Standards update

Seeing Red

By David Hodges, Chairman, SCTE Standards Committee

This update relates to the standardisation work of IEC TC100/TA5, CENELEC TC209 and BSI EPL100/04.

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David Hodges was chairman of the CAI for 24 years after joining the Board in 1980. He was educated in Sevenoaks and at South East London Technical College where he gained a full tech. and completed his apprenticeship as a development engineer with GEC Elliott Automation, working on power station control and monitoring systems.

After a short period at the SIRA Institute as a research technologist, he joined Chubb as project engineer working on electronic security systems, including its large security projects, and became surveillance divisional manager running the CCTV operation.

In 1976 he joined the SCTE and two years later joined a CAI member, Kindue, as technical director and joining the CAI Board in 1980. At that time, he had the opportunity to develop some very special entry communications systems and, as a result of this work, Blakeglow Ltd. was formed. Over the years, he has moved Blakeglow into the installation field. Blakeglow Systems Ltd. is the latest form of the company which concentrates on systems.

During the past few years, he has been awarded an Honorary Fellowship of the Society and presented with its Tom Hall award. He has also been awarded an Honorary Fellowship of the CAI and was presented with the John Summerfield award. Dave currently represents the SCTE on BSi, CENELEC and IEC Standards Committees and is Chairman of the BSi Cable Standards Committee EPL100/04. He is also Chairman of the SCTE's Lecture and Standards committees.

This update relates to the standardisation work of IEC TC100/TA5, CENELEC TC209 and BSI EPL100/04. The background to this is as follows:

To provide a complete set of International and European standards of IEC/EN 50083 and IEC/EN 60728 series for cable networks and reception of terrestrial radio, television and satellite television broadcasts signals, mainly covering the following aspects:

- System performance (five parts).
- Electrical and optical system specifications and interfaces (seven parts), Equipment specifications (four parts) and Electromagnetic compatibility (two parts).
- Safety requirements (one 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, the technical committee is responsible for five ENs and one TR on specific techniques, such as satellite signal distribution over a single coaxial cable and transport of satellite signals over IP networks.

The process

The CENELEC 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 at a 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 of work on the EN 50083 series of European standards, solely produced by TC 209, a new initiative was started by IEC and the topic of “Cable Networks” was finally integrated into the new Multimedia Technical Committee TC 100 as Technical Area TA 5. Since that time, CLC/TC 209 has worked closely with IEC/TC 100/TA 5 so that 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.

Current situation

The new risk-based process of creating and vetting standards has caused significant problems for the revision of harmonised standards and for us particularly, insofar as this affects EMC and safety standards.

I am pleased to confirm that the EN 60728-11 Edition 4 has now been listed in the official journal (OJ). EN 50083-2 had stalled, along with some 80 other EMC standards, as a result of the Commission’s new approach with consultants rejecting standards as not meeting the new criteria. A month ago, we heard that EN 50083-2 would now be accepted by the commission, subject to some minor amendments, and would then also be considered for the RE directive.

Much of the work in the transition from analogue to digital has now been completed, but there is still new work to do.

WG1 (Safety)

Work on IEC 60728-11 on Edition 5 has been ongoing for the last 18 months to update the standard to the new LDV directive and related risk-based standards. The changes to the standard are substantial as there have been two stages of committee draft for comment (CD). Shortly, a committee draft for comment (CDV) will be issued by IEC and it is expected that the results of this will be available for the series of meetings during May 2019.

WG2 (EMC)

EN 50083-2 was submitted to the commission for approval last year and has been held up, along with many other EMC standards. In the meantime, the RE directive has resulted in pressure on existing standards to be RE directive-registered, including EN50083-2.

A review of EN 50083-8 is due and has been assigned to Working Group 2.

The work reported here last time, on LTE Interference Mitigation filters in the 800MHz-band, resulted in TS 50083-2-3 2018. The new work item on LTE Interference Mitigation filters in the 700MHz and 800MHz bands has its final vote at the end of January 2019 and will be EN 50083-2-4.

WG3 (Equipment)

The work on IEC 60728-3 has been completed. This Working Group took on the work detailed in Working Group 2 on LTE interference mitigation filters. A decision is awaited on the

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requirement for a maintenance cycle for EN/IEC 60728-3, which is due during March 2019.

WG5 (Optical Equipment and Systems)

Work on IEC 60728-14 continues and it is hoped that the ISBE RFoG standard can be used as input to this work. EN 60728-13-1 2017 Bandwidth Expansion for Broadcast Signal over FTTH system was released last year.

WG7 (System Performance)

This Working Group has no outstanding items at this time. System performance standards are as listed below, which includes EN 60728-101 2017 issued last year.

WG8 (Satellite Systems and Equipment)

This Working Group has no outstanding items at this time. The most recent standard was EN 50607 2015 Satellite signal distribution over a single coaxial cable - second generation.

My thanks to Thomas Weggerman, secretary of CENELEC TC209, for the following table.

Present status of International and European Standards and projects of EN 50083 and IEC/EN 60728 series and other standards and projects under TC209 and 100/TA5 responsibility
(Status: 2018-09-18)

"European Standard EN 50083 series"	International Standard IEC 60728 series (Stability Date)	European Standard EN 60728 series	Title of European Standard "Cable networks for television signals, sound signals and interactive services;"
---	IEC 60728-1:2014 (2020-12)	EN 60728-1:2014	Part 1: System performance of forward paths
---	IEC 60728-1-1:2014 (2020-12)	EN 60728-1-1:2014	Part 1-1: RF cabling for two-way home networks
---	IEC 60728-1-2:2014 (2020-12)	EN 60728-1-2:2014	Part 1-2: Performance requirements for signals delivered at the system outlet in operation
---	IEC 60728-101:2016 (2018-12)	EN 60728-101:2017	Part 101: System performance of forward paths with all-digital channels load
---	IEC 60728-106		Part 106: Optical equipment for systems loaded with digital channels only *Project withdrawn, will be restarted*
---	IEC 60728-113:2018 (2021-12) **NEW**	FprEN 60728-113	Part 113: Optical systems for broadcast signal transmissions loaded with digital channels only *Approved, EN awaited*
EN 50083-2:2012	IEC 60728-2:2018 (2020-12) **NEW**	---	Part 2: Electromagnetic compatibility for equipment Note: IEC aligned with EN of 2012
EN 50083- 2:2012/ A1:2015	---	---	Part 2: Electromagnetic compatibility for equipment; Amendment A1
EN 50083-2:2012 /prA2			Part 2: Electromagnetic compatibility for equipment; Amendment A2
CLC/TR 50083-2- 1:2014	---	---	Electromagnetic compatibility measurements
CLC/TR 50083-2-2:2014	---		Interference situation for DVB-T reception in the presence of LTE base station signals
CLC/TS 50083-2- 3:2018 **NEW**	---		LTE (4G) Interference Mitigation Filters in the 800 MHz band

"European Standard EN 50083 series"	International Standard IEC 60728 series (Stability Date)	European Standard EN 60728 series	Title of European Standard "Cable networks for television signals, sound signals and interactive services;"
prEN 50083-2-4: 2018	---		LTE (4G) Interference Mitigation Filters in the 700MHz and 800MHz bands
	IEC 60728-3:2017 (2020-20) **NEW**	EN IEC 60728-3:2018	Part 3: Active wideband equipment for cable networks NOTE: also replaces EN 60728-3-1:2012 and CLC/TC 50083-3-3:2014
---	IEC/TR 60728-3-2:2016-10		Part 3-2 : Method of measurement of 5th order non-linearity for active electronic equipment using five carriers
---	IEC 60728-4:2007 (2020-12)	EN 60728-4:2008	Part 4: Passive wideband equipment for coaxial cable networks
---	IEC 60728-5:2015 (2018-12)	EN 60728-5:2016	Part 5: Headend equipment
CLC/ TR 50083-5-1: 2009	After approval in CENELEC	---	Technical Report: IP gateways and interfaces for headends
---	IEC 60728-6:2011 (2020-12)	EN 60728-6:2011	Part 6: Optical equipment
CLC/ TR 50460:2005	IEC/TR 60728-6-1: 2006 (2018-12)	---	System guidelines for analogue optical transmission systems
---	IEC 60728-7-1:2003	EN 60728-7-1:2005	Part 7-1: Hybrid Fibre Coax Outside Plant Status Monitoring - Physical (PHY) Layer Specification
	IEC 60728-7- 1:2003/ A1:2015	EN 60728-7- 1:2003/ A1:2015	
---	IEC 60728-7-2:2003 Stabilised until 2026	EN 60728-7-2:2005	Part 7-2: Hybrid Fibre Coax Outside Plant Status Monitoring - Media Access Control (MAC) Layer Specification
---	IEC 60728-7-3:2009 Edition 2 Stabilised until 2026	EN 60728-7-3:2009 Edition 2	Part 7-3: Hybrid Fibre Coax Outside Plant Status Monitoring - Power supply to Transponder Interface Bus (PSTIB) Specification
EN 50083-8:2013	IEC 60728-12:2017 (2020-12) **NEW**	---	Part 8: Electromagnetic compatibility for networks
EN 50083-9:2002	IEC 60728-9:2000 (2012-12) IEC 60728-9-am1 (2012-12) Stabilized until 2026	---	Part 9: Interfaces for CATV/SMATV headends and similar professional equipment for DVB/ MPEG-2 transport streams
	IEC 60728-10:2014 (2020-12)	EN 60728-10:2014	Part 10: System performance for return paths
CLC/ TR 50083-10-1: 2014	---	---	Guidelines for the implementation of return paths in cable networks
EN 60728-11:2017/ A11:2018	IEC 60728-11:2016 (2018-12)	EN 60728-11:2017 **NEW**	Part 11: Safety requirements *Common Modifications for LVD*

"European Standard EN 50083 series"	International Standard IEC 60728 series (Stability Date)	European Standard EN 60728 series	Title of European Standard "Cable networks for television signals, sound signals and interactive services;"
---	IEC 60728-13:2010 (2020-12)	EN 60728-13:2010	Part 13: Optical systems for broadcast signal transmissions
---	IEC 60728-13-1:2017 (2020-12) **NEW**	EN 60728-13-1:2017 **NEW**	Part 13-1: Bandwidth Expansion for Broadcast Signal over FTTH system
---	IEC 60728-14:2014 (2019-12)	EN 60728-14:2014	Part 14: Optical transmission systems using RFoG technology

Other standards and projects under the responsibility of CLC/TC209 and/or IEC 100/TA5

	International Standard (Stability date)	European Standard/ Publication	Title of European Standard
---	---	EN 50494:2007	Satellite signal distribution over a single coaxial cable in single dwelling installations
---	---	EN 50585:2014	Transport of satellite delivered signals over IP networks
		EN 50607:2015	Satellite signal distribution over a single coaxial cable - second generation
		CLC/TR 50607-10:2015	Satellite signal distribution over a single coaxial cable - Part 10: Implementation guideline
---	IEC 61114-1:1999 (Stabilised until 2026)	EN 61114-1:1999	Receiving antennas for satellite broadcast transmissions in the 11/12GHz band - Part 1: Electrical measurements
---	IEC 61114-2:1996 (Stabilised until 2026)	EN 61114-2:1996	Methods of measurement on receiving antennas for satellite broadcast transmission in the 11/12GHz band - Part 2: Mechanical and environmental tests on individual and collective receiving antennas

Actual projects (new or revision)

Actual European version, published

Changes since Rev. 33 of this document, published in August 2017

Delayed projects

Standards' work is often painstaking and time-consuming, but always worthwhile. It is always better to take part at the formulating stage rather than discover horrific implications for your business when the standard is published! The maintenance teams/working groups in IEC and CENELEC are always looking for technical experts; if you really cannot devote time for the actual meetings, then at least consider commenting on the interim drafts that they issue.

For UK-based organisations, the SCTE is happy to circulate drafts of standards issued for comment and voting and to cross-correlate input into BSi. Please contact me if you would like to be on the circulation list. Other readers should contact their own national committees.

Please email me at **dave@hodges.co.com** if you would like to be included on the draft circulation list.