION
4	ST	O	N	Diagnosis description	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION DFT: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION
5	TS	O	N	Diagnosis date/time	Mapped: BAR: PCI Codes --> BAR/DFT. EXAM_TBL.EXAM_DATE_STARTTIME DFT: PCI Codes --> BAR/DFT. EXAM_TBL.EXAM_DATE_STARTTIME

6.2.3.9 PR1 – Procedures Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID procedure	Hardcoded
2	IS	R	N	Procedure coding method	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES_TABS.NAME DFT: PCI Codes --> BAR/DFT. PCI_CODES_TABS.NAME
3	CE	R	N	Procedure code	
3-1	ST			Identifier	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES.PCI_CODE DFT: PCI Codes --> BAR/DFT. PCI_CODES.PCI_CODE
3-2	ST			Text	Mapped: BAR: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION DFT: PCI Codes --> BAR/DFT. PCI_CODES.DESCRPTION
5	TS	R	N	Procedure date/time	Mapped: BAR: PCI Codes --> BAR/DFT. EXAM_TBL.EXAM_DATE_STARTTIME DFT: PCI Codes --> BAR/DFT. EXAM_TBL.EXAM_DATE_STARTTIME
7	NM	O	N	Procedure minutes	Mapped: BAR: PCI Codes --> BAR/DFT. EXAM_PCI_CODES_LINK.QUANTITY DFT: PCI Codes --> BAR/DFT. EXAM_PCI_CODES_LINK.QUANTITY

6.2.3.10 IN1 – Insurance Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID insurance	Hardcoded
3	CX	R	Y	Insurance company ID	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
3-1	ST			ID	Mapped: BAR: Insurance Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_CODE DFT: Insurance Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_CODE
4	XON	O	Y	Insurance company name	Mapped: BAR: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD DFT: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
4-1	ST			Organization Name	Mapped: BAR: Insurance Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_NAME DFT: Insurance Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_NAME
36	ST	O	N	Policy number	Mapped: BAR: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_CUST_NO DFT: Patient Data --> BAR/DFT/ORM. PATIENT_TBL.INSURANCE_CUST_NO

6.2.3.11 ORC – Common Order Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Order Control	Mapped: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_08
2	EI	O	N	Placer Order Number	
2-1	ST			Entity Identifier	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.HL7_ORDER_ID
9	TS	O	N	Date/Time of Transaction	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.UPDATE_DATE
10	XCN	O	N	Entered By	
10-1	ST			ID Number	Mapped: ORM:Examiner --> BAR/DFT/ORM. WORKER_TBL.DOCTOR_NO
10-2	ST			Family Name	Mapped: ORM:Examiner --> BAR/DFT/ORM. WORKER_TBL.LAST_NAME
10-3	ST			Given Name	Mapped: ORM:Examiner --> BAR/DFT/ORM. WORKER_TBL.FIRST_NAME
10-6	ST			Prefix	Mapped: ORM:Examiner --> BAR/DFT/ORM. SALUTATION_TBL.SALUTATION

ORC-1: Order Control NW new order

6.2.3.12 OBR – Observation Request Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID Observation Request	Hardcoded
3	EI	O	N	Filler Order Number	
3-1	ST			Entity Identifier	Mapped: ORU: Report Data (Report Options !!!) --> ORU. EXAM_TBL.PRIMARY_NO
3-2	IS			Namespace ID	Mapped: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORU.FIXED_VALUES.VALUE_01
4	CE	R	N	Universal Service ID	
4-1	ST			Identifier	Mapped: ORU: Report Data (Report Options !!!) --> ORU. EXAMTYPE_TBL.EXAM_TYPE
4-2	ST			Text	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_NAME
7	TS	O	N	Observation Date/Time	Mapped: ORU: Report Data (Report Options !!!) --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME
15	CM	O	N	Specimen Source	
15-1-1	ST			Name.Identifier	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_TYPE
15-1-2	ST			Name.Test	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_NAME
15-2	TX			Additives	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_NUMBER
15-3	TX			Freetext	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_COMMENT

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
15-4-1	ST			Bodysite.Identifier	Mapped: ORM: Lab Request Data --> ORM. EXAM_LABTEST_TBL.TEST_LOCATION
16	XCN	O	Y	Ordering Provider	Mapped: ORU: (Ext) # Items = 1. DUMMY_TABLE.DUMMY_FIELD
16-1				ID Number	Mapped: ORU: Referring Doctor --> ORU. WORKER_TBL.DOCTOR_NO
21	ST	O	N	Filler Field 2	Mapped: ORU: Report Data (Report Options !!!) --> ORU. DEPARTMENT_TBL.DEPARTMENT
22	TS	O	N	Results Rpt/Status Chng – Date/Time	Mapped: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL.CREATE_DATE_TIME
24	ID	O	N	Diagnostic Serv Sect ID	Mapped: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_01
25	ID	O	N	Result Status	Mapped: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL.OBSERVATION_STATUS
28	XCN	O	Y	Result Copies To	Mapped: ORU: (Ext)#CC Receivers. WORKER_INSTITUTION_TBL.PERSON
28-1	ST			IDNumber	Mapped: ORU: CC Receiver --> ORU. WORKER_TBL.DOCTOR_NO
28-2	ST			FamilyName	Mapped: ORU: CC Receiver --> ORU. WORKER_TBL.DOCTOR_NO
28-3	ST			GivenName	Mapped: ORU: CC Receiver --> ORU. WORKER_TBL.LAST_NAME
28-6	ST			Prefix	Mapped: ORU: CC Receiver --> ORU. WORKER_TBL.FIRST_NAME
28-9-1	ID			AssigningAuthority.NamespaceID	Mapped: ORU: CC Receiver --> ORU. SALUTATION_TBL.SALUTATION
32	CM	O	N	Principal Result Interpreter	
32-1-1	ST			Name.IDNumber	Mapped: ORU: Report Signer --> ORU. WORKER_TBL.PAGER
33	CM	O	Y	Assistant Result Interpreter	Mapped: ORU: (Ext)#Attendants. WORKER_TBL.PRIMARY_NO
33-1-1	ST			Name.IDNumber	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.DOCTOR_NO
33-1-2	ST			Name.FamilyName	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.LAST_NAME
33-1-3	ST			Name.GivenName	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.FIRST_NAME
33-1-6	ST			Name.Prefix	Mapped: ORU: Attendant.Nurse Data --> ORU. SALUTATION_TBL.SALUTATION
33-1-9	IS			Name.AssigningAuthority.NamespaceID	Mapped: ORU: Attendant, Nurse Data --> ORU. INSTITUTION_TBL.INSTITUTION
34	CM	O	Y	Technician	Mapped: ORU: (Ext)#Nurses.

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					WORKER_TBL.PRIMARY_NO
34-1-1	ST			Name.IDNumber	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.DOCTOR_NO
34-1-2	ST			Name.FamilyName	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.LAST_NAME
34-1-3	ST			Name.GivenName	Mapped: ORU: Attendant, Nurse Data --> ORU. WORKER_TBL.FIRST_NAME
34-1-6	ST			Name.Prefix	Mapped: ORU: Attendant.Nurse Data --> ORU. SALUTATION_TBL.SALUTATION
34-1-9	IS			Name. AssigningAuthority NamespaceID	Mapped: ORU: Attendant, Nurse Data --> ORU. INSTITUTION_TBL.INSTITUTION

OBR – 3 – 2:
Namespace ID: ENDOBASE IV

OBR – 24: ENDOBASE IV

OBR – 25: F (final)
C (corrected)

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
25	ID	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.3.13 OBX – Observation/Result Segment

There are five different options for sending reports:

1. Report text only
2. Report text with image reference pointers
3. Images reference pointers only
4. Report reference pointers
5. Report text and/or report reference pointer and/or images and/or structured report (i.e. different parts of a report separately corresponding to different tabs of text blocks/structured terminology) and/or RTF- and/or PDF link (i.e. the complete file name of the exported report (as RTF or PDF file))

The respective options can be set in the HL7 Mapping Tool by selecting the Out service (Ext) # Report Items (ORU..ObservationResultGroup) and pressing of Options button.

The choice between these options is done in the HL7 Mapping Tool by selecting the corresponding out service:

1. GetReportByKey
2. GetReportWithImageByKey
3. GetReportWithImageByKey
4. GetReportReferenceByKey
5. Report Data (Report Options !!!) --> ORU

Each option corresponds with a recommended mapping of the OBX-segment as shown in the different sub-chapters below.

Comment: Reference pointers to files in the EB3_SPOOL directory of ENDOBASE IV have to be handled with care. It might happen that the name of the subdirectory in which a file is located changes after the reference pointer has been transferred. This happens in the rare case that an image is imported in ENDOBASE IV and linked to an examination that has already been set as performed. The structure of the directory name is P_N_N, where P is the primary key of the corresponding examination and N is the number of images contained in the directory. Whereas the primary key P is fixed the number N might change.

Example: A reference pointer //ENDOBASE IV-Server/EB3_SPOOL/123_1_1/9.jpg was sent by ENDOBASE IV. After an image has been imported for the concerned examination the directory name changes from 123_1_1 to 123_2_2.

6.2.3.13.1 Sending Reports Text Only (Optional)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Observational Simple	Hardcoded
2	ID	R	N	Value Type	Hardcoded: FT
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Mapped: ORU: (Old) Report Data --> ORU. EXAMTYPE_TBL.EXAM_TYPE
3-2	ST			Text	Mapped: ORU: (Old) Report Data --> ORU. REPORT_VER_TBL.PRIMARY_NO
4	ST	O	N	Observation Sub-ID	Mapped: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_07
5	FT	R	N	Observation Value	Mapped: ORU: (Old) Report Data --> ORU. REPORT_VER_TBL.REPORT_TEXT
11	ID	O	N	Observ Result Status	Mapped: ORU: (Old) Report Data --> ORU. REPORT_VER_TBL. OBSERVATION_STATUS
14	TS	O	N	Date/Time of the Observation	Mapped: ORU: (Old) Report Data --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME

OBX-3-2: Primary key of the original report
 OBX – 4: 1
 OBX – 11: F (final)
 C (corrected)

Comments: The message contains one single OBX-segment.
 In the HL7 Mapping Tool the ObservationResultGroup which contains the OBX-Segment must be mapped to
 GetReportKeyByKey.REPORT_VER_TBL.PRIMARY_NO.

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
11	ID	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.3.13.2 Sending Report Text With Images (Optional)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Observational Simple	Hardcoded
2	ID	R	N	Value Type	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.Value_TYPE
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. EXAMTYPE_TBL.EXAM_TYPE
3-2	ST			Text	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.PRIMARY_NO
4	ST	O	N	Observation Sub-ID	Map optional: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_07
5	RP	R	N	Observation Value	
5-1	ST			Pointer	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.VALUE
11	ID	O	N	Observ Result Status	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL. OBSERVATION_STATUS
14	TS	O	N	Date/Time of the Observation	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME

OBX – 2: RP
 OBX-3-2: Primary key of the original report
 OBX – 4: 1
 OBX – 5 – 1: //<Computer name>/EB3_SPOOL/<Directory>
 /<File name>.<Extension>
 Example: //EB3/EB3_Spool/123_1_1/1.jpg
 OBX – 11: F (final)
 C (corrected)

Comments: The message contains one OBX-segment for the report text as described in chapter „Sending Reports Text Only (Default)“ and one OBX-segment as described above for each image selected for the report.

The report text is sent in the first, the image reference pointers are sent in the second to n-th OBX-segment.

Regarding reference pointers to the EB3_SPOOL directory please refer to the comment at the beginning of chapter “OBX – Observation/Result Segment”.

In the HL7 Mapping Tool the ObservationResultGroup which contains the OBX-segment must be mapped to

(Ext) # Report Images + Text

(ORU..ObservationResultGroup).REPORT_VER_TBL.REPORT_ITEM

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
11	I	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.3.13.3 Sending Images Only (Optional)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Observational Simple	Hardcoded
2	ID	R	N	Value Type	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.Value_TYPE
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. EXAMTYPE_TBL.EXAM_TYPE
3-2	ST			Text	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.PRIMARY_NO
4	ST	O	N	Observation Sub-ID	Map optional: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_07
5	RP	R	N	Observation Value	
5-1	ST			Pointer	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.VALUE
11	ID	O	N	Observ Result Status	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. REPORT_VER_TBL.OBSERVATION_STATUS
14	TS	O	N	Date/Time of the Observation	Map optional: ORU: (Old) Report Images or Images and Text --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME

OBX – 2: RP
 OBX-3-2: Primary key of the original report
 OBX – 4: 1
 OBX – 5 – 1: //<Computer name>/EB3_SPOOL/<Directory>
 /<File name>.<Extension>

Example: //EB3/EB3_Spool/123_1_1/1.jpg

OBX – 11: F (final)
 C (corrected)

Comments: The message contains one OBX-segment as described above for each image selected for the report.
 Regarding reference pointers to the EB3_SPOOL directory please refer to the comment at the beginning of chapter "OBX – Observation/Result Segment".
 In the HL7 Mapping Tool the ObservationResultGroup which contains the OBX-segment must be mapped to
 (Ext) # Report Images
 (ORU..ObservationResultGroup).REPORT_VER_TBL.REPORT_ITEM.

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
11	I	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.3.13.4 Sending Report Reference Pointers (Optional)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Observational Simple	Hardcoded
2	ID	R	N	Value Type	Hardcoded: RP
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Map optional: ORU: (Old) Report File Reference --> ORU. EXAMTYPE_TBL.EXAM_TYPE
3-2	ST			Text	Map optional: ORU: (Old) Report File Reference --> ORU. REPORT_VER_TBL.PRIMARY_NO
4	ST	O	N	Observation Sub-ID	Map optional: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_07
5	RP	R	N	Observation Value	
5-1	ST			Pointer	Map optional: ORU: (Old) Report File Reference --> ORU. REPORT_VER_TBL.REPORT_TEXT
11	ID	O	N	Observ Result Status	Map optional: ORU: (Old) Report File Reference --> ORU. REPORT_VER_TBL. OBSERVATION_STATUS
14	TS	O	N	Date/Time of the Observation	Map optional: ORU: (Old) Report File Reference --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME

OBX-3-2: Primary key of the original report
 OBX – 4: 1
 OBX – 5 – 1: //<Computer name>/EB3_SPOOL/<Directory>
 /<File name>.<Extension>

Example: //EB3/EB3_Spool/123_1_1/1.sdw

OBX – 11: F (final)
 C (corrected)

Comments: The message contains one OBX-segment as described above for the report. Regarding reference pointers to the EB3_SPOOL directory please refer to the comment at the beginning of chapter “OBX – Observation/Result Segment”. In the HL7 Mapping Tool the ObservationResultGroup which contains the OBX-segment must be mapped to GetReportKeyByKey.REPORT_VER_TBL.PRIMARY_NO.

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
11	I	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.3.13.5 Sending Report with Variable Options (Default)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Observational Simple	Hardcoded
2	ID	R	N	Value Type	Map optional: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL.Value_TYPE
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Map optional: ORU: Report Data (Report Options !!!) --> ORU. EXAMTYPE_TBL.EXAM_TYPE
3-2	ST			Text	Map optional: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL.PRIMARY_NO
3-5	ST			Alternate Text	Map optional: ORU: Report Data (Report Options !!!) --> ORU. RPT_TEXTBLOCK_TAB_TBL. TAB_NAME
4	ST	O	N	Observation Sub-ID	Map optional: ORU: Fixed Value (defined in registry) --> BAR/DFT/ORM/ORU.FIXED_VALUES.VALUE_07
5	FT	R	N	Observation Value	Map optional: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL.VALUE
11	ID	O	N	Observ Result Status	Map optional: ORU: Report Data (Report Options !!!) --> ORU. REPORT_VER_TBL. OBSERVATION_STATUS
14	TS	O	N	Date/Time of the Observation	Map optional: ORU: Report Data (Report Options !!!) --> ORU. EXAM_TBL.EXAM_DATE_STARTTIME

- OBX – 2: RP for report reference pointer and images
FT otherwise
- OBX-3-2: Primary key of the original report
- OBX – 4: 1
- OBX – 5 – 1: - //<Computer name>/<Share name>/<Directory>[</Sub directory>]
/<File name>.<Extension> for report reference pointer, images,
anatomic graphic, or videos.
- Complete report text for Report text.
- Appropriate text of different parts of a structured report.
- //<Computer name>/<Share name>/<Directory>[</Sub directory>]
/<File name>.<Extension> for link of exported report file (RTF or
PDF format) that has been saved in a user defined shared directory.
- <Drive>:[<Directory>]/<File name>.<Extension> for link of
exported report file that has been saved in a user defined
local directory.
- //<Computer name>/EB3_SPOOL/<Directory>/
<File Name>.<Extension> for link to exported report that has been
saved in the “EB3_SPOOL” directory
- OBX – 11: F (final)
C (corrected)

Comments: The message contains one or more segments depending on the selected options. The message can contain one OBX-segment for the report text as described in chapter „Sending Reports Text Only (Default)“, one segment for the report reference pointer as described in chapter „Sending Reports Reference Pointer (Optional)“, one OBX-segment as described in chapter „Sending Images Only (Optional)“ for each image selected for the report, one for each text block tab, one for each structured terminology tab respective sub tab, one for the RTF link of exported report, one for the PDF link, one for the anatomic graphic, and one for each video file. Regarding reference pointers to the EB3_SPOOL directory please refer to the comment at the beginning of chapter “OBX – Observation/Result Segment”. In the HL7 Mapping Tool the ObservationResultGroup which contains the OBX-segment must be mapped to (Ext) # Report Items (ORU..ObservationResultGroup).REPORT_VER_TBL.REPORT_ITEM.

When the out service Report Data (Report Options !!!) --> ORU is selected, it can be configured which data are actually sent (text, reference pointer, images, structured report, RTF link, PDF link, anatomic graphic, video).

Value Translations

SEQ	DT	Element Name	EBIII Value	HL7 Value	Comment
11	I	Result Status	0	F	Final results
			<*>	C	Record coming over is a correction and thus replaces a result

6.2.4 Incoming Messages

ENDOBASE IV is able to receive the following HL7 messages from the HL7 server:

HL7 Message	HL7 Event	Name	Description
ACK	Any	General acknowledgement	ENDOBASE IV receives acknowledgement from HL7 server indicating that message has been successfully transmitted.
ADR (ADT)	A19	Patient Query	HL7 server sends requested Patient Administration data as response to QRY A19 message. Only immediate mode is supported.
ADT	A01	Admit/Visit Notification	HL7 server sends message that a new patient has been admitted
ADT	A02	Transfer A Patient	HL7 server sends message that a patient has been transferred from one location to another
ADT	A03	Discharge/End Visit	HL7 server sends message that a patient has been discharged
ADT	A04	Register A Patient	HL7 server sends message that a patient has checked in as an outpatient
ADT	A05	Pre-admit A Patient	HL7 server sends message that a patient has undergone the pre-admission process
ADT	A06	Change Outpatient To Inpatient	HL7 server sends message that a patient has changed from outpatient to inpatient
ADT	A07	Change Inpatient To Outpatient	HL7 server sends message that a patient has changed from inpatient to outpatient
ADT	A08	Update Patient Information	HL7 server sends message that patient data are updated
ADT	A11	Cancel Admit/Visit Notification	HL7 server sends message that either the admission or the visit of a patient has been cancelled
ADT	A18	Merge Patient Information	HL7 server sends message to merge patient data by patient ID
ADT	A23	Delete Patient Record	HL7 server sends message to delete a patient record
ADT	A28	Add Person Information	HL7 server sends message that a new person has to be added
ADT	A30	Merge Person Information	HL7 server sends message to merge person data by patient ID
ADT	A31	Update Person Information	HL7 server sends message that person data are updated
ADT	A34	Merge Patient Information – Patient ID Only	HL7 server sends message to merge patient data by patient ID
ADT	A36	Merge Patient Information – Patient ID & Account Number	HL7 server sends message to merge patient data by patient ID. (Account numbers are not considered by ENDOBASE IV)
ADT	A40	Merge Patient – Internal ID	HL7 server sends message to

HL7 Message	HL7 Event	Name	Description
			merge patient data by patient ID
ADT	A42	Merge Visit – Visit Number	HL7 server sends message to merge visits by visit number
ADT	A45	Move Visit Information – Visit Number	HL7 server sends message to move data with one visit number to another patient
ADT	A47	Change Internal ID	HL7 server sends a message to update the internal patient ID of a patient
ADT	A50	Change Visit Number	HL7 server sends a message to update the visit number of a patient
ORM	O01	General Order	HL7 server sends scheduling request to ENDOBASE IV.
ORU	R01	Unsolicited Transmission of an Observation	HL7 server sends laboratory test results to ENDOBASE IV.
SRM	S01	Request New Appointment Booking	HL7 server sends new scheduling request to ENDOBASE IV.
SRM	S02	Request Appointment Rescheduling	HL7 server sends request to reschedule existing appointment
SRM	S03	Request Appointment Modification	HL7 server sends request to change data of an existing appointment except rescheduling
SRM	S04	Request Appointment Cancellation	HL7 server sends request to cancel a scheduled appointment
SRM	S05	Request Appointment Discontinuation	HL7 server sends request to discontinue an appointment in progress
SRM	S06	Request Appointment Deletion	HL7 server sends request to remove an appointment from system
SRM	S07	Request Addition of Service/ Resource on Appointment	HL7 server sends request to add a new service (e.g. examination type) or resource (e.g. personnel or location) to an appointment
SRM	S08	Request Modification of Service/ Resource on Appointment	HL7 server sends request to modify a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SRM	S09	Request Cancellation of Service/ Resource on Appointment	HL7 server sends request to cancel a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SRM	S10	Request Discontinuation of Service/ Resource on Appointment	HL7 server sends request to discontinue a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SRM	S11	Request Deletion of Service/ Resource on Appointment	HL7 server sends request to delete a service (e.g. examination type) or resource (e.g. personnel or location) from an appointment
SIU	S12	Notification of New Appointment Booking	HL7 server sends new scheduling notification to ENDOBASE IV.
SIU	S13	Notification of Appointment Rescheduling	HL7 server sends notification to reschedule existing

HL7 Message	HL7 Event	Name	Description
			appointment
SIU	S14	Notification of Appointment Modification	HL7 server sends notification to change data of an existing appointment except rescheduling
SIU	S15	Notification of Appointment Cancellation	HL7 server sends notification to cancel a scheduled appointment
SIU	S16	Notification of Appointment Discontinuation	HL7 server sends notification to discontinue an appointment in progress
SIU	S17	Notification of Appointment Deletion	HL7 server sends notification to remove an appointment from system
SIU	S18	Notification of Addition of Service/ Resource on Appointment	HL7 server sends notification to add a new service (e.g. examination type) or resource (e.g. personnel or location) to an appointment
SIU	S19	Notification of Modification of Service/ Resource on Appointment	HL7 server sends notification to modify a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SIU	S20	Notification of Cancellation of Service/ Resource on Appointment	HL7 server sends notification to cancel a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SIU	S21	Notification of Discontinuation of Service/ Resource on Appointment	HL7 server sends notification to discontinue a service (e.g. examination type) or resource (e.g. personnel or location) of an appointment
SIU	S22	Notification of Deletion of Service/ Resource on Appointment	HL7 server sends notification to delete a service (e.g. examination type) or resource (e.g. personnel or location) from an appointment

6.2.4.1 General

6.2.4.1.1 Actions Related to Message Types and Event Types

It is possible to define one of the following actions to be performed for each known combination of HL7 message type and event type:

Ignore:	Messages of that kind are not processed. If ACK mode is enabled, a positive ACK message is sent to HL7 server.
Only New:	Only new data are imported. It is checked whether appropriate data do not already exist.
New And Update:	New data are imported or existing data are updated.
Only Update:	Only existing data are updated. It is checked whether appropriate data already exist.
Only Update And Deactive Admission No.:	Only existing patient data are updated and current Admission No. is deactivated. It is checked whether appropriate data already exist.
Delete:	Existing data are deleted if possible. It is checked whether appropriate data exist.
Delete And Update And Deactivate Admission No.:	If examination exists, patient data will be updated and current Admission No. deactivated. If examination does not exist, patient data will be deleted.
Patient Merge Only:	Patient data are only merged if the surviving patient already exists in database.
Patient Merge And Insert:	Patient data are merged if already existing in database. Patient data are inserted if not already present.
Person Merge Only:	The person data related to a patient ID is only updated if the patient ID already exists in database.
Person Merge And Insert:	The person data related to a patient ID is updated if the patient ID already exists in database. Person data are inserted if patient ID not already present.
Visit Merge Only:	Visits are merged only if patients already exist in database.
Visit Merge And Insert:	Visits are merged. The surviving patient is inserted if not already present.

The following table shows the default actions:

HL7 Message	HL7 Event	Default Action
ADT	A01	Only New
ADT	A02	Only Update
ADT	A03	Delete And Update And Deactivate Admission No.
ADT	A04	Only New
ADT	A05	Only New
ADT	A06	Only Update
ADT	A07	Only Update
ADT	A08	Only Update
ADT	A11	Delete
ADT	A18	Patient Merge And Insert
ADT	A23	Delete
ADT	A28	Only New
ADT	A30	Person Merge And Insert
ADT	A31	Only Update
ADT	A34	Patient Merge And Insert
ADT	A36	Patient Merge And Insert
ADT	A40	Patient Merge And Insert
ADT	A42	Visit Merge And Insert
ADT	A45	Visit Merge And Insert
ADT	A47	Patient Merge
ADT	A50	Visit Merge
ORM	O01	New And Update
ORU	R01	New And Update
SIU	S12	Only New
SIU	S13	Only Update
SIU	S14	Only Update
SIU	S15	Delete
SIU	S16	Delete
SIU	S17	Delete
SIU	S18	Only Update
SIU	S19	Only Update
SIU	S20	Delete
SIU	S21	Delete
SIU	S22	Delete
SRM	S01	Only New
SRM	S02	Only Update
SRM	S03	Only Update
SRM	S04	Delete
SRM	S05	Delete
SRM	S06	Delete
SRM	S07	Only Update
SRM	S08	Only Update
SRM	S09	Delete
SRM	S10	Delete
SRM	S11	Delete

6.2.4.1.2 Insert of Patients by Patient ID

Incoming patient data are only stored into the database when a patient (internal) ID is contained. When patient data are received from the HL7 server, the HL7 Service checks whether there is already a patient with the same ID. When not found, this patient is inserted into the ENDOBASE IV database without prior information to the user.

6.2.4.1.3 Update of Patients by Patient ID

When the transmitted patient ID is found, the behaviour of the update depends on the contents of the transmitted items as follows:

The item in the message is empty:

No changes are made to the respective database field.

The item in the message contains double quotation "":

The value of the respective database field is erased. If it is a date field, the value is either updated with the default date (01.01.1753) or erased.

The item in the message contains a value:

The value of the respective database field is updated with the value from the message.

6.2.4.1.4 Deletion of Patients by Patient ID

If the transmitted patient ID is found, it is checked whether there are no examination data or patient history data stored for this patient. In this case, the selected patient is deleted from database. Deletion of patients is not possible with SRM, SIU or ORM message but only with ADT messages.

6.2.4.1.5 Merge of Patients by Patient ID

The behavior of merging patient data depends on the fact whether none, one or both patients already exist in database.

In case that none of the patient IDs exist in database, the data of the new (surviving) patient (patient „B“) are inserted into database.

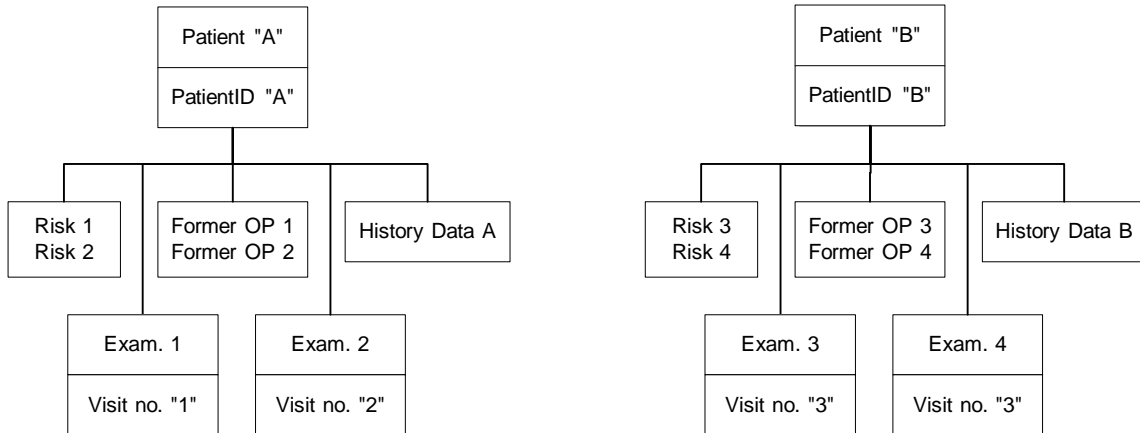
In case that only the old (absorbed) patient ID (patient „A“) already exists, it is updated with the new data being sent.

In case that only the new (surviving) patient ID „B“ already exists, the patient is updated with the new data being sent.

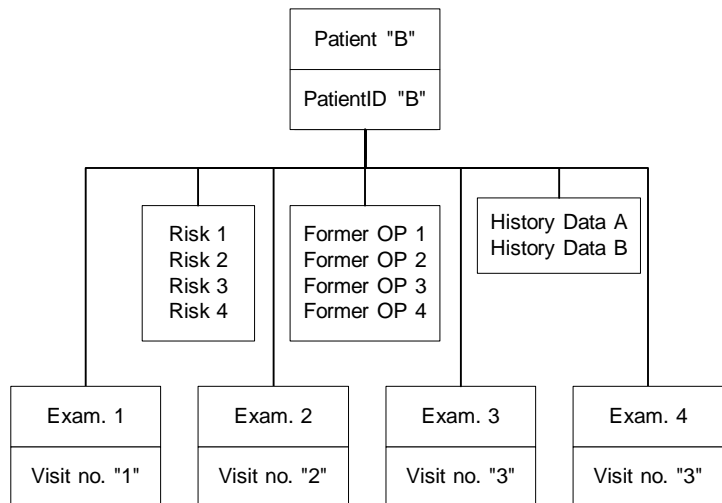
If both patient IDs exist, the new patient „B“ is updated with the data from PID segment. The data of the old (absorbed) patient „A“ as well as all linked data (like visits, examinations, patient risks, former operations and further information in the patient file) are transferred to the new (surviving) patient „B“.

The following figure shows this behavior:

Before Merge:



After Merge:



6.2.4.1.6 Merge of Persons by Patient ID

ENDOBASE IV does not handle “persons” in the sense of HL7 data model but only “patients”. Therefore a real person merge is not done. When receiving a person merge request ENDOBASE IV updates patient “B” identified by new (surviving) patient ID with the data received in the PID segment (except the patient ID). Then patient “A” identified by the old (absorbed) patient ID is updated with the data of patient “B” (except the patient ID). The patient IDs of both patients remain untouched. Even after the merge there are two different patients “A” and “B” in ENDOBASE IV.

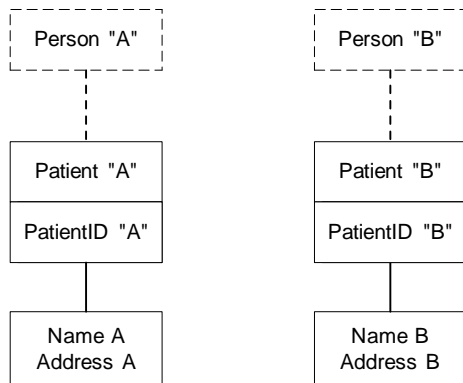
If patient “B” does not exist in ENDOBASE IV, patient “A” is updated with the data received in the PID segment (except the patient ID).

If patient “A” does not exist in ENDOBASE IV, patient “B” is updated with the data received in the PID segment (except the patient ID).

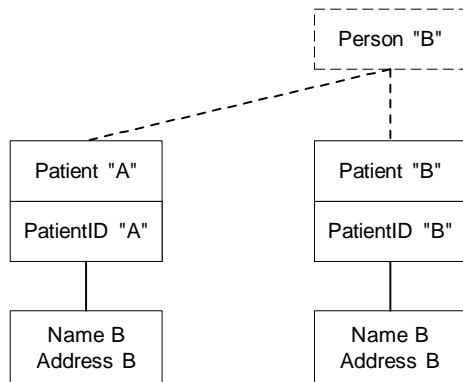
If both patients do not exist, ENDOBASE IV inserts patient “B” with the data received in the PID segment.

The following figure shows the behavior if both patients exist in ENDOBASE IV:

Before Merge:



After Merge:



6.2.4.1.7 Merge of Accounts

ENDOBASE IV does not handle accounts. Therefore merges of accounts are not done at all.

6.2.4.1.8 Merge of Visits by Visit Number

The behavior of merging visit data depends on the fact whether none, one or both visit numbers already exist in database and whether the related patient IDs belong to different patients than the visit numbers.

Let "A" be the patient with the old (absorbed) visit number "2" contained in the MRG segment. In ENDOBASE IV patient "A" might already exist with a different visit number "1".

Let "B" be a patient already existing in ENDOBASE IV with visit number "2". (Such a patient only exists in case of data inconsistencies between ENDOBASE IV and the HIS/HL7 Server).

Let "C" be the patient with the new (surviving) visit number "4" contained in the PV1 segment. In ENDOBASE IV patient "C" might already exist with a different visit number "3".

Let "D" be a patient already existing in ENDOBASE IV with visit number "4". (Such a patient only exists in case of data inconsistencies between ENDOBASE IV and the HIS/HL7 Server).

If patient "C" does not yet exist in the database, ENDOBASE IV inserts this patient with the data received in the PID segment.

If a patient "B" with visit number "2" exists, the visit number "2" is removed from this patient.

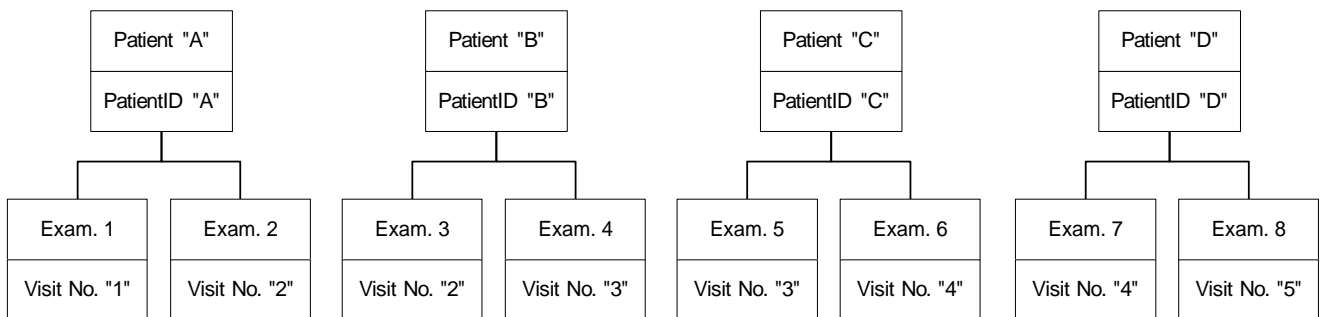
If a patient "D" with visit number "4" exists, the visit number "4" is removed from this patient.

If patient "A" exists and is different from patient "C", all examinations with visit number "2" are moved from patient "A" to "C" and visit number "2" is removed from patient "A".

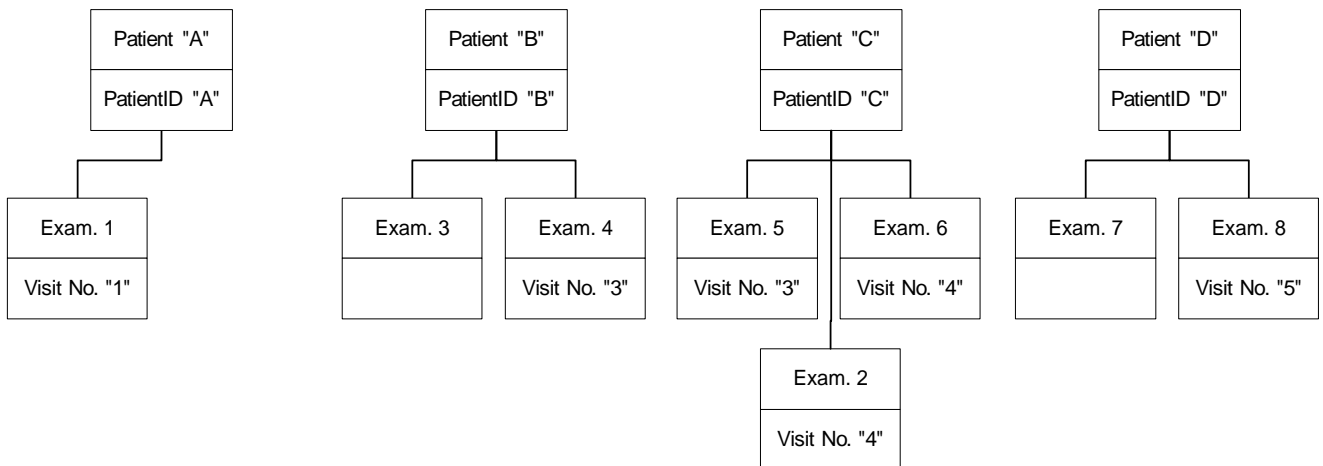
If the visit numbers "2" and "4" are different, the visit number "2" of patient "C" (including all examinations with this visit number) is changed to "4".

The following figure shows the general case. Please note that in ENDOBASE IV it is usually not possible that different patients get the same visit number (like e.g. "A" and "B" in the figure). This example is only used to illustrate the general process of a visit merge.

Before Merge:

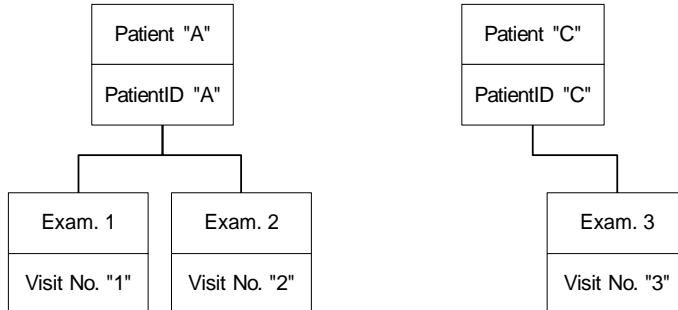


After Merge:

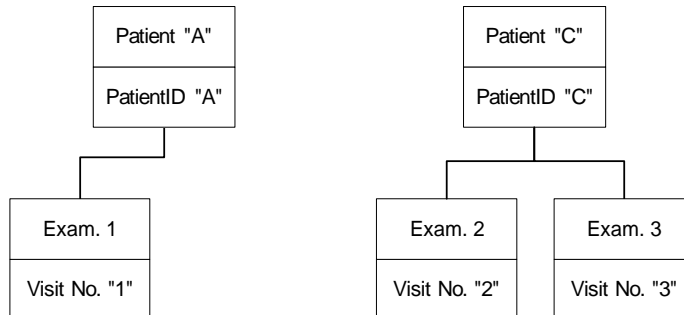


The following figure shows the special case of a visit move, i.e. patients "B" and "D" do not exist and visit numbers "2" and "4" are identical:

Before Visit Move:

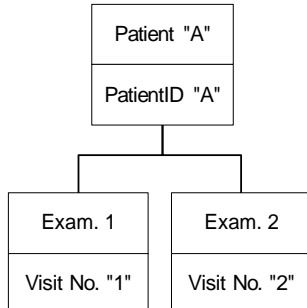


After Visit Move:

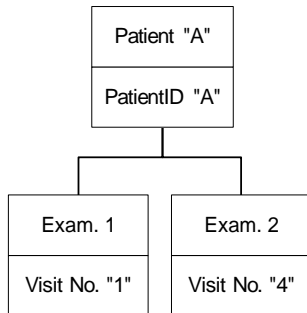


The following figure shows the special case of a visit number change, i.e. patients "B" and "D" do not exist and patients "A" and "C" are identical:

Before Visit Number Change:



After Visit Number Change:



6.2.4.2 Receiving Patient Administration Messages (ADT)

ADT messages (except ADT A19) are unsolicitedly received from HL7 server. They are processed and data directly imported into ENDOBASE IV database according to the rules described in "Update of Patients by Patient ID".

6.2.4.2.1 Handling of Admission Number

When receiving an admission number in an unsolicited message, HL7 Service tries to find this number in the ENDOBASE IV database. On success, the received admission number is ignored. If not found, the received admission number is stored into the ENDOBASE IV database and becomes the patient's current admission number.

6.2.4.2.2 Handling of Home Doctor

Incoming home doctor data are only stored into the database when the Staff ID Code (Home Doctor Number) is contained. The handling regarding insert and update is the same as described in "Insert of Patients by Patient ID" and "Update Patients by Patient ID".

6.2.4.2.3 Receiving Patient Query Response Message (ADR A19)

The ADR (ADT) A19 message can only be processed by ENDOBASE IV as a result of sending an HL7 QRY A19 message as described in "Sending Query Message (QRY A19)". Only the immediate mode is supported, i.e. the result is displayed on screen after having received and processed this message.

6.2.4.3 Receiving Scheduling of Examinations Messages

Three different message types (ORM, SRM, SIU) can be used to receive scheduling data from HL7 server.

6.2.4.3.1 Insert of Examination by Order ID

Requests and notifications for scheduling examinations are only stored in database when an order ID is contained in the message.
If the action „Only New“ or „New And Update“ is set for this message/event type, HL7 service checks whether an examination with the same order ID does not exist. If this is the case and the transmitted start and end date and time are not in the past, a new examination is inserted into the database.

The received examination type must exactly correspond to an existing one in ENDOBASE IV.

6.2.4.3.2 Update of Examination by Order ID

If the action „New And Update“ or „Only Update“ is set for this message/event type, HL7 service checks whether an examination with the same order ID already exists. If this is the case and the examination has not been started or performed, the data are updated (rescheduled).

6.2.4.3.3 Deletion of Examination by Order ID

If the action „Delete“ is set for this message/event type, HL7 service checks whether an examination with the same order ID already exists. If this examination is found, not yet started or performed, and no patient history data are added to it, the respective examination data are deleted from database.
Patient data that have been imported by a scheduling message are not deleted.
Deletion of examinations is not possible with ORM messages but only with SRM or SIU messages.

6.2.4.3.4 Handling of Staff Members

Incoming staff members are only stored in database when the Staff ID Code is contained. The HL7 service checks whether a staff member with the same ID already exists. If this is not the case this staff member is inserted into the ENDOBASE IV database. Otherwise, if the staff ID is found, the staff member data will be updated.

6.2.4.3.5 Handling of Referring Doctor and Institution

Incoming referring doctor is only stored in the ENDOBASE IV database when ID Code is contained in the message. The handling regarding insert and update is the same as the handling of staff members as described in "Handling of Staff Members".

For referring institutions no ID numbers are available. They are identified by their names.

6.2.4.3.6 Receiving ORM O01 Messages

This message type provides the possibility to import data of up to three assistant doctors and data of up to three nurses in addition to the examiner's data.

To use this feature, it is recommended to send those data in repeatable fields in a segment that is unique for one examination, e.g. OBR-33 (Assistant Result Interpreter) and OBR-34 (Technician) as used in the default mapping described in this document.

It is also possible to receive more than one examination for one patient in one message by repeating the segment which holds the HL7_ORDER_ID with different HL7_ORDER_IDs.

6.2.4.3.7 Receiving SRM, SIU Messages

This message type is restricted to only receive staff data for one staff member, e.g. only the examiner. It is also restricted to receive only one examination per message. Deviant from HL7 Standard, the AIS segment is required. The field AIS-3 must be mapped to "Examination Data <-- ORM/SIU/SRM.EXAMTYPE_TBL.EXAM_TYPE". Additionally, the fields ARQ-11 in SRM messages and SCH-11 in SIU messages are required and must be mapped to "Examination Data <-- ORM/SIU/SRM.EXAM_TBL.START_TIME".

6.2.4.4 Receiving Laboratory Results (ORU R01)

Laboratory results can be received from HL7 server within ORU R01 messages. For each test, the same unique placer order number must be provided that has been sent to HL7 server via laboratory test request message ORM O01 before.

It is possible to send results requested for different examinations that belong to the same patient together within one ORU R01 message. In this case, one OBR segment must be sent for each examination and the primary examination ID (e.g. HL7_ORDER_ID) must be different from one another.

Each test result must be sent in its own OBX segment.

Examples:

1. Multiple laboratory test results for one examination:

MSH	Message header
PID	Patient data
OBR	Examiner, examination data
OBX (1)	Laboratory test result data (1)
OBX (2)	Laboratory test result data (2)
OBX (3)	Laboratory test result data (3)

2. Multiple laboratory test results for multiple examinations:

MSH	Message header
PID	Patient data
OBR (1)	Examiner, examination data (1)
OBX (1)(1)	Laboratory test result data (1) for examination (1)
OBX (1)(2)	Laboratory test result data (2) for examination (1)
OBR (2)	Examiner, examination data (2)
OBX (2)(1)	Laboratory test result data (1) for examination (2)
OBX (2)(2)	Laboratory test result data (2) for examination (2)

For the message ORU R01 only two actions are allowed: "Ignore" and "New And Update". Deleting of erroneous results is possible by updating with "".

6.2.5 Structure of Incoming Messages

The structures of messages depend on the mapping described in chapter „Flexible Mapping“. In the following, the message structures are described according to the default mapping. Segments not mentioned here are ignored by HL7 Service. It does not matter whether they are allowed according to the HL7 standard or not.

6.2.5.1 ACK – General Acknowledgement

Structure:

MSH	Message Header
MSA	Message Acknowledgement

6.2.5.2 ADR (ADT) A19 – Patient Query (Response)

Structure:

MSH	Message Header
MSA	Message Acknowledgement
QRD	Query Definition
{ [EVN]	Event Type
PID	Patient Information
PV1	Patient Visit
[{ AL1 }]	Allergy Information
[{ PR1 }]	Procedure
[IN1]	Insurance
[STF]	General Practitioner (Home Doctor), extension to the standard
}	

6.2.5.3 ADT A01 –Admit/Visit Notification

ADT A04 – Register Patient

ADT A05 – Pre-Admit Patient

ADT A08 – Update Patient Information

ADT A28 – Add Person Information

ADT A31 – Update Person Information

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
PV1	Patient Visit
[{ AL1 }]	Allergy Information
[IN1]	Insurance
[STF]	General Practitioner (Home Doctor), extension to the standard

6.2.5.4 ADT A02 – Transfer Patient
ADT A23 – Delete Patient Record

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
PV1	Patient Visit

6.2.5.5 ADT A03 – Discharge/End Visit

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
PV1	Patient Visit
[DG1]	Diagnosis Information

6.2.5.6 ADT A06 –Change Outpatient to Inpatient
ADT A07 –Change Inpatient to Outpatient

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
PV1	Patient Visit
{ AL1 }	Allergy Information
[IN1]	Insurance
[STF]	General Practitioner (Home Doctor), extension to the standard

6.2.5.7 ADT A11 – Cancel Admit/Visit Notification

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
PV1	Patient Visit
{ DG1 }	Diagnosis Information

6.2.5.8 ADT A18 – Merge Patient Information

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
MRG	Merge Information

6.2.5.9 ADT A30 – Merge Person Information
ADT A34 – Merge Patient Information – Patient ID Only
ADT A36 – Merge Patient Information – Patient ID & Account Number
ADT A47 – Change Internal Number

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
MRG	Merge Information

6.2.5.10 ADT A40 – Merge Patient – Internal ID
ADT A42 – Merge Visit – Visit Number

Structure:

MSH	Message Header
EVN	Event Type
{ PID	Patient Information
MRG	Merge Information
[PV1]	Patient Visit
}	

6.2.5.11 ADT A45 – Move Visit Information – Visit Number

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
{ MRG	Merge Information
PV1	Patient Visit
}	

6.2.5.12 ADT A50 – Change Visit Number

Structure:

MSH	Message Header
EVN	Event Type
PID	Patient Information
MRG	Merge Information
PV1	Patient Visit

6.2.5.13 ORM O01 –General Order

Structure:
MSH Message Header
PID Patient Information
[PV1] Patient Visit
[IN1] Insurance
[AL1] Allergy Information
{ ORC Common Order
 [OBR Order Detail
 [DG1] Diagnosis
]
}

6.2.5.14 ORU R01 – Unsolicited Transmission of an Observation Result

Structure:
MSH Message header
PID Patient Information
[PV1] Patient Visit
{ OBR Observation Report ID
 { OBX } Observation Result
}

- 6.2.5.15 SRM S01 – Request New Appointment Booking
- SRM S02 – Request Appointment Rescheduling
- SRM S03 – Request Appointment Modification
- SRM S04 – Request Appointment Cancellation
- SRM S05 – Request Appointment Discontinuation
- SRM S06 – Request Appointment Deletion
- SRM S07 – Request Addition of Service/Resource on Appointment
- SRM S08 – Request Modification of Service/Resource on Appointment
- SRM S09 – Request Cancellation of Service/resource on Appointment
- SRM S10 – Request Discontinuation of Service/Resource on Appointment

Structure:
MSH Message Header
ARQ Appointment Request Information
PID Patient Identification
[PV1] Patient Visit
[DG1] Diagnosis
RGS Resource Group
AIS Appointment Information Service
[AIG] Appointment Information General
[AIL] Appointment Information Location
[AIP] Appointment Information Personnel

- 6.2.5.16 SIU S12 - Notification of New Appointment Booking**
- SIU S13 – Notification of Appointment Rescheduling**
- SIU S14 – Notification of Appointment Modification**
- SIU S15 – Notification of Appointment Cancellation**
- SIU S16 – Notification of Appointment Discontinuation**
- SIU S17 – Notification of Appointment Deletion**
- SIU S18 – Notification of Addition of Service/Resource on Appointment**
- SIU S19 – Notification of Modification of Service/Resource on Appointment**
- SIU S20 – Notification of Cancellation of Service/Resource on Appointment**
- SIU S21 – Notification of Discontinuation of Service/Resource on Appointment**
- SIU S22 – Notification**

Structure:

MSH	Message Header
SCH	Schedule Activity Information
PID	Patient Identification
[PV1]	Patient Visit
{ { DG1 } }	Diagnosis
RGS	Resource Group
AIS	Appointment Information Service
{ { AIG } }	Appointment Information General
[AIL]	Appointment Information Location
[AIP]	Appointment Information Personnel

6.2.6 Structure of Supported Segments of Incoming Messages

See comments in chapter „Structure of Supported Segments of Outgoing Messages“. To distinguish the default mappings of ADT A01, A02, A03, A04, A05, A06, A07, A08, A11, A23, A28, A31 messages from the mappings of merge messages ADT A18, A30, A34, A36, A40, A42, A45, A47, A50 the first are marked ADT and the second are marked ADT M in the ENDOBASE IV column.

6.2.6.1 MSH – Message Header Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ST	R	N	Field separator	
2	ST	R	N	Encoding characters	^~\&
3	HD	O	N	Sending application	
3-1	ID			Namespace ID	<HL7Admin: HL7 Server.Query/Message Application Name>
5	HD	O	N	Receiving application	
5-1	ID			Namespace ID	<HL7Admin: ENDOBASE IV. Sending Application Name>
7	TS	O	N	Date/Time of message	
9	CM	R	N	Message type	See below
9-1	ID			Message Type	
9-2	ID			Trigger Event	
10	ST	R	N	Message control ID	
11	PT	R	N	Processing ID	
11-1	ID			Processing ID	
12	ID	R	N	Version ID	2.0, 2.1, 2.2, 2.3
15	ID	O	N	Accept acknowledgement type	See below
16	ID	O	N	Application acknowledgement type	See below

MSH-9:

Message type: Expected Values
 ACK General Acknowledgement
 ADR Patient Query Response
 ADT Patient Administration

Trigger event:

Expected Values
 Axx Trigger event of acknowledged and unsolicited messages
 A19 Patient Query

MSH-15, MSH-16:

Expected Values
 <empty> Original acknowledgement mode rules
 AL Always
 NE Never
 SU Success Only
 ER Error Only

6.2.6.2 MSA – Message Acknowledgement Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Acknowledgement code	See below
2	ST	R	N	Message control ID	

MSA-1: Expected Values

AA	Application Accept
CA	Commit Accept
AR	Application Reject
AE	Application Error
CR	Commit Reject
CE	Commit Error

6.2.6.3 EVN - Event Type Segment

The content of this segment is ignored on incoming messages.

6.2.6.4 QRD – Original-style Query Definition Segment

The content of this segment is ignored on incoming messages.

6.2.6.5 PID – Patient Identification Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID	
3	CX	R	Y	Patient ID (Internal ID)	
3-1	ST			ID	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.PATIENT_ID ADT M: Patient Merge Data <-- ADT (merge only). Surviving_Patient_ID ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.PATIENT_ID ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.PATIENT_ID SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.PATIENT_ID SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.PATIENT_ID ADR: Patient Data <-- ADR (query).XML.Patient_ID
5	XPN	R	Y	Patient name	
5-1	ST			Family Name	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.LAST_NAME ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.LAST_NAME ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.LAST_NAME ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.LAST_NAME SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM.

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					PATIENT_TBL.LAST_NAME SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.LAST_NAME ADR: Patient Data <-- ADR (query). XML.Patient_LastName
5-2	ST			Given Name	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.FIRST_NAME ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.FIRST_NAME ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.FIRST_NAME ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.FIRST_NAME SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.FIRST_NAME SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.FIRST_NAME ADR:Patient Data <-- ADR (query). XML.Patient_FirstName
5-3	ST			Middle Name	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.MIDDLE_NAME ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.MIDDLE_NAME ORM:Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.MIDDLE_NAME ORU:Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.MIDDLE_NAME SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.MIDDLE_NAME SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.MIDDLE_NAME ADR:Patient Data <-- ADR (query).XML.Patient_MiddleName
5-6	ST			Prefix	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION ADT M: Patient Merge Data <-- ADT (merge only). SALUTATION_TBL.SALUTATION ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION ADR: Patient Data <-- ADR (query). XML.Patient_Salutation
6	XPN	O	N	Mother's maiden	

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
				name	
6-1	ST			Family Name	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_NAME ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.BIRTH_NAME ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_NAME ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_NAME SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_NAME SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_NAME ADR: Patient Data <-- ADR (query). XML.Patient_NameOfBirth
7	TS	O	N	Date of birth	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTHDAY ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.BIRTHDAY ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTHDAY ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTHDAY SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTHDAY SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTHDAY ADR: Patient Data <-- ADR (query). XML.Patient_Birthday
8	IS	O	N	Sex	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.GENDER ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.GENDER ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.GENDER ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.GENDER SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.GENDER SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.GENDER ADR: Patient Data <-- ADR (query). XML.Patient_Gender
11	XAD	O	Y	Patient address	
11-1	ST			Street Address	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM.

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					PATIENT_TBL.STREET_NUMBER ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.STREET_NUMBER ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.STREET_NUMBER ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.STREET_NUMBER SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.STREET_NUMBER SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.STREET_NUMBER ADR: Patient Data <-- ADR (query). XML.Patient_Street
11-3	ST			City	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.CITY ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.CITY ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.CITY ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.CITY SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.CITY SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.CITY ADR: Patient Data <-- ADR (query). XML.Patient_City
11-5	ST			Zip Or Postal Code	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ZIP_CODE ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.ZIP_CODE ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ZIP_CODE ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ZIP_CODE SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ZIP_CODE SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ZIP_CODE ADR: Patient Data <-- ADR (query).XML.Patient_Zip
13	XTN	O	Y	Phone number – home	
13-1	TN			Telephone Number	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.HOME_TEL ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.HOME_TEL ORM:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.HOME_TEL SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.HOME_TEL SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.HOME_TEL ADR: Patient Data <-- ADR (query). XML.Patient_HomePhone
14	XTN	O	Y	Phone number – business	
14-1	TN			Telephone Number	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.OFFICE_TEL ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.OFFICE_TEL ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.OFFICE_TEL ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.OFFICE_TEL SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.OFFICE_TEL SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.OFFICE_TEL ADR: Patient Data <-- ADR (query). XML.Patient_OfficePhone
19	ST	O	N	SSN Number patient	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.SSN ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.SSN ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.SSN ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.SSN SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.SSN SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.SSN ADR: Patient Data <-- ADR (query). XML.Patient_SSN
23	ST	O	N	Birth place	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_PLACE ADT M: Patient Merge Data <-- ADT (merge only). PATIENT_TBL.BIRTH_PLACE ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_PLACE ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_PLACE SRM:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_PLACE SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.BIRTH_PLACE ADR: Patient Data <-- ADR (query). XML.Patient_BirthPlace
28	CE	O	N	Nationality	
28-2	ST			Text	Mapped: ADT: Patient Data <-- ADT/ORM/SIU/SRM.RACE_TBL.RACE ADT M: Patient Merge Data <-- ADT (merge only).PATIENT_TBL.RACE ORM: Patient Data <-- ADT/ORM/SIU/SRM.RACE_TBL.RACE SRM: Patient Data <-- ADT/ORM/SIU/SRM.RACE_TBL.RACE SIU: Patient Data <-- ADT/ORM/SIU/SRM.RACE_TBL.RACE ADR: Patient Data <-- ADR (query).XML.Patient_Nationality
29	TS	O	N	Patient death date and time	Mapped: ADT: Patient Data <-- ADT/ORM/SIU/SRM.PATIENT_TBL.DATE_OF_DE ATH ADT M: Patient Merge Data <-- ADT (merge only).PATIENT_TBL.DATE_OF_DEATH ORM:Patient Data <-- ADT/ORM/SIU/SRM.PATIENT_TBL.DATE_OF_DE ATH SRM: Patient Data <-- ADT/ORM/SIU/SRM.PATIENT_TBL.DATE_OF_DE ATH SIU: Patient Data <-- ADT/ORM/SIU/SRM.PATIENT_TBL.DATE_OF_DE ATH ADR: Patient Data <-- ADR (query).XML.Patient_DateOfDeath

PID-8: Expected Values
 U Unknown
 M Male
 F Female

Value Translations

SEQ	DT	Element Name	HL7 Value	EBIII Value	Comment
8	IS	Sex	F	2	Female
			M	1	Male
			U	0	Unknown
			<*>	0	Unknown

6.2.6.6 PV1 – Patient Visit Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	O	N	Set ID – Patient Visit	
2	IS	R		Patient Class	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. AMBULANT_STATIONARY_TBL. ambulant_stationary ORU: Examination Data <-- ORM/ORU/SIU/SRM. AMBULANT_STATIONARY_TBL. ambulant_stationary SRM: Examination Data <-- ORM/ORU/SIU/SRM. AMBULANT_STATIONARY_TBL. ambulant_stationary SIU: Examination Data <-- ORM/ORU/SIU/SRM. AMBULANT_STATIONARY_TBL. ambulant_stationary
4	IS	O	N	Admission Type	Mapped: ADR: Patient Data <-- ADR (query).XML.Patient_Emergency ORM: Examination Data <-- ORM/ORU/SIU/SRM.EXAM_TBL.EMERGENCY ORU: Examination Data <-- ORM/ORU/SIU/SRM.EXAM_TBL.EMERGENCY SRM: Examination Data <-- ORM/ORU/SIU/SRM.EXAM_TBL.EMERGENCY SIU: Examination Data <-- ORM/ORU/SIU/SRM.EXAM_TBL.EMERGENCY
7	XCN	O	Y	Attending Doctor	
7-1	ST			ID Number	Mapped: ADR: Attending Doctor (displayed only) <--ADR (query).XML.Doctor_No
7-2	ST			Family Name	Mapped: ADR: Attending Doctor (displayed only) <--ADR (query).XML. Doctor_LastName
7-3	ST			Given Name	Mapped: ADR: Attending Doctor (displayed only) <--ADR (query).XML. Doctor_FirstName
7-6	ST			Prefix	Mapped: ADR: Attending Doctor (displayed only) <--ADR (query). XML.Doctor_Salutation
8	XCN	O	Y	Referring Doctor	
8-1	ST			ID Number	Mapped: ADR: Referring Doctor (displayed only) <-- ADR (query). XML.Doctor_No ORM: Referring Doctor or Institution <-- ORM/ SIU/SRM. WORKER_TBL.DOCTOR_NO SRM: Referring Doctor or Institution <-- ORM/ SIU/SRM. WORKER_TBL.DOCTOR_NO SIU: Referring Doctor or Institution <-- ORM/ SIU/SRM. WORKER_TBL.DOCTOR_NO

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
8-2	ST			Family Name	Mapped: ADR: Referring Doctor (displayed only) <-- ADR (query). XML. Doctor_LastName ORM: Referring Doctor or Insttution <-- ORM/ SIU/SRM. WORKER_TBL.LAST_NAME SRM: Referring Doctor or Insttution <-- ORM/ SIU/SRM. WORKER_TBL.LAST_NAME SIU: Referring Doctor or Insttution <-- ORM/SIU/SRM. WORKER_TBL.LAST_NAME
8-3	ST			Given Name	Mapped: ADR: Referring Doctor (displayed only) <-- ADR (query). XML.Doctor_FirstName ORM: Referring Doctor or Insttution <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME SRM: Referring Doctor or Insttution <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME SIU: Referring Doctor or Insttution <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME
8-4	ST			Middle Name	Mapped: ADR: Referring Doctor (displayed only) <-- ADR (query). XML.Doctor_MiddleName
8-6	ST			Prefix	Mapped: ADR: Referring Doctor (displayed only) <-- ADR (query). XML.Doctor_Salutation ORM: Referring Doctor or Insttution <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION SRM: Referring Doctor or Insttution <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION SIU: Referring Doctor or Insttution <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION
8-9-1	IS			AssigningAuthority. NamespaceID	Mapped: ORM: Referring Doctor or Insttution <-- ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION SRM: Referring Doctor or Insttution <-- ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION SIU: Referring Doctor or Insttution <-- ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION
14	IS	O		Admit Source	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION ORM: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION ADR: PutXMLReferringInstiitution.XML.Inst_Name
17	XCN	O	Y	Admitting Doctor	
17-1	ST			ID Number	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO ORM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					SRM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO SIU: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO
17-2	ST			Family Name	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.LAST_NAME ORM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.LAST_NAME SRM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.LAST_NAME SIU: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.LAST_NAME
17-3	ST			Given Name	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.FIRST_NAME ORM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.FIRST_NAME SRM: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.FIRST_NAME SIU: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.FIRST_NAME
17-6	ST			Prefix	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. SALUTATION_TBL.SALUTATION ORM: Home Doctor <-- ADT/ORM/SIU/SRM. SALUTATION_TBL.SALUTATION SRM: Home Doctor <-- ADT/ORM/SIU/SRM. SALUTATION_TBL.SALUTATION SIU: Home Doctor <-- ADT/ORM/SIU/SRM. SALUTATION_TBL.SALUTATION
19	CX	O	N	Visit Number	
19-1	ST			ID	Mapped: ADT: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ADMISSION_NO ADT M: Patient Merge Data <-- ADT (merge only). Surviving_Admission_No ORM: Patient Data <-- ADT/ORM/ORU/SIU/SRM. PATIENT_TBL.ADMISSION_NO ORU: Patient Data <-- ADT/ORM/ORU/SIU/SRM . PATIENT_TBL.ADMISSION_NO SRM: Patient Data <-- ADT/ORM/ORU/SIU/SRM . PATIENT_TBL.ADMISSION_NO SIU: Patient Data <-- ADT/ORM/ORU/SIU/SRM . PATIENT_TBL.ADMISSION_NO ADR: Patient Data <-- ADR (query). XML.Patient_Admission
50	CX	O	N	Alternate Visit ID	
50-4-1	IS			AssigningAuthority. NamespaceID	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION ORM: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION SRM: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION SIU: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITUTION_TBL.INSTITUTION

PV1-2: Expected Values
 I Inpatient (In)
 O Outpatient (Out)
 P Preadmin (Pre In)
 R Recurring Patient (Post In)

PV1-4: Expected Values
 E Emergency

Value Translations

SEQ	DT	Element Name	HL7 Value	EBIII Value	Comment
2	IS	Patient Class	I	1	Inpatient
			O	2	Outpatient
			P	3	Preadmin
			R	4	Recurring Patient
			<*>	0	Undefined
4	IS	Admission Type	E	1	Emergency
			<*>	0	No emergency

6.2.6.7 PR1 – Procedures Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID procedure	Ignored
4	ST	R	N	Procedure Description	Mapped: ADR: Former Operations <-- ADR (query). FormerOP_Description
5	TS	R	N	Procedure date/time	Mapped: ADR: Former Operations <-- ADR (query). FormerOP_Date

6.2.6.8 IN1 – Insurance Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID insurance	Ignored
3	CX	O	N	Insurance Company ID	
3-1	ID			ID	Mapped: ADT: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_CODE ORM: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_CODE ADR: Patient Data <-- ADR (query). XML.Patient_InsuranceCode
4	XON	O	N	Insurance company name	
4-1	ST			Organization Name	Mapped: ADT: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_NAME ORM: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_NAME ADR: Patient Data <-- ADR (query). XML.Patient_InsuranceName
36	ST	O	N	Policy number	Mapped: ADT: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_CUST_NO ORM: Patient Data <-- ADT/ORM/SIU/SRM. PATIENT_TBL.INSURANCE_CUST_NO ADR: Patient Data <-- ADR (query). XML.Patient_InsuranceCustNo

6.2.6.9 AL1 – Patient Allergy Information Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID – Allergy	Ignored
3	CE	R	N	Allergy Code/Mnemonic/Description	
3-2	ST	O	N	Text	Mapped: ADT: Risks <-- ADT/ORM/ORU. RISKS_TBL.RISKS ORM: Risks <-- ADT/ORM/ORU. RISKS_TBL.RISKS ADR: Risks <-- ADR (query).XML.Risk_Description
6	DT	O	N	Identification Date	Mapped: ADT: Risks <-- ADT/ORM/ORU. PATIENT_RISKS1_TBL.RECORD_DATE ORM: Risks <-- ADT/ORM/ORU. PATIENT_RISKS1_TBL.RECORD_DATE ADR: Risks <-- ADR (query).XML.Risk_Date

6.2.6.10 STF – Staff Identification Segment (Transmissions of Home Doctor Data)

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	CE	O	N	STF primary key	Ignored
2	CE	R	N	Staff ID code	
2-1				Identifier	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO ADR: Home Doctor <-- ADR (query).Doctor_No
3	PN	O	N	Staff name	
3-1				Family Name	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.LAST_NAME ADR: Home Doctor <-- ADR (query).Doctor_LastName
3-2				Given Name	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.FIRST_NAME ADR: Home Doctor <-- ADR (query).Doctor_FirstName
4	ID	O	N	Staff type	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. OCCUPATION_TBL.OCCUPATION ADR:Home Doctor <-- ADR (query).Doctor_Occupation
5	ID	O	N	Sex	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.GENDER_P ADR: Home Doctor <-- ADR (query).Doctor_Gender
8	CE			Department	
8-2	ST			Text	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. INSTITIUTION_TBL.INSTITIUTION ADR:Home Doctor <-- ADR (query).Doctor_Institution
9	CE	O	N	Service	
9-2	ST			Text	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. FUNCTION_TBL.FUNC ADR: Home Doctor <-- ADR (query).Doctor_Function
10	TN	O	N	Phone	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.TEL1

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					ADR: Home Doctor <-- ADR (query).Doctor_Tel1
11	AD	O	N	Office home address	
11-1	ST			Street Address	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.STREET_NUMBER ADR: Home Doctor <-- ADR (query).Doctor_Street
11-3	ST			City	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM.WORKER_TBL.CITY ADR: Home Doctor <-- ADR (query).Doctor_City
11-5	ST			Zip or Postal Code	Mapped: ADT: Home Doctor <-- ADT/ORM/SIU/SRM. WORKER_TBL.ZIP_CODE ADR: Home Doctor <-- ADR (query).Doctor_ZipCode

STF-5: Expected Values
 U Unknown
 M Male
 F Female

Value Translations

SEQ	DT	Element Name	HL7 Value	EBIII Value	Comment
5	ID	Sex	F	2	Female
			M	1	Male
			U	0	Unknown
			<*>	0	Unknown

6.2.6.11 ORC – Common Order Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	ID	R	N	Order Control	Ignored
16	CE	O	N	Order Control Code Reason	
16-2				Text	Mapped: ORM: Indications <-- ORM/SIU/SRM. INDICATION_TBL.INDICATION

6.2.6.12 OBR – Observation Request Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
2	EI	C	N	Placer Order Number	
2-1				Entity Identifier	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.HL7_ORDER_ID ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.HL7_ORDER_ID
3	EI	O	N	Filler Order Number	
3-1				Entity Identifier	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.EXAM_NO ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.EXAM_NO
4	CE	R	N	Universal Service ID	
4-2				Text	Mapped: ORM:Examination Data <-- ORM/ORU/SIU/SRM. EXAMTYPE_TBL.EXAM_TYPE ORU:Examination Data <-- ORM/ORU/SIU/SRM. EXAMTYPE_TBL.EXAM_TYPE
7	TS	O	N	Observation	Mapped:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
				Date/Time	ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.START_TIME ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.START_TIME
8	TS	O	N	Observation End Date/Time	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.END_TIME ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.END_TIME
13	ST	O	N	Relevant Clinical Info	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.ADDITIONAL_INFO ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAM_TBL.ADDITIONAL_INFO
20	ST	O	N	Filler Field 1	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. EXAMSPACE_TBL.EXAMSPACE ORU: Examination Data <-- ORM/ORU/SIU/SRM. EXAMSPACE_TBL.EXAMSPACE
21	ST	O	N	Filler Field 2	Mapped: ORM: Examination Data <-- ORM/ORU/SIU/SRM. DEPARTMENT_TBL.DEPARTMENT ORU: Examination Data <-- ORM/ORU/SIU/SRM. DEPARTMENT_TBL.DEPARTMENT
32	CM	O	N	Principal Result Interpreter	
32-1-1	ST			Name.IDNumber	Mapped: ORM: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.DOCTOR_NO ORU: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.DOCTOR_NO
32-1-2	ST			Name.Family Name	Mapped: ORM: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.LAST_NAME ORU: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.LAST_NAME
32-1-3	ST			Name.Given Name	Mapped: ORM: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.FIRST_NAME ORU: Examiner <-- ORM/ORU/SIU/SRM. WORKER_TBL.FIRST_NAME
32-1-6	ST			Name.Prefix	Mapped: ORM: Examiner <-- ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION ORU: Examiner <-- ORM/ORU/SIU/SRM. SALUTATION_TBL.SALUTATION
33	CM	O	Y/3	Assistant Result Interpreter	
33-1-1	ST			Name.IDNumber	Mapped: ORM: Assistant Doctors <-- ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO
33-1-2	ST			Name.Family Name	Mapped: ORM: Assistant Doctors <-- ORM/SIU/SRM. WORKER_TBL.LAST_NAME
33-1-3	ST			Name.Given Name	Mapped: ORM: Assistant Doctors <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME
33-1-6	ST			Name.Prefix	Mapped: ORM: Assistant Doctors <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION
34	CM	O	Y/3	Technician	
34-1-1	ST			Name.IDNumber	Mapped: ORM: Nurses <-- ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO
34-1-2	ST			Name.Family Name	Mapped:

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
					ORM: Nurses <-- ORM/SIU/SRM. WORKER_TBL.LAST_NAME
34-1-3	ST			Name.Given Name	Mapped: ORM: Nurses <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME
34-1-6	ST			Name.Prefix	Mapped: ORM: Nurses <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION

OBR – 4 – 2 : ENDOBASE IV expects the name of an examination type defined in ENDOBASE IV.

Comments: Requests to schedule an examination are only stored into the database, when a HL7_ORDER_ID is contained. HL7 service checks, whether there is already an examination with the same HL7_ORDER_ID. When not found and the transmitted start and end date and time are not in the past, a new examination is inserted into the database.
When the transmitted HL7_ORDER_ID is found and the appropriate examination has not been started or performed, the examination is updated (rescheduled).
The received examination type must exactly correspond to an existing one in ENDOBASE IV. If this cannot be realised according value translations have to be defined in ENDOBASE IV.

6.2.6.13 OBX – Observation Result Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID Observational Simple	Ignored
2	ID	R	N	Value type	Ignored
3	CE	O	N	Observation Identifier	
3-1	ST			Identifier	Mapped: ORU: Labresult Data <-- ORU. EXAM_LABTEST_TBL.HL7_TEST_ORDER_ID
4	ST	O	N	Observation Sub-ID	Mapped: ORU: Laresult Data <-- ORU. EXAM_LABTEST_TBL.RESULT_COMMENT
5	FT	R	N	Observation Value	Mapped: ORU: Labresult Data <-- ORU. EXAM_LABTEST_TBL.RESULT
14	TS	O	N	Date/Time Of The Observation	Mapped: ORU: Labresult Data <-- ORU. EXAM_LABTEST_TBL.RESULT_DATE
16	XCN	O	N	Responsible Observer	
16-1	ST			ID Number	Mapped: ORU: Labresult Data <-- ORU. EXAM_LABTEST_TBL.UPDATE_USER_ID

Comments: As in HL7 Service, field 5, Observation Result, is implemented as FT (Formatted Text), this field must not contain any separators (| ^ & ~ \).

6.2.6.14 DG1 – Diagnosis Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID diagnosis	Ignored
4	ST	O	N	Diagnosis description	Mapped: ORM: Main Diagnosis <-- ORM/SIU/SRM. DIAGNOSIS_TBL.diagnosis SRM: Main Diagnosis <-- ORM/SIU/SRM. DIAGNOSIS_TBL.diagnosis SIU: Main Diagnosis <-- ORM/SIU/SRM. DIAGNOSIS_TBL.diagnosis

6.2.6.15 ARQ – Appointment Request Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	EI	R	N	Placer Appointment ID	
1-1				Entity Identifier	Mapped: SRM: Examination Data <-- ORM/SIU/SRM. EXAM_TBL.HL7_ORDER_ID
2	EI	O	N	Filler Appointment ID	
2-1				Entity Identifier	Mapped: SRM: Examination Data <-- ORM/SIU/SRM.EXAM_TBL.EXAM_NO
7	CE	O	N	Appointment Reason	
7-2	ST			Text	Mapped: SRM:Indications <-- ORM/SIU/SRM.INDICATION_TBL.INDICATION
11	DR	R	N	Requested Start Date/Time Range	
11-1	TS			Range Start Date/Time	Mapped: SRM: Examination Data <-- ORM/SIU/SRM.EXAM_TBL.START_TIME
11-2	TS			Range End Date/Time	Mapped: SRM: Examination Data <-- ORM/SIU/SRM.EXAM_TBL.END_TIME

Comments: Requests to schedule an examination are only stored into the database, if a HL7_ORDER_ID is contained. HL7 service checks, whether there is already an examination with the same HL7_ORDER_ID. When not found and the action is „Only New“ or „New And Update“ and the transmitted start and end date and time are not in the past, a new examination is inserted into the database. When the transmitted HL7_ORDER_ID is found and the action is „New And Update“ or „Only Update“ and the appropriate examination has not been started or performed, the examination is updated (rescheduled). In case the action is „Delete“, the examination is deleted from database.

6.2.6.16 SCH – Schedule Activity Information Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	EI	R	N	Placer Appointment ID	
1-1				Entity Identifier	Mapped: SIU: Examination Data <-- ORM/SIU/SRM. EXAM_TBL.HL7_ORDER_ID
2	EI	O	N	Filler Appointment ID	
2-1				Entity Identifier	Mapped: SIU: Examination Data <-- ORM/SIU/SRM.EXAM_TBL. EXAM_NO
5	CE	O	N	Schedule ID	
5-1				Identifier	Mapped: SIU: Examination Data <-- ORM/SIU/SRM.EXAM_TBL. DICOM_Study_ID
7	CE	O	N	Appointment Reason	
7-2	ST			Text	Mapped: SIU:Indications <-- ORM/SIU/SRM.INDICATION_TBL.INDICATION
11	TQ	R	N	Appointment Timing Quantity	
11-4	TS			Start Date/Time	Mapped: SIU: Examination Data <-- ORM/SIU/SRM.EXAM_TBL.START_TIME
11-5	TS			End Date/Time	Mapped: SIU: Examination Data <-- ORM/SIU/SRM.EXAM_TBL.END_TIME

Comments: Notifications to schedule an examination are only stored into the database, if a HL7_ORDER_ID is contained. HL7 service checks, whether there is already an examination with the same HL7_ORDER_ID. When not found and the action is „Only New“ or „New And Update“ and the transmitted start and end date and time are not in the past, a new examination is inserted into the database. When the transmitted HL7_ORDER_ID is found and the action is „New And Update“ or „Only Update“ and the appropriate examination has not been started or performed, the examination is updated (rescheduled). In case the action is „Delete“, the examination is deleted from database.

6.2.6.17 RGS – Resource Group Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID	Ignored, but must be present

6.2.6.18 AIS – Appointment Information Service Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID	Ignored
3	CE	R	N	Universal Service Identifier	
3-2	ST			Text	Mapped: SRM: Examination Data <-- ORM/SIU/SRM. EXAMTYPE_TBL.EXAM_TYPE SIU: Examination Data <-- ORM/SIU/SRM. EXAMTYPE_TBL.EXAM_TYPE

AIS – 3 – 2 : ENDOBASE IV expects the name of an examination type which is defined in ENDOBASE IV.

6.2.6.19 AIG – Appointment Information General Resource Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID	Ignored
4	CE	R	N	Resource Type	
4-2	ST			Text	Mapped: SRM: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.MEDICATION SIU: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.MEDICATION
6	NM	O	N	Resource Quantity	Mapped: SRM: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.QUANTITY SIU: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.QUANTITY
7	CE	O	N	Resource Quantity Units	
7-2	ST			Text	Mapped: SRM: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.QUANTITY_UNIT SIU: Medications <-- ORM/SIU/SRM. MEDICATION_TBL.QUANTITY_UNIT

6.2.6.20 AIL – Appointment Information Location Resource Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID	Ignored
3	PL	C	N	LocationResource ID	
3-9	ST			Location Description	Mapped: SRM: Examination Data <-- ORM/SIU/SRM. EXAMSPACE_TBL.EXAMSPACE SIU: Examination Data <-- ORM/SIU/SRM. EXAMSPACE_TBL.EXAMSPACE
5	CE	O	N	Location Group	
5-2	ST			Text	Mapped: SRM: Examination Data <-- ORM/SIU/SRM. DEPARTMENT_TBL.DEPARTMENT SIU: Examination Data <-- ORM/SIU/SRM. DEPARTMENT_TBL.DEPARTMENT

6.2.6.21 AIP – Appointment Information Personnel Resource Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	SI	R	N	Set ID	Ignored
3	XCN	C	N	Personnel Resource ID	
3-1	ST			ID Number	Mapped: SRM: Examiner <-- ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO SIU: Examiner <-- ORM/SIU/SRM. WORKER_TBL.DOCTOR_NO
3-2	ST			Family Name	Mapped: SRM: Examiner <-- ORM/SIU/SRM. WORKER_TBL.LAST_NAME SIU: Examiner <-- ORM/SIU/SRM. WORKER_TBL.LAST_NAME
3-3	ST			Given Name	Mapped: SRM: Examiner <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME SIU: Examiner <-- ORM/SIU/SRM. WORKER_TBL.FIRST_NAME
3-6	ST			Prefix	Mapped: SRM: Examiner <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION SIU: Examiner <-- ORM/SIU/SRM. SALUTATION_TBL.SALUTATION

6.2.6.22 MRG – Merge Patient Information Segment

SEQ	DT	R/O	RP	Element Name	ENDOBASE IV
1	CX	R	Y	Prior Patient ID - Internal	
1-1	ID			ID	Mapped: ADT M: Patient Merge Data <-- ADT (merge only).Absorbed_Patient_ID
5	CX	O	N	Prior Visit Number	
5-1	ID			ID	Mapped: ADT M: Patient Merge Data <-- ADT (merge only).Absorbed_Admission_No (only for visit merge messages A42, A45, A50)

6.2.7 Supported Field Types

6.2.7.1 ENDOBASE IV Field Types

The HL7 Service supports the following 5 field types to store data in ENDOBASE IV database:

Data Type	Data Type Name	Comments
S	String	
I	Integer	
N	Decimal	
D	Date	
TS	Time stamp	Same as Date

6.2.7.2 HL7 Field Types

The HL7 Service supports the following HL7 field types read from HL7 messages:

Data Type Category/ Data Type	Data Type Name	Notes/Format
Alphanumeric		
ST	String	
TX	Text data	
FT	Formatted text	
Numerical		
CQ	Composite quantity with units	<quantity (NM)> ^ <units (CE)>
MO	Money	<quantity (NM)> ^ <denomination (ID)>
NM	Numeric	
SI	Sequence ID	
Identifier		
ID	Coded values for HL7 tables	
IS	Coded value for user-defined tables	
HD	Hierarchic designator	<namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)> Used only as part of EI and other data types.
EI	Entity identifier	<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>
RP	Reference Pointer	<pointer (ST)>
PL	Person location	<point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ < location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^ <floor (IS)> ^ <location description (ST)>
PT	Processing type	<processing ID (ID)> ^ <processing mode (ID)>
Date/Time		
DT	Date	YYYY[MM[DD]]
TM	Time	HH[MM[SS].[S[S[S[S]]]]][+/-ZZZZ]
TS	Time stamp	YYYY[MM[DD][HHMM[SS].[S[S[S[S]]]]]]][+/-ZZZZ] ^ <degree of precision>
Code Values		
CE	Coded element	<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>
CF	Coded element with formatted values	<identifier (ID)> ^ <formatted text (FT)> ^ <name of coding system (ST)> ^ <alternate identifier (ID)> ^ <alternate formatted text (FT)> ^ <name of alternate coding system (ST)>
CK	Composite ID with check digit	<ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ < assigning authority (HD)>
CN	Composite ID number	<ID number (ST)> ^ <family name (ST)> ^ <given

Data Type Category/ Data Type	Data Type Name	Notes/Format
	and name	name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)>
CX	Extended composite ID with check digit	<ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ < assigning authority (HD))> ^ <identifier type code (IS)> ^ < assigning facility (HD)
XCN	Extended composite ID number and name	In Version 2.3, used instead of the CN data type. <ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
Generic		
CM	Composite	No new CM's are allowed after HL7 Version 2.2. Hence there are no new CM's in Version 2.3.
Demographics		
AD	Address	<street address (ST)> ^ < other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)>
PN	Person name	<family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)>
TN	Telephone number	[NN] [(999)]999-9999[X99999][B99999][C any text]
XAD	Extended address	In Version 2.3, replaces the AD data type. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>
XPN	Extended person name	In Version 2.3, replaces the PN data type. <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <name type code (ID) >
XON	Extended composite name and ID number for organizations	<organization name (ST)> ^ <organization name type code (IS)> ^ <ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>
XTN	Extended telecommunications number	In Version 2.3, replaces the TN data type. [NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>
Price data		
CP	Composite price	In Version 2.3, replaces the MO data type. <price (MO)> ^ <price type (ID)> ^ <from value (NM)> ^ <to value (NM)> ^ <range units (CE)> ^ <range type (ID)>

Data Type Category/ Data Type	Data Type Name	Notes/Format
Patient Administration/Financial Information		
FC	Financial class	<financial class (ID)> ^ <effective date (TS)>
Master Files		
DLN	Driver's license number	<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>
JCC	Job code/class	<job code (IS)> ^ <job class (IS)>
Time Series		
TQ	Timing/quantity	<quantity (CQ)> ^ <interval (CM)> ^ <duration (ST)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ST)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ST)> ^ <order sequencing (CM)>

6.2.7.3 Data Compatibility

6.2.7.3.1 Outgoing Data

This table shows which ENDOBASE IV field types should be mapped to HL7 field types for outgoing messages. If other field types were mapped, the result would not be predictable.

ENDOBASE IV Field Type		HL7 Field Type		
Data Type	Data Type Name	Data Type	Data Type Name	Comment
S	String	ST	String	
		TX	Text data	
		FT	Formatted text	
		ID	Coded value for HL7 table	
		IS	Coded value for user-defined table	
		TN	Telephone number	
I	Integer	NM	Numeric	
		SI	Sequence ID	
N	Decimal	NM	Numeric	
D	Date	DT	Date	Only date
		TM	Time	Only time
		TS	Time stamp	Date and time
TS	Time stamp	DT	Date	Only date
		TM	Time	Only time
		TS	Time stamp	Date and time

6.2.7.3.2 Incoming Data

This table shows which HL7 field types should be mapped to ENDOBASE IV field types for incoming messages. If other field types were mapped, the result would not be predictable.

HL7 Field Type		ENDOBASE IV Field Type		
Data Type	Data Type Name	Data Type	Data Type Name	Comment
ST	String	S	String	
TX	Text data			
FT	Formatted text			
ID	Coded value for HL7 table			
IS	Coded value for user-defined table			
TN	Telephone Number			
SI	Sequence ID	I	Integer	
NM	Numeric	N	Decimal	
DT	Date	D	Date	Only date
TM	Time			Only time
TS	Time stamp			Date and time
DT	Date	TS	Time stamp	Only date
TM	Time			Only time
TS	Time stamp			Date and time

6.2.8 Used Escape Sequences

There are several characters, printable and non-printable ones that cannot be directly used within HL7 messages since they have a special meaning and are used to define the structure of messages (e.g. the field separators). If an HL7 field should contain such characters they have to be included encoded. According to the HL7 standard escape sequences have to be used for this purpose.

ENDOBASE IV supports escape sequences within HL7 fields of following types:

Data Type	Data Type Name
ST	String
TX	Text data
FT	Formatted text

Escape sequences start with the character „\“, which is the default escape character defined in the HL7 standard.

The following escape sequences are supported by ENDOBASE IV for incoming and outgoing messages:

Escape Sequence	Meaning
\\.sp+5\\	Tabulator
\\.br\\	Line break
\\F\\	Represents the character „ ”
\\S\\	Represents the character „^”
\\T\\	Represents the character „&”
\\R\\	Represents the character „~”
\\E\\	Represents the character „\”

7 Handling of Repeatable Message Components

7.1 Repeatable Segments

A repeatable segment is repeated when multiple values are found in the database which are mapped to the same field of this segment. When segments are grouped with other repeatable segments and the group is repeatable itself, only the repeatable segment is repeated inside the group. The group itself is unique.

The exception to the rule is the Financial Transaction Group (FT1 {[PR1]}) within a DFT message:

There is one group for each Billing Code (FT1) without any Procedures Segments. In addition, the last group includes one FT1 Segment without Billing Codes and one PR1 Segment for each Procedure Code.

Example:

- Diagnosis Codes in segment DG1:
There is one DG1 segment for each diagnosis code:
DG1, DG1, DG1, ...
- Billing and Procedure Codes
FT1, FT1, FT1, PR1, PR1, ...

7.2 Repeatable Fields

In this implementation repeatable fields are not repeated in outgoing messages. For transmitting multiple values the segment itself is then repeated.

It is recommended that on incoming messages fields are also not repeated within segments, but that the segment is repeated. When repeated fields occur, only the first item is read and inserted into the ENDOBASE IV database.

Exception to this rule:

OBR-segment in ORM O01 message

Field 33: „Assistant Result Interpreter“ is repeatable 3 times.

Field 34: „Technician“ is repeatable 3 times.

8 Error Handling

There are certain errors that are trapped by the HL7 Service and are either displayed in Trace Mode and/or written into the service's log file in any case. Errors are displayed with their number and a short description.

HL7 Service does not start or terminates in case of writing into log file failed. A message box is displayed which informs about termination, then.

8.1 Database-related Errors

HL7 Service starts but will stay inactive as long as there is no connection to ENDOBASE IV database. That means that the HL7 Service window is not displayed. HL7 Service will be activated when the database connection is established.

If the database connection gets lost while HL7 Service is running, HL7 Service must be restarted after the database connection has been re-established.

All database errors are written into log file. In case the error occurred on a database transaction, the SQL statement which caused the error is also written into log file.

8.2 Transmission Errors

8.2.1 Missing Connection to Receiver

Displayed Message: Connection to <type> server broken
Log File: Description which receiver is not found or refused connection

8.2.2 Other Transmission Errors

Displayed Message: Send failed! Connection refused!
Log File: Description which receiver caused problem

8.2.3 Wrong Message Format

Displayed Message: Receive Error, Error Code, ParsMsg
Log File: Same as displayed

8.2.4 Timeout Error

Displayed Message: Message ID timed out
Log File: Same as displayed

9 Message Examples

9.1 General Acknowledgement ACK

```
MSH|^~\&|EB^EB^GUID||DPS^DPS^GUID||199601061000||ACK^A02|  
C7E7-85-11-A5-004005|P|2.3|AL|NE  
MSA|AA|000002
```

9.2 Patient Query QRY (ADT) A19

```
MSH|^~\&|EB^EB^GUID||DPS^DPS^GUID||20000908063220||QRY^A19|  
C7E6-85-11-A5-004005|P|2.3|AL|NE  
QRD|20000908000000|R||1||10240.00^CH&Characters|^Maier^Hans|DEM
```

9.3 Add Patient Account BAR P01

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID  
||20000908064603||BAR^P01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE  
EVN|P03|20000908084603  
PID|1||1235||JONES^SARAH^A|WILLIAMS|19610615000000|F||AMERICAN|  
1200 N ELM STREET^GREENSBORO^27401-1020|(919)379-1212|  
(919)271-3434||||123456789||||GREENSBORO||||^AMERICAN|20011231063000  
PV1|1||||001^Miller^Gary^^Dr.||||002^Webster^Daniel^^Dr.||20310  
DG1|1|EBM|1^Ordnationsgebühr je Beh.sfall (0)|Ordnationsgebühr je Beh.sfall (0)  
|20000726000000  
DG1|2|EBM|741^Gastroskopie (1400)|Gastroskopie (1400)|20000726000000  
DG1|3|EBM|7026^3-D-Technik Zuschlag (600)|3-D-Technik Zuschlag (600)  
|20000726000000  
PR1|1|GoÄ|1^Beratung [auch telefonisch]||20000726000000||10  
PR1|2|GoÄ|253^Injektion, i.v.||20000726000000||2  
PR1|3|GoÄ|683^Gastro- + Ösophagoskopie [vollflexible Instr.]||20000726000000||20  
PR1|4|GoÄ|4071^5-HIES||20000726000000||10
```

9.4 Post Detail Financial Transaction DFT P03

```
MSH|^~\&|EB^EB^GUID||DPS^DPS^GUID  
||20000908064603||DFT^P03|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE  
EVN|P03|20000908084603  
PID|1||1235||JONES^BETTY^A|SMITH|19610615000000|F||American  
|1200 N ELM STREET^GREENSBORO^27401-1020|(919)379-1212|  
(919)271-3434||||123456789||||New York||||^American|20010131  
PV1|1||||003^Lance^William^^Dr.||||004^Smith^Willma^^Dr.||1234532  
FT1|1|1234545||20010116000000||Billing|Bill^Test Billing Code||1.00  
||123.00|ENDOBASE IV||004||||U200^Ima^Rin^^Dr.|112233^Hausarzt^Paul^^Dr.^^Privat  
FT1|2|1234545||20010116000000||Billing|B123^Billing 2||2.00  
||23.23|ENDOBASE IV||004||||U200^Ima^Rin^^Dr.|112233^Hausarzt^Paul^^Dr.^^Privat  
FT1|3|||||||ENDOBASE IV||004||||U200^Ima^Rin^^Dr.|112233^Hausarzt^Paul^^Dr.^^Privat  
PR1|1|GoÄ|1^Beratung [auch telefonisch]||20000726000000||1.00  
PR1|2|GoÄ|253^Injektion, i.v.||20000726000000||1.00  
PR1|3|GoÄ|683^Gastro- + Ösophagoskopie [vollflexible Instr.]||20000726000000||1.00  
PR1|4|GoÄ|4071^5-HIES||20000726000000||1.00  
DG1|1|EBM|1^Ordnationsgebühr je Beh.sfall (0)|Ordnationsgebühr je Beh.sfall(0)  
|20000726000000  
DG1|2|EBM|741^Gastroskopie (1400)|Gastroskopie (1400)|20000726000000  
DG1|3|EBM|7026^3-D-Technik Zuschlag (600)|3-D-Technik Zuschlag (600)  
|20000726000000  
IN1|1||1234|AnyInsurance||||||||||||||||||||||456667878
```

9.5 General Order ORM 001 (Request for Laboratory Test Results)

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID  
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE  
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F  
||Deutsch|Strasse 305^Dorfen^^83123||(0819)3791212  
|(0819)2713434||||123456789||||Dorfen||||^Deutsch|20020131000000  
PV1|1||||||||||||0021324  
ORC|NW|EB_12||||||12234^Examiner^Harry^^Dr  
OBR|1||||^Hb|||20000726100000|||||Polypectomy&Hb^1^Blood sample^Upper stomach
```

9.6 Unsolicited Transmission of Observation ORU R01

9.6.1 Sending Report Text Only (Default)

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID  
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE  
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F  
||Deutsch|Strasse 305^Dorfen^^83123||(0819)3791212  
|(0819)2713434||||123456789||||Dorfen||||^Deutsch|20020131000000  
PV1|1||||||||||||0021324  
OBR|1||1^ENDOBASE IV|COLO|||20000726100000||||||1234||||Endo|20000726000000  
||ENDOBASE IV|F|||||Administrator|Administrator  
OBX|1|FT|1^1|1|Examination Report\.br\\.br\\.brWe are reporting about an examination  
of the type EGD,  
that we performed on 26.07.2000 on your patient.\.br\\.br  
Let us give you the results:\.br\tAB 1\.br\tB 1 Tab 1\.br\tAB 2\.br\tB 1 Tab  
2\.br\\.brThat's it, man!\.br\\.brRegards,\.br\\.br\\.br  
Prof. Dr. med. Fritz\.br||||F|||20000726000000
```

9.6.2 Sending Report Text With Images (Optional)

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID  
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE  
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F  
||Deutsch|Strasse 305^Dorfen^^83123||(0819)3791212  
|(0819)2713434||||123456789||||Dorfen||||^Deutsch|20020131000000  
PV1|1||||||||||||0021324  
OBR|1||1^ENDOBASE IV|COLO|||20000726100000||||||1234||||Endo|20000726000000  
||ENDOBASE IV|F|||||Administrator|Administrator  
OBX|1|FT|1^1|1|Examination Report\.br\\.br\\.brWe are reporting about an examination  
of the type EGD,  
that we performed on 26.07.2000 on your patient.\.br\\.br  
Let us give you the results:\.br\tAB 1\.br\tB 1 Tab 1\.br\tAB 2\.br\tB 1 Tab  
2\.br\\.brThat's it, man!\.br\\.brRegards,\.br\\.br\\.br  
Prof. Dr. med. Arnold Franz\.br||||F|||20000726000000  
OBX|2|RP|1^1|1|//EB3/EB3_File/1_1/Image.JPG||||F|||20000726000000  
OBX|3|RP|1^1|1|//EB3/EB3_File/1_1/Image1.JPG||||F|||20000726000000  
OBX|4|RP|1^1|1|//EB3/EB3_File/1_1/Image2.JPG||||F|||20000726000000
```

9.6.3 Sending Report Images Only (Optional)

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F
||Deutsch|Strasse 305^^Dorfen^^83123||(0819)3791212
|(0819)2713434||||123456789|||Dorfen|||^^Deutsch|20020131000000
PV1|1||||||||||||0021324
OBR|1||1^ENDOBASE IV|COLO|||20000726100000||||1234||||Endo|20000726000000
||ENDOBASE IV|F|||||Administrator| Administrator
OBX|1|RP|1^1|1|//EB3/EB3_File/1_1/Image.JPG|||||F|||20000726000000
OBX|2|RP|1^1|1|//EB3/EB3_File/1_1/Image1.JPG|||||F|||20000726000000
OBX|3|RP|1^1|1|//EB3/EB3_File/1_1/Image2.JPG|||||F|||20000726000000
```

9.6.4 Sending Report Reference Pointer (Optional)

```
MSH|^~\&|ENDOBASE IV^ ENDOBASE IV^GUID||AHC_HIS_Port^AHC_HIS_Port^GUID
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F
||Deutsch|Strasse 305^^Dorfen^^83123||(0819)3791212
|(0819)2713434||||123456789|||Dorfen|||^^Deutsch|20020131000000
PV1|1||||||||||||0021324
OBR|1||1^ENDOBASE IV|COLO|||20000726100000||||1234||||Endo|20000726000000
||ENDOBASE IV|F|||||Administrator| Administrator
OBX|1|RP|1^1|1|//EB3/EB3_File/1_1/1.sdw|||||F|||20000726000000
```

9.6.5 Sending Structured Report (Optional)

```
MSH|^~\&|EB^EB^GUID^|MSG^MSG^GUID^|20020424132146||ORU^R01
|999B-67-1D-CC-022AE4|P|2.3||NE|NE
PID|1||UAF007||Fritz^Arnold||19500315|M
OBR|1||74^ENDOBASE IV|ERCP|||20020424000000|||||Endo|20020424000000
||ENDOBASE IV|C
OBX|1|FT|ERCP^80^^^Tab1|1|Das ist ein Textblock\.\br\
Das ist ein 2. Textblock|||||C|||20020424000000
OBX|2|FT|ERCP^80^^^Tab2|1|Der 2. Tabtextblock|||||C|||20020424000000
```

9.6.6 Sending RTF/PDF Link (Optional)

```
MSH|^~\&|EB^EB^GUID^|MSG^MSG^GUID^|20030128045446||ORU^R01
|C7C5-5E-4D-AC-E2DBCA|P|2.3||NE|NE
PID|1||test id||Test last name^Test first name||19370313|M
OBR|1||1^ENDOBASE IV|COLO|||20030128000000|||||Endo|20030128000000
||ENDOBASE IV|C
OBX|1|RP|COLO^8|1|//EB3TESTPCW2KPRO/EB3_SPOOL/1_10_10/13.RTF|
|Report RTF|||||C|||20030128000000
OBX|2|RP|COLO^8|1|C:/1_1_8.PDF|Report PDF|||||C|||20030128000000
```

9.6.7 Sending Anatomic Graphic (Optional)

```
MSH|^~\&|EB^EB^GUID^|MSG^MSG^GUID^|20030128045446||ORU^R01
|C7C5-5E-4D-AC-E2DBCA|P|2.3||NE|NE
PID|1||test id||Test last name^Test first name||19370313|M
OBR|1||1^ENDOBASE IV|COLO|||20030128000000|||||Endo|20030128000000
||ENDOBASE IV|C
OBX|1|RP|COLO^9^^^Anatomic Graphic|1|//X211/EB3_SPOOL/2F_0_0/2_2F_Graphic.jpg
|||||C|||20061128131400
```

9.6.8 Sending Video (Optional)

MSH|^~\&|EB^EB^GUID^|MSG^MSG^GUID^||20030128045446||ORU^R01
|C7C5-5E-4D-AC-E2DBCA|P|2.3||NE|NE
PID|1||test id||Test last name^Test first name||19370313|M
OBR|1||1^ENDOBASE IV|COLO|||20030128000000|||||||||Endo|20030128000000
||ENDOBASE IV|C
OBX|1|RP|COLO^9^^^Video|1//X211/EB3_MOVIE_SPOOL/
EB3_MOVIE_2F_01_20061128_1308_Müller.E3M02|||||C|||20061128131400

9.7 Patient Query Response ADR (ADT) A19

MSH|^~\&|DPS^DPS^GUID^|EB^EB^GUID^||200007250712||ADR^A19|00002|D|2.3||AL|NE
MSA|AA|00001
QRD|200007250700|R||UAF_001|||10240.00^CH|^Franz^Lotte|DEM
EVN|A19|200007250712
PID|1||191919||Franz^Lotte^Marie^^Mrs.|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||||371-66-9256||||New York|||||^American|20010131
PV1|1||E|||0148^ADDISON^JAMES^JOYCE^Dr.
|0148^ADDISON^JAMES^JOYCE^Dr.|||||AMB|||||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
PR1|||Operation|20000101
IN1|1||BC1|BLUE CROSS|||||||||||||||||5475698
STF|1|1234|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.8 Admit/Visit Notification ADT A01

MSH|^~\&|DPS^DPS^GUID^|EB^EB^GUID^||200007250712||ADT^A01|00003|D|2.3||AL|NE
EVN|A01|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||||371-66-9256||||New York|||||^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
IN1|1||BC1|BLUE CROSS|||||||||||||||||5475698
STF|1|001|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.8 Transfer a Patient ADT A02

MSH|^~\&|DPS^DPS^GUID^|EB^EB^GUID^||200007250712||ADT^A02|00003|D|2.3||AL|NE
EVN|A02|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||||371-66-9256||||New York|||||^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434

9.9 Discharge/End Visit ADT A03

MSH|^~\&|DPS^DPS^GUID^|EB^EB^GUID^||200007250712||ADT^A03|00003|D|2.3||AL|NE
EVN|A03|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||||371-66-9256||||New York|||||^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
DG1|1||Akuter Bauch

9.10 Register Patient ADT A04

MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A04|00003|D|2.3||AL|NE
EVN|A04|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||371-66-9256|||New York|||^^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
IN1|1||BC1|BLUE CROSS|||||||||||||||||||||5475698
STF|1|001|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.11 Pre-Admit Patient ADT A05

MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A05|00003|D|2.3||AL|NE
EVN|A05|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||371-66-9256|||New York|||^^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
IN1|1||BC1|BLUE CROSS|||||||||||||||||||||5475698
STF|1|001|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.12 Change Outpatient to Inpatient ADT A06

MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A06|00003|D|2.3||AL|NE
EVN|A06|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||371-66-9256|||New York|||^^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
IN1|1||BC1|BLUE CROSS|||||||||||||||||||||5475698
STF|1|001|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.13 Change Inpatient to Outpatient ADT A07

MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A07|00003|D|2.3||AL|NE
EVN|A07|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344
|(900)485-5344|||371-66-9256|||New York|||^^American|20010131
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
AL1|1|^Testallergy|||20000721
AL1|2|^Allergy against lemons|||19781023
AL1|3|^Jodine|||19890101
IN1|1||BC1|BLUE CROSS|||||||||||||||||||||5475698
STF|1|001|Miller^Arnold|Doctor|M|||^Hospital|^Internist|(030)123456|Street^^City^^1234

9.14 Cancel Admit/Visit Notification ADT A11

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A11|00003|D|2.3||AL|NE  
EVN|A11|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
```

9.15 Merge Patient Information ADT A18

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A18  
    |00003|D|2.3||AL|NE  
EVN|A18|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
MRG|192343
```

9.16 Delete Patient Record ADT A23

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A23|00003|D|2.3||AL|NE  
EVN|A23|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
PV1|1|||||||||AMB|||0148^ADDISON^JAMES||123434
```

9.17 Merge Person Information ADT A30

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A30  
    |00003|D|2.3||AL|NE  
EVN|A30|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
MRG|192343
```

9.18 Merge Patient Information – Patient ID Only ADT A34

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A34  
    |00003|D|2.3||AL|NE  
EVN|A34|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
MRG|192343
```

9.19 Merge Patient Information – Patient ID & Account Number ADT A36

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A36  
    |00003|D|2.3||AL|NE  
EVN|A36|200007250712  
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F  
    ||171 ZOBERLEIN^^ISHPEMING^ ^49849|(900)485-5344  
    |(900)485-5344||||371-66-9256||||New York||||^American|20010131  
MRG|192343
```

9.20 Merge Patient – Internal ID ADT A40

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A40
|00003|D|2.3||AL|NE
EVN|A40|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^\SHPEMING^ ^49849||(900)485-5344
|(900)485-5344||||371-66-9256||||New York||||^American|20010131
MRG|192343
```

9.21 Merge Visit – Visit Number ADT A42

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A42
|00003|D|2.3||AL|NE
EVN|A42|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^\SHPEMING^ ^49849||(900)485-5344
|(900)485-5344||||371-66-9256||||New York||||^American|20010131
MRG||||200004
PV1||||||||||||||||200003
```

9.22 Move Visit Information – Visit Number ADT A45

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A45
|00003|D|2.3||AL|NE
EVN|A45|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^\SHPEMING^ ^49849||(900)485-5344
|(900)485-5344||||371-66-9256||||New York||||^American|20010131
MRG||||200004
PV1||||||||||||||||200003
```

9.23 Change Internal ID ADT A47

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A47
|00003|D|2.3||AL|NE
EVN|A47|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^\SHPEMING^ ^49849||(900)485-5344
|(900)485-5344||||371-66-9256||||New York||||^American|20010131
MRG|192343
```

9.24 Change Visit Number ADT A50

```
MSH|^~\&|DPS^DPS^GUID||EB^EB^GUID||200007250712||ADT^A50
|00003|D|2.3||AL|NE
EVN|A50|200007250712
PID|1||191919||Franz^Lotte^Marie|Schulz|19560129|F
|||171 ZOBERLEIN^^\SHPEMING^ ^49849||(900)485-5344
|(900)485-5344||||371-66-9256||||New York||||^American|20010131
MRG||||200004
PV1||||||||||||||||200003
```

9.25 General Order ORM O01 (Scheduling)

```
MSH|^~\&|SAP^SAP^GUID|099|EB^EB^GUID||20010520173800||ORM^O01
|93710577|P|2.3|AL|NE
PID|1||001000||Meier^Sabine|Müller|19770808|F||
|Karl-Lipp-Str.9^^München^^80992||(089) 14002243|(089)1234
||||198708080150||||München||||^D|20020131063000
PV1|1|||||||||Hausarzt
IN1|1||72560|Test Versicherung||||||||||||||||19870808-396
AL1|1|^Jodine|||20001010
AL1|2|^Cats|||19990113
AL1|3|^Any Contraindication|||20010101
ORC|NW|||||||||^Unklare Indikation
OBR||Placer20|Filler20^COLO|||200306041100|200306041130||||Testcolonoscopy
||||Room 1|Endo|||||10300&Examiner&ExVorname&ExMidname&Oberarzt&Dr.
|10301&Attend1&AttVorname&&&Dr.~10302&Attend2&At2Vorname&&&Dr.
~10303&Attend3&At3Vorname&&&Dr.
|10600&Nurse1&N1Vorname&&&Schw~10601&Nurse2&N2Vorname&&&Schw
~10603&Nurse3&N3Vorname&&&Schw
DG1|1|||Akuter Bauch
DG1|2|||Durchfall
DG1|3|||Blut im Stuhl
```

9.26 Unsolicited Transmission Of Observation ORU R01 (Laboratory Test Result)

```
MSH|^~\&|AHC_HIS_Port^AHC_HIS_Port^GUID || ENDOBASE IV^ ENDOBASE IV^GUID
||20000901110442||ORU^R01|L1BD-JB-1C-B4-022AE4|P|2.3|AL|NE
PID|1||1235||Meier^Luise^Henriette|Schulz|19220615000000|F
||Deutsch|Strasse 305^^Dorfen^^83123||(0819)3791212
|(0819)2713434||||123456789||||Dorfen||||^Deutsch|20020131000000
PV1|1|||||||||0021324
OBR|1|HL7_12|1^ENDOBASE IV|COLO|||20000726100000|||||1234||||Endo|20000726000000
||ENDOBASE IV|F|||||Administrator|Administrator
OBX|1|FT|EB_1|Normal result|HB=12.3|||||20070226121000|Administrator
OBX|2|FT|EB_2|Any comment|Haemo|||||20000726000000|Administrator
OBR|2|HL7_13|1^ENDOBASE IV|COLO|||20000726100000|||||1234||||Endo|20000726000000
||ENDOBASE IV|F|||||Administrator|Administrator
OBX|1|FT|EB_3|Normal result|HB=12.3|||||20070226121000|Administrator
OBX|2|FT|EB_4|Any comment|Haemo|||||20000726000000|Administrator
```

9.27 New Appointment Booking SRM S01

MSH|^~\&|SAP^SAP^GUID||EB^EB^GUID||20010520173800||SRM^S01
|93710600|P|2.3|AL|NE
ARQ|Placer001|Filler001||||^Unklare Beschwerden|||20010701100000^20010701103000
PID|1||001000||Meier^Florian^Bernd^^^Herr|Schulz|19670808|M||
|Karl-Lipp-Str.9^^München^80992^D||(089) 14002243
|(089) 1234||||198708080150||||München||||D|20020131063000
PV1|1||||||||||||10100
DG1|1|||Akuter Bauch
DG1|2|||Durchfall
DG1|3|||Blut im Stuhl
RGS|1
AIS|1||^COLO
AIG|1|||^Medikament 3||1.5|^Amp
AIG|2|||^Medikament 4||3|^cm3
AIL|1||^Room 2||^Endo
AIP|1||D100^Müller^Heiner^^^Dr.

9.28 Notification of New Appointment Booking SIU S12

MSH|^~\&|SAP^SAP^GUID||EB^EB^GUID||20010520173800||SIU^S12
|93710600|P|2.3|AL|NE
SCH|Placer001|Filler001||||^Unklare Beschwerden||
|^20010701100000^20010701103000
PID|1||001000||Meier^Florian^Bernd^^^Herr|Schulz|19670808|M||
|Karl-Lipp-Str.9^^München^80992^D||(089) 14002243
|(089) 1234||||198708080150||||München||||D|20020131063000
PV1|1||||||||||||10100
DG1|1|||Akuter Bauch
DG1|2|||Durchfall
DG1|3|||Blut im Stuhl
RGS|1
AIS|1||^COLO
AIG|1|||^Medikament 3||1.5|^Amp
AIG|2|||^Medikament 4||3|^cm3
AIL|1||^Room 2||^Endo
AIP|1||D100^Müller^Heiner^^^Dr.