

## ITU-R NEWSFLASH

### ITU JOURNEY TO WORLDWIDE '3D TELEVISION' SYSTEM BEGINS

Geneva, 3 June 2008 - In the past, the [ITU Radiocommunication Sector \(ITU-R\)](#) has approved many [ground-breaking Recommendations](#) for the broadcasting community - some examples are for 'standard definition' digital television ('[Rec. ITU-R BT.601](#)<sup>1</sup>' which is the basis for digital television throughout the world), formats for higher resolution television ([Rec. ITU-R BT.709](#)<sup>2</sup>, [Rec. ITU-R BT.1543](#)<sup>3</sup>), and methods for quality evaluation ([Rec. ITU-R BT.500](#)<sup>4</sup>). It is now turning to '3D Television'.

**3D Television** is a general name for systems that provide viewers with a sense of depth similar to that we see in real life, because we have two eyes spaced apart and a highly sophisticated brain. Each eye sees the world from slightly different angles, and the brain merges these two pictures to create a central single image that has 'depth'.

The reason for the sense of depth we see has been understood for over 100 years, and many techniques for recreating for the viewer have been developed. Fundamentally those developed so far have been relatively simple. Two pictures or scenes are shot, one for each eye, and each eye is presented with its proper picture or scene, in one way or another. This is called 'stereoscopy'. Hollywood has made movies like this, and indeed over the past 50 years there have been waves when this falls in and out of favour with filmmakers. At the moment (2008) we are in a wave of favour.

Though the concept of 3D is simple to understand, it is difficult to achieve a 3D system that does not cause 'eye fatigue' after a certain time. Most current higher resolution systems also need special eyeglasses which can be inconvenient. Digital alignment of the stereo pair, possible in our new digital world, can help to reduce eye fatigue, but is not the complete answer.

Apart from eye-fatigue, systems developed so far can also have limitations such as constrained viewing positions. Multiple viewpoint television systems are intended to alleviate this.

Stereoscopic systems also allow only limited 'production grammar' etc. We should not under-estimate the difficulty, or the imagination and creativity required, to create a near 'ideal' 3D Television system that the public could enjoy in a relaxed way, and for a long period of time.

Among the countries where 3D research has been made for many years are the United States, France, UK, Italy, Canada, Japan, Germany, and Russia, though this is far from a complete list. Russia (Prof Mark Krivocheev) made the proposal to the ITU-R that the time was ripe for worldwide agreements on 3D Television, and the ITU-R Study Group 6 has agreed on a 'new Study Question' on 3D Television, which will be submitted for approval by the ITU-R Membership.

The Question calls for contributions on systems that include, but also go beyond stereoscopy, and include technology that may record what physicists call the 'object wave'. Holograms record in a limited way the 'object wave'. Will there be a way of broadcasting to record an 'object wave'? This remains to be seen. No approaches are excluded at this stage.

The 'Question' is essentially a call for proposals for 3D Television. **Journals and individuals are asked to 'spread the word' about this, and to invite contributions if possible before October 13, 2008.** Such contributions are normally channelled via national administrations, or via the other Members of the ITU - the so-called Sector Members. A list of all ITU member countries is available at <http://www.itu.int/net/about/index.aspx> .

If you wish more information about making a submission, and/or to participate in the work, you are invited to contact ITU-R by email at [rsg6@itu.int](mailto:rsg6@itu.int).

---

<sup>1</sup> Studio encoding parameters of digital television for standard 4:3 and wide screen 16:9 aspect ratios

<sup>2</sup> Parameter values for the HDTV standards for production and international programme exchange

<sup>3</sup> 1 280 × 720, 16 × 9 progressively-captured image format for production and international programme exchange in the 60 Hz environment

<sup>4</sup> Methodology for the subjective assessment of the quality of television pictures

This Question is being studied in ITU-R Study Group 6 (Chaired by Christoph Dosch, Germany), Working Party 6C (Chaired by David Wood, EBU).

A group within WP 6C (termed a Rapporteur Group) has been established, led by Vittorio Baroncini (Italy), to take up this matter between now and the next meeting of SG 6 WP 6C.

This is the dawning of the technology of 3D Television, and if we pool our ideas at this early stage, we stand the best chance of developing a single worldwide standard.

Which proposals will be made, and which may be the subject of agreement, remains to be seen, but the ITU-R has launched an exciting new issue, which may have a profound impact on television in the years ahead.

---

The [ITU Radiocommunication Sector \(ITU-R\)](#) plays a vital role in the management of the radio-frequency spectrum and satellite orbits, finite natural resources which are increasingly in demand from a large number of services such as fixed, mobile, broadcasting, amateur, space research, meteorology, global positioning systems, environmental monitoring and, last but not least, those communication services that ensure safety of life on land, at sea and in the skies.

ITU is the leading [United Nations](#) agency for information and communication technologies. As the global focal point for governments and the private sector, ITU's role in helping the world communicate spans 3 core sectors: [radiocommunication](#), [standardization](#) and [development](#). ITU also organizes [TELECOM](#) events and was the lead organizing agency of the [World Summit on the Information Society](#).

ITU is based in Geneva, Switzerland, and its membership includes 191 [Member States](#) and more than 700 [Sector Members](#) and [Associates](#).

**Committed to Connecting the World**



Copyright © ITU 2008  
All Rights Reserved