



[Document reference]

BUSINESS PLAN

CENELEC/TC or SC	Secretariat	Date
TC 209	Germany	2018-04-25

TC or SC title: Cable networks for television signals, sound signals and interactive services

A Background

CLC/TC 209 serves a complete set of European standards of EN 50083 and EN 60728 series for cable networks and reception of terrestrial radio, television and satellite television broadcasts signals covering mainly the following aspects:

- System performance (5 parts)
- Electrical and optical system specifications and interfaces (7 parts)
- Equipment specifications (4 parts)
- Electromagnetic compatibility (2 parts)
- Safety requirements (1 part)

All parts of these standards series contain, as far as applicable, clauses with the following main content:

- Terms and definitions, symbols and abbreviations,
- Methods of measurement
- Performance requirements for systems and/or equipment
- Performance recommendations for systems and/or equipment

These 19 European Standards are supplemented by one Technical Specification and five Technical Reports which provide useful and practice-oriented information for the user of the complete standards system.

In addition, TC 209 is responsible for 5 ENs and 1 TR on specific techniques such as satellite signal distribution over a single coaxial cable and transport of satellite signals over IP networks..

TC 209 (previously known as TC 109) was created in 1989 after a preparatory working group was set-up in 1987 to investigate the need to start standardisation work for cable networks and reception of terrestrial radio, television and satellite television broadcasts signals on European level. At that time IEC had just published an International Standard IEC 728, which had been in preparation for a very long time (more than 10 years) and which was finally rejected by European countries due to the fact that it no longer described the state of the art when it was published.

After roughly ten years work on the EN 50083 series of European standards, solely produced by TC 209, a new initiative was started by IEC and the subject of "Cable networks" was finally integrated in the new Multimedia Technical Committee TC 100 as Technical Area TA 5. Since that time CLC/TC 209 works closely together with IEC/TC 100/TA 5 in such a way that the operational work is performed in working groups that are jointly convened through CLC/TC 209 and IEC/TC 100/TA 5. For most parts of the series of standards, IEC procedures and IEC/CENELEC parallel voting procedures are used.

B Business Environment

B.1 General

The results of the standardization work in CLC/TC 209 are applied by operators of cable networks, installers of terrestrial radio, television and satellite television broadcasts reception systems as well as by manufacturers of components . Business sizes range from large integrated telecommunication companies and worldwide operating suppliers to small and medium sized enterprises (SME) operating networks with only a few 100s or 1000s of customers and installers of terrestrial radio, television and satellite television broadcasts systems ranging from single dwellings to 100s of users or offering highly specialized products to the market. Historically, work in CLC/TC 209 and its working groups is mainly performed by European experts. Based on the joint operation with IEC, they are regularly joined by experts from Japan and United States on selected topics.

The importance of the standardisation work particularly for small and medium sized enterprises (SME) is the

establishment of a horizontal market for both suppliers of components and equipment as well as for sub-contracting installation companies. A significant portion of both, sub-contracting companies and manufacturers, in this industry are medium-sized, as are many of the cable network operators and other system installers. All of these entities benefit from common standards for procurement and implementation. In recent years, consolidation took place in the cable industry both on the operator as well as on the supplier side. While larger enterprises would be able to introduce their own specifications into the market, they equally benefit from common standards and the resulting scale and interoperability.

The cable as well as the terrestrial radio, television and satellite industry relies heavily on technology and has to adapt quickly to new developments and increasing competition from alternative service and delivery platforms. Currently the main drivers for change, in both technical and marketing contexts, are as follows:

- Continuing evolution of cable networks, terrestrial radio, television and satellite systems into hybrid fibre-coax networks with increasing usage of optical transmission techniques and fibre reaching within few meters of the subscriber connection (e.g. FTTB, FTTH, ...)
- New generations of digital broadcast signals (DVB-S2, DVB-T2, DVB-C2) and broadband signals (DOCSIS 3.0, DOCSIS 3.1)
- Introduction of enhanced television services (e.g. 4k and 8k TV)
- Extended use of cable networks for triple-play services with high data capacity in the Gbit/s range
- Strong competition with all kinds of telecommunication networks
- Allocation of new mobile radio services in frequency ranges formerly used only by terrestrial broadcast services (Digital Dividend)

B.2 Market demand

Standards of EN 50083 and EN 60728 series are used by all stakeholders such as:

- Cable network operators
 - Technical departments
 - Purchasing departments
- Equipment manufacturers and suppliers
- Terrestrial radio, television and satellite system installers
- Test houses
- Planning and consulting companies
- Installation companies
- Broadcasters
- Regulating authorities

Due to the voluntary nature of standards developed by CLC/TC 209, the extent of their application in development and procurement processes varies. It is often the case, for example, that large cable network operators, whilst utilising the base standards, will also request additional specifications to be followed by their suppliers and, possibly, apply individual certification processes. However, European standards of EN 50083 and EN 60728 series are frequently used in call for proposals and in all kinds of contractual affairs.

The Harmonized Standards for EMC and Safety create the technical basis for the implementation of European Directives¹ and the corresponding national legislations and have, therefore, regulatory relevance in all countries belonging to the European Union or the EFTA.

There are no directly competing standards in Europe.

1 LVD - Low Voltage Directive (2014/35/EU); EMC - Electromagnetic Compatibility (2014/30/EU), RED – Radio Equipment Directive (2014/53/EU)

B.3 Trends in technology

The following technology trends influencing equipment, system design and structure of cable networks and reception of terrestrial radio, television and satellite television broadcasts signals are present in the marketplace:

- Digital transmission techniques replace analogue ones
- 4k and 8k TV formats supplement or replace HDTV formats
- Optical transmission techniques supplement and/or replace coaxial infrastructures
- Expansion of transmission capacity requires highly sophisticated modulation and coding techniques, increased frequency ranges and an overall high quality of cable infrastructures
- IP-based delivery of TV services will take an ever increasing share in the distribution of television and sound signals.

These technology developments will have direct impacts on the future standardisation work.

B.4 Market trends

Originally, cable networks, terrestrial radio, television and satellite television broadcasts signals were built with a coaxial infrastructure to serve for the distribution of television and sound signals only. Nowadays, regional and local cable networks evolved into widespread hybrid fibre-coax infrastructures and carry, besides these broadcast signals, all kinds of signals for multimedia services like fast internet access, cable telephony, on-demand services etc. As a result, these so-called “full-service cable networks” have to face direct competition from all kinds of wired and wireless telecommunication networks, which, in turn, endeavour to add a broadcast service component to their portfolio.

To address the strong competition, it is imperative that the current advantages of cable networks (e.g. high bandwidth and data capacity, ubiquitous availability within footprint) are preserved by utilising best practices in network architecture and installation and implementing the latest developments in technology. This demand has to be accompanied by a flexible and contemporary standardisation.

B.5 Ecological environment

Equipment used in cable networks and reception of terrestrial radio, television and satellite television broadcasts signals (excluding CPE) has, up to now, not been covered by any environmental directive of the EU, like the Ecodesign Directive (2005/32/EC). Energy efficiency considerations are, however, kept constantly under review. Relevant standardisation efforts are monitored and contributed to.

B.6 Involvement of societal stakeholders

Societal stakeholders have no direct involvements in the work in CLC/TC 209 although many of the performance standards are designed to ensure that end users receive a high quality service from the network operators.

B.7 Involvement of SMEs

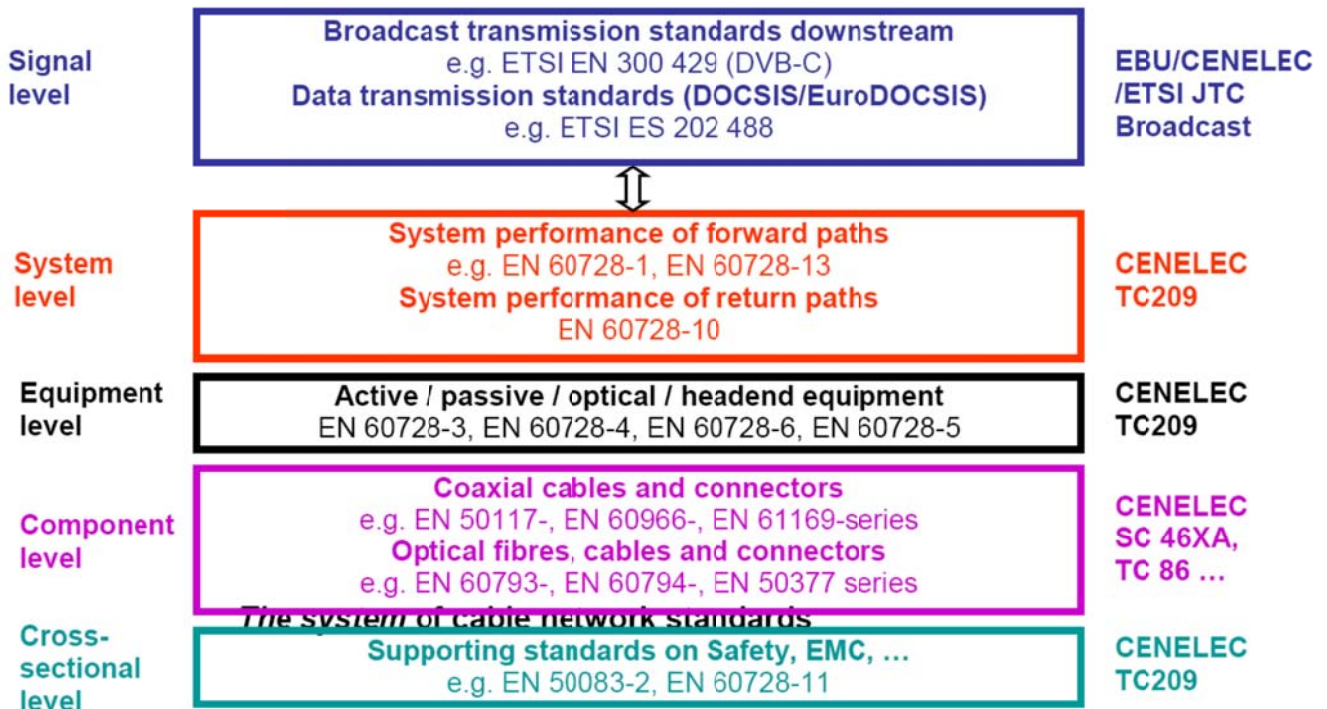
It is the task of the National Committees as members of CENELEC to provide delegates and experts to CLC/TC 209 in a representative manner covering all national stakeholders. Through this mechanism, SMEs are well represented in TC 209 from manufacturing industry side. Cable operators and cable, terrestrial radio, television and satellite television associations are providing input and representation on behalf of their members which include also smaller cable operators.

C System approach aspects

CLC/TC 209 develops the EN 50083 and EN 60728 standards series as part of a system which is based on different levels of standardization where TC 209 standards together with IEC TC 100/TA 5 establish the core of this system, providing 19 Standards, 1 Technical Specification and 5 Technical Reports for

- Safety
- EMC
- System performance and system specifications
- Equipment
- Status monitoring

Core standards take into account the requirements established by other standards, e.g. by DVB transmission standards, in order to provide a network platform. Core standards also make normative references to other standards, e.g. to coaxial cable standards. The following diagram gives an overview on this standardisation system for cable networks.



For coordination of the various levels of the standardisation system, TC 209 has established strong working relationships with other standards committees such as ETSI TC CABLE and ETSI TC ERM that are covering other standardization levels and/or are covering horizontal aspects relevant for cable networks. These liaisons intend to ensure that documents developed by these technical bodies do not conflict.

D Objectives and strategies (3 to 5 years)

In the medium-term, (3 to 5 years) TC 209 has defined the following **objectives**:

- Maintain the existing standard series EN 50083 and EN 60728 so that they remain relevant and up-to-date following the trends in technology
- Complete the new set of standards for optimisation of cable networks, terrestrial radio, television and satellite television broadcasts reception systems carrying only digitally modulated signals
- Address new developments in
 - optical transmission infrastructures
 - baseband transmission, using IP technology
 - evolved HFC network architectures
- Engage in new fields of satellite signal transmission
- Address relevant regulatory developments by providing appropriate contributions
- Develop interest in more CENELEC countries for active participation in TC 209 work

CLC/TC 209 relies heavily on the contributions of its technical experts and NC representatives to ensure that its knowledge base is current, comprehensive and relevant in a fast moving technological market place. It is of utmost strategic importance that TC 209 at least retains the current core of participants whilst striving to expand representation and recruiting additional experts as technology changes. This includes representation from cable network operators, to ensure that their technical business requirements continue to be met, as well as from manufacturers, universities and associations to ensure that new technological innovations are identified and standards developed in a timely manner.

CLC/TC 209 will continue to encourage NCs, especially those who have not actively participated in the past, to provide both representatives and technical experts.

E Action plan

E.1 To Implement the Common Modifications to IEC 60728-11:2016 as EN and to fully revise EN 60728-11:2016 in a 2nd step.

E.2 To develop EN 50083-2-4 on LTE mitigation filters in the 700 MHz and 800 MHz band for formal vote by 2019-03.

E.3 To revise EN 50083-2 and EN 50083-8 in the light of the new EMC-Directive and outdated normative references for formal vote by 2020-07.

E.4 To develop CLC/TS 50083-11 on energy efficiency aspects for EN 60728-based networks.

E.5 To update the existing ENs as required.

F Useful links to CENELEC web site

TC home page giving access to Membership, TC/SC Officers, Scope, Publications, Work programme [password-protected area].

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