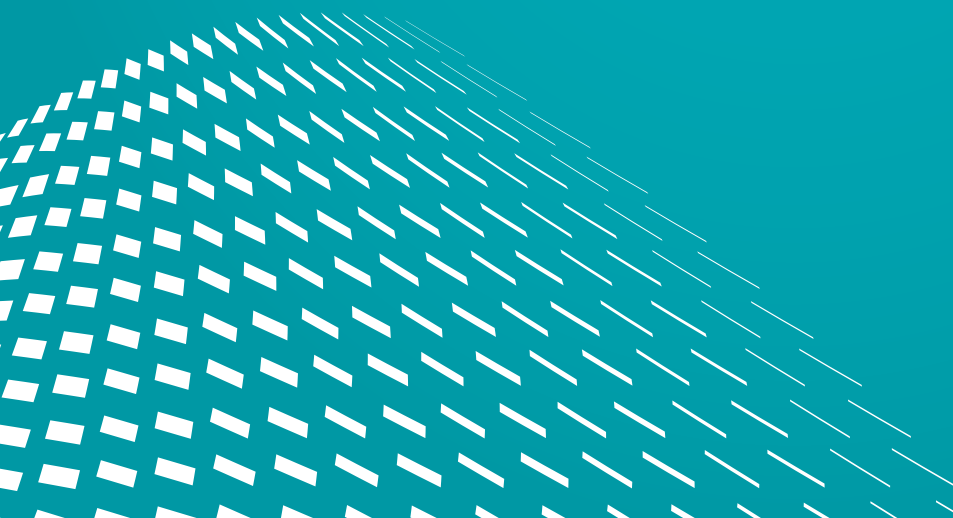


CONNECT™

HL7 Interface Specification



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1 GENERAL INFORMATION

1.1 MIRTH(R) CONNECT

Mirth(R) Connect is a cross-platform HL7 interface engine that enables bi-directional sending of HL7 messages between Connect and other systems and applications over multiple transports.

Connect uses Mirth(R) Connect Version 3.4.2

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1.2 SUPPORTED HL7 MESSAGE TYPES AND VERSIONS

Connect by Mirth Connect supports the following HL7 message types for:

1.2.1 HL7 ADT	
TYPE	DESCRIPTION
A01	Admit/visit notification
A02	Transfer a patient
A03	Discharge/end visit
A04	Register a patient
A05	Pre-admit a patient
A06	Change an outpatient to an inpatient
A07	Change an inpatient to an outpatient
A08	Update patient information
A09	Patient departing - tracking
A10	Patient arriving - tracking
A11	Cancel admit/visit notification
A12	Cancel transfer
A13	Cancel discharge/end visit
A40	Merge patient - patient identifier list
A47	Change patient identifier list

1.2.2 HL7 QRY / ADR

TYPE	DESCRIPTION
ADR A19	Patient query
QRY A19	Patient query

1.2.3 HL7 ORM / ORU

TYPE	DESCRIPTION
O01	Order message
R01	Unsolicited transmission of an observation message

1.2.4 SIU

TYPE	DEFINITION
S12	Notification of new appointment booking
S13	Notification of Appointment Rescheduling
S14	Notification of Appointment Modification
S15	Notification of Appointment Cancellation
S16	Appointment Discontinuation
S17	Appointment Deletion
S18	Addition of Service/Resource on Appointment
S19	Modification of Service/Resource on Appointment

1.2.5 MDM


TYPE	DEFINITION
T01	Original document notification
T02	Original document notification and content



HL7 Versions 2.3 and 2.5.1 are supported.

2 MESSAGE TYPES

The implemented segment dimension for each message type is listed. The presentation of segment structure is based on the representation of the official HL7 standard.

 Square brackets “[]” indicate an optional use.
Curly braces “{}” indicate repeatability

2.1 ADT

2.1.1 ADT A01 – A13

TYPE DEFINITION

TYPE	DESCRIPTION
A01	Admit/visit notification
A02	Transfer a patient
A03	Discharge/end visit
A04	Register a patient
A05	Pre-admit a patient
A06	Change an outpatient to an inpatient
A07	Change an inpatient to an outpatient
A08	Update patient information
A09	Patient departing - tracking
A10	Patient arriving - tracking
A11	Cancel admit/visit notification
A12	Cancel transfer
A13	Cancel discharge/end visit

MESSAGE SEGMENTS

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

MESSAGE EXAMPLE

```
MSH|^~\&|||||20160115164205||ADT^A01|6567314|P|2.5.1|||NE|AL|||
EVN|A01|20160115164205|||
PID|99777|99777|15585321|Mustermann^Max^^^^BS||19801220000000|M||Musterstr.
5^Muttentz^BL^4132^D||||D|S|ATH||||||Ingenieur|CH|||||
PV1||O|PHYS^0^0^FRTS|A||||^^^^^|20^Mustermann^Gernot^^^^|16^Doe^Fabian^^^^|||1130190|||1^2|||||20160115162800
|20160323000000|||||
```

2.1.2 ADT A40, A47

TYPE DEFINITION

TYPE	DEFINITION
A40	Merge patient - patient identifier list
A47	Change patient identifier list

MESSAGE SEGMENTS

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

MESSAGE EXAMPLE

```
MSH|^~\&|||20160720150000||ADT^A40|65466555|P|2.5.1^DEU|||AL|NE|||
EVN||20160720150000|||20160720150000
PID|2|ABCDEF|ABCDEF||Mustermann^Gabriele^^^^L^A^^G||19770325|F|||Spechtweg 14&Spechtweg&14^Hamburg^^^^H-Spitalstr.
17&Spitalstr. &17^Hamburg^^^^BDL|^PRN^PH^49^40^7654321^^^^040/7654321|^WPN^PH^49^40^5432^555^^^^040/5432-
555|DEU^HL70296|M^married^HL70002|CAT^HL70006|||Heilig-Geist-Krankenhaus||DEU^HL70171
MRG|99777|
```

2.1.3 ADR A19 - PATIENT QUERY

TYPE DEFINITION

TYPE	DESCRIPTION
A19	Patient query

MESSAGE SEGMENTS

MSH	Message Header
MSA	Message Acknowledgment
QRD	Original-Style Query Definition
PID	Patient Identification
PV1	Patient Visit

MESSAGE EXAMPLE

```
MSH|^~\&|HIS|Hospital|SORIN connect|LIVANOVA|20160801090441||ADR^A19^ACK|20160801090441|P|2.5.1
MSA|AA|0f52dd3f-e27e-4e24-8c8e-29ba273a0fd7|Query successFu1
QRD|201608010904|R|I|Q99777|||1^RD|99777|DEM|S|
PID||99777|99777|15585321|Mustermann^Max^^BS||19801220000000|M||Musterstr.
5^Muttentz^BL^14132^D|||DIS|ATH|||Ingenieur|CH|||
PV1||O|PHYS^5^12^RAD|A||^16^Doe^Fabian^^|1130190|||1^2|||20160115162800
|20160323000000|||
```

2.1.4 QRY A19 – PATIENT QUERY

TYPE DEFINITION

TYPE	DESCRIPTION
A19	Patient query

MESSAGE SEGMENTS

MSH	Message Header
QRD	Original-Style Query Definition

MESSAGE EXAMPLE

```
MSH|^~\&|SORIN connect|LIVANOVA|HIS|Hospital|20160801085500||QRY^A19|1324567894|P|2.5.1||AL|AL||8859/15|
QRD|20160801085500|R|I|Q99777||1^RD|99777|DEM|S|
```


2.2 MDM

2.2.1 MDM T01 - ORIGINAL DOCUMENT NOTIFICATION

TYPE DEFINITION

TYPE	DESCRIPTION
T01	Original document notification

MESSAGE SEGMENTS

MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
TXA	Transcription Document Header

MESSAGE EXAMPLE

```
MSH|^~\&|SORIN connect|LIVANOVA|HIS|Hospital|20161013041732||MDM*T01|ef8a0810-6f22-4015-abc-79bb87c82c6b|P|2.5.1|||AL|AL|8859/1
EVN|T01|20161013041732
PID|1|99777|99777||Mustermann^Max^^^BS||19801220|M
PV1|1|N|||||1130190|||||
TXA|1|HP|AP|20161013041732|||20161013041732|||ef8a0810-6f22-4015-abc-79bb87c82c6b|||C:/test/TESTPDF.pdf|DO|||0
```

2.2.2 MDM T02 - ORIGINAL DOCUMENT NOTIFICATION AND CONTENT

TYPE DEFINITION

TYPE	DESCRIPTION
T02	Original document notification and content

MESSAGE SEGMENTS

MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
TXA	Transcription Document Header
OBX	Observation / Result

MESSAGE EXAMPLE

```
MSH|^~\&|SORIN connect|LIVANOVA|HIS|Hospital|20161013041231||MDM*T02|095b8220-2935-4E79-90ed-0a1614832c8b|P|2.5.1|||AL|AL|8859/1
EVN|T02|20161013041231
PID|1|99777|99777||Mustermann^Max^^^BS||19801220|M
PV1|1|N|||||1130190|||||
TXA|1|HP|AP|20171122174542|||20171122174542|||e4044edf-acc9-4879-bb73-5ee288bf045e|||test3.pdf|DO|||0
OBX|1|BD|^test3.pdf|^application/pdf^^Base64^$(ATTACH:5e44eaa8-8e40-4a08-aaec-140ea7f18f43)|||P
```

2.3 ORM

2.3.1 ORM O01 – ORDER MESSAGE

TYPE DEFINITION

TYPE	DESCRIPTION
O01	Order message

MESSAGE SEGMENTS

An ORM message will be considered if it contains at least one of the following segments: AL1 or DG1 or OBX. Otherwise the message will be ignored.

Full segment list:

MSH	Message Header
PID	Patient Identification
PV1	Patient Visit
[{AL1}]	Patient Allergy Information
ORC	Common Order
[{NTE}]	Notes and Comments (for ORC and global comments)
OBR	Observation Request
[{DG1}]	Diagnosis
[{OBX}]	Observation / Result
[{NTE}]	Notes and Comments (for OBX)

MESSAGE EXAMPLE

```
MSH|^~\&|HIS|Hospital|sorin connect|LIVANOVA|20160222150522||ORM^O01|6567317|P|2.5.1||NE|AL||
PID|99777|99777|15585321|Mustermann^Max^^^BS||19801220000000|M|||Mustestr.
5^^Muttentz^BL^14582^D|||D|S|ATH|||Ingenieur|CH|||
PV1|O|PHYS^5^12^RAD|A||^16^Doe^Fabian^^^|1130190|||1^2|||20160115162800
|20160323000000|||
AL1|1|DA|00000741^OXYCODONE||HYPOTENSION|19820202000000
AL1|2|DA|00001433^TRAMADOL||SEIZURES|19820202000000
AL1|3|DA|00004700^INFLUENZA VIRUS VACCINE||19820202000000
ORC|XO|PMS201942153^2.16.756.5.33.2.5.3.501.5^^ISO|SC|||832178^Testarzt^Martin^^^|
OBR|1|PMS201942153^2.16.756.5.33.2.5.3.501.5^^ISO|PMECHO5001^PM und
Echo|||832178^Testarzt^Martin^^^|20160221150000|||KARDIO-CRPASO|||
DG1|1||784.3^APHASIA^I9C||20150816|A
DG1|2||784.0^HEADACHE^I9C||20150816|A

DG1|3||781.6^MENINGISMUS^I9C||20150816|A
OBX|1|NM|0106550^WHITE BLOOD CELL COUNT||7.9|10e9/L|4.3-11.0|||F||20160719020200|34333^Kelly, Bacon^^00010033^MOLIS XE2|RES
OBX|2|NM|0104650^RBCx10e12||4.09|10e12/L|4.53-5.73|L|||F||20160719220200|34333^Kelly, Bacon^^00010033^MOLIS XE2|RES
OBX|3|NM|0102150^HEMOGLOBIN||12.9|g/dL|13.6-17.4|L|||F||20160719120200|34333^Kelly, Bacon^^00010033^MOLIS XE2|RES
OBX|4|NM|0102100^HEMATOCRIT||37.5|%|40.7-50.8|L|||F||20160718130200|34333^Kelly, Bacon^^00010033^MOLIS XE2|RES
OBX|5|NM|0103500^MEAN CORPUSCULAR VOLUME||91.7|fL|81.6-96.8|||F||20160718200200|34333^Kelly, Bacon^^00010033^MOLIS XE2|RES
OBX|6|NM|HEIGHT^HEIGHT||175|cm|||F||20160718200200|RES
OBX|7|NM|WEIGHT^WEIGHT||85|kg|||F||20160718200200|RES
```

2.4 ORU

2.4.1 ORU R01 - UNSOLICITED TRANSMISSION OF AN OBSERVATION MESSAGE

TYPE DEFINITION

TYPE	DESCRIPTION
R01	Unsolicited transmission of an observation message

MESSAGE SEGMENTS

Full segment list:

MSH	Message Header
PID	Patient Identification
PV1	Patient Visit
OBR	Observation Request
OBX	Observation / Result

MESSAGE EXAMPLE

```
MSH|^~\&|SORIN connect|LIVANOVA|HIS|Hospital|20171026095353||ORU^R01|a9394670-b612-4415-be1b-c98c013cccc|P|2.5.1|||AL|AL||8859/15
PID|1|8890088|8890088||McDoogal^Hattie^^^^||F||100 Beach Drive^Apt. 5^Mission Viejo^CA^92691
PV1|1|N|||||||||||||1783332658
OBR|1|928272607|928272607|^Document Content|||20171026095353
OBX|1|ED|^Document Content 'test.pdf'|^application/pdf^^Base64*${ATTACH:43726a55-7f55-4861-974d-d2fb70da45f1}|||||F
```

2.5 SIU

2.5.1 SIU S12 – S19

TYPE DEFINITION

TYPE	DEFINITION
S12	Notification of new appointment booking
S13	Notification of Appointment Rescheduling
S14	Notification of Appointment Modification
S15	Notification of Appointment Cancellation
S16	Appointment Discontinuation
S17	Appointment Deletion
S18	Addition of Service/Resource on Appointment
S19	Modification of Service/Resource on Appointment

MESSAGE SEGMENTS

MSH	Message Header
SCH	Scheduling Activity Information
PID	Patient Identification
[PV1]	Patient Visit
RGS	Resource Group

MESSAGE EXAMPLE

```
MSH|^~\&|HIS|Hospital|LIVANOVA|SORIN CONNECT|20160222152207||SIU^S12|6567318|P|2.5.1|||||
SCH|00331839401|||S8||Normal^HEALTHCHECK ANY AGE|20|MIN|^20160222100000|||123456|||99777|||Pending|
PID||99777|99777|15585321|Mustermann^Max^^^BS||1980122000000|M||Musterstr.
5^Muttentz^BL^14582^D||D|S|ATH|||||Ingenieur|CH||||
PV1||0|PHYS^S^12^RAD|A||^20^Mustermann^Gernot^^^16^Doe^Fabian^^^|1130190|||||1^2|||||20160115162800
|20160323000000|||||
RGS|1||987654|
```

3 SEGMENTS

3.1 DESCRIPTION FOR THE SEGMENT TABLES

ALL SEGMENT DESCRIPTIONS IN THE TABLES ARE SEPARATED IN THE FOLLOWING WAY.

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	DATA	COMMENTS
<ul style="list-style-type: none"> • SEQ: Describes the field number in the segment. • Name: In this column the HL7-identifier of the field are defined. • DT: Specifies the data category. • TBL: Lists possibly linked tables which specify a certain field. • LEN: For most of the fields a maximal length is defined. • The following codes mark a field as required, optional or conditional <ul style="list-style-type: none"> • R - Required • O - Optional • C - Conditional (In response to a triggering event or another field/s). The field definitions determine the specific algorithm that defines the dependencies for this field. • B - Backward compability • Data: may contain examples how to use this field. • Comments: may contain comments for this field. • The fields with blue background and bold text are used by the channels. 							

3.2 AL1 - PATIENT ALLERGY INFORMATION

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - AL1	SI		4	R	A02	
2	Allergen Type Code	CE	0127	250	O	DA	
3	Allergy Code/Mnemonic/Description	CE		250	R	20161224052003	
4	Allergy Severity Code	CE	0128	250	O	SV	
5	Allergy Reaction Code	ST		15	O	1234567	
6	Identification Date	DT		8	B	20161224	

3.3 DG1 – DIAGNOSIS

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - DG1	SI		4	R	0004	
2	Diagnosis Coding Method	ID		2	B		Deleted from the HL7 standard. A replacement field is not defined.
3	Diagnosis Code - DG1	CE		250	O	784.3^APHASIA^I9C	
4	Diagnosis Description	ST		40	B		Deleted from the HL7 standard. A replacement field is not defined.
5	Diagnosis Date /Time	TS		24	O	20130419072300	
6	Diagnosis Type	IS		2	R	A	
7	Major Diagnostic Category	CE		250	B		Deleted from the HL7 standard. A replacement field is not defined.
8	Diagnostic Related Group	CE		250	B		Deleted from the HL7 standard. A replacement field is not defined.
9	DRG Approval Indicator	ID		1	B		Deleted from the HL7 standard. A replacement field is not defined.
10	DRG Grouper Review Code	IS		2	B		Deleted from the HL7 standard. A replacement field is not defined.
11	Outlier Type	CE		250	B		Deleted from the HL7 standard. A replacement field is not defined.
12	Outlier Days	NM		3	B		Deleted from the HL7 standard. A replacement field is not defined.
13	Outlier Cost	CP		12	B		Deleted from the HL7 standard. A replacement field is not defined.
14	Grouper Version And Type	ST		4	B		Deleted from the HL7 standard. A replacement field is not defined.
15	Diagnosis Priority	ID		2	O	1 = Primary diagnosis, 2..n = Secondary diagnosis	
16	Diagnosing Clinician	XCN		250	O	Hasebein^Hans^Dr.	
17	Diagnosis Classification	IS		3	O	D	
18	Confidential Indicator	ID		1	O	Y	
19	Attestation Date/Time	TS		24	O	20130419072300	
20	Diagnosis Identifier	EI		427	C		
21	Diagnosis Action Code	ID		1	C	A	

3.4 EVN - EVENT TYPE

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Event Type Code	ID		3	B	A02	
2	Recorded Date/Time	TS		24	R	20161224052003	
3	Date/Time Planned Event	TS		24	O	20161224052003	
4	Event Reason Code	IS		3	O	02	
5	Operator ID	XCN		250	O	1234567	
6	Event Occurred	TS		24	O	20161224052003	
7	Event Facility	HD		241	O		

3.5 MRG - MERGE PATIENT INFORMATION

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Prior Patient Identifier List	CX		250	R	99777	
2	Prior Alternate Patient ID	CX		250	B		
3	Prior Patient Account Number	CX		250	O		
4	Prior Patient ID	CX		250	B		
5	Prior Visit Number	CX		250	O		
6	Prior Alternate Visit ID	CX		250	O		
7	Prior Patient Name	XPN		250	O		

3.6 MSA - MESSAGE ACKNOWLEDGMENT

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Acknowledgement Code	ID		2	R	AA	
2	Message Control ID	ST		20	R	0f52dd3f-e27e-4e24-8c8e-29ba273a0fd7	
3	Text Message	ST		80	B	Query successful	
4	Expected Sequence Number	NM		15	O		
5	Delayed Acknowledgment Type	ID		1	B		
6	Error Condition	CE		250	B		

3.7 MSH - MESSAGE HEADER

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Field Separator	ST		1	R		
2	Encoding Characters	ST		4	R	^~\&	
3	Sending Application	HD		227	O	KIS	Host name of the sending system
4	Sending Facility	HD		227	O	Agfa Orbis	Client of the sending System
5	Receiving Application	HD		227	O	LIVANOVA	Host name of the sending system
6	Receiving Facility	IS		227	O	SORIN CONNECT	Client of the sending System
7	Date/Time Of Message	TS		24	R	20160222152207	
8	Security	ST		40	O		
9	Message Type	MSG		15	R	SIU^S12	
10	Message Control ID	ST		20	R	1,2,3...	Unique (per lab) ID. Is used for monitoring purposes
11	Processing ID	PT		3	R	P	
12	Version ID	VID		60	R	2.5.1	
13	Sequence Number	NM		15	O		
14	Continuation Pointer	ST		180	O		
15	Accept Acknowledgement Type	ID	0155	2	O	AL	
16	Application Acknowledgement Type	ID	0155	2	O	NE	
17	Country Code	ID		3	O	DE	Referred to ISO Norm 3166-2
18	Character Set	ID	0211	16	O	8859/1	
19	Principal Language of Message	CE		250	O	EN	Referred to ISO Norm 639-1
20	Alternate Character Set Handling Scheme	ID		20	O		
21	Message Profile Identifier	EI		427	O		

3.8 NTE - NOTES AND COMMENTS

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - NTE	SI		4	O	1234	
2	Source of Comment	ID		8	O		
3	Comment	FT		65536	O	This ia a test comment	
4	Comment Type	CWE		250	O		

3.9 OBR - OBSERVATION REQUEST

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - OBR	SI		4	O		
2	Placer Order Number	EI		22	O/R**	A32210001	
3	Filler Order Number	EI		22	C	1112345678	
4	Universal Service ID	CE		250	R	LEUK^Leukozyten	
5	Priority-OBR	ID		2	B		Delete from the HL7 standard. (obsolete, use the sixth component of OBR-27)
6	Requested Date/Time	TS		24	B		Delete from the HL7 standard. (obsolete, use the sixth component of OBR-27)
7	Observation Date/Time	TS		24	C	20130419230512	
8	Observation End Date/Time	TS		24	O		
9	Collection Volume	CQ		20	O	1000ml	
10	Collector Identifier	XCN		250	O		
11	Specimen Action Code	ID		1	O		
12	Danger Code	CE		250	O		
13	Relevant Clinical Information	ST		300	O		
14	Specimen Received Date/Time	TS		24	B	20130419230512	
15	Specimen Source	SPS		300	B	1025^BUN^Harnstoff^ Genital^^Urinausscheidung	
16	Ordering Provider	XCN		250	O		
17	Order Callback Phone Number	XTN		250	O		
18	Placer Field 1	ST		60	O		
19	Placer Field 2	ST		60	O		
20	Filler Field 1	ST		60	O		

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
21	Filler Field 2	ST		60	O		
22	Results Rpt/Status Chng - Date/Time	TS		24	C		
23	Charge to Practice	MOC		40	O		
24	Diagnostic Serv Sect ID	ID		10	O		
25	Result Status	ID		1	C		
26	Parent Result	PRL		400	O		
27	Quantity/Timing	TQ		200	B		Delete from the HL7 standard. A replacement field is not defined.
28	Result Copies To	XCN		250	O		
29	Parent Number	EIP		200	O		
30	Transportation Mode	ID		20	O		
31	Reason for Study	CE		250	O		
32	Principal Result Interpreter	NDL		200	O		
33	Assistant Result Interpreter	NDL		200	O		
34	Technician	NDL		200	O		
35	Transcriptionist	NDL		200	O		
36	Scheduled Date/Time	TS		24	O		
37	Number of Sample Containers	NM		4	O		
38	Transport Logistics of Collected Sample	CE		250	O		
39	Collector's Comment	CE		250	O		
40	Transport Arrangement Responsibility	CE		250	O		
41	Transport Arranged	ID		30	O		
42	Escort Required	ID		1	O		
43	Planned Patient Transport Comment	CE		250	O		
44	Procedure Code	CE		250	O		
45	Procedure Code Modifier	CE		250	O		
46	Placer Supplemental Service Information	CE		250	O		
47	Filler Supplemental Service Information	CE		250	O		
48	Medically Necessary Duplicate Procedure Reason	CWE		250	C		
49	Result Handling	IS		2	O		
50	Parent Universal Service Identifier	CWE		250	O		

O/R** = Either OBR2.1 or ORC2.1 must be filled.

3.10 OBX - OBSERVATION / RESULT

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - OBX	SI		4	O	1	
2	Value Type	ID		3	C	NM	
3	Observation Identifier	CE		250	R	0106550^WHITE BLOOD CELL COUNT	
4	Observation Sub-ID	ST		20	C		
5	Observation Value	ST		99999	C	7.9	
6	Units	CE		250	O	10e9/L	
7	References Range	ST		60	O	4.3-11.0	
8	Abnormal Flags	IS		5	O		
9	Probability	NM		5	O		
10	Nature of Abnormal Test	ID		2	O		
11	Observation Result Status	ID		1	R	F	
12	Effective Date of Reference Range	TS		24	O		
13	User Defined Access Checks	ST		20	O		
14	Date/Time of the Observation	TS		24	O	20160719020200	
15	Producer's ID	CE		250	O	34333	
16	Responsible Observer	XCN		250	O	RES	
17	Observation Method	CE		250	O		
18	Equipment Instance Identifier	EI		22	O		
19	Date/Time of the Analysis	TS		24	O		
20	Reserved for v2.6	ST		0	O		
21	Reserved for v2.6	ST		0	O		
22	Reserved for v2.6	ST		0	O		
23	Performing Organization Name	XON		567	O		
24	Performing Organization Address	XAD		631	O		
25	Performing Organization Medical Director	XCN		3002	O		

3.11 ORC - COMMON ORDER

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Order Control	ID	2		R	NW	
2	Placer Order Number	EI	22		O/R**	AA32210001	
3	Filler Order Number	EI	22		C	112345678	This processing number is from the commissioning laboratory and it can be coded in the barcode on the tube. It must send back in ORU to identify the Result in the LIS of the commissioning laboratory
4	Placer Group Number	EI	22		O		
5	Order Status	ID	2		O	CM	
6	Response Flag	ID	1		O		
7	Quantity/Timing	TQ	200		B	^^^^^E	Delete from the HL7 standard. It is recommended to use TQ1 and TQ2 Segment
8	Parent Order	EIP	200		O		
9	Date/Time of Transaction	TS	24		O	20121224052003	
10	Entered By	XCN	250		O		
11	Verified By	XCN	250		O		
12	Ordering Provider	XCN	250		O		
13	Enterer's Location	PL	80		O		
14	Call Back Phone Number	XTN	250		O		
15	Order Effective Date/Time	TS	24		O	20121224052003	The time when the sending laboratory recorded the sample
16	Order Control Code Reason	CE	250		O		
17	Entering Organization	CE	250		O		
18	Entering Device	CE	250		O		
19	Action By	XCN	250		O		
20	Advanced Beneficiary Notice Code	CE	250		O		
21	Ordering Facility Name	XON	250		O		
22	Ordering Facility Address	XAD	250		O		
23	Ordering Facility Phone Number	XTN	250		O		
24	Ordering Provider Address	XAD	250		O		
25	Order Status Modifier	CWE	250		O		
26	Advanced Beneficiary	CWE	60		C		
27	Filler's Expected Availability Date/Time	TS	24		O		
28	Confidentiality Code	CWE	250		O		
29	Order Type	CWE	250		O		
30	Enterer Authorization Mode	CNE	250		O		
31	Parent Universal Service Identifier	CWE	250		O		

O/R** = Either OBR2.1 or ORC2.1 must be filled.

3.12 PID - PATIENT IDENTIFICATION

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - Patient ID	SI		4	O	0001	Continuous sequence number
2	Patient ID	CX		20	B	12345	Patient ID HIS
3	Patient Identifier List	CX		250	R	0001710156	
4	Alternate Patient ID	CX		20	B		Deleted from the HL7 standard. It is recommended to use PID-3 - Patient Identifier List for all patient identifiers
5	Patient Name	XPN		250	R	Müller^Peter^Klaus ^ Jr. ^Herr^Dr. rer. nat.^	Name^Firstname^2. Firname^Suffix (Jr., Sr.) ^Title^Degree
6	Mother's Maiden Name	XPN		250	O	Meier	This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name
7	Date/Time of Birth	TS		24	R	19750701	
8	Administrative Sex	IS	0001	1	O	M	Example: M (male), F (female), U (unknown)
9	Patient Alias	XPN		250	B		Deleted from the HL7 standard. It is recommended to use PID-5 - Patient Name for all patient names
10	Race	CE		250	O	2106-3	
11	Patient Address	XAD		250	O	Friedhof 5^hinten links^Trier^Rheinland Pfalz^54290^D^P	Street^Adding^City^ State^ZIP^Country ^Type send only when needed for LIS2LIS communication
12	Country code	IS		4	B		Deleted from the HL7 standard. The county can now be supported in the county/parish code component of the XAD data type (PID-11 - Patient Address)
13	Phone Number - Home	XTN		250	O	00493381300525 ^WPN^PH	
14	Phone Number - Business	XTN		250	O		
15	Language - Patient	CE		250	O	DE	
16	Marital Status	CE		250	O	A	
17	Religion	CE		250	O	rk	
18	Patient Account Number	CX		250	O	9800010^^^^AN	
19	Social Security Number - Patient	ST		16	B		Deleted from the HL7 standard. It is recommended to use PID-3 - Patient Identifier List for all patient identifiers
20	Driver's License Number - Patient	DLN		25	B		Deleted from the HL7 standard. It is recommended to use PID-3 - Patient Identifier List for all patient identifiers
21	Mother's Identifier	CX		250	O	2398473^^^^ 02~1631895^^^^01	Visit nr Mother^^^^ 02~PIDMother^^^^01 IdentifierTypeCodes: 01 = PID, 02 = Visit number
22	Ethnic Group	CE		250	O		
23	Birth Place	ST		250	O	Brandenburg	
24	Multiple Birth Indicator	ID		1	O		
25	Birth Order	NM		2	O		
26	Citizenship	CE		250	O	DE	
27	Veterans Military Status	CE		250	O		

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
28	Nationality	CE		250	B		Deleted from the HL7 standard. It is recommended to refer to PID-10 - Race, PID-22 - Ethnic group and PID-26 - Citizenship
29	Patient Death Date and Time	TS		24	O	20130215120320	
30	Patient Death Indicator	ID		1	O	Yes	
31	Identity Unknown Indicator	ID		1	O		
32	Identity Reliability Code	IS		20	O		
33	Last Update Date/Time	TS		24	O		
34	Last Update Facility	HD		241	O		
35	Species Code	CE		250	C		
36	Breed Code	CE		250	C		
37	Strain	ST		80	O		
38	Production Class Code	CE		250	O		
39	Tribal Citizenship	CWE		250	O		

3.13 PV1 - PATIENT VISIT

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - Patient Visit	SI		4	O	0001	Continuous sequence number
2	Patient Class	IS		1	R	1	
3	Assigned Patient Location	PL		80	O	ST1^R1^B2^INN^^961211	
4	Admission Type	IS		2	O		
5	Preadmit Number	CX		250	O		
6	Prior Patient Location	PL		80	O		
7	Attending Doctor	XCN		250	O	1234567^9876543	ELANR^EBSNR
8	Referring Doctor	XCN		250	O	1234567^9876543	LANR^BSNR
9	Consulting Doctor	XCN		250	B		
10	Hospital Service	IS		3	O		
11	Temporary Location	PL		80	O		
12	Preadmit Test Indicator	IS		2	O		
13	Re-admission Indicator	IS		2	O		
14	Admit Source	IS		6	O		
15	Ambulatory Status	IS		2	O		
16	VIP Indicator	IS		2	O	N	

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
17	Admitting Doctor	XCN		250	O		
18	Patient Type	IS		2	O		
19	Visit Number	CX		250	R	123456789	
20	Financial Class	FC		50	O	B	
21	Charge Price Indicator	IS		2	O		
22	Courtesy Code	IS		2	O	4321	
23	Credit Rating	IS		2	O		
24	Contract Code	IS		2	O		
25	Contract Effective Date	DT		8	O		
26	Contract Amount	NM		12	O		
27	Contract Period	NM		3	O		
28	Interest Code	IS		2	O		
29	Transfer to Bad Debt - Code	IS		4	O		
30	Transfer to Bad Debt - Date	DT		8	O		
31	Bad Debt Agency Code	IS		10	O		
32	Bad Debt Transfer Amount	NM		12	O		
33	Bad Debt Recovery Amount	NM		12	O		
34	Delete Account Indicator	IS		1	O		
35	Delete Account Date	DT		8	O		
36	Discharge Disposition	IS		3	O		
37	Discharged to Location	DLD		47	O		
38	Diet Type	CE		250	O		
39	Servicing Facility	IS		2	O		
40	Bed Status	IS		1	B		Deleted from the HL7 standard. The information is now held in the fifth component of the PL data type in PV1-3
41	Account Status	IS		2	O		
42	Pending Location	PL		80	O		
43	Prior Temporary Location	PL		80	O		
44	Admit Date/Time	TS		24	O		
45	Discharge Date/Time	TS		24	O		
46	Current Patient Balance	NM		12	O		
47	Total Charges	NM		12	O		
48	Total Adjustments	NM		12	O		
49	Total Payments	NM		12	O		

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
50	Alternate Visit ID	CX		250	O		
51	Visit Indicator	IS		1	O		
52	Other Healthcare Provider	XCN		2	B		Deleted from the HL7 standard. The reader is advised to use the ROL-Role Segment to communicate providers not specified elsewhere

3.14 QRD - ORIGINAL-STYLE QUERY DEFINITION

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Query Date/Time	TS		24	R	201608010904	
2	Query Format Code	ID		1	R	R	
3	Query Priority	ID		1	R	I	
4	Query ID	ST		10	R	Q99777	
5	Deferred Response Type	ID		1	O		
6	Deferred Response Date/Time	TS		24	O		
7	Quantity Limited Request	CQ		10	R	1^RD	
8	Who Subject Filter	XCN		250	R	99777	
9	What Subject Filter	CE		250	R	DEM	
10	What Department Data Code	CE		250	R	S	
11	What Data Code Value Qual.	VR		20	O		
12	Query Results Level	ID		1	O		

3.15 RGS - RESOURCE GROUP

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID - RGS	SI		4	R	1	
2	Segment Action Code	ID		3	C		
3	Resource Group ID	CE		250	O	987654	

3.16 SCH – SCHEDULING ACTIVITY INFORMATION

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Placer Appointment ID	EI		75	C	00331839401	
2	Filler Appointment ID	EI		75	C		
3	Occurrence Number	NM		5	C		
4	Placer Group Number	EI		22	O		
5	Schedule ID	CE		250	O		
6	Event Reason	CE		250	R	58	
7	Appointment Reason	CE		250	O		
8	Appointment Type	CE		250	O	HLCK	
9	Appointment Duration	NM		20	O/R*	20	
10	Appointment Duration Units	CE		250	B	MIN	
11	Appointment Timing Quantity	TQ		200	O/R*	20160223100000	
12	Placer Contact Person	XCN		250	O		
13	Placer Contact Phone Number	XTN		250	O		
14	Placer Contact Address	XAD		250	O		
15	Placer Contact Location	PL		80	O		
16	Filler Contact Person	XCN		250	R	123456	
17	Filler Contact Phone Number	XTN		250	O		
18	Filler Contact Address	XAD		250	O		
19	Filler Contact Location	PL		80	O		
20	Entered by Person	XCN		250	R	99777	
21	Entered by Phone Number	XTN		250	O		
22	Entered by Location	PL		80	O		
23	Parent Placer Appointment ID	EI		75	O		
24	Parent Filler Appointment ID	EI		75	C		
25	Filler Status Code	CE		250	O	Booked	
26	Placer Order Number	EI		22	C		
27	Filler Order Number	EI		22	C		

O/R* = One of these fields must be filled.

3.17 TXA - TRANSCRIPTION DOCUMENT HEADER

SEQ	NAME	DT	TBL	LEN	R/O/C/N/B	EXAMPLE	COMMENTS
1	Set ID- TXA	SI		4	R	1	
2	Document Type	IS		30	R	HP	
3	Document Content Presentation	ID		2	C	AP	
4	Activity Date/Time	TS		24	O	20161013041231	
5	Primary Activity Provider Code/Name	XCN		250	C		
6	Origination Date/Time	TS		26	O		
7	Transcription Date/Time	TS		26	C		
8	Edit Date/Time	TS		24	O	20161013041231	
9	Originator Code/Name	XCN		250	O		
10	Assigned Document Authenticator	XCN		250	C		
11	Transcriptionist Code/Name	XCN		250	C		
12	Unique Document Number	EI		30	R		
13	Parent Document Number	EI		30	C		
14	Placer Order Number	EI		22	O	PMS201942153	
15	Filler Order Number	EI		22	O		
16	Unique Document File Name	ST		30	O		
17	Document Completion Status	ID		2	R	DO	
18	Document Confidentiality Status	ID		2	O		
19	Document Availability Status	ID		2	O		
20	Document Storage Status	ID		2	O		
21	Document Change Reason	ST		30	C	0	
22	Authentication Person, Time Stamp	PPN		250	C		
23	Distributed Copies	XCN		250	O		

4 DATA TYPES

HL7 supports the following Data types for each Field. (Extraction from the official HL7- documentation)

DATA TYPE	DATA TYPE NAME	FORMAT	DESCRIPTION
CE	Coded Element	Identifier^Text^Name Of Coding System^Alternate Identifier^Alternate Text^Name Of Alternate Coding System^Coding System Version Id^Alternate Coding System Version Id^Original Text	This data type transmits codes and the text associated with the code
CNE	Coded with No Exceptions	Identifier^Text^Name Of Coding System^Alternate Identifier^Alternate Text^Name Of Alternate Coding System^Coding System Version Id^Alternate Coding System Version Id^Original Text	The CNE data type is used when a required or mandatory coded field is needed
CP	Composite Price	Price^Price Type^From Value^To Value^Range Units^Range Type	This data type composed price
CQ	Composite Quantity with Units	Quantity^Units	This data type composed quantity with units
CWE	Coded with Exceptions	Identifier^Text^Name Of Coding System^Alternate Identifier^Alternate Text^Name Of Alternate Coding System^Coding System Version Id^Alternate Coding System Version Id^Original Text	The CWE data type is used when <ul style="list-style-type: none"> more than one table may be applicable or the specified HL7 or externally defined table may be extended with local values or when text is in place, then code may be omitted
CX	Extended Composite ID with Check Digit	Id Number^Check Digit^Check Digit Scheme^Assigning Authority^Identifier Type Code^Assigning Facility^Effective Date^Expiration Date^Assigning Jurisdiction^Assigning Agency Or Department	This data type is used for specifying an identifier with its associated administrative detail
DLD	Discharge to location and date	Discharge Location^Effective Date	Specifies the healthcare facility to which the patient was discharged and the date
DLN	Driver_s License Number	License Number^Issuing State, Province, Country^Expiration Date	This field contains the driver's license information. For state or province refer to official postal codes for that country; for country refer to ISO 3166 for codes
DT	Date	YYYY[MM[DD]]	Specifies the century and year with optional precision of month and day
EI	Entity Identifier	Entity Identifier^Namespace Id^Universal Id^Universal Id Type	This data type contains numbers and characters
EIP	Entity Identifier Pair	Placer Assigned Identifier^Filler Assigned Identifier	Specifies an identifier assigned to an entity by either the placer or the filler system. If both components are populated the identifiers must refer to the same entity
FC	Financial Class	Financial Class Code^Effective Date	This data type describes the financial class
FT	Formatted Text Data		This data type is derived from the string data type by allowing the addition of embedded formatting instructions. These instructions are limited to those that are intrinsic and independent of the circumstances under which the field is being used. The actual instructions and their representation are described elsewhere in this chapter. The FT field is of arbitrary length (up to 64k) and may contain formatting commands enclosed in escape characters

DATA TYPE	DATA TYPE NAME	FORMAT	DESCRIPTION
HD	Hierarchic Designator	Namespace Id^Universal Id^ Universal Id Type	The basic definition of the HD is that it identifies an (administrative or system or application or other) entity that has responsibility for managing or assigning a defined set of instance identifiers (such as placer or filler number, patient identifiers, provider identifiers, etc.)
ID	Identifier	User-defined	The value of such a field follows the formatting rules for an ST field except that it is drawn from a table of legal values
IS	Coded value for user-defined tables	User-defined	The value of such a field follows the formatting rules for a ST field except that it is drawn from a site-defined (or user-defined) table of legal values. There shall be an HL7 table number associated with IS data types. An example of an IS field is the Event reason code defined in Section 3.3.1.4, Event reason code. This data type should be used only for user-defined tables (see Section 2.6.7, ID number). The reverse is not true, since in some circumstances, it is more appropriate to use the CE data type for user-defined tables
MOC	Money and charge code	Monetary Amount^Charge Code	Transmits monetary information and the associated charge code for services performed
MSG	Message type	Message Code^Trigger Event^Message Structure	This field contains the message type, trigger event, and the message structure ID for the message
NDL	Name with date and location	Name^Start Date/Time^End Date/Time^Point Of Care^Room^Bed^Facility^Location Status^Patient Location Type^Building^Floor	Specifies the name of the person performing a service, when the person performed the service and where the person performed the service. Retained for backward compatibility as of v2.6
NM	Numeric		A number represented as a series of ASCII numeric characters consisting of an optional leading sign (+ or -), the digits and an optional decimal point
PL	Person Location	Point Of Care^Room^Bed^Facility ^Location Status^Person Location Type^Building^Floor^Location Description^Comprehensive Location Identifier^Assigning Authority For Location	This data type is used to specify a patient location within a healthcare institution
PPN	Performin Person Time Stamp	Id Number^Family Name^Given Name^Second And Further Given Names Or Initials Thereof^Suffix (e.g., Jr Or Iii)^Prefix (e.g., Dr) ^Degree (e.g., Md)^Source Table^ Assigning Authority^Name Type Code^Identifier Check Digit^Check Digit Scheme^Identifier Type Code^ Assigning Facility^Date/Time Action Performed^Name Representation Code^Name Context^Name Validity Range^Name Assembly Order^Effective Date^Expiration Date^Professional Suffix^Assigning Jurisdiction^Assigning Agency Or Department	This data type is the equivalent of an XCN data type joined with a TS data type. However, the XCN data type has been flattened to allow legal expression of its embedded complex data types HD, TS, CE and CWE
PRL	Parent result link	Parent Observation Identifier^Parent Observation Sub-identifier^Parent Observation Value Descriptor	Uniquely identifies the parent result's OBX segment related to the current order, together with the information in OBR-29 - Parent
PT	Processing Type	Components: <processing ID (ID)> ^ <processing mode (ID)>	This data type indicates whether to process a message as defined in Application-Level 7 Processing rules

DATA TYPE	DATA TYPE NAME	FORMAT	DESCRIPTION
SI	Sequence ID	0 - 9999	A non-negative integer in the form of a NM field. The uses of this data type are defined in the chapters defining the segments and messages in which it appears
SPS	Specimen Source	Specimen Source Name Or Code^Additives^Specimen Collection Method^Body Site^Site Modifier^Collection Method Modifier Code^Specimen Role	This data type identifies the site where the specimen should be obtained or where the service should be performed
ST	String	Almost any data at all or ^ testdata ^	The String data type is used for text data when the appearance of text does not bear meaning. This is true for formalized text, symbols and formal expressions, and all kinds of names intended for machine processing (e.g., sorting, querying, indexing, etc.)
TQ	Timing Quantity	Quantity^Interval^Duration^Start Date/Time^End Date / Time^Priority^Condition^Text^ Conjunction^Order Sequencing^Occurrence Duration^Total Occurrences	Describes when a service should be performed and how frequently
TS	Time Stamp	YYYY[MM[DD[HH[MM [SS].[S[S[S[S]]]]]]]] [+/-ZZZZ]	Specifies a point in date and time
VID	Version identifier	Version Id^Internationalization Code^International Version Id	Used to identify the HL7 version. Refer to HL7 Table 0104 - Version ID in Chapter 2C for valid values
VR	Value Range	First Data Code Value^Last Data Code Value	This data type contains the lower bound value and upper bound values that constitute a range. Either or both components may be populated
XAD	Extended Address	Street Address^Other Designation ^City ^State Or Province^Zip Or Postal Code^Country^Address Type^Other Geographic Designation ^County /Parish Code^Census Tract ^Address Representation Code^Address Validity Range ^Effective Date^Expiration Date	This data type specifies the address of a person, place or organization plus associated information
XCN	Extended Composite ID Nr. and Name for Persons	Id Number^Family Name^Given Name^Second And Further Given Names Or Initials Thereof^Suffix (e.g., Jr Or Iii)^Prefix (e.g., Dr) ^Degree (e.g., Md)^Source Table^Assigning Authority^Name Type Code^Identifier Check Digit^Check Digit Scheme ^Identifier Type Code^Assigning Facility^Name Representation Code ^Name Context ^Name Validity Range^Name Assembly Order ^Effective Date^Expiration Date ^Professional Suffix^Assigning Jurisdiction^Assigning Agency Or Department	This data type is used extensively appearing in the PV1, ORC, RXO, RXE, OBR and SCH segments, as well as others, where there is a need to specify the ID number and name of a person
XON	Extended Composite Name & Identification Nr. for Organizations	Organization Name^Organization Name Type Code^Id Number^Check Digit^Check Digit Scheme^Assigning Authority^Identifier Type Code ^Assigning Facility^Name Representation Code^Organization Identifier	This data type is used in fields (e.g., PV2-23, NK1-13, PD1-3, OBR-44) to specify the name and ID number of an organization

DATA TYPE	DATA TYPE NAME	FORMAT	DESCRIPTION
XPN	Extended Person Name	Family Name^Given Name^Second And Further Given Names Or Initials Thereof^Suffix (e.g., Jr Or Iii)^Prefix (e.g., Dr)^Degree (e.g., Md)^Name Type Code^Name Representation Code^Name Context^Name Validity Range^Name Assembly Order^Effective Date^Expiration Date^Professional Suffix	This data type administrate the conquer and the transmission of the patients name
XTN	Extended Telecommunication Nr.	Telephone Number ^Telecommunication Use Code^Telecommunication Equipment Type^Email Address ^Country Code^Area/City Code ^Local Number^Extension^Any Text ^Extension Prefix^Speed Dial Code ^Unformatted Telephone Number	This data type administrate the telecommunication number

5 USING TABLES

5.1 USING TABLE FOR AL1

0127 - ALLERGY TYPE

VALUE	DESCRIPTION
DA	Drug allergy
FA	Food allergy
MA	Miscellaneous allergy
MC	Miscellaneous contraindication
EA	Environmental Allergy
AA	Animal Allergy
PA	Plant Allergy
LA	Pollen Allergy

0128 - ALLERGY SEVERITY

VALUE	DESCRIPTION
SV	Severe
MO	Moderate
MI	Mild
U	Unknown

5.2 USING TABLE FOR MSH

0155 - ACCEPT/APPLICATION ACKNOWLEDGMENT CONDITIONS

VALUE	DESCRIPTION
AL	Always
NE	Never
ER	Error/reject conditions only
SU	Successful completion only

0211 - ALTERNATE CHARACTER SETS

VALUE	DESCRIPTION
ASCII	The printable 7-bit ASCII character set.
8859/1	The printable characters from the ISO 8859/1 Character set
8859/2	The printable characters from the ISO 8859/2 Character set
8859/3	The printable characters from the ISO 8859/3 Character set
8859/4	The printable characters from the ISO 8859/4 Character set
8859/5	The printable characters from the ISO 8859/5 Character set
8859/6	The printable characters from the ISO 8859/6 Character set
8859/7	The printable characters from the ISO 8859/7 Character set
8859/8	The printable characters from the ISO 8859/8 Character set
8859/9	The printable characters from the ISO 8859/9 Character set
ISO IR14	Code for Information Exchange (one byte)(JIS X 0201-1976).
ISO IR87	Code for the Japanese Graphic Character set for information interchange (JIS X 0208-1990),
ISO IR159	Code of the supplementary Japanese Graphic Character set for information interchange (JIS X 0212-1990).
GB 18030-2000	Code for Chinese Character Set (GB 18030-2000)
KS X 1001	Code for Korean Character Set (KS X 1001)
CNS 11643-1992	Code for Taiwanese Character Set (CNS 11643-1992)
BIG-5	Code for Taiwanese Character Set (BIG-5)
UNICODE	The world wide character standard from ISO/IEC 10646-1-1993[6]
UNICODE UTF-8	UCS Transformation Format, 8-bit form
UNICODE UTF-16	UCS Transformation Format, 16-bit form
UNICODE UTF-32	UCS Transformation Format, 32-bit form

5.3 USING TABLE FOR PID**0001 - ADMINISTRATIVE SEX**

VALUE	DESCRIPTION
F	Female
M	Male
O	Other
U	Unknown

6 DATAPOINT CHANNELS DESCRIPTION

6.1 XML FORMAT FOR DATAPOINT EXPORT FROM CONNECT MANAGER

NODE NAME	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)														
Surgery	1	-	[Contains Children]	-														
EccNumber	2	Surgery	Ecc number of the case	-														
DateOfSurgery	2	Surgery	Date of surgery	-														
TransferredFrom	2	Surgery	Transferred from of surgery	-														
AdmissionNumber	2	Surgery	Admission number of surgery	-														
CaseNumber	2	Surgery	Case number of surgery	-														
PlacerOrderNumber	2	Surgery	Placer order number of surgery	-														
TransactionId	2	Surgery	Transaction id for this data point upload	-														
Notes	2	Surgery	Notes of surgery	-														
SurgeryStatus	2	Surgery	Status of surgery	-														
Patient	2	Surgery	[Contains Children]	-														
PatientId	3	Patient	Patient id of patient	-														
LastName	3	Patient	Last name of patient	-														
FirstName	3	Patient	First name of patient	-														
DateOfBirth	3	Patient	Date of birth of patient	-														
Gender	3	Patient	Gender of patient	-														
Title	3	Patient	Title of patient	-														
MaidenName	3	Patient	Maiden name of patient	-														
Physique	3	Patient	[Contains Children]	-														
Height	4	Physique	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Height</td> </tr> <tr> <td>ConnectUnit</td> <td>cm</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td>cm</td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Height of patient</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Height	ConnectUnit	cm	EmrCode		EmrUnit	cm	IsIncluded	0	Value	Height of patient
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	Height																	
ConnectUnit	cm																	
EmrCode																		
EmrUnit	cm																	
IsIncluded	0																	
Value	Height of patient																	
Weight	4	Physique	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Weight</td> </tr> <tr> <td>ConnectUnit</td> <td>kg</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td>kg</td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Weight of patient</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Weight	ConnectUnit	kg	EmrCode		EmrUnit	kg	IsIncluded	0	Value	Weight of patient
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	Weight																	
ConnectUnit	kg																	
EmrCode																		
EmrUnit	kg																	
IsIncluded	0																	
Value	Weight of patient																	

NODE NAME	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
BSA	4	Physique	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Body Surface Area (BSA)
				ConnectUnit	m^2
				EmrCode	Configured value in configuration studio
				EmrUnit	cm
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	BSA value
Weight	4	Physique	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Calculated Flow
				ConnectUnit	l/min
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Calculated Flow value
ABO	4	Physique	ABO value	-	
Rh	4	Physique	Rh value	-	
NYHA	4	Physique	NYHA value	-	
EF	4	Physique	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	EF
				ConnectUnit	%
				EmrCode	
				EmrUnit	
				IsIncluded	0
				Value	EF value
ClinicalData	2	Surgery	[Contains Children]	-	
Diagnosis	3	ClinicalData	[Contains Children]	-	
Diagnose	4	Diagnosis	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Diagnosis value of surgery
				EmrCode	
				IsIncluded	0
				Value	Diagnosis value of surgery
Procedures	3	ClinicalData	[Contains Children]	-	
Procedure	4	Procedures	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Procedure value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Procedure value of surgery

NODE NAME	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)										
Risks	3	ClinicalData	[Contains Children]	-										
Risk	4	Risks	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Risk value of surgery</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Risk value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Risk value of surgery	EmrCode		IsIncluded	0	Value	Risk value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Risk value of surgery													
EmrCode														
IsIncluded	0													
Value	Risk value of surgery													
Allergies	3	ClinicalData	[Contains Children]	-										
Allergy	4	Allergies	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Allergy value of surgery</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Allergy value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Allergy value of surgery	EmrCode		IsIncluded	0	Value	Allergy value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Allergy value of surgery													
EmrCode														
IsIncluded	0													
Value	Allergy value of surgery													
Infections	3	ClinicalData	[Contains Children]	-										
Infection	4	Infections	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Infection value of surgery</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Infection value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Infection value of surgery	EmrCode		IsIncluded	0	Value	Infection value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Infection value of surgery													
EmrCode														
IsIncluded	0													
Value	Infection value of surgery													
Studies	3	ClinicalData	[Contains Children]	-										
Study	4	Studies	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Study value of surgery</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Study value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Study value of surgery	EmrCode		IsIncluded	0	Value	Study value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Study value of surgery													
EmrCode														
IsIncluded	0													
Value	Study value of surgery													
SurgeryTeam	2	Surgery	[Contains Children]	-										
Perfusionists	3	SurgeryTeam	[Contains Children]	-										
Perfusionist	4	Perfusionists	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Perfusionist value of surgery</td> </tr> <tr> <td>EmrCode</td> <td>Configured value in configuration studio</td> </tr> <tr> <td>IsIncluded</td> <td>1: if configured in configuration studio 0: otherwise</td> </tr> <tr> <td>Value</td> <td>Perfusionist value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Perfusionist value of surgery	EmrCode	Configured value in configuration studio	IsIncluded	1: if configured in configuration studio 0: otherwise	Value	Perfusionist value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Perfusionist value of surgery													
EmrCode	Configured value in configuration studio													
IsIncluded	1: if configured in configuration studio 0: otherwise													
Value	Perfusionist value of surgery													
Surgeons	3	SurgeryTeam	[Contains Children]	-										
Surgeon	4	Surgeons	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Surgeon value of surgery</td> </tr> <tr> <td>EmrCode</td> <td>Configured value in configuration studio</td> </tr> <tr> <td>IsIncluded</td> <td>1: if configured in configuration studio 0: otherwise</td> </tr> <tr> <td>Value</td> <td>Surgeon value of surgery</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Surgeon value of surgery	EmrCode	Configured value in configuration studio	IsIncluded	1: if configured in configuration studio 0: otherwise	Value	Surgeon value of surgery
ATTRIBUTE NAME	ATTRIBUTE VALUE													
ConnectName	Surgeon value of surgery													
EmrCode	Configured value in configuration studio													
IsIncluded	1: if configured in configuration studio 0: otherwise													
Value	Surgeon value of surgery													

NODE NAME	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
Assistants	3	SurgeryTeam	[Contains Children]	-	
Assistant	4	Assistants	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Assistant value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Assistant value of surgery
Cardiologists	3	SurgeryTeam	[Contains Children]	-	
Cardiologist	4	Cardiologists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Cardiologist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Cardiologist value of surgery
Anaesthetists	3	SurgeryTeam	[Contains Children]	-	
Anaesthetist	4	Anaesthetists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Anaesthetist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Anaesthetist value of surgery
NurseAnaesthetists	3	SurgeryTeam	[Contains Children]	-	
NurseAnaesthetist	4	NurseAnaesthetists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	NurseAnaesthetist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration
				Value	NurseAnaesthetist value of surgery
TheatreNurses	3	SurgeryTeam	[Contains Children]	-	
TheatreNurse	4	TheatreNurses	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	TheatreNurse value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	TheatreNurse value of surgery

NODE NAME	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
Assistants	3	SurgeryTeam	[Contains Children]	-	
Assistant	4	Assistants	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Assistant value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Assistant value of surgery
Cardiologists	3	SurgeryTeam	[Contains Children]	-	
Cardiologist	4	Cardiologists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Cardiologist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Cardiologist value of surgery
Anaesthetists	3	SurgeryTeam	[Contains Children]	-	
Anaesthetist	4	Anaesthetists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Anaesthetist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Anaesthetist value of surgery
NurseAnaesthetists	3	SurgeryTeam	[Contains Children]	-	
NurseAnaesthetist	4	NurseAnaesthetists	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	NurseAnaesthetist value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration
				Value	NurseAnaesthetist value of surgery
TheatreNurses	3	SurgeryTeam	[Contains Children]	-	
TheatreNurse	4	TheatreNurses	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	TheatreNurse value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	TheatreNurse value of surgery

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
VisitingSurgeons	3	SurgeryTeam	[Contains Children]	-	
VisitingSurgeon	4	VisitingSurgeons	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	VisitingSurgeon value of surgery
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	VisitingSurgeon value of surgery
Products	2	Surgery	[Contains Children]	-	
Disposables	3	Products	[Contains Children]	-	
[Name of the Disposables]	4	Disposables	[Contains Children]	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Name of the disposable
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Identification of the disposable
[All the attributes which are showing in CONNECT]	5	Name of the Disposables]	Value of that specific attribute. If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	
Instrumentation	3	Products	[Contains Children]	-	
OperatingRoom	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	OR
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of the operating room
HLM	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	HLM
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of HLM
ArterialPump	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Arterial Pump
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Arterial Pump

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
HeaterCooler	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Heater/Cooler
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Heater/Cooler
Autotransfusion	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Autotransfusion
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Autotransfusion
BloodgasAnalyserOnline	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	BGA Online
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of BGA Online
BloodgasAnalyserOffline	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	BGA Offline
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of BGA Offline
PatientMonitor	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Patient Monitor
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Patient Monitor
Act	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	ACT
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of ACT
GasMonitor	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Gas Monitor
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Gas Monitor

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
CerebralOximeter	4	Instrumentation	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Cerebral Oximeter
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Cerebral Oximeter
Cannulaes	3	Products	[Contains Children]	-	
Cannulae	4	Cannulaes	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Cannulae
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Identification of the Cannulae
[All the attributes which are showing in CONNECT]	5	Cannulae	Value of that specific attribute. If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	
Priming	2	Surgery	[Contains Children]	-	
Balance	3	Priming	[Contains Children]	-	
Total	4	Balance	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Balance
				ConnectUnit	ml
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Balance
PrimingVolume	3	Priming	[Contains Children]	-	
Total	4	PrimingVolume	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Priming Volume
				ConnectUnit	ml
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Priming Volume
[PrimingVolumeEntry]	4	PrimingVolume	-	All the Connect attributes shall be presented in the "Attributes" section Some important additional attributes: VolumeDirection="Priming"	

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)														
VolumInput	3	Priming	[Contains Children]	-														
Total	4	VolumInput	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>VolumInput</td> </tr> <tr> <td>ConnectUnit</td> <td>ml</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Value of total Volume Input</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	VolumInput	ConnectUnit	ml	EmrCode		EmrUnit		IsIncluded	0	Value	Value of total Volume Input
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	VolumInput																	
ConnectUnit	ml																	
EmrCode																		
EmrUnit																		
IsIncluded	0																	
Value	Value of total Volume Input																	
VolumInputEntry	4	VolumInput	-	All the Connect attributes shall be presented in the "Attributes" section Some important additional attributes: VolumeDirection="In"														
VolumeOutput	3	Priming	[Contains Children]	-														
Total	4	VolumeOutput	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>VolumeOutput</td> </tr> <tr> <td>ConnectUnit</td> <td>ml</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Value of total Volume Output</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	VolumeOutput	ConnectUnit	ml	EmrCode		EmrUnit		IsIncluded	0	Value	Value of total Volume Output
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	VolumeOutput																	
ConnectUnit	ml																	
EmrCode																		
EmrUnit																		
IsIncluded	0																	
Value	Value of total Volume Output																	
[VolumeOutputEntry]	4	VolumeOutput	-	All the Connect attributes shall be presented in the "Attributes" section Some important additional attributes: VolumeDirection="Out"														
BloodVolume	3	Priming	[Contains Children]	-														
BloodVolume	4	BloodVolume	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>BloodVolume</td> </tr> <tr> <td>ConnectUnit</td> <td>ml</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Value of Blood Volume</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	BloodVolume	ConnectUnit	ml	EmrCode		EmrUnit		IsIncluded	0	Value	Value of Blood Volume
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	BloodVolume																	
ConnectUnit	ml																	
EmrCode																		
EmrUnit																		
IsIncluded	0																	
Value	Value of Blood Volume																	
PreOpHb	3	Priming	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>PreOpHb</td> </tr> <tr> <td>ConnectUnit</td> <td>g/dl</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Value of PreOpHb</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	PreOpHb	ConnectUnit	g/dl	EmrCode		EmrUnit		IsIncluded	0	Value	Value of PreOpHb
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	PreOpHb																	
ConnectUnit	g/dl																	
EmrCode																		
EmrUnit																		
IsIncluded	0																	
Value	Value of PreOpHb																	
PreOpHct	3	Priming	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>PreOpHct</td> </tr> <tr> <td>ConnectUnit</td> <td>%</td> </tr> <tr> <td>EmrCode</td> <td></td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>0</td> </tr> <tr> <td>Value</td> <td>Value of PreOpHct</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	PreOpHct	ConnectUnit	%	EmrCode		EmrUnit		IsIncluded	0	Value	Value of PreOpHct
ATTRIBUTE NAME	ATTRIBUTE VALUE																	
ConnectName	PreOpHct																	
ConnectUnit	%																	
EmrCode																		
EmrUnit																		
IsIncluded	0																	
Value	Value of PreOpHct																	

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
ExpHb	3	Priming	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	ExpHb
				ConnectUnit	%
				EmrCode	
				EmrUnit	
				IsIncluded	0
				Value	Value of ExpHct
PrimingFilledIn	3	Priming	Priming Filled In date	-	
IsCo2Flushed	3	Priming	IsCo2Flushed value of CONNECT	-	
Implants	2	Surgery	[Contains Children]	-	
Valves	3	Implants	[Contains Children]	-	
Valve	4	Valves	[Contains Children]	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Valves
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Valve
[All the attributes which are showing in CONNECT]	5	Valve	Value of that specific attribute. If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	
Stents	3	Implants	[Contains Children]	-	
Stent	4	Stents	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Stents
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Stent
[All the attributes which are showing in CONNECT]	5	Stent	Value of that specific attribute. If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	
AssistDevices	3	Implants	[Contains Children]	-	
AssistDevice	4	AssistDevice	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Assist Devices
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Assist Device
[All the attributes which are showing in CONNECT]	5	AssistDevice	Value of that specific attribute. If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	If the attribute contains unit then the value of the node will be empty and the value will be showing in the value attribute of the xml node	

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)																										
PostOperative	2	Surgery	[Contains Children]	-																										
FlowAndPressureList	3	PostOperative	[Contains Children]	-																										
FlowAndPressure	4	FlowAndPressureList	-	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>Flow</td> <td>Flow value</td> </tr> <tr> <td>FlowConnectUnit</td> <td>Unit of flow what is inserted in CONNECT</td> </tr> <tr> <td>FlowEmrCode</td> <td>Configured value for Flow in configuration studio</td> </tr> <tr> <td>FlowEmrUnit</td> <td></td> </tr> <tr> <td>IsFlowIncluded</td> <td>1: if flow is configured in configuration studio 0: otherwise</td> </tr> <tr> <td>IsPressureIncluded</td> <td>1: if flow is configured in configuration studio 0: otherwise</td> </tr> <tr> <td>Position</td> <td>Position of the value</td> </tr> <tr> <td>Pressure</td> <td>Pressure value</td> </tr> <tr> <td>PressureConnectUnit</td> <td>Unit of pressure what is inserted in CONNECT</td> </tr> <tr> <td>PressureEmrCode</td> <td>Configured value for Pressure in configuration studio</td> </tr> <tr> <td>PressureEmrUnit</td> <td></td> </tr> <tr> <td>Time</td> <td>Time of the entry</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	Flow	Flow value	FlowConnectUnit	Unit of flow what is inserted in CONNECT	FlowEmrCode	Configured value for Flow in configuration studio	FlowEmrUnit		IsFlowIncluded	1: if flow is configured in configuration studio 0: otherwise	IsPressureIncluded	1: if flow is configured in configuration studio 0: otherwise	Position	Position of the value	Pressure	Pressure value	PressureConnectUnit	Unit of pressure what is inserted in CONNECT	PressureEmrCode	Configured value for Pressure in configuration studio	PressureEmrUnit		Time	Time of the entry
ATTRIBUTE NAME	ATTRIBUTE VALUE																													
Flow	Flow value																													
FlowConnectUnit	Unit of flow what is inserted in CONNECT																													
FlowEmrCode	Configured value for Flow in configuration studio																													
FlowEmrUnit																														
IsFlowIncluded	1: if flow is configured in configuration studio 0: otherwise																													
IsPressureIncluded	1: if flow is configured in configuration studio 0: otherwise																													
Position	Position of the value																													
Pressure	Pressure value																													
PressureConnectUnit	Unit of pressure what is inserted in CONNECT																													
PressureEmrCode	Configured value for Pressure in configuration studio																													
PressureEmrUnit																														
Time	Time of the entry																													
QualityScoreList	3	PostOperative	[Contains Children]	-																										
QualityScore	4	QualityScoreList	[Contains Children]	<table border="1"> <thead> <tr> <th>ATTRIBUTE NAME</th> <th>ATTRIBUTE VALUE</th> </tr> </thead> <tbody> <tr> <td>ConnectName</td> <td>Name of the quality score</td> </tr> <tr> <td>ConnectUnit</td> <td>Unit of quality score</td> </tr> <tr> <td>EmrCode</td> <td>Configured value in configuration studio</td> </tr> <tr> <td>EmrUnit</td> <td></td> </tr> <tr> <td>IsIncluded</td> <td>1: if configured in configuration studio 0: otherwise</td> </tr> </tbody> </table>	ATTRIBUTE NAME	ATTRIBUTE VALUE	ConnectName	Name of the quality score	ConnectUnit	Unit of quality score	EmrCode	Configured value in configuration studio	EmrUnit		IsIncluded	1: if configured in configuration studio 0: otherwise														
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ConnectName	Name of the quality score																													
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EmrUnit																														
IsIncluded	1: if configured in configuration studio 0: otherwise																													
TimeAbove	5	QualityScore	Value of the time above of quality score element																											
MaximumLimit	5	QualityScore	Value of the Maximum Limit of quality score element																											
Maximum	5	QualityScore	Value of the max value of quality score element																											
Average	5	QualityScore	Value of the average of quality score element																											
Minimum	5	QualityScore	Value of the min value of quality score element																											
MinimumLimit	5	QualityScore	Value of the minimum limit of quality score element																											
TimeBelow	5	QualityScore	Value of the time below of quality score element																											
BypassTime	5	QualityScore	Bypass time of the case																											
WithinLimit	5	QualityScore	Value of the within limit of quality score element																											

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
Status	3	PostOperative	[Contains Children]	ATTRIBUTE NAME	ATTRIBUTE VALUE
				IsIncluded	1: if configured in configuration studio 0: otherwise
BeginOfSurgery	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Start of Surgery
				ConnectUnit	dddd, MMMM dd, yyyy h:mm:ss tt
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Start of Surgery
EndOfSurgery	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	End of Surgery
				ConnectUnit	dddd, MMMM dd, yyyy h:mm:ss tt
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of End of Surgery
TimeOfExtubation	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Time of Extubation
				ConnectUnit	dddd, MMMM dd, yyyy h:mm:ss tt
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Time of Extubation
TimeOfTransfer	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Time Of Transfer
				ConnectUnit	dddd, MMMM dd, yyyy h:mm:ss tt
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Time of Extubation

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
TimeOfDischarge	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Time of Dismissal
				ConnectUnit	dddd, MMMM dd, yyyy h:mm:ss tt
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Time of Dismissal
				SecondaryBleeding	4
ConnectName	Secondary Hemorrhage				
ConnectUnit	ml				
EmrCode	Configured value in configuration studio				
EmrUnit					
IsIncluded	1: if configured in configuration studio 0: otherwise				
Value	Value of Secondary Hemorrhage				
Urine	4	Status	-		
				ConnectName	Time of Extubation
				ConnectUnit	ml
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of Urine
				EjectionFraction	4
ConnectName	EF (ejection fraction)				
ConnectUnit	%				
EmrCode	Configured value in configuration studio				
EmrUnit					
IsIncluded	1: if configured in configuration studio 0: otherwise				
Value	Value of EF (ejection fraction)				
CardiacOutput	4	Status	-		
				ConnectName	Cardiac Output
				ConnectUnit	l/min
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of cardiac Output

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
Comment	4	Status	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				ConnectName	Comment
				ConnectUnit	
				EmrCode	Configured value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
Value	Value of Comment				
EventList	2	Surgery	[Contains Children]		
Event	3	EventList	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				CommentText	Comment text of the event
				CommentTimeStamp	Time of the comment of the event
				DataInput	Data input of the event
				DurationSeconds	Duration of the event
				EmrCode	Configured value in configuration studio
				EventLabel	Label of the event
				EventTime	Time of the event
				IsIncluded	1: if configured in configuration studio 0: otherwise
				SourceLabel	Label of the event source
				SourceType	Source type of the event
				Time	Time when the event is recorded in the system
				TriggerType	Trigger type of the event
				Unit	Unit of the event
Value	Value of the event				
IsCustomEvent	1: if custom event 0: otherwise				
Timers	2	Surgery	[Contains Children]		
BypassTimer	3	Timers	[Contains Children]		
TimerData	4	BypassTimer	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				Start time	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
AortaTimer	3	Timers	[Contains Children]		
TimerData	4	AortaTimer	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				Start time	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime
ReperfusionTimer	3	Timers	[Contains Children]		
TimerData	4	ReperfusionTimer	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				Start time	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime
Timer4	3	Timers	[Contains Children]		
TimerData	4	Timer4	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				Start time	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime
Timer5	3	Timers	[Contains Children]		
TimerData	4	Timer5	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				Start time	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime

INSTRUMENTATION	LEVEL	PARENT NODE	VALUE	ATTRIBUTE(S)	
Timer6	3	Timers	[Contains Children]		
TimerData	4	Timer6	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				Duration	Duration of the timer
				EmrCode	Configured value in configuration studio
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Label	Label of the timer
				StartTime	Start time of the timer
				StopTime	Stop time of the timer
				TotalTime	TotalTime
NumericData	2	Surgery	[Contains Children]		
DateTime	3	NumericData	[Contains Children]	ATTRIBUTE NAME	ATTRIBUTE VALUE
				IsIncluded	If any item in the children is configured to transfer to emr in config studio then 1. Otherwise 0
				TimeStamp	Time of the recorded data
OBX	4	DateTime	-	ATTRIBUTE NAME	ATTRIBUTE VALUE
				BloodSampleCategory	Blood Sample Category for laboratory and coagulation data. For the other data type the value is empty
				BloodSampleOrigin	Blood Sample Origin for laboratory and coagulation data. For the other data type the value is empty
				InputTime	Measurement time for laboratory and coagulation data. For the other data type the value is same with the date time value
				ConnectName	Name of the system value what is recorded in that time stamp
				ConnectUnit	Connect unit of that system value
				DataCategory	Data category of that system value
				DataFrequency	Data frequency of that system value
				DataInputType	Data input type of that system value
				EmrCode	Configured value of the system value in configuration studio
				EmrUnit	
				IsIncluded	1: if configured in configuration studio 0: otherwise
				Value	Value of the system value

6.2 DESTINATIONS

6.2.1 GENERATE HL7 MESSAGE

(i) Filter

FilterTheTestMessage: It filters the message if the message contains the test string in the Surgery.SurgeryStatus node

(ii) Transformer

The transformer contains the following steps:

1. ADD MESSAGE HEADER

Added the general HL7 message header contents in the temporary HL7 message.

MESSAGE SEGMENT	ASSIGNED VALUE
MSH-3-1	mp_sendingApplication (Config key value in Mirth)
MSH.4.1	mp_sendingFacility (Config key value in Mirth)
MSH.5.1	mp_receivingApplication (Config key value in Mirth)
MSH.6.1	mp_receivingFacility (Config key value in Mirth)
MSH.7.1	Current datetime when message is preparing
MSH.8	""
MSH.9	""
MSH.9.1	ORU
MSH.9.2	R01
MSH.10.1	Unique Id
MSH.11.1	P
MSH.12.1	mp_hl7Version (Config key value in Mirth)
MSH.13	""
MSH.14	""
MSH.15.1	AL
MSH.16.1	AL
MSH.17	""
MSH.18.1	gp_characterSet (Config key value in Mirth)

2. ADD PATIENT DATA

Added the patient information in the PID segment of the message and put the temporary generated message in the BasicHL7Message channel variable to use it in the different destination of the channel.

PID	
PID.1.1	1
PID.2.1	Surgery.Patient.PatientId
PID.3.1	Surgery.Patient.PatientId
PID.5.1	Surgery.Patient.LastName
PID.5.2	Surgery.Patient.FirstName

PID.5.3	Surgery.Patient.MaidenName
PID.5.4	
PID.5.5	
PID.5.6	Surgery.Patient.Title
PID.6.1	Surgery.Patient.MaidenName
PID.7.1	Surgery.Patient.DateOfBirth (if it is not NULL) or Empty
PID.8.1	Surgery.Patient.Gender
PID.11.1	
PID.11.2	
PID.11.3	
PID.11.4	
PID.11.5	
PV1	
PV1.1.1	1
PV1.2.1	N
PV1.19.1	Surgery.CaseNumber

3. CHECK DATA POINT EXPORT TYPE

Prepare the **DataPointExportType**, **DataPointTransactionId**, **SurgeryStatus** channel variables from the configuration key and message. If the data point export type is not HL7 then it tries to build up the file name "DataPoint_< yyyyMMddHHmmssSS >" and file directory.

4. ADD ORC SEGMENT

Prepare the ORC segment of the HL7 message.

ORC		DESCRIPTION
ORC.1.1	1	
ORC.2.1	Surgery.PlacerOrderNumber	Placer Order Number
ORC.2.2	Surgery.PlacerOrderNumber	Placer Order Number
ORC.3.1	Surgery.CaseNumber	Filler Order Number
ORC.3.2	Surgery.CaseNumber	Filler Order Number
ORC.7.1	Surgery.Patient.FirstName	Quantity/Timing
ORC.15.1	Surgery.Patient.FirstName	Order Effective Date Time

5. ADD PHYSIQUE

If the physique value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZPH (Physique) segment of the message in the **AddPhysique_ZSegment** transformer.

6. ADD CLINICAL DATA

If the clinical data value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZCD (Clinical Data) segment of the message in the **AddClinicalData_ZSegment** transformer

7. ADD SURGERY TEAM

If the surgery team value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZST (Surgery Team) segment of the message in the **AddSurgeryTeam_ZSegment** transformer

8. ADD PRODUCTS

If the product value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZPD (Products) segment of the message in the **AddProducts_ZSegment** transformer

9. ADD PRIMING

If the priming value is transformed as an OBX segment, then add it inn this step. Otherwise add it in the ZPR (Priming) segment of the message in the **AddPriming_ZSegment** transformer

10. ADD BALANCE

If the balance value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZBL (Balance) segment of the message in the **AddBalance_ZSegment** transformer

11. ADD IMPLANTS ASSIST DEVICE

If the implants and assist device value are transformed as an OBX segment, then add it in this step. Otherwise add it in the ZIA (Implants and Assist Device) segment of the message in the **AddImplantsAssistDevice_ZSegment** transformer

12. ADD POST OPERATIVE_FLOW AND PRESSURE

If the flow and pressure value are transformed as an OBX segment, then add it in this step. Otherwise add it in the ZFP (Flow and Pressure) segment of the message in the **AddPostOperative_FlowAndPressure_ZSegment** transformer

13. ADD POSTOPERATIVE_QUALITY SCORE

If the quality score value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZQS (Quality Score) segment of the message in the **AddPostOperative_QualityScore_ZSegment** transformer

14. ADD POST OPERATIVE_STATUS

If the status value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZST (Status) segment of the message in the **AddPostOperative_Status_ZSegment** transformer

15. ADD EVENTS

If the event value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZEV (Event) segment of the message in the **AddEvents_ZSegment** transformer

16. ADD TIMERS

If the timer value is transformed as an OBX segment, then add it in this step. Otherwise add it in the ZTD (Timer Data) segment of the message in the **AddTimers_ZSegment** transformer

17. ADD NUMERIC DATA

It includes laboratory data, coagulation data, cardioplegia data, ats data. The observation result is created for each date time stamp. HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table

OBR	DESCRIPTION
OBR.1.1	1
OBR.2.1	Surgery.PlacerOrderNumber Placer Order Number
OBR.2.2	Surgery.PlacerOrderNumber Placer Order Number
OBR.3.1	Surgery.CaseNumber Filler Order Number
OBR.3.2	Surgery.CaseNumber Filler Order Number
OBR.7.1	Surgery.NumericData.DateTime.@TimeStamp Observation time of the event
OBR.22.1	Surgery.NumericData.DateTime.@TimeStamp Results report/status change date time
OBR.25	P/F (F = Completed Case, Otherwise P) Result Status

OBX	DESCRIPTION
OBX.1.1	<i>Incremental number starting from 1</i>
OBX.2	
OBX.3.1	Surgery.NumericData.DateTime.OBX.@EmrCode Observation Identifier
OBX.3.2	Surgery.NumericData.DateTime.OBX.@ConnectName Observation Text
OBX.3.5	Surgery.NumericData.DateTime.OBX.@ConnectName Observation Alternate Text
OBX.5	Surgery.NumericData.DateTime.OBX.@Value
OBX.6.1	Surgery.NumericData.DateTime.OBX.@EmrUnit
OBX.6.2	Surgery.NumericData.DateTime.OBX.@EmrUnit
OBX.6.5	Surgery.NumericData.DateTime.OBX.@ConnectUnit
OBX.11	P/F (F = Completed Case, Otherwise P)
OBX.14.1	Surgery.NumericData.DateTime.OBX.@InputTime

18. ADD_ZSEGMENTS_STARTED

19. ADD PHYSIQUE_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table

ZPH	DESCRIPTION
ZPH.1.1	<i>Incremental number starting from 1</i>
ZPH.2.1	Value Type {Physique}
ZPH.2.2	Sub-category of the value type {BSA/CalculatedFlow}
ZPH.3.1	EMR Identifier Code
ZPH.3.2	Exact value from the CONNECT
ZPH.3.3	EMR data unit of the value
ZPH.3.4	CONNECT Name of the value
ZPH.3.5	CONNECT data unit of the value
ZPH.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

20. ADD CLINICAL DATA_ZSEGMENT

ZCD	DESCRIPTION
ZCD.1.1	<i>Incremental number starting from 1</i>
ZCD.2.1	Value Type {Clinical Data}
ZCD.2.2	Sub-category of the value type {Procedure/Risk/Study}
ZCD.3.1	EMR Identifier Code
ZCD.3.2	Exact value from the CONNECT
ZCD.3.3	EMR data unit of the value
ZCD.3.4	CONNECT Name of the value
ZCD.3.5	CONNECT data unit of the value
ZCD.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

21.ADD SURGERY_TEAM_ZSEGMENT

ZST	DESCRIPTION
ZST.1.1	<i>Incremental number starting from 1</i>
ZST.2.1	Value Type {Surgery Team}
ZST.2.2	Sub-category of the value type {Perfusionists, Surgeons, Asistants, Cardiologists, Anaesthetists, NurseAnaesthetists, Visiting Surgeons}
ZST.3.1	EMR Identifier Code
ZST.3.2	Exact value from the CONNECT
ZST.3.3	EMR data unit of the value
ZST.3.4	CONNECT Name of the value
ZST.3.5	CONNECT data unit of the value
ZST.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

22. ADD PRODUCTS_ZSEGMENT

ZPD	DESCRIPTION
ZPD.1.1	<i>Incremental number starting from 1</i>
ZPD.2.1	Value Type {Disposables, Instrumentation, Cannulae}
ZPD.2.2	Sub-category of the value type {Name of Disposables, Instrumentation, Cannulae}
ZPD.3.1	EMR Identifier Code
ZPD.3.2	Exact value from the CONNECT
ZPD.3.3	EMR data unit of the value
ZPD.3.4	CONNECT Name of the value
ZPD.3.5	CONNECT data unit of the value
ZPD.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

23. ADD PRIMING_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table.

ZPR	DESCRIPTION
ZPR.1.1	<i>Incremental number starting from 1</i>
ZPR.2.1	Value Type {Priming}
ZPR.2.2	Sub-category of the value type
ZPR.3.1	EMR Identifier Code
ZPR.3.2	Exact value from the CONNECT
ZPR.3.3	EMR data unit of the value
ZPR.3.4	CONNECT Name of the value
ZPR.3.5	CONNECT data unit of the value
ZPR.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

24. ADD BALANCE_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table

ZBL	DESCRIPTION
ZBL.1.1	<i>Incremental number starting from 1</i>
ZBL.2.1	Value Type {Balance}
ZBL.2.2	Sub-category of the value type
ZBL.3.1	EMR Identifier Code
ZBL.3.2	Exact value from the CONNECT
ZBL.3.3	EMR data unit of the value
ZBL.3.4	CONNECT Name of the value
ZBL.3.5	CONNECT data unit of the value
ZBL.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

25. ADD IMPLANTS ASSIST DEVICE_ZSEGMENT

ZIA	DESCRIPTION
ZIA.1.1	<i>Incremental number starting from 1</i>
ZIA.2.1	Value Type {Implants & Assist Device}
ZIA.2.2	Sub-category of the value type {Valve, Stents, Assist Device}
ZIA.3.1	EMR Identifier Code
ZIA.3.2	Exact value from the CONNECT
ZIA.3.3	EMR data unit of the value
ZIA.3.4	CONNECT Name of the value
ZIA.3.5	CONNECT data unit of the value
ZIA.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

26. ADD POST OPERATIVE_FLOW AND PRESSURE_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table

ZFA	DESCRIPTION
ZFA.1.1	<i>Incremental number starting from 1</i>
ZFA.2.1	Value Type {Flow and Pressure}
ZFA.2.2	Sub-category of the value type {Flow, Pressure}
ZFA.3.1	EMR Identifier Code
ZFA.3.2	Exact value from the CONNECT
ZFA.3.3	EMR data unit of the value
ZFA.3.4	CONNECT Name of the value
ZFA.3.5	CONNECT data unit of the value
ZFA.3.6	Measurement time of the flow and pressure
ZFA.3.7	Position of the measurement
ZFA.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

27. ADD POST OPERATIVE_QUALITY SCORE_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table

ZQS	DESCRIPTION
ZQS.1.1	Incremental number starting from 1
ZQS.2.1	Value Type {Quality Score}
ZQS.2.2	Sub-category of the value type
ZQS.3.1	EMR Identifier Code
ZQS.3.2	Exact value from the CONNECT
ZQS.3.3	EMR data unit of the value
ZQS.3.4	Name of the value in CONNECT
ZQS.3.5	CONNECT data unit of the value
ZQS.4.1	EMR Identifier Code of the Time Above
ZQS.4.2	CONNECT Name of the Time Above
ZQS.4.3	Exact value from the CONNECT of the Time Above
ZQS.5.1	EMR Identifier Code of the Maximum Limit
ZQS.5.2	CONNECT Name of the Maximum Limit
ZQS.5.3	Exact value from the CONNECT of the Maximum Limit
ZQS.6.1	EMR Identifier Code of the Maximum
ZQS.6.2	CONNECT Name of the Maximum
ZQS.6.3	Exact value from the CONNECT of the Maximum
ZQS.7.1	EMR Identifier Code of the Average
ZQS.7.2	CONNECT Name of the Average
ZQS.7.3	Exact value from the CONNECT of the Average
ZQS.8.1	EMR Identifier Code of the Minimum
ZQS.8.2	CONNECT Name of the Minimum
ZQS.8.3	Exact value from the CONNECT of the Minimum
ZQS.9.1	EMR Identifier Code of the Minimum Limit
ZQS.9.2	CONNECT Name of the Minimum Limit
ZQS.9.3	Exact value from the CONNECT of the Minimum Limit
ZQS.10.1	EMR Identifier Code of the Time Below
ZQS.10.2	CONNECT Name of the Time Below
ZQS.10.3	Exact value from the CONNECT of the Time Below
ZQS.11.1	EMR Identifier Code of the Bypass Time
ZQS.11.2	CONNECT Name of the Bypass Time
ZQS.11.3	Exact value from the CONNECT of the Bypass Time
ZQS.12.1	EMR Identifier Code of the Within Limits
ZQS.12.2	CONNECT Name of the Within Limits
ZQS.12.3	Exact value from the CONNECT of the Within Limits
ZQS.13.1	Result Status (P/F, [F = Completed Case, Otherwise P])

28. ADD POST OPERATIVE_STATUS_ZSEGMENT

HL7 segment separator character (^) is replaced by the character what is defined in the key (sw_150__7__DataPoint_Unit_Separator) for the unit of the respective value in the following table.

ZSS	DESCRIPTION
ZSS.1.1	<i>Incremental number starting from 1</i>
ZSS.2.1	Value Type {Status}
ZSS.2.2	Sub-category of the value type
ZSS.3.1	EMR Identifier Code
ZSS.3.2	Exact value from the CONNECT
ZSS.3.3	EMR data unit of the value
ZSS.3.4	CONNECT Name of the value
ZSS.3.5	CONNECT data unit of the value
ZSS.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

29. ADD EVENTS_ZSEGMENT

ZEV	DESCRIPTION
ZEV.1.1	<i>Incremental number starting from 1</i>
ZEV.2.1	Value Type {Events}
ZEV.2.2	Sub-category of the value type
ZEV.3.1	EMR Identifier Code
ZEV.3.2	Event Time
ZEV.3.3	
ZEV.3.4	SourceLabel + EventLabel of the event
ZEV.3.5	
ZEV.4.1	Result Status (P/F, [F = Completed Case, Otherwise P])

30. ADD TIMERS_ZSEGMENT

ZTD	DESCRIPTION
ZTD.1.1	<i>Incremental number starting from 1</i>
ZTD.2.1	Value Type { Timer Data }
ZTD.2.2	Sub-category of the value type
ZTD.3.1	EMR Identifier Code
ZTD.3.2	Label of Timer
ZTD.3.3	
ZTD.3.4	Label of Timer
ZTD.3.5	
ZTD.4.1	Start Time
ZTD.4.2	Stop Time
ZTD.4.3	Duration
ZTD.4.4	Total Time
ZTD.5.1	Result Status (P/F, [F = Completed Case, Otherwise P])

31. FINAL STEP

Put the message in the channel variable to use it later.
(iii) Response

6.2.2 GENERATE .CSV FILE

(i) Filter

- FilterTheTestMessage: It filters the message if the message contains the test string in the Surgery.SurgeryStatus node
- If the data point export type is HL7 or xml then Skip this Destination

(ii) Transformer

Create the .csv file with comma separator. The first 23 columns are fixed. The rest of the columns are generated dynamically based on the number of the system values. Each row represents each recording time of the case. If the value of the column is empty then there is no value recorded for that system value on that specific time.

(iii) Response

6.2.3 GENERATE .XML FILE

(i) Filter

- FilterTheTestMessage: It filters the message if the message contains the test string in the Surgery.SurgeryStatus node
- If the data point export type is HL7 or csv then Skip this Destination

(ii) Transformer

Create the xml file. The root element is Case and the respective children will be identical of the incoming message. The xml shall not include any element which is not intended for upload

(iii) Response

6.2.4 SEND FINAL HL7 MESSAGE

(i) Filter

FilterTheTestMessage: It filters the message if the message contains the test string in the Surgery.SurgeryStatus node

ii.ii.Transformer
If the data point export type is HL7 then it sends the data point in the obx segments. Otherwise it sends the data point via file (csv/xml). It encodes the file content to base64 if the file content type is inline, otherwise it sends only the file reference.

(iii) Response

It tries 3 times in each 5 seconds. After that it queues the message if it fails to send. If the message is successfully sent to the EMR then it changes the HisExport status to Completed

6.3 ERROR HANDLING

ID	ERROR EVENT	LOG INFORMATION	INFORMATION PROPAGATION	ACTIONS TRIGGERED
DATABASE				
1	Wrong data value (date). Happens if mirth receives a date that cannot be inserted into DB because out of range For example: must be between 01/01/1753 and 12/31/9999	[absent? / variable XXX / alert]	[none / NACK / variable in DB]	
2	Wrong data value (number). Happens if mirth receives a number value that cannot be inserted into DB because out of range - 3.40E + 38 to -1.18E - 38, 0 and 1.18E - 38 to 3.40E + 38			
3	Wrong data value (string). Happens if mirth receives a string which length is greater than the DB field size			
4	Error during insert or update. It could be for example: # Primary/Foreign Key constraint error # Invalid insert values # Missing values # Data table locked due to shared access (dead lock)			
5	Missing permission on tables / elements			
6	Wrong database authentication information (DB and login)			
CONNECTIVITY				
7	Connectivity to HIS DB is lost			
8	Connectivity to Mirth DB is lost			
9	SQL Service is stopped unexpectedly			
10	Loss of connection during transaction			
INBOUND MESSAGES				
11	Wrong message event type received, not supported in our system			
12	Incomplete message /cut message			
13	Missing segments – mandatory segments according Interface description is missing Interface Description needs to be updated			
14	Missing fields inside the segments – mandatory fields according Interface description is missing Interface Description needs to be updated			
15	Message containing data in a wrong format (date) HisAppointmentNo => AppointmentDateTime - Nullable HisOrderNumber => OrderDateTime - Nullable HisPatient => DateOfBirth - Nullable HisPatientMetaData => DataTimestamp - Nullable			
16	Message containing data in a wrong format (number) HisPatient => WeightValue - real HisPatient => HeightValue - real			
17	Message containing data in a wrong format (non ASCII characters)			

OUTBOUND MESSAGES

- 18 HL7 separator characters inside a string. This can actually happen when putting the report file name into the MDM message. There is no constraint on the report file name on characters like &, ^ and ~

- 19 Receiving error message from receiving system
Shared folder (for file) not accessible

- 20 Shared folder (for file) not accessible

- 21 Receiver (EMR) is not available

- 22 Message too big. For example in a MDM message that grows too much due to its file content

- 23 Patient Query response does not arrive



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The LivaNova Deutschland Quality System complies with:
EN ISO 13485:2012

CE 0123 According to Annex II (Full Quality System) of
MDD 93/42/EEC as amended by directive 2007/47/EEC

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Please always refer to the Instructions For Use (IFU) manual provided with each product for detailed information, warnings, precautions and possible adverse side effects. For product availability in your country, please refer to your LivaNova sales representative.