

MINUTES

DICOM WORKING GROUP SIX (Base Standard)

November 1 – 5, 2010

Rosslyn, Virginia

(Includes Results from T-con of October 26, 2010)

Members Present	Represented by	Tc	M	T	W	T	F
Agfa Healthcare	Robert Horn	P	X	X	X	X	X
Burgert, Oliver	Oliver Burgert (Innovation Center Computer Assisted Surgery (ICCAS))		X	X	X	X	X
Carl Zeiss Medical Software	Tobias Kurzke	P			X	X	X
GE Healthcare	Harry Solomon	P			P	P	
JIRA	Makoto Suzuki		X	X	X	X	
Konica Minolta Med. Imaging	Michael Laconti	P	X	X	X	X	X
Merge Healthcare	Ronald Cowan	P	X	X	X	X	X
Philips Healthcare	Bas Revet	P	X	X	X	X	X
Siemens Healthcare	Michael Jonas	P	X	X	X	X	X
Toshiba Medical Research Institute USA	Kevin O'Donnell			X	X	X	X
Members Absent	Voting Representative						
DatCard Systems	Jere Darling						
RadPharm	David Clunie						
Societe Francaise de Radiologie	TBD						

Others Present	Affiliation	Tc	M	T	W	T	F
Emmanuel Cordonnier	WG-27/ETIAM						P
Christian Dressler	WG-24/ Innovation Center Computer Assisted Surgery (ICCAS)					P	
Philipp Liebmann	WG-24/Innovation Center for Computer Assisted Surgery (ICCAS)		P	P	P		
Cor Loef	WG-27/Philips Healthcare						P
Marilyn Maguire	Fujifilm	P					
David Murray	WG-07/Tomotherapy		X	X	X		
James Philbin	WG-27/ACR/Johns Hopkins Medical						P
Tom Probasco	WG-01/Dimatics				X	X	
Gary Tearney	WG-01/Mass. General Hospital				X		
Thomas Treichel	WG-24/Computer konkret				P		
Howard Clark	MITA Staff	P	X	X	X	X	X

(* = Does not count toward a quorum, P = Phone, X = Present)

Presiding Officer:

Bas Revet, Chair

1. Preliminary Events

Participants identified themselves and their employers. The secretary reported that a quorum was present.

Members approved the agenda as presented (version 3).

Members reviewed the minutes from the WG-06 meeting held in August of 2010 (Rev1), suggested some minor editorial changes, and unanimously approved them as modified. Additionally, they reviewed minutes of the teleconferences of September 30 (Sup152) and October 18 (Sup153). These were approved as submitted.

2. NEMA Staff Report

Committee Secretary Howard Clark reported on ballots that were distributed following the June 2010 meeting of WG-06. All ballots met DICOM's quorum requirements.

BALLOT	APPROVE	DIS-APPROVE	ABSTAIN	COMMENTS
Sup142	32	0	4	7
Sup149	30		2	1
Correction Pack 58	26 for all, 5 for all except those noted ⇒	1 (768), 4 (1039), 1 (1047)	3 for all, 1 (994), 1 (1039), 1 (1044), 1 (1047)	1(768), 1(798), 1(994), 5 (1039), 1 (1040), 3 (1043), 1 (1044), 3 (1047), 1 (1048), 1 (1050), 1 (1051), 1 (1052), 1 (1054), 1 (1055), 1 (1060), 1 (1062)

3. Ballot Packages #58 from August 2010

The CPs listed below were included in Ballot Package 58. The results of that ballot are reported in Item 2 above. Comments were submitted for those CPs marked with an asterisks (*) in the list shown below. Each of these comments was carefully considered, and minor editorial changes were made in response to them. At the conclusion of this review, members of WG-06 unanimously voted to approve the following correction items, as amended, for **Final Text**:

CP	Name
797	Measurement References to Segments
1036	Correct Image and Frame Type Enhanced XA/XRF
*1040	Mammo Figure and Table Numbers
*1043	Clarification on the Multiplicity of Items – 2
1044	FOV Clarifications for XA Derived Images
*1048	Correct Overlay Activation Module Condition in Presentation States
1049	Typo Correction Following CP-750
*1050	Wrong Reference of Context Group Extension in PS 3.16
*1051	Typo's in Various Templates
*1052	Corrections for CID 12110
1053	Correction Nesting Level Mask Visibility Percentage
*1054	Correct Figure C.7.6.16-2 in PS 3.3
*1055	PS 3.3 Section C.11.15 Is Used Twice
*1060	Clarify UCUM Does Not Require Version
1061	Clarify SNOMED Retired Codes
*1062	Addition of More Isotopes and Radiopharmaceuticals for NM (Needs SNOMED Codes)
1067	Fix Reference to Derived Image Section
1087	Update Foreword of All Parts

One of the comments submitted on CP768 was referred to WG-12 for review, but a reply had not been received by the close of this meeting. Members of WG-06 do not anticipate any significant changes to be made and approved this CP for Final Text pending confirmation of that assumption.

Likewise, one of the comments submitted on CP1044 was referred to WG-02 for review, but a reply had not been received by the close of this meeting. Members of WG-06 do not anticipate any significant changes to be made and, therefore, approved this CP for Final Text pending confirmation of that assumption.

4. Voting Package for November 2010

During the August 2010 meeting, members of WG-06 placed the correction proposals contained in following table in the Voting Package for November 2010. During this meeting, after careful review and some slight modifications, members voted unanimously to include them in a **Letter Ballot** to be designated **Ballot Package 59** for distribution soon after the meeting.

CP	Name
952	Correct Filter Type Value Multiplicity
970	Improving Compatibility between Segmentation and Surface Segmentation
979	Add Directory Record for Surface Segmentation
1037	Clarification on the Multiplicity of Items - 2

1056	Series Description Code Sequence Number of Items
1057	Correct Retired ACR-NEMA Value Representations
1058	Make Patient Size and Weight Relative to Study Start
1059	Add SHA2 Hash Algorithms for Digital Signatures
1063	Clean Up Radiation Dose Reports
1065	Device Information in Radiation Dose Reports
1069	Inconsistent Capitalization of X-Ray Code Meaning in Radiation Dose Reports
1070	Additional Sources of Information in Radiation Dose Reports
1071	Additions to Various CID of Supplement 78
1072	Correct Description Contrast Agent Number in FG
1073	Disconnect Dimension Organization from Frame of Reference
1074	TID 4006 Clarify Image & Image Region Reference
1076	Bad Person-participant Relationship in TID 1020 in Dose SR
1078	Add Document Class Code Sequence
1080	Update CID 4204 to Use SNOMED
1081	Distance Source to Detector in NM TOMO Modes
1082	Add Term for IEEE 1588 Precision Time Protocol
1084	Clarify Spatial Registration Description
1088	Modality Code for Structured Display
1093	Part 16 typos

5. Change Proposals to VP for January of 2011

During this meeting, members of WG-06 reviewed the following assigned correction proposals and, after some modifications, voted to include them in the WG-06 **Voting Package for January 2011**:

CP	Name
994	Clarify Per-frame Functional Groups
1039	Add 'Document Laterality' to Encapsulated Document Module
1047	Dose Check Support in DICOM CT Radiation Dose Report
1068	Scan Location in CT Dose Reports
1075	CT Dose Permissible for Constant Angle Acquisitions
1079	Update ECG Report TID 3700
1092	Clarify Condition on Content Date and Time

6. Other Previously Assigned Change Proposals (Reviewed)

The following correction proposals were reviewed, refined and dispatched as noted:

CP#	Title	Result
1038	Hanging Protocol Reference to Color Palette Instances	Remains assigned to D. Clunie
1064	Float VR in Numeric SR Content Items	Remains assigned to WG-08

7. Previously Assigned Change Proposals (Not Reviewed)

The following change proposals were not ready for review at this meeting and were held over for future consideration:

CP#	Title	Assigned to
145	Curve Data Value Representation Clarification	D. Clunie
235	Clarify NM detector start angle usage	J. Pohlhammer
296	Eliminate Duplicate Terms and Provide Missing Definitions	H. Solomon
375	Correct CID 4017 – Intra-oral Anatomy Modifier	K. O'Donnell
430	Additions to PS 3.16 for Cardiac Cath SR	H. Solomon
450	Correct Myocardium Mass	D. Sluis
464	Add SOP Common to the Print-related N-CREATES	R. Horn
471	Add Common Finding Template	H. Solomon
591	Attribute Identifier List for Errors in Sequence Attributes	H. Solomon
596	Add Request and Schedule Information to Results and MPPS	R. Horn
597	Instance Availability Notification Structure	H. Solomon
757	Add RTSS ROI Feature UID	H. Solomon
802	Incorporate Fixes on 702 and 706	D. Clunie
804	Indicator for Cone Beam CT	K. O'Donnell. Consult with WG-02 and WG-21 on 3D Radiography.
811	Note for Forwarders Regarding SCP-assigned Instance UIDs during N-CREATE	D. Harvey
812	Clarification that Pixel Padding Value Is a Raw Value before Any Transformations	D. Harvey
833	Transfer Syntax Availability and Selection for Q/R	R. Horn
836	Clarify Usage of Attributes for Normalized IODs	K. O'Donnell
838	Consistent Naming of Error Code Tables	K. O'Donnell
906	Remove Summary from CID 7001	H. Solomon
934	Fix Inconsistency of C-FIND Only Number of Patient Related XXX Attributes	D. Harvey
941	More Clarification of Instance References	D. Clunie
944	Extend Procedure Intent Context Group	D. Clunie
991	Clarify Handling of Private Data in the Retrieve Without Bulk Data Service	R. Horn
992	Clarify Allowable Length Values for Certain PDUs	K. O'Donnell
993	Specific Character Set in PPS N-SET	R. Horn
1005	Make Keywords Valid Java/C Identifiers	R. Horn
1006	Add Keywords to Command Dictionary	R. Horn
1013	RT Ion Beams Recording Clarifications	B. Curran
1030	Re-factor Common Attributes for Enhanced Images	WG-06
1031	Use of OIDs and Non-ASCII Characters in Codes	R. Horn
1032	Fix Position Angle Sign Inconsistency in Mammography Image	K. O'Donnell
1041	Add 'Image Comments' to Four Measurements Objects	R. Horn
1042	Add Colors to Visual Acuity Background	R. Horn
1066	Encoding of Attributes with Value Length > 64KiB with Explicit VR	R. Horn
1077	Add CR Report Type to Dose SR and Relax Content Conditions	B. Revet
1083	Additional Attributes for Key Object Selection Document	R. Horn
1085	Clarify CT Acquisition Types	K. O'Donnell
1086	New DICOMDIR ZIP File Extension	R. Horn
1089	Clarify Use of ESC	R. Horn
1090	Allow Image IODs to Reference Multiple Irradiation Event UIDs	K. O'Donnell
1091	Other Language Code Meanings Not Translations	K. O'Donnell

1092	Clarify Condition on Content Date and Time	B. Revet
1093	Correct LOINC Code Typo	H. Solomon

8. [New Change Proposals](#)

The following new change proposals were reviewed and dispatched as noted:

File ID	CP	Name	Assigned to or Outcome
dac165	1094	Hanging Protocol Range Selector Cannot Be Date or Time	D. Clunie
gz1	1095	Duplicate Exposure Time Codes	R. Horn
gz4	1096	Correct Breed Codes	H. Solomon
gz5	1097	CID 3829, 3839, 3840 Structure of Anatomy	H. Solomon
gz_hpfilter	1098	Clarify Behavior of HP Filter-by Operator If the Selected Attribute Value Is Absent	D. Clunie
hs14	1099	Allow SCOORD on WSI Total Matrix	H. Solomon
hs16	1100	Add Pericardial Effusion to Echo SR	H. Solomon
hs17	1101	Acquisition Duration Units in Enhanced US	B. Revet
hs18	1102	Correct LOINC Code Meanings	H. Solomon
hs19	1103	Pixel Intensity Relationship LUT Number of Items	B. Revet
PaddleID	1104	Add Paddle Identification for Mammography	B. Revet
WG-20_xfrm	1105	Conformance Claim for SR-CDA Transform	R. Cowan
rjh24	1106	Assign a Namespace for Audit Schema Elements	R. Horn
dac166	1107	No Human Readable Label for Irradiation Events in CT Dose SR	D. Clunie

9. [Supplement 74 – Utilization of Worklist in Radiotherapy Treatment Delivery {WIR 2000-11-B}](#)

This supplement was released for letter ballot in June of 2010. While it was approved with no negative ballots, it did attract three sets of comments. On behalf of WG-07, Chair David Murray reviewed these comments, offered WG-07's proposed response, and modified the text to reflect guidance provided by members of WG-06. However, because this document is so closely linked to Supplement 96, and Supplement 96 will go out for another letter ballot, members chose to delay the line-by-line review of this document until that one has stabilized – probably in April of 2011. In the immediate future, **Dr. Murray** will post an updated version of Supplement 74 to the private FTP site for this meeting.

10. [Supplement 96 – Unified Worklist and Procedure Step {WI 2000-11-B & 2003-12-A}](#)

This document was distributed for letter ballot following the January meeting of 2010. It received 28 positive votes, none to disapprove, and five sets of comments – plus a number of detailed questions from one company that already has begun to implement the technology. In subsequent meetings of WG-06, Supplement Editor Kevin O'Donnell led a review of the comments that had been received and the responses that he proposed. Followed this, members began a line-by-line review of the entire document. However, the volume of material to be covered was too large to permit completion of the task in the time that was available. At this meeting, Mr. O'Donnell resumed that review beginning

with a discussion of Annex F, which had been significantly revised. Also, he suggested that in view of the number and nature of changes that had been made since letter ballot, the supplemented should be balloted again. After completing a careful review, members voted unanimously to approve it for **Letter Ballot**.

11. [Supplement 109 – SOP Instance Location Service {WI 2004-12-A}](#)

Not discussed at this meeting. This supplement is under development by members of WG-06. It was last considered by WG-06 in January of 2005.

12. [Supplement 115 – Evidence Document SOP Classes {WI 2003-12-B}](#)

Not discussed at this meeting. The supplement is under development by members of WG-06. It was last reviewed by WG-06 in January of 2006.

13. [Supplement 121 – Modality Procedure Plan and Protocol Storage {WI 2006-04-E}](#)

Not discussed at this meeting. The supplement is under development by members of WG-06. It was last reviewed by WG-06 in March of 2010.

14. [Supplement 124 – Communication of Display Parameters {WI 2004-12-B}](#)

This document was last discussed at the WG-06 meeting in January of 2009. Forward progress was halted temporarily due to a job change for one of the champions and illness of the other. However, this situation has been resolved and work is underway.

15. [Supplement 129 – Electrophysiology Structured Reports and Procedure Log Templates {WI 2006-04-A}](#)

Not discussed at this meeting. This supplement is under development by members of WG-01. It was approved for Public Comment in June of 2007.

16. [Supplement 131 – Implant Templates {WIR 2007-03-D}](#)

This supplement is under development by members of WG-24. It was last reviewed by WG-06 in June of 2010. However, the minutes of that meeting indicate, “Some additional work is needed in response to the ballot comments received and WG-06 reactions to them.” In the course of this meeting, Editor Oliver Burgert, carefully reviewed all changes implemented by WG-24 in response to guidance provided by WG-06 during the meeting in Munich. Particular attention was focused on Table Y.6-1 (Attributes for the Implant Template Information Model), on the Context ID for Implant Target Anatomy, and on a new Context ID for Human Trauma Implant Component Types. He, then, led a line-by-line review of the entire text and implemented a few refinements suggested by members of WG-06. At the conclusion of this review, members voted unanimously to approve the document for **Final Text**. However, on the very next day, the editor shared some comments that had been received regarding a minor error in the supplement. This was immediately fixed and the file name was changed to sup131_ft2.

17. [Supplement 134 – Implantation Plan SR IOD {WIR 2007-03-D}](#)

On behalf of WG-24 Oliver Burgert and Philipp Liebmann presented version “dft2” of this supplement, which was last reviewed by WG-06 in June of 2010. Unfortunately, there was not sufficient time available at that meeting to complete the review of the entire document. They resumed the review at the beginning of Part 17 and completed it in short order. Finally, since the purpose of this review is to prepare Final Text, WG-06 requested a complete, page-by-page scan of the entire text. Considerable effort was devoted to refining the definition of “fiducials” and related terms. Upon completion of this review, members voted unanimously to approve it for **Final Text**.

18. [Supplement 136 – DOT Mammography Storage SOP Class {WIR 2006-04-C}](#)

This supplement is under development by members of WG-15. It was presented to WG-06 for a First Reading in January of 2008.

19. [Supplement 139 – Enhanced XA/XRF IOD Informative Annex {WIR 2002-06-A}](#)

Not discussed at this meeting. This supplement is under development by members of WG-02. It was presented to WG-06 in June of 2010 with the objective of achieving final text for this 110 page document. Unfortunately, time was not sufficient to complete a detailed line-by-line review. WG-02 Chair Francisco Sureda will return at a future meeting to complete the process.

20. [Supplement 142 – Clinical Trial De-identification Profiles {WIR 2008-04-E}](#)

Not discussed at this meeting. This supplement, which is under development by members of WG-18, was approved for letter ballot at the August 2010 WG-06 meeting.

21. [Supplement 147 – Second Generation Radiotherapy {WIR 2007-06-B}](#)

WG-07 Chair David Murray began his review of this document by providing a five-page list of changes to the document that have been made since it was last reviewed by WG-06 in March of 2010 and a five-paragraph list of notes regarding the general contents of the document – e.g., what has been left out or what will be handled by other supplements to be added later. After discussing these points, Dr. Murray began a comprehensive review of the entire document that covered some Part 3 module tables, and all of Part 17. However, since it contains more than 200 pages, the review could not be completed in the time available. He hopes to have another representative of WG-07 continue the review in January of 2011. The remaining sections to review are from Section C.8.A.C.1 (RT Radiation Set Modules, page 73 approx), to the end of the Part 16 definitions (page 179 approx).

22. [Supplement 148 – WADO via Web Services {WIR 2008-04-B}](#)

This supplement is being developed by members of WG-27 in conjunction with ISO-TC215-WG 2. It was approved it for Public Comment during the August meeting of WG-06. Three sets of comments were received. At this meeting, Rob Horn led a comprehensive discussion of these comments and the List of Open Issues with the objective of providing written feedback to the members of WG-27, who plan to meet on November 29, 2011 at RSNA. In the course of this process, members gave particular attention to the question of how one should document conformance to Web Services. Some suggested that it would be desirable to make various schemas available on the DICOM Web Page. **Mr. Horn** will attend the WG-27 meeting at RSNA and communicate the Groups suggestions.

23. Supplement 149 – MPEG-4 Transfer Syntax {WIR 2008-09-B}

This supplement is under development by members of WG-13. It was last reviewed by WG-06 in a Tcon on July 29, 2010 and approved for letter ballot during the August meeting. One set of comments was received. They will be discussed during the WG-13 meeting on November 18. Another teleconference of WG-06 will be arranged to evaluate the Supplement for final text.

24. Supplement 150 – Radiation Dose Related Information in Radiology Reports {WIR 2007-06-C}

Not discussed at this meeting. This supplement was presented to WG-06 in June of 2010 and distributed for public comment with a deadline of August 9, 2010. Four sets of comments were received. Supplement Editor Helmut Koenig will return at an early opportunity for a letter ballot review.

25. Supplement 151 – Intravascular Optical Coherence Tomography (IVOCT) Image Storage SOP Class

This supplement was presented to WG-06 in June of 2010 and distributed for public comment with a deadline of August 9, 2010. Two sets of comments were received. Supplement Editor Thomas Probasco, accompanied by Dr. Gary Tearney of WG-01, reviewed the comments that had been received and WG-01's response to them. Following this, Mr. Probasco led a line-by-line review of the document but not enough time was available to complete the task. He will return in January 2011 with the objective of winning authorization to issue the document for letter ballot.

26. Supplement 152 – Ophthalmic Thickness Map Storage SOP Class {WIR 2006-04-G}

Not discussed at this meeting. The development of this supplement is being undertaken by members of WG-09. It was last discussed during a teleconference on September 30, 2010. As a consequence of that discussion, the Supplement was issued for Public Comment with a deadline of December 13, 2010.

27. Supplement 153 – Blu-ray Disc Media Application Profiles {WIR 2006-04-G}

This document was last reviewed by WG-06 during a teleconference on October 18, 2010. At that time, members of WG-13 were seeking approval to disseminate the document for public comment. While the members who participated in the call considered it to be ready for mailing, a quorum was not present. During this meeting, members of WG-06 participated in another review, made a few refinements, and voted unanimously to approve its distribution for **Public Comment**.

28. Long-term Consistency

Not discussed at this meeting. The topic was last discussed by WG-06 during its meeting in August of 2010. At that time, members urged Dr. Behlen to present it to WG-10 for consideration at its meeting on October 11, 2010 and, if appropriate, to the DICOM Standards Committee as a Work Item Request on October 12.

29. What to Do about Profiling

Not discussed at this meeting. The development of this supplement is being undertaken by members of WG-06. It was last discussed in October of 2009.

30. 3D Presentation States {WIR 2008-04-C}

Not discussed at this meeting. The development of a supplement on 3D Presentation States is being undertaken by members of WG-11. It was last reviewed by WG-06 in June of 2009.

31. Publishing DICOM in XML

The editor is looking for a commercial service that can convert the Standard's text to XML format.

32. Optical Surface Scanner Storage SOP Class

On behalf of WG-24, Oliver Burgert and Christian Dressler offered a proposal to extend the DICOM Standard by adding a new IOD on Optical Surface Scanning. This proposal was embodied in a PowerPoint file named "Extending the DICOM Standard by an 'Optical Surface Scan IOD.'" The proponents noted that since the use of optical surface scanners in medical applications is constantly rising, they should be represented by their own modality and specific device attributes in DICOM. This would allow the user to store the scanned surfaces on a PACS.

An optical surface scanner projects structured light (line(s) or complex pattern) on an object and takes a picture of the scene. A point cloud is calculated from the deviations of the projected pattern. Based on that point cloud, a 3D surface is calculated. (Point clouds and surfaces are already part of the current DICOM Standard.) Optionally, an additional camera on the scanner device is able to take colored high-resolution pictures to create textures of the object. Available devices are able to store the scanned object either completely processed as a 3D object or alternatively as point cloud with texture. Therefore, two SOP classes are required.

A modality for Optical Surface Scanners does not exist. Scanner-specific attributes and texture mapping also are not considered in the current standard. It is also not possible to store a colored 3D object using the Surface Segmentation IOD. UV mapping is used for applying textures on 3D objects. To make UV mapping possible the supplement describes a way to assign vectors with arbitrary properties to existing point clouds. Upon completion of the review, WG-06 assigned it **Supplement Number 154**.

33. Miscellaneous Business

The DICOM Standards Committee's Vendor Co-chair Kevin O'Donnell announced that during the Committee's October meeting in Rio de Janeiro, members of the DSC agreed with WG-06 that it would be desirable to conduct periodic reviews of any work items that have not progressed for at least three years. In particular, the Committee decided to make this a routine agenda item. To facilitate this process, members of WG-06 determined that the chair of WG-06 shall:

- Identify those work items/supplements that have not progressed for at least three years.
- Notify the editors of such supplements that the matter will be discussed at the next meeting of the DSC and the work item will be cancelled unless the editor can provide a credible plan for accomplishing the work.

Near the end of the discussion of Supplement 148, the leaders of WG-27 joined WG-06 for a short planning session regarding its meeting on November 29 at RSNA.

34. Future Meetings

The Group's future meeting dates and locations are as follows:

- November 10; Tcon for Sup115; 10:00 a.m. EST
- January 24 – 28, 2011 at MITA.
- April 4 – 8, 2011 in Pisa
- June 6 – 10, 2011 at MITA.
- August 22 – 26, at MITA.
- October 24 – 28, 2011 at MITA.

Unless otherwise noted, meetings are scheduled from 8:30 a.m. to 5:30 p.m. each day; T-cons begin at times specified above and normally continue for two hours.

35. Next Meeting Agenda

A detailed agenda for the next meeting will be prepared at a later date. Anticipated topics for November are shown in the table attached as Appendix A.

36. Adjournment

The meeting was adjourned at 12:15 p.m. on November 5, 2010.

Reported by:

Howard E. Clark, Secretary
November 22, 2010

Reviewed by counsel: CRS 11/23/10