

ATSC 3.0 Complete Television Transmission Systems

A reliable long-term transmission solution for high return on investment



One-stop Transmission Solution

Focusing on the best return of investment for broadcasters, Thomson Broadcast is optimizing its digital ATSC 3.0 systems with **high-efficient transmitters and smart integration of transmission solutions** from the satellite downlink, Integrated Receiver-Decoder & head ends to the masts and antennas including leading-edge energy system. Thomson Broadcast guarantees the global interoperability and the quality of services from the installation to the commissioning. Combined with Thomson long field- proven experience in Americas in coverage studies, site surveys, civil work and training, Thomson Broadcast unique transmitter manufacturing capability is a key advantage.

Based on a huge installed base in North and South Americas, Thomson Broadcast benefits from a long experience of in-house **high- and very high- solid-state transmitters** commissioning and from recent OFDM complete transmission system deployments all over the world.

Capitalizing on continuous industry leading research and development, Thomson Broadcast is an industry pioneer, which has deployed, through all its latest digital television transmitter lines, sustainable transmission systems. With a many

times duplicated transmitter architecture, Thomson transmitters ranges continue to pave the way for easy maintainable solution guaranteeing continuous services.

For UHD Television Quality

ATSC 3.0 has been designed to be one of the most flexible and efficient but still robust standard. **New H265 compression allows to transmit currently 4K** and 8K in the future for fixed and also mobile receivers, phones, tabs... while Television is now viewed in a variety of ways and viewers behaviors are rapidly evolving.

With streamed 4K content now including **High Dynamic Range (HDR)** capability, viewers benefit from the most detailed and realistic TV picture ever seen. This ultimate viewer experience is reinforced by a unique immersive audio 5.1 surrounding sound.

Furthermore this next-gen broadcast transmission standard allows broadcasters to use a combination of both broadcasting and broadband distribution for hybrid delivery. Interactive features such as video-on-demand (VOD), personalized news, weather, sports, audio channels, social media feeds and emergency information are proposed to the viewers and localized targeted ads offer new opportunities to broadcasters.

With outstanding Performances & easy Maintenance

Thomson Broadcast may support broadcasters with their transmission migration from ATSC 1.0 to ATSC 3.0 including transmitter, filter, combiner, antenna and mast replacement and upgrade. For a smooth and efficient migration, new solid-state transmitters up to 60 kW may be recommended as energy savings greater than 50% may be reached with the latest generation of Thomson transmitter. Unmatched performances are achieved with Thomson specific features such as real-time Digital Adaptive Pre-correction (DAP) technology, the proprietary agile automatic gain control (AAGC), power supply voltage optimization as well as ATSC 3.0 Peak Average Power Ratio (PAPR) with Tone Reservation (TR).

This combination of high performance and leading-edge transmitter design backed by 100 years of experience, provides easy maintainability, scalability and minimized the network Total Cost of Ownership. By using a modular concept with easy access to all part, hot-swappable components, transistor module for simplified exchanges, Thomson Broadcast optimizes transmission networks.

KEY FEATURES

- ATSC 3.0 ready
- Complete transmission systems
- From downlink, IRD, HE to antenna
- Guaranteed interoperability
- Optimized station TCO
- UHD transmission
- H265 compression
- High Dynamic Range (HDR)
- Immersive audio sound
- Hybrid services
- Flexible and robust transmission
- Up to 64 PLPs
- SFN network
- Advanced Emergency Alert System
- Ready for the future



ATSC 3.0 Complete Television Transmission Systems

New business model

ATSC 3.0 combines the best of broadcast and IP capabilities. IP transport based on HTML5 is used for broadcast delivery of both streaming and file content. In DVB standard countries, the Hybrid Broadcast-Broadband Television (HbbTV) open standard is widely spread and Thomson Broadcast has successfully managed its deployment to offer Interactive Environment nourished by numerous HTML5 apps on the receivers.

Whereas internet advertising is powerful, and lucrative, current broadcast advertising landscape is less efficient but consumer far-reaching. With the ability of ATSC.3 to deliver content and IP-based data to multiple consumers with regionalized and localized content & ads, new huge revenues may be generated. ATSC 3.0 is a game changing opportunity for TV broadcasters that will reshape the television system's business model.

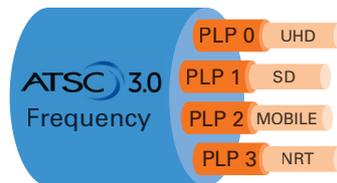


Geotargeting

With Flexible and robust transmission

ATSC 3.0 is a next-generation robust transmission platform using new technologies and advanced error correction for the physical layer featuring OFDM modulation. MPEG HEVC (H265) compression is used for great spectrum efficiency savings which allows more streams and more robust signal approach for mobile programming. Indeed Broadcasting video to mobile devices requires more robust technology because of varying receive conditions and compromised antennas.

This flexibility lies in the various combinations of error corrections, modulation and coding rates assigned to each Physical Layer Pipes (PLP). With a deep expertise in Multiple PLP's (MPLP's) up to 64, Thomson Broadcast offers broadcasters to define their own business model while adapting specific reception robustness to their needs. Within a single broadcast channel MPLP allows to transmit simultaneously UHD, SD, Mobile and Non Real Time services.

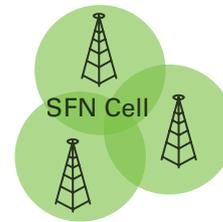


MPLPs

It also allows multiple encoders, as required for multiple services in the so named ATSC 3.0 Scheduler equivalent to DVB-T2 Gateway and offers the opportunity of regional advertising.

Efficient SFN networks

Backed by latest DVB-T2 Single Frequency Networks (SFN) deployments, Thomson Broadcast supports the coverage study and implementation of broadcasters' SFN networks. Additional synchronized transmitters may be added to the network in order to provide a higher quality of services i.e. better indoor or mobile coverage area with the next-generation ATSC 3.0 standard.



SFN Networks

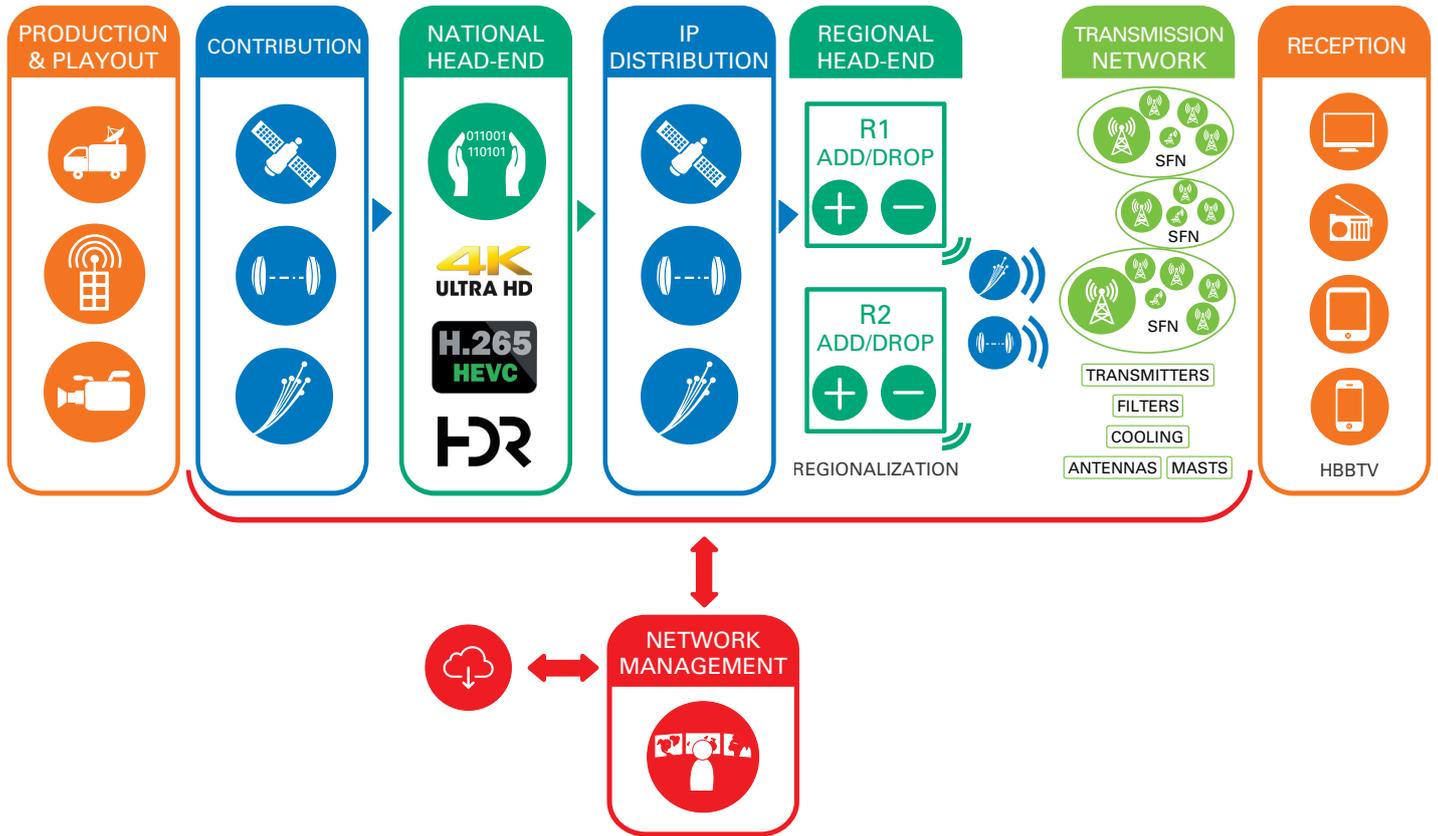
Advanced Emergency Alert System

Deployment of ATSC 3 is expected to deliver much-improved emergency alert services with more robust transmission and better indoor reception. Benefiting from geolocalization capabilities through hybrid broadband-broadcast model, localized alert may be really helpful.

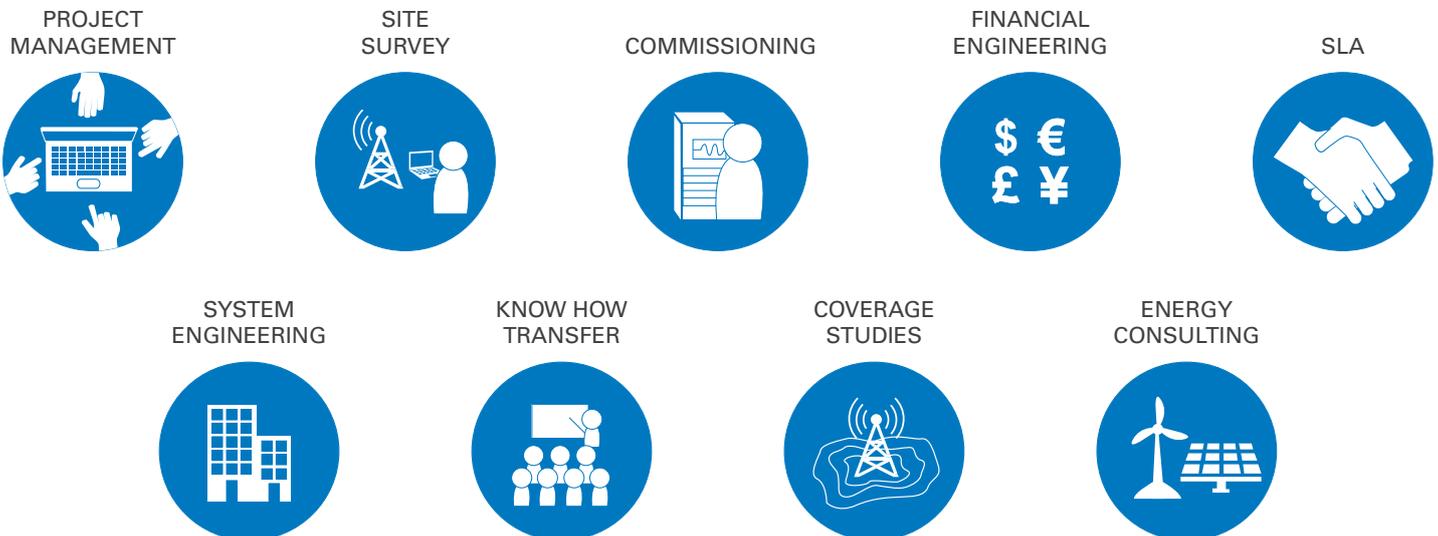
Ready for the future

Thomson Broadcast transmission solution represents a great opportunity for broadcasters, whether for the migration to ATSC 3.0 of existing transmission stations or for the replacement of IOT Transmitters by transistor-based high efficient transmitters. Thomson transmitter families allow broadcasters to benefit from the latest energy efficiency technologies for huge operational cost savings. Thanks to the support of the latest advanced spectrum-efficient ATSC 3,0 standard combined with managed PAPR efficient technologies, UHD/3D & localized services can be offered for new revenue generation.

New Transmission Solution



With advanced added-value services





ORDERING INFORMATION

Please contact your authorized Thomson Broadcast representative or emailto: sales@thomson-broadcast.com

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