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Information Technology

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ISO/IEC JTC 1 SC 29

Kohtaro Asai, SC 29 Chair
Yukiko Ogura, SC 29 Secretariat

2009 JTC 1 Plenary
Revised presentation

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scope of SC 29 (unchanged)

- Coding of Audio, Picture, Multimedia and Hypermedia information
- Standardization of coded representation of audio, picture, multimedia and hypermedia information - and sets of compression and control functions for use with such information such as
  - Audio information
  - Bi-level and Limited Bits-per-pixel Still Pictures
  - Digital Continuous-tone Still Pictures
  - Computer Graphic Images
  - Moving Pictures and Associated Audio
  - Multimedia and Hypermedia Information for Real-time Final Form Interchange
  - Audio Visual Interactive Script ware
  - Excluded: Character Coding

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what is new – work items (1)

- SC 29: Coding of Audio, Picture, Multimedia and Hypermedia Information
  - WG 1: Coding of Still Pictures
  - WG 11: Coding of Moving Pictures and Audio

- unchanged but more focus on:
  - High quality image and video coding
  - 3D and free view-point video coding
  - Unified speech and audio coding

what is new – work items (2)

- 111 ballots
  - 2 for NP, 37 for CD, 35 for FCD, 1 for PDTR, 34 for FDIS and 2 for DTR
  - with sufficient number of participation
- 58 Standards published
  - 1 for TR and 57 for IS/AMD/COR
- Two NP's
  - AIC (Advanced Image Coding and evaluation methodologies)
  - MPEG-U (Rich media user interface)

what is new – participants and liaisons

- participants
  - 24 P-members (-3)
  - 16 O-members (0)
  - http://www.itscj.ipsj.or.jp/sc29/29w2po.htm
- Liaisons
  - Liaisons in JTC 1: 4 (-1)
  - Liaisons within ISO/TC and IEC/TCs: 8 (0)
  - Category A Liaisons: 16 (-1)
  - Category B Liaisons: 3 (0)
  - Category C Liaisons: 35 (+1)
  - http://www.itscj.ipsj.or.jp/sc29/29w2l.htm

user engagement

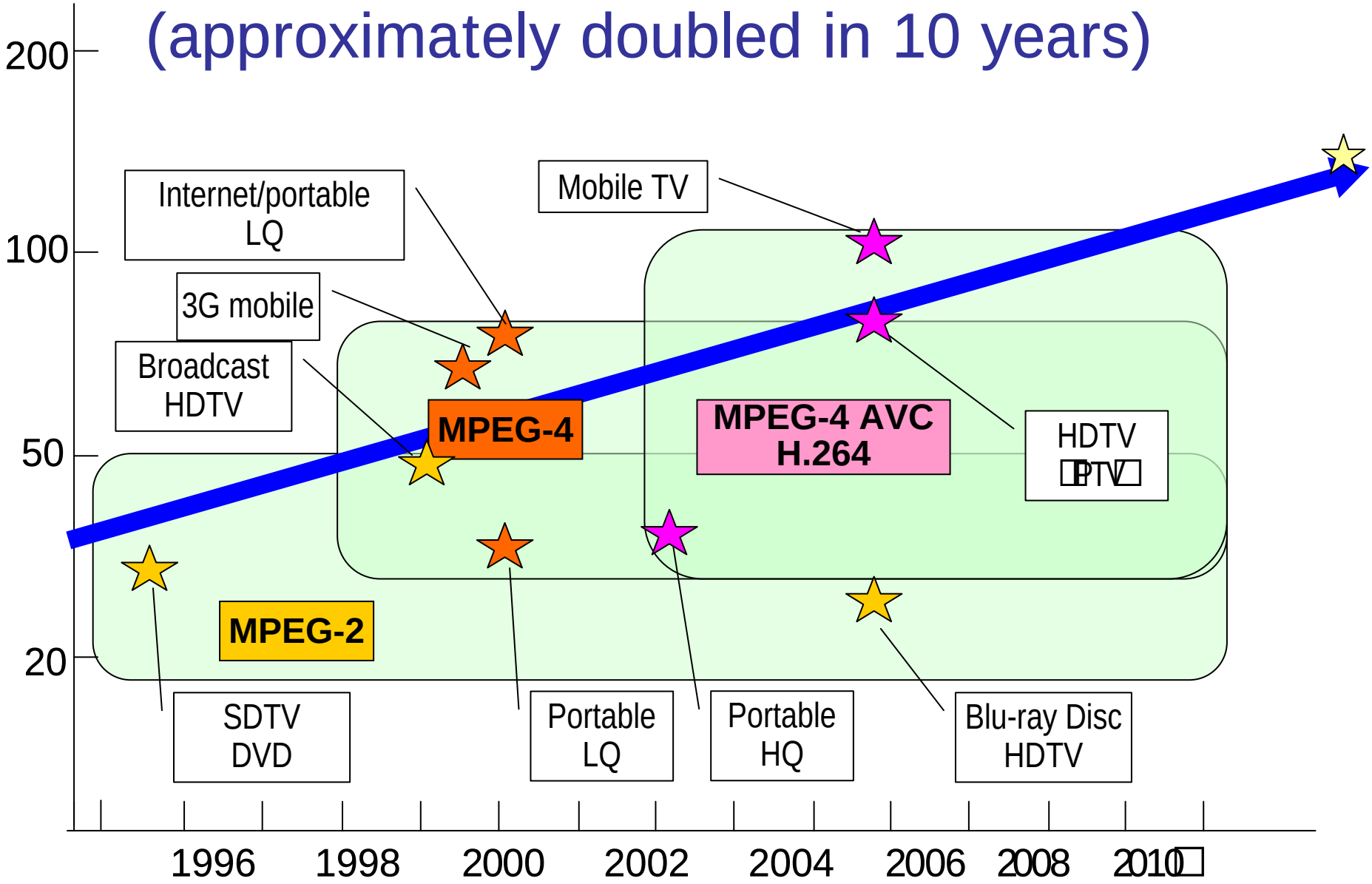
- participation in meetings
  - WG 1: 46th meeting (42), 47th meeting (43), 48th meeting (40) and 49th meeting (35)
  - WG 11: 86th meeting (353), 87th meeting (221), 88th meeting (245) and 89th meeting (296)
- working groups currently have sufficient participation from relevant industry fields such as CE and professional equipment manufacturers, carriers, broadcasters and service providers

user engagement - challenges

- to enhance coding efficiency in High-performance Video Coding compared to the current services:
  - 50:1 compression for DVD
  - 70:1 compression for HDTV broadcasting
  - 100:1 compression for IPTV delivery
- target is 2x efficiency (200:1!)
  - beyond HDTV
  - HDTV for mobile
- We need further technologies

Coding efficiency enhancement

(approximately doubled in 10 years)



known implementations

- WG 1 (Coding of Still Pictures) JPEG, JBIG
  - Digital Still Camera, photo viewers and editing software
  - Digital Cinema, digital images on the web,...
- WG 11 (Coding of Moving Pictures and Audio) MPEG
  - Digital broadcasting & video delivery system (terrestrial, satellite, cable and IPTV)
  - Digital music player (MP3, AAC,...)
  - Mobile videophone, portable video player
  - DVD and Blu-ray player, recorder, camcorder
  - Broadcasting programs, Internet streaming, home video,...
- Market scale of MPEG-2 in 2008: $445 billion

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outreach – press releases

- SC 29 (http://www.itscj.ipsj.or.jp/sc29/)
- WG 1 (http://www.jpeg.org/news.html)
  - Press Release – 49th JPEG Meeting, July 2009
  - Press Release – 48th JPEG Meeting, April 2009
  - Press Release – 47th JPEG Meeting, January 2009
- WG 11 (http://www.chiariglione.org/mpeg/for_the_media.htm)
  - Press Release – 89th MPEG Meeting, July 2009
  - Press Release – 88th MPEG Meeting, April 2009
  - Press Release – 87th MPEG Meeting, February 2009

outreach – articles et al.

- ISO Focus
  - April 2009
  - ISO and the Media
- Special issue of academic magazines
- Workshops

The Co-Chairs and members of MPEG's video subgroup and the JVT at the NATAS Emmy award ceremony in January 2009, with the paired awards presented to ISO/IEC MPEG and ITU-T VCEG: (from left) Jens-Rainer Ohm, Gary J. Sullivan, Thomas Wiegand and Ajay Luthra.

Photo credit: Marc Bryan-Brown Photography.

ISO and the Media

And the Emmy goes to ... The MPEG story

by Jens-Rainer Ohm and Gary J. Sullivan, Co-Chairs of the Video sub-group of ISO/IEC JTC 1/SC 29/WG 11, Coding of moving pictures and audio

The ISO/IEC Moving Picture Experts Group, or MPEG as it is most commonly known, recently celebrated its 20th anniversary. Part of joint technical committee ISO/IEC JTC 1, *Information technology*, subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*, it has, since the beginning, been at the leading edge of defining digital media standards for consumer and professional applications.

With filename extensions like .mp3, .mpg, and .mp4 in everyday use, and MPEG features advertised for equipment in every consumer electronics shop, it can be said that most people in the world know the acronym "MPEG" better than they know the meaning behind it.

Tremendous market adoption

The most recent MPEG video coding standard – MPEG-4 Advanced video coding (AVC) – has been the subject of especially newsworthy events. Embodied in the International Standard ISO/IEC 14496-10, and the International Telecommunication Union

ISO and the Media

JPEG – Still photography brought to life

by Daniel T. Lee, Convenor, ISO/IEC JTC 1/SC 29/WG 1, Coding of still pictures

Sharing photographs over the Internet has become one of the most interesting modes of social interaction since the advent of modern digital media.

Millions of images are shared every day among friends and family in e-mails, photo-hosting Web sites and the enormously popular social networking sites, like MySpace, Facebook and Flickr, where users can even instantly upload photos taken with their mobile phone cameras. Digital photos are also widely printed at home or through commercial printing services.

Digital photography has not replaced traditional chemical photography, but rather given photographers new creative tools and many new modes of printing. It has also contributed to the progress of e-commerce, where digital images of products and services offer new merchandising opportunities.

One enabler of this phenomenon is the availability of powerful and inexpensive digital cameras. Less visible to consumers, but nonetheless key, is the JPEG imaging standard – a joint project between ISO and the International Telecommunication Union's Telecommunication Standardization Sector (ITU-T). The JPEG standard, ISO/IEC 10918-1 or ITU-T recommendation T.81, giving requirements and guidelines for digital compression and coding of continuous-tone still images, was approved in 1992.

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issues or needs

- Lack of participants
  - Currently enough resources (WG 1: 50, WG 11: 300)
  - SC 29 constantly monitors attendance of WGs
- Management of documents
  - depend on good electronic document repositories and systems
  - operated and maintained by WG members and SC Secretariat
- Uncertain presence of applicable patents
  - possible patents owned by parties that have not participated in the development process are not available on RAND terms
  - we encourage our members to submit patent statements expecting that it helps to clarify the potential licensors of applicable patents and to increase the opportunities of licensing under reasonable conditions

2010 - focus

- WG 1
  - JPEG XR
    - Higher compression, high-quality and high dynamic range in digital photography
  - JPSearch
    - work on Social tagging as JPSearch metadata support
  - AIC
    - Subjective tests for JPEG XR and objective metrics for testing of compression algorithms

2010 - focus

- WG 11
  - HVC (High-performance Video Coding)
    - Higher compression with reasonable complexity
    - High resolution support for beyond HDTV (4K/8K) or HDTV-class video for mobile applications
    - Collaboration with ITU-T/SG16 being discussed
  - USAC (Unified Speech and Audio Coding)
    - Supports both speech and audio efficiently
  - Many more projects
    - FTV/3DV (Free viewpoint Video), AIT (Advanced IPTV Terminal) with ITU-T/SG16, Application formats, ...

2010 to 2012 – Beyond HDTV

Ultra High-Definition sheet television

Example:
- 100 inch TV on the wall
- >100 degree view angle
- up to 7680 x 4320 (8K)
- low power consumption employing OLED

Flexible television

Example:
- 25cm viewing distance
- 25 inch flexible display
- up to 7680 x 4320 resolution for twenty-twenty vision

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2009/2010 - meetings

- date/location of co-located WGs meetings
  - WG 1 and WG 11
  - 2009-10-26/30
  - Xian, China
- date/location of next SC plenary
  - 2010-04 or 07 in Germany