

CENELEC/TC or SC	Secretariat	Date
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**TC title: Electromagnetic Compatibility (EMC)**

## A Background

CLC/TC 210 deals with a wide range of product family, generic and basic EMC standards, some initiated and produced by CENELEC but the majority parallel-voted under the Dresden Agreement. CLC/TC 210 coordinates activities on general EMC standards matters with IEC/TC 77 and CISPR committees.

Some standards are produced under mandates from the European Commission. These standards aim to protect the radio spectrum by their emission requirements and aim to ensure that equipment operates satisfactorily in its intended environment by their immunity requirements.

CLC/TC 210 has a coordinating role with CENELEC product committees that incorporate EMC requirements into their product standards, and guidance is provided in CENELEC Guides 24 and 25 (see section F of this business plan).

CLC/TC 210 has a Working Group (WG11) dealing with apparatus EMC standards for power line communication, and two joint working groups with ETSI, one dealing with EMC of wired networks and one defining the electromagnetic environment in UHF bands IV and V resulting from digital dividend.

## B Business Environment

### B.1 General

Electromagnetic compatibility is a horizontal-standard subject and many standards produced by CLC/TC 210 are listed in the Official Journal of the European Union under the EMC Directive 2004/108/EC and the R&TTE Directive 1999/5/EC. Some standards are also referenced by standards produced by other committees.

### B.2 Market demand

There is a strong demand for EMC standards to provide a presumption of conformity under the EMC and R&TTE Directives, and for the basic standards that provide consistency in testing by specifying the test methods. Standards produced by CLC/TC 210 cover a very wide range of products and some are amongst the highest selling titles for National Standards Bodies.

### B.3 Trends in technology

The electromagnetic environment is becoming more complex, as demand for spectrum increases, driving innovative and flexible uses, and higher data rates are demanded of copper networks. The migration from analogue to digital technologies both in the conducted and wireless domain imposes new challenges. The quest for energy efficiency and distributed generation is driving more complex electronics into domestic, commercial and industrial equipment, creating new threats to existing networks and equipment. The demands of smart metering and smart networks are increasing the need for communication. High power charging for electric vehicles in domestic and public settings, by both conductive and inductive coupling, will create stronger fields at the lower frequency end of the spectrum.

Changed use of the radio spectrum, particularly in the UHF bands, can be expected to increase local field strengths, and changes of modulation techniques are producing more aggressive disturbances, leading to a demand for higher levels of immunity in potential victim equipment.

Convergence in electronics has caused the production of multimedia EMC standards, and can be expected to continue, requiring better communication and cooperation between committees responsible for diverse product types as functionality widens and merges.

CLC/TC 210, within its responsibilities, seeks to balance the interests of all stakeholders.

### B.4 Market trends

The market will be driven by technological changes, which drive demand for ever shorter timescales for the production of new and amended standards.

CLC/TC 210 recognises that many products have a global market and within its responsibilities seeks to minimise differences between European and international standards.

## **B.5 Ecological environment**

EMC standards deal with control and effects of electromagnetic pollution (but not the safety aspects) that is not related to "ecology" in common parlance. However, good EMC leads to a cleaner radio spectrum which has clear benefits.

## **B.6 Involvement of societal stakeholders**

Most National Committee members are active in CLC/TC 210 meetings and/or by correspondence. The makeup of each National Standards Committee is the responsibility of the responsible standards body.

## **B.7 Involvement of SMEs**

A large number of SMEs (test laboratories, Notified Bodies and consultants) are involved in EMC standardisation.

## **C System approach aspects**

EMC standards generally set requirements at apparatus level, but some standards, for example EN 55011, can cover very large systems. Some standards relate to networks. When appropriate, there is cooperation with relevant ETSI committees.

The achievement of electromagnetic compatibility inherently requires a system approach by all involved and may require the application of several standards to achieve that aim, for example, control of emissions from a potential source and adequate immunity in a potential victim.

## **D Objectives and strategies (3 to 5 years)**

Complete the work on network EMC under Mandate M/313.

Complete the work on powerline EMC requirements (access and frequencies above 30 MHz).

Take into account the changing environment below 150 kHz.

Complete the review and amendments to standards for broadcast receivers to take into account new uses in the UHF bands IV and V, in particular "white space" devices.

Review guidance on EMC of military equipment and update if necessary.

Maintain and improve cooperation with other committees involved in EMC standardisation, both European and international.

## **E Action plan**

Continue to hold two meetings per year, in May and December, and create small, flexible and time-limited task forces to deal with specific tasks.

## **F Useful links to CENELEC web site**

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

CLC/TC 210 website:

[http://www.cenelec.eu/dyn/www/f?p=104:7:4187909369221151:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:814,25](http://www.cenelec.eu/dyn/www/f?p=104:7:4187909369221151:::FSP_ORG_ID,FSP_LANG_ID:814,25)

EMC Technology page:

<http://www.cenelec.eu/aboutcenelec/whatwedo/technologysectors/electromagneticcompatibility.html>

Guide 24 and Guide 25:

<http://www.cenelec.eu/membersandexperts/referencematerial/cenelecguides.html>