

Content Delivery

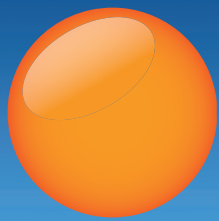


A Connected World



Serving content users across
different business areas

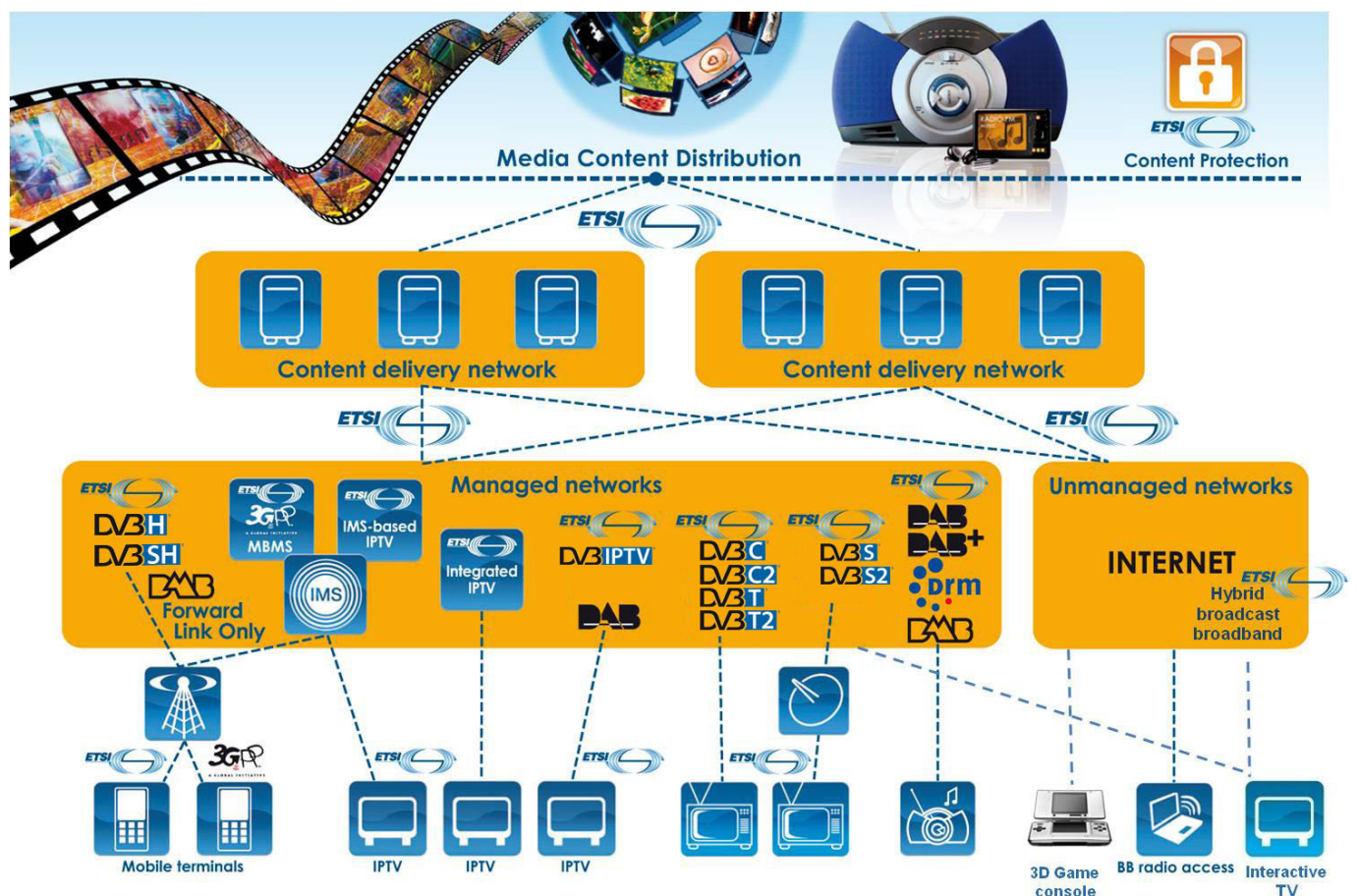
Facilitating content consumption
whatever the platform



Content Delivery

The Internet, mobile communications and broadcasting are converging. But the standardization of these different areas has traditionally followed different paths, so they do not interoperate across the same platforms.

We are addressing the urgent need to align the diverse specifications for content delivery in a converged environment supporting Internet Protocol Television (IPTV), mobile TV and broadcast TV – for the benefit of both the industry and the consumer.



Standardization Activities

ETSI's standardization of broadcast systems, programme transmission and receiving equipment is dealt with in a Joint Technical Committee together with the European Broadcasting Union (EBU) and the European Committee for Electrotechnical Standardization (CENELEC) – **JTC Broadcast**, which delivers the DVB standards for satellite, cable, and terrestrial systems.

IPTV is managed by NTECH and JTC Broadcast. NTECH focuses on the IPTV service delivery for fixed networks. JTC Broadcast defines DVB IPTV deliverables specifying technologies on the interface between a managed IP network and retail receivers.

Mobile TV is defined by 3GPP, JTC Broadcast and SES-MSS (Mobile Satellite Systems). MBMS (Multimedia Broadcast Multicast Service) solutions are defined by 3GPP for terrestrial networks and by SES-MSS for satellite networks. Solutions such as DVB-H, DVB-SH, DMB and 'Forward Link Only' are specified by JTC Broadcast.

Content Delivery Networks (CDN) offer end-users fast access to media content whilst optimizing network resources. NTECH addresses CDN: internal CDN architecture and protocols on one hand; CDN interconnection on the other hand.

Broadcast Standards

JTC Broadcast concentrates on digital broadcasting. The JTC is updating the ETSI Technical Specification (TS) on Digital Video Broadcasting (DVB) **Audio Video Coding** to address **AC-4** audio aspects and **DVB 3DTV Phase 3**. AC-4, the innovative codec for next generation digital audio compression for audio-only and audio for video delivery, offers an advanced sound experience to meet modern entertainment requirements including home theatres, online streaming and video games. The JTC is now extending the specification to enable new, more immersive and personalized consumer audio experiences in the future.

The committee plans to update the TS on the receiver status and control interface for **Digital Radio Mondiale** to accommodate the xHE-AAC codec.

The JTC also expects to revise its popular DVB service specifications, describing the necessary metadata for TV broadcast. The '**DVB-SI (Service Information)** specification' enables all the various components of a video service to work together. Current work is addressing companion screens and streams and Ultra High-Definition TV.

The existing DVB IPTV standards are being updated to take account of **IPv6**. Guidelines for both DVB-S2 and DVB-S2X

for broadcasting, interactive services, news gathering and other broadband satellite applications will be published. The JTC will also address **3DTV**, adding **High Efficiency Video Coding (HEVC)** coded services to its existing specification. The Hybrid Broadcast Broadband TV specification will be revised to take account of recent developments and to add support for companion screen, advert insertion, Timed Text Markup Language subtitles, Push Video on Demand etc.

The **Programme Making and Special Events (PMSE)** market urgently needs access to new spectrum resources to satisfy demand both now and in the future. As an alternative to the allocation of new spectrum, the possibility of using cognitive spectrum access methods to allow the use of hitherto unavailable spectrum and to facilitate spectrum sharing is being investigated.

A revised Harmonised Standard on wireless microphones in the 25 MHz-3 GHz band, which takes account of the latest developments will be published. We plan to finalize four System Reference documents, addressing intercom systems, conferencing systems, wireless microphones and PMSE.

Our Harmonised Standard and the ETSI Standard (ES) on wireless video links in the 1,3 - 50 GHz band will be revised in line with recent developments.

Content delivery and protection

Our Industry Specification Group (ISG) on the **Embedded Common Interface (ECI)** for exchangeable **Conditional Access (CA)/Digital Rights Management (DRM)** solutions is developing a standardized system architecture for general purpose, software-based, embedded and exchangeable CA/DRM systems. This will counter market fragmentation and allow consumers to continue using equipment and content they have previously paid for, after a move or a change of network provider, or to access content from multiple service providers from the same device. A seven-part specification is being created; it is expected to complete the remaining five parts, covering the ECI framework, requirements, ECI interfaces, virtual machine and advanced security.

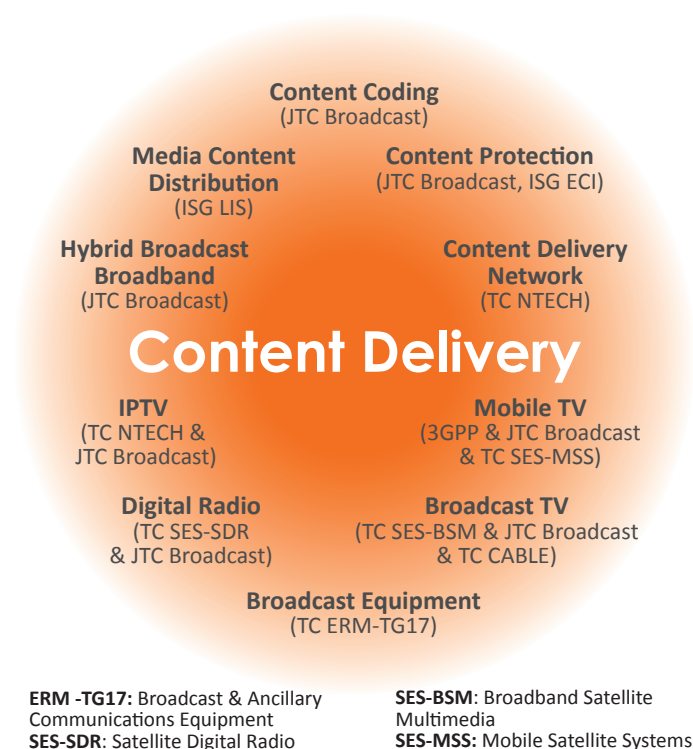
The **localisation** industry is engaged in making computer software and other materials linguistically and culturally appropriate to users in different locations. Our ISG on **Localisation Industry Standards** is producing specifications to ensure quality and efficiency, as well as interoperability in data exchange between the various products used in the industry.

Partners in the Content Delivery Cluster

The ETSI content delivery cluster (illustrated below) encompasses the activities of several ETSI Technical Committees:

- **CABLE** (Integrated broadband cable telecommunication networks)
- **ERM** (EMC and Radio spectrum Matters)
- **LIS** (Localisation Industry Standards)
- **SES** (Satellite Earth Stations and Systems)
- **NTECH** (Network Technologies)
- **JTC Broadcast** is a joint Technical Committee between ETSI, the European Broadcasting Union and CENELEC. Some of its input comes from industry organizations, such as the DVB Project.
- **ISG ECI**: Embedded Common Interface for exchangeable CA/DRM solutions

Other contributors include **3GPP**, the Third Generation Partnership Project, a collaboration between standards organizations worldwide that develops specifications for advanced mobile communications technologies.



To find out more about ETSI's Content Delivery activities or to get involved, please contact **CHANTAL BONARDI**, Content Delivery cluster coordinator: content_delivery@etsi.org

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ETSI produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, aeronautical, broadcast and internet technologies and is officially recognized by the European Union as a European Standards Organization. ETSI is an independent, not-for-profit association whose more than 800 member companies and organizations, drawn from 64 countries across five continents, determine its work programme and participate directly in its work.

For further information, please visit: www.etsi.org

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