



OPERATING EUROVISION AND EURORADIO

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# **EBU POLICY STATEMENT ON ULTRA HIGH DEFINITION TELEVISION**

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## EBU POLICY STATEMENT ON UHDTV

<i>EBU Committee</i>	<i>First Issued</i>	<i>Revised</i>	<i>Re-issued</i>
TC <sup>1</sup>	July 2014		

**Keywords:** Ultra High Definition Television, 4k, HFR, HDR, WCG.

### Introduction

The EBU notes the growing interest throughout the world in Ultra High Definition Television (UHDTV). The technical parameter values of such systems may include higher image resolution, higher image frame rate (HFR), higher image dynamic range (HDR), wider colour gamut (WCG) and advanced sound system technologies. Together these enhancements will give a more “immersive” and better experience for viewers.

This document is intended to guide strategic decisions in regard to UHDTV and future TV services. It is addressed at Senior Management of EBU Members and other broadcasters and at anyone who is a stakeholder in the audiovisual content industries.

### The issues

At the time of publication (July 2014) the issues confronting broadcasters are:

- Televisions advertised as “4K Ultra-HD” entered the market in 2013. These displays provide four times (3840 x 2160 pixels) the resolution of HDTV. It is predicted<sup>2</sup> that in excess of 12% of worldwide television sales will be ‘4K Ultra-HD’ TVs in 2015.
- The *UHDTV standard*, however, provides several other additional enhancements over HDTV parameters. These are higher frame rates, more contrast in images (dynamic range), better colours and immersive audio. The intent of a suitable combination of all these enhanced parameters is to provide an “immersive” and better experience for the viewer (“better pixels”).
- The EBU Technical Committee believes that the current focus of the CE industry to provide *only* an increased resolution (“4k”) and ignoring other enhancements is not a sufficiently large step for the introduction of successful new broadcasting services.
- New broadband services, such as YouTube, Netflix and Amazon’s, and disruptive technologies, such as Dolby Vision, are capable of delivering these extended options as Over-The-Top or enhanced services.
- In Japan, the Administration, together with NHK, has a roadmap to deliver a UHDTV service called “Super Hi-Vision” (“8k”) in time for the 2020 Olympics<sup>3</sup>. The impact of this on the rest of

<sup>1</sup> TC; The EBU Technical Committee, comprised of 13 members, coordinates and manages the EBU's technical work.

<sup>2</sup> Display Search presentation at EBU Production Technology Seminar in Jan. 2014.

<sup>3</sup> By May 2014 first 4k broadcasts are planned in Japan and first 8k test transmissions by 2016

the world is unclear at present.

### **UHDTV in production:**

In the short term, some broadcasters and producers of high value programmes are already taking advantage of the latest “4k” equipment in the market<sup>1</sup> to provide greater production headroom and to future-proof their content for the archive.

In the same way that HD production technologies have improved the image quality of SD services over the last decade, improved cameras and production equipment will enhance the technical quality of current HD services. “4k” capture technologies will also enable innovative creative possibilities to create HD programmes (e.g. extracting HD frames from a “4k” image). The ITU-R has already recommended “the use of UHDTV image systems for capturing, editing, finishing and archiving high-quality HDTV programmes”. It should be noted, however, that mainstream production infrastructures for “4k” and UHDTV are still in development.

### **UHDTV in distribution:**

The DVB Project has specified that a Phase 1 UHDTV broadcast format shall only include the higher resolution and does not take into account other enhanced parameters for “better pixels”. The parameters (or a combination of them) that provide a more immersive viewing experience, such as frame rate, dynamic range, colour gamut and enhanced audio are to be considered for a DVB Phase 2 UHDTV broadcast format.

An enhanced, 1080p-based, HD service that includes a certain combination of UHDTV parameters except for the resolution increase (e.g. higher frame rate, higher dynamic range, wider colorimetry and advanced sound system audio) is not yet standardized. Such a 1080p-based HD format could be an appealing option for some broadcasters and should be taken into account in the standardization and investigation process. The EBU proposes that an enhanced 1080p format be developed for broadcasting.

### **Conclusions:**

The TC believes that the current ‘4K Ultra-HD’ approach of the consumer electronics industry is unsatisfactory and will be of limited success in broadcasting.

- It will lead to significant public confusion by associating the term UHDTV only with an increase of resolution (“4k”).
- Many different combinations of parameters are currently under discussion and key interoperability standards are still missing.
- A UHDTV roadmap for Europe is still not defined.

The TC has therefore asked its technical groups to investigate and interpret the available data, to work on ‘future-proof’ standards and the collection and creation of objective information, so that Members can make well informed strategic decisions.

EBU Members will continue to lobby for a satisfactory (i.e. a “DVB Phase 2”) service.

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<sup>1</sup> Only some equipment allows the production of images that go beyond current HD standards