

HL7 Interface Specifications

V2.2



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1. Introduction

This document serves as basis for the implementation of HL7 interfaces and describes the HL7 message types (version 2.6 and below) that are currently supported by ifa.

1.1. Role allocation & general concept

For all specifications in this document it is assumed that ifa represents an EMR subsystem which communicates with a superordinate hospital information system (HIS) via HL7. Other scenarios (e.g. ifa serving as PMS) need to be considered independently. Please also see section 3 for further remarks.

In general there are two implementations of the ifa HL7 interface. The original implementation has been fully developed by ifa and deals with all aspects of the communication via HL7. The second implementation utilizes a commercially available interface engine (Iguana¹) that is responsible for receiving and decoding HL7 messages; here only the transfer of the message contents into the ifa program is designed by ifa. Additional advantages of this implementation are the logging functionalities as well as an increased flexibility in terms of the configuration of HL7 messages.

1.2. Syntax & delimiters

In terms of syntax and delimiters the standard rules of HL7 apply:

Segment termination	0x0D
Field delimiter	
Component delimiter	^
Subcomponent delimiter	&
Repetition delimiter	~
Escape	\

1.3. Used abbreviations

The following abbreviations are used for the message descriptions throughout this document

Classes	
SEQ	Position of field in segment or subfield
DT	Data type
R	Required
O	Optional
C	Conditional
B	Optional, ensuring backward compatibility

¹ <http://www.interfaceware.com/iguana.html>

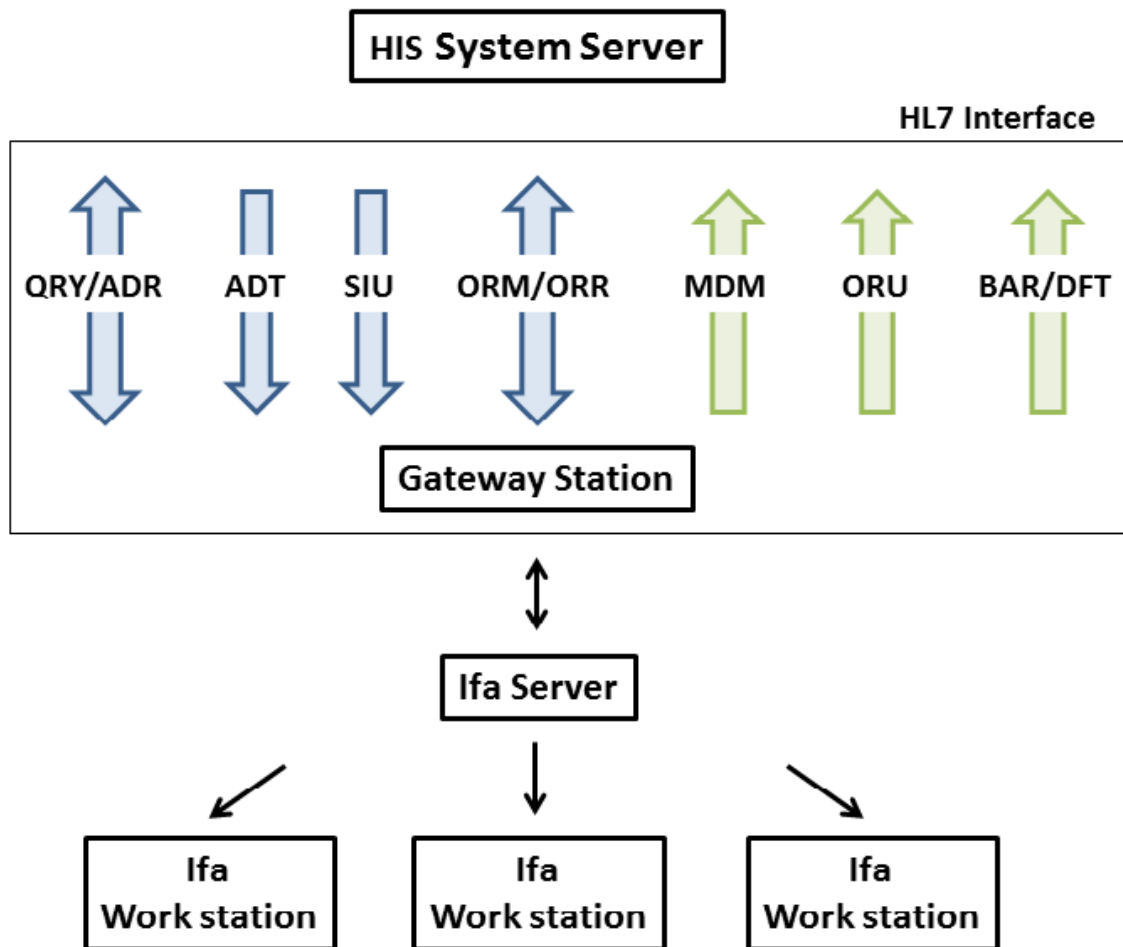
Data types	
CE	Coded element
CX	Extended Composite ID With Check Digit
EI	Entity identifier
FN	Family Name
HD	Hierarchic designator
ID	Coded value for HL7-defined tables
IS	Coded value for user-defined tables
NDL	Observing practitioner
NM	Numeric
OSD	Order Sequence Data
PL	Person location
SI	Sequence ID
ST	String
TQ	Timing quantity
TS	Time stamp
VID	Version identifier
XAD	Extended address
XCN	Extended composite ID number and name for persons
XPN	Extended person name
XTN	Extended telecommunication number

2. Supported HL7 message types

2.1. Overview & general information

The following table and sketch provide an overview of the HL7 messages supported by the ifa standard interface:

HL7 Message	Description	Import / Export
ADT	Admit Discharge Transfer	Import
QRY/ADR	Patient Query	Import / Export
SIU	Schedule Information Unsolicited	Import
ORM/ORR	General Order	Import / Export
MDM	Medical Records / Information Management (Document Management)	Import / Export
ORU	Observational Report Unsolicited	Export
BAR	Update Billing Account	Export
DFT	Detail Financial Transaction	Export



The message types listed above will be described throughout the following sections. Further message types can be implemented upon request. Only the currently supported segments and fields of each message will be listed in this document. Please note: In case the ifa Iguana interface is installed in addition to the standard interface (see section 1.1.) any HL7 message of one of the types listed above can be implemented easily; for the messages that have been implemented already, please refer to section 3.

To some extent the field configuration of the messages imported via the standard ifa interface can be customized individually using an assign tool specifically created for this purpose; in the message descriptions this is indicated by an additional comment wherever applicable. Please see the separate description of the assign tool for detailed information. The import settings can be configured such that an ACK or NACK message is sent when the import was successful or unsuccessful.

ACK/NACK messages which are returned after a successful/unsuccessful export are received and can be processed further in case the ifa Iguana interface is installed.

2.2. Admit – Discharge – Transfer (ADT Import)

The ADT messages described in the following sections are currently supported. Other messages can be implemented upon request.

2.2.1. ADT-A01: Admit / visit notification

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

The **MSH** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	ST	R	Field Separator	Fixed
2	ST	R	Encoding Characters	Fixed
3	HD	O	Sending Application	Not processed
5	HD	O	Receiving Application	Not processed
7	TS	O	Date/Time of Message	Not processed
9	ID	R	Message Type	Fixed
10	ST	R	Message Control ID	Not processed
11	ID	R	Processing ID	Not processed
12	VID	R	Version ID	Not processed

The **EVN** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
3	TS	O	Date/Time Planned Event	Used, depending on other fields
4	IS	O	Event Reason Code	Fixed

The **PID** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	SI	O	Set ID - PID	Not processed
3	CX	R	Patient Identifier List	User-defined
5	XPN	R	Patient Name	User-defined
7	TS	O	Date/Time of Birth	User-defined
8	IS	O	Sex	User-defined
11	XAD	O	Patient Address	User-defined
13	XTN	O	Phone Number / E-Mail - Home	User-defined
14	XTN	O	Phone Number / E-Mail - Business	User-defined
15	CE	O	Primary Language	User-defined

16	CE	O	Marital Status	User-defined
17	CE	O	Religion	User-defined
19	ST	B	SSN Number	User-defined
22	CE	O	Ethnic Group	User-defined
26	CE	O	Citizenship	User-defined
30	ID	O	Patient Death Indicator	User-defined

The **PV1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	SI	O	Set ID – PV1	Not processed
2	IS	R	Patient Class	Fixed
3	PL	O	Assig. Pat. Location	Fixed
8	XCN	O	Referring Doctor	User-defined
9	XCN	O	Consulting Doctor	User-defined
10	IS	O	Hospital Service	Fixed
19	CX	O	Visit Number	Fixed
44	TS	O	Admit Date/Time	Used, depending on other fields
45	TS	O	Discharge Date/Time	Used, depending on other fields

The **PV2** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
8	TS	O	Expected Admit Date/Time	Used, depending on other fields
9	TS	O	Expected Discharge Date/Time	Used, depending on other fields

The **IN1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
3	CX	R	Insurance Company ID	User-defined
15	IS	O	Plan Type	User-defined
49	CX	O	Insured's ID number	User-defined

Wherever the above segments are used in the following sections the standard definition is exactly the same as described here. In addition to these specifications, the usage of the fields can be defined individually with the help of the ifa assign tool (see section 2.1).

2.2.2. ADT-A02: Transfer a patient

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.3. ADT-A03: Discharge / end visit

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.4. ADT-A04: Register a patient

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.5. ADT-A05: Pre-admit a patient

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.6. ADT-A06: Change an outpatient to an inpatient

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.7. ADT-A07: Change an inpatient to an outpatient

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.8. ADT-A08: Update patient information

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.9. ADT-A11: Cancel for A01 and A04

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.10. ADT-A12: Cancel for A02

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.11. ADT-A13: Cancel for A03

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.12. ADT-A38: Cancel for A05

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.13. ADT-A40: Merge patient – patient identifier list

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.2.14. ADT-A45: Move visit information – visit number

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>PV2</i>	Patient Visit Additional Information	HL7 Optional
<i>IN1</i>	Insurance	HL7 Optional, may be repeated

For the definition of the segments, please refer to section 2.2.1. (ADT-A01).

2.3. Patient Query (QRY/ADR Import on request)

2.3.1. QRY-A19: Patient Query

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>QRD</i>	Query Definition	HL7 Required

For the definition of the *MSH* segment, please refer to section 2.2.1. (ADT-A01). The *QRD* segment is configured as follows:

SEQ	DT	R(O/C/B)	Element Name
1	TS	R	Query Date/Time
2	ID	R	Query Format Code
3	ID	R	Query Priority
4	ST	R	Query ID
7 - 1	NM	R	Quantity Limited Request - Quantity
7 - 2	CE	R	Quantity Limited Request - Units
8 - 1	ST	R	Who Subject Filter - ID
9 - 1	ID	R	What Subject Filter - ID
12	ID	O	Query Results Level

2.3.2. ADR-A19: Patient Query Response

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>MSA</i>	Message acknowledgement	HL7 Required
<i>QRD</i>	Query Definition	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required

For the definition of the *MSH* and *PID* segments, please refer to section 2.2.1. (ADT-A01). The *QRD* segment is not processed when receiving the response of a query. The *MSA* segment is configured as follows:

SEQ	DT	R(O/C/B)	Element Name
1	ID	R	Acknowledgement Code
2	ST	R	Message Control ID
6	CE	O	Error condition

2.4. Schedule Information Unsolicited (SIU Import)

2.4.1. SIU-S12: New appointment booking

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>SCH</i>	Schedule Activity Information	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional
<i>AIS</i>	Appointment Information Service	HL7 Required
<i>AIL</i>	Appointment Information Location	HL7 Optional
<i>AIP</i>	Appointment Information Personnel	HL7 Optional
<i>NTE</i>	Notes and Comments	HL7 Optional

For the definition of the *MSH*, *PID* and *PV1* segments, please refer to section 2.2.1. (ADT-A01). The *SCH* segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
2	EI	C	Filler Appointment ID	User-defined
11 - 4	TS	R	Appointment Timing Quantity - Start Date/Time	User-defined
11 - 5	TS	R	Appointment Timing Quantity - Stop Date/Time	User-defined
11 - 10	OSD	R	Appointment Timing Quantity - Order Sequencing	User-defined
11 - 11	CE	R	Appointment Timing Quantity - Occurrence Duration	User-defined

The *AIS* segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
3 - 2	ST	R	Universal Service Identifier - Text	User-defined

The *AIL* segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
3	PL	C	Location Resource ID	User-defined
4 - 1	CE	R	Location Type	User-defined

The *AIP* segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
3 - 1	ST	C	Personnel Resource ID	User-defined
3 - 2	ST	C	Personnel Resource - Family Name	User-defined
3 - 3	ST	C	Personnel Resource - Given Name	User-defined

The *NTE* segment can be appended to the *AIS*, *AIL* and *AIP* segments; the usage of its fields has to be defined with the help of the ifa assign tool (see section 2.1).

2.4.2. SIU-S14: Appointment notification

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>SCH</i>	Schedule Activity Information	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional
<i>AIS</i>	Appointment Information Service	HL7 Required
<i>AIL</i>	Appointment Information Location	HL7 Optional
<i>AIP</i>	Appointment Information Personnel	HL7 Optional

For the definition of the segments, please refer to sections 2.2.1. (ADT-A01) and 2.4.1 (SIU-S12).

2.4.3. SIU-S15: Appointment cancellation

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>SCH</i>	Schedule Activity Information	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional
<i>AIS</i>	Appointment Information Service	HL7 Required
<i>AIL</i>	Appointment Information Location	HL7 Optional
<i>AIP</i>	Appointment Information Personnel	HL7 Optional

For the definition of the segments, please refer to sections 2.2.1. (ADT-A01) and 2.4.1 (SIU-S12).

2.5. Order Message (ORM Import, ORR Export)

2.5.1. ORM-O01: General order

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>ORC</i>	Common Order	HL7 Optional, may be repeated
<i>OBR</i>	Observation/Request	HL7 Optional, may be repeated

For the definition of the *MSH*, *PID* and *PV1* segments, please refer to section 2.2.1. (ADT-A01). The *ORC* segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	ID	R	Order Control
2	EI	C	Placer Order Number
3	EI	C	Filler Order Number
5	ID	O	Order Status
7 - 4	TS		Quantity/Timing - Start Date/Time
7 - 6	TS		Quantity/Timing - Priority
7 - 7	ST	O	Quantity/Timing - Condition
9	TS	O	Date/Time of Transaction
12 - 2	ST	O	Ordering Provider - Family Name
14	ST	O	Call Back Phone Number
16	CE	O	Order Control Code Reason

The **OBR** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
4	CE	R	Universal service ID
27	TS	O	Quantity/Timing

2.5.2. ORR-O02: General Order Response

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>MSA</i>	Message Acknowledgement	HL7 Required
<i>PID</i>	Patient Identification	HL7 Optional
<i>ORC</i>	Common Order	HL7 Optional, may be repeated

For the definition of the **MSH** and **PID** segments, please refer to section 2.2.1. (ADT-A01).

The **MSA** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	ID	R	Acknowledgement Code
2	ST	R	Message Control ID

The **ORC** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	ST	R	Order Control
2	ST	R	Placer Order Number
3	ST	O	Filler Order Number
5	ID	O	Order Status
9	TS	R	Date/Time of Transaction

2.6. Medical Document Management (MDM Export)

2.6.1. MDM-T02: Original Document Notification and Content

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event Type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required
<i>TXA</i>	Transcription Document Header	HL7 Required

For the definition of the **MSH** segment, please refer to section 2.2.1. (ADT-A01).

The **EVN** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
2	TS	R	Recorded Date / Time

The **PID** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
3-1	ST	R	Patient Identifier List – ID
3-4	HD	R	Patient Identifier List – Assigning Authority
3-5	ID	R	Patient Identifier List – ID Type Code
5-1	FN	R	Patient Name – Family Name
5-2	ST	R	Patient Name – First Name
7	TS	O	Date/Time of Birth
8	IS	O	Sex

The **PV1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
2	IS	R	Patient Class
19	ST	O	Visit Number

The **TXA** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	R	Set ID
4	TS	O	Activity Date / Time
12	EI	R	Unique Document Number
16	ST	O	Unique Document File Name
21	ST	C	Document Change Reason

2.7. Observational Report Unsolicited (ORU Export)

2.7.1. ORU-R01: Unsolicited transmission of an observation

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional
<i>OBR</i>	Observations Report ID	HL7 Required
<i>OBX</i>	Observation/Result	HL7 Optional

For the definition of the **MSH** segment, please refer to section 2.2.1. (ADT-A01).

The **PID** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
3 - 1	ST	R	Patient Identifier List – ID
3 - 4	HD	R	Patient Identifier List – Assigning Authority
3 - 5	ID	R	Patient Identifier List – ID Type Code
5 - 1	FN	R	Patient Name - Family Name
5 - 2	ST	R	Patient Name - First Name
7	TS	O	Date/Time of Birth
8	IS	O	Administrative Sex

The **PV1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
2	IS	R	Patient Class
19	ST	O	Visit Number

The **OBR** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
2	EI	C	Placer order number
3	EI	C	Filler order number
4-1	ST	R	Universal Service Identifier - ID
4-2	ST	R	Universal Service Identifier - Text
7	TS	C	Observation Date/Time
16	XCN	O	Ordering Provider
22	TS	C	Results Rpt /Status Chng Date/Time
24	ID	O	Diagnostic Service Section ID
25	ID	C	Result Status
27	TQ	O	Quantity / Timing
32	NDL	O	Principal Result Interpreter
35	NDL	O	Transcriptionist

The **OBX** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID
2	ID	C	Value type
3	CE	R	Observation Identifier
5	*	C	Observation value
11	ID	R	Observation result status
14	TS	O	Date/Time of Observation

* Depending on OBX-2 Value Type

2.8. Update Billing Account (BAR Export)

2.8.1. BAR-P05: Update Billing Account

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional, may be repeated
<i>DG1</i>	Diagnosis	HL7 Optional, may be repeated

For the definition of the **MSH**, **PID** and **PV1** segments, please refer to section 2.2.1. (ADT-A01) and for the **EVN** segment to section 2.6.1. (MDM-T02).

The **DG1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	R	Set ID
2	ID	R	Coding Method
3	CE	O	Code
4	ST	B	Description
5	TS	O	Date

2.9. Data Financial Transaction (DFT Export)

2.9.1. DFT-P03: Detail Financial Transaction

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>EVN</i>	Event type	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Optional
<i>ORC</i>	Common Order	HL7 Required
<i>FT1</i>	Financial Transaction	HL7 Optional
<i>PR1</i>	Procedures	HL7 Optional, may be repeated

For the definition of the **MSH**, **PID** and **PV1** segments, please refer to section 2.2.1. (ADT-A01) and for the **EVN** segment to section 2.6.1. (MDM-T02). The **ORC** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
2	EI	C	Placer Order Number
3	EI	C	Filler Order Number
9	TS	O	Transaction Date/Time

The **FT1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	O	Set ID - FT1
4	TS	R	Transaction Date
7	ST	R	Transaction Code

The **PR1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name
1	SI	R	Set ID - PR1
2	IS	R	Coding Method
3	CE	R	Code
5	TS	R	Transaction Date

3. Additional information

3.1. Message Examples

In the following sections examples for each message type will be given. The required fields are always filled, while the optional fields may have been left empty depending on the content of the message.

3.1.1. ADT

MSH ^~\& SAP SAP_ISH IFA IFA_EYE 20080605171008 ADT^A04 17120966 P 2.4
PID 1 0001179273 Doe^John 19610701 M
PV1 1 0101519136

MSH ^~\& SAP SAP_ISH IFA IFA_EYE 20080605171008 ADT^A08 17120958 P 2.4
EVN 20080605171008 U
PID 0001250869 Doe^John 19520331 M Street 105^City^45473^DE 0568 456897 info@ifasystems.de D U 32 46545648 Caucasian GE N
PV1 O ZAMB^^UC NT 0000012020^Buxxx/Buxxx^^^Dres. med. 0101519127 AMB 20080605160000

3.1.2. QRY/ADR

MSH ^~ IFA KIS 20071218171537 QRY^A19 20071218171537 P 2.4
QRD 20071218171700 R 20071218171700 3^RD 125666 DEM T

MSH ^~ KIS IFA 20071218171542 ADR^A19 18139 P 2.4
MSA AA 20090202141648 0
QRD 20071218171700 R 20071218171700 3^RD 125666 DEM T
PID 0001250869 Doe^John 19520331 M Street 105^City^45473^DE 0568 456897 info@ifasystems.de D U 32 46545648 Caucasian GE N

3.1.3. SIU

MSH ^~\& SAP 400^1000 IFA 20081021113825 SIU^S12 4230105 P 2.4
SCH 13688372- 1 ""^NP41P0 N ^20081022103000^20081022103500 8569^Maxx^E.H.^Dr. ""
BOOKED
PID 010170BO22 Bxxxxx 19700101 M Laxxstr 4^Echt^6101 ME^NL 0475-485600 (P) N "" N
RGS 0 A
AIS 0 U POL AFSPR^Poliklinische Afspraak^COMSRV 0 m BOOKED
AIL 1 OE0052^^^poli oogheelkunde D^DEPARTMENT
AIP 1 8569^Maxx^E.H.^Dr. PHYSICIAN

MSH ^~\& SAP 400^1000 IFA 20081016142158 SIU^S14 5459011 P 2.4
SCH 14085167-1 ""^NP42P0 N ^20081021141000^20081021141500 8569^Maxx^E.H.^Dr. "" BOOKED
PID 300518TU10 Plxxx^H 19180530 F Raxxxxstr 4 D^Brunssum^6444 AB^NL 045-5251717 (P) N "" N
RGS 0 U
AIS 0 U POL AFSPR^Poliklinische Afspraak^COMSRV 0 m BOOKED
AIL 1 OE0052^poli oogheekunde D^DEPARTMENT
AIP 1 8569^Maxx^E.H.^Dr. PHYSICIAN

3.1.4. ORM/ORR

MSH ^~\& RIS WB0 LINKMED RAD 200307070841 ORM^O01 1 P 2.3.1
PID 000001234567 000001234567 000006495773 DOE^JANE^ F^ 19501115 F 2003 WEST LAWN AVE^MADISON^WI^53711 6082571234 6082044567 N^ 000101128180 323468612 W PV1 ^ 000006495773 WB0
ORC NW 90001^002 6159034 IP ^200307070000^R^ROUTINE 101 108068^GOERG E^W BUSH.^UWHealth ^Incorrect exam
OBR 90001^002 6159034 CWH^0005^MAMMOGRAM DIGITAL SCREENING BI^76092 101 N ^108068^GEORGE^W BUSH.^UWHealth ^MG routine yearly exam MG 1^200307070000^R^ROUTINE ^SCREENING
NTE cbe normal

MSH ^~\+ IFA HIS 20120426115739 ORR^O02 4102549836 P 2.4
MSA AA 4102549836
PID 1 987654321 Doe^John 010019
ORC NW 999999 4102549836 CM 20120426115739

3.1.5. MDM

MSH ^~\+ IFA HIS 20120426110126 MDM^T02 4102545932 P 2.4
EVN 201204261101
PID 1 0001282895^DS^R Test^Otto 19470617 M
PV1 1 O 23154545
TXA 1 132110204415 456456456 C:\Test_MDM.hl7 Test_MDM

3.1.6. ORU

MSH ^~\& IFA IFA-3 GHH OE BLDG4 200202150930 ORU^R01 CNTRL-3456 P 2.4
PID 1 555-44-4444 EVERYWOMAN^EVE 19620320 F
PV1 1 O 0101541482
OBR 1 845439 1045813 15545^GLUCOSE 200202150730 555^PRIMARY^PATRICIA P^^^MD^^ 1045813 200202151051 EYE F
OBX 1 RP Letter.doc F 200202150730

3.1.7. BAR

MSH ^~\& IFA AUGENAB GHH OE BLDG4 20090828161416 BAR^P05 400536757 P 2.4
EVN 200908281614
PID 1 0001220907 Schwarz^Antje 19700802 F
PV1 1 O 0101541482
ORC 1005425 4005367657 20090828161416
DG1 1 ICD-10 H33.5^B^G Netzhaut-Ablösungen, sonstige 20090825

3.1.8. DFT

MSH ^~\& IFA PARADIGM 20101201214848 DFT^P03 2010120178528689 P 2.4
EVN 20101201214848 1
PID 1 10042 Gruber^Felicia 19320816 F
PV1 1 O 26699
FT1 1 20101201214848 3730045
FT1 2 20101201214848 3730055

3.2. Ifa as a PMS

As stated previously the specifications in this document are listed under the assumption that ifa is used as an EMR subsystem communicating with a superordinate HIS. However, ifa may also serve as a PMS and in this case the export (rather than the import) of patient data (ADT export) may be of use. This feature has also been implemented in ifa and may be made available if desired.

3.2.1. ADT-A04: Patient registration

The currently implemented message is structured as follows:

<i>MSH</i>	Message header	HL7 Required
<i>PID</i>	Patient Identification	HL7 Required
<i>PV1</i>	Patient Visit	HL7 Required

The **MSH** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	ST	R	Field Separator	Fixed – Value user-defined
2	ST	R	Encoding Characters	Fixed – Value user-defined
3	HD	O	Sending Application	Fixed – Value user-defined
5	HD	O	Receiving Application	Fixed – Value user-defined
7	TS	O	Date/Time of Message	Fixed – Value set by system
9	ID	R	Message Type	Fixed – Value: ADT-A04
10	ST	R	Message Control ID	Fixed – Value set by system
11	ID	R	Processing ID	Fixed – Value: P (production)
12	VID	R	Version ID	Fixed – Value: 2.4 or less

The **PID** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	SI	O	Set ID - PID	Fixed
3	CX	R	Patient Identifier List	Fixed
5	XPN	R	Patient Name	Fixed
7	TS	O	Date/Time of Birth	Fixed
8	IS	O	Sex	Fixed

The **PV1** segment is configured as follows:

SEQ	DT	R/O/C/B	Element Name	Comment
1	SI	O	Set ID – PV1	Fixed
19	CX	O	Visit Number	Fixed

3.3 Messages supported by the ifa Iguana import interface

As mentioned previously any HL7 message of one of the types described in section 2 can be supported in case the ifa Iguana interface is installed in addition to the standard interface. The messages listed in the table below are currently implemented in the ifa Iguana import interface. Further messages can be added easily upon customer request.

HL7 Message	Description
ADT-A01	Admit/Visit Notification
ADT-A02	Transfer a Patient
ADT-A03	Discharge/End Visit
ADT-A04	Register a Patient
ADT-A05	Pre-admit a Patient
ADT-A06	Change An Outpatient To An Inpatient
ADT-A07	Change An Inpatient To An Outpatient
ADT-A08	Update Patient Information
ADT-A39	Merge Person - Patient ID
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
ORM-O01	Order Message