

**Integrating the Healthcare Enterprise**



**IHE Patient Care Device  
Technical Framework Supplement**

**Implantable Cardiac Device Observation  
IDCO**

**Public Comment**

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**This is a supplement to the IHE Patient Care Device Technical Framework V1.1.**

**It is submitted for Public Comment between **June 1, 2009 and July 1, 2009.****

**Comments shall be submitted within that period to <http://forums.rsna.org>:**

1. Select the “IHE” forum
2. Select Patient Care Device (PCD) Technical Framework
3. Select 2009-2010 Supplements for Public Comment
4. Select Implantable Cardiac Device Observation (IDCO)

Please use the Public Comment Template provided there when starting your New Thread.

**Details about IHE may be found at: [www.ihe.net](http://www.ihe.net)**

**Details about the IHE Patient Care Device domain may be found at:**

<http://www.ihe.net/Domains/index.cfm>

**Details about the structure of IHE Technical Frameworks and Supplements may be found at: <http://www.ihe.net/About/process.cfm> and <http://www.ihe.net/profiles/index.cfm>**

**The current version of the IHE Patient Care Device Technical Framework may be found at: [http://www.ihe.net/Technical\\_Framework/index.cfm](http://www.ihe.net/Technical_Framework/index.cfm)**

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## Introduction

This Supplement adds a new profile to the IHE Patient Care Device Technical Framework describing a means to transfer information from an interrogated implantable cardiac device to information management systems. This profile is named Implantable Cardiac Device Observation or IDCO for short.

A common question asked: Why are the letters of the acronym in a different order than the initials of the full name? The reason is the acronym ICD (implantable cardioverter defibrillator) has a specific meaning for the implantable cardiac device domain. To avoid confusion the initials used in the acronym were reordered to IDCO.

## Profile Abstract

Cardiac physicians follow patients with implantable cardiac devices from multiple vendors. These devices are categorized as pacemakers, implantable cardioverter defibrillators, cardiac resynchronization therapy devices, and cardiac monitor devices. As part of patient follow-up an interrogation of a cardiac device is performed (either in-clinic or from a remote location). Information is collected about the device such as device identification, therapy settings, device diagnostics, and device testing. These interrogations are performed by vendor proprietary equipment.

To improve workflow efficiencies Cardiology and Electrophysiology practices require the management of “key” summary implantable rhythm control device interrogation information in a central system such as an electronic health record system (EHR) or a device clinic management system.

To address this requirement, the Implantable Cardiac Device Observation (IDCO) Profile defines a standards based translation and transfer of summary device interrogation information from the interrogation system to the information management system.

With the increased use of EHR systems, the networking of in-clinic and remote follow-up systems for implanted cardiac devices, and the continued growth of the implantable cardiac device market, the importance of this profile to clinicians has become more acute. Strong device and EHR vendor participation in the IDCO profile development is an acknowledgement of this importance. As the IDCO Profile and associated standards continue to evolve there is little doubt that the use of this profile will be a critical component of comprehensive cardiac care.

## **Open Issues and Questions**

1. The clocks contained within implanted devices will not be synchronized with Device Observation Reporters that interrogate the implanted devices. This fact should be considered by implementors.
2. EP workflow integration needs to be addressed when the IHE CARD EP Workflow profile work starts up again in 2010.

## **Closed Issues**

1. Scheduling is not within scope of this profile for year 2010.
2. This profile does not require the use of ATNA. There are several implementation models for this profile that do not require transmission of data over public networks including intra-institutional, VPN, etc. However, when public networks are used, ATNA is one option for secure transport over those networks. Referencing ATNA makes defining security for the profile easy.

# Volume 1 – Integration Profiles

## Glossary

*Add the following terms to the Glossary:*

- Cardiac Device Programmer – A device used to noninvasively interrogate, monitor, and alter the operating parameters of an implantable pacemaker, defibrillator, or cardiac resynchronization device.
- Implantable Pacemaker – An electronic device implanted beneath the skin for providing a normal heartbeat by electrical stimulation of the heart muscle, used in certain heart conditions.
- Implantable Defibrillator – An electronic device implanted beneath the skin used to counteract fibrillation of the heart muscle and restore normal heartbeat by applying an electric shock.
- Implantable Cardiac Resynchronization Therapy (CRT) Device – An electronic device implanted beneath the skin used to reestablish ventricular synchrony in an effort to improve left ventricular efficiency.

## 1.7 History of Annual Changes

*Add the following bullet to the end of the bullet list in Section 1.7*

- Added the IDCO Profile which specifies a mechanism for the translation, transmission, and processing of discrete data elements and report attachments associated with cardiac device interrogations (observations).

## 2.1 Dependencies among Integration Profiles

*Add the following to Table 2-1*

Integration Profile	Depends On	Dependency Type	Comments
IDCO	None	N/A	N/A

*Add the following section to section 2.2*

### 2.2.X Implantable Cardiac Device Observation Integration Profile

The Implantable Cardiac Device Observation Integration Profile defines a mechanism for the translation, transmission, and processing of discrete data elements and report attachments

associated with cardiac device interrogations (observations). It supports the uses cases for in-clinic and remote implanted cardiac device follow-ups.

*Add the following to Section 2.3*

<b>Integration Profile</b>	<b>DEC</b>	<b><u>IDCO</u></b>
<b>Actor</b>		
<u>Device Observation Reporter</u>		<u>X</u>
<u>Device Observation Consumer</u>		<u>X</u>

*Add the following to Section 2.4*

**Send Observations** – Observations, measurements, or reports, are sent using an HL7 Observations message. [PCD-09]

<b>Integration Profile</b>	<b>DEC</b>	<b><u>IDCO</u></b>
<b>Transaction</b>		
<u>Send Observations [PCD-09]</u>		<u>X</u>

*Add Section X*

## **X Implantable Cardiac Device Observation Integration Profile**

Cardiac physicians follow patients with implantable cardiac devices from multiple vendors. These devices are categorized as implantable pacemakers, cardioverter defibrillators, cardiac resynchronization therapy, and cardiac monitor devices. As part of patient follow-up an interrogation of an implanted cardiac device is performed (either in-clinic or remotely from a patient's residence). These interrogations (solicited or unsolicited) are performed by vendor proprietary equipment. Information is collected regarding the system (attributes, settings and status), the patient (demographics and observations) and therapy (delivery and results).

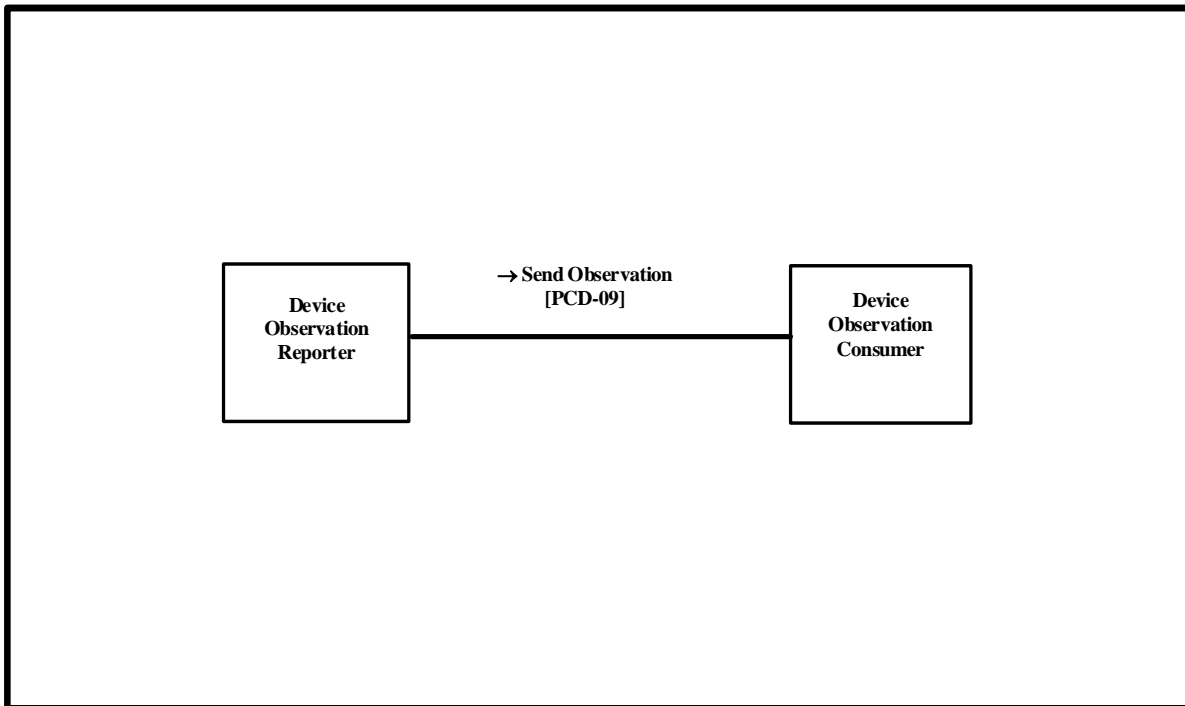
To improve workflow efficiencies cardiology and electrophysiology practices require the management of "key" information in a central system such as an EHR or a device clinic management system.

To address this requirement, the Implantable Cardiac Device Observation (IDCO) Profile defines a standard based translation and transfer of summary device interrogation information from the interrogation system to the information management system.

The IDCO profile specifies a mechanism for the translation, transmission, processing, and storage of discrete data elements and report attachments associated with cardiac device interrogations (observations).

## X.1 Actors/ Transactions

Figure X.1-1 shows the actors directly involved in the IDCO Integration Profile and the relevant transactions between them. Other actors that may be indirectly involved due to their participation in other related profiles are not necessarily shown.



**Figure X.1-1. IDCO Actor Diagram**

See section X.5 Patient Identification for details concerning how patient identity is managed.

Table X.1-1 lists the transactions for each actor directly involved in the IDCO Profile. In order to claim support of this Integration Profile, an implementation must perform the required transactions (labeled “R”). Transactions labeled “O” are optional. A complete list of options defined by this Integration Profile and that implementations may choose to support is listed in Volume I, Section X.2.

**Table X.1-1. IDCO Integration Profile - Actors and Transactions**

Actors	Transactions	Optionality	Section in Vol. 2
Device Observation Reporter	Send Observation [PCD-09]	R	PCD TF-2: 4.12
Device Observation Consumer	Send Observation [PCD-09]	R	PCD TF-2: 4.12

## X.2 IDCO Integration Profile Options

Options that may be selected for this Integration Profile are listed in Table X.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

**Table X.2-1 IDCO - Actors and Options**

Actor	Options	Vol & Section
Device Observation Reporter	PV1 – Patient Visit	3.Y.5.2.3
	OBX – Encapsulated PDF or Reference Pointer	3.Y.5.2.6
Device Observation Reporter	PV1 – Patient Visit	3.Y.5.2.3
	OBX – Encapsulated PDF or Reference Pointer	3.Y.5.2.6

## X.3 IDCO Use Cases

### X.3.1 Use Case I1: Implantable Cardiac Device In-Clinic Follow-up

#### Clinical Context:

Alex Everyman presents at the implantable cardiac device follow-up clinic for his appointment. Alex will present for follow-up 7-10 days after implant and every 3-6 months thereafter, depending on the therapy protocol.

Dr. Tom Electrode, a cardiac physician, and Nicci Nightingale, a registered nurse (R.N.), work in the implantable cardiac device follow-up clinic.

Nicci interrogates the device using a cardiac device programmer. The programmer extracts the device data (e.g., settings, status, events) from the device. Nicci reviews the device data and initiates a transfer of the data from the programmer to a translator system. A necessary subset of the data that represents a summary is converted by the translator system from a proprietary data format to a standard HL7 format. The data is then transmitted using HL7 messaging to the EHR or device clinic management system.

This summary data is sent as an unsolicited observation message.

#### Notes:

- In the area of Electrophysiology, a "programmer" is a commonly used term to describe a specialized computer that is capable of communicating with an implanted device. Programmers are used to interrogate implanted devices and "program", or make changes to the cardiac device settings.
- Electrocardiograms are not currently addressed in the HL7 standards. They can be sent as a PDF attachment to the HL7 message.

#### IHE Context:

In the use case the translator system equates to the Device Observation Reporter actor and the EHR or device clinic management system equates to the Device Observation Consumer actor. The HL7 formatted cardiac device message is the [PCD-09] transaction.

### **X.3.2 Use Case I2: Implantable Cardiac Device In-Clinic Followup with Networked Programmer that Translates Information**

#### **Clinical Context:**

Same as in-clinic use case above with the following change. The programmer communicates directly with an EHR or device clinic management system, acting as a translator system.

#### **IHE Context:**

Same as in-clinic use case above with the following change. The programmer assumes the role the actor Device Observation Reporter.

### **X.3.3 Use Case I3: Implantable Cardiac Device Remote Followup**

#### **Clinical Context:**

Portions of the previous use case also apply to Alex Everyman having his device followed remotely. Alex will present to an interrogation device located outside of the clinic (e.g., in Alex's residence) which will capture the state of his implanted device and will transmit the information to a translator system. The translator system converts the data into an HL7 message and communicates the summary data to the clinic's EHR.

#### **IHE Context:**

Same as in-clinic use case above. It is recommended that the Device Observation Reporter actor be grouped with the Secure Node actor of the ATNA Profile to secure communications for remote follow-ups if data is sent across an un-trusted network.

### **X.3.4 Use Case I4: Remote Monitoring of Implanted Cardiac Devices**

#### **Clinical Context:**

The translator system described in use case I3 may be implemented as a service of a third party, e.g., the device manufacturer or a monitoring service. This system may collect data provided on a periodic basis to enable early detection of trends and problems, or provide other event information. This system may also provide various types of value-added services, such as data aggregation and analysis, trending, and statistical reports. Depending on user selectable settings in the translator system, detailed information concerning the current status of the patient and reports may be sent to the recipient system.

#### **IHE Context:**

The same as the Remote Follow-up use case above. The additional data aggregation or rendering can be sent as a PDF attachment to the HL7 message.

These types of value-added services are likely to be provided by a party that will send the results over the Internet. It is recommended that the Device Observation Reporter actor be grouped with the Secure Node actor of the ATNA Profile to secure communications for remote follow-ups if data is sent across an un-trusted network.

### X.4 IDCO Process Flow

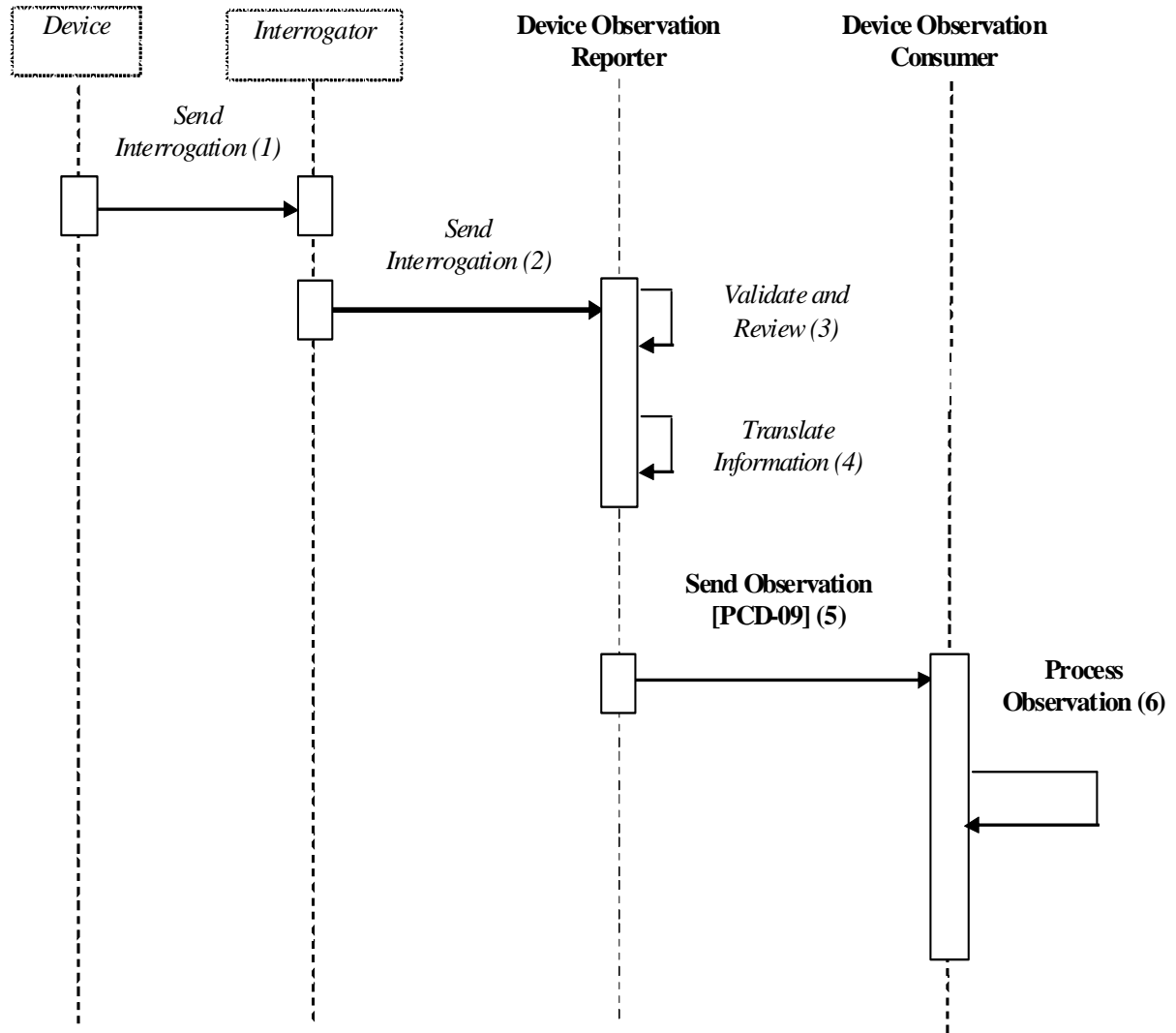


Figure X.2-1. Basic Process Flow in <Profile Name> Profile

#### Process Flow Steps for Figure X.2-1

\* NOTE – Device, Interrogator, and steps 1 thru 4 are informative and are not formal actors or transactions of the IDCO profile.

- 1) Send Interrogation – The Device sends information in a manufacturer-proprietary manner to the Interrogator.
- 2) Send Interrogation – The Interrogator sends information in a manufacturer-proprietary manner to the Device Observation Reporter.
- 3) Validate and Review – The Device Observation Reporter validates the information. This may include the clinician reviewing and approving the information.
- 4) Translate Information – The Device Observation Reporter translates/maps/transforms the information into the proper HL7 format.
- 5) Send Observation – The Device Observation Reporter sends the device information to the Observation Consumer using the [PCD-09] transaction.
- 6) Process Observation – The Device Observation Consumer further processes the observation message for inclusion within derivative products, such as clinical reports, databases, or trans-coded / reformatted results.

## **X.5 IDCO Patient Identification Considerations**

This profile assumes a pre-coordinated association of identifiers across the two Patient Identifier Domains: the device vendor systems providing the observations and the clinics receiving the observations.

Each implantable cardiac device vendor is obligated by regulation to maintain a registry that maps a unique device identifier with the patient in which it is implanted. Specific patient identification information is typically not stored in the device but is made available in the registry. Consequently the Device Observation Reporter is only required to send this identifier which represents the patient to device relationship for an implanted device as part of the PCD-09 transaction. This identifier by normative convention is the concatenation of a unique industry wide manufacturer id, unique manufacturer model number, and unique manufacturer serial number.

This profile specifies one actor, the Device Observation Consumer, as the endpoint for observation messages. The Device Observation Consumer will have pre-coordinated a cross-reference of patient identifiers across the two Patient Identifier Domains. This will be done by storing the unique device identifier within the patient's record. This will typically be the patient's unique identity but could be the patient's location in emergency situations.

In some cases the Device Observation Reporter will have detailed patient identification information like name, address, etc. In these cases the Device Observation Reporter can send this information as part of the PCD-09 transaction.

## **X.6 IDCO Security Considerations**

This profile does not require the use of ATNA. There are several implementation models for this profile that do not require transmission of data over public networks including intra-institutional, VPN, etc. However, when public networks are used, ATNA is one option for secure transport over those networks. It is recommended that the Device Observation Reporter actor be grouped with the Secure Node actor of the ATNA Profile to secure communications for remote follow-ups if data is sent across an un-trusted network.

### **<Appendix A> Actor Summary Definitions**

None.

### **<Appendix B> Transaction Summary Definitions**

#### **PCD-09**

In the PCD-09 Send Observation transaction, the Device Observation Reporter sends the observation as an unsolicited HL7 ORU message to the Device Observation Consumer actor.

## Volume 2 - Transactions

*Add Section 3.Y*

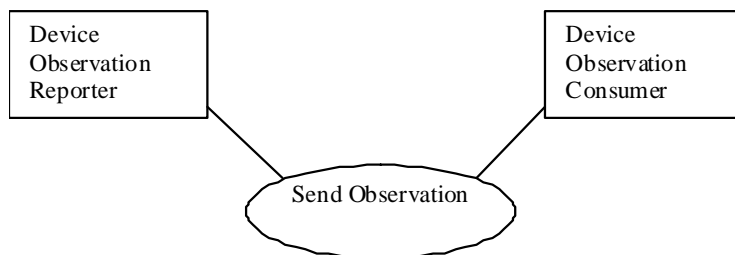
### 3.Y Send Observation [PCD-09]

This section corresponds to transaction [PCD-09] of the IHE Technical Framework. Transaction [PCD-09] is used by the Device Observation Reporter and Device Observation Consumer actors.

#### 3.Y.1 Scope

In the Send Observation transaction, the Device Observation Reporter sends the observation as an unsolicited HL7 ORU message to the Device Observation Consumer actor.

#### 3.Y.2 Use Case Roles



**Actor:** Device Observation Reporter

**Role:** Outputs the Observation as an HL7 ORU message upon completion of the observation. This message contains the discrete data for the observation and/or a PDF document containing displayable data relating to the observation.

**Actor:** Device Observation Consumer

**Role:** Receives the HL7 ORU message and provides some implementation-specific processing. This may include creation of reports, integration of information into electronic health records, or creation of derived data (trends, analyses, reformatted data, population statistics, etc.). If needed, it will reconcile patient identification using an implementation-specific mapping function.

#### 3.Y.3 Referenced Standard

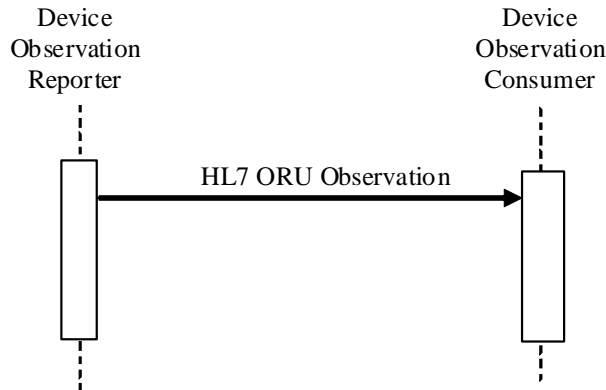
HL7 Messaging Standard v2.5

ISO 19005-1. Document management – Electronic document file format for long-term preservation – Part 1: Use of PDF (PDF/A)

UCUM: Unified Code for Units of Measure, Regenstrief Institute for Health Care, Indianapolis 2005. Version 1.6

IEEE 11073\_10103 MDC\_IDC Nomenclature

### 3.Y.4 Interaction Diagram



#### 3.Y.4.1 HL7 ORU Observation

This is a standard HL7 v2.5 unsolicited orders and observation message containing the observations taken by the implanted device. Information is coded using the IEEE 11073-10103 IDC Nomenclature.

##### 3.Y.4.1.1 Trigger Events

The Device Observation Reporter initiates the HL7 ORU message to the Device Observation Consumer following an implanted cardiac device interrogation.

##### 3.Y.4.1.2 Message Semantics

The message is an unsolicited v2.5 ORU message from the Device Observation Reporter to the Device Observation Consumer with a corresponding ACK message back to the Device Observation Reporter. The contents of the message (in OBX segments) are a required set of individual observations or measurements trans-coded into separate HL7 v2.5 OBX segments and an optional encapsulated PDF document.

Refer to the HL7 v2.5 Standard, Chapter 7 ORU Message for general message semantics.

The constrained message structure is given in Table 3.Y.4.1.2-1, with additional details provided in sections below.

**Table 3.Y.4.1.2-1 ORU Message Structure**

ORU	Observation Results Message	Usage	HL7 Spec Chapter
MSH	Message Header		2
[{ SFT }]	Software Segment		2
PID	Patient Identification	Demographics for id matching	3
[ PVI ]	Patient Visit		3
{	Order Observation Repeat Grouping BEGIN		
OBR	Observations Request	Clinical context	7
{[NTE]}	Notes Section	Notes related to OBR	
{OBX}	Observation results	Observations related to the pulse generator	7
{[NTE]}	Notes Section	Notes Related to OBX	
[{OBX}]	Observation result	Optional PDF document payload	7
}	Order Observation Repeat Grouping END		
[DSC]	Continuation Pointer		2

### 3.Y.4.1.2.1 MSH Segment – Message Header

**Table 3.Y.4.1.2-2 – MSH Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed	Ex Val
Field Separator	1	ST	1	R	False	1	1		Y	
Encoding Characters	2	ST	4	R	False	1	1		Y	^~ &
Sending Application	3	HD	227	RE	False	0	1	0361		
<i>namespace ID</i>	<i>1</i>	IS	20	O		0	1	0300		APP NAME
Sending Facility	4	HD	227	RE	False	0	1	0362		
<i>namespace ID</i>	<i>1</i>	IS	20	O		0	1	0300		VENDOR NAME
Receiving Application	5	HD	227	RE	False	0	1	0361		
<i>namespace ID</i>	<i>1</i>	IS	20	O		0	1	0300		CLINIC APPLICATION
Receiving Facility	6	HD	227	RE	False	0	1	0362		
<i>namespace ID</i>	<i>1</i>	IS	20	O		0	1	0300		CLINIC ID
Date/Time Of Message	7	TS	26	R	False	1	1			
<i>time</i>	<i>1</i>	DTM	24	R		1	1			20040328134623.1234+0300
Message Type	9	MSG	15	R	False	1	1			
<i>message code</i>	<i>1</i>	ID	3	R		1	1	0076	Y	ORU
<i>trigger event</i>	<i>2</i>	ID	3	R		1	1	0003	Y	ROI
Message Control ID	10	ST	20	R	False	1	1			1234567890
Processing ID	11	PT	3	R	False	1	1			
<i>processing ID</i>	<i>1</i>	ID	1	R		1	1	0103	Y	P
Version ID	12	VID	971	R	False	1	1			
<i>version ID</i>	<i>1</i>	ID	5	R		1	1	0104	Y	2.5

MSH-11.1 Processing ID - MSH-11 is used to indicate whether a message is processed as defined in the HL7 Application (level 7) Processing rules. Requires one of the following:

- D – Debugging
- P – Production
- T – Training

**3.Y.4.1.2.2 PID Segment – Patient Identification**

**Table 3.Y.4.1.2-3 – PID Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed Val	Ex Val
Patient Identifier List	3	CX	250	R	True	1	*			
<i>ID number</i>	1	ST	15	R		1	1			MODEL:XXX/SERIAL:XXX
<i>Assigning authority</i>	4	HD	227	NS		0	0	0363		BSC
<i>identifier type code</i>	5	ID	5	O		0	1	0203		U
Patient Name	5	XPN	294	RE	True	1	*			
<i>family name</i>	1	FN	194	O		0	1			DOE
<i>given name</i>	2	ST	30	O		0	1			JOHN
<i>second and further given names or initials thereof</i>	3	ST	30	O		0	1			S
<i>suffix (e.g., JR or III)</i>	4	ST	20	O		0	1			JR
Date/Time of Birth	7	TS	26	RE	False	0	1			
<i>time</i>	1	DTM	24	R		1	1			19600328
Administrative Sex	8	IS	1	RE	False	0	1	0001		M
Patient Address	11	XAD	513	RE	True	0	*			
<i>street address</i>	1	SAD	184	O		0	1			12345 Some Street
<i>other designation</i>	2	ST	120	O		0	1			Apartment 123
<i>city</i>	3	ST	50	O		0	1			Town
<i>state or province</i>	4	ST	50	O		0	1			MN
<i>zip or postal code</i>	5	ST	12	O		0	1			12345
<i>country</i>	6	ID	3	O		0	1	0399		USA

PID-3.1 Patient Identifier List - ID Number contain a unique identifier for the patient assigned by the Device Observation Reporter. Identifier Type Code is constrained by Table 0203 listed below (others can be included as defined in the 2.5 standard). The first identifier will always be the unique model/serial number of the implanted device with an identifier of type U (see table following). This will be used by the Device Observation Consumer / Repository actor to match the device interrogations with the patient accounts. Assigning Authority will be a unique name of the Device Observation Reporter system or owning organization that creates the observation and will be coded using the MDC\_IDC Nomenclature, MDC\_IDC\_PG\_MFG term.

**Table 3.Y.4.1.2-4 Table 0203**

Code	Description	Notes	Usage
U	Model and Serial Number of Device IEEE 11073_10103 MDC_IDC_PG_MODEL and MDC_IDC_PG_SERIAL	Model and Serial number will be concatenated together and will be unique within an Assigning Authority.  The format of the ID will be following: “model:xxx/serial:yyy”  Example: model:XZY987/serial:abc123	R
SS	Patient Social Security Number	Social Security number will be included if known.	RE

### 3.Y.4.1.2.3 PV1 Segment – Patient Visit (Optional)

**Table 3.Y.4.1.2-5 – PV1 Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed Value	Ex Val
Set ID - PV1	1	SI	4	O	False	0	1			I
Patient Class	2	IS	1	R	False	1	1	0004		R
Attending Doctor	7	XCN	309	O	True	0	*	0010		
<i>ID number</i>	<i>1</i>	ST	15	O		0	1			MWELBY
<i>family name</i>	<i>2</i>	FN	194	O		0	1			Marcus
<i>given name</i>	<i>3</i>	ST	30	O		0	1			Welby
<i>second and further given names or initials thereof</i>	<i>4</i>	ST	30	O		0	1			A
<i>suffix (e.g., JR or III)</i>	<i>5</i>	ST	20	O		0	1			III
<i>prefix (e.g., DR)</i>	<i>6</i>	ST	20	O		0	1			DR
Visit Number	19	CX	250	O	False	0	1			
<i>ID number</i>	<i>1</i>	ST	15	O		0	1			123456

Because this is an unsolicited observation and the Device Observation Reporter will not be aware of an associated order, this segment is optional. The Device Observation Reporter may want to track the interrogation as a visit using this segment. If information is provided here it will match corresponding information provided in the OBX segments.

PV1-7 Attending Doctor will optionally be captured by the Device Observation Reporter actor. If present, PV1-7.1 Attending Doctor ID Number will be a unique identifier for each doctor in the context of the Device Observation Reporter actor, not the Device Observation Consumer actor.

PV1-19 Visit Number, ID Number will be a unique identifier generated by the Device Observation Reporter for each visit.

### 3.Y.4.1.2.4 OBR Segment – Observation Request

The ORU message may include discrete OBX segments for individual observations reported. An OBR Segment will be used for each set of such OBX segments to establish the equipment context for the observations (i.e., whether the interrogation was done in-clinic or remote). All observation dates and times reported here should match OBX segments that report the same.

**Table 3.Y.4.1.2-6 – OBR Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed Val	Ex Val
Set ID – OBR	1	SI	4	O	False	0	1			1
Placer Order Number	2	EI	424	O	False	0	1			
<i>entity identifier</i>	<i>1</i>	ST	199	O		0	1			
Filler Order Number	3	EI	424	R	False	0	1			
<i>entity identifier</i>	<i>1</i>	ST	199	O		0	1			123456
Universal Service Identifier	4	CE	478	R	False	1	1			
<i>identifier</i>	<i>1</i>	ST	20	R		1	1			Remote Follow-up
<i>text</i>	<i>2</i>	ST	199	O		0	1			
Observation Date/Time	7	TS	26	C	False	0	1			
<i>time</i>	<i>1</i>	DTM	24	R		1	1			20040328134623.1234+0300
Observation End Date/Time	8	TS	26	O	False	0	1			
<i>time</i>	<i>1</i>	DTM	24	R		1	1			20040328134623.1234+0300
Results Rpt/Status Chng - Date/Time	22	TS	26	C	False	0	1			
<i>Time</i>	<i>1</i>	DTM	24	R		1	1			20040328134623.1234+0300
Result Status	25	ID	1	C	False	0	1	0123		F

OBR-2 Placer Order Number will usually be empty given that this is an unsolicited order.

OBR-3 Filler Order Number will contain a unique identifier for the observation / interrogation session generated by the Device Observation Reporter actor.

OBR-4.1-2 Universal Service ID, Identifier and Text can identify unique OBR segments that partition observations. The values for this field will be taken from the 11073\_10103 MDC\_IDC\_SESS\_TYPE enumerator MDC\_IDC\_ENUM\_SESS\_TYPE.

OBR-25 Result Status values will be one of the values in Table 3.Y.4.1.2-8.

**Table 3.Y.4.1.2-8 Result Status**

Value	Description
R	Results stored; not yet verified
P	Preliminary: A verified early result is available, final results not yet obtained
F	Final results; results stored and verified. Can only be changed with a corrected result.
C	Correction to results

### 3.Y.4.1.2.5 OBX Segments – Pulse Generator and Lead Observation Results

Discrete OBX segments for individual observations will be encoded into separate OBX segments as individual observations or measurements. These OBX segments will be preceded by an appropriate OBR segment (see 3.Y.4.1.2.4) to set the context for observations dealing with the implantable devices or leads.

**Table 3.Y.4.1.2-8 – OBX Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed Value	Ex Val
Set ID - OBX	1	SI	4	R	False	0	1			1
Value Type	2	ID	2	R	False	0	1	0125		TX
Observation Identifier	3	CE	478	R	False	1	1			
<i>identifier</i>	<i>1</i>	ST	20	R		1	1			257
<i>text</i>	<i>2</i>	ST	199	O		0	1			MDC- IDC_SYSTEM_STATUS
<i>name of coding system</i>	<i>3</i>	ID	20	R		0	1	0396		MDC_IDC
Observation Sub-ID	4	ST	20	RE	False	0	1			1
Observation Value	5	varies	99999	R	True	0	*			Normal
Units	6	CE	478	RE	False	0	1			
<i>identifier</i>	<i>1</i>	ST	20	RE		0	1			
<i>text</i>	<i>2</i>	ST	199	O		0	1			
Abnormal Flags	8	IS	5	O	True	0	*	0078		
Observation Result Status	11	ID	1	R	False	1	1	0085		
Date/Time of the Observation	14	TS	26	RE	False	0	1			
<i>time</i>	<i>1</i>	DTM	24	R		1	1			20070422170125
Observation Method	17	CE	478	O	True	0	*			
<i>identifier</i>	<i>1</i>	ST	20	R		0	1			
<i>text</i>	<i>2</i>	ST	199	R		0	1			
Equipment Instance Identifier	18	EI	424	O	True	0	*			
<i>entity identifier</i>	<i>1</i>	ST	199	O		0	1			

OBX-1 Set ID – This field contains the sequence number.

OBX-2 Value Type – The HL7 data type of the Observation Value will depend on the P11073\_10103 term data type, as shown in Table 3.Y.4.1.2-9.

**Table 3.Y.4.1.2-9 – IEEE to HL7 Data Type Matching**

Applicable IEEE 11073 MDC_IDC types	HL7 v2 data type
String	ST
Enumerated	CWE
Date Time	DTM
Numeric	NM
Structured Numeric	SN*

\* The Structured Numeric type (SN) is used for numeric terms that require qualifications. SN types will only be qualified as >value or <value.

OBX-3.1 Observation Identifier, Identifier – Will be coded with the 11073\_10103 nomenclature code value.

OBX-3.2 Observation Identifier, Text – Will be coded with the 11073\_10103 nomenclature Reference ID for the associated observation.

OBX-3.3 Observation Identifier, Name of Coding System – Will be coded with the IEEE 11073\_10103 coding system identifier: “MDC\_IDC”

OBX-4 Observation Sub-ID – Used to uniquely identify repeating terms within an OBR segment and to organize relationships within sets of observations or composite (complex data type) observations.

OBX-5 Observation Value – This is the actual value of the observation.

OBX-6 Unit – Will be coded with the MDC\_IDC Nomenclature (based on UCUM) Unit for associated observation.

OBX-8 Abnormal Flags – This field will contain a code from the extended User Defined Table 0078 – Abnormal Flags as specified below.

**Table 3.Y.4.1.2-10 –User Defined Table – 078 Abnormal Flags**

Value	Extended Value?	Description	Comment
NI	Yes	No information. There is no information which can be inferred from this exceptional value.	No value is provided in OBX-5.
NAV	Yes	Temporarily not available. Information is not available at this time but it is expected that it will be available later.	No value is provided in OBX-5.
OFF	Yes	Numeric measurement function is available but has been deactivated by user.	No value is provided in OBX-5.
>	N	Above absolute high-off instrument scale.	Provide the high-off instrument scale number in OBX-5 if available.
<	N	Below absolute low-off instrument scale.	Provide the low-off instrument scale number in OBX-5 if available.

OBX-11 Observation Result Status – This field holds the value from the table *HL7 Table 0085 - Observation result status codes interpretation*. Valid values are following: F, P, R, S, & X. The value N or X denotes a missing or null value, and in this case the OBX-5 will be empty.

OBX-14 Date/Time of Observation – This field is required when the observation reported is different from the OBR report header. If an observation method is reported in OBX-17 the date will represent end date/time of the reported time interval.

OBX-18 Equipment Instance Identifier – A unique identifier for the equipment or software that was responsible for the production of the observation

**3.Y.4.1.2.5.1 IEEE 1073.1.1.3 IDC term mapping to OBX segment**

In the IEEE 11073\_10103 MDC\_IDC nomenclature each term is discrete, self descriptive and maps to one OBX segment. Refer to the IEEE 11073\_10103 MDC\_IDC standard for information concerning the IDC nomenclature.

**3.Y.4.1.2.6 OBX Segment with Encapsulated PDF or Reference Pointer to External Report [Optional]**

Optionally, observations or additional analyses may be provided in an encapsulated PDF containing displayable information or as a reference pointer to an external report.

**Table 3.Y.4.1.2-11 – OBX Segment**

Name	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Fixed Value	Ex Val
Set ID - OBX	1	SI	4	R	False	0	1			
Value Type	2	ID	2	R	False	0	1	0125	Y	ED
Observation Identifier	3	CE	478	R	False	1	1			
identifier	1	ST	20	R		1	1		Y	18750-0
Text	2	ST	199	R		0	1		Y	Cardiac Electrophysiology Report
name of coding system	3	ID	20	R		0	1	0396	Y	LN
Observation Value	5	ED	99999	R	True	0	*			Encapsulated PDF
type of data	2	ST	10	R		1	1		Y	Application
data subtype	3	ST	10	R		1	1		Y	PDF
encoding	4	ST	10	R		1	1		Y	Base64
Data	5	TX	*	RE		1	1		Y	Encapsulated and Base64 binary encoded PDF File
Observation Result Status	11	ID	1	R	False	1	1	0085		
Date/Time of the Observation	14	TS	26	RE	False	0	1			
Time	1	DTM	24	R		1	1			20040328134623.1234+0300

OBX-2 If sending an encapsulated PDF the value will be ED. If referencing an external report the value will be RP.

OBX-3 If sending an encapsulated PDF value is report ID from LOINC coding system, and will be set to 18750-0^Cardiac Electrophysiology Report^LN.

OBX-5 If referencing an external document the Observation Value will contain a reference pointer to the external document.

OBX-5.2 If sending an encapsulated PDF the Type of Data component will have the value “Application”

OBX-5.3 If sending an encapsulated PDF the Data Subtype component will have the value “PDF”.

OBX-5.4 If sending an encapsulated PDF the Encoding component will have the value “Base64”.

**OBX-5.5** If sending an encapsulated PDF the Data component contains the encapsulated Base64-encoded PDF/A document in accordance with ISO 19005-1..

- Notes:
1. An actor participating in this transaction must support encapsulated data with a length beyond the nominal 65536 byte limit of the OBX-5.
  2. The base64 encoded stream must not include CR/LF characters, which are forbidden within HL7 field text streams. Breaking a base64 encoded stream into lines of 76 characters or less is used for email in accordance with RFC 822, but is not applicable to encapsulated data in HL7.

The attached PDF or externally referenced report will contain in its content the device ID, patient ID and name if known, and the dates of the procedure and document.

### 3.Y.4.1.2.7 NTE Segment – Notes and Comments [Optional]

**Table 3.Y.4.1.2-12 – NTE Segment – Notes and Comments**

ELEMENT NAME	SEQ	COMP	DT	LEN	USAGE	CARD	TBL#	ITEM #	Fixed	Ex. Values
Set ID - NTE	1		SI	4	O	[1..1]		00096		1
Source of comment	2		CX	20	O	[1..1]		00097	Y	L
Comment	3		FT	65536	O	[1..*]		01318		

NTE-3 Comments – Contains any notes, comments needed that are not included as part of an observation.

### 3.Y.4.1.3 Expected Actions

#### 3.Y.4.1.3.1 Device Observation Consumer

The Device Observation Consumer actor will return the standard HL7 acknowledgement message to the Device Observation Creator.

### 3.Y.5 Security Considerations

This profile does not require the use of ATNA. There are several implementation models for this profile that do not require transmission of data over public networks including intra-institutional, VPN, etc. However, when public networks are used, ATNA is one option for secure transport over those networks. It is recommended that the Device Observation Reporter actor be grouped with the Secure Node actor of the ATNA Profile to secure communications for remote follow-ups if data is sent across an un-trusted network.

## Appendix Z – IDCO Observation Message Example

```
MSH|^~\&|APPNAME|VENDOR|CLINIC APP|CLINIC ID|20090422152341||ORU^R01|12345||2.5
PID|||MODEL:XXX/SERIAL:YYY^^^BSC^U~123-12-1234^^^BSC^SS||DOE^JOHN||20070422153118|M||^12345-1234
PV1|1|R|||MWELBY|||12345
5 OBR|1||123456|REMOTE FOLLOW-UP|||20070422162958|20070422163006|||F|||&OLSON&JANE||&ANDERSON&BOB
OBX|1|CWE|720897^MDC_IDC_PG_TYPE^MDC_IDC|720897|CRT_D|||F|||20090422170125|||
OBX|2|TX|720898^MDC_IDC_PG_MODEL^MDC_IDC|Superpacer|||F|||20090422170125|||
OBX|3|TX|720899^MDC_IDC_PG_SERIAL^MDC_IDC|PM88881234|||F|||20090422170125|||
OBX|4|CWE|720900^MDC_IDC_PG_MFG^MDC_IDC|BIO|||F|||20090422170125|||
10 OBX|5|DTM|720901^MDC_IDC_PG_IMPLANT_D^MDC_IDC|20090511170125|||F|||20090422170125|||
OBX|6|TX|720902^MDC_IDC_PG_IMPLANTER^MDC_IDC|Dr. A. Miller|||F|||20090422170125|||
OBX|7|TX|720903^MDC_IDC_PG_IMPLANTER_CONTACT_INFO^MDC_IDC|Phone: 43214321, e-mail: miller@cityclinic.org|||F|||20090422170125|||
OBX|8|TX|720904^MDC_IDC_PG_IMPLANTING_FACILITY^MDC_IDC|London City clinic|||F|||20090422170125|||
OBX|9|TX|720961^MDC_IDC_LEAD_MODEL^MDC_IDC|OptiSense XXL|||F|||20090422170125|||
15 OBX|10|TX|720962^MDC_IDC_LEAD_SERIAL^MDC_IDC|5020304789|||F|||20090422170125|||
OBX|11|CWE|720963^MDC_IDC_LEAD_MFG^MDC_IDC|BSC|||F|||20090422170125|||
OBX|12|DTM|720964^MDC_IDC_LEAD_IMPLANT_D^MDC_IDC|20090121|||F|||20090422170125|||
OBX|13|CWE|720965^MDC_IDC_LEAD_POLARITY_TYPE^MDC_IDC|BI|||F|||20090422170125|||
OBX|14|CWE|720966^MDC_IDC_LEAD_LOCATION^MDC_IDC|RV|||F|||20090422170125|||
20 OBX|15|CWE|720967^MDC_IDC_LEAD_LOCATION_DETAIL_1^MDC_IDC|Apex|||F|||20090422170125|||
OBX|16|CWE|720968^MDC_IDC_LEAD_LOCATION_DETAIL_2^MDC_IDC|not used in this example|||F|||20090422170125|||
OBX|17|CWE|720969^MDC_IDC_LEAD_LOCATION_DETAIL_3^MDC_IDC|not used in this example|||F|||20090422170125|||
OBX|18|CWE|720970^MDC_IDC_LEAD_CONNECTION_STATUS^MDC_IDC|Connected|||F|||20090422170125|||
OBX|19|TX|720971^MDC_IDC_LEAD_SPECIAL_FUNCTION^MDC_IDC|incl. p-sensor|||F|||20090422170125|||
25 OBX|20|DTM|721025^MDC_IDC_SESS_DTM^MDC_IDC|20090525095530|||F|||20090422170125|||
OBX|21|CWE|721026^MDC_IDC_SESS_TYPE^MDC_IDC|RemoteDeviceInitiated|||F|||20090422170125|||
```

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OBX|22|CWE|721027^MDC\_IDC\_SESS\_REPROGRAMMED^MDC\_IDC||NO|||||F|||20090422170125|||

OBX|23|DTM|721028^MDC\_IDC\_SESS\_DT\_PREVIOUS^MDC\_IDC||20090515095530|||||F|||20090422170125|||

OBX|24|CWE|721029^MDC\_IDC\_SESS\_TYPE\_PREVIOUS^MDC\_IDC||InClinic|||||F|||20090422170125|||

OBX|25|TX|721030^MDC\_IDC\_SESS\_CLINICIAN\_NAME^MDC\_IDC||Mrs. Monitor|||||F|||20090422170125|||

5 OBX|26|TX|721031^MDC\_IDC\_SESS\_CLINICIAN\_CONTACT\_INFORMATION^MDC\_IDC||Phone: 123456789|||||F|||20090422170125|||

OBX|27|TX|721032^MDC\_IDC\_SESS\_CLINIC\_NAME^MDC\_IDC||Super FU clinic|||||F|||20090422170125|||

OBX|28|DTM|721216^MDC\_IDC\_MSMT\_BATTERY\_DTM^MDC\_IDC||20090525095010|||||F|||20090422170125|||

OBX|29|CWE|721280^MDC\_IDC\_MSMT\_BATTERY\_STATUS^MDC\_IDC||BOS|||||F|||20090422170125|||

OBX|30|NM|721344^MDC\_IDC\_MSMT\_BATTERY\_VOLTAGE^MDC\_IDC||6.2|V|||||F|||20090422170125|||

10 OBX|31|NM|721408^MDC\_IDC\_MSMT\_BATTERY\_IMPEDANCE^MDC\_IDC||2450|Ohm|||||F|||20090422170125|||

OBX|32|NM|721472^MDC\_IDC\_MSMT\_BATTERY\_REMAINING\_LONGEVITY^MDC\_IDC||38|mo|||||F|||20090422170125|||

OBX|33|NM|721536^MDC\_IDC\_MSMT\_BATTERY\_REMAINING\_PERCENTAGE^MDC\_IDC||75|%|||||F|||20090422170125|||

OBX|34|TX|721600^MDC\_IDC\_MSMT\_BATTERY\_RRT\_TRIGGER^MDC\_IDC||Battery capacity < limit for 3 months|||||F|||20090422170125|||

OBX|35|DTM|721664^MDC\_IDC\_MSMT\_CAP\_LAST\_CHARGE\_DTM^MDC\_IDC||20090501095010|||||F|||20090422170125|||

15 OBX|36|NM|721728^MDC\_IDC\_MSMT\_CAP\_CHARGE\_TIME^MDC\_IDC||9.4|s|||||F|||20090422170125|||

OBX|37|NM|721792^MDC\_IDC\_MSMT\_CAP\_CHARGE\_ENERGY^MDC\_IDC||30|J|||||F|||20090422170125|||

OBX|38|CWE|721856^MDC\_IDC\_MSMT\_CAP\_CHARGE\_TYPE^MDC\_IDC||Reformation|||||F|||20090422170125|||

OBX|39|DTM|721921^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_DTM\_START^MDC\_IDC||20090401095010|||||F|||20090422170125|||

OBX|40|DTM|721922^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_DTM\_END^MDC\_IDC||20090501095010|||||F|||20090422170125|||

20 OBX|41|CWE|721984^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_LEAD\_CHANNEL\_STATUS^MDC\_IDC||UNI|||||F|||20090422170125|||

OBX|42|NM|722051^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_SENSING\_INTR\_AMPL\_MEAN^MDC\_IDC||2.8|mV|||||F|||20090422170125|||

OBX|43|CWE|722112^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125|||

OBX|44|NM|722176^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_PACING\_THRESHOLD\_AMPLITUDE^MDC\_IDC||0.8|V|||||F|||20090422170125|||

OBX|45|NM|722240^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_PACING\_THRESHOLD\_PULSEWIDTH^MDC\_IDC||0.5|ms|||||F|||20090422170125|||

25 OBX|46|CWE|722304^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_PACING\_THRESHOLD\_MEASUREMENT\_METHOD^MDC\_IDC||DeviceAutomatic|||||F|||20090422170125|||

OBX|47|CWE|722368^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_PACING\_THRESHOLD\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125|||

OBX|48|NM|722432^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_IMPEDANCE\_VALUE^MDC\_IDC||530|Ohm|||||F|||20090422170125|||

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OBX|49|CWE|722496^MDC\_IDC\_MSMT\_LEADCHNL\_RA\_IMPEDANCE\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|50|DTM|721925^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_DTM\_START^MDC\_IDC||20090401095010|||||F|||20090422170125||||

OBX|51|DTM|721926^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_DTM\_END^MDC\_IDC||20090501095010|||||F|||20090422170125||||

OBX|52|CWE|721985^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_LEAD\_CHANNEL\_STATUS^MDC\_IDC||UNI|||||F|||20090422170125|||

5 OBX|53|NM|722055^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_SENSING\_INTR\_AMPL\_MEAN^MDC\_IDC||2.8|mV|||||F|||20090422170125||||

OBX|54|CWE|722113^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|55|NM|722177^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_PACING\_THRESHOLD\_AMPLITUDE^MDC\_IDC||0.8|V|||||F|||20090422170125||||

OBX|56|NM|722241^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_PACING\_THRESHOLD\_PULSEWIDTH^MDC\_IDC||0.5|ms|||||F|||20090422170125||||

OBX|57|CWE|722305^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_PACING\_THRESHOLD\_MEASUREMENT\_METHOD^MDC\_IDC||DeviceAutomatic|||||F|||20090422170125||||

10 OBX|58|CWE|722369^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_PACING\_THRESHOLD\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|59|NM|722433^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_IMPEDANCE\_VALUE^MDC\_IDC||530|Ohm|||||F|||20090422170125||||

OBX|60|CWE|722497^MDC\_IDC\_MSMT\_LEADCHNL\_RV\_IMPEDANCE\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|61|DTM|721933^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_DTM\_START^MDC\_IDC||20090401095010|||||F|||20090422170125||||

OBX|62|DTM|721934^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_DTM\_END^MDC\_IDC||20090501095010|||||F|||20090422170125||||

15 OBX|63|CWE|721987^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_LEAD\_CHANNEL\_STATUS^MDC\_IDC||UNI|||||F|||20090422170125|||

OBX|64|NM|722063^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_SENSING\_INTR\_AMPL\_MEAN^MDC\_IDC||2.8|mV|||||F|||20090422170125||||

OBX|65|CWE|722115^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|66|NM|722179^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_PACING\_THRESHOLD\_AMPLITUDE^MDC\_IDC||0.8|V|||||F|||20090422170125||||

OBX|67|NM|722243^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_PACING\_THRESHOLD\_PULSEWIDTH^MDC\_IDC||0.5|ms|||||F|||20090422170125||||

20 OBX|68|CWE|722307^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_PACING\_THRESHOLD\_MEASUREMENT\_METHOD^MDC\_IDC||DeviceAutomatic|||||F|||20090422170125||||

OBX|69|CWE|722371^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_PACING\_THRESHOLD\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|70|NM|722435^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_IMPEDANCE\_VALUE^MDC\_IDC||530|Ohm|||||F|||20090422170125||||

OBX|71|CWE|722499^MDC\_IDC\_MSMT\_LEADCHNL\_LV\_IMPEDANCE\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|72|DTM|722562^MDC\_IDC\_MSMT\_LEADHVCHNL\_DTM\_START^MDC\_IDC||20090401095010|||||F|||20090422170125||||

25 OBX|73|DTM|722561^MDC\_IDC\_MSMT\_LEADHVCHNL\_DTM\_END^MDC\_IDC||20090501095010|||||F|||20090422170125||||

OBX|74|NM|722624^MDC\_IDC\_MSMT\_LEADHVCHNL\_IMPEDANCE^MDC\_IDC||47|Ohm|||||F|||20090422170125|||

OBX|75|CWE|722688^MDC\_IDC\_MSMT\_LEADHVCHNL\_MEASUREMENT\_TYPE^MDC\_IDC||LowVoltage|||||F|||20090422170125||||

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OBX|76|CWE|722752^MDC\_IDC\_MSMT\_LEADHVCHNL\_STATUS^MDC\_IDC||Null|||||F|||20090422170125||||

OBX|77|NM|729344^MDC\_IDC\_SET\_CRT\_LVRV\_DELAY^MDC\_IDC||10|ms|||||F|||20090422170125||||

OBX|78|CWE|729408^MDC\_IDC\_SET\_CRT\_PACED\_CHAMBERS^MDC\_IDC||BiV|||||F|||20090422170125||||

OBX|79|TX|729472^MDC\_IDC\_SET\_MAGNET\_RESP^MDC\_IDC||Therapies inactive, VVIR|||||F|||20090422170125||||

5 OBX|80|NM|729536^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_SENSITIVITY^MDC\_IDC||0.8|mV|||||F|||20090422170125||||

OBX|81|CWE|729600^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|82|CWE|729665^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_ANODE\_LOCATION\_1^MDC\_IDC||RA|||||F|||20090422170125||||

OBX|83|CWE|729729^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_ANODE\_TERMINAL\_1^MDC\_IDC||Tip|||||F|||20090422170125||||

OBX|84|CWE|729793^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_CATHODE\_LOCATION\_1^MDC\_IDC|||||F|||20090422170125||||

10 OBX|85|CWE|729857^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Can|||||F|||20090422170125||||

OBX|86|CWE|729920^MDC\_IDC\_SET\_LEADCHNL\_RA\_SENSING\_ADAPTATION\_MODE^MDC\_IDC||AdaptiveSensing|||||F|||20090422170125||||

OBX|87|NM|729984^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_AMPLITUDE^MDC\_IDC||3.2|V|||||F|||20090422170125||||

OBX|88|NM|730048^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_PULSEWIDTH^MDC\_IDC||0.5|ms|||||F|||20090422170125||||

OBX|89|CWE|730112^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

15 OBX|90|CWE|730177^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_ANODE\_LOCATION\_1^MDC\_IDC||RA|||||F|||20090422170125||||

OBX|91|CWE|730241^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_ANODE\_TERMINAL\_1^MDC\_IDC||Ring|||||F|||20090422170125||||

OBX|92|CWE|730305^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_CATHODE\_LOCATION\_1^MDC\_IDC|||||F|||20090422170125||||

OBX|93|CWE|730369^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Can|||||F|||20090422170125||||

OBX|94|CWE|730432^MDC\_IDC\_SET\_LEADCHNL\_RA\_PACING\_CAPTURE\_MODE^MDC\_IDC||AdaptiveCapture|||||F|||20090422170125||||

20 OBX|95|NM|729537^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_SENSITIVITY^MDC\_IDC||1.3|mV|||||F|||20090422170125||||

OBX|96|CWE|729601^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125||||

OBX|97|CWE|729681^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_ANODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125||||

OBX|98|CWE|729745^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_ANODE\_TERMINAL\_1^MDC\_IDC||Tip|||||F|||20090422170125||||

OBX|99|CWE|729809^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_CATHODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125||||

25 OBX|100|CWE|729873^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Ring|||||F|||20090422170125||||

OBX|101|CWE|729921^MDC\_IDC\_SET\_LEADCHNL\_RV\_SENSING\_ADAPTATION\_MODE^MDC\_IDC||AdaptiveSensing|||||F|||20090422170125||||

OBX|102|NM|729985^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_AMPLITUDE^MDC\_IDC||3.2|V|||||F|||20090422170125||||

## IHE Technical Framework Supplement - Implantable Cardiac Device Observation (IDCO)

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OBX|103|NM|730049^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_PULSEWIDTH^MDC\_IDC||0.5|ms||||F|||20090422170125|||

OBX|104|CWE|730113^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125|||

OBX|105|CWE|730193^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_ANODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125|||

OBX|106|CWE|730257^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_ANODE\_TERMINAL\_1^MDC\_IDC||Tip|||||F|||20090422170125|||

5 OBX|107|CWE|730321^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_CATHODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125|||

OBX|108|CWE|730385^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Ring|||||F|||20090422170125|||

OBX|109|CWE|730433^MDC\_IDC\_SET\_LEADCHNL\_RV\_PACING\_CAPTURE\_MODE^MDC\_IDC||AdaptiveCapture|||||F|||20090422170125|||

OBX|110|NM|729539^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_SENSITIVITY^MDC\_IDC||1.0|mV||||F|||20090422170125|||

OBX|111|CWE|729603^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125|||

10 OBX|112|CWE|729713^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_ANODE\_LOCATION\_1^MDC\_IDC||LV|||||F|||20090422170125|||

OBX|113|CWE|729777^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_ANODE\_TERMINAL\_1^MDC\_IDC||Tip|||||F|||20090422170125|||

OBX|114|CWE|729841^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_CATHODE\_LOCATION\_1^MDC\_IDC||LV|||||F|||20090422170125|||

OBX|115|CWE|729905^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Ring|||||F|||20090422170125|||

OBX|116|CWE|729923^MDC\_IDC\_SET\_LEADCHNL\_LV\_SENSING\_ADAPTATION\_MODE^MDC\_IDC||AdaptiveSensing|||||F|||20090422170125|||

15 OBX|117|NM|729987^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_AMPLITUDE^MDC\_IDC||3.2|V||||F|||20090422170125|||

OBX|118|NM|730051^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_PULSEWIDTH^MDC\_IDC||0.5|ms||||F|||20090422170125|||

OBX|119|CWE|730115^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_POLARITY^MDC\_IDC||BI|||||F|||20090422170125|||

OBX|120|CWE|730225^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_ANODE\_LOCATION\_1^MDC\_IDC||LV|||||F|||20090422170125|||

OBX|121|CWE|730289^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_ANODE\_TERMINAL\_1^MDC\_IDC||Tip|||||F|||20090422170125|||

20 OBX|122|CWE|730353^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_CATHODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125|||

OBX|123|CWE|730417^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_CATHODE\_TERMINAL\_1^MDC\_IDC||Ring|||||F|||20090422170125|||

OBX|124|CWE|730435^MDC\_IDC\_SET\_LEADCHNL\_LV\_PACING\_CAPTURE\_MODE^MDC\_IDC||AdaptiveCapture|||||F|||20090422170125|||

OBX|125|CWE|730497^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_ANODE\_LOCATION\_1^MDC\_IDC||RV|||||F|||20090422170125|||

OBX|126|CWE|730561^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_ANODE\_TERMINAL\_1^MDC\_IDC||Coil|||||F|||20090422170125|||

25 OBX|127|CWE|730498^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_ANODE\_LOCATION\_2^MDC\_IDC||RA|||||F|||20090422170125|||

OBX|128|CWE|730562^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_ANODE\_TERMINAL\_2^MDC\_IDC||Coil|||||F|||20090422170125|||

OBX|129|CWE|730625^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_CATHODE\_LOCATION\_1^MDC\_IDC||N/A|||||F|||20090422170125|||

## IHE Technical Framework Supplement - Implantable Cardiac Device Observation (IDCO)

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OBX|130|CWE|730689^MDC\_IDC\_SET\_LEADHVCHNL\_SHOCK\_VECTOR\_CATHODE\_TERMINAL\_1^MDC\_IDC||Can|||||F|||20090422170125||||

OBX|131|CWE|730752^MDC\_IDC\_SET\_BRADY\_MODE^MDC\_IDC||DDDR|||||F|||20090422170125||||

OBX|132|CWE|730816^MDC\_IDC\_SET\_BRADY\_VENDOR\_MODE^MDC\_IDC||DDI-CLS|||||F|||20090422170125||||

OBX|133|NM|730880^MDC\_IDC\_SET\_BRADY\_LOWRATE^MDC\_IDC||60|{beats}/min|||||F|||20090422170125||||

5 OBX|134|NM|730944^MDC\_IDC\_SET\_BRADY\_HYSTRATE^MDC\_IDC||55|{beats}/min|||||F|||20090422170125||||

OBX|135|NM|731008^MDC\_IDC\_SET\_BRADY\_NIGHT\_RATE^MDC\_IDC||50|{beats}/min|||||F|||20090422170125||||

OBX|136|TX|731072^MDC\_IDC\_SET\_BRADY\_SENSOR\_TYPE^MDC\_IDC||Acceleration and CLS|||||F|||20090422170125||||

OBX|137|NM|731136^MDC\_IDC\_SET\_BRADY\_MAX\_TRACKING\_RATE^MDC\_IDC||140|{beats}/min|||||F|||20090422170125||||

OBX|138|NM|731200^MDC\_IDC\_SET\_BRADY\_MAX\_SENSOR\_RATE^MDC\_IDC||120|{beats}/min|||||F|||20090422170125||||

10 OBX|139|NM|731265^MDC\_IDC\_SET\_BRADY\_SAV\_DELAY\_LOW^MDC\_IDC||140|ms|||||F|||20090422170125||||

OBX|140|NM|731266^MDC\_IDC\_SET\_BRADY\_SAV\_DELAY\_HIGH^MDC\_IDC||180|ms|||||F|||20090422170125||||

OBX|141|NM|731329^MDC\_IDC\_SET\_BRADY\_PAV\_DELAY\_LOW^MDC\_IDC||110|ms|||||F|||20090422170125||||

OBX|142|NM|731330^MDC\_IDC\_SET\_BRADY\_PAV\_DELAY\_HIGH^MDC\_IDC||150|ms|||||F|||20090422170125||||

OBX|143|CWE|731392^MDC\_IDC\_SET\_BRADY\_AT\_MODE\_SWITCH\_MODE^MDC\_IDC||DDIR|||||F|||20090422170125||||

15 OBX|144|NM|731456^MDC\_IDC\_SET\_BRADY\_AT\_MODE\_SWITCH\_RATE^MDC\_IDC||180|{beats}/min|||||F|||20090422170125||||

OBX|145|CWE|731520^MDC\_IDC\_SET\_TACHYTHERAPY\_VSTAT^MDC\_IDC||On|||||F|||20090422170125||||

OBX|146|CWE|731584^MDC\_IDC\_SET\_TACHYTHERAPY\_ASTAT^MDC\_IDC||Off|||||F|||20090422170125||||

OBX|147|CWE|731648^MDC\_IDC\_SET\_ZONE\_TYPE^MDC\_IDC|1|VF|||||F|||20090422170125||||

OBX|148|CWE|731712^MDC\_IDC\_SET\_ZONE\_VENDOR\_TYPE^MDC\_IDC|1|VF|||||F|||20090422170125||||

20 OBX|149|CWE|731776^MDC\_IDC\_SET\_ZONE\_STATUS^MDC\_IDC|1|Active|||||F|||20090422170125||||

OBX|150|NM|731840^MDC\_IDC\_SET\_ZONE\_DETECTION\_INTERVAL^MDC\_IDC|1|195|ms|||||F|||20090422170125||||

OBX|151|NM|731904^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_NUMERATOR^MDC\_IDC|1|12|{beats}|||||F|||20090422170125||||

OBX|152|NM|731968^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_DENOMINATOR^MDC\_IDC|1|18|{beats}|||||F|||20090422170125||||

OBX|153|TX|732032^MDC\_IDC\_SET\_ZONE\_DETECTION\_DETAILS^MDC\_IDC|1|||||F|||20090422170125||||

25 OBX|154|CWE|732097^MDC\_IDC\_SET\_ZONE\_TYPE\_ATP\_1^MDC\_IDC|1|Ramp|||||F|||20090422170125||||

OBX|155|NM|732161^MDC\_IDC\_SET\_ZONE\_NO\_ATP\_SEQS\_1^MDC\_IDC|1|1|{seq}|||||F|||20090422170125||||

OBX|156|NM|732225^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_1^MDC\_IDC|1|30|J|||||F|||20090422170125||||

# IHE Technical Framework Supplement - Implantable Cardiac Device Observation (IDCO)

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OBX|157|NM|732289^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_1^MDC\_IDC|1|5|{shocks}||||F|||20090422170125||||  
OBX|158|CWE|731648^MDC\_IDC\_SET\_ZONE\_TYPE^MDC\_IDC|2|VT||||F|||20090422170125||||  
OBX|159|CWE|731712^MDC\_IDC\_SET\_ZONE\_VENDOR\_TYPE^MDC\_IDC|2|VT1||||F|||20090422170125||||  
OBX|160|CWE|731776^MDC\_IDC\_SET\_ZONE\_STATUS^MDC\_IDC|2|Active||||F|||20090422170125||||  
5 OBX|161|NM|731840^MDC\_IDC\_SET\_ZONE\_DETECTION\_INTERVAL^MDC\_IDC|2|165|ms||||F|||20090422170125||||  
OBX|162|NM|731904^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_NUMERATOR^MDC\_IDC|2|9|{beats}||||F|||20090422170125||||  
OBX|163|NM|731968^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_DENOMINATOR^MDC\_IDC|2|12|{beats}||||F|||20090422170125||||  
OBX|164|TX|732032^MDC\_IDC\_SET\_ZONE\_DETECTION\_DETAILS^MDC\_IDC|2|Enhanced detection||||F|||20090422170125||||  
OBX|165|CWE|732097^MDC\_IDC\_SET\_ZONE\_TYPE\_ATP\_1^MDC\_IDC|2|Burst||||F|||20090422170125||||  
10 OBX|166|NM|732161^MDC\_IDC\_SET\_ZONE\_NO\_ATP\_SEQS\_1^MDC\_IDC|2|5|{seq}||||F|||20090422170125||||  
OBX|167|NM|732225^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_1^MDC\_IDC|2|20|J||||F|||20090422170125||||  
OBX|168|NM|732289^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_1^MDC\_IDC|2|1|{shocks}||||F|||20090422170125||||  
OBX|169|NM|732226^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_2^MDC\_IDC|2|30|J||||F|||20090422170125||||  
OBX|170|NM|732290^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_2^MDC\_IDC|2|1|{shocks}||||F|||20090422170125||||  
15 OBX|171|NM|732227^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_3^MDC\_IDC|2|30|J||||F|||20090422170125||||  
OBX|172|NM|732291^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_3^MDC\_IDC|2|5|{shocks}||||F|||20090422170125||||  
OBX|173|CWE|731648^MDC\_IDC\_SET\_ZONE\_TYPE^MDC\_IDC|3|VT||||F|||20090422170125||||  
OBX|174|CWE|731712^MDC\_IDC\_SET\_ZONE\_VENDOR\_TYPE^MDC\_IDC|3|FastVT||||F|||20090422170125||||  
OBX|175|CWE|731776^MDC\_IDC\_SET\_ZONE\_STATUS^MDC\_IDC|3|Nu11||||F|||20090422170125||||  
20 OBX|176|NM|731840^MDC\_IDC\_SET\_ZONE\_DETECTION\_INTERVAL^MDC\_IDC|3|165|ms||||F|||20090422170125||||  
OBX|177|NM|731904^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_NUMERATOR^MDC\_IDC|3|9|{beats}||||F|||20090422170125||||  
OBX|178|NM|731968^MDC\_IDC\_SET\_ZONE\_DETECTION\_BEATS\_DENOMINATOR^MDC\_IDC|3|12|{beats}||||F|||20090422170125||||  
OBX|179|TX|732032^MDC\_IDC\_SET\_ZONE\_DETECTION\_DETAILS^MDC\_IDC|3|Progressive Therapy||||F|||20090422170125||||  
OBX|180|CWE|732097^MDC\_IDC\_SET\_ZONE\_TYPE\_ATP\_1^MDC\_IDC|3|RampScan||||F|||20090422170125||||  
25 OBX|181|NM|732161^MDC\_IDC\_SET\_ZONE\_NO\_ATP\_SEQS\_1^MDC\_IDC|3|5|{seq}||||F|||20090422170125||||  
OBX|182|NM|732225^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_1^MDC\_IDC|3|20|J||||F|||20090422170125||||  
OBX|183|NM|732289^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_1^MDC\_IDC|3|1|{shocks}||||F|||20090422170125||||

# IHE Technical Framework Supplement - Implantable Cardiac Device Observation (IDCO)

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OBX|184|NM|732226^MDC\_IDC\_SET\_ZONE\_SHOCK\_ENERGY\_2^MDC\_IDC|3|30|J|||||F|||20090422170125|||||

OBX|185|NM|732290^MDC\_IDC\_SET\_ZONE\_NO\_SHOCKS\_2^MDC\_IDC|3|5|{shocks}|||||F|||20090422170125|||||

OBX|186|DTM|737617^MDC\_IDC\_STAT\_HEART\_RATE\_DTM\_START^MDC\_IDC||20090201095010|||||F|||20090422170125|||||

OBX|187|DTM|737618^MDC\_IDC\_STAT\_HEART\_RATE\_DTM\_END^MDC\_IDC||20090201105010|||||F|||20090422170125|||||

5 OBX|188|NM|737635^MDC\_IDC\_STAT\_HEART\_RATE\_ATRIAL\_MEAN^MDC\_IDC||80|{beats}/min|||||F|||20090422170125|||||

OBX|189|NM|737651^MDC\_IDC\_STAT\_HEART\_RATE\_VENTRICULAR\_MEAN^MDC\_IDC||78|{beats}/min|||||F|||20090422170125|||||

OBX|190|DTM|737505^MDC\_IDC\_STAT\_BRADY\_DTM\_START^MDC\_IDC||20090101095010|||||F|||20090422170125|||||

OBX|191|DTM|737506^MDC\_IDC\_STAT\_BRADY\_DTM\_END^MDC\_IDC||20090201095010|||||F|||20090422170125|||||

OBX|192|NM|737520^MDC\_IDC\_STAT\_BRADY\_RA\_PERCENT\_PACED^MDC\_IDC||0|%|||||F|||20090422170125|||||

10 OBX|193|NM|737536^MDC\_IDC\_STAT\_BRADY\_RV\_PERCENT\_PACED^MDC\_IDC||4|%|||||F|||20090422170125|||||

OBX|194|NM|737552^MDC\_IDC\_STAT\_BRADY\_AP\_VP\_PERCENT^MDC\_IDC||1|%|||||F|||20090422170125|||||

OBX|195|NM|737568^MDC\_IDC\_STAT\_BRADY\_AS\_VP\_PERCENT^MDC\_IDC||3|%|||||F|||20090422170125|||||

OBX|196|NM|737584^MDC\_IDC\_STAT\_BRADY\_AP\_VS\_PERCENT^MDC\_IDC||0|%|||||F|||20090422170125|||||

OBX|197|NM|737600^MDC\_IDC\_STAT\_BRADY\_AS\_VS\_PERCENT^MDC\_IDC||0|%|||||F|||20090422170125|||||

15 OBX|198|DTM|737665^MDC\_IDC\_STAT\_AT\_DTM\_START^MDC\_IDC||20090101095010|||||F|||20090422170125|||||

OBX|199|DTM|737666^MDC\_IDC\_STAT\_AT\_DTM\_END^MDC\_IDC||20090201095010|||||F|||20090422170125|||||

OBX|200|NM|737680^MDC\_IDC\_STAT\_AT\_BURDEN\_PERCENT^MDC\_IDC||3|%|||||F|||20090422170125|||||

OBX|201|NM|737696^MDC\_IDC\_STAT\_AT\_MODE\_SW\_DAILY\_PERCENT\_TIME^MDC\_IDC||3|%|||||F|||20090422170125|||||

OBX|202|NM|737712^MDC\_IDC\_STAT\_AT\_MODE\_SW\_DAILY\_COUNT^MDC\_IDC||7|{switches}|||||F|||20090422170125|||||

20 OBX|203|DTM|737729^MDC\_IDC\_STAT\_CRT\_DTM\_START^MDC\_IDC||20090101095010|||||F|||20090422170125|||||

OBX|204|DTM|737730^MDC\_IDC\_STAT\_CRT\_DTM\_END^MDC\_IDC||20090201095010|||||F|||20090422170125|||||

OBX|205|NM|737744^MDC\_IDC\_STAT\_CRT\_LV\_PERCENT\_PACED^MDC\_IDC||95|%|||||F|||20090422170125|||||

OBX|206|NM|737760^MDC\_IDC\_STAT\_CRT\_PERCENT\_PACED^MDC\_IDC||93|%|||||F|||20090422170125|||||

OBX|207|NM|737776^MDC\_IDC\_STAT\_THERAPY\_SHOCKS\_DELIVERED\_RECENT^MDC\_IDC||1|{shocks}|||||F|||20090422170125|||||

25 OBX|208|NM|737792^MDC\_IDC\_STAT\_THERAPY\_SHOCKS\_DELIVERED\_TOTAL^MDC\_IDC||4|{shocks}|||||F|||20090422170125|||||

OBX|209|NM|737808^MDC\_IDC\_STAT\_THERAPY\_SHOCKS\_ABORTED\_RECENT^MDC\_IDC||0|{shocks}|||||F|||20090422170125|||||

OBX|210|NM|737824^MDC\_IDC\_STAT\_THERAPY\_SHOCKS\_ABORTED\_TOTAL^MDC\_IDC||1|{shocks}|||||F|||20090422170125|||||

# IHE Technical Framework Supplement - Implantable Cardiac Device Observation (IDCO)

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OBX|211|NM|737840^MDC\_IDC\_STAT\_THERAPY\_ATP\_DELIVERED\_RECENT^MDC\_IDC||1|{seq}||||F|||20090422170125|||

OBX|212|NM|737856^MDC\_IDC\_STAT\_THERAPY\_ATP\_DELIVERED\_TOTAL^MDC\_IDC||3|{seq}||||F|||20090422170125|||

OBX|213|DTM|737873^MDC\_IDC\_STAT\_THERAPY\_TOTAL\_DTM\_START^MDC\_IDC||20080201095010||||F|||20090422170125|||

OBX|214|DTM|737874^MDC\_IDC\_STAT\_THERAPY\_TOTAL\_DTM\_END^MDC\_IDC||20080201095010||||F|||20090422170125|||

5 OBX|215|DTM|737889^MDC\_IDC\_STAT\_THERAPY\_RECENT\_DTM\_START^MDC\_IDC||20090101095010||||F|||20090422170125|||

OBX|216|DTM|737890^MDC\_IDC\_STAT\_THERAPY\_RECENT\_DTM\_END^MDC\_IDC||20090201095010||||F|||20090422170125|||

OBX|217|CWE|737904^MDC\_IDC\_STAT\_EPISODE\_TYPE^MDC\_IDC|1|VF||||F|||20090422170125|||

OBX|218|CWE|737920^MDC\_IDC\_STAT\_EPISODE\_TYPE\_INDUCED^MDC\_IDC|1|NO||||F|||20090422170125|||

OBX|219|CWE|737936^MDC\_IDC\_STAT\_EPISODE\_VENDOR\_TYPE^MDC\_IDC|1|VF||||F|||20090422170125|||

10 OBX|220|NM|737952^MDC\_IDC\_STAT\_EPISODE\_RECENT\_COUNT^MDC\_IDC|1|1||||F|||20090422170125|||

OBX|221|NM|737984^MDC\_IDC\_STAT\_EPISODE\_TOTAL\_COUNT^MDC\_IDC|1|4||||F|||20090422170125|||

OBX|222|CWE|737904^MDC\_IDC\_STAT\_EPISODE\_TYPE^MDC\_IDC|2|VT||||F|||20090422170125|||

OBX|223|CWE|737920^MDC\_IDC\_STAT\_EPISODE\_TYPE\_INDUCED^MDC\_IDC|2|NO||||F|||20090422170125|||

OBX|224|CWE|737936^MDC\_IDC\_STAT\_EPISODE\_VENDOR\_TYPE^MDC\_IDC|2|VT1||||F|||20090422170125|||

15 OBX|225|NM|737952^MDC\_IDC\_STAT\_EPISODE\_RECENT\_COUNT^MDC\_IDC|2|0||||F|||20090422170125|||

OBX|226|NM|737984^MDC\_IDC\_STAT\_EPISODE\_TOTAL\_COUNT^MDC\_IDC|2|0||||F|||20090422170125|||

OBX|227|CWE|737904^MDC\_IDC\_STAT\_EPISODE\_TYPE^MDC\_IDC|3|ATAF||||F|||20090422170125|||

OBX|228|CWE|737920^MDC\_IDC\_STAT\_EPISODE\_TYPE\_INDUCED^MDC\_IDC|3|NO||||F|||20090422170125|||

OBX|229|CWE|737936^MDC\_IDC\_STAT\_EPISODE\_VENDOR\_TYPE^MDC\_IDC|3|ATAF||||F|||20090422170125|||

20 OBX|230|NM|737952^MDC\_IDC\_STAT\_EPISODE\_RECENT\_COUNT^MDC\_IDC|3|2||||F|||20090422170125|||

OBX|231|NM|737984^MDC\_IDC\_STAT\_EPISODE\_TOTAL\_COUNT^MDC\_IDC|3|150||||F|||20090422170125|||

OBX|232|NM|737969^MDC\_IDC\_STAT\_EPISODE\_RECENT\_COUNT\_DTM\_START^MDC\_IDC||20090101095010||||F|||20090422170125|||

OBX|233|NM|737970^MDC\_IDC\_STAT\_EPISODE\_RECENT\_COUNT\_DTM\_END^MDC\_IDC||20090201095010||||F|||20090422170125|||

OBX|234|NM|738001^MDC\_IDC\_STAT\_EPISODE\_TOTAL\_COUNT\_DTM\_START^MDC\_IDC||20080201095010||||F|||20090422170125|||

25 OBX|235|NM|738002^MDC\_IDC\_STAT\_EPISODE\_TOTAL\_COUNT\_DTM\_END^MDC\_IDC||20090201095010||||F|||20090422170125|||

OBX|236|TX|739536^MDC\_IDC\_EPISODE\_ID^MDC\_IDC|1|1||||F|||20090422170125|||

OBX|237|DTM|739552^MDC\_IDC\_EPISODE\_DTM^MDC\_IDC|1|20080222063010||||F|||20090422170125|||

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OBX|238|CWE|739568^MDC\_IDC\_EPISODE\_TYPE^MDC\_IDC|1|VT|||||F|||20090422170125||||

OBX|239|CWE|739584^MDC\_IDC\_EPISODE\_TYPE\_INDUCED^MDC\_IDC|1|NO|||||F|||20090422170125||||

OBX|240|CWE|739600^MDC\_IDC\_EPISODE\_VENDOR\_TYPE^MDC\_IDC|1|VT1|||||F|||20090422170125||||

OBX|241|NM|739648^MDC\_IDC\_EPISODE\_VENTRICULAR\_DETECTION\_INTERVAL^MDC\_IDC|1|147|ms|||||F|||20090422170125||||

5 OBX|242|NM|739664^MDC\_IDC\_EPISODE\_VENTRICULAR\_TERMINATION\_INTERVAL^MDC\_IDC|1|95|ms|||||F|||20090422170125||||

OBX|243|TX|739680^MDC\_IDC\_EPISODE\_DETECTION\_THERAPY\_DETAILS^MDC\_IDC|1|2 ATP, 5x 30J|||||F|||20090422170125||||

OBX|244|CWE|739696^MDC\_IDC\_EPISODE\_THERAPY\_RESULT^MDC\_IDC|1|Successful|||||F|||20090422170125||||

OBX|245|NM|739712^MDC\_IDC\_EPISODE\_DURATION^MDC\_IDC|1|00:00:27|s|||||F|||20090422170125||||

OBX|246|TX|739536^MDC\_IDC\_EPISODE\_ID^MDC\_IDC|2|1|||||F|||20090422170125||||

10 OBX|247|DTM|739552^MDC\_IDC\_EPISODE\_DTM^MDC\_IDC|2|20080222063010|||||F|||20090422170125||||

OBX|248|CWE|739568^MDC\_IDC\_EPISODE\_TYPE^MDC\_IDC|2|VT|||||F|||20090422170125||||

OBX|249|CWE|739584^MDC\_IDC\_EPISODE\_TYPE\_INDUCED^MDC\_IDC|2|NO|||||F|||20090422170125||||

OBX|250|CWE|739600^MDC\_IDC\_EPISODE\_VENDOR\_TYPE^MDC\_IDC|2|VT1|||||F|||20090422170125||||

OBX|251|NM|739616^MDC\_IDC\_EPISODE\_ATRIAL\_DETECTION\_INTERVAL^MDC\_IDC|2|200|ms|||||F|||20090422170125||||

15 OBX|252|NM|739632^MDC\_IDC\_EPISODE\_ATRIAL\_TERMINATION\_INTERVAL^MDC\_IDC|2|60|ms|||||F|||20090422170125||||

OBX|253|TX|739680^MDC\_IDC\_EPISODE\_DETECTION\_THERAPY\_DETAILS^MDC\_IDC|2|10 ATP|||||F|||20090422170125||||

OBX|254|CWE|739696^MDC\_IDC\_EPISODE\_THERAPY\_RESULT^MDC\_IDC|2|Successful|||||F|||20090422170125||||

OBX|255|NM|739712^MDC\_IDC\_EPISODE\_DURATION^MDC\_IDC|2|43:00:13|s|||||F|||20090422170125||||