

# Content Delivery

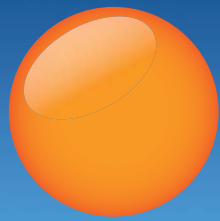


## A Connected World



Serving content users across  
different business areas

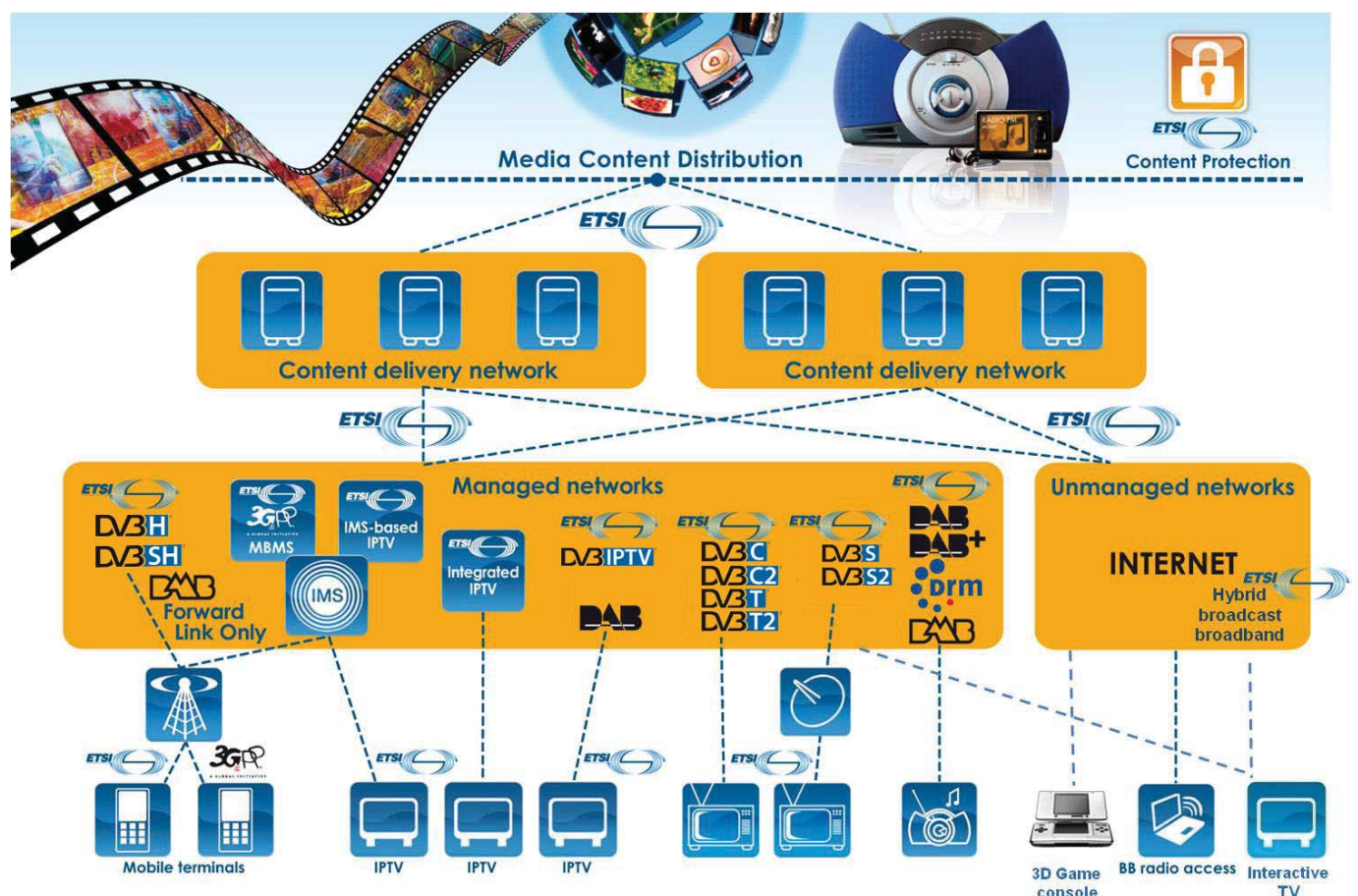
Facilitating content consumption  
whatever the platform



# Content Delivery

Standardization of broadcast and telecommunications has traditionally followed different paths, due to differing commercial requirements. Recent developments have led to a convergence of these traditional communities, in which content delivery has become common ground.

ETSI has undertaken the task of guiding and co-ordinating standardization work for content delivery within the scope of this convergence of broadcast, internet and telecommunications standards. The goal of this approach is a successful overall development of multimedia systems, including television and communication, managed and unmanaged networks, that serve present and future market needs.



## 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's current work includes updating the DVB service specifications, describing the necessary metadata for TV broadcast. The existing DVB IPTV standards are being revised to take account of the transition to IPv6.

Several new activities have been identified. JTC Broadcast will be particularly active in **Ultra High-Definition TV (UHDTV)** and related areas, where it will define the means by which UHDTV content will be transmitted over broadcast channels.

Other work includes a new European Standard (EN) on **DVB Next Generation Handheld (DVB-NGH)**, a highly advanced air interface for mobile terrestrial broadcasting. The JTC is working on a revised version of the **DVB Return Channel Satellite 2 (RCS2)** specification, which defines the world's only standardized interactive satellite system. A new part 2 of this specification will include extensions to the original DVB-S2 specification (DVB-S2X), which will bring improved spectral efficiency to professional satellite applications as well as new

operational modes such as channel bonding.

The JTC will revise its popular specification on **Hybrid Broadcast-Broadband**. ETSI delivers several solutions for **Connected TV** via JTC Broadcast: DVB-MHP, DVB-GEM, Hybrid broadcast broadband TV and MHEG-5 Broadcast profile.

Work has started on a new standard on look-up for radio services for **RadioDNS**, the open technology that lets broadcast radio and the Internet work together, enhancing the listener experience. The specifications for the **Electronic Programme Guide (EPG)** and **SlideShow** will be updated to include IP delivery.

In the audio area, JTC Broadcast has recently completed a revision of the TS on Digital Audio Compression (**AC-3, Enhanced AC-3**), as well as a new specification for Digital Audio Compression (**AC-4**), and is currently working on Multi-Dimensional Audio.

### Programme Making and Special Events (PMSE)

The 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, our ERM-TG17 committee is investigating the possibility of using cognitive spectrum access methods to allow usage of hitherto unavailable spectrum and to facilitate spectrum sharing. We are also updating our multipart EN on wireless microphones in the 25 MHz - 3 GHz frequency range to take account of the latest developments.

### Content Protection

Our End-to-End Network Architectures Project (EP E2NA) is working on a TR which will analyse solutions for interoperable multimedia customer premises equipment for **Conditional Access (CA)/Digital Rights Management (DRM)**. This will be suitable for multimedia platforms (broadcast, broadband or hybrid) and for the content and services delivered over them.

Work continues in JTC Broadcast on **CI Plus**. Following the release of CI Plus v1.4, the JTC will develop a second generation interface (CI Plus v2.0) which will be based on the USB interface.

Our new ISG on **Embedded Common Interface** for exchangeable CA/DRM solutions (ISG ECI) is working on a software-embedded Common Interface for CA- and DRM-solutions.

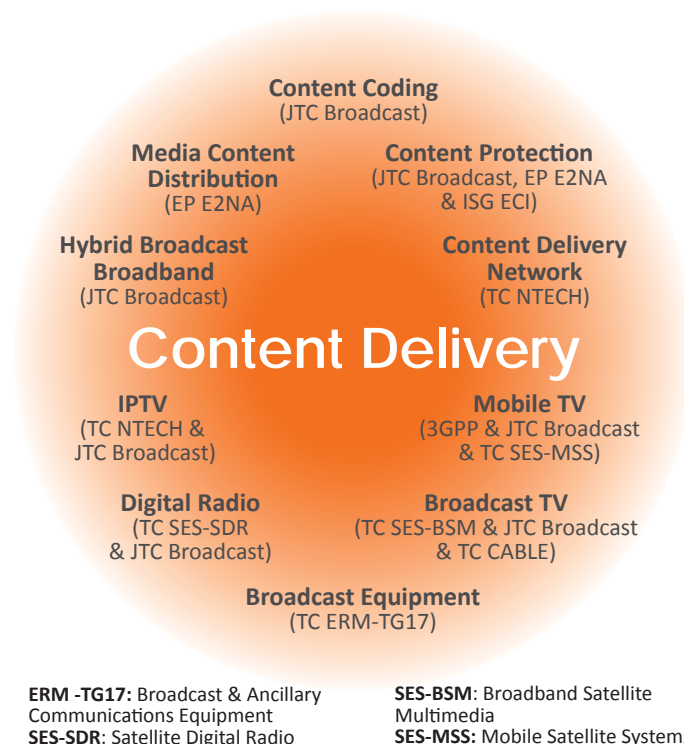


# Partners in the Content Delivery Cluster

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

- **CABLE** (Integrated broadband cable telecommunication networks)
- **E2NA** (End-to-End Network Architectures)
- **ERM** (EMC and Radio spectrum Matters)
- **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](mailto: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 700 member companies and organizations, drawn from 63 countries across five continents worldwide, determine its work programme and participate directly in its work.

**For further information, please visit: [www.etsi.org](http://www.etsi.org)**

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