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English version

Traffic and Travel Information (TTI) - TTI messages via cellular networks - Part 5: Internal services

This Technical Specification (CEN/TS) was approved by CEN on 10 May 2001 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (CEN/TS 14821-5:2003) has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Transport information and control systems".

This technical specification was prepared by Working Group 7 of CEN TC278. In the field of Traffic and Traveller Information, the innovative rate is high, with many research and development projects under way in many countries, and there is a need to establish prospective standards which allow manufacturers to introduce competitive products to the market in the knowledge that they can accommodate the future issues of the standard(s) without fundamental change to equipment.

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No known national technical specifications (identical or conflicting) exist on this subject.

CEN/TS 14821 consists of eight parts; one part describing the framework and seven parts providing detailed specifications of all components, protocols and services that are within the scope of CEN/TS 14821.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this CEN Technical Specification: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Traffic and Traveller Information (TTI) may be disseminated through a number of services or means of communication, covering static displays, portable terminals and in-vehicle equipment.

For all such services, the data to be disseminated, and the message structure involved in the various interfaces, require clear definition and standards formats in order to allow competitive products to operate with any received data.

This technical specification focuses on an application data specification whereby data is produced at a central location and is disseminated via a cellular radio network. It addresses the data specifications for both downlink and uplink existing between a central location and randomly located vehicles. It enables messages to be exchanged between different systems and service providers adopting a variety of applications specifications.

Other techncial specifications are being produced by the CEN TC278 Working Group 4 to cover TTI dissemination via other means or services. This set of specifications is named GATS (Global Automotive Telematics Standard). GATS provides the modular framework for implementing such traffic telematics services on an open technology platform and is network - independent. In many details definitions are necessary to ensure interoperability. Therefore, those detailed definitions are given in a network-specific part (CEN/TS 14821-8). With the development of future mobile communication systems towards UMTS / IMT2000 the bottleneck of narrow-band data communication might fade. Due to its modular structure, the GATS framework and applications are prepared for that due to its network-independence. The same holds for emerging technologies for positioning which today is almost exclusively based on GPS.

Other relevant standard developments are, independent from telematics, the application-independent Wireless Application Protocol (WAP), enabling mobile access to the Internet. It is understood that these emerging technologies might fit into the framework of telematics applications in future WAP-versions. For the time being, GATS already today independently from WAP enables access to telematics services. Utilisation of GATS on a WAP protocol stack and identifying necessary adaptation of WAP specifications (if any) is currently under investigation of the appropriate groups within WAP-Forum and GATS-Forum.

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1. Scope

This CEN/TS defines the specific interfaces and functionality of traffic telematics (TT) services based on the use of cellular networks. Device manufacturers are enabled to develop terminal equipment compatible to services based on this technical specification. This will allow for interoperability of different terminal equipment and service providers which allows competition between service providers and terminal manufacturers. Furthermore it sets the scene for international availability of these services.

This technical specification specifies

- TT-specific interfaces between terminal and service centre. This especially incorporates the message sets of the application data protocols and the service-independent communication handling (including conditional access and transport protocols).
- Functionality, procedures and requirements of basic terminal components as well as their interaction with the service centre. This especially comprises conditional access and security mechanisms.
- Service Specifications, which are essential to ensure consistent behaviour of terminal and service centre.

The services incorporated within this issue comprise:

- breakdown and emergency services
- interactive traffic information services
- broadcast traffic information services
- navigation services (route assistance, route advice, homing)
- operator services
- general information services
- floating car data collection

It is envisaged that future research and development will lead to improvements on the services listed above as well as to the creation of new services. Nevertheless this technical specification provides the framework for seamless integration of new features and services into the existing architecture.

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2. Normative references

This Technical Specification incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO/IEC 9797-1	Information technology -- Security techniques -- Message Authentication Codes (MACs) -- Part 1: Mechanisms using a block cipher
ISO/IEC 9797-2:2002	Information technology -- Security techniques -- Message Authentication Codes (MACs) -- Part 2: Mechanisms using a dedicated hash-function
ISO/IEC 10116	*Information technology – Security techniques - Modes of operation for an n-bit block cipher*
ISO/IEC 10118-1:2000	*Information technology - Security techniques – Hash-functions – Part 1: General*
ISO/IEC 10118-2	*Information technology – Security techniques – Hash-functions – Part 2: Hash-functions using an n-bit block cipher*
ISO 11568-3:	*Banking - Key management (retail) - Part 3: Key life cycle for symmetric ciphers*

PKCS#1: RSA Encryption Standard, RSA Labs Technical Notes, Version 1.5, Nov. 1993

CCITT, Annex A to CCITT Blue Book Rec. E212

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