



UHD Spain Current Status

UltraHD Forum Italia

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UltraHD Forum Italia

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1. Introduction

UHD Spain

Presentation

UHD SPAIN is a non-profit Association that gather all companies from the 4K HDR audiovisual industry to work together in the advancement and implementation of Ultra High Definition in Spain.

This Association was constituted **on January 26, 2021** with 30 founding partners in Spain.

Our international approach:

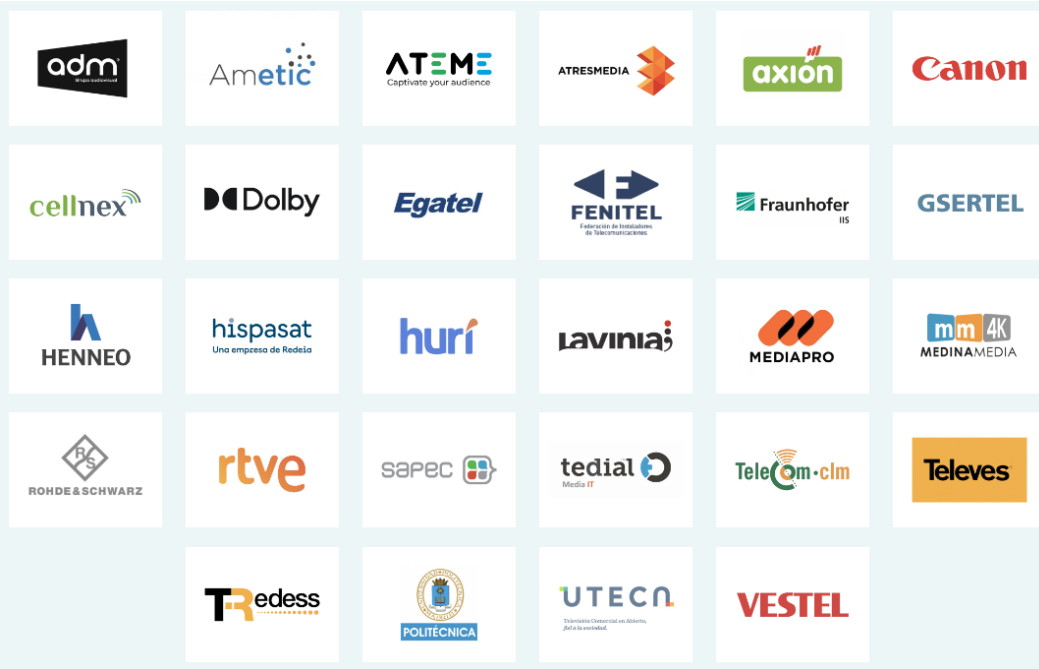
- Collaborate with organizations, alliances, forums, worldwide, international and national from other countries that also promote UHD.
- Creation of a platform for the dissemination of all the news about UHD, both in Spain and worldwide.



UHD Spain

Organization

Founding partners



New members



Collaborating companies



UHD Spain

Working Groups

Today, **UHD Spain** is composed by 6 working groups:

Working Group	Activity	Description
Production	Signal acquisition and production.	Impact of the new UHD specifications in every aspect in the production and acquisition, both image and sound, of all kind of productions, live contents, series, movies and news.
Postproduction	Postproduction graphics and archive	The purpose of the UHD Spain postproduction group is to address those issues related to the workflow of this technology. It analyzes all the implications of UHD, such as the increase of spatial resolution, HDR, WCG, HFR and NGA.
Coding	Coding, transport and headends	This group analyzes the aspects related to the audio and video signal compression as well as the processing performed for optimizing the bit rate used to stream/store such information, during the different stages of the value chain.
Transmission	DTT, Satellite, HbbTV. IP broadcasting: live streaming, VOD.	The broadcast group deals with those actions associated with the primary transport and distribution of UHD content and its corresponding monitoring signals: including satellite, terrestrial, cable, IPTV and streaming, to be carried out in the forum.
Receivers	Receivers and home apps including connected devices: Chromecast, Amazon Fire, etc.	The Receivers Working Group covers activities related to the shared telecommunications infrastructure in buildings and residences for signal reception and distribution, decoding of the UHD content on a receiver level and the display of that audio and video content via the user devices.
Audio	It is a transversal group, present in all parts of the chain.	Experience and knowledge of Audio contributing to all the groups of the Association.



2. Main Activities

UHD Spain Activity Report

White Book

The objective/purpose of this book is to have a document which aims to explain in detail the UHD and its practical implementation.

It consists of the following chapters:

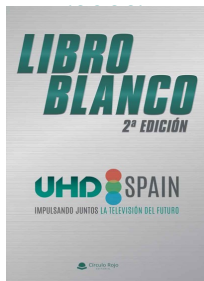
1. Previous experience of UHD signal deployment in Spain
2. UHD video capture
3. Video signal encoding
4. High Dynamic Range - HDR
5. UHD signal reception tests

This book is a participatory document, with contributions from UHD partners and the association's working groups.

First edition (2021)



Second edition



- Released in November, 2022
- Expanded content
- New content about NGA and UHD signal broadcast, archiving and media sharing has been included
- New Aspects of the video encoding tests that were started in the first edition
- Interesting prologue by two professionals of recognized prestige in the sector

UHD Spain Activity Report

Training course

UHD Spain and Universidad Politécnica de Madrid (UPM) carried out a training course.

- Certificate by UPM targeting the professional sector
- Covers aspects of capturing, post-production, encoding, broadcast, archive and exchange
- Addresses aspects of both signal NGA video and audio
- Includes theoretical and practical aspects
- Number of places: 25

A new edition of this course will take place between November, 2023 and May 2024.



**Curso
producción y emisión
de señal UHD**
Sector profesional



UNIVERSIDAD
POLITÉCNICA
DE MADRID

**Curso
sobre
señal UHD**

- Certificado de formación específica de la UPM, orientado al sector profesional
- Cubre aspectos de captación, posproducción, codificación, emisión, archivo e intercambio
- Aborda aspectos tanto de señal de vídeo como de audio NGA
- Impartido en remoto
- Incluye aspectos teóricos y prácticos
- Fecha de comienzo:
Curso 2022-23 (Octubre 2022)
- Número mínimo de alumnos: 20



UHD Spain Activity Report

Webinars

UHD is holding different Webinars to show the key elements and insights about UHD for example:

- 5G & UHD
- DVB-I: Introduction, Opportunities and Latest developments
- DOLBY ATMOS Content distribution over E-AC-3 and AC-4 (next generation audio)
- Broadcasting experience with MPEG-H audio
- The state of the art in the world of live streaming
- V-Nova on LCVEC Technology – Low complexity enhancement video coding



UHD Spain Activity Report

Marketing activities and International relationships

UHD Spain is carrying out different marketing activities. The association is also expanding its international relationships.

- International Events:



- Press Releases, Articles - <https://www.uhdspain.com>

- Social media



@uhd_spain



UHD Spain



Instagram

@spainuhd

- International relationships



UHD Spain Activity Report

Tests

Several tests have been carried out to further improve the UHD knowledge and performances:

- Audio
- Audio coding
- Production and camera
- camera lenses
-

End-to-end test pilots have been performed using in different distribution media:

- DTT
- Satellite
- Streaming
- OTT
- 5G

All results have been reflected in the White Book.



UHD Spain Activity Report

5G-UHD Tests

UHD Spain has performed a pioneering proof-of-concept with UHD-HDR and 5G in Europe.

Key information

- The association carried out a test transmission of an end-to-end UHD concert with 5G technology, from image capture to broadcasting.
- The objective of the test consisted of setting up a UHD workflow with HDR-HLG from the camera to the user's device, using 5G communications, edge and cloud processing, and all available broadcast media.
- The content (flamenco concert) was held at the Royal Observatory of Madrid on October 19th 2023, live produced within an UHD cloud-based workflow, and transmitted via different broadcasting technologies (DTT, satellite, 5G Broadcast, etc)
- This proof of concept is completely innovative and has been a major technological challenge, combining the latest technologies in communication, processing and broadcasting.



UHD Spain Activity Report

Other Activities

UHD Spain have been a relevant actor for the broadcast of World Cup in UHD in Spain and in the decision-making by RTVE to start broadcasting in UHD in a regular basis (From Feb 2024)

- Spain was the only country in the world broadcasting/streaming the World Cup using all available technologies (DTT, Satellite, OTT, CableTV) in UHD-HDR
- UHD took the opportunity to conduct a specific event in a Cinema in Madrid where a match of the Spanish team was displayed in UHD HDR using both DTT signals of TVE UHD and the OTT pay-per-view platform.

1 UHD





3. Possible lines of collaboration with UHD Italy

Possible lines of collaboration

International relationships between Spain and Italy

○ UHD knowledge sharing

- Co-Publishing relevant information
- Share documents
- Training courses



○ Marketing, communication and dissemination of UHD

- White papers
- Technical Articles
- Joint events, such as webinars

○ Tests and pilots

- Work together in tests for common requirements/need.
- Perform common end-to-end trials
- Obtain common conclusions, recommendations and communicate them.





Thank you!

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