SG1 - 3DTV

Standardization Opportunities in 3DTV

Jon Fairhurst

IEC TC 100 TA 12 Technical Area Secretary

Manager, Energy, Ecology & Television Standards
Sharp Laboratories of America, Camas, WA, USA

3DTV Standards Ecosystem

Production
3D Home Master
SMPTE

Compression
Multiview Video Coding
MPEG

Transmission
B'cast, Cable, Sat., HH
atsc
DVB
ARIB

Media
Optical Disc
Blu-ray Disc

Home Connectivity
HDMI

Display Technology
Proprietary
IEC TC 110?

Eyewear
CEA

Closed Captions
CEA
Proprietary

Most 3D standardization opportunities have already been claimed.

October 2011 | IEC TC 100 AGS – 3DTV Report | 2

ATSC 3DTV Report

atsc
Advanced Television Systems Committee

- ATSC 3DTV Report
  - Final version completed – 31-Aug-2011
  - *http://www.atsc.org/cms/pdf/PT1-049r1-Final-Report.pdf*

- 3 Sections
  - **Visual Sciences** ⟵ **Standardization Opportunity**
  - 3D Broadcast
  - 3D Production Techniques

October 2011 | IEC TC 100 AGS – 3DTV Report | 3

IEC TC 100 Opportunities

IEC TC 100 can take an overarching view.

Terms & Definitions

Quality Measurement

Production

Compression

Broadcast Delivery

Packaged Media

Home Connectivity

Display Technology

Eyewear

Closed Captions

October 2011 | IEC TC 100 AGS – 3DTV Report | 4

Terms and Definitions

- IEC TC 100 can unite various standards
  - SMPTE is working on definitions
    - From a media generation viewpoint
  - 3D@Home has published a glossary
    - http://www.3dathome.org/resources-glossary.aspx
  - All domain-specific standards are likely to include definitions

IEC TC 100 is in a good position to unify terms and definitions

October 2011 | IEC TC 100 AGS – 3DTV Report | 5

3DTV Quality Measurement

- TC 100 already has TA 11
  - Quality for audio, video and multimedia systems

- Opportunities
  - Content
    - Maximum divergence guidelines (for HD 3D TV home viewing)
  - Display systems (display + eyewear)
    - Crosstalk, spatial resolution, temporal issues
  - Home theater recommendations
    - Screen size, seating distance, lighting, angle of view, etc

Quality standards could help reduce frivolous legal actions against 3DTV

October 2011 | IEC TC 100 AGS – 3DTV Report | 6

3D@Home

- 3D@Home has liaisons with many of our liaisons (CEA, ATSC, SMPTE, etc…)
- 3D@Home is studying human factors
- 3D@Home has an online 3D glossary
- Should we consider a liaison?

Other…

- TA 12 MT 62087 will consider TV power consumption in 3D mode
  - Half the light is presented to each eye; some TVs increase brightness in 3D mode
  - 3D might be included in 62087 Ed. 4.0 TV part, or broken out in a separate part, if it would delay publication of the update.

Thank you

Jon Fairhurst
jonf@sharplabs.com