STANDARDISATION ACTIVITIES IN INTELLIGENT TRANSPORT SYSTEMS IN THE CZECH REPUBLIC

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Summary: The article is aimed on an overview on standardisation activities in intelligent transport systems (ITS) in the Czech Republic. International background and circumstances are described. Innovative method of work of Czech experts is explained. Information sources for standardisation procedures, standards and linked activities are included.

Key words: Technical Standard, Interoperability, Intelligent Transport Systems.

TERMS

"Technical Standard" is, from the legislation point of view, a non-mandatory document; nevertheless, use of technical standards can be demanded or required by purchasing/procuring side to assure interoperability.

ABBREVIATIONS

CTN   (delegated Czech) Technical Standardisation Centre
ČSN XY   the Czech national standard
EN XY   the European standard of CEN (European Committee for Standardization)
ISO XY   the international standard of ISO (International Organization for Standardization)
ITS   Intelligent Transport Systems
TNK   (Czech) Technical Standardisation Committee
ÚNMZ   Czech Office for Standards, Metrology and Testing

INTRODUCTION

Standardisation in the area of information/data form and communication ways runs for years with the main aim to reach interoperability on an international level. Interoperability means end of isolated "island solutions" and is important in a wide range:

- Among individual systems
- Among product producers
- Among service providers
- Among professional areas and
- Among countries globally

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Since the intelligent transport systems are more and more service and end user oriented, indeed, using standardisation enables options for data exchange, systems integration and data sharing. Because of fast development in ICT (Information and Communication Technologies) and linked deployment of ITS, it is necessary to periodically update standards accordingly with needs.

„The primary objective of standardisation is the definition of voluntary technical or quality specifications with which current or future products, production processes or services may comply. Standardisation can cover various issues… or technical specifications in product or services markets where compatibility and interoperability with other products or systems are essential.“ (1)

1. INTERNATIONAL STANDARDISATION

Standardisation in ITS area at European level is supported and performed mainly by CEN (European Committee for Standardization) and ETSI (European Telecommunications Standards Institute).

At the worldwide level, IATA (International Air Transport Association), IEC (International Electrotechnical Commission), IEEE (Institute of Electrical and Electronics Engineers), ISO, ITU (International Telecommunication Union), OASIS (Organization for the Advancement of Structured Information Standards) and UN (United Nations) are leaders. Cooperation and coordination is necessary for standards designing in topics of interests across of the mentioned institutions. Also the World Customs Organization is an institution triggering demand on interoperable form of data and messaging.

The European ITS Directive requires four priority areas for the development and use of specifications and standards (2):
I. Optimal use of road, traffic and travel data
II. Continuity of traffic and freight management ITS services
III. ITS road safety and security applications
IV. Linking the vehicle with the transport infrastructure

Information safety and privacy of users is one of safety tasks and a basic issue (3). It is necessary to cover interests of consumers including disabled persons (1).

For enabling a faster track for certain industrial areas standardisation, so called mandate is a possible tool. „The concept of a mandate is based on the principle of partnership, cooperation and the clear division of tasks between the public authorities and the duly recognised European standardisation bodies (4).“ In this way, public sector demands technical specifications and standards for completing their needs/public interests, and meeting their requirements in regard of products, procedures and services design and specification based on the state-of-the-art. A standardisation mandate follows a study mandate and a programming mandate, and all are demand driven (4).

In the 2013, a proposed outline has been completed for the Rolling Plan for ICT Standardisation, what can be seen as a supportive European document for the standardisation, too (5).

2. CZECH STANDARDISATION

Technical standardisation in the Czech Republic runs under umbrella of ÚNMZ, established by Czech National Council Act No. 20/1993 Coll. on Organisation of the State Administration in the Field of Standards, Metrology and Testing. ÚNMZ deals with issues based on Czech legislation and EU membership (6).

Department of Technical Standardization of ÚNMZ ensures development, publication and distribution of Czech technical standards, documents and publications. It enables professional activities related to standardisation that are given by the Act No. 22/1997 Coll. on Technical Requirements for Products. ÚNMZ is responsible for cooperation with European and international standards organizations within the competence of the department (6).

In the Czech Republic, there are two main technical committees for technical standardisation linked with the area of intelligent transport systems: ÚNMZ TNK78 Packages and Packaging, and ÚNMZ TNK136 Transport Telematics. TNK 78 is managed by CTN CIMTO and TNK 136 by CTN SILMOS. Both of CTNs closely cooperate with the international bodies.

3. CZECH CENTRES FOR TECHNICAL STANDARDISATION LINKED WITH TRANSPORTATION

3.1 TNK 78 Packages and Packaging (CTN CIMTO)

CIMTO is an immediate successor of earlier testing and research activities in the area of packages and packaging. The company was launched 1971, after joining more facilities into one of CIMTO. They offer various expert services. CIMTO reached the following certificates (7):

- Czech certification authority No. 3063 for certification of packaging materials and packaging and transportation means, and
- Accredited testing laboratory No. 1075 for testing packaging and IBC (Intermediate Bulk Containers) vessels mainly for dangerous goods according to international standards and regulations

In 2007, CIMTO was assigned to manage TNK 78 Czech technical standardisation committee. (More on www.cimto.cz)

3.2 TNK 136 Intelligent Transport Systems (CTN SILMOS)

TNK 136 is a mirror committee of CEN/TC 278 and ISO/TC 204, which is administrated by SILMOS (8). The committee activities were originally, since 1994, included under the technical committee on roads. Since 2003, TNK 136 works autonomously. Its members cover 18 CEN and ISO working groups, with different fields of expertise in ITS. (More on www.silmos.cz/?doc=tnk136).

4. ITS STANDARDISATION ACTIVITIES IN THE CZECH REPUBLIC

„In order to speed up the decision-making process, national standardisation bodies and European standardisation organisations should facilitate accessible information on their activities through the promotion of the use of information and communication technologies (ICT) in their respective standardisation systems…" (1)

ITS standardisation activities in the Czech Republic relate to national circumstances and needs, and the organization of TNK 136 can be offered as a potential reference model for active standardisation planning and organization in other countries.

The Czech Republic endeavours to make ITS standards accessible to all users by means of the Ministry of Transport and ÚNMZ. In TNK 136, which is administrated by SILMOS company, from the current overall number of 177 nationally adopted standards and documents 50 were translated into Czech language, 127 were deployed in English, 71 of them containing synopsis in Czech, translation of terminology and normative and cited references. Only 55 standards have not been deployed.

There is also a unique project running, called Standard project, aimed at spreading information about ITS standards - every approved standard is converted into a detailed formalized informative text (so called extract – about 5 pages long), offering crucial information about the standard. These extracts are available at public website: http://www.silmos.cz/standard/. More than 200 extracts have been created so far to support private sector (mainly industry and services focused) and public sector (administration´s needs in technical specification for procurement purposes), and experts in research, development and innovations area, both from private and academic sectors.

Annually, a national plan of ITS standards deployment is being prepared to enable a smooth cooperation between TNK136 and ÚNMZ decision makers. In this way, optimisation of ITS stakeholders´ needs and public resources for Czech ITS standardisation is ensured. These goals are being monitored via annual reporting.

5. ACHIEVEMENTS

In the following paragraphs, there are specified services in ITS standardisation in the Czech Republic.

5.1 SILMOS offers to its members, cost free

Membership is cost fee for all experts involved as TNK136 delegated persons. The delegation comes via the Czech Ministry of Transport.

SILMOS provides monitoring, selection and record of CEN/TC 178 and ISO/TC 204 documents and activities.

In a role of secretariat, SILMOS also distributes documents for ballots and other important documents of CEN and ISO, and leads dealings with the Ministry of Transport and ÚNMZ, about adoption of new standards as ČSN etc.

It supports creation of a National Plan of ITS standards annual deployment for all working groups in the TNK136 and its provision to ÚNMZ and the Ministry (8).

5.2   www.silmos.cz offers for public, cost free

Towards public, SILMOS gives an overview of existing standards in the area of ITS.

For public, professional and general, results of the Standard project are available - extracts from chosen standards, as described in chapter 4 (being gradually completed).

TNK 136 activities on national and international levels are described, too (8).

5.3   www.unmz.cz offers for public, cost free

ÚNMZ Bulletin with news is available online.

Also a complex ČSNs overview from all ÚNMZ TNKs is being offered. ČSNs contents for potential buyers are online (started 2012 and being gradually completed) to ease a decision which of standards is/are the needed for their considered activities.

5.4   www.unmz.cz offers a service to be paid

It is possible to buy all official standards and technical specifications in a printed form via ÚNMZ.

Access to the ÚNMZ electronic database for an individual specific standard as a paid service is enabled. Also annual subscription for online access to the standards database is a very welcome tool for persons or companies with a long term interest; printing of standards is allowed; electronic copies download is not permitted (6).

5.5   Transport Dictionary: www.slovnikdopravy.cz offers cost free

Czech/English and English/Czech technical Transport Dictionary based on standardisation activities, including definition and explanation of terms in both of languages. Created by SILMOS in collaboration with members of other technical committees and supported by the Ministry of Transport (9).

6.   SOURCES FOR FURTHER INFORMATION ON INTERNATIONAL STANDARDISATION

For details about international environment, the official web pages of related standardisation bodies are available with the following information types:

6.1   www.cen.eu (10)

Cost free information on existing CEN standards incl. search tool is available. All CEN standards are available via National Members of CEN, in the CR, it is ÚNMZ - as above.

Membership in the Joint Working Group Education about Standardization (JWG-EaS) is possible. Education and training activities support knowledge on standards, and hence use of them.

6.2   www.ieee.org (11)

IEEE Get Program enables cost free access to selected IEEE standards.

Other IEEE standards and publications are possible to obtain via Catalogue and Internet eShop. There is also an online tool called Standards Tracking Service, which allows to see "what is new about the standard of my interest?"

Standards and certified professional education, also in an eLearning form are supportive activities by IEEE for spreading the knowledge.

6.3   www.iso.org (12)

Also ISO offers cost free information on existing ISO standards incl. search tools.

Catalogue and Internet eShop for ISO standards and other ISO publications enables purchasing.

ISO repository of teaching materials is possible to get cost free or to order it as a paid service via certain publishers, depending on the certain document.

CONCLUSIONS

Activities developed by TNK 136 for promotion of technical standardisation in the field of intelligent transport systems were specified here, since they are internationally unique and national Czech processes could be applied as a reference model in other countries.

ITS technical standards may ease interoperability and also systems integration, what are highlighted future aims in Europe.

Technical standardisation is thought as a key issue for the economic success and political integration in Europe (13).

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