SDC update

Joint meeting of IEEE EMBS 11073 & HL7 Health Care Devices (DEV) WG,
2015/01/20, Stefan Schlichting

SDC Update
Agenda

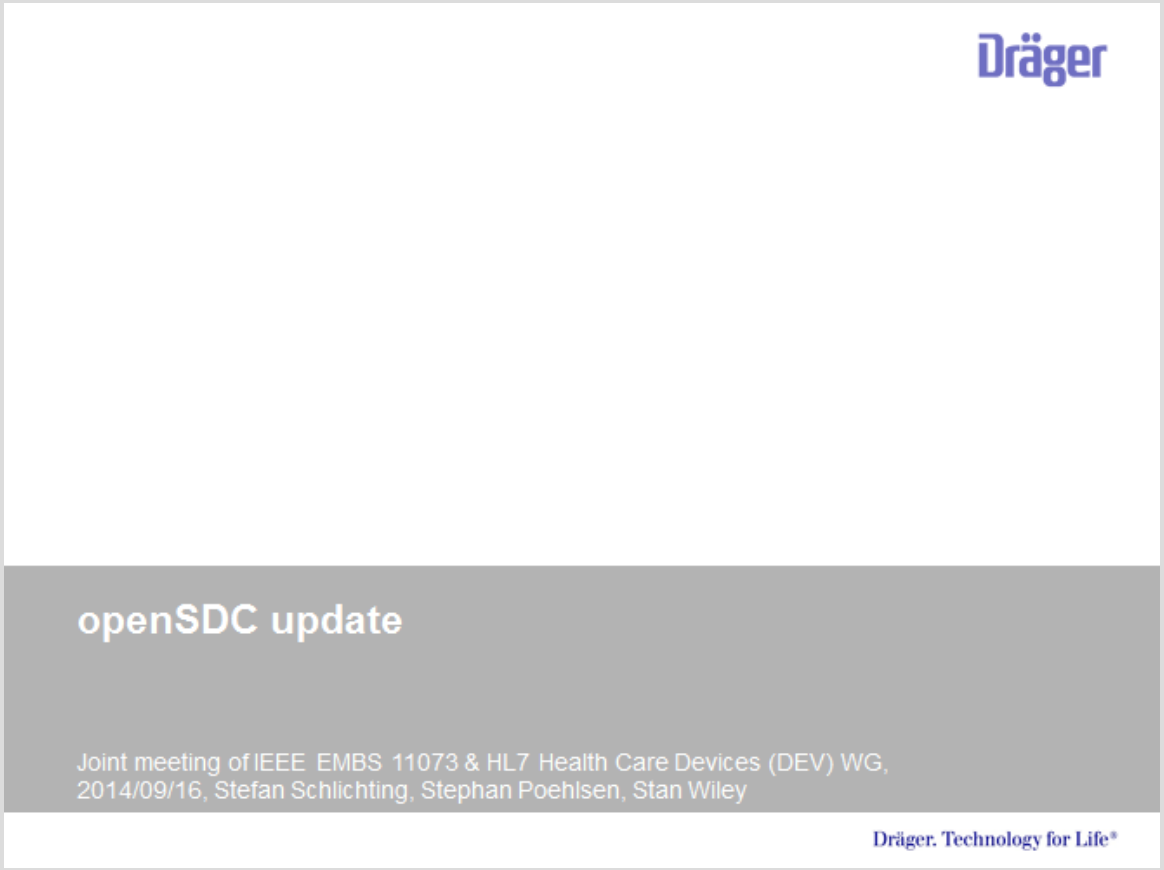
1. **Review of PARs**
2. openSDC Update
3. Draft Documents
4. DICOM MDS
5. Roadmap

Review of PARs
History

January 2014 WG Meeting we proposed

“an architecture for distributed systems of medical devices in high acuity environments” for standards adoption.

Review of PARs
History



September 2014 WG Meeting we were asked to create PARs for 3 artefacts for

“an architecture for distributed systems of medical devices in high acuity environments”.

Review of PARs
SDC PARs

P11073-10702

Submitter Email: stefan.schlichting@draeger.com
Type of Project: New IEEE Standard
PAR Request Date: 19-Oct-2014
PAR Approval Date: 10-Dec-2014
PAR Expiration Date: 31-Dec-2018
Status: PAR for a New IEEE Standard

1.1 Project Number: P11073-10702
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Domain Information & Servic

3.1 Working Group: Upper_Layer (EMB/11073/UL
Contact Information for Working Group Chair
Name: Jan Wittenber
Email Address: jan.wittenber@gmail.com
Phone: 978-494-2439
Contact Information for Working Group Vice-Ch
None

3.2 Sponsoring Society and Committee: IEEE Engi
(EMB/11073)

P11073-20701

Submitter Email: stefan.schlichting@draeger.com
Type of Project: New IEEE Standard
PAR Request Date: 19-Oct-2014
PAR Approval Date: 10-Dec-2014
PAR Expiration Date: 31-Dec-2018
Status: PAR for a New IEEE Standard

1.1 Project Number: P11073-20701
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Service-Oriented Medical Devic

3.1 Working Group: Upper_Layer (EMB/11073/UL)
Contact Information for Working Group Chair
Name: Jan Wittenber
Email Address: jan.wittenber@gmail.com
Phone: 978-494-2439
Contact Information for Working Group Vice-Chai
None

3.2 Sponsoring Society and Committee: IEEE Engine
(EMB/11073)

P11073-20702

Submitter Email: stefan.schlichting@draeger.com
Type of Project: New IEEE Standard
PAR Request Date: 19-Oct-2014
PAR Approval Date: 10-Dec-2014
PAR Expiration Date: 31-Dec-2018
Status: PAR for a New IEEE Standard

1.1 Project Number: P11073-20702
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Medical Devices Communicatio

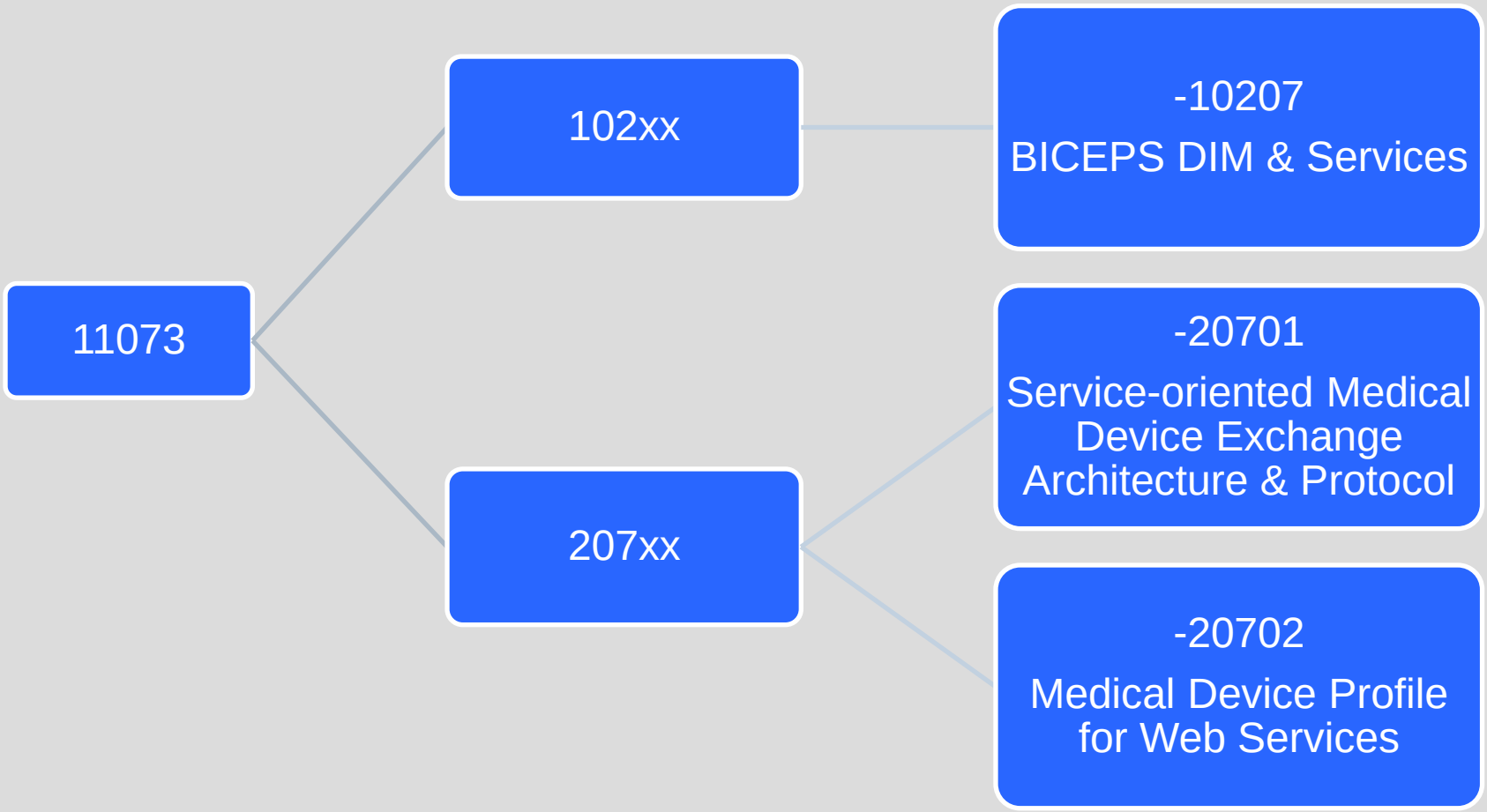
3.1 Working Group: Upper_Layer (EMB/11073/UL)
Contact Information for Working Group Chair
Name: Jan Wittenber
Email Address: jan.wittenber@gmail.com
Phone: 978-494-2439
Contact Information for Working Group Vice-Chai
None

3.2 Sponsoring Society and Committee: IEEE Engine
(EMB/11073)

- All PARs were approved during December 2015 Nescom
- Thanks to Jan and Kathryn for their help

Review of PARs

SDC Standardization Artifacts



Review of PARs
Standardization Artifacts

The scope of this standard is …

-10207 Domain Information & Service Model for Service-Oriented Point-of-Care Medical Device Communication (BICEPS)

•**definition and structuring of information that is communicated** in a distributed system of point-of-care medical (PoC) medical devices and medical IT systems that need to exchange data or safely control networked PoC medical devices by **defining a participant information model and service model**. The definition of transport serialization is outside the scope of this standard.

-20701 Service-Oriented Medical Device Exchange Architecture & Protocol Binding (SDC)

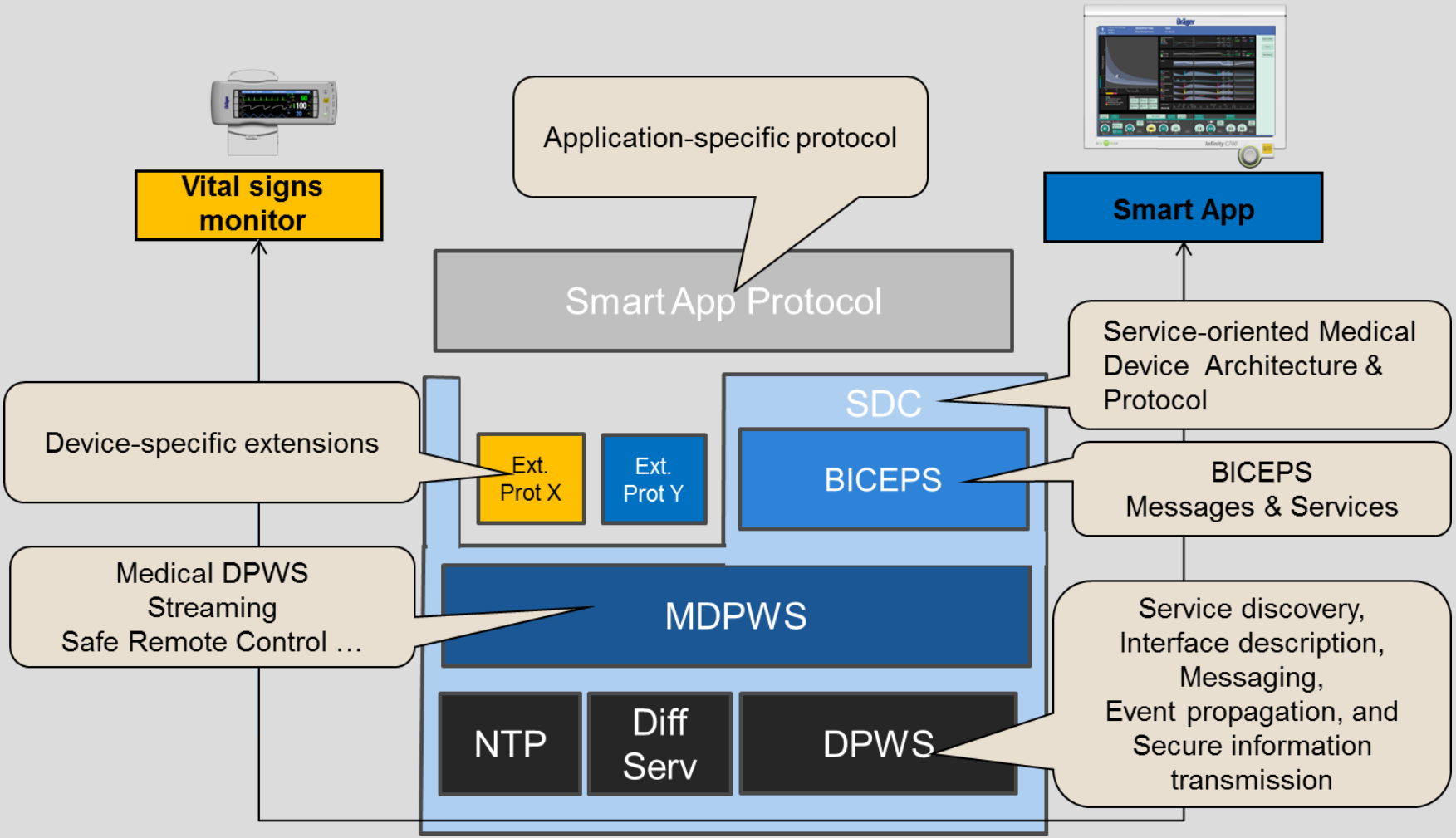
- **service-oriented medical device architecture** and **communication protocol specification** for distributed system of point-of-care medical (PoC) medical devices and medical IT systems that need to exchange data or safely control networked PoC medical devices **by identifying the functional components, their communication relationships as well as the binding of the components and communication relationships to protocol specifications**.

-20702 Medical Devices Communication Profile for Web Services (MDPWS)

- **communication protocol specification** for a distributed system of point-of-care (PoC) medical devices and medical IT systems that need to exchange data or safely control networked PoC medical devices **by defining a profile for Webservice specifications and defining additional Web service specifications** as part of this standard

Review of PARs

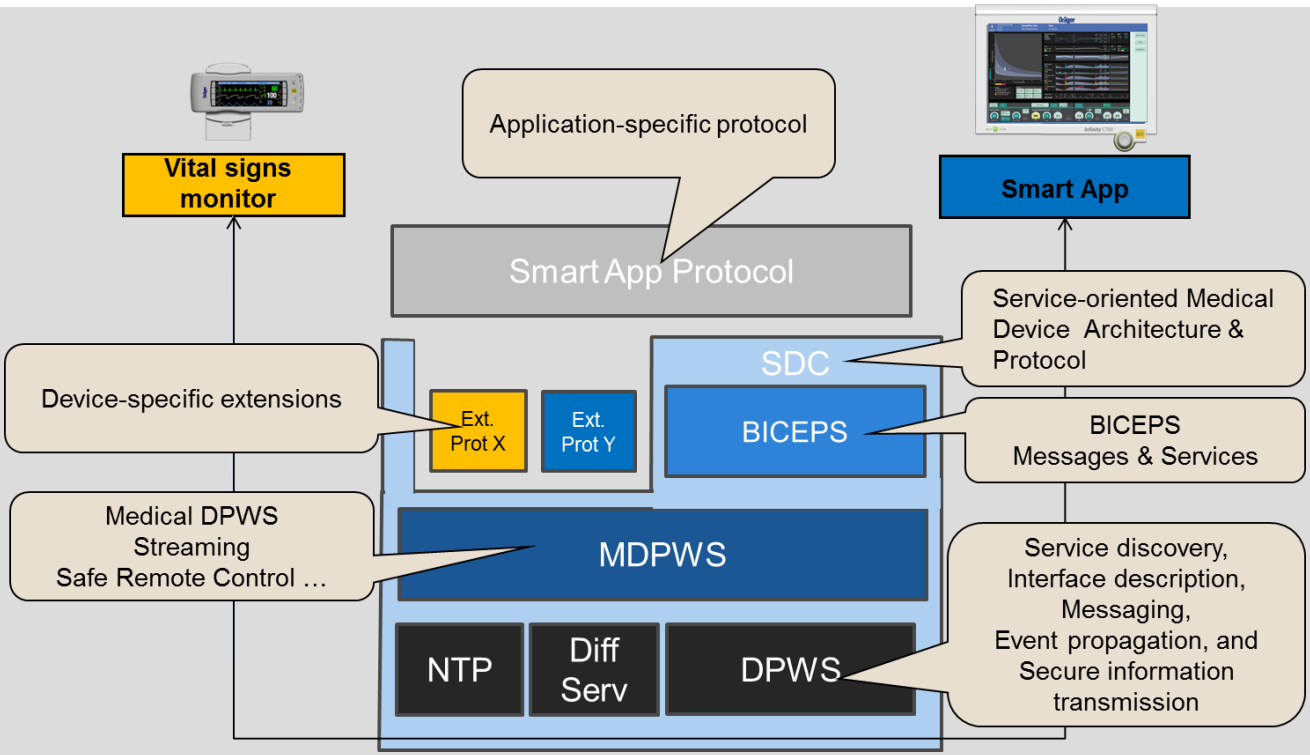
SDC PARs & Communication Stack



SDC Update
Agenda

1. Review of PARs
2. **openSDC Update**
3. Draft Documents
4. DICOM MDS
5. Roadmap

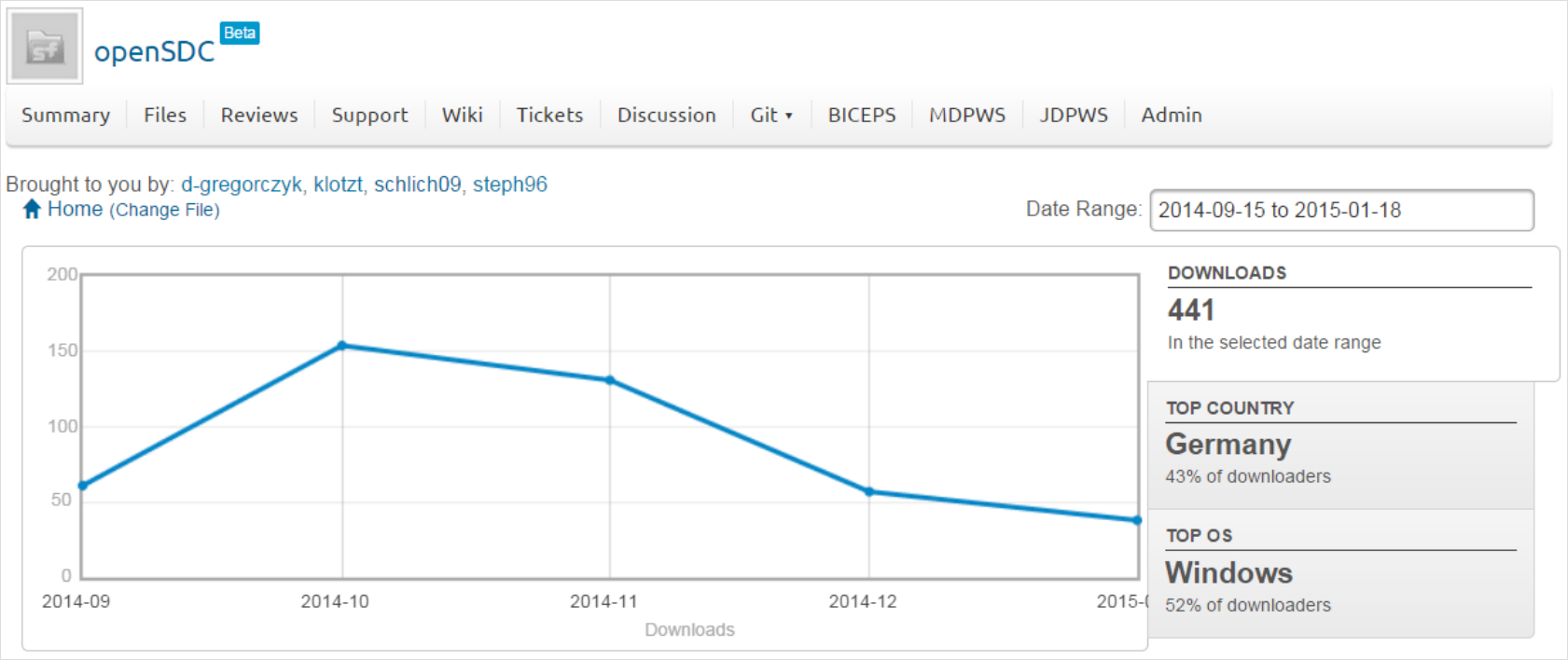
openSDC Update
What is openSDC?



openSDC is a reference implementation of the extensible SDC protocol stack for clinical workplace service-oriented medical device architectures

- BICEPS (Message & Service Model)
- MDPWS & DPWS (Transport)

openSDC Update
openSDC Reference Implementation



openSDC downloads since September 2014 WG Meeting

- Version beta04 was released mid of November 2014

See http://sourceforge.net/projects/opensdc/

openSDC Update
openSDC changes since last WG Meeting

openSDC beta04

- Get closer to the classic DIM
- Incorporate change request from OR.NET
- Switched to Git instead of Hg
- Established a separate project for model development

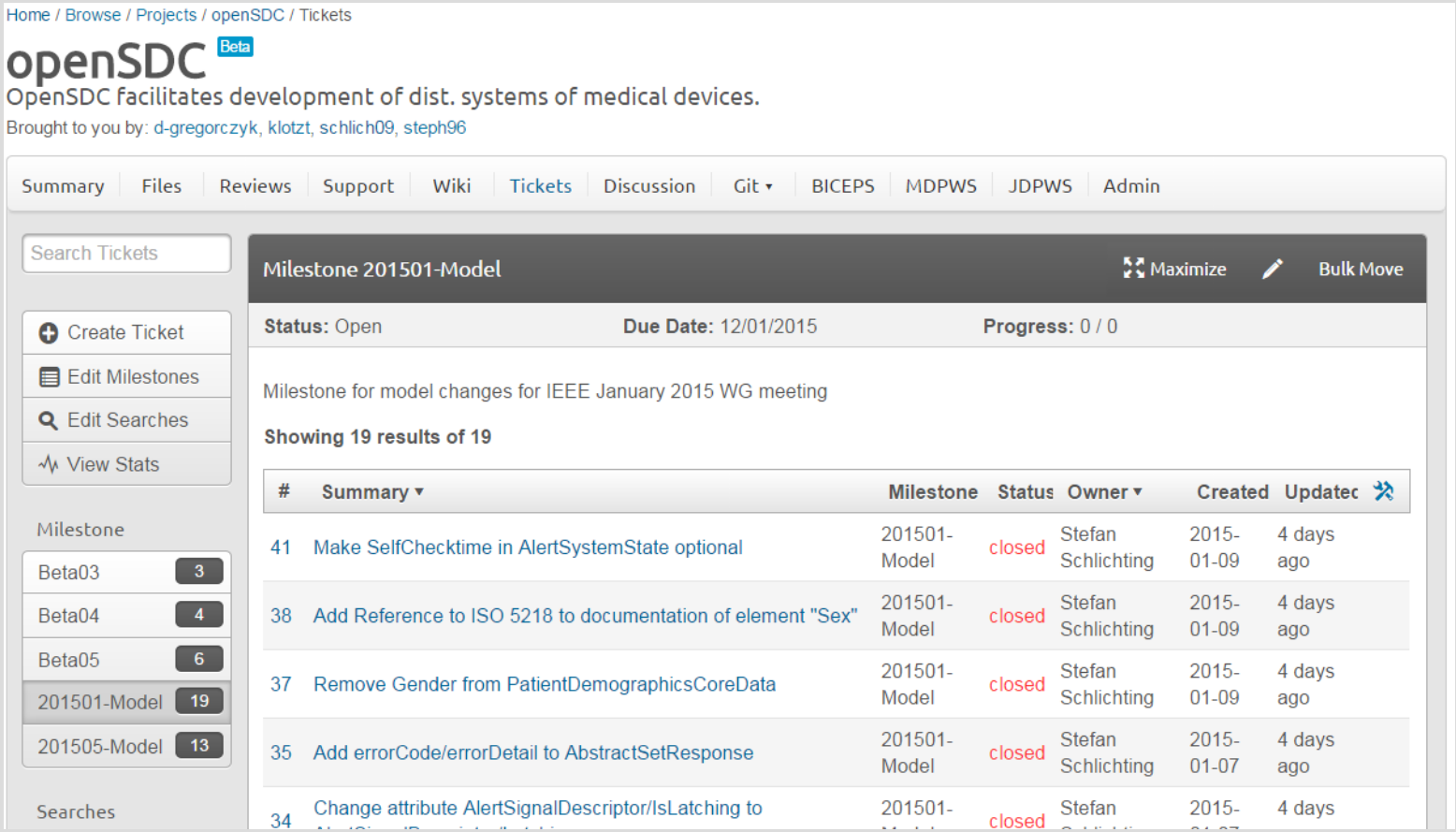
Expect an update in Q1/2015 (openSDC beta05)

- Optimized Discovery Mechanism
  - Device context-based Discovery
  - Descriptor exchange protocol optimization
- Incorporate change request from DKE & IEEE workgroups

Expect an update in Q2/2015 (openSDC beta06)

- Incorporate change request from DKE & IEEE workgroups

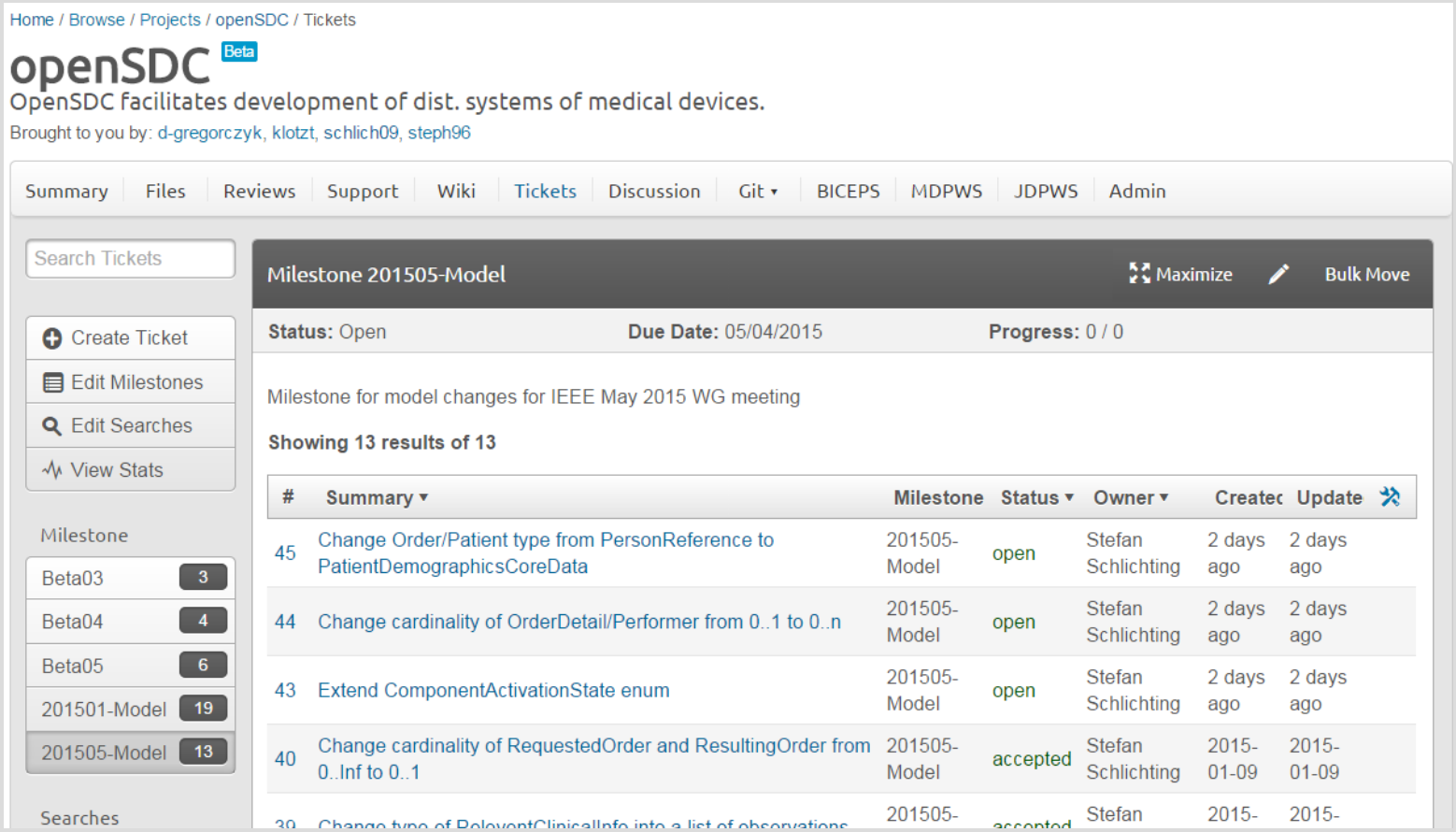
openSDC Update
Ticket system



- Tickets for the January 2015 model (-10207) revision can be found @

https://sourceforge.net/p/opensdc/tickets/milestone/201501-Model/

openSDC Update
Ticket system



- Ticket backlog for the May 2015 model (-10207) revision can be found @

https://sourceforge.net/p/opensdc/tickets/milestone/201505-Model/

SDC Update
Agenda

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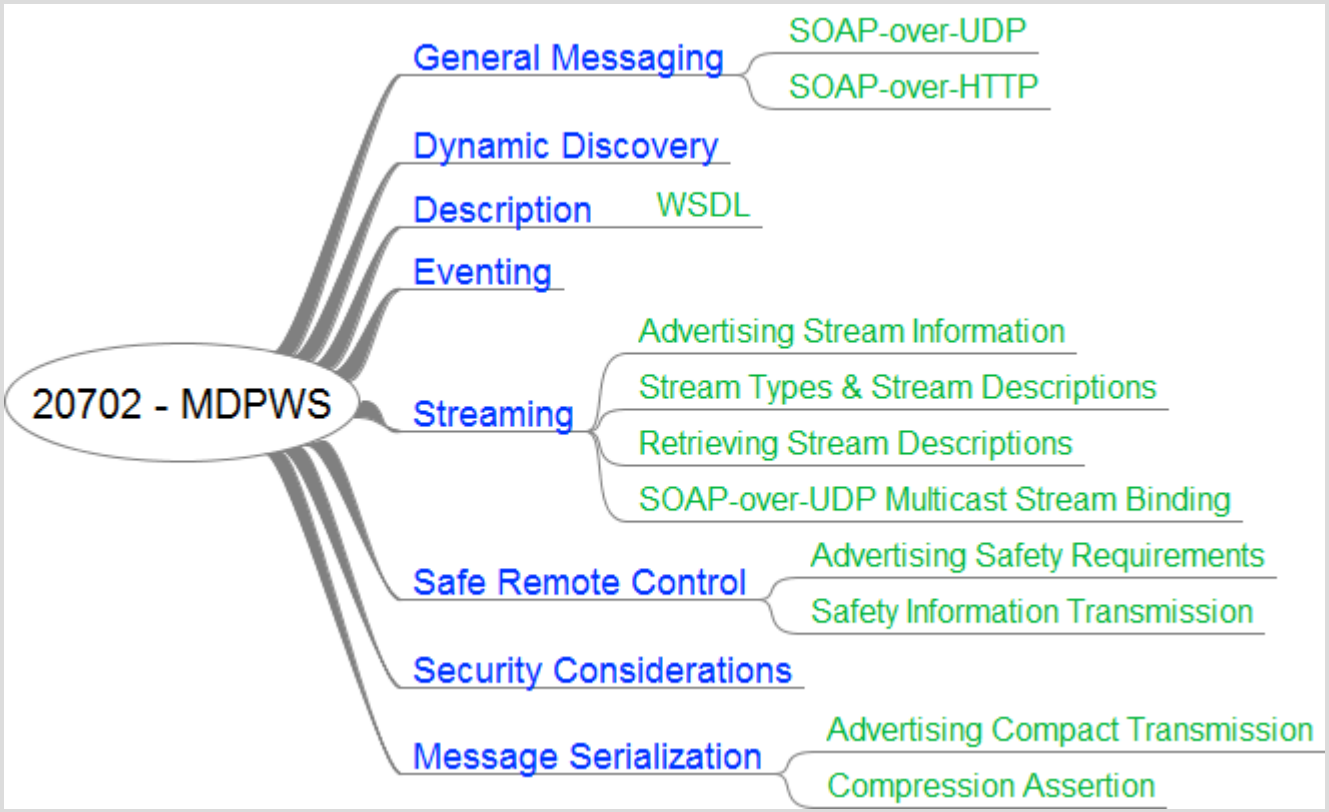
3. **Draft Documents**
4. DICOM MDS
5. Roadmap

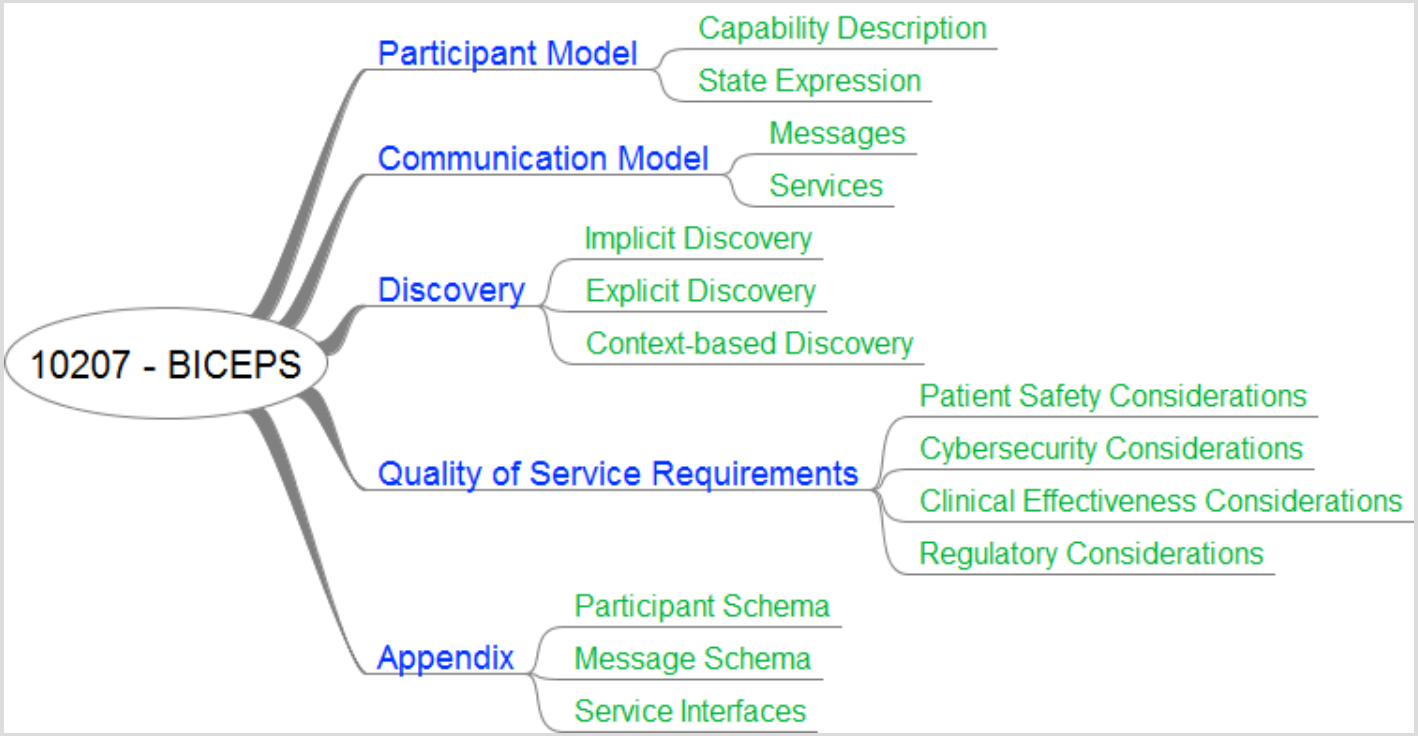
Draft Documents
20702 - MDPWS



Stability

- Minor changes in November DKE Workgroup meeting
- Only editorial comments in January DKE workgroup meeting
- All sections except Message Serialization has been decided

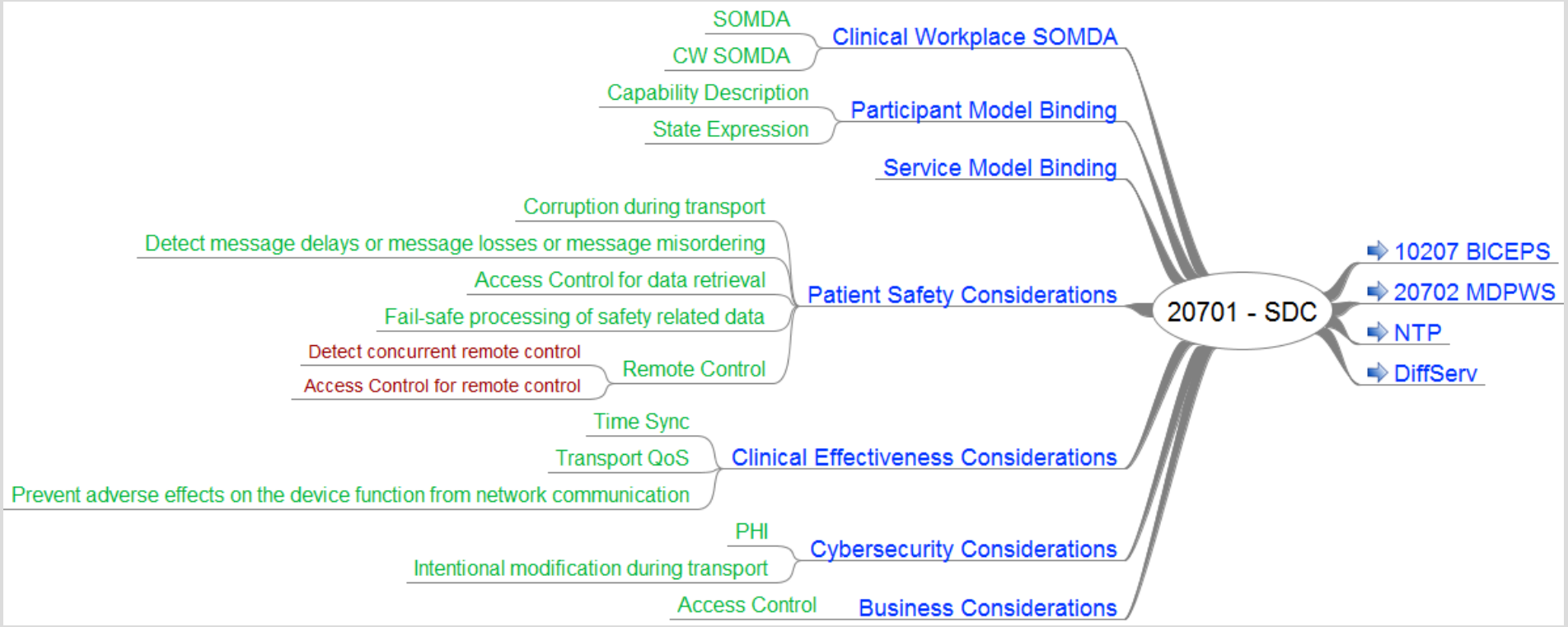
Draft Documents
10702 - BICEPS



Stability

- New elements decided in November DKE Workgroup meeting
- First Draft with content for model and discovery sections ready
- 19 Comments for 2015-01 model resolved, 13 Comments for 2015-05 model to be discussed

Draft Documents
20701 - SDC

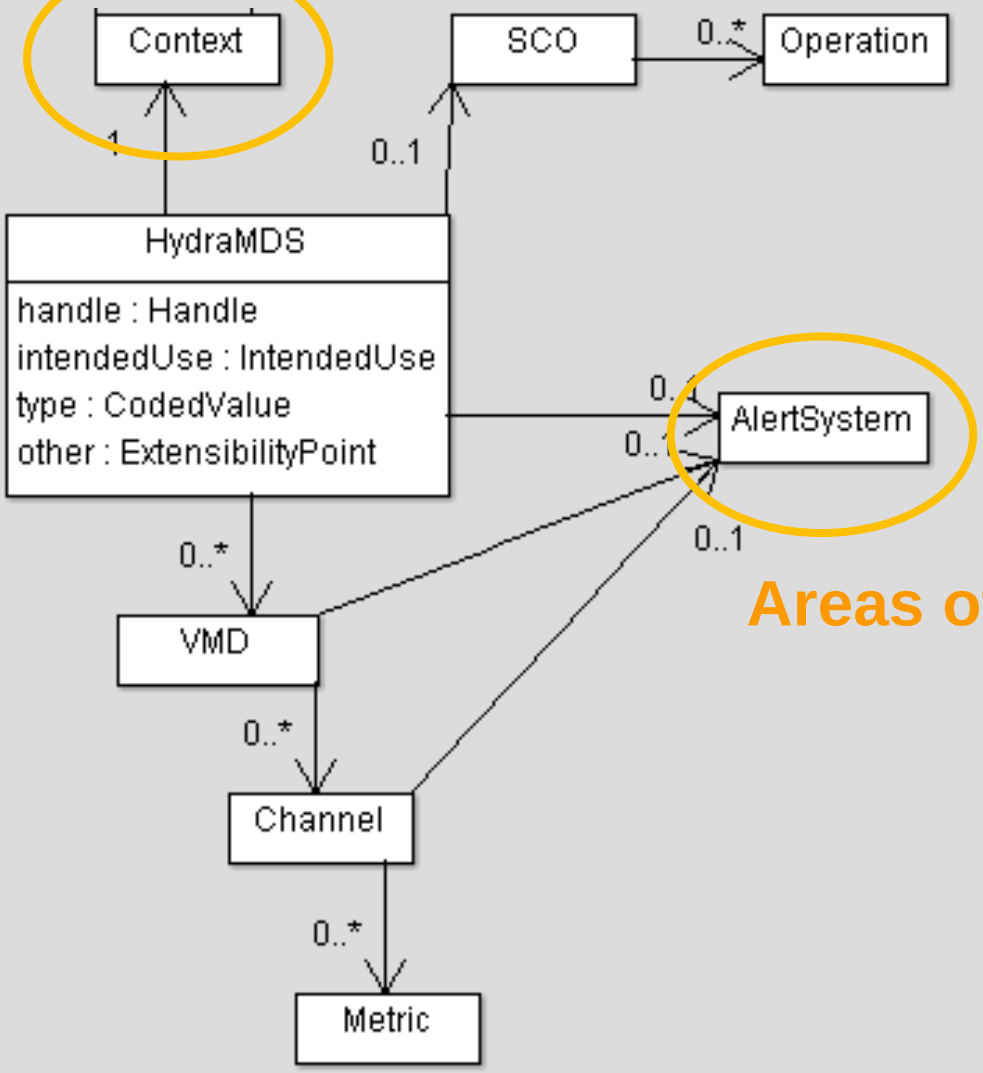


Stability

- First draft of ToC was developed

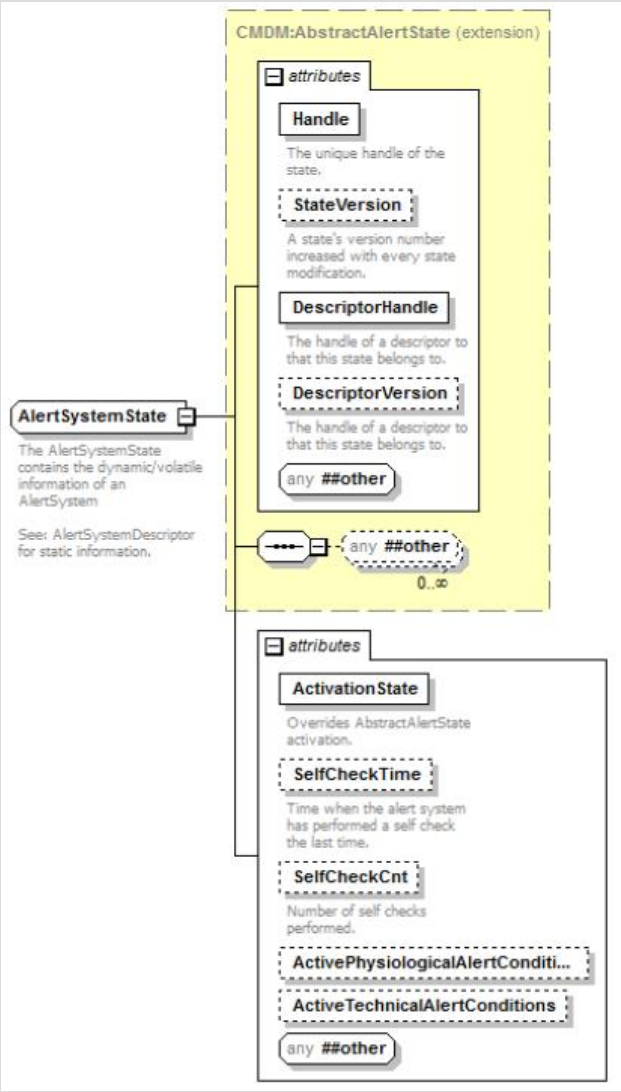
Draft Documents

20701 - BICEPS



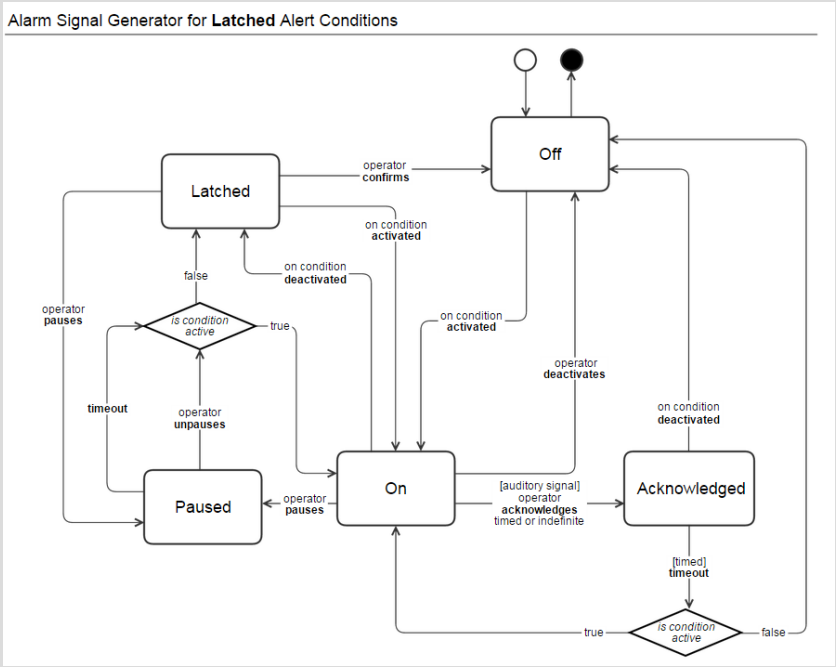
Areas of discussion

Draft Documents
20701 - BICEPS

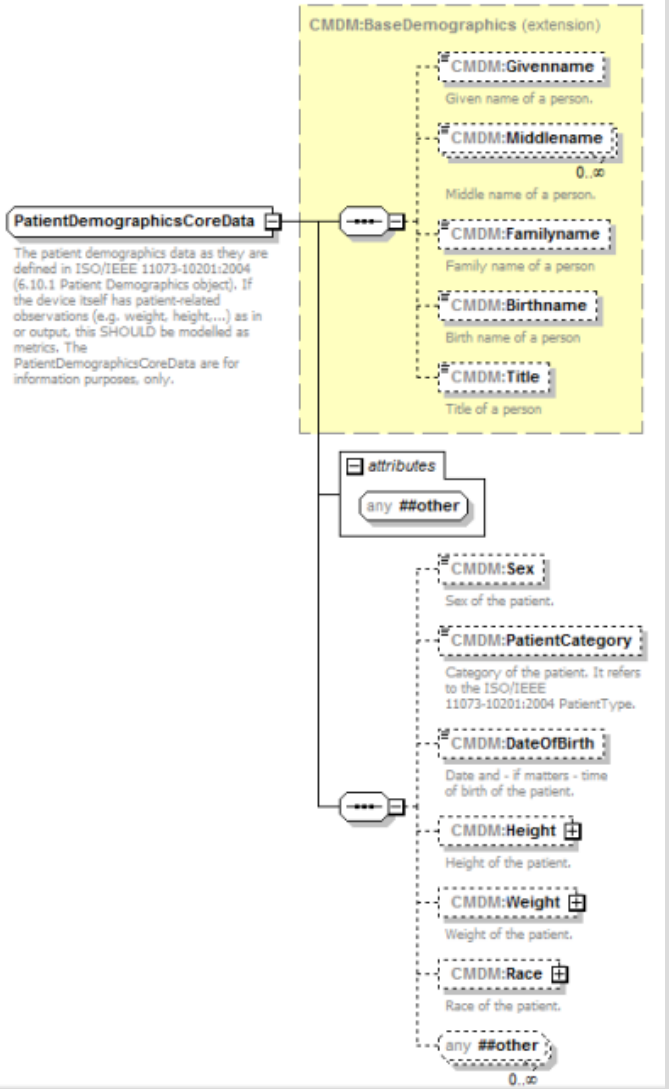


Alert-related Changed

- SelfCheck properties of AlertSystem
- Add active alert condition reference list to AlertSystemState similar to “Alert Monitor” from -10201.
- Add “Acknowledged” state to AlertSignal activation state and info about timeout in AlertSignalDescriptor



Draft Documents
20701 - BICEPS



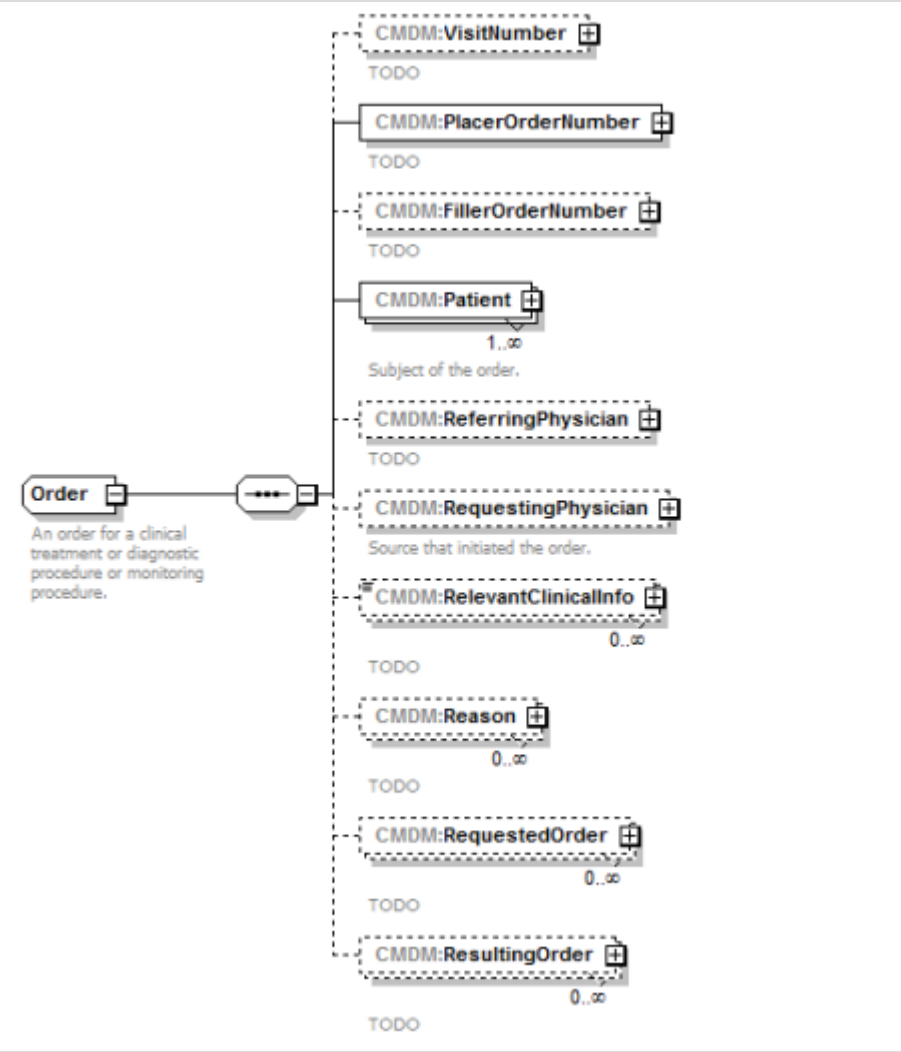
Under Discussion

PatientDemographicsCoreData

- Gender has been removed. Only Sex is supported.
- Only DateOfBirth can be captured. No Patient age field.
- Multiple IDs per patient can be captured but are not part of the Demographics.
- Currently not supported Patient-Lbm & Patient-Bsa
- Bed-Id has been extracted to LocationContextState.
- Order/Workflow related info has been extracted to Order object
- Info related to Neonates has been extracted.

Draft Documents
20701 - BICEPS

Under Discussion

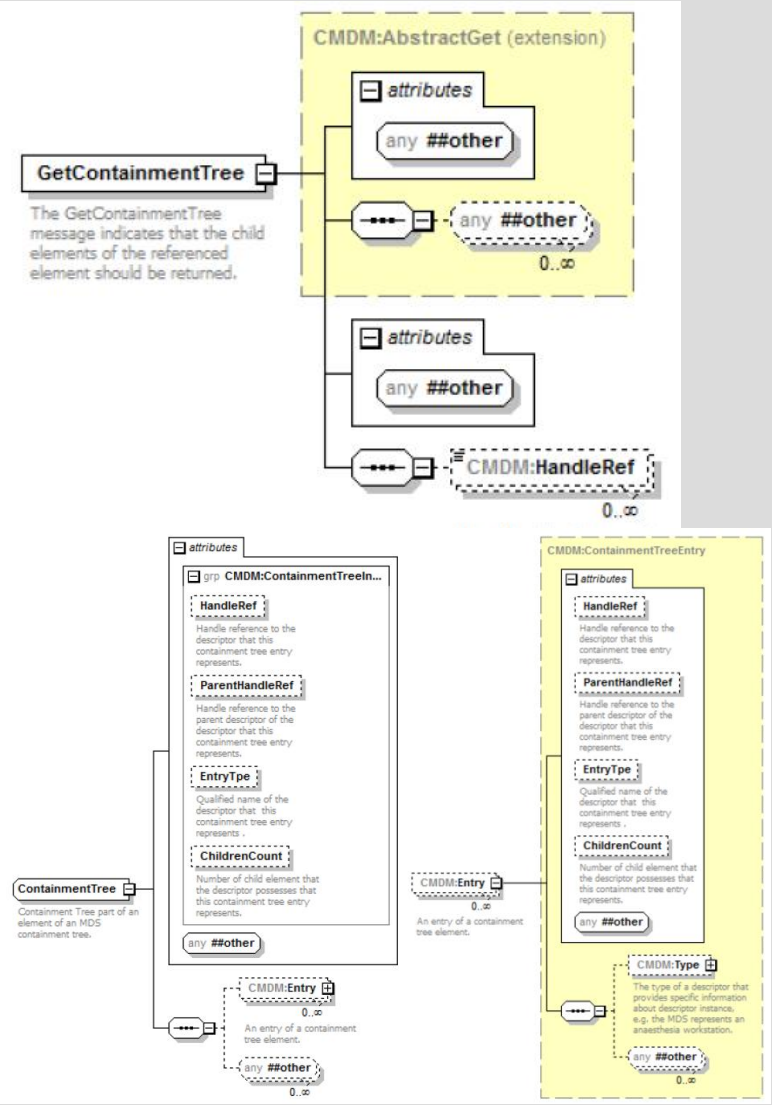


Order Object

- Contextual information for a clinical order that should be or is performed by a medical device.
- Currently uses PersonReferences as Type to refer to Patient(s), Physicians
  - List of Instance Identifiers + Name
  - Person details, e.g. Patient, have to be obtained in a 2nd step
- Objective is to make a lookup of e.g. Worklist Items possible, but not to include all information.
- In -10201 some of the information is part of Patient Demographics.

Draft Documents
20701 - BICEPS

Under Discussion



Optimized Descriptor Retrieval

- Until Beta04 only GetMDDescription was available for retrieve the whole capability description of a device.
  - Can be very large and ofter only small portions are needed by a client, e.g. Metrics with a certain type code.
- GetContainmentTree & GetContainmentTreeResponse
  - Typed info about children of a descriptor
- GetDescriptor & GetDescriptorResponse
  - Child descriptors are not included in the response.

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DICOM MDS
DICOM Integration

Under Discussion

Target

Integrate DICOM devices in the OR with each other and with clinic IT systems

- Only dynamic discovery of DICOM networking services covered
- Not addressed: DICOM payload; devices should still talk DICOM!

Use Case #1

- For surgery preparation, screen likes to display pre-acquired CT images
- Screen discovers clinic PACS* config. and retrieves/displays images

Use Case #2

- During surgery, images are acquired by mobile C-Arm
- C-Arm discovers clinic PACS* configuration and stores image

Use Case #3

- Two DICOM devices inside OR discover each other and can start DICOM connection

*or „Gateway“ representing PACS in OR for safety reasons

DICOM MDS
DICOM Integration

Under Discussion

Means

- Develop device specialization extending BICEPS data model
- Describes DICOM network capabilities („SOP Classes, transfer syntaxes“, etc.)
- Describes DICOM configuration (IP, port, „AE Titles“, etc)

Current status

- Initial data model exists

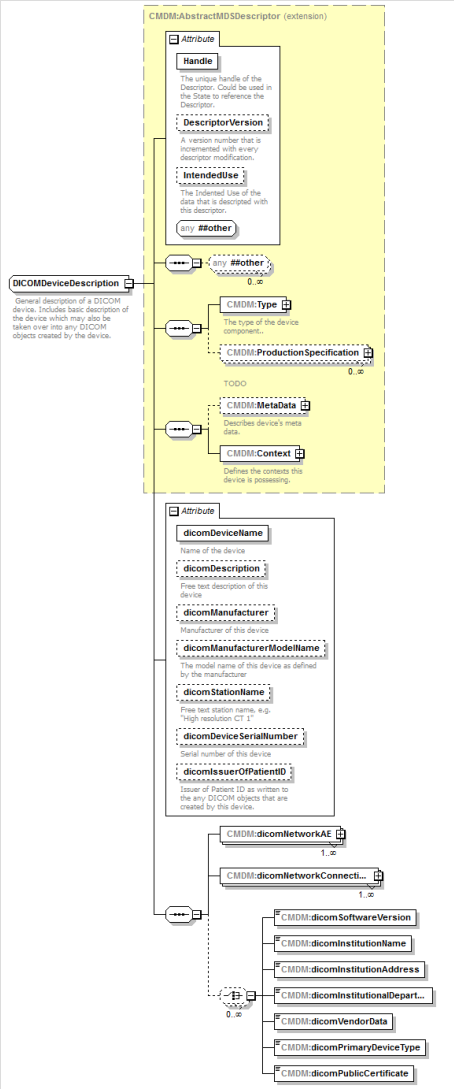
Next steps

- Identify best way to hook into existing data model
- Make DICOM configuration (partly) writeable?
- Integrate DICOM’s “new” web service extensions

If you like to comment or help, please contact: dicom@offis.de

DICOM MDS
Draft Document

Under Discussion



DICOM MDS

The scope of this specification is the definition and structuring of DICOM device information that is communicated in a distributed system of point-of-care medical (PoC) medical devices and medical IT systems that need to exchange data or safely control networked PoC medical devices by defining a participant information model. The definition of transport serialization is outside the scope of this standard.

- Maybe derived from HydraMDS instead of AbstractMDS in order to allow metrics asf.

Not part of -10702. Maybe a device specialization?

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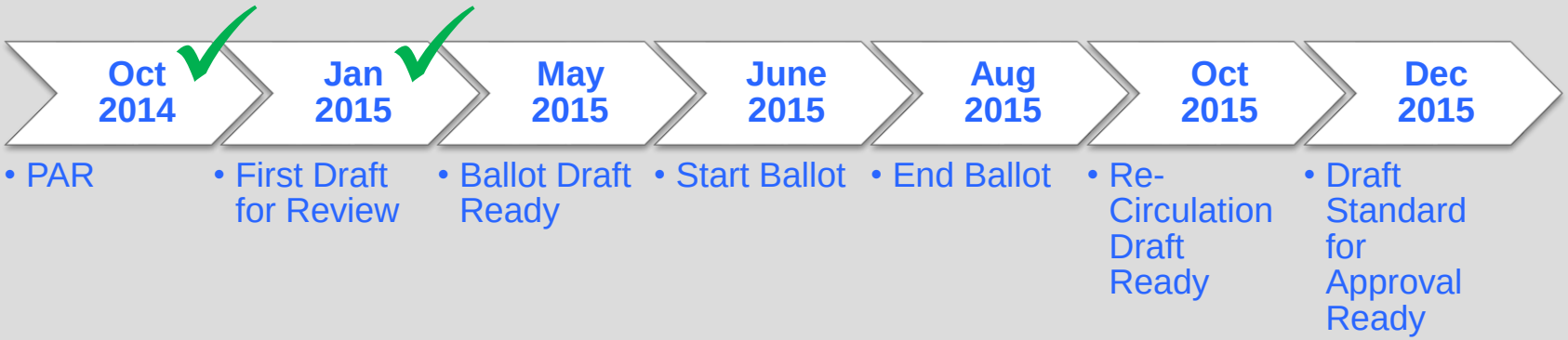
Roadmap
Timeline



- The DKE WG STD 1000.8.03 has developed initial standardization artifacts and will continue to develop the draft documents.
  - Next F2F: 2015-03-19, Berlin
- Content will be presented in IHE PCD DPI calls (Thursday 8 p.m. CET)

Comments for 201505 drafts are welcome until 2015-05-04 !

Thank you for your attention.

Contact
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stefan.schlichting@draeger.com