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# Presentation of JTC1 SC24 :
# "Computer graphics, image processing and environmental data representation"
# for JTC 1 Plenary Meeting '08, 10-15 Nov., Nara, Japan

Presenter :  Professor Ha-Jine Kimn
SC24 Chairman

# SC 24 searching on Imagery Technology Standardizations :

- 2D/3D multi & hyper-spectral image collections

- Using data fusion and defining elements for virtual environments

- Large image files with metadata attached

- Collection platform metadata

- Archival and dissemination of imagery and digital documents

- Intelligent documents and analysis

- Web3D, W3C & Khoronos Applications,  etc.

# Outlines :

- About JTC 1/SC 24

- What SC24 is doing, what it has to offer

- Marketing Strategies & Risks

- Importance of Collaborative Works

# SC24 Status :

Chairman : **Ha-Jine Kimn**,  Secretariat : **David Hyde**

Three working groups :

WG6 : **Multimedia Presentation and Interchange**

WG7 : **Image Processing and Interchange**

WG8 : **Environmental Representation**

6 ISO/IEC standards documents published since July 07

Membership : **33** Nations

– 6 National Bodies actively participating
  - **Australia, Germany, Japan, Korea, UK, US**
– **21** Observing Nations + 12 Participating Nations

# Liaisons :

**Internal to ISO :**

ISO TC211, Joint Steering Group on Spatial Standards and Interoperability, JTC 1/SC29, ISO TC130, IEC TC100, ISO TC215 Health Informatics.

**External :**

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

W3C, Web3D, Khoronos Group, SISO, SEDRIS Organization, MEDSEC, Open GIS Consortium, Digital Geographic Information Working Group (DGIWG), NATO Air Group IV and Modeling and Simulation Co-ordination Office, IHO, WMO etc.

# SC24 Area of Work :

- Area of Work (JTC 1 N7752) - Standardization of interfaces for  information technology based applications relating to :

    - **computer graphics,**

    - **image processing,**

    - **virtual reality,**

    - **Environmental data representation and**

    - **interaction with, and visualization presentation of information**.

# Inclusions :

**Included are the following related areas :**

Modeling and simulation related reference models;  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 and hypermedia 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;  Software environments as described by ISO/IEC JTC 1 SC22.

# What SC24 is doing :

- A mapping method to simplify the use of SEDRIS.

  - **Templates for SEDRIS DRM (ISO/IEC TR 24788)**

- Amendments of SRM**(ISO/IEC 18026, 18042-4:2006/Am.)**, SEDRIS.

- Standards projects emanating from the Web3D Consortium.

- Standards projects emanating from the World Wide Web Consortium.

- Standardization of APIs to enable authoring and playback of dynamic media emanating from the Khronos Group.

# 5 Published Standards since July 07 :

- **ISO/IEC 19775-1:2004/Am1 : X3D architecture and base components**

  **Amendment 1**

- **ISO/IEC 19776-2:2005/Am1 : X3D encodings Classical VRML**

- **Amendment 1**

- **ISO/IEC 19776-3 : X3D encodings Compressed binary**

- **ISO/IEC 18041-4 : EDCS Language Binding, Part 4: C**

- **ISO/IEC 18026/Cord1:2007 : SRM Technical Corrigendum 1**

# 1 Document approved for publication since July 07 :

**ISO/IEC 19776-2.2 : X3D encodings classical VRML**

# 6 Progressed documents since July 07 :

**Standards Progressed to FDIS :**

ISO/IEC 19776-1.2 : X3D encodings - XML

ISO/IEC 19776-3.2 : X3D encodings - Compressed binary

**Standards Progressed to FDAM :**

ISO/IEC 18026:2006/Am1 : SRM Amendment 1

**Standards Progressed to FCD :**

ISO/IEC 1975-2.2 : X3D – Scene access interface (SAI)

ISO/IEC 18042-4 Amd 1 : SRM Language Binding C, Amendment 1

**Standards progressed to PDTR :**

ISO/IEC TR 24788 : Template for SEDRIS DRM

# Focus for Next Work Period :

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

- X3D standards and amendments (WG 6)

- Development of TR "Templates for SEDRIS DRM" (WG 8)

- Amendment 1 to ISO/IEC 18026 SRM and subsequent revision of 18026 to edition 2 (WG 8)

- Amendment to 18042-4 SRM language binding (WG 8)

- Technical Corrigendum 2 for 18026 SRM (WG  8)

# 10 Deliverables predicted for period July 08 to July 09 :

| Deliverable | Standard | Appr.Pub. Date |
|---|---|---|
| FCD | 19775-2.2 X3D scene access interface | Jul. 08 |
| FDIS | 19775-2.2 X3D scene access interface | Jan. 09 |
| | 19776-1.2 X3D encoding XML | Aug. 08 |
| IS Ed 2 | 19776-2.2 X3D encoding Classic VRML | Nov. 08 |
| FDIS | 19776-3.2 X3D encoding compressed binary | Aug. 08 |
| FDAM | 18026  Amd 1 SRM | Jul. 08 |
| IS Ed 2 | 18026 SRM | Dec. 08 |
| FPDAM | 18042-4 SRM Language Binding, Part4:C | Aug. 08 |
| FDAM | 18042-4 SRM Language Binding, Part4:C | Jan. 09 |
| PDTR | 24788 Templates for the SEDRIS DRM | Mar. 09 |

# Market Requirements :

**In ICT fields, standards developed in SC 24 :**

• exchange of mediation of environmental data

• utilization of intelligence systems in M&S

• geospatial applications with metadata & data

• web graphics technology utilizing 2D/3D imagery

• virtual or 3D environments incorporating imagery,

   content concepts & interaction

# Market Opportunities (1/2) :

**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

# Market Opportunities (2/2) :

- Increased use of satellite and remote imagery improvements for environment managements in resource development

- Standardization of imagery exploitation ⇒ ability to process terabytes of collected imagery & remotely sensed data

- Standardization of internet protocols & interfaces ⇒ 2D/3D graphical interaction ⇒ comm. adoption of VRML & H-Anim

- Supporting partnership with Web3D Consortium ⇒ web-based 3D techniques

- Co-operation with SEDRIS Organization ⇒ specialized technologies for military & government application

# Strategies (1/2) :

**Strategies to achieve our missions :**

• Facilitating use & implementation of existing SC 24 standards

• Seeking out consortia & organizations following open processes as partners

• Managing our work 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

# Strategies (2/2) :

**Strategies being in keeping with JTC 1 Business Plan :**

- No issues regarding stability & ongoing maintenance

- Great importance given to stability and maintenance of standards to achieve interoperability & to secure investment into individual products

# Risks :

## 4 risks on SC 24 :

- US NGA, as RA (Registration Authority) to SC 24 Registry of Items has notified intention to not extend tenure as RA from April 08.  SC 24 secretary has investigated the possibility of posting the Registry content on the SC 24 *Livelink*  Site and determined this approach is suitable for the next term to provide RA  services.

- Increasing P members without commitment to participate actively ⇒ potential risks for balloting NPs or approving resolutions at meetings

- Lack of  sufficient number of experts & national bodies to continue willingly standardization in rapid life cycle on technology

- Lack of support for cooperative development because of partner's change of objectives & directions.

# Co-operation & Competition :

**Co-operative Work 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 SEDRIS (2005).

# Metadata Capture : 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

# Collaborative Work :
## JSG on Spatial Standards and Interoperability :

- **JSG Meeting (may 2003) on potential harmonization topic** ⇒ Several standards development organizations, most of them in ISO, worked on projects related to **imagery encoding.**
ISO established **Steering Committee on Image Technology** (SCIT) : the most appropriate forum to resolve harmonization issues in this topic area.                                    ⇒
ISO TC211 now SCIT member.

# Work Programme Priorities :

- Development of standards processing & 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

- Implementation of enhancements SRM, associated language binding, and TR for templates to facilitate use of SEDRIS

# Thank you :

- Using **ISO** *Livelink* (especially, **JTC1 N8804**, **SC24 N3070**, and **SC24 N3074**/**JTC1 N9338**)

- **Future Plenary Meetings** of SC 24:

  2009. 06.29 - 07.03 : UK(BSI)

  2010 : Asia/Oceania

  2011 : North America

  2012 : Europe

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11.11.2008

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