

Immersive experience at the Champions League Final with Dolby Vision and Dolby Atmos

In an industry first, Canal+ broadcasted the Champions League Final in Dolby Vision and Dolby Atmos for their subscribers. AMPVISUALTV produced the signal in UHD HDR HLG and immersive sound, which was then encoded in low latency by Ateme in HEVC Dolby Vision and Dolby Atmos, giving viewers an unprecedented audiovisual experience that put them right in the middle of the action.





The project

"When the 2022 Champions League Final was moved from St. Petersburg to Paris, UEFA chose Canal+ as the new broadcaster," explains Matthieu Montigaud, Product Manager at Canal+. UEFA required all broadcasters to produce all matches from the knockout stage in Dolby Atmos. "We would produce a signal without using it ourselves," says Christophe Schatz, Head of Sports TV Production at Canal+. "But we wanted to offer it as a real bonus to our subscribers." It was an exciting opportunity, as broadcasting in Dolby Vision and Dolby Atmos simultaneously had never been done before.

Setting the scope

"We wanted to minimise the potential impact on our normal processes," explained Vincent Wel, Headend Manager at Canal+. "That's where the idea of a dedicated OTT channel came from. We were able to provide the experience without disrupting standard Canal+ broadcasts."

They also needed to decide on which endpoints to broadcast in Dolby Vision and Dolby Atmos. "We chose Apple, Apple TV, Android, and Android TV," explained Montigaud. "It worked very well on Apple. All iPhones, from the iPhone 8 onwards, could support the stream in Atmos and Vision with no errors."

“With Dolby’s help, we were able to create a unique immersive experience.” David Paillet, AMPVISUALTV

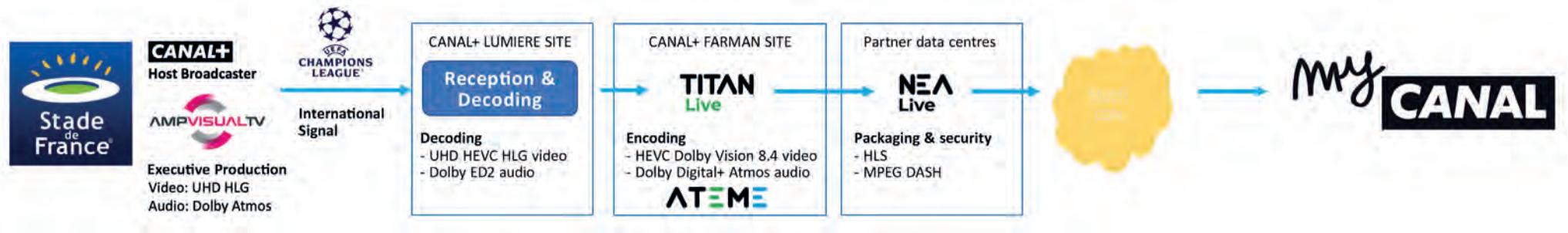
Because of the wide range of Android phones and TVs, some tradeoffs were made to ensure compatibility with a majority of devices. “Most users were able to watch the game to the quality they expected,” says Montigaud.

Producing sound and picture

AMPVISUALTV worked in UHD HLG for the video and developed a unique mix that was used by all broadcasters. The signal is available in all formats (SDR/HDR, HD/UHD, interlaced/progressive, stereo/5.1/Atmos). For the audio, the Dolby Atmos workflow allowed for the necessary downmixes.

This was not AMPVISUALTV’s first experience with this type of broadcast, and having experience with previous games helped them determine the best audio takes, the best equipment, and the best workflow. “Canal+ is known for live events, particularly sports, so we knew what kind of sound they would want,” said David Paillet, Audio Project Manager at AMPVISUALTV. “We needed to strike the right balance between the sound from the pitch and the sound from the fans. With Dolby’s help, we were able to create a

Production and distribution chain



International signal

"Producing an international signal in Dolby Atmos meant we could use the stadium atmosphere for immersive sound, but also turn the French and English commentators into audio objects," explains Benoît Leteneur, Solutions Engineer for Broadcast & OTT at Dolby. The two fan zones in the stands behind the goals were also turned into stand-alone audio objects. Broadcasters could then choose what they would broadcast: only the stadium atmosphere sounds, or the stadium with a commentator in the main speaker. The signal also includes the bed, a "baseline" ambient sound broadcast on the five speakers. The production went smoothly and without incident.

"It's the first time we've mixed Dolby Vision and Dolby Atmos like this. We also made Dolby Vision backward compatible with HLG in Profile 8.4." Mickaël Raulet, Ateme

A unique encoded signal

"We created an additional mini-infrastructure to process the signal on top of our normal infrastructure just for the event, a sort of 'bubble,'" Wel explained. "Thanks to this dedicated architecture and with the help of Ateme, we had the best conditions possible to create a great experience." This meant the signal was processed at the desired quality, without affecting Canal+'s standard broadcast. The experience gained from broadcasting the Winter Olympics in Dolby Vision last February proved to be very valuable. To integrate Dolby Atmos, tests were conducted locally with streams provided by Dolby and then through the editing equipment, using a similar signal to the one used on match day.

Canal+ received two streams: the usual UHD Canal+ stream (SDR and 5.1 audio), which was processed by the standard broadcasting infrastructure, and the new HDR HLG and Dolby Atmos stream, which was processed by the "bubble". "It's the first time we've mixed Dolby Vision and Dolby Atmos, and also made Dolby Vision backward compatible with HLG in Profile 8.4," said Mickaël Raulet, Technical Director at Ateme. The signal retrieved by Ateme - in UHD HLG and Dolby Atmos audio - was encoded and packaged to be backward compatible. "We added Dolby Vision metadata onto the HLG video signal. We encoded the sound in Atmos and the video in HEVC, all in low latency," said Roulet.



Ensuring compatibility

"The main challenge was ensuring compatibility with different types of endpoints, so we ran multiple tests," explains Raulet. "The signal was only made available shortly before the event, so we needed to act quickly." For Dolby Atmos, the signal needed to be read by unsupported devices, such as Dolby Digital Plus 5.1 endpoints. For Dolby Vision, HLG needed to render correctly across all devices. The audio quality could have gone even further using the AC-4 audio codec, but that would have reduced the number of compatible devices.

Viewer-approved

Discussions between Canal+ and Dolby began in February, with the final scheduled for 28 May. Despite the short timeline, the different stakeholders were able to put all of the puzzle pieces together in time, and their hard work was rewarded. The independent "bubble" and dedicated channel worked so well that Canal+ intends to keep the infrastructure live. "We were able to put the new standards and software to the test, without risking the integrity of our broadcasting infrastructure," said Wel. "We want to keep this test infrastructure going, and even develop it with our partners to put it in the cloud, to push the testing even further."

"We got loads of positive feedback on social media. The sound and image quality were appreciated, and there's a growing appetite for this level of audiovisual experiences." **Matthieu Montigaud, Canal+**

Most importantly, the viewers loved it. "We got loads of positive feedback on social media. The sound and image quality were appreciated, and there's a growing appetite for this level of audiovisual experiences," says Montigaud. Professionals were also won over by the Dolby Atmos audio experience. "The four additional speakers really make you feel like you're in the stadium," said Paillet.

