IHE Technical Framework Change Proposal

Tracking information:

IHE Technical Framework Domain	Cardiology
Change Proposal Number (assigned by Domain Technical Committee)	TF-CARD-CP-2006-01
Change Proposal Status:	Proposed
Date of last update:	2006/04/05
Person assigned:	

Change Proposal Summary information:

Cath Case C10: EP Ablation / Implantation Lab	
Submitter's Name(s) and e-mail address(es):	EP Subcommittee / EP Lab Work Group
Submission Date:	
Integration Profile affected:	CATH
Version of IHE Technical Framework:	2.0
Volume(s) and Section(s) affected:	CARD-TF 1:3.4
Rationale for Change: For the initial implementation of the electrophysiology laboratory workflow, the CATH profile is being extended with a special use case (C10) to address the workflow in the EP Lab.	

Add new section

3.4.10 Case C10: EP Ablation / Implantation Lab

Clinical Context: The Cardiac Cath workflow is also applicable to the multi-modality electrophysiology laboratory. Programmers for implantable devices and device-generated data will be addressed in a separate profile.

In electrophysiology laboratory ablation procedures, specialized catheters are placed into the heart to identify and eliminate sources for arrhythmia. The EP lab is also used to implant and adjust cardiac rhythm control devices (pacemakers, cardioverter-defibrillators, and cardiac resynchronization therapy devices).

The EP lab is a multi-modality mix of many types of equipment from many different manufacturers; as many as eight systems from different manufacturers may typically participate in a procedure. In current practice, these systems are unconnected islands, each managing its piece of the patient clinical record. Integration of this data would result in increases in efficiency and reduce medical errors.

Increases in efficiency are especially critical due to the rapidly increasing demand for EP procedures and devices, and the limited availability of trained clinical professionals in the field.

For an ablation procedure, the patient is brought to the electrophysiology laboratory and the patient's demographic data is separately entered into the EP recording system, the fluoroscopy system, the intracardiac echocardiographic system, and any specialized mapping systems that will be required for the procedure. Data from the medical record such as allergies and laboratory values are frequently reentered into the procedural record to document that the information has been "reviewed."

A wide array of specialized equipment is used during an ablation procedure; data is acquired from each of these systems independently without any time synchronization, and any documentation of simultaneous acquisition of information from various pieces of equipment must be entered manually in the procedural record. During the procedure, review of data must be evaluated on each individual piece of equipment. For example, if an important event occurred at time X:XX, data from the recording equipment, imaging equipment, and mapping equipment must be queued for display separately to X:XX and reviewed sequentially. Finally, raw data from each system is stored in a variety of formats (optical disc, hard drive, tape) and stored near the electrophysiology laboratory. However, a summary of discrete data from the procedure (usually paper) is kept in a separate document in the hospital and is often not part of the medical record.

To summarize, for the simplest electrophysiologic/ablation studies, current hospital information systems will typically generate a paper copy of the dictated report, a paper copy of important hemodynamic or electrophysiologic data, an optical disc of electrophysiologic data, a disc of fluoroscopic data, and a disc of echocardiographic imaging data.

IHE Context: For the initial implementation of the EP workflow, the CATH profile includes this special use case to address the workflow in the EP Lab. Given the similarities between the CATH and EP workflows, the process flow diagrams for use cases C1-C9 defined for CATH are also applicable to EP. The emergency use cases C3 and C5 however, are highly unusual in the EP workflow.

The following systems are typical Acquisition Modality Actors for this use case:

- EP recording system
- EP logging system
- Mapping system
- X-ray angiography/fluoroscopy
- Intracardiac echo
- There are other modalities that may be involved during the EP procedure that will be equally applicable to this workflow.

It should be noted that the EP lab acquistion devices are managed by separate Scheduled Procedure Steps within the process flows described in cases C1-C9. These SPSs provide patient demographics and eliminate multiple entry of patient data. All acquired data is consistently time stamped (in accordance with the Consistent Time profile) and stored in the Image Manager/Image Archive for review on multi-modality Image Display actors. A procedure log containing a summary of events and key measurements may be included in the study data set.