Ultra HD Forum Executive Summary: SBTVD Forum's DTV+ Television System

Introduction

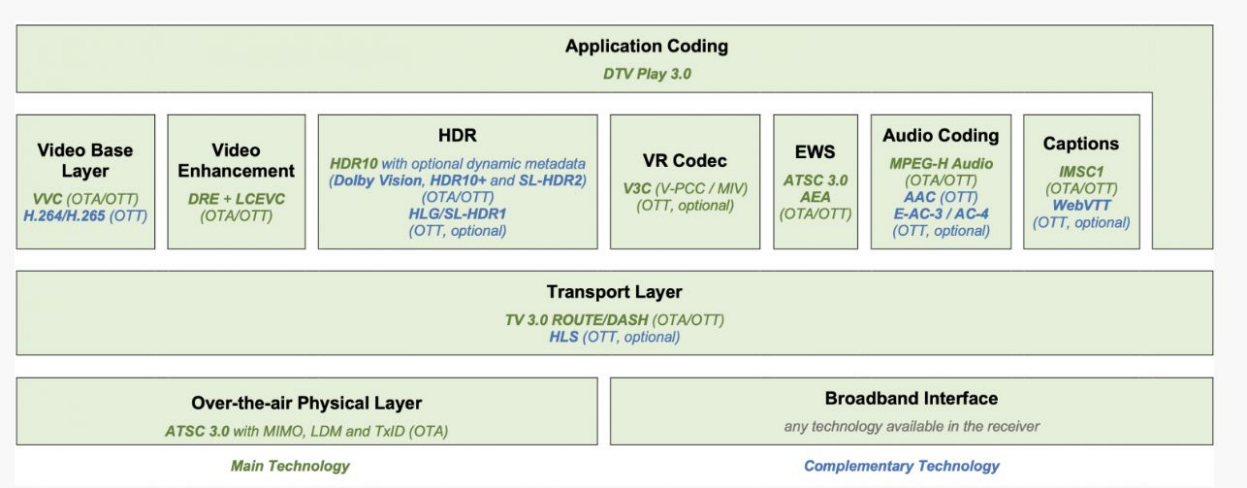
The SBTVD Forum, which oversees the development of Brazil's digital television standards, has specified and officially launched the DTV+ (also known as TV 3.0) brand of television system, the first broadcasting system in the world to mandate *Ultra HD 4K/HDR video* and immersive audio as a base television service.

This report first details the technical elements of the DTV+ system and its Ultra HD capabilities, then describes the Olympic trial broadcasts conducted for the Paris 2024 Olympics, and the recent launches of experimental DTV+ stations in Rio de Janeiro and São Paulo. For more information on the DTV+ system, please visit the SBTVD Forum's official page [1].

Overview of DTV+ Television System

DTV+, also referred to as TV 3.0, is Brazil's next-generation digital television standard designed to enhance the viewing experience through improved video and audio quality, interactivity, and efficient bandwidth utilization. The system incorporates several advanced technologies and standards, making it a robust platform for future broadcasting.

Key Technical Elements of DTV+



Source: https://forumsbtvd.org.br/tv3_0/#panel-phase3 [1]

1. **Ultra HD video formats**

    - HDR10 video format, supporting ITU-R BT 2020 wide-gamut color space, PQ extended dynamic range transfer characteristic, as well as master display and content light level metadata [2]. Optional support is also available for advanced formats, including HDR10 with Dolby Vision or SL-DHR2 dynamic metadata, and HLG with SL-HDR1 dynamic metadata. These formats enable videos to be delivered with a broader dynamic range and greater color accuracy. Learn more about UltraHD formats [2].

2. **VVC (Versatile Video Coding)**:

    - MPEG VVC (aka ITU-T H.266) is the latest MPEG video compression standard, providing significant improvements in compression efficiency compared to its predecessor, HEVC (H.265). It allows for high-quality video broadcasting and streaming at lower bitrates, making it ideal for 4K and 8K broadcasts. The DTV+ base video service, based on VVC + LCEVC, is 4K UHD/HDR, an industry first. Learn more about VVC [3].

3. **LCEVC (Low Complexity Enhancement Video Coding)**:

    - MPEG-5 LCEVC is designed to enhance existing video codecs by providing an additional layer of compression. It allows for improved video quality and lower latency, making it suitable for live broadcasts and interactive applications. Learn more about LCEVC [4].

4. **ATSC 3.0 Physical Layer**:

    - The DTV+ system utilizes an enhanced variant of the ATSC 3.0 physical layer, which supports advanced features such as robust transmission, improved reception in challenging environments, and the ability to deliver multiple services over a single frequency. This layer is crucial for ensuring high-quality broadcasts across various platforms. DTV+ uses MIMO and LDM simultaneously to increase channel capacity. Learn more about ATSC 3.0 [5].

5. **ATSC 3.0 Advanced Emergency Alert/Information System**:

    - This system enhances public safety by providing timely emergency alerts and information to viewers. It allows broadcasters to deliver critical information during emergencies, ensuring that audiences receive important updates. Learn more about the Advanced Emergency Information System [6].

6. **DASH (Dynamic Adaptive Streaming over HTTP)**:

- DASH is a streaming protocol that enables adaptive bitrate streaming, allowing content to be delivered seamlessly across different network conditions. This technology ensures that viewers receive the best possible quality based on their internet connection and device capabilities. Learn more about DASH [7].

7. **IMSC1 (Internet Media Subtitles Consortium)**:

    - IMSC1 is a standard for delivering subtitles and captions in a way that is compatible with various media formats. It supports multiple languages and enhances accessibility for viewers, ensuring that content is inclusive for all audiences. Learn more about IMSC1. [8]

8. **MPEG-H Immersive Audio**:

    - MPEG-H is an advanced audio coding standard that provides an immersive audio experience, enabling object-based audio and personalized sound fields. This technology enhances the listening experience by enabling viewers to interactively customize their audio settings based on their preferences, including dialog levels vs other sound sources. Learn more about MPEG-H. [9]

Olympic Trials 2024

The Paris 2024 Olympic Trials served as a significant event for the SBTVD Forum, showcasing the capabilities of the DTV+ system. The trial featured extensive coverage, highlighting the system's ability to deliver high-definition content with immersive audio and interactive features.

Globo organized and operated a TV 3.0 trial that covered the Paris 2024 Olympic Games live. Globo received the live feeds from Paris and encoded them end-to-end using the full TV 3.0/DTV+ stack in a first live production suite for the new television system. This trial demonstrated live production, encoding, and distribution workflows for UltraHD formats, VVC+LCEVC video, MPEG-H audio, and ATSC 3.0 physical-layer features.

Significance of the Trials

The Globo-led 3.0 trial provided practical, live end-to-end validation of the DTV+ stack — including live encoding, immersive audio, and interactive features — and produced operational data useful to broadcasters and equipment vendors. The trial emphasized the system's advanced technical features, including VVC and LCEVC, which enhanced the viewing experience for audiences. Coverage of the trials was available through various platforms, showcasing the potential of DTV+ technology. Source: Digital Spy. [9]

Launch of Experimental DTV+ Stations in Rio and São Paulo

In April 2025, TV Globo launched an experimental DTV+ broadcast station in Rio de Janeiro, marking a significant milestone in Brazil's transition to the DTV+ standard. The station, located at Pico do Sumaré, operates under a temporary license granted by the Ministry of Communications and Anatel.

In August 2025, it was announced in the Brazilian press that two additional stations would be launched in São Paulo, confirmed by ATSC [11].

Technical Specifications

- **Coverage Area**: The station covers parts of the South Zone and Barra da Tijuca in Rio de Janeiro.
- **Transmission Technology**: The experimental broadcasts utilize a single frequency network and operate in the 300 MHz band.
- **Service Offerings**: The station is testing two services: one delivering 1080p video at 6 Mbps and another providing 2160p video using ***VVC+LCEVC at 10 Mbps***.

Objectives of the Experimental Stations

The primary goal of the experimental stations is to evaluate new content and system architecture models, facilitating the development of the DTV+ industry in Brazil. This initiative is expected to accelerate the transition to the DTV+ standard, with commercial availability anticipated by 2026, coinciding with the FIFA World Cup. Source: Informitv. [12]

Presidential Decree and Future Prospects

Brazil's President has signed a decree formally launching the government-mandated next-generation television system that adopts ATSC 3.0 physical layer technologies, DASH, VVC, and LCEVC as part of the national DTV+ framework. This formal adoption elevates DTV+ from a forum-led specification to an official, government-backed standard, accelerating regulatory timelines, spectrum planning, and nationwide deployment efforts. Immediate implications include clearer mandates for broadcasters and equipment manufacturers, stronger incentives for commercial launches, and prioritization of receiver certification and consumer awareness campaigns. With government backing, the target of commercial availability by 2026 (to align with the FIFA World Cup) is likely to be met, though rollout speed will depend on licensing, spectrum refarming, and industry readiness. Source: ATSC [11]

Conclusion

The SBTVD Forum's DTV+ television system is poised to revolutionize the broadcasting landscape in Brazil. With the upcoming Olympic Trials in Paris serving as a showcase for the technology and the recent launch of the experimental station in Rio, the Forum is making significant strides toward a successful transition to next-generation digital television. As Brazil

prepares for the FIFA World Cup in 2026, the DTV+ system will play a crucial role in delivering high-quality, immersive content to viewers nationwide.

References

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[2] https://ultrahdforum.org/guidelines/
[3] https://www.itu.int/rec/T-REC-H.266 or ISO/IEC 23090-3
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