

# MINUTE S- Rev.1

## DICOM WORKING GROUP SIX

(Base Standard)

April 4 – 8, 2011

Pisa, Italy

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

Others Present	Affiliation	Tc	M	T	W	T	F
Uli Busch	Varian Medical Systems International		X	X	X		
Yoshihiro Ishikawa	Fujifilm			X	X		
Masatoshi Kanzaki	WG-11/JIRA/Real Vision			X	X	X	

Helmut Koenig	WG-20/Siemens Healthcare			X	X		
Norihisa Matsui	WG-11/JIRA/			P	P	P	
Howard Clark	MITA Staff			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 2).

Members reviewed the minutes from the WG-06 meeting held in January of 2011 (Rev2), suggested some minor editorial changes, and approved them as modified (Rev3). Additionally, they reviewed minutes of the teleconferences of March 14 (Supplements 149 & 153) and March 17 (Sup148). These two sets were approved as submitted. In all three votes, the representative of GE Healthcare abstained, as she had not been present at any of those events.

### 2. NEMA Staff Report

Committee Secretary Howard Clark reported on ballots that were distributed following the January 2011 meeting of WG-06. All ballots met DICOM's quorum requirements.

BALLOT	APPROVE	DISAPPROVE	ABSTAIN	COMMENTS
Sup151	28	0	5	3
Correction Pack 60	29 for all, 1 for all except those noted⇒	1 (1114)	3 for all	2 (994), 2 (1047), 1 (1068), 2 (1075), 1 (1079), 2 (1114)

### 3. Ballot Packages #60 from January 2011

All CPs listed below were included in Ballot Package 60. The results of that ballot are reported in Item 2 above. Comments were submitted for those CPs marked with an asterisk (\*) 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
*994	Clarify Per-frame Functional Groups
1038	Hanging Protocol Reference to Color Palette Instances
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
*1079	Update ECG Report TID 3700
1092	Clarify Condition on Content Date and Time
*1114	Correct UCUM Multiplication

CP1075 (CT Dose Permissible for Constant Angle Acquisitions) was deemed unnecessary and, therefore, cancelled.

#### 4. Ballot Package for April 2011

During the January 2011 meeting, members of WG-06 placed the correction proposals contained in following table in the Voting Package for April 2011. 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 61** for distribution soon after the meeting.

CP	Name
993	Specific Character Set in PPS N-SET
1041	Add 'Image Comments' to Four Measurements Objects
1042	Add Colors to Visual Acuity Background
1089	Clarify Use of ESC
1090	Allow Image IODs to Reference Multiple Irradiation Event UIDs
1091	Other Language Code Meanings Not Translations
1094	Hanging Protocol Range Selector Cannot Be Date or Time
1096	Correct Breed Codes
1097	CID 3829, 3839, 3840 Structure of Anatomy
1098	Clarify Behavior of HP Filter-by Operator If the Selected Attribute Value Is Absent
1099	Allow SCOORD on WSI Total Matrix
1100	Add Pericardial Effusion to Echo SR
1101	Acquisition Duration Units in Enhanced US
1102	Correct LOINC Code Meanings
1103	Pixel Intensity Relationship LUT Number of Items
1104	Add Paddle Identification for Mammography
1107	No Human Readable Label for Irradiation Events in CT Dose SR
1113	Correct Lead III Code

CP1085 (Clarify CT Acquisition Types) was moved to the voting package for June 2011.

#### 5. Change Proposals to VP for June 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 June 2011**:

CP	Name
1064	Float VR in Numeric SR Content Items
1085	Clarify CT Acquisition Types
1109	Correct Figure Numbers in PS.3.3
1110	Encoding Undefined Length Empty Items and Sequences
1111	Correction Palette LUT Descriptor Description
1116	RT Image Higher Precision Current and Time
1117	Transform Inversion Correction
1118	Recorded Brachy Applicator Terms
1119	Registration Fiducials Reference Macro
1120	Source Distance in General Accessories
1121	Dose Scope Indicator
1122	Referenced Reference Image Sequence Tag
1124	Add Standard for DICOM Reference

1125	Add Protocol Name to SR Series
1128	Relax CR/LF Requirement in Part 5
1129	Correct Part 5 Rule on Group 0004 in Sequence
1130	Clarify Referenced Image Sequence Usage as Additional DICOMDIR Keys

## 6. Other Previously Assigned Change Proposals (Reviewed)

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

CP#	Title	Result
1013	RT Ion Beams Recording Clarifications	Continues Assigned to WG-07
1077	Add CR Report Type to Dose SR and Relax Content Conditions	Continues Assigned to B. Revet
1112	Add SR Structure for ROI Statistics	Continues Assigned to H. Solomon

## 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
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	<del>Remove Summary from CID 7001 (Cancelled CP)</del>	<del>H. Solomon</del>
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 PDU	K. O'Donnell

1005	Make Keywords Valid Java/C Identifiers	R. Horn
1006	Add Keywords to Command Dictionary	R. Horn
1030	Re-factor Common Attributes for Enhanced Images	B. Revet
1031	Use of OIDs and Non-ASCII Characters in Codes	R. Horn
1032	Fix Position Angle Sign Inconsistency in Mammography Image	K. O'Donnell
1066	Encoding of Attributes with Value Length > 64KiB with Explicit VR	R. Horn
1086	New DICOMDIR ZIP File Extension	R. Horn
1095	Duplicate Exposure Time Codes	R. Horn
1105	Conformance Claim for SR-CDA Transform	R. Cowan
1106	Assign a Namespace for Audit Schema Elements	R. Horn
1115	Add Dose Reference Point Codes for CR/DR	K. O'Donnell
1123	Add Attributes and Codes for Dose Reports Generated during QA Scans	K. O'Donnell
1126	Corrections LOINC Codes Sup78	B. Revet
1127	Add Fields for Organ Dose to Dose SR	K. O'Donnell

## 8. New Change Proposals

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

File ID	CP	Name	Assigned to or Outcome
RT8	1131	Leaf Position Boundaries Clarification	U. Busch/WG-07
RT9	1132	High Dose Technique Type Clarification	U. Busch/WG-07
RT11	1133	RT ROI Identification Sequence Baseline CID Clarification	U. Busch/WG-07
RT12	1134	Correction of RT Ion Plan Module Table	U. Busch/WG-07
RT13	1135	Extensions of Pitch and Roll Attribute Description	U. Busch/WG-07
RT14	1136	Correct Channel Time Tag number	U. Busch/WG-07
RT18	1137	Structure Set Relationship Sequence	U. Busch/WG-07
RT10	1138	Average Beam Dose Parameters	U. Busch/WG-07
hh04	1139	Part 16 VM 2-n	H. Solomon
hh05	1140	Part 16 Consistency Clean-up Annex A	H. Solomon
hh06	1141	Part 16 Consistency Clean-up Annex C	H. Solomon
hs25	1142	Add Context Group for Cardiac Sync Technique	H. Solomon
hs26	1143	Change NCDR Nomenclature to SNOMED	H. Solomon
hs27	1144	Correct Wall Motion Codes CID 3703	H. Solomon
hs28	1145	Add Informative SNOMED Numeric IDs	H. Solomon
hs29	1146	Enhance Cardiovascular Procedure List	H. Solomon
hs30	1147	Observation UID	H. Solomon
WG26-1	1148	Add Pathology Protocol Codes	H. Solomon
WG26-2	1149	Add Staining Equipment and Protocol Codes	H. Solomon
br103	1150	Inconsistent Raw Data Reference in Enhanced PET	B. Revet
hb	1151	Correct Condition for "Number of Pulses" in TID 10003	B. Revet
kh_KOS	1152	Additional Document Titles for Key Object Selection Document	R. Horn
kh_SOP	1153	New Instance Reference Attribute in SOP Common	R. Horn
mj06	1154	Clarify usage of Referenced SOP Sequence in Storage Commitment	M. Jonas
rjh25	1155	Alternative Calendar Systems	R. Horn

**9. Supplement 74 – Utilization of Worklist in Radiotherapy Treatment Delivery {WIR 2000-11-B}**

WG-07 Chair Uli Busch presented version lb+3 of this draft supplement noting that significant changes were made only in the section on RT Beams Delivery Instruction Module Attributes and figures ZZZ.3.1.1-1 (Treatment Delivery Normal Flow – Internal Verification Message Sequence) and ZZZ.3.2.1-1 (Treatment Delivery Normal Flow – External Verification Message Sequence). After obtaining UIDs and Codes, Mr. Busch prepared a draft final version that was unanimously approved for **FINAL TEXT**.

**10. Supplement 109 – SOP Instance Location Service {WI 2004-12-A}**

Work on this Supplement was suspended by the DICOM Standards Committee at its meeting in December of 2010.

**11. 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 during a teleconference in November of 2010.

**12. Supplement 121 – Modality Procedure Plan and Protocol Storage {WI 2006-04-E}**

The supplement is under development by members of WG-06. Due to the press of other business, it has not appeared on the agenda since March of 2010. Likewise, due to the substantial time gap since that last review, Editor Kevin O'Donnell reminded members that the Supplement defines a trio of CT-specific storage SOP Classes to distribute planned protocols and to record performed protocols. Similar trios of SOP Classes for other modalities may be added in other supplements. Each modality will have two planned procedure SOP Classes that describe desired values and/or value ranges for various parameters; one SOP Class for patient-specific procedure plans, and one SOP Class for generic procedure plans. Also, each modality will have one performed procedure SOP Class that describes the actual values used in a performed acquisition. Because performed procedures are always patient-specific, the SOP Classes can address details including:

- Patient preparation
- Patient positioning
- Acquisition technique
- Equipment characteristics
- Reconstruction
- Image processing such as filtering, enhancement, etc.

The Supplement also introduces a private tag dictionary to permit description of the private tags that inevitably appear to address unique scanner model characteristics and the ongoing addition of system-specific features and settings. This is intended to make it easier for receiving applications to deal more robustly with these private attributes (e.g. being able to display the value with an appropriate label to the operator).

In the course of this review, members paid considerable attention to details of the Real World Model appearing in Part 3 of the Standard. A number of questions regarding extension of the Real World Model for Hanging Protocols were also discussed. The definitions of Referenced Image Sequence and

Anatomic Region Sequence also drew considerable discussion. Mr. O'Donnell will further update and refine this draft supplement and **return** at a future meeting.

**13. [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, the situation ultimately was resolved and work has progressed. At this meeting, Kevin O'Donnell – accompanied by JIRA representatives Masatoshi Kanzaki and Yoshihiro Ishikawa (plus Norihisa Matsui via a phone link) presented version 13C of this document. Since the topic had not been considered for over two years, Mr. O'Donnell began with a short review of the document's scope, intent, and structure. Some of the key discussions revolved around the details of calibration, conformance requirements, hardware parameters, light sources, location of job results, etc. Unfortunately, because of the size and complexity of this document, only about 2/3 of the text could be discussed. Mr. O'Donnell and JIRA representatives will **return** at a future meeting to complete the review with the objective of winning authorization to issue it for Public Comment.

**14. [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. Due to the long period of inactivity, the Work Item was reviewed by the DICOM Standards Committee at its meeting in December of 2009. At that time, WG-01 co-chair Harry Solomon requested and was granted a one year extension of the Work Item to see whether a new champion could be found to move the Supplement's development forward.

**15. [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.

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

On the last day of the January 2011 meeting of WG-06, Francisco Sureda completed the Final Text Review of Sup139. All who were present considered the document to be ready for Final Text. However, a quorum was not present at the time. Subsequent to this meeting, the document was mailed to members of WG-06 for a Committee Ballot, but an insufficient number of ballots was received to constitute a quorum. After a quick review during this meeting, members voted unanimously to approve the document as amended for **FINAL TEXT**.

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

This Supplement was last reviewed by WG-06 in January of 2011. At that time, WG-07 member Uli Busch conducted part-two of the comprehensive review of this document aimed at securing authorization to issue it for Public Comment. However, since it contains more than 200 pages, the review could not be completed in the time available. Subsequently, WG-07 met at the Headquarters of Brainlab AG to further refine the document and respond to suggestions made by WG-06. For this occasion, Mr. Busch, now chair of WG-07, resumed the detailed review beginning with the discussion of changes made in response to the suggestions from WG-06 during the January 2011 meeting.

Following this summary, Mr. Bush drew WG-06 members' attention to some specific questions in the list of Open Issues that WG-06 could immediately resolve. Following these introductory discussions, he jumped to page 128 of the document to resume the detailed review. A host of issues was discussed – far too many to be recorded in a set of minutes. However, these items have been recorded by Mr. Busch for later resolution by WG-07. Unfortunately, due to the size and complexity of this document, even six hours was not sufficient time to complete the review. Mr. Busch will **return** at a subsequent meeting to continue this process.

**18. [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 last reviewed by WG-06 during its January 2011 meeting. On that occasion, Editor Rob Horn led a detailed line-by-line review of the document. A key question was concerned with how one might conduct a review of the schema associated with this supplement. Members thought it might be best to issue the supplement for trial implementation. Another issue was concerned with how to define the Conformance requirements. Additional work on Part 6 was required. At this meeting, Mr. Horn brought a new example that members found entirely acceptable. With this new addition, they unanimously voted to approve its distribution for **LETTER BALLOT**.

**19. [Supplement 149 – MPEG-4 Transfer Syntax {WIR 2008-09-B}](#)**

This supplement is under development by members of WG-13. During its August meeting of 2010, members of WG-06 approved its distribution for letter ballot. That ballot was successful, and one set of comments was received. These comments were reviewed and resolved by WG-13 at its meeting in November of 2010. During a WG-06 teleconference on March 14, 2011, members who were present agreed that it was ready for final text, but a quorum was not present. After a quick review during this meeting, members voted unanimously to approve the document as amended for **FINAL TEXT**.

**20. [Supplement 150 – Radiation Dose Related Information in Radiology Reports {WIR 2007-06-C}](#)**

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 presented version pc + 2 of the draft and led a line-by-line review of its contents. At the completion of this review, members voted unanimously to approve its distribution, as amended, for **LETTER BALLOT**.

**21. [Supplement 151 – Intravascular Optical Coherence Tomography \(IVOCT\) Image Storage SOP Class {WIR 2008-12-A}](#)**

Not discussed at this meeting. This supplement is being developed by members of WG-01. It was last reviewed by WG-06 in January of 2011 – at which time it was released for Letter Ballot with a deadline of March 21, 2011.

**22. [Supplement 152 – Ophthalmic Thickness Map Storage SOP Class {WIR 2006-04-G}](#)**

Not discussed at this meeting. This supplement is being developed by members of WG-09. The document was released for Public Comments with a deadline of December 13, 2010, but none were received. It was last reviewed by WG-06 in January of 2011.

**23. [Supplement 153 – Blu-ray Disc Media Application Profiles {WIR 2006-04-G}](#)**

This document was reviewed by WG-06 during its meeting in early November of 2010. At that time members voted to approve its distribution for Public Comment (deadline of January 31, 2011). However, no comments were received. When WG-13 met in mid-November, members resolved the one Open Issue that had been included in the Public Comment version. The revised document was considered by WG-06 during a Tcon on March 14, 2011. While it was considered satisfactory for moving to Letter Ballot, a quorum was not present. At this meeting, members carefully reviewed the entire document and voted unanimously to approve the document as amended for **LETTER BALLOT**.

**24. [Supplement 154 – Optical Surface Scanner Storage SOP Class {WIR 2010-04-F}](#)**

Not discussed at this meeting. This supplement is being developed by members of WG-24. It was last reviewed by WG-06 in November of 2010.

**25. [Supplement XXX – Templates for Imaging Procedure Reports Encoded in CDA](#)**

On behalf of WG-08, Harry Solomon introduced a draft supplement on the topic shown above. This supplement introduces a new mechanism for specifying templates for imaging procedure reports. Such reports are intended to be encoded using the HL7 Clinical Document Architecture Release 2 (CDAR2, or simply CDA) Standard. The templates envisioned here will allow a professional society to normalize best practice for reports with appropriate quality for their use cases, including foreseeable secondary uses such as research or quality improvement. Ultimately, templates provide a conformance validation for instances of reports against the purposes (use case) of the template. They may also be used in the creation of reports; thus, an application may use the template to guide authoring of the report, ensuring the entry or composition of essential reporting elements, and structuring that data into the target encoded format.

Mr. Solomon explained that the normative specification of this Part of the Standard consists of the XML schema representing a view of the structures used in an imaging report template (the meta-template schema). Documents compliant to that schema constitute report templates for specific types of reports. As the review proceeded, Mr. Solomon touched on:

- Normative XML Meta-Template Schema
- Meta-Template Table Transform to XML Report Template
- Numerous Example Templates

One of the most recent additions to this document is the section on p.4 titled “Template Development Process and Use” and the associated figure. At the conclusion of this briefing, members assigned the document **Supplement # 155**.

**26. [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.

### **27. 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.

### **28. 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.

### **29. Publishing DICOM in XML**

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

### **30. New or Miscellaneous Business**

Members spent a few minutes each day working on an improved version of the CP Template. The final result of this effort (until next time) is included in the both the Minutes and private FTP Folders for this meeting as well as the Member's Handbook on the DICOM Web Page. It is called CP Template 2011.

### **31. Future Meetings**

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

- May 31, 2011: Tcon for CPs, 10 a.m. EDT
- June 6 – 10, 2011 at MITA.
- August 16, 2011: Tcon for CPs, 10 a.m. EDT
- August 22 – 26, at MITA.
- October 11, 2011: Tcon for CPs, 10 a.m. EDT
- October 24 – 28, 2011 at MITA.
- January 23 – 27, 2012 at MITA
- March 26 – 30, 2012 at MITA
- June 11 – 15, 2012 in Berlin
- August 27 – 31, 2012 at MITA
- November 5 – 9, 2012 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.

### **32. Next Meeting Agenda**

A detailed agenda for the next meeting will be prepared at a later date. Anticipated topics for June are shown in the Agenda Plan for June 2011, which may be found in the Private FTP site for the June meeting or the Public FTP site for this meeting:

[FTP://medical.nema.org/MEDICAL/Dicom/Minutes/WG-06/2011/2011-04-04](http://medical.nema.org/MEDICAL/Dicom/Minutes/WG-06/2011/2011-04-04).

### **33. Adjournment**

The meeting was adjourned at 11:10 a.m. on April 8, 2011.

**Reported by:**

Howard E. Clark, Secretary  
April 11, 2010

**Reviewed by counsel:**

April 13, 2011