

ISO/IEC JTC 1
Information technology
Secretariat: ANSI (USA)

Document type: Officer's Contribution

Title: SC 24 Chairman's Presentation to the November 2012 JTC 1 Plenary meeting in Jeju

Status: This document is circulated to JTC 1 National Bodies for review and consideration at the November 2012 JTC 1 Plenary meeting in Jeju.

Date of document: 2012-10-16

Source: SC 24 Chairman

Expected action: ACT

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Committee URL: <http://isotc.iso.org/livelink/livelink/open/jtc1>

- ISO/IEC JTC 1/SC 24/N 3424
- 24-Sep-12

**Presentation of JTC 1/SC 24:
“Computer Graphics, Image
Processing, Environmental Data
Representation” for 2012 JTC 1
Plenary Meeting, 5 - 10 Nov. 2012,
Jeju, Rep. of Korea (SC 24 N XXXX)**

**Presenter : Professor Ha-Jine Kimn
SC 24 Chairman**

SC 24 seeks Standardization of Imagery Technology:

- 2D/3D multi & hyper-spectral image collections
- Large image files with metadata attached
- Collection platform metadata
- Archival and dissemination of imagery and digital documents
- Intelligent documents and analysis
- **Augmented Reality Continuum (ARC) presentation and reference model**

SC 24 Status:

Chairman : **Ha-Jine Kimn**, Secretariat : **Charles Whitlock**

4 working groups:

WG6 : **Augmented Reality Continuum** Presentation and Interchange (R. Puk)

WG7 : Image Processing and Interchange (Y. Chung)

WG8 : Environmental Data Representation (J. Cogman)

WG9 : **Augmented Reality Continuum Concepts and Reference Model** (G. Kim)

Membership : 33 Nations

- Actively Participating 6 National Bodies
 - Australia, China, Japan, Korea, UK, US
- 24 Observing Nations + 9 Participating Nations

Liaisons:

6 internal to ISO:

ISO TC211, Steering Committee for Imagery Technology (SCIT), JTC 1/SC29, ISO TC130, IEC TC100, ISO TC215 Health Informatics.

13 external: Forums in geospatial, navigation, virtual environments and simulation technologies:

W3C, Web3D, Khoronos Group, SISO, SEDRIS Organization, MEDSEC, Open Geospatial Consortium (OGC), Digital Geographic Information Working Group (DGIWG), NATO Air Group IV and Modeling and Simulation Group, IHO, WMO, **DICOM**.

SC 24 Area of Work:

- **Area of Work (JTC 1 N10933)** - Standardization of interfaces for information technology based applications relating to :
 - **computer graphics,**
 - **image processing,**
 - **environmental data representation,**
 - **support for the augmented reality continuum (ARC), &**
 - **interaction with, and visual presentation, of information.**

Inclusions:

Included are the following related areas:

Modeling and simulation related reference models; **virtual reality with accompanying augmented reality/augmented virtuality aspects, related reference model**; application program interfaces; functional specifications; representation models; Interchange formats, encodings and their specifications, including metafiles; device interfaces; testing methods; registration procedures; presentation and support for creation of multimedia, hypermedia, and mixed reality documents.

Exclusions:

Excluded are the following related areas:

character and image coding; coding of multimedia and hypermedia document interchange formats; JTC 1 work in user system interfaces and document presentation: ISO TC207 work on ISO14000 environmental management, ISO TC 211 work on geographic information and geomatics; and software environments as described by ISO/IEC JTC 1 SC22.

What SC24 is doing (1/2):

3 documents published:

SEDRIS FS (18023-1:2012), SEDRIS TBE (18023-3:2012),
SEDRIS LB to C (18024-4:2012)

8 documents approved for publication to FDIS/FDAM:

Procedure for registration of items (9973:2012), EDCS (18025 Ed. 2),
SRM (18025 Ed 3), X3D-part 1 Architecture (19775-1 Ed. 3),
X3D-part 3 SAI (19775-2 Ed. 3), X3D encoding-part 1 XML (19776-1
Ed. 3), X3D encoding-part 3 Classical VRML (19776-2 Ed. 3),
X3D encoding-part 3: Compressed binary (19776-3).

What SC 24 is doing (2/2):

4 documents approved for progression to DIS/FPDAM:

X3D-2: SAI (19775-2 Ed. 3), X3D encoding-1: XML (19776-1 Ed.3), X3D encoding-2: classical VRML (19776-2 Ed. 3), X3D encoding-3 CB (19776-3 Ed. 3).

4 documents approved for progression to CD/PDAM:

X3D SAI Am. 1 (19775-2 2010), X3D encoding XML Am. 1 (19776-1 2009), X3D encoding Classical VRML Am. 1 (19776-2 2008), X3D encoding CB Am. 1 (19776-3 2011).

3 new ARC work items requested 2 months letter ballot:

ARC RM(G. Kim), ARC RM for physical sensor(M. Lee & G. Kim), ARC RM for real character representation(K-H. Yoo),

21 supports for NW & 1 SG of OpenCV APIs.

Outreach:

◆ Articles:

- Ha Jine Kimn & Richard F. Puk, “***Entertainment of the future from 3D to virtual reality***”, *ISO Focus*, Nov./Dec. 2011, pp13-15.

◆ Presentations:

- Ha Jine Kimn, “***Present states of ISO/IEC JTC1/SC 24***“, the SCIT meeting, 7-8 June 2012, Seoul, Korea.
- Ha Jine Kimn, “***ARC: A strategy for the future of JTC 1/SC 24 standardization efforts***“, Web3D Standards Meeting, 8 August 2012, SIGGRAPH 2012, LA, USA.
- Ha Jine Kimn, “***ARC: New strategy for the SC 24 standardization efforts***“, the 8th ISCoK meeting, 11 September 2012, Seoul, Korea.

Challenges:

SC24 follows developments from its cooperative agreements to build ISO standards from mature consortia recommendations in keeping with JTC 1 objectives:

- Amendments and revisions of X3D standards (WG 6)
- Revisions of SEDRISs, EDCS, SRM and associated language binding (WG 8)
- Revision of Procedure for Registration of items (WG 8)
- NWIPs on Augmented Reality Continuum (WG 6 & WG 9)

Market Opportunities:

Significant opportunities for SC 24 playing major role in standards development:

- Effective data interchange formats with ISO TC211 & NATO ⇒ marketing in military, satellite & airborne
- Commercial availability based on 12087-5 BIIF ⇒ NW proposed IEC TC11
- Sensor model standard 19130 (spectral sensing & fusion of imagery) being emerging segment in market ⇒ collaboration with ISO TC 211
- Remote sensing & fusion in non-stationary & hand-held devices ⇒ incorporating metadata into imagery/sensed data files

Strategies:

Strategies to achieve our mission:

- Facilitating use & implementation of existing SC 24 standards
- Seeking out consortia & organizations following open processes as partners
- Working effectively including timeliness & window of market opportunity with technical quality
- Maximizing contribution by seeking out new & innovative projects
- Continuing to seek ways to cooperate with JTC 1 SCs & ISO TCs, especially SC 29 & SC 32

Issues or Needs:

- P members without commitment to participate actively
⇒ **potential risks** for balloting NPs or approving resolutions at meetings.
- Lack of sufficient numbers of experts & national bodies to continue willingly participate in standardizations development related to **very short ICT life cycle.**
- Lack of supports for cooperative development because of **partner's change** of objectives & directions.
- Need to actively expand P-member NBs in **South America & Africa.**

Cooperation & Competition:

Co-operative Works with other JTC 1 SCs, ISO TCs & Industry Consortia sharing common objectives within scope of SC 24 work area:

Actively with ISO TC 211, TC 11, SC 37, NATO JISRCG, Web3D Consortium, W3C, Open CGM, SEDRIS Organization, SISO, IHO, DGIWG, WMO, etc. **JTF team** established by SC 24/WG 8 & ISO TC 211 on SEDRISs.

Collaboration (1/2): SC24 membership to ISO SCIT:

- Imagery Metadata Standards Matrix :
Common discussion of
 - Intelligent Documents,
 - Imagery Quality initiatives,
 - Embedded Metadata,
 - Content-based Data/Metadata Extraction,
automating imagery exploitation

Collaboration (2/2): JTC 1 SC29 Interchange:

- **JTC1 SC24, SC29, and ISO TC 211:**
 - JPEG2000 implementations in ISO/IEC 12087-5(BIIF)
 - Expect wide commercial utility
 - Later parts of ISO/IEC 15444 JPEG2000 multi-part standard to handle file size and metadata extension requirements
 - Implementation Profile of JPEG2000 use in BIIF to be registered June 2004 (coordination with NATO, other user communities, test and certification facility)
 - ISO TC211 also recognizing JPEG2000 significance

New Directions:

- Development of ISs describing data from spectral, optical, radar, laser, polar-metric & advanced remote sensors
- Application of standardization metadata in support of data archival, discovery & retrieval
- Exploitation capabilities to apply to imagery & remotely sensed data
- Revisions to X3D standards, ISO/IEC 19775 & 19776
- Speedy implementation of enhancements & defect correction to SRM, ISO/IEC 18026
- **Development of standards on ARC interchange and reference model**

Future Meetings:

- **Plenary Meetings:**

 - 2013 August 26-30: Sydney, Australia

 - 2014: Eastern City, USA

 - 2015: Europe

 - 2016: Asia

- **Teleconference Meetings with Web3D**

 - 4 times every month on H-Anim, CAD, KC and ARC

- **Editing Meetings on ARC: TBD**

Thank you for your attention!