BUSINESS PLAN

CENELEC/TC	Secretariat	Date
86A	France	2012-12-18

TC title: Optical fibres and optical fibre cables

A Background

Technical Committee 86A and its working groups prepare standards, specifications and technical reports for fibre optic fibres and cables intended primarily, but not exclusively, for use with communications equipment. This activity covers terminology, characteristics, related tests, calibration and measurement methods, optical, environmental and mechanical requirements to ensure reliable system performance.

TC86A develops standards and other types of publications needed for trade and commerce of optical fibres and optical fibre cables. The basic understanding on behalf of the stakeholders is the development of generic and family product specification as performance specifications in defining interfaces / boundary conditions and in avoiding detailed product standards in order to avoid restriction of possible new developments and trends in technology and/or – in other view – to guarantee the possible implementation of new technologies and trends within the products in accordance to these family specifications by the manufacturers and/or customers and to avoid the possible misuse of standards as purchasing documents/specifications; this is also the understanding of IEC/TC 86.
The work of TC86A is not uniquely targeted to telecommunications, but covers a broad application spectrum (automotive, avionics, transportation, sensors, military, industrial automation, testing and calibration, structured cabling, oil and gas, etc.).

Today TC86A has three working groups.

Currently, there are experts from 17 countries who are active in the span of work covered by TC86A in the CLC Expert Management System.

TC86A and its working groups meet in general twice a year.

B Business Environment

B.1 General

The work of TC86A and its working groups has made, and continues to make, a profound impact on the broad band communications and fibre optics market. External factors, including the effects of the 2001 "Telecom Bubble" and the recent international and European financial crisis continue to impact the markets and commerce for optical fibres and optical fibre optic cables. However, the market has undergone a slow but steady growth and diversification of fibre optics applications since the early 2000 time period. This has resulted in continued participation by users and suppliers, as well as a shift from a few participants from large organizations to more participants from smaller organizations.

B.2 Market demand

Despite economic events of the 2000's which forced numerous telecommunications organizations downsizings, consolidations and layoffs, and the following 2008-2009 financial crisis, which had and still has a significant impact on investment reduction from major players (Telecom operators in industrialized markets), there is an underlying increase in the use of high speed data, which has continued to grow unabated annually. This has led to deeper penetration of communications and data transmission related applications that use fibre optic technology. While the market for long haul communication applications has remained somewhat saturated over the last 5 years, demand continues to emerge in LANs, data centres, residential cabling, industrial cabling and automotive applications. Demand has increased steadily in metropolitan and local access networks. This includes applications known as "the last mile" or Fibre to the x (FTTx, where x stands for curb, node, cabinet, premises building or home), stimulating optimized fibre designs (like bend-insensitive fibre) and cable designs (like high fibre count compact cables or cables specifically designed for brown-field Multi-Dwelling-Units applications). These swings impacted the worldwide market and not just the European one. As is evident, the underlying data transmission demand has resulted in renewed market growth.

Thanks to the increased demand of triple-play services, and the expectation that the effects of the 2008-2009 worldwide financial crisis will be absorbed in relatively short time, it is expected that the continuous increase of fibre optics technology penetration in the access network in many countries will contribute (jointly with the growth of IP applications) to guarantee a steady market growth for optical fibres and optical fibre cables falling under the TC86A standardization scope.

In addition to the previous bottom-up driver, a synergic top-down driver for optical technology market increase can be identified in the investment programs that some central or local governments plan to devote to the modernization of telecommunications infrastructure as a vital country asset (like other countrywide infrastructures, e.g. railways, airports, motorways, power transmission, etc.) to compensate for the difficulty of investments of traditional Telco operators. Such public programs, intended more to stimulate than to follow market demand growth, may have a crucial effect in a slow-down temporal frame to trigger applications and developments whose investments may not have been sustainable on a strict financial analysis.

In this context, the need for a "Smart Grid" from power sources up to the end users in all countries will create a new market demand. "Smart Electrification" will require transmission media in each of the grid segments and the Smarter the grid, the higher will be the data rate requirements. This could result in more optical networks along Overhead High Voltage Lines, as well as hybrid MV and LV cables including optical fibre use in the electrical distribution network and even optical home networking.

As technologies converge, TC86A will continue to explore application of existing or newly developed products in traditional areas (focusing on enhanced performance, wider usability, improved economics, and smaller, more dedicated spaces), as well as in new, emerging fields of application of optical technology (automotive, avionics, enhanced sensors, medical equipment, etc.), and for more demanding environmental and transmission requirements. Additional work is also foreseen in cooperation with other Technical Committees in the use or adaptation of TC86A work, as even low-bandwidth voice or data transmission (traditionally implemented by electrical circuits) is realized using optical transmission media.

B.3 Trends in technology

In addition to the traditional telephony driven applications, the convergence of digital data, video and telephony markets has resulted in demands for ever increasing data transport throughput, resulting in stronger emphasis on technical aspects that limit transport data rates. These include improved and accurate measurement, calibration and reproducibility of parameters such as attenuation, return loss, polarization mode dispersion (PMD), chromatic dispersion and bandwidth. There is also a need for design guides and technical reports to explain measurements as well as the use and limitations in operational situations, in view of innovative modulation techniques, for very high capacity transmission links. In addition to the impact of higher bit rates, market demands have also led to conversion to optical transport for many point-to-point applications that were traditionally realized electrically. During this conversion period, more combined active/passive applications in the outside plant will be seen. The combination of active electronics in enclosures is creating a typical operating environment with higher operating temperatures due to "trapped heat". Since most optical components are only specified for use in passive optical network elements, there will be a need to extend the temperature ranges in the existing environmental categories for optical components used in combination with enclosed active electronics.

Under development are standards to address new optical fibre designs including alternatives to all glass silica based fibres such as plastic or plastic clad silica, and new designs of optical fibres optimized for ultra tight bends that will have a positive impact on installation practices and on the size of network elements.

Further developments include new optical cable designs for cables better matching their targeted installation environment. This includes optimized mechanical properties as well as fire behaviour and installation practices for dedicated cables.

Work in fibre optic sensors has been re-instituted and promises to be an important area, although it is outside of the telecommunication area.

B.4 Market trends

As the market has stabilized from previous years of turbulence, new entrants have emerged and new products are also emerging (e.g. optical circuit boards, active optical cables for device to device connections or fibre optic sensing devices). The challenge for TC86A is to continue to attract the participation of these new market entrants to the CENELEC and TC86A's work. Additionally, as technologies converge, more communication technologies are being realized using optical solutions. TC86A will continue to strive to develop a useful base of standards for these technologies to utilize in development of optical communication solutions.

The close cooperation between CLC/TC 86A and IEC/SC 86A on the basis of the Dresden Agreement between CENELEC and IEC allows a broader view of the market trends not only on the European but also on the worldwide needs. This cooperation is not only covered by liaisons but also by the direct participation of CLC/TC 86A members to these IEC Committees as for instance within the IEC/TC 86 Committees and working groups as well as the Advisory Committee for Telecommunications (ACTEL) representing a unique opportunity to improve the market relevance of the technical work carried out also in SC86A through the added value of strategic market perception from senior industry representatives. The Dresden Agreement allows sharing the development of international standards in order to avoid double work. The procedure for the adoption of international IEC standards as European standards is layered down in the parallel voting procedure for new IEC standards' projects. CLC/TC 86A has – within this procedure – the duty to make recommendation for the acceptance of IEC standards as IEC standards only and/or for the implementation of these standards in parallel as European standards (EN).

The European market trends are also including the Mandates issued by the European Commission for the development of European specific standards as procedural instructions for European laws within the New Approach; aiming at building a common European market by overcoming the multiple national regulations within the individual member states. One example for such European mandates is M/443 on the standardization of the Construction Product Directive (CPD) later transferred into the Construction Product Regulation (CPR), here especially for cables to be installed in construction works with respect to their individual reaction to fire and resistance to fire performances. Such mandates are given by the European Commission to the European Standardization Bodies in order to take the advantage of the technical and standardization expertise of the experts within the Technical Committees and therefore with the involved European Industries. Mandated European standards (ENs) can't be overruled by international standards, but they can be issued as NPs in IEC to promote their international acceptance.

B.5 Ecological environment

Recognizing the need to address questions regarding the environmental impact of products in TC86A. TC86A will review the recommendations outlined on environmentally conscious design for electrical and electronic products, environmental standardization for electrical and electronic products and systems and other relevant documents.

B.6 Involvement of societal stakeholders

TC 86A is always pleased to welcome societal stakeholders among the National members.

B.7 Involvement of SMEs

SMEs are directly involved as members of National committees and/or national professional associations being stake holders of the national committees.

B.8 Involvement of Universities and Research Institutes

Experts from Universities and Research Centres as members of National Committees and/or national professional associations being stakeholders of national committees are welcomed to be involved in standardization work of CLC/TC 86A.

C System approach aspects

TC86A and its Working Groups / joint Working Groups are component committees dealing with optical fibres and cables.

TC86A and its Working Groups act as supplier of component specifications for the systems specified in other CENELEC TCs (e.g. CLC/TC 215) and other bodies.

The awareness of all system aspects of the components that TC86A is called to standardize greatly helps TC86A's understanding of the market environment in which we operate and promotes communication, reciprocity and cooperation between TC86A and the numerous bodies with which we cooperate/interact.

TC86A and its Working Groups work directly in component specification work through liaisons and/or joint working groups to several CENELEC Technical Committees such as TC46X (Communication cables), TC86BXA (Fibre optic interconnect, passive and connectorised components, TC 215 (Electrotechnical aspects of telecommunication equipment) and others.

D Objectives and strategies (3 to 5 years)

TC86A looks to the future with the following objectives:

(1) Continue to sustain the quality and appropriate work required by our industry enabling medium and long term growth in relevant markets.

(2) Establish and nurture relationships to other Technical Committees and external organizations

undertaking work relevant to TC86A's mission;

- Feed those Technical Committees and external organisations that deal with optical systems with TC 86A relevant technical specifications to be referred to into their documents;
- Utilise technical inputs (i.e. environmental, mechanical, performances requirements) that are provided by Technical Committees and external organisations to establish technical specifications that support actual market demand;
- Nurture systems committees with technical specifications for new innovative products to be incorporated in their applications.

(3) Deliver useful documents for industry in a timely manner while minimizing market confusion or divergence of essential fibre optics definitions and product specification requirements.

(4) Continue to maintain the critical mass for all fibre optics related work, evolving as our industry and markets change, while ensuring that the composition of TC86A experts reflects the makeup of our industry.

E Action plan

For the items outlined in D above:

Objective D-1

- Manage the TC and WG organization, structure, frequency and location of meetings to ensure improved efficiency and optimum use of expert time and resources
- Continue to measure and report voting with the objective to ensure availability of experts to actively participate and contribute to technical meetings and to ensure that internal procedures are adapted to cope with voting on documents within the requested time periods

Objectives D-2 and D-3

- Continuously improve quality, quantity, timeliness and effectiveness of joint work with TC46X on Optical functionality for electronic assemblies
- Continuously improve quality, quantity, timeliness and effectiveness of joint work with TC86BXA on Optical / electrical hybrid connectors

Objective D-4:

- Review annually the industry market leaders in the areas addressed by TC86A Working Groups, with a goal of attaining increased representation of the major market manufacturers and users.

F Useful links to CENELEC web site

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

CLC/TC 86A working documents are available on CLC collaboration tool through CLC website. CLC/TC 86A has a particular location at the CNELEC website:
http://www.cenelec.eu/dyn/www/f?p=104:7:4209738406808905:::FSP_ORG_ID,FSP_LANG_ID:884,25

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