



**EBU TECHNICAL**  
MEDIA TECHNOLOGY & INNOVATION

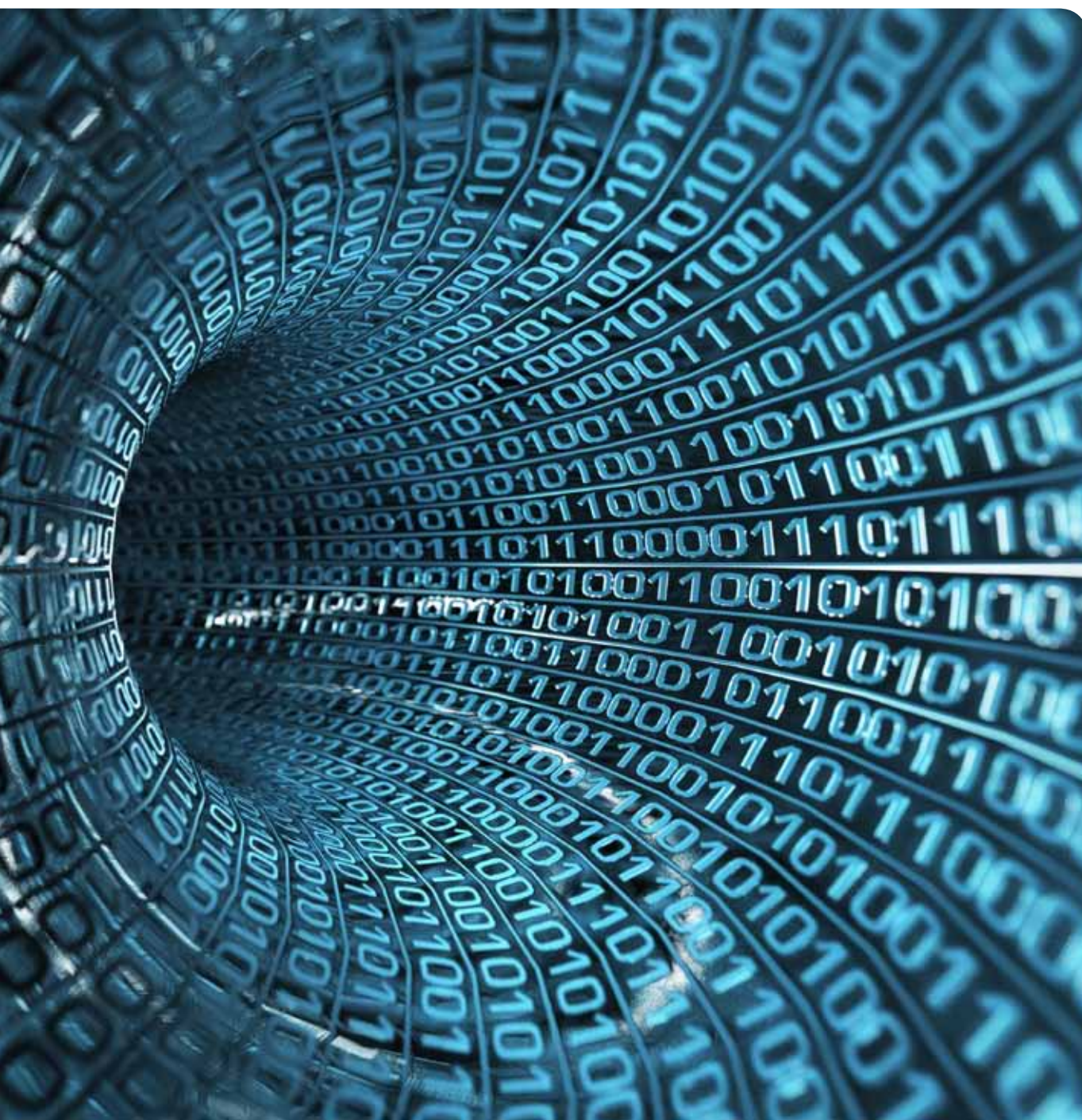
# Workshop on Three-Dimensional Television Broadcasting

Toward worldwide standards  
for first and second Generation 3D TV

ORGANIZED BY THE ITU, EBU AND SMPTE



EBU, GENEVA, 30 APRIL 2009



The ITU-R has begun a study programme on 3D TV. The objective is to agree worldwide Recommendations for standards drawing on, but not duplicating, the work done by other relevant bodies. The purpose of this Workshop is to understand the 'landscape' of 3D TV systems today and of the work being done. It is hoped to identify who is doing what, where, and when.

All bodies working in this field should benefit from this, and the steps that the ITU-R can usefully take to help the broadcasting community in '3D TV' will be clearer. This is the first in a series of workshops of the ITU-R, the SMPTE (Society of Motion Picture and Television Engineers) and the European Broadcasting Union.

ITU-R WP 6C classifies 3D TV systems into two groups. The 'first generation' systems are essentially those based on 'Plano-stereoscopic' display of single or multiple discrete lateral left and right eye pictures. Recommendations for such systems should be possible in the near future. The 'second generation' systems are those which are based on object-wave recording or approximations of object wave recording. Recommendations for such systems may be possible in the years ahead. The systems and the relationships between them need to be considered.

## 30 April 2009

08.30 – 09.20 **Registration completion for EBU and SMPTE delegates**  
**ITU-R delegates will have already registered as attendees for SG 6, and must have registered for the workshop, but are requested to bring their badges.**

### Session 1 What are the options for production and display?

*Chair: Christoph Dosch – Chair of ITU SG 6*

09.20 – 09.40 **Introductory remarks**  
*David Wood, Christoph Dosch and Mark Krivocheev*

09.40 – 10.00 **The 3D TV toolbox – the results of the 3D TV NoE**  
*Levent Onural – University of Bilkent, Turkey*

10.00 – 10.20 **Production aspects of Plano-stereoscopic 3D TV**  
*Colin Smith – ITV*

10.20 – 10.40 **3D TV situation for consumer electronics manufacturers**  
*Brian Markwalker – CEA*

10.40 – 11.00 **Human visual perception relevant to 3D TV**  
*Wa James Tam – CRC*

11.00 – 11.15 **Coffee break**

## Session 2 What is the role of the standards bodies?

*Chair: Paul Gardiner – WP 6C Rapporteur for 3D TV*

- 11.15 – 11.35 **3D activities in the ITU-T**  
*Arthur Webster – Chair ITU-T SG9*
- 11.35 – 11.55 **3D Activities in the DVB Project**  
*David Daniels – BSkyB*
- 11.55 – 12.15 **Report of the SMPTE Task Force on 3D to the Home**  
*Bill Zou – SMPTE*
- 12.15 – 12.35 **Report on the ITU-R activities in 3D TV**  
*Vittorio Baroncini – FUB*
- 12.35 – 12.50 **Summary of morning conclusions**  
*Hans Hoffmann – EBU*
- 12.50 – 14.15 **Light Lunch**

## Session 3 What tools are available for picture coding?

*Chair: Vittorio Baroncini – WP 6C Rapporteur for 3D TV*

- 14.15 – 14.35 **MPEG developments in Multi-view Video Coding and 3D Video**  
*Jens-Rainer Ohm – RWTH Aachen University*
- 14.35 – 14.55 **3D 4 U**  
*Ralf Tanger – Fraunhofer HHI*
- 14.55 – 15.15 **The Sensio system and its applicability for broadcasting**  
*Richard LaBerge – Sensio*
- 15.15 – 15.35 **Issues in broadcast delivery of 3D**  
*Walt Husak – Dolby*
- 15.35 – 15.50 **Coffee break**

## Session 4 What are the emerging future technologies?

*Chair: David Wood – Chair WP 6C*

- 15.50 – 16.10 **3D TV based on integral method**  
*Fumio Okano – NHK*
- 16.10 – 16.30 **3D TV based on Multi-view capturing**  
*Amar Aggoun – Brunel University, London*
- 16.30 – 16.50 **Summary of afternoon conclusions**  
*Hans Hoffmann – EBU*
- 16.50 – 17.30 **Interactive discussion – What needs to be done to agree worldwide standards for 3D TV?**  
Discussion leader: *David Wood – Chair WP 6C*
- 17.30 End of the workshop

### **Venue**

#### **European Broadcasting Union (EBU)**

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### **Internet**

[tech.ebu.ch/3dtv09](http://tech.ebu.ch/3dtv09)



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