ITU-R Study Group 6 Progress Report 2026

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The past year has been very productive for ITU-R Study Group 6 (SG 6) *Broadcasting Service*. SG 6 is the ITU group responsible for international standardization of the end-to-end broadcasting chain, from program production to the delivery of content to the public by any means. SG 6 continues its work through three Working Parties: Working Party 6A, responsible for Terrestrial Broadcasting Delivery; Working Party 6B, which bridges the gap between program production and distribution; and Working Party 6C, which has the remit of Programme Production and Quality Assessment.

At the close of the March 2026 meeting, the former Working Party 6B chair, Paul Gardiner from the UK, retired. (He continues to actively participate in SMPTE activities.) Consequently, at the March 2026 meeting, SG6 appointed Ms Ana Eliza Faria e Silva from Brazil as the new chair of Working Party 6B.

The current Study Period began in 2023 after the ITU Radio Assembly and World Radiocommunication Conference; it offers SG 6 a great opportunity to focus resources on standardizing and regulating new broadcasting services and technologies, rather than concentrating on spectrum-sharing and compatibility issues between broadcasting and non-broadcasting radiocommunication services.

Recent Publications

It must be remembered that the work of the Standards Organization is not just about delving into new Standards and Reports. It's just as imperative, if not more, that existing documents are kept up to date and relevant.

Report ITU-R BS/BT.2522-1—"*A framework for the future of broadcasting*", revised in November 2024, and its sister Report, ITU-R BS/BT.2524, "*A Framework for the future of broadcast production*," present a snapshot vision of how current technologies are shaping the future of broadcasting. Both were developed in response to ITU-R Res. 70 "*Principles for the future development of broadcasting*" and Res. 71 "*Role of the Radiocommunication Sector in the ongoing development of television, sound and multimedia broadcasting*". The Reports speculate on the direction of travel over the coming years from the perspective of end users and how advances in broadcast program production and delivery technologies can satisfy ever-growing expectations. These Reports also aim to inform, assist, and guide the broadcasting industry, researchers, and regulators on future developments in broadcasting systems, technologies, and applications. SG 6 will continue to review both reports.

Over the past year, SG 6 has approved the Recommendations and Reports listed in **Tables 1, 2** and **3**:

Currently, the Study Group 6 Working Parties are focusing on the following topics:

WP 6A Terrestrial Broadcasting Delivery

Terrestrial Broadcasting Delivery plays a vital role in providing universal, high-quality, and free-to-air delivery of audio-visual content to the public and therefore remains a crucial topic in SG 6 discussions. A key focus is the transition to second-generation DTTB systems. These newer systems enhance broadcast quality and efficiency, allowing broadcasters to deliver more content and services within the same spectrum. Japan recently standardized a new second-generation system, ISDB-T3, which ITU-R SG 6 has since adopted.

Developing and testing ultra-high-definition television (UHDTV) over Digital Terrestrial Television Broadcasting (DTTB) networks is a significant area for trials and discussion. The trials assess how existing infrastructure can handle UHDTV's high data demands while delivering superior resolution and color.

SG 6 is studying new technologies like Multiple Input Multiple Output (MIMO) and Layered Division Multiplexing (LDM) to maximize spectrum efficiency, allowing broadcasters to transmit more data without compromising quality.

Standardization of new Terrestrial Mobile Multimedia Broadcasting (TMMB) technologies designed to reach audiences on the go is well underway. New trials and tests on TMMB systems, such as LTE-based 5G Broadcasting and 5G New Radio, are being developed to demonstrate their capabilities and challenges (and ways to resolve them!).

Network planning and evaluation of LTE-based 5G broadcasting systems have been published in a new Report ITU-R BT.2549

TABLE 1. New or recently revised ITU-R texts as of September 2026 (WP 6A).

Recommendations ITUR	Title	Status
BS.705-1	HF transmitting and receiving antennas characteristics and diagrams	Revision
BS.1114-12	Systems for terrestrial digital sound broadcasting to vehicular, portable and fixed receivers in the frequency range 30-3 000 MHz	Revision
BT.1877-3	Error-correction, data framing, modulation and emission methods and selection guidance for second-generation digital terrestrial television broadcasting systems	Revision
Reports ITU-R	**Title**	**Status**
BT.2140-14	Transition from analogue to digital terrestrial television broadcasting	Revision
BT.2485-3	Advanced network planning and transmission methods for enhancements of digital terrestrial television broadcasting	Revision
BT.2526-1	Field trials of terrestrial multimedia mobile broadcasting systems	Revision
BT.2299-3	Broadcasting for public warning, disaster mitigation and relief	Revision
BT.2343-10	Collection of field trials of ultra-high-definition television over digital terrestrial television broadcasting networks	Revision
BT.2385-1	Reducing the environmental impact of terrestrial broadcasting systems	Revision
BT.2386-5	Digital terrestrial broadcasting: Design and implementation of single frequency networks (SFN)	Revision
BT.2295-4	Digital terrestrial broadcasting systems	Revision
BS.2037	Evaluating fields from terrestrial broadcasting transmitting systems operating in any frequency band for assessing exposure to non-ionizing radiation	Suppressed
DTTB Handbook	Digital terrestrial television broadcasting in the VHF/UHF bands	Suppressed

TABLE 2. New or recently revised ITU-R texts as of September 2026 (WP 6B).

Recommendations ITUR	Title	Status
BS.1548-8	User requirements for audio coding systems for digital broadcasting	Revision
BS.2088-2	Long-form file format for the international exchange of audio programme materials with metadata	Revision
Reports ITU-R	**Title**	**Status**
BS.2388-6	Usage guidelines for the Audio Definition Model and multichannel audio files	Revision
BT.2400-4	Usage scenarios, requirements and technical elements of a global platform for the broadcasting service	Revision
BT.2448-1	Technical realisation of signing in digital television	Revision
BT.2539-0	Use of cloud computing for programme production	Revision
BT.2557	Application of Smart Media Transport (SMT) based on MPEG Media Transport (MMT) under different service requirements	New
BT.2568	Application-oriented television broadcasting	New

TABLE 3. New or recently revised ITU-R texts as of September 2026 (WP 6C).

Recommendations ITUR	Title	Status
BT.1907	Objective perceptual video quality measurement techniques for broadcasting applications using HDTV in the presence of a full reference signal	Revision
6/142	Energy usage optimization for broadcasting systems	Revision
Reports ITU-R	**Title**	**Status**
BT.2207-6	Accessibility to broadcasting services for persons with disabilities	Revision
BT.2246-8	The present state of ultra-high-definition television	Revision
BT.2408-8	Suggested guidance for operational practices in high dynamic range television production	Revision
BT.2420-8	Collection of usage scenarios of advanced immersive sensory media systems	Revision
BS.2555	Production workflows for advanced sound system	New
BT.2556	Experiences of ultra-high-definition television and high dynamic range television	New

Complementing these technologies are efforts to expand datacasting, enabling broadcasters to transmit additional data, such as weather updates, emergency alerts, or educational content, alongside traditional TV and radio broadcasts for reception by both large-screen TV sets and handheld devices.

WP 6B Assembly and Access

Working Party 6B continues to advance studies related to video coding, transport, multiplexing, and multimedia services for digital broadcasting systems. Current work focuses on the revision of a number of Recommendations covering transport architectures, service multiplexing, data access, IP packet carriage, mobile multimedia delivery and video coding technologies, including the introduction of Versatile Video Coding (VVC) into the ITU-R broadcasting framework. Work is also progressing on use cases for VVC multilayer profiles and on the evolution of transport mechanisms to support increasingly IP-based broadcasting environments.

Audio streaming formats, audio metadata, and file formats continue to be an active discussion. User requirements for metadata in advanced sound systems for digital broadcasting are being gathered. Ongoing work also includes aspects of audio metadata related to the Audio Definition Model of Recommendation. ITU-R BS.2076.

In the area of Integrated Broadcast-Broadband (IBB) systems, WP 6B is studying application-oriented television broadcasting, Broadcast Core Network (BCN) architectures, integrated broadcast-broadband platforms and global platform frameworks. Ongoing activities include the development of reports and recommendations addressing application-oriented television, high-level architectures for global broadcasting platforms, and mechanisms for channel mapping in hybrid broadcast-broadband environments. In parallel, WP 6B has initiated work on a new framework for Privacy

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Mechanisms for Integrated Broadcast-Broadband Systems, examining privacy management as a platform-level function integrated into the receiver environment, including privacy signaling, viewer interaction, consent management and enforcement mechanisms.

WP 6B is also progressing work on content provenance for program production, international exchange, and distribution of content. This activity aims to document practices and potential solutions that can support media authenticity and provenance workflows throughout the content lifecycle. In parallel, studies continue on advanced audio systems, including audio coding, audio metadata and delivery formats, the Audio Definition Model (ADM), and interactive audio capabilities. Ongoing work includes revisions to Recommendations ITU-R BS.1196 and BS.2076, updates to ADM usage guidelines, and the development of an interactive control extension for the Audio Definition Model.

WP 6C Programme Production and Quality Assessment

Working Party (WP) 6C studies issues and develops solutions associated with program production and the international exchange of content for radio and television broadcasting, including multimedia, interactive and converged services.

Work on High Dynamic Range Television continues, focusing on use cases and technologies that enable single workflows for live and non-live program production through Reports ITU-R BT.2390 and BT.2408 revisions. Other HDR activities include updated test signals and the monitoring and measurement of brightness changes, and a new HDR use case Report on the use of HDR Vivid is in the final stage of consideration.

WP 6C continues to investigate accessible media services, regularly updating Report ITU-R BT.2207, *Accessibility to broadcasting services for persons with disabilities, and* adding how haptics and avatars can make media more accessible to all. WP 6C continues to represent all ITU-R Study Groups on accessibility topics by co-chairing the ITU Intersector Rapporteur Group with Study Group ITU-T SG 21.

Energy-efficient broadcasting is another key area of activity where practical advice is provided on the requirements to report and actively reduce the impact that program production and distribution have on the environment, and how this can be managed with minimal or no offsetting.

The use of AI is having a major impact on program production and exchange of content. WP 6C is responsible for maintaining Reports ITU-R BT.2447 on the use of AI for programmaking and ITU-R BT.2524 on the future of broadcast production, where examples of future workflows are presented. Work on a revision of these Reports to keep them looking forward is currently being discussed.

In other work, Report ITU-R BT.2420 is bringing together examples of Advanced Immersive Sensory Media topics which combine all aspects of program making, including volumetric image capture, advanced immersive sound, haptics, and other sensory-enhanced content where the merging of traditional audio and video production is creating new media experiences.

WP 6C continues to review quality assessment methodologies for all media. Mindful of the accelerating changes to media production, WP 6C continues to consider how subjective and objective quality assessment is carried out and measured. Recommendation ITU-R BT.500 will continue to be revised to include new techniques for HDR, AI and ML QC and new environments needed for immersive AV media.

WP 6C collaborates with WP 6B on topics related to content provenance, immersive sound systems (ADM and SADM), cloud processing, and with WP 6A on how new content types can be delivered through new distribution systems.

To summarize

During the current 2024-2027 Study Period, SG 6 continues to push the boundaries of broadcasting technology, ensuring broadcasters remain at the forefront of innovation. Artificial intelligence (AI) is expected to become increasingly important, with AI-driven content curation set to transform viewer engagement by delivering personalized content based on user preferences and viewing habits.

SG 6 will continue its collaboration with industry partners, including organizations such as SMPTE and other ITU Study Groups, harmonizing standards and fostering interoperability across platforms and regions. This collaboration is key to ensuring that broadcasting technologies evolve in ways that benefits the global community, maintaining broadcasting's role as a vital public service.

About the Authors



Paolo Lazzarini is a radiocommunication engineer, chief of Radio Communication Division at the *Dicasterium pro Communictione* (Vatican City State). He is the chair of the ITU-R Study Group 6 (Broadcasting Services).



Amir Nafez joined the Islamic Republic of Iran Broadcasting (IRIB) in 1995, served as general director of technical evaluation and frequency planning from 2014, and now consults for IRIB. He serves as the acting chair of ITU-R WP 6A.



Ana Eliza Faria e Silva is an international leader in broadcasting standardization and digital television innovation. For over two decades, she has held leadership roles within ITU-R and fostered global consensus. She received the 2026 Women in Technology Leadership Award.



Andy Quested joined the British Broadcasting Corporation as a technical assistant in 1978, becoming a videotape editor in 1985, working on comedy, children's, and documentary series. He is chair of ITU-R WP 6C, co-chair of the ITU's Accessible Media Group, and led the EBU Production Strategic Programme. He is a SMPTE Fellow.

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