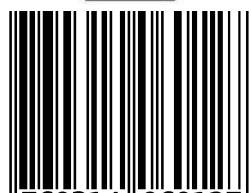
	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x



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CE


MD

Ez RDM (Radiation  
Dose Monitor)


	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

# TABLE OF CONTENTS

1 Foreword .....	4
2 INTRODUCTION .....	5
2.1 Scope and field of application .....	5
2.2 Revision History .....	6
2.3 Audience .....	7
2.4 Remarks .....	7
2.5 Definitions, Terms and Abbreviations .....	8
2.6 Related Documents .....	8
3 NETWORKING .....	9
3.1 HL7 Protocol Support .....	9
4 INBOUND MESSAGES .....	10
4.1 Supported Trigger Events .....	10
4.1.1 Supported RSP Events (V.2.5) .....	10
4.1.2 Supported ADT Events .....	10
4.1.3 Supported ORM Events .....	12
4.2 Supported HL7 Attributes .....	13
4.2.1 MSH Segment Mappings .....	14
4.2.2 PID Segment Mappings .....	15
4.2.3 PV1 Segment Mappings .....	17
4.2.4 MRG Segment Mappings .....	19
4.2.5 QPD Segment Mappings .....	19
4.2.6 QAK Segment Mappings .....	19
4.2.7 MSA Segment Mappings .....	20
4.2.8 ORC Segment Mappings .....	20
4.2.9 OBR Segment Mappings .....	22
4.2.10 ZDS Segment Mappings .....	24

	<b>HL7 Conformance Statement</b>	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x







4.3 Acknowledgments .....	24
5 OUTBOUND MESSAGES .....	25
5.1 Supported QBP Events .....	25
5.1.1 QBP Segments Processed .....	25
5.2 Supported ORU Events .....	25
5.2.1 ORU Segments Processed .....	26
5.3 Supported HL7 Attributes .....	26
5.3.1 MSH Segment Mappings .....	26
5.3.2 PID Segment Mappings .....	27
5.3.3 PV1 Segment Mappings .....	28
5.3.4 ORC Segment Mappings .....	29
5.3.5 OBR Segment Mappings .....	30
5.3.6 OBX Segment Mappings .....	31
5.3.7 QPD Segment Mappings .....	31
5.3.8 RCP Segment Mappings .....	32
6 SAMPLE MESSAGES .....	33
6.1 PDQ Messages .....	33
6.2 PIX Messages .....	34
6.3 ORU^R01 sample message sent by Ez RDM for dose report .....	34
7 SUPPORTED CHARACTER SETS .....	35
8 CONFIGURATION .....	35
8.1 Default Server Configuration .....	35

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x


## 1 FOREWORD

This software is a Class I medical device in the EU. It is "CE" marked, in compliance with the applicable requirements of European regulation 2017/745.

Meaning of symbols:

Symbol	Symbol Title
	Manufacturer
	CE-Mark
	Medical device
	Unique Device ID
	Date of manufacture <u>Note:</u> This symbol is accompanied by a date indicating the date of manufacture, expressed as four digits for the year and two digits for the month: YYYY-MM. This symbol is displayed on the Ez RDM web interface.
	See the instructions for use

Note: Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 2 INTRODUCTION


### 2.1 Scope and field of application

The Ez RDM Software is a universal solution for managing the archiving and communication of medical images with integrated workflow control. In order to offer these services Ez RDM Software utilizes and supports different medical communication standards. Apart from DICOM services, which are described in a dedicated Conformance Statement [DICOM CS] Ez RDM uses HL7 [HL7 V2.3] services to communicate with other medical systems.

Ez RDM supports several HL7 messages in order to provide the following capabilities:


- Allow systems like HIS or RIS to update patient information on Ez RDM.
- Allow the reception and sending of reports.

For more information about the system, visit <https://www.mptronic.com/>

	<b>HL7 Conformance Statement</b>	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 2.2 Revision History

Version	Date	Description
1.0	17-10-2012	Initial Version
1.1	30-05-2013	Update document
1.2	07-03-2017	Update document for PDQ and PIX
1.4.4	01-01-2020	New layout
1.4.6	07-01-2022	New layout
1.4.7	02-05-2023	Update document
1.4.8	20-08-2024	Update section 2.2 - 4.1.2 - 4.1.3.1

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x


### 2.3 Audience

This HL7 conformance statement is targeted at people who are involved in integrating the Ez RDM with complementary products, e. g. hospital or radiological information systems. A reader of this document should possess working knowledge of the HL7 standard [HL7 V2.3] and the IHE Radiology Technical Framework [IHE RTF 8.0].

### 2.4 Remarks

The HL7 standard neither requires manufacturers of HL7-compliant software or hardware vendors to provide a conformance statement nor describes what information should be included into such a statement. This document utilizes or modifies some notations of a DICOM conformance statement and adds additional content if necessary.

The fact that a product X has a HL7 conformance statement which is complementary to that of Ez RDM does not automatically guarantee interoperability between said product X and Ez RDM. A comparison of two complementary conformance statements is only one step towards determining whether two applications are interoperable; aside from this comparison other steps are inevitable, e. g. the analysis of interoperability requirements for the communicating applications, the creation of a test scheme to verify interoperability and the execution of this test scheme.

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 2.5 Definitions, Terms and Abbreviations


Definitions, terms and abbreviations used in this document are defined within the HL7 standard. Abbreviations and terms are as follows:

ADT	Admission, Discharge, and Transfer message
EVN	Event Type segment
HL7	Health Level 7
IHE	Integrating the Healthcare Enterprise
MDM	Medical Document Management
MFN	Master Files Change Notification
MRG	Merge Patient Information segment
MSA	Message acknowledgement segment
MSH	Message Header segment
NTE	Notes and comments segment
OBR	Observation Request segment
OBX	Observation/Result segment
ORC	Common Order segment
ORM	Order Request message
ORU	Observation Results - Unsolicited message
PID	Patient ID segment
PV1	Patient Visit segment
QPD	Query parameter definition
RCP	Response control parameter
RIS	Radiology Information System

## 2.6 Related Documents

- HL7 Standard v2.3 and v2.5.1
- IHE Radiology Technical Framework Revision 10.0
- IHE IT Infrastructure Technical Framework Revision 8.0
- IHE Cardiology Supplement Displayable Report (DRPT)




	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

### 3 NETWORKING

#### 3.1 HL7 Protocol Support

Ez RDM uses the HL7 protocol options as required by IHE. This includes the Minimal Lower Layer Protocol defined in Appendix C of the HL7 Implementation Support Guide [HL7 IG] and the Original Acknowledgement Mode defined in the HL7 standard [HL7 V2].

Several transfer modes are implemented: Socket communication based on TCP/IP and file based communication where files are transferred to specific directories.

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 4 INBOUND MESSAGES

### 4.1 Supported Trigger Events

#### 4.1.1 Supported RSP Events (V.2.5)

Inbound support for RSP triggers is implemented by a lookup table.

**Table 1 Supported RSP Events**

Function Area	Event Code	RSP Trigger Event	Inbound Supported
RSP	K22	PDQ Query response	Y
RSP	K23	PIX Query response	Y

##### 4.1.1.1 RSP SEGMENTS PROCESSED

The following segments are processed when Ez RDM receives an RSP message:

- MSH
- MSA
- QAK
- QPD
- PID

#### 4.1.2 Supported ADT Events

Inbound support for ADT triggers is implemented by a lookup table. This table may be edited to meet a site's needs.

**Table 2 Supported ADT Events**

Function Area	Event Code	ADT Trigger Event	Inbound Supported
<b>ADT</b>	<b>A01</b>	<b>Admit a patient</b>	<b>Y</b>
ADT	A02	Transfer a patient	
ADT	A03	Discharge a patient	
<b>ADT</b>	<b>A04</b>	<b>Register a patient</b>	<b>Y</b>
ADT	A05	Preadmit a patient	
ADT	A06	Transfer an outpatient to inpatient	
ADT	A07	Transfer an inpatient to outpatient	
<b>ADT</b>	<b>A08</b>	<b>Update patient information</b>	<b>Y</b>
ADT	A09	Patient departing	
ADT	A10	Patient arriving	
<b>ADT</b>	<b>A11</b>	<b>Cancel admit</b>	<b>Y</b>




## HL7 Conformance Statement

Doc. Ref. :  
CONF-EZRDMHL7-EN  
Version : 1.4.8.x

### Ez RDM

ADT	A12	Cancel transfer	
ADT	A13	Cancel discharge	
ADT	A14	Pending admit	
ADT	A15	Pending transfer	
ADT	A16	Pending discharge	
ADT	A17	Swap patients	
ADT	A18	Merge patient information	
QRY	A19	Patient query	
ADT	A20	Nursing/Census application updates	
ADT	A21	Leave of absence - out (leaving)	
ADT	A22	Leave of absence - in (returning)	
<b>ADT</b>	<b>A23</b>	<b>Delete a patient record</b>	<b>Y</b>
ADT	A24	Link patient information	
ADT	A25	Cancel pending discharge	
ADT	A26	Cancel pending transfer	
ADT	A27	Cancel pending admit	
ADT	A28	Add person information	
<b>ADT</b>	<b>A29</b>	<b>Delete person information</b>	<b>Y</b>
ADT	A30	Merge person information	
ADT	A31	Update person information	
ADT	A32	Cancel patient arriving	
ADT	A33	Cancel patient departing	
ADT	A34	Merge patient information – patient ID only	
ADT	A35	Merge patient information – account number only	
ADT	A36	Merge patient information – patient ID and account	
ADT	A37	Unlink patient information	
ADT	A38	Cancel pre-admit	
ADT	A39	Merge person – external ID	
<b>ADT</b>	<b>A40</b>	<b>Merge patient – internal ID</b>	<b>Y</b>
ADT	A41	Merge account – patient account number	
ADT	A42	Merge visit – visit number	
ADT	A43	Move patient information – internal ID	
ADT	A44	Move account information – patient account number	
ADT	A45	Move visit information – visit number	
QRY	A46	Change external ID	
ADT	A47	Change internal ID	
ADT	A48	Change alternate patient ID	
ADT	A49	Change patient account number	
ADT	A50	Change visit number	
ADT	A51	Change alternate visit ID	

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

#### 4.1.2.1 ADT SEGMENTS PROCESSED

The following segments are processed when Ez RDM receives an ADT message:

- MSH
- [ EVN ]
- PID
- PV1
- [ MRG ]

#### 4.1.3 Supported ORM Events

The ORM^O01 is the only code supported for order messages.

**Table 3 Supported ORM Events**


Function Area	Event Code	ORM Trigger Event	Inbound Supported
ORM	O01	General order message	Y

#### 4.1.3.1 ORM MESSAGES : SUPPORTED CONTROL CODES AND ORDER STATUTES

For ORM messages the processing performed is determined by a combination of ORC(1,1) and ORC(5,1). If ORC(1,1) is set to "SC" for "Status Changed" or ORC(1,1) is set to "XO" , then ORC(5,1) is used as the key to determine both the order status. Otherwise ORC(1,1) is used as the key. The following tables indicate what order control codes and order statuses are supported by default from ORC(1,1) and ORC(5,1). The set of supported control codes and the corresponding handling behaviour can be changed by configuration.

**Table 4 Default Order Control Codes supported from ORC 1,1**

Control Code (ORC-1) Value
NW
XO
CA
OC
DC
OD
SC

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

**Table 5 Default Order Status Codes supported from ORC 5,1**

Order Status (ORC-5) Value
DC
CM
IP
CA
SC


#### 4.1.3.2 ORM SEGMENTS PROCESSED

The following segments are processed when Ez RDM receives an ORM message:

- MSH
- PID
- [ PV1 ]
  - {
  - ORC
  - [ OBR ]
  - [
  - { OBX }
  - ]
  - }
- ZDS

#### 4.2 Supported HL7 Attributes


The following sections indicate the default mapping of HL7 attributes to internal Ez RDM data attributes.

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

#### 4.2.1 MSH Segment Mappings

**Table 6 MSH Attribute Support in Ez RDM**


Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Field Separator	Yes	No	Usually " "
2	Encoding Characters	Yes	No	Usually "^~\&"
3	Sending Application	Yes	No	
4	Sending Facility	Yes	No	
5	Receiving Application	Yes	No	
6	Receiving Facility	Yes	No	
7	Date/time of Message	No	No	
8	Security	No	No	
9	Message Type	Yes	No	Extract the message type and event type components
10	Message Control ID	Yes	No	Generated by sending application
11	Processing ID	Yes	No	
12	Version ID	Yes	No	"2.1", "2.2", "2.3", "2.3.1", "2.5", "2.5.1"
13	Sequence Number	No	No	
14	Continuation Pointer	No	No	
15	Accept Acknowledgement Type	No	No	
16	Application Acknowledgement Type	No	No	
17	Country Code	No	No	
18	Character Set	Yes	No	If missing, then set to ISO_IR 100
19	Principal Language of Message	No	No	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

#### 4.2.2 PID Segment Mappings


**Table 7 PID Attribute Support in Ez RDM**

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Set ID – Patient ID	No	No	
2	Patient ID (External ID)	No	No	
3	<b>Patient ID (Internal ID)</b>	<b>Yes</b>	<b>Yes</b>	<b>Maps to DICOM Patient ID (0010,0020)</b>  <b>Note for RSP^K23 and RSP^K22</b> <b>This is a list of Patient Id's and Assigning Authorities</b> <b>Each Patient Id Assigning Authority combination is separated by a tilde (~)</b>
4	Alternate Patient ID	No	No	
5	<b>Patient Name</b>	<b>Yes</b>	<b>Yes</b>	<b>Maps to DICOM Patient Name (0010,0010)</b>
6	Mother's Maiden Name	No	No	
7	<b>Date of Birth</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Patient's Birth Date (0010,0030)</b>
8	<b>Sex</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Patient's Sex (0010,0040)</b>
9	Patient Alias	No	No	
10	Race	No	No	
11	Patient Address	No	No	
12	Country Code	No	No	
13	Phone Number – Home	No	No	
14	Phone Number –Business	No	No	
15	Primary Language	No	No	
16	Marital Status	No	No	
17	Religion	No	No	
18	Patient Account Number	No	No	
19	SSN Number – Patient	No	No	
20	Driver's Lic Num – Patient	No	No	
21	Mother's Identifier	No	No	
22	Ethnic Group	No	No	
23	Birth Place	No	No	
24	Multiple Birth Indicator	No	No	
25	Birth Order	No	No	
26	Citizenship	No	No	
27	Veterans Military Status	No	No	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

28	Nationality	No	No	
29	Patient Death Date/Time	No	No	
30	Patient Death Indicator	No	No	




	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x


#### 4.2.3 PV1 Segment Mappings

**Table 8 PV1 Attribute Support in Ez RDM**

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Set ID - Patient Visit	No	No	
2	Patient Class	No	No	
3	Assigned Patient Location	No	No	
4	Admission Type	No	No	
5	Pre-admit Number	No	No	
6	Prior Patient Location	No	No	
7	Attending Doctor	No	No	
<b>8</b>	<b>Referring Doctor</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Referring Physician's Name (0008,0090) on ORM messages</b>
9	Consulting Doctor	No	No	
10	Hospital Service	No	No	
11	Temporary Location	No	No	
12	Pre-admit Test Indicator	No	No	
13	Readmission Indicator	No	No	
14	Admit Source	No	No	
<b>15</b>	<b>Ambulatory Status</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Pregnancy Status(0010,21C0) for ORM messages only</b>  <b>If the Ambulatory Status is set to B6, then the Pregnancy status is set to 3 in DICOM</b>
16	VIP Indicator	No	No	
17	Admitting Doctor	No	No	
18	Patient Type	No	No	
<b>19</b>	<b>Visit Number</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Admission ID (0038.0010)</b>
20	Financial Class Eff. Date	No	No	
21	Charge Price Indicator	No	No	
22	Courtesy Code	No	No	
23	Credit Rating	No	No	
24	Contract Code	No	No	
25	Contract Effective Date	No	No	
26	Contract Amount	No	No	

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

27	Contract Period	No	No	
28	Interest Code	No	No	
29	Transfer to Bad Debt Code	No	No	
30	Transfer to Bad Debt Date	No	No	
31	Bad Debt Agency Code	No	No	
32	Bad Debt Transfer Amount	No	No	
33	Bad Debt Recovery Amt	No	No	
34	Delete Account Indicator	No	No	
35	Delete Account Date	No	No	
36	Discharge Disposition	No	No	
37	Discharged to Location	No	No	
38	Diet Type	No	No	
39	Servicing Facility	No	No	
40	Bed Status	No	No	
41	Account Status	No	No	
42	Pending Location	No	No	
43	Prior Temporary Location	No	No	
44	Admit Date/Time	No	No	
45	Discharge Date/Time	No	No	
46	Current Patient Balance	No	No	
47	Total Charges	No	No	
48	Total Adjustments	No	No	
49	Total Payments	No	No	
50	Alternate Visit ID	No	No	
51	Visit Indicator	No	No	
52	Other Healthcare Provider	No	No	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

#### 4.2.4 MRG Segment Mappings

This segment is only used in ADT Merge messages (A40).

**Table 9 MRG Attribute Support in Ez RDM**

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	<b>Prior Patient ID - Internal</b>	Yes	Yes	
2	Prior Alternate Patient ID	No	No	
3	Prior Patient Acct Number	No	No	
4	Prior Patient ID - External	No	No	
5	Prior Visit Number	No	No	
6	Prior Alternate Visit ID	No	No	
7	Prior Patient Name	No	No	

#### 4.2.5 QPD Segment Mappings


**Table 10 QPD Attribute Support in Ez RDM**

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	<b>Message Query Name</b>	Yes	No	
2	<b>Query Tag</b>	Yes	No	Must be equal to QPD-2 of the request
3	<b>User Parameters</b>	Yes	No	Must be equal to QPD-3 of the request
4	Field	No	No	

#### 4.2.6 QAK Segment Mappings

**Table 11 QAK Attribute Support in Ez RDM**

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	<b>Query Tag</b>	Yes	No	Must be equal to QPD-2 of the

	<b>HL7 Conformance Statement</b>	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

				<b>request</b>
<b>2</b>	<b>Query Response Status</b>	<b>Yes</b>	<b>No</b>	
3	Message Query Name	No	No	

#### 4.2.7 MSA Segment Mappings


*Table 12 MSA Attribute Support in Ez RDM*

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
<b>1</b>	<b>Acknowledgment Code</b>	<b>Yes</b>	<b>No</b>	
<b>2</b>	<b>Message Control ID</b>	<b>Yes</b>	<b>No</b>	
3	Text Message	No	No	
4	Expected Sequence Number	No	No	
5	Delayed Acknowledgment Type	No	No	
6	Error Condition	No	No	

#### 4.2.8 ORC Segment Mappings


*Table 13 ORC Attribute Support in Ez RDM*

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Order Control	Yes	No	Refer to Table 3
2	Placer Order #	No	No	
<b>3</b>	<b>Filler Order #</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Accession Number (0008,0050) *</b>
4	Placer Group #	No	No	
5	Order Status	No	No	
6	Response Flag	No	No	
7	Quantity/Timing	No	No	
8	Parent	No	No	
9	Date/Time of Transaction	No	No	
10	Entered By	No	No	
11	Verified By	No	No	
12	Ordering Provider	No	No	
13	Enterer' s Location	No	No	
14	Call Back Phone Number	No	No	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

15	Order Effective Date/Time	No	No	
16	Order Control Reason	No	No	
17	Entering Organization	No	No	
18	Entering Device	No	No	
19	Action By	No	No	


\*Used if Accession Number is not present in the OBR Segment

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

#### 4.2.9 OBR Segment Mappings

**Table 14 OBR Attribute Support in Ez RDM**


Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Set ID – Observation Request	No	No	Set to 1,2,3...
2	Placer Order #	No	No	
3	Filler Order #	No	Yes	Maps to DICOM Accession Number (0008,0050) *
4	Universal Service ID	No	Yes	OBR 4,1-3 maps to DICOM Requested Procedure Code Sequence (0032,1064) . OBR 4,2 maps to Requested Procedure Description (0032,1060) **
5	Priority	No	No	
6	Requested Date/Time	No	No	
7	Observation Date/Time	No	No	
8	Observation End Date/Time	No	No	
9	Collection Volume	No	No	
10	Collector Identifier	No	No	
11	Specimen Action Code	No	No	
12	Danger Code	No	No	
13	Relevant Clinical Inf.	No	No	
14	Specimen Rec'd Date/Time	No	No	
15	Specimen Source	No	No	
16	Ordering Provider	No	No	
17	Order Callback Phone No.	No	No	
18	Placer Field 1	No	Yes	Maps to DICOM Accession Number (0008,0050) *
19	Placer Field 2	No	Yes	
20	Filler Field 1	No	Yes	
21	Filler Field 2	No	No	
22	Result Rpt/Status Change - Date/Time	No	No	
23	Charge To Practice	No	No	
24	Diagnostic Serv Sect Id	No	Yes	Maps to DICOM Modality (0008,0060)
25	Result Status	No	No	
26	Parent Result	No	No	
27	Quantity/Timing	No	No	
28	Result Copies To	No	No	
29	Parent Number	No	No	

	<b>HL7 Conformance Statement</b>	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
30	Transportation Mode	No	No	
31	Reason For Study	No	No	
32	Principal Result Interpreter	No	No	
33	Assistant Result Interpreter	No	No	
<b>34</b>	<b>Technician</b>	<b>No</b>	<b>Yes</b>	<b>Maps to DICOM Scheduled Performing Physician Name (0040,0006)</b>
35	Transcriptionist	No	No	
36	Scheduled Date/Time	No	No	
37	Number of Sample Containers	No	No	
38	Transport Logistics of Collected Sample	No	No	
39	Collector's Comment	No	No	
40	Transport Arrangement Responsibility	No	No	
41	Transport Arranged	No	No	
42	Escort Required	No	No	
43	Planned Patient Transport Comment	No	No	
<b>44</b>	<b>Procedure Code</b>	<b>No</b>	<b>Yes</b>	<b>OBR 44,1-3 maps to DICOM Requested Procedure Code Sequence (0032,1064) . OBR 44,2 maps to Requested Procedure Description (0032,1060) **</b>

\*Accession Number is extracted from OBR-18 by default (IHE RAD-4) . If not present it is extracted from OBR-3

\*\*Requested Procedure Code Sequence is extracted from OBR-44 by default (IHE RAD-4). If not present it is extracted from OBR-4

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

#### 4.2.10 ZDS Segment Mappings

Ez RDM REM supports the IHE custom segment ZDS that conveys the study instance uid.

*Table 15 ZDS Attribute Support in Ez RDM*

Seq	HL7 Field Name	Value Required	Default Mapping in Ez RDM (Yes/No)	Comments
1	Study Instance UID	No	Yes	ZDS 1,1 is the Study Instance UID


#### 4.3 Acknowledgments

If the HL7 message is processed successfully, then an ACK is returned with the Acknowledgement Code set to "AA".

If the incoming message cannot be processed, the HL7 mapping returns a NAK. If the reason is the one of the required fields or segments in the message is missing, the Acknowledgment Code is set to "AR".

Any other parsing error returns an Acknowledgment Code of "AE".



	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 5 OUTBOUND MESSAGES

### 5.1 Supported QBP Events

Outbound support for QBP events is implemented by a lookup table.

**Table 16 Supported QBP Events**

Function Area	Event Code	QBP Trigger Event	Outbound Supported
QBP	Q22	PDQ Query	Y
QBP	Q23	PIX Query	Y

#### 5.1.1 QBP Segments Processed

The following segments are processed when Ez RDM send a query message:

- MSH
- QPD
- RCP

### 5.2 Supported ORU Events


The ORU^R01 is supported for outbound messages.

Ez RDM is able to send reports. In order to accomplish this, a configurable script allows adapting the HL7 message to communicate with a HIS/RIS.

Ez RDM can format reports as a “multiline report” (one OBX segment by line) or a “singleline report” (one OBX segment only where lines are separated by a defined character (e.g. ~))

**Table 17 Supported ORU Events**

Function Area	Event Code	ORU Trigger Event	Outbound Supported
ORU	R01	Unsolicited Transmission of an Observation Message	Y

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

### 5.2.1 ORU Segments Processed

The following segments are processed when Ez RDM receives an ORU message:

- MSH
- PID
- [ PV1 ]
  - {
  - ORC
  - [ OBR ]
  - [
  - { OBX }
  - ]
  - }


## 5.3 Supported HL7 Attributes

The following sections indicate the default mapping of HL7 attributes to internal Ez RDM data attributes.

### 5.3.1 MSH Segment Mappings

**Table 17 MSH Attribute generated by Ez RDM**


Seq	HL7 Field Name	Comments
1	Field Separator	" "
2	Encoding Characters	"^~\&"
3	Sending Application	Configurable Sending Application
4	Sending Facility	Configurable Sending Facility
5	Receiving Application	Receiving Application
6	Receiving Facility	Receiving Facility
7	Date/time of Message	Date/Time Generated by Ez RDM format of YYYYMMDDHHmmSS
8	Security	
9	Message Type	"ORU^R01"
10	Message Control ID	Date/Time Generated by Ez RDM format of YYYYMMDDHHmmSS
11	Processing ID	"P"
12	Version ID	"2.3"
13	Sequence Number	
14	Continuation Pointer	
15	Accept Acknowledgement Type	
16	Application Acknowledgement Type	
17	Country Code	
18	Character Set	
19	Principal Language of Message	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

### 5.3.2 PID Segment Mappings

**Table 18 PID Attribute generated by Ez RDM**


Seq	HL7 Field Name	Comments
1	Set ID – Patient ID	
2	Patient ID (External ID)	
3	Patient ID (Internal ID)	Maps to DICOM Patient ID (0010,0020)
4	Alternate Patient ID	
5	Patient Name	Maps to DICOM Patient Name (0010,0010)
6	Mother’s Maiden Name	
7	Date of Birth	Maps to DICOM Patient’s Birth Date (0010,0030)
8	Sex	Maps from DICOM Patient’s Sex (0010,0040)
9	Patient Alias	
10	Race	
11	Patient Address	
12	Country Code	
13	Phone Number – Home	
14	Phone Number –Business	
15	Primary Language	
16	Marital Status	
17	Religion	
18	Patient Account Number	
19	SSN Number – Patient	
20	Driver’s Lic Num – Patient	
21	Mother’s Identifier	
22	Ethnic Group	
23	Birth Place	
24	Multiple Birth Indicator	
25	Birth Order	
26	Citizenship	
27	Veterans Military Status	
28	Nationality	
29	Patient Death Date/Time	
30	Patient Death Indicator	

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

### 5.3.3 PV1 Segment Mappings

*Table 19 PV1 Attribute generated by Ez RDM*

Seq	HL7 Field Name	Comments
1	Set ID - Patient Visit	
2	Patient Class	"E"
3	Assigned Patient Location	
4	Admission Type	
5	Pre-admit Number	
6	Prior Patient Location	
7	Attending Doctor	
8	Referring Doctor	
9	Consulting Doctor	
10	Hospital Service	
11	Temporary Location	
12	Pre-admit Test Indicator	
13	Readmission Indicator	
14	Admit Source	
15	Ambulatory Status	
16	VIP Indicator	
17	Admitting Doctor	
18	Patient Type	
19	Visit Number	
20	Financial Class Eff. Date	
21	Charge Price Indicator	
22	Courtesy Code	
23	Credit Rating	
24	Contract Code	
25	Contract Effective Date	
26	Contract Amount	
27	Contract Period	
28	Interest Code	
29	Transfer to Bad Debt Code	
30	Transfer to Bad Debt Date	
31	Bad Debt Agency Code	
32	Bad Debt Transfer Amount	
33	Bad Debt Recovery Amt	
34	Delete Account Indicator	
35	Delete Account Date	
36	Discharge Disposition	
37	Discharged to Location	
38	Diet Type	
39	Servicing Facility	


	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

40	Bed Status	
41	Account Status	
42	Pending Location	
43	Prior Temporary Location	
44	Admit Date/Time	
45	Discharge Date/Time	
46	Current Patient Balance	
47	Total Charges	
48	Total Adjustments	
49	Total Payments	
50	Alternate Visit ID	
51	Visit Indicator	
52	Other Healthcare Provider	

#### 5.3.4 ORC Segment Mappings

*Table 20 ORC Attribute generated by Ez RDM*


Seq	HL7 Field Name	Comments
1	Order Control	"RE"
2	Placer Order #	
3	Filler Order #	Maps from DICOM Accession Number (0008,0050)
4	Placer Group #	
5	Order Status	
6	Response Flag	
7	Quantity/Timing	
8	Parent	
9	Date/Time of Transaction	
10	Entered By	
11	Verified By	
12	Ordering Provider	
13	Enterer's Location	
14	Call Back Phone Number	
15	Order Effective Date/Time	
16	Order Control Reason	
17	Entering Organization	
18	Entering Device	
19	Action By	

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

### 5.3.5 OBR Segment Mappings

**Table 21 OBR Attribute Support in Ez RDM**

Seq	HL7 Field Name	Comments
1	Set ID – Observation Request	
2	Placer Order #	
3	Filler Order #	Maps from DICOM Accession Number (0008,0050)
4	Universal Service ID	
5	Priority	
6	Requested Date/Time	
7	Observation Date/Time	
8	Observation End Date/Time	
9	Collection Volume	
10	Collector Identifier	
11	Specimen Action Code	
12	Danger Code	
13	Relevant Clinical Inf.	
14	Specimen Rec'd Date/Time	
15	Specimen Source	
16	Ordering Provider family	
17	Order Callback Phone No.	
18	Placer Field 1	Maps from DICOM Accession Number (0008,0050)
19	Placer Field 2	
20	Filler Field 1	
21	Filler Field 2	
22	Result Rpt/Status Change -Date/Time	Date/Time Generated by Ez RDM format of YYYYMMDDHHmmSS
23	Charge To Practice	
24	Diagnostic Serv Sect Id	Maps from DICOM Modality (0008,0060)
25	Result Status	
26	Parent Result	
27	Quantity/Timing	
28	Result Copies To	
29	Parent Number	
30	Transportation Mode	
31	Reason For Study	
32	Principal Result Interpreter	
33	Assistant Result Interpreter	
34	Technician	
35	Transcriptionist	
36	Scheduled Date/Time	
37	Number of Sample Containers	
38	Transport Logistics of Collected Sample	
39	Collector's Comment	
40	Transport Arrangement Responsibility	

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

41	Transport Arranged	
42	Escort Required	
43	Planned Patient Transport Comment	
44	Procedure Code	

### 5.3.6 OBX Segment Mappings

One OBX segment with line separators or multiples OBX segments, one by line, can be used.


**Table 22 OBX Attribute Support in Ez RDM**

Seq	HL7 Field Name	Comments
1	Set ID – Observation Information	
2	Value Type	“TX”
3	Observation Identifier	
4	Observation Sub-ID	
5	Observation Value	Formatted Report
6	Units	
7	References Range	
8	Abnormal Flags	
9	Probability	
10	Nature of Abnormal Test	
11	Observ Result Status	
12	Date Last Obs Normal Values	
13	User Defined Access Checks	
14	Date/Time of the Observation	
15	Producer's ID	
16	Responsible Observer	
17	Observation Method	

### 5.3.7 QPD Segment Mappings

**Table 23 QPD Attribute Support in Ez RDM**

Seq	HL7 Field Name	Comments
1	Message Query Name	For QBP^Q22 = IHE PDQ Query For QBP^Q23 = IHE PIX Query
2	Query Tag	Generated from current Date (YYYYMMDDHHMMSS)
3	User Parameters	For QBP^Q22 (IHE PDQ Query) @PID.3.1^PatientID~@PID.3.4.1^Domain'sNamespace~@PID.3.4.2^ <b>Domain'sUniversalID</b> ~@PID.3.4.3^Domain'sUniversalIDType For QBP^Q23 (IHE PIX Query)

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x


		<b>PatientID^^^Domain'sNamespace&amp;Domain'sUniversalID&amp;Domain'sUniversalIDType</b>
4	Field	

### 5.3.8 RCP Segment Mappings

*Table 24 RCP Attribute Support in Ez RDM*

Seq	HL7 Field Name	Comments
1	Query Priority	Set to I (Immediate)



	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 6 SAMPLE MESSAGES

### 6.1 PDQ Messages

#### Request

```
MSH|^~\&|SendingApplication|SendingFacility|ReceivingApplication|ReceivingFacility|20090223144546||QBP^Q22^QBP_Q21|1235421946|P|2.5
```

```
QPD|IHE PDQ
```

```
Query|20170309022059|@PID.3.1^GLNFBR06H01C002W~@PID.3.4.1^IT~@PID.3.4.2^UNKNOWN~@PID.3.4.3^ISO
```

```
RCP||
```

#### Response

```
MSH|^~\&|SendingApplication|SendingFacility|ReceivingApplication|ReceivingFacility|20090223144546||RSP^K22^RSP_K21|1235421946|P|2.5
```

```
MSA|AA|20170209115806
```


```
QAK|20170309022059|OK
```

```
QPD|IHE PDQ
```

```
Query|20170309022059|@PID.3.1^GLNFBR06H01C002W~@PID.3.4.1^IT~@PID.3.4.2^UNKNOWN~@PID.3.4.3^ISO
```

```
PID|1||GLNFBR06H01C002W^^^IT&UNKNOWN&ISO^NH~DDS-
```

```
14004^^^DDS&1.3.6.1.4.1.12559.11.1.4.1.2&ISO^PI||Fa***^Giul***^L|Testa^L|20060601142937|M||SP 169^Cass*** ^87011^ITA
```

	HL7 Conformance Statement	Doc. Ref. :
	<b>Ez RDM</b>	CONF-EZRDMHL7-EN Version : 1.4.8.x

## 6.2 PIX Messages

Request


MSH ^~\& SendingApplication SendingFacility ReceivingApplication ReceivingFacility 20090223144546  QBP^Q23^QBP_Q21 1235421946 P 2.5
QPD IHE PIX Query 20170309125152 06557411036092470264 90^^^FR&1.2.250.1.213.1.4.2&ISO
RCP

Response

MSH ^~\& SendingApplication SendingFacility ReceivingApplication ReceivingFacility 20090223144546  RSP^K23^RSP_K23 20170309125227 P 2.5
MSA AA 20170209115806
QAK 20170309125152 OK
QPD IHE PIX Query 20170309125152 06557411036092470264 90^^^FR&1.2.250.1.213.1.4.2&ISO
PID   DDS-38496^^^DDS&1.3.6.1.4.1.12559.11.1.4.1.2&ISO~DDS-38497^^^DDS&1.3.6.1.4.1.12559.11.1.4.1.2&ISO  ~^S

## 6.3 ORU^R01 sample message sent by Ez RDM for dose report

MSH ^~\& SendingApplication SendingFacility ReceivingApplication ReceivingFacility 20140918104901  ORU^R01 20140918104901 P 2.3
PID   300347615  Anonymized  19420209 F
PV1  E
ORC RE A10015720553 A10015720553
OBR  A10015720553 A10015720553             20140918104901
OBX 1 TX   Dose Report from Ez RDM
OBX 2 TX
OBX 3 TX   PatientID=300347615 - PatientName=Anonymized - DOB=09/02/1942
OBX 4 TX   StudyDate=30/09/2010 13:27:05 - AccessionNumber=A10015720553
OBX 5 TX
OBX 6 TX   TotalDLP=413,74 mGy.cm
OBX 7 TX   RadioNuclideTotalDose=335,388672 Mbq
OBX 8 TX

	HL7 Conformance Statement	Doc. Ref. : CONF-EZRDMHL7-EN
	<b>Ez RDM</b>	Version : 1.4.8.x

## 7 SUPPORTED CHARACTER SETS

Ez RDM supports the ISO 8859 character set.

## 8 CONFIGURATION

### 8.1 Default Server Configuration

Listener Type: LLP Listener

Listener Port: 6661

Start of Message Char: 0x0B

End of Message Char: 0x1C

Record Separator Char: 0x0D

End of Segment Char: 0x0D

Successful ACK Code: AA

Error ACK Code: AE (an Error Occurred Processing Message)

Rejected ACK Code: AR (Message Rejected)

All these values can be modified in the java based server configuration.