

# health-engine HL7 Conform- ance Statement English

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Abstract	This document provides information about the HL7 Conformance of the health-engine.
Manufacturer	the i-engineers AG, 8004 Zürich, Switzerland
Support	the i-engineers AG, 8004 Zürich, Switzerland, <a href="http://www.tie.ch">www.tie.ch</a>



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## 2. Introduction

### 2.1 Revision History

1.0 Rev D	May 1, 2019	Minor format changes
1.0 Rev C	Aug 29, 2018	Format changes
1.0 Rev B	June 02, 2016	Added PV1-6
1.0 Rev A	May 27, 2016	Initial Version for health-engine

### 2.2 Audience

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

### 2.3 Remarks

HL7, by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same HL7 message types.

This Conformance Statement is not intended to replace validation with other HL7 equipment to ensure proper exchange of information intended.

The scope of this Conformance Statement is to facilitate communication between the health-engine and other HL7 systems.

The user should be aware of the following important issues:

- The comparison of different Conformance Statements is the first step towards assessing interconnectivity between health-engine and other HL7 conformant equipment.
- Test procedures should be defined to validate the desired level of connectivity.

HL7 is an evolving standard, constantly being amended and augmented. In consideration of this fact, The i-engineers reserves the right to make changes to health-engine as it sees fit to keep abreast of these changes.

The Conformance Statement should be read and understood in conjunction with the HL7 standard [1].

### 2.4 Definitions and Abbreviations

ADT	Admission, Discharge, and Transfer message
EVN	Event Type segment
HE	health-engine
HIS	Hospital Information System
HL7	Health Level 7
IHE	Integrating the Healthcare Enterprise
MFH	Master Files Notification message
MFI	Master File Identification
MFE	Master File Entry
MLLP	Minimal Lower Layer Protocol
MRG	Merge Patient Information segment
MSH	Message Header



ORU	Observation Results
PID	Patient ID segment
PRA	Practitioner Detail
STF	Staff Identification
TCP/IP	Transmission Control Protocol/Internet Protocol
UI	User Interface
UID	Unique Identifier

The following identifiers are used:

<b>Use Identifier</b>	<b>Description</b>
D	Definierbar
F	Fix – Kann nicht geändert werden
O	Optional
R	Required
U	Unused

## 2.5 References

- [1] HL7 Standard, Health Level Seven International, Ann Arbor, MI 48104, USA  
<http://www.hl7.com>
- [2] HL7 ADT Detailspezifikationen, the i-engineers, Switzerland
- [3] HL7 MDM-In Detailspezifikationen, the i-engineers, Switzerland
- [4] HL7 MFN Detailspezifikationen, the i-engineers, Switzerland
- [5] HL7 ORU Detailspezifikationen, the i-engineers, Switzerland
- [6] HL7 SRM/SIU Detailspezifikationen, the i-engineers, Switzerland
- [7] HL7 MDM-Out Detailspezifikationen, the i-engineers, Switzerland
- [8] HL7 DataMapping Tabellen, the i-engineers, Switzerland



### 3. General health-engine Behavior

#### 3.1 Supported HL7 Versions

Versions 2.2 through 2.6 are supported by the HE.

#### 3.2 Meta Data

In general, all incoming data delivered in a HL7 message will be imported into the health-engine. The importing process expects:

- The messages to arrive in the same order as they were created.
- The messages to include up to date data.
- The segments to include the correct data (not complete data is allowed).
- Meta data to be consistent.

Therefore, theoretically it is possible that a patient name is being changed using a “Cancel Discharge (A03) message, even though this should not happen. A “Update Patient Information (A08)” should be received first.

In case a field is empty, data in the HE will not be changed. To delete a field in the HE a delete symbol needs to be agreed first.

#### 3.3 Value Lists

Attributes can be transferred with a code and being translated at import. If the import does not find a dedicated code in the specified value list, the value received will be stored.

Which fields use value lists is being described in chapter 4 while defining the segments in detail. Default lists are available but are commonly adopted by the project.

Codes can be processed in three different ways:

- The code is being saved as delivered in the HL7 message. The translation to text happens in the UI.
- The code is being translated to text at import, then saved.
- The HL7 code is being translated into an i-engine code before the save process.

The definition of this translation and where it shall happen is part of the individual HE configuration.

#### 3.4 Multiple Use of a Field

The HL7 format allows for multiple use of a field (marked with ~~~). The HE imports by default only the first value. This can be changed on customer request.

#### 3.5 Confirmation

Neither receiving nor processing by the HE will cause a confirmation (ACK) to be sent to the sending system: „fire and forget“.

#### 3.6 Customization

##### 3.6.1 Events

In a customized solution, any HL7 event available in the HL7 standard may be added to the list of supported events.

##### 3.6.2 Fields

Any field marked as “Optional” may be defined as “Required” field in the customized solution.

Any field marked as “Unused” may be defined as “Optional” or “Required” in the customized solution.



### 3.7 Transport Layer

File importer: The HE does the housekeeping, all incoming or outgoing messages are being stored in the database and deleted on the file share.

Instead of deleting the incoming or outgoing messages they can be moved to a folder (e.g. "Done"). This is commonly used during implementation phase and testing of the configuration.

Rules during processing:

- The writing process renames the file to \*.hl7 only once it's done writing.
- The file is only being deleted (or moved to the „Done“ folder) once the HE saved the message in the database.
- Possible protocols: FTP, URN, SMB
- TCP/IP MLLP: Incoming transport layer can also be TCP/IP MLLP. Such messages will be saved as objects, which allows logging them properly.

### 3.8 Data Mapping

For data mapping details, refer to [8] HL7 DataMapping Tabellen, the i-engineers, Switzerland.





## 4. Inbound Messages

### 4.1 health-engine

#### 4.1.1 Supported Trigger Events

##### 4.1.1.1 Supported ACK Events

Table 4-1: Supported ACK Events	
Event Code	Trigger Event Description
ALL	General ACK Message

##### 4.1.1.2 Supported ADT Events

For more information about the processed segments and segment mappings, refer to [2] HL7 ADT Detailspezifikationen, the i-engineers, Switzerland.

Table 4-2: Supported ADT Events	
Event Code	Trigger Event Description
A01	Admit a Patient
A02	Transfer a patient
A03	Discharge a Patient
A04	Register a patient
A05	Pre-Admit a patient
A06	Change an Outpatient-to Inpatient
A07	Change an Inpatient-to Outpatient
A08	Update Patient Information
A11	Cancel Admit
A12	Cancel Transfer
A13	Cancel Discharge
A14	Pending Admit
A15	Pending Transfer
A16	Pending Discharge
A25	Cancel Pending Discharge
A26	Cancel Pending Transfer
A27	Cancel Pending Admit
A28	Add Person Information
A29	Delete Person Information
A31	Update Person Information
A38	Cancel Pre-Admit
A40	Merge Person - Internal ID
A45	Move Visit Information - Visit Number



#### 4.1.1.2.1 Important Fields in ADT Segments

The ADT segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- PID, NK1, PV1, PV2, DG1, PR1, GT1, IN1

#### 4.1.1.3 Supported MDM Events

For more information about the processed segments and segment mappings, refer to [3] HL7 MDM-In Detailspezifikationen, the i-engineers, Switzerland.

**Table 4-3: Supported MDM Events**

Event Code	Trigger Event Description
<b>T02</b>	Original document notification and content
<b>T04</b>	Document status change notification and content
<b>T08</b>	Document edit notification and content
<b>T11</b>	Document cancel notification

#### 4.1.1.3.1 Important Fields in MDM Segments

The MDM segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- PID, PV1, TXA, OBX

#### 4.1.1.4 Supported MFN Events

For more information about the processed segments and segment mappings, refer to [4] HL7 MFN Detailspezifikationen, the i-engineers, Switzerland.

**Table 4-4: Supported MFN Events**

Event Code	Trigger Event Description
<b>M02</b>	Staff/Practitioner

#### 4.1.1.4.1 Important Fields in MFN Segments

The MFN segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- MFI, MFE, STF, PRA

#### 4.1.1.5 Supported ORU Events

For more information about the processed segments and segment mappings, refer to [5] HL7 ORU Detailspezifikationen, the i-engineers, Switzerland.

**Table 4-5: Supported ORU Events**

Event Code	Trigger Event Description
<b>R01</b>	Unsolicited observation message



## 4.1.1.5.1 Important Fields in ORU Segments

The ORU segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- PID, PV1, PV2, NK1, ZXX, ORC, OBR, OBX

## 4.1.1.6 Supported SRM/SIU Events

For more information about the processed segments and segment mappings, refer to [6] HL7 SRM/SIU Detailspezifikationen, the i-engineers, Switzerland.

**Table 4-6: Supported SIU Events**

Event Code	Trigger Event Description	Standard-HE
<b>SRM</b>		
<b>S01</b>	Request new appointment booking	Yes
<b>S02</b>	Request appointment rescheduling	Yes
<b>S03</b>	Request appointment modification	Yes
<b>S04</b>	Request appointment cancellation	Yes
<b>S05</b>	Request appointment discontinuation	Yes
<b>S06</b>	Request appointment deletion	Yes
<b>S07</b>	Request addition of service/resource on appointment	Yes
<b>S08</b>	Request modification of service/resource on appointment	Yes
<b>S09</b>	Request cancellation of service/resource on appointment	Yes
<b>S10</b>	Request discontinuation of service/resource on appointment	Yes
<b>S11</b>	Request deletion of service/resource on appointment	Yes
<b>SIU</b>		
<b>S12</b>	Notification of new appointment booking	Yes
<b>S13</b>	Notification of appointment rescheduling	Yes
<b>S14</b>	Notification of appointment modification	Yes
<b>S15</b>	Notification of appointment cancellation	No
<b>S16</b>	Notification of appointment discontinuation	No
<b>S17</b>	Notification of appointment deletion	No
<b>S18</b>	Notification of addition of service/resource on appointment	No
<b>S19</b>	Notification of modification of service/resource on appointment	No
<b>S20</b>	Notification of cancellation of service/resource on appointment	No
<b>S21</b>	Notification of discontinuation of service/resource on appointment	No
<b>S22</b>	Notification of deletion of service/resource on appointment	No
<b>S23</b>	Notification of blocked schedule time slot(s)	No
<b>S24</b>	Notification of opened ("un-blocked") schedule time slot(s)	No
<b>S26</b>	Notification that patient did not show up for scheduled appointment	No



## 4.1.1.6.1 Important Fields in SRM/SIU Segments

The SRM/SIU segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- PID, PV1, PV2, NK1, ZXX, ORC, OBR, OBX

## 4.1.2 Supported HL7 Fields

## 4.1.2.1 MSH - Message Header – Segment Mapping

Seq	HL7 Field Name	Use	Comments
1	Field separator	R	
2	Encoding characters	R	^~\& ^ Component ~ Repeat \ Escape & Subcomponent
3	Sending application	O	
4	Sending facility	O	
5	Receiving application	O	HE
6	Receiving facility	O	
7	Date/Time of message	R	YYYYMMDDhhmmss
8	Security	U	Value is ignored
9	Message type	R	Example: ADT^A01
10	Message control ID	R	Increasing number generated by sending application
11	Processing ID	R	P
12	Version ID	R	Supported versions: 2.2 – 2.6
13	Sequence number	U	Value is ignored
14	Continuation pointer	U	Value is ignored
15	Accept acknowledgement type	O	NE
16	Application acknowledgement type	O	NE
17	Country code	O	DE
18	Character Set	U	Value is ignored
19	Principal Language of Message	U	Value is ignored
20	Alternate Character Set hand-ling Scheme	U	Value is ignored
21	Conformance Statement ID	U	Value is ignored



## 4.1.2.2 EVN - Event Type – Segment Mapping

Table 4-8: EVN Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Event Type Code	O	Expl. "A01"
2	Recorded Date/Time	O	YYYYMMDDhhmmss
3	Date/Time Planned Event	U	Value is ignored
4	Event Reason Code	O	
5	Operator ID	U	Value is ignored
6	Event Occurred	U	
7	Event Facility	U	Value is ignored

## 4.1.2.3 PID - Patient identification – Segment Mapping

Table 4-9: PID Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID - Patient ID	U	Value is ignored
2	Patient ID	R	Could also be taken from ID-3.1
3	Patient Identifier List	O	
4	Alternate Patient ID	U	Value is ignored
5	Patient Name	R	Also supported: 5.1.1 Family Name 5.1.2 Own Family Prefix 5.2 Given Name
6	Mother's Maiden Name	O	
7	Date of Birth	O	YYYYMMDD
8	Administrative Sex	O	List 0001
9	Patient Alias	U	Value is ignored
10	Race	U	Value is ignored
11	Patient Address	O	Also supported: 11.1 Street Address 11.3 City 11.4 State or province 11.5 Zip Code 11.6 Country (List 0399)
12	County Code	U	Value is ignored
13	Phone Number - Home	O	
14	Phone Number - Business	O	
15	Language - Patient	U	Value is ignored
16	Marital Status	O	List 0002
17	Religion	O	List 0006
18	Patient Account Number	U	Value is ignored
19	SSN Number - Patient	O	



Table 4-9: PID Attribute Support			
Seq	HL7 Field Name	Use	Comments
20	Driver's licence - Patient	U	Value is ignored
21	Mother's identifier	O	
22	Ethnic group	U	Value is ignored
23	Birth place	O	
24	Multiple birth indicator	O	
25	Birth order	O	
26	Citizenship	O	List 0399
27	Veterans military status	O	Occupation
28	Nationality	O	List 0399
29	Patient death date/time	O	YYYYMMDDhhmmss?
30	Patient death indicator	O	Y/N
31	Identity unknown indicator	U	Value is ignored
32	Identity reliability code	U	Value is ignored
33	Last update date/time	U	Value is ignored
34	Last update facility	U	Value is ignored
35	Species code	U	Value is ignored
36	Breed code	U	Value is ignored
37	Strain	U	Value is ignored
38	Production class code	U	Value is ignored

4.1.2.4 PV1 – Patient Visit – Segment Mapping

Table 4-10: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID - Patient Visit	O	Always "1" or {empty}
2	Patient Class	R	List 0004
3	Assigned Patient Location	O	Also supported: 3.1 Point of Care (List) 3.2 Room (List) 3.3 Bed (List) 3.4 Facility (List) 3.5 Status 3.7 Department
4	Admission Type	O	
5	Preadmit Number	U	Value is ignored
6	Prior Patient Location	O	



Table 4-10: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
7	Attending Doctor	O	Also supported: 7.1 ID Number 7.2.1 Family Name 7.2.2 Own Family Prefix 7.3 Given Name 7.7 Degree 7.16 Street 7.17 Zip Code 7.18 City 7.19 Country (List 0399) 7.21 Phone 1 7.22 Phone 2
8	Referring Doctor	O	Also supported: 8.1 ID Number 8.2.1 Family Name 8.2.2 Own Family Prefix 8.3 Given Name 8.7 Degree 8.16 Street 8.17 Zip Code 8.18 City 8.19 Country (List 0399) 8.21 Phone 1 8.22 Phone 2
9	Consulting Doctor	O	Also supported: 9.1 ID Number 9.2.1 Family Name 9.2.2 Own Family Prefix 9.3 Given Name 9.7 Degree 9.16 Street 9.17 Zip Code 9.18 City 9.19 Country (List 0399) 9.21 Phone 1 9.22 Phone 2
10	Hospital Service	U	Value is ignored
11	Temporary Location	U	Value is ignored
12	Preadmit Test Indicator	U	Value is ignored
13	Readmission indicator	U	Value is ignored
14	Admit Source	U	Value is ignored
15	Ambulatory Status	U	Value is ignored
16	VIP Indicator	O	



Table 4-10: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
17	Admitting doctor	O	Also supported: 17.1 ID Number 17.2.1 Family Name 17.2.2 Own Family Prefix 17.3 Given Name 17.7 Degree 17.16 Street 17.17 Zip Code 17.18 City 17.19 Country (List 0399) 17.21 Phone 1 17.22 Phone 2
18	Patient Type	U	Value is ignored
19	Visit Number	R	FID Could also be in PV1-50
20	Financial Class	O	
21	Charge Price Indicator	O	
22	Courtesy Code	U	Value is ignored
23	Credit Rating	U	Value is ignored
24	Contract Code	U	Value is ignored
25	Contract Effective Date	U	Value is ignored
26	Contract Amount	U	Value is ignored
27	Contract Period	U	Value is ignored
28	Interest Code	U	Value is ignored
29	Transfer to Bad Debt Code	U	Value is ignored
30	Transfer to Bad Debt Date	U	Value is ignored
31	Bad Debt Agency Code	U	Value is ignored
32	Bad Debt Transfer Amount	U	Value is ignored
33	Bad Debt Recovery Amount	U	Value is ignored
34	Delete Account Indicator	U	Value is ignored
35	Delete Account Date	U	Value is ignored
36	Discharge Disposition	O	List 0112
37	Discharged to Location	O	List 0113
38	Diet Type Kostform plus	U	Value is ignored
39	Servicing Facility	U	Value is ignored
40	Bed Status	U	Value is ignored
41	Account Status	U	Value is ignored
42	Pending Location	U	Value is ignored
43	Prior Temporary Location	U	Value is ignored





Table 4-10: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
44	Admit Date/Time	O	YYYYMMDDhhmmss
45	Discharge Date/Time	O	YYYYMMDDhhmmss
46	Current Patient Balance	U	Value is ignored
47	Total Charges	U	Value is ignored
48	Total Adjustments	U	Value is ignored
49	Total Payments	U	Value is ignored
50	Alternate Visit ID	O	Could also be in PV1-19
51	Visit Indicator	U	Value is ignored
52	Other Healthcare Provider	U	Value is ignored

4.1.2.5 PV2 – Patient Visit – additional information – Segment Mapping

Table 4-11: PV2 Attribute Support			
Seq	HL7 Field Name	Use	Comments
2.1	Accommodation Code	O	List
3	Admin Reason	O	
8	Expected Admit Date	O	
9	Expected Discharge Date	O	
10	Estimated Length of Stay	O	

4.1.2.6 NK1 – Next of kin – Segment Mapping

Table 4-12: NK1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID	R	
2	Name	O	Also supported: 2.1 Family Name 2.2 Given Name
3	Relationship	O	List 0063
4	Address	O	Also supported: 4.1 Street Address 4.3 City 4.5 Zip Code 4.6 Country (List 0399)
5	Phone number	O	
6	Business phone number	O	
8	Contact Begin Date	O	
9	Contact End Date	O	
10	Title	O	
15	Sex	O	List 0001
29	Contact Reason	O	List 0222



## 4.1.2.7 GT1 – Guarantor – Segment Mapping

Table 4-13: GT1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – GT1	R	
2	Guarantor Number	O	
3	Guarantor Name	R	
4	Guarantor Spouse Name	O	
5	Guarantor Address	O	
6	Guarantor Ph Num – Home	O	
7	Guarantor Ph Num – Business	O	
8	Guarantor Date/Time Of Birth	O	
9	Guarantor Administrative Sex	O	
10	Guarantor Type	O	
11	Guarantor Relationship	O	
12	Guarantor SSN	O	
13	Guarantor Date – Begin	O	
14	Guarantor Date – End	O	
15	Guarantor Priority	O	

## 4.1.2.8 DG1 – Diagnosis – Segment Mapping

Table 4-14: DG1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID	R	
2	Diagnosis Coding Method	U	Value is ignored
3	Diagnosis Code	O	Also supported: 3.1 Identifier 3.2 Text 3.3.1 Diag. Coding Syst.
4	Diagnosis Description	U	Value is ignored
5	Diagnosis Date/Time	O	YYYYMMDDhhmmss
6	Diagnosis Type	O	List
15	Diagnosis Priority	O	List
16	Diagnosing Clinician	O	ID or Name&GivenName
20.1	Diagnosis Identifier	O	
20.4	Signing Authority	O	Could also be in MSH-3

## 4.1.2.9 PR1 – Procedures – Segment Mapping

Table 4-15: PR1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID	R	



Table 4-15: PR1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
2	Procedure Coding Method	O	
3	Diagnosis Code	O	Also supported: 3.1 Identifier 3.2 Text 3.3.1 Coding System
4	Procedure Description	O	
5	Procedure Date/Time	O	YYYYMMDDhhmmss
6	Procedure Functional Type	O	List
7	Procedure Minutes	O	In minutes
12	Procedure Practitioner	O	ID or Name&GivenName
14	Procedure Priority	O	List
15	Associated Diagnosis Code	O	Only if the Identifier of the Diagnose is provided
19.1	Procedure Identifier	O	
19.4	Signing Authority	U	Could also be in MSH-3

4.1.2.10 IN1 – Insurance – Segment Mapping

Table 4-16: IN1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – IN1	R	
2	Insurance Plan ID	U	Value is ignored
3.1	Insurance Company ID	O	
3.5	Namespace	O	
4	Insurance Company Name	O	
5	Insurance Company Address	O	Also supported: 5.1 Street Address 5.3 City 5.5 Zip Code 5.6 Country (List 0399)
7(1).1.1	Insurance Co Phone Number	O	Telephone
7(2).1.1	Insurance Co Phone Number	O	Fax
12	Plan Effective Date	O	
13	Plan Expiration Date	O	
15	Plan Type	O	
16	Name of Insured	O	
17	Insured's Relationship to Patient	O	
18	Insured's Date of Birth	O	YYYYMMDD
19	Insured's Address	O	Also supported:



Table 4-16: IN1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
			19.1 Street Address 19.3 City 19.5 Zip Code 19.6 Country (List 0399)
42	Insured's Employment Status	U	Value is ignored
43	Insured's Sex	O	
44	Insured's Employer's Address	O	
49	Insured's ID Number	O	

4.1.2.11 MRG – Merge patient information – Segment Mapping

Table 4-17: MRG Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Prior Patient Identifier List	R	
2	Prior Alternate Patient ID	U	Value is ignored
3	Prior Patient Account Number	U	Value is ignored
4	Prior Patient ID	U	Value is ignored
5	Prior Visit Number	O	Only used with ADT A45
6	Prior Alternate Visit ID	U	Value is ignored
7	Prior Patient Name	U	Value is ignored

4.1.2.12 TXA – Transcription Document Header – Segment Mapping

Table 4-18: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID- TXA	R	
2	Document type	R	List 0270
3	Document content presentation	O	
4	Activity date/time	O	
5	Primary activity provider code/name	O	Also supported: 5.1 ID Number 5.2.1 Family Name 5.2.2 Own Family Prefix 5.3 Given Name 5.7 Degree 5.16 Street 5.17 Zip Code 5.18 City 5.19 Country (List 0399) 5.21 Phone 5.22 Fax
6	Origination date/time	O	



Table 4-18: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
7	Transcription date/time	O	
8	Edit date/time	O	
9	Originator code/name	O	Also supported: 9.1 ID Number 9.2.1 Family Name 9.2.2 Own Family Prefix 9.3 Given Name 9.7 Degree 9.16 Street 9.17 Zip Code 9.18 City 9.19 Country (List 0399) 9.21 Phone 9.22 Fax
10	Assigned document authenticator	O	Also supported: 10.1 ID Number 10.2.1 Family Name 10.2.2 Own Family Prefix 10.3 Given Name 10.7 Degree 10.16 Street 10.17 Zip Code 10.18 City 10.19 Country (List 0399) 10.21 Phone 10.22 Fax
11	Transcriptionist Code/Name	O	Also supported: 11.1 ID Number 11.2.1 Family Name 11.2.2 Own Family Prefix 11.3 Given Name 11.7 Degree 11.16 Street 11.17 Zip Code 11.18 City 11.19 Country (List 0399) 11.21 Phone 11.22 Fax
12	Unique document number	O	MSH-3 is signing authority Also supported: 12.1 Entity Identifier 12.2 Namespace ID (List or MSH-3)
13	Parent document number	U	Value is ignored
14	Placer order number	O	



Table 4-18: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
15	Filler order number	O	
16	Unique document file name	R	Max. length incl file extension: 100 chars
17	Document completion status	O	Workflow or list
18	Document confidentiality status	O	
19	Document availability status	O	
20	Document storage status	U	Value is ignored
21	Document change reason	U	Value is ignored
22	Authentication person, time stamp	U	Value is ignored
23	Distributed copies (code and name of recipients)	U	Value is ignored

4.1.2.13 OBX – Observation/Result – Segment Mapping

Table 4-19: OBX Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – OBX	R	
2	Value type	U	Value is ignored
3	Observation identifier	U	Value is ignored Also supported: 3.1 Identifier 3.2 Text 3.3 Coding Scheme 3.4 Alternate Identifier 3.5 Alternate Text 3.6 Alt. Coding Scheme
4	Observation sub-ID	U	Value is ignored
5	Observation value	R	OBX-5.5 is required.
6	Units	U	Value is ignored
7	Reference range	U	Value is ignored
8	Abnormal flag	U	Value is ignored
9	Probability	U	Value is ignored
10	Nature of abnormal test	U	Value is ignored
11	Observation result status	U	Value is ignored
12	Date last observation normal value	U	Value is ignored
13	User defined access checks	U	Value is ignored
14	Date/time of the observation	U	Value is ignored
15	Producer’s ID	U	Value is ignored
16	Responsible observer	U	Value is ignored
17	Observation method	U	Value is ignored



Table 4-19: OBX Attribute Support			
Seq	HL7 Field Name	Use	Comments
18	Equipment instance identifier	U	Value is ignored
19	Date/time of the analysis	U	Value is ignored

## 4.1.2.14 MFI – Master File Identification – Segment Mapping

Table 4-20: MFI Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Master File Identifier	R	The message is only being processed with PRA in MFI-1, otherwise the message is being ignored. This means if a Guarantor is being delivered with GT1 in this field, this message is being ignored.
2	Master File Application Identifier	O	
3	File-Level Event Code	R	
4	Entered Date/Time	O	
5	Effective Date/Time	O	Every message is immediately being processed. The timeline is not being taken into account.
6	Response Level Code	R	

## 4.1.2.15 MFE – Master File Entry – Segment Mapping

Table 4-21: MFE Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Record-Level Event Code	R	MAD = Add record to master file MDL = Delete record from master file MUP = Update record for master file MDC = Deactivate: discontinue using record in master file, but do not delete from database MAC = Reactivate deactivated record  This code is not being interpreted. The HE always tries to update a record (MUP) and if update doesn't work it will add a record (MAD).
2	MFN Control ID	U	
3	Effective Date/Time	O	YYYYMMDD Every message is immediately being processed. The timeline is not being taken into account.
4	Primary Key Value – MFE	R	
5	Primary Key Value Type	R	

## 4.1.2.16 STF – Staff Identification – Segment Mapping

Table 4-22: STF Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Primary Key Value – STF	R	



Table 4-22: STF Attribute Support			
Seq	HL7 Field Name	Use	Comments
2	Staff ID Code	O	
3	Staff Name	O	3.1 Family Name 3.2 Given Name 3.5 Prefix 3.6 Degree
4	Staff Type	O	
5	Administrative Sex	O	
6	Date/Time Of Birth	O	
7	Active/Inactive Flag	O	
8	Department	O	
9	Hospital Service	O	
10	Phone	O	
11	Office/Home Address	O	
12	Institution Activation Date	O	
13	Institution Inactivation Date	O	
14	Backup Person ID	O	14.1 HIN-ID
15	E-Mail Address	O	15.1 HIN-Mail 1 15.2 HIN-Mail 2
16	Preferred Method Of Contact	O	
17	Marital Status	O	
18	Job Title	O	
19	Job Code/Class	O	
20	Employment Status Code	O	
21	Additional Insured on Auto	O	
22	Driver's License Number – Staff	O	
23	Copy Auto Insurance	O	
24	Auto Ins. Expires	O	
25	Date Last DMV Review	O	
26	Date Next DMV Review	O	
27	Race	O	
28	Ethnic Group	O	
29	Re-activation Approval Indicator	O	

4.1.2.17 PRA – Practitioner Detail – Segment Mapping

Table 4-23: PRA Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Primary Key Value	O	
2	Practitioner Group	O	





<b>Seq</b>	<b>HL7 Field Name</b>	<b>Use</b>	<b>Comments</b>
<b>3</b>	Practitioner Category	O	Text, no list
<b>4</b>	Provider Billing	O	
<b>5</b>	Specialty	O	
<b>6</b>	Practitioner ID Numbers	O	EAN Number
<b>7</b>	Privileges	O	
<b>8</b>	Date Entered Practice	O	
<b>9</b>	Institution	O	
<b>10</b>	Date Left Practice	O	
<b>11</b>	Government Reimbursement Billing Eligibility	O	
<b>12</b>	Set ID – PRA	O	



## 5. Outbound Messages

### 5.1 health-engine

#### 5.1.1 Supported Trigger Events

By default, the HE is creating MDM Events only. Other events may be added on request.

##### 5.1.1.1 Supported MDM Events

For more information about the processed segments and segment mappings, refer to [7] HL7 MDM-Out Detailspezifikationen, the i-engineers, Switzerland.

Event Code	Trigger Event Description
T01	Original document notification
T02	Original document notification and content
T03	Document status change notification

##### 5.1.1.1.1 Important Fields in MDM Segments

The MDM segments and associated fields supported by the health-engine are described in the conformance profile documents. The purpose of this chapter is to emphasize the importance of certain fields:

- PID, PV1, TXA

### 5.1.2 Supported HL7 Fields

#### 5.1.2.1 MSH Segment Mapping

Seq	HL7 Field Name	Use	Comments
1	Field separator	F	
2	Encoding characters	F	^~\&
3	Sending application	F	iengine
4	Sending facility	F	HE
5	Receiving application	D	{empty}
6	Receiving facility	D	{empty}
7	Date/Time of message	F	YYYYMMDDhhmmss
8	Security	U	Value is ignored
9	Message type	F	Example: ADT^A01
10	Message control ID	D	Increasing number generated by sending application
11	Processing ID	D	P
12	Version ID	D	Configurable, supported versions: 2.2, 2.3, 2.3.1, 2.4, 2.5, 2.5.1, 2.6
13	Sequence number	D	Obj_ID + Date
14	Continuation pointer	D	Value is ignored



Table 5-2: MSH – Message Header			
Seq	HL7 Field Name	Use	Comments
15	Accept acknowledgement type	D	NE
16	Application acknowledgement type	D	NE
17	Country code	D	DE
18	Character Set	D	Value is ignored
19	Principal Language of Message	D	Value is ignored
20	Alternate Character Set handling Scheme	U	Value is ignored
21	Conformance Statement ID	U	Value is ignored

## 5.1.2.2 EVN Segment Mapping

Table 5-3: EVN Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Event Type Code	F	Expl. "A01"
2	Recorded Date/Time	D	
3	Date/Time Planned Event	D	Creation date : YYYYMMDDhhmmss
4	Event Reason Code	D	
5	Operator ID	D	
6	Event Occurred	F	Last update: YYYYMMDDhhmmss
7	Event Facility	D	

## 5.1.2.3 PID Segment Mapping

Table 5-4: PID Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – Patient ID	F	Always "1"
2	Patient ID	D	
3	Patient Identifier List	D	
4	Alternate Patient ID	D	
5	Patient Name	D	Also supported: 5.1.1 Family Name 5.1.2 Own Family Prefix 5.2 Given Name
6	Mother's Maiden Name	D	
7	Date of Birth	D	YYYYMMDD
8	Administrative Sex	D	List 0001
9	Patient Alias	D	
10	Race	D	



Table 5-4: PID Attribute Support			
Seq	HL7 Field Name	Use	Comments
11	Patient Address	D	Also supported: 11.1 Street Address 11.3 City 11.5 Zip Code 11.6 Country (List 0399)
12	County Code	D	
13	Phone Number – Home	D	
14	Phone Number – Business	D	
15	Language – Patient	D	
16	Marital Status	D	List 0002
17	Religion	D	List 0006
18	Patient Account Number	D	
19	SSN Number – Patient	D	
20	Driver’s licence – Patient	D	
21	Mother’s identifier	D	
22	Ethnic group	D	
23	Birth place	D	
24	Multiple birth indicator	D	
25	Birth order	D	
26	Citizenship	D	List 0399
27	Veterans military status	D	
28	Nationality	D	List 0399
29	Patient death date/time	D	
30	Patient death indicator	D	Y/N
31	Identity unknown indicator	D	
32	Identity reliability code	D	
33	Last update date/time	D	
34	Last update facility	D	
35	Species code	D	
36	Breed code	D	
37	Strain	D	
38	Production class code	D	

5.1.2.4 PV1 Segment Mapping

Table 5-5: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – Patient Visit	F	Always “1” or {empty}
2	Patient Class	D	List 0004



Table 5-5: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
3	Assigned Patient Location	D	Also supported: 3.1 Point of Care (List) 3.2 Room (List) 3.3 Bed (List) 3.4 Facility (List)
4	Admission Type	D	
5	Preadmit Number	D	
6	Prior Patient Location	D	
7	Attending Doctor	D	Also supported: 7.1 ID Number 7.2.1 Family Name 7.2.2 Own Family Prefix 7.3 Given Name 7.7 Degree 7.16 Street 7.17 Zip Code 7.18 City 7.19 Country (List 0399) 7.21 Phone 1 7.22 Phone 2
8	Referring Doctor	D	Also supported: 8.1 ID Number 8.2.1 Family Name 8.2.2 Own Family Prefix 8.3 Given Name 8.7 Degree 8.16 Street 8.17 Zip Code 8.18 City 8.19 Country (List 0399) 8.21 Phone 1 8.22 Phone 2
9	Consulting Doctor	D	Also supported: 9.1 ID Number 9.2.1 Family Name 9.2.2 Own Family Prefix 9.3 Given Name 9.7 Degree 9.16 Street 9.17 Zip Code 9.18 City 9.19 Country (List 0399) 9.21 Phone 1 9.22 Phone 2



Table 5-5: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
10	Hospital Service	D	
11	Temporary Location	D	
12	Preadmit Test Indicator	D	
13	Readmission indicator	D	
14	Admit Source	D	
15	Ambulatory Status	D	
16	VIP Indicator	D	
17	Admitting doctor	D	Also supported: 17.1 ID Number 17.2.1 Family Name 17.2.2 Own Family Prefix 17.3 Given Name 17.7 Degree 17.16 Street 17.17 Zip Code 17.18 City 17.19 Country (List 0399) 17.21 Phone 1 17.22 Phone 2
18	Patient Type	D	
19	Visit Number	D	
20	Financial Class	D	
21	Charge Price Indicator	D	
22	Courtesy Code	D	
23	Credit Rating	D	
24	Contract Code	D	
25	Contract Effective Date	D	
26	Contract Amount	D	
27	Contract Period	D	
28	Interest Code	D	
29	Transfer to Bad Debt Code	D	
30	Transfer to Bad Debt Date	D	
31	Bad Debt Agency Code	D	
32	Bad Debt Transfer Amount	D	
33	Bad Debt Recovery Amount	D	
34	Delete Account Indicator	D	
35	Delete Account Date	D	
36	Discharge Disposition	D	List 0112
37	Discharged to Location	D	List



Table 5-5: PV1 Attribute Support			
Seq	HL7 Field Name	Use	Comments
38	Diet Type Kostform plus	D	
39	Servicing Facility	D	
40	Bed Status	D	
41	Account Status	D	
42	Pending Location	D	
43	Prior Temporary Location	D	
44	Admit Date/Time	D	YYYYMMDDhhmmss
45	Discharge Date/Time	D	YYYYMMDDhhmmss
46	Current Patient Balance	D	
47	Total Charges	D	
48	Total Adjustments	D	
49	Total Payments	D	
50	Alternate Visit ID	D	
51	Visit Indicator	D	
52	Other Healthcare Provider	D	

5.1.2.5 TXA Segment Mapping

Table 5-6: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID- TXA	D	Segment number TXA
2	Document type	D	List 0270
3	Document content presentation	D	Application/pdf [MIME-Type]
4	Activity date/time	D	
5	Primary activity provider code/name	D	Also supported: 5.1 ID Number 5.2.1 Family Name 5.2.2 Own Family Prefix 5.3 Given Name 5.7 Degree 5.16 Street 5.17 Zip Code 5.18 City 5.19 Country (List 0399) 5.21 Phone 5.22 Fax
6	Origination date/time	D	
7	Transcription date/time	D	
8	Edit date/time	D	



Table 5-6: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
9	Originator code/name	D	Also supported: 9.1 ID Number 9.2.1 Family Name 9.2.2 Own Family Prefix 9.3 Given Name 9.7 Degree 9.16 Street 9.17 Zip Code 9.18 City 9.19 Country (List 0399) 9.21 Phone 9.22 Fax
10	Assigned document authenticator	D	Also supported: 10.1 ID Number 10.2.1 Family Name 10.2.2 Own Family Prefix 10.3 Given Name 10.7 Degree 10.16 Street 10.17 Zip Code 10.18 City 10.19 Country (List 0399) 10.21 Phone 10.22 Fax
11	Transcriptionist Code/Name	D	Also supported: 11.1 ID Number 11.2.1 Family Name 11.2.2 Own Family Prefix 11.3 Given Name 11.7 Degree 11.16 Street 11.17 Zip Code 11.18 City 11.19 Country (List 0399) 11.21 Phone 11.22 Fax
12	Unique document number	D	MSH-3 is signing authority Also supported: 12.1 Entity Identifier 12.2 Namespace ID: HE 12.3 Universal ID 12.4 Universal ID Type
13	Parent document number	D	
14	Placer order number	D	
15	Filler order number	D	





Table 5-6: TXA Attribute Support			
Seq	HL7 Field Name	Use	Comments
16	Unique document file name	D	T02 only: exported file name
17	Document completion status	D	Workflow or list
18	Document confidentiality status	D	
19	Document availability status	D	
20	Document storage status	D	
21	Document change reason	D	
22	Authentication person, time stamp	D	
23	Distributed copies (code and name of recipients)	D	

5.1.2.6 OBX Segment Mapping

Table 5-7: OBX Attribute Support			
Seq	HL7 Field Name	Use	Comments
1	Set ID – OBX	D	OBX segment number
2	Value type	D	
3	Observation identifier	D	Also supported: 3.1 Identifier 3.2 Text 3.3 Coding Scheme 3.4 Alternate Identifier 3.5 Alternate Text 3.6 Alt. Coding Scheme
4	Observation sub-ID	D	
5	Observation value	D	
6	Units	D	
7	Reference range	D	
8	Abnormal flag	D	
9	Probability	D	
10	Nature of abnormal test	D	
11	Observation result status	D	
12	Date last observation normal value	D	
13	User defined access checks	D	
14	Date/time of the observation	D	
15	Producer's ID	D	



Table 5-7: OBX Attribute Support			
Seq	HL7 Field Name	Use	Comments
16	Responsible observer	D	Also supported: 16.1 Responsible observer ID 16.2 Responsible observer family name 16.3 Responsible observer given name 16.7 Responsible observer title
17	Observation method	D	
18	Equipment instance identifier	D	
19	Date/time of the analysis	D	