

Dear ITS Standards Stakeholder

**EUROPEAN ITS STANDARDS STEERING GROUP (ITSSG)
STRATEGIC FRAMEWORK DOCUMENT**

I am very pleased to enclose a copy of the ITS Standards Steering Group's first major output – a Strategic Framework for Intelligent Transport Systems (ITS) Standards – which was launched on 3 November at the CEN/CENELEC/ETSI organised Transport European Standardisation conference in Brussels.

Established in 2003 by the ICT Standards Board with a broad membership, ITSSG exists to steer and co-ordinate at a strategic level the development and deployment of Intelligent Transport Systems standards internationally. ITSSG has a particular focus on the standards falling under the responsibility of the European Standardisation Organisations (ESOs) CEN, CENELEC and ETSI and the links between the ESOs and ITS standards being developed through their global counterparts ISO, IEC and ITU.

The enclosed Strategic Framework provides the ITS community with an over-arching policy context for ITS standards activity that recognises the role of industry innovation and motivation. It is being disseminated widely.

ITSSG encourages all those involved in ITS standards development itself to consider how their current and future work programmes fit within the Strategic Framework. The standards technical committee representatives in ITSSG will be working with their working groups to facilitate this and will report to ITSSG on a regular basis.

Section 6 of the Strategic Framework summarises the next steps for ITSSG and includes a commitment to update the Framework document on an annual basis, to keep it fresh and to expand its content and impact over time.

ITSSG welcomes feedback on the Strategic Framework either through ITSSG members or directly to the Secretary whose contact details are Gerd.Ochel@etsi.org.

Regards



**Cathy Jenkins
UK Department for Transport
Chair, ITSSG**

INTELLIGENT TRANSPORT SYSTEMS (ITS) STANDARDS STEERING GROUP

STRATEGIC FRAMEWORK FOR INTELLIGENT TRANSPORT SYSTEMS (ITS) STANDARDS

Section 1 Introduction

1. This first published output from ITSSG¹ provides a strategic framework for ITS standards by identifying the high level European policy context, discussing in broad terms the role of standardisation in responding to that context. By focusing on a policy and policy delivery context, the document should not be read as a detailed statement of industry-driven activity in ITS standards. Instead, it aims to demonstrate that regardless of the organisation(s) driving development of an individual standard, there is a continual need to take account of a high level 'policy' context. The document summarises as illustration through Annexes A to C the current work streams of the key relevant standardisation technical committees. Annex D is a glossary of abbreviations used in the document and Annex E a list of ITSSG members.
2. The principal audience for this strategic standardisation framework is twofold: those developing standards within the ITS community and those setting the high level policy context. In producing this document, ITSSG hopes that it will also be of interest to a wider audience of industry, public sector and consumers. ITSSG hopes that the relevant Standards Bodies will ensure that this document reaches those audiences at the working level.
3. The document focuses on the roads sector, and on public transport in a multi-modal context, for example in relation to smart cards and traffic and traveller information. Whilst some reference is made to other modes for completeness, they are not discussed in detail in this current document.

Section 6 sets out the role for ITSSG and next steps it will take to work towards a more strategic approach to standardisation for ITS. In summary ITSSG will:

- Disseminate this framework document
- Consider the standardisation process
- Work effectively with the EC and others
- Encourage delivery of meaningful ITS standards
- Review ITS standards work programmes for contextual relevance
- Update the strategic framework

¹ Annex D contains Abbreviations used in this document

Section 2 High Level Policy Context

4. Several key European policies set a high level context both within the EU and EEA EFTA states. They fall into 3 broad and overlapping categories – transport, eEurope (including eSafety) and economic competitiveness policies. Policy delivery is achieved through a combination of tools and mechanisms including regulatory, fiscal and administrative measures that embrace the standardisation process directly or indirectly.
5. The following paragraphs describe each policy category as it relates to ITS, and identifies current priority regulatory measures specifically.

Transport

6. *Transport policy for 2010: time to decide*². The White Paper sets a European strategic direction for transport based on a principle of achieving balance between different transport modes in order to deliver better and more sustainable mobility for individuals and business. In doing so it recognises the continued growth in road transport and the need to improve road safety and reduce congestion (with consequential environmental benefits) to improve network efficiency as key priorities. ITS is identified as a key tool to help achieve those priorities and standardisation plays an important role in enabling and supporting their delivery.
7. Two key priorities, where standards are already being developed to protect interoperability and which are being taken forward as general transport measures using ITS are:
 - Directive 2004/52/EC on the interoperability of electronic road toll systems in the EU³; and
 - the EU High Level Group on Road Safety exploring the feasibility of electronic vehicle identification⁴.
8. The EU Road Safety Action Programme aims to deliver the White Paper target to reduce by half the number of road fatalities by 2010. It acknowledges the role of ITS in supporting achievement of that target, with a particular emphasis on the eSafety agenda, which has developed under the eEurope banner, and which includes a number of standardisation issues through a European Commission (EC) Communication⁵ described further in paragraph 13 below.
9. The European Commission Trans-European Road Network initiative aims to establish appropriate inter-operable and accessible service provision on the strategic road network across national boundaries, and into urban areas. It focuses on information society deployment. Policy documents such as those described below and Euro-regional projects⁶ that focus on cross-border co-operation by implementing continuous

² Published September 2001

³ 29 April 2004

⁴ EC supported ERTICO-led feasibility study; papers available at www.ertico.com

⁵ COM(2003)542 final

⁶ ARTS, CENTRICO, CORVETTE, SERTI, VIKING

and interoperable services in neighbouring transborder areas show a dear ITS and ITS standardisation relevance, that can provide a framework for service delivery to which industry can respond.

eEurope

10. eEurope is a wide-ranging initiative that aims to optimise the use of new and emerging electronic technologies to support a sustainable Europe. It is not specific to transport but has acknowledged in its Action Plan 2002 a specific ITS role in helping to tackle congestion, safety and service provision⁷. It extends beyond road transport, taking forward initiatives such as the Single European Sky that will establish inter-operability into European air traffic management. This ITSSG document focuses on those elements relevant to roads and multi-modal traffic and traveller information.
11. eEurope encourages deployment of smart cards for public transport and better traveller and travel information to promote choice and accessibility across the EU. The EC Recommendation on Traffic and Traveller Information⁸ provides added impetus to this high level aim that is ITS dependent.
12. The eEurope Action Plan 2002 adopted an EC Decision on further development of the Galileo infrastructure, aiming to introduce by 2010 a European satellite positioning infrastructure to complement the existing GPS under the eEurope banner. Galileo represents an area of major investment by the EU and is likely to offer opportunities for enhanced service provision through ITS. Considerable and rapid progress is being driven forward under the framework of the Galileo Joint Undertaking, including political agreements between EU and other countries (including the US), legislative requirements⁹ and technical development including through the EC Framework 6 research programme.

eSafety

13. The EC Communication on ICT for safe and intelligent vehicles identifies European Commission actions and actions for many other stakeholders including standardisation bodies, industry groups and member states in response to 28 recommendations in the eSafety report published in November 2003 that focused on delivering safer vehicles through ITS measures.
14. eSafety is entirely ITS specific, generally focusing on roads and on multi-modal issues relevant to traffic and traveller information. Its work is being taken forward through a series of working groups. As part of eSafety, the European Commission is placing particular priority on the following regulatory or quasi-regulatory issues:

⁷ Action Plan 2005 is now in place and does not include ITS priorities given its strong focus in Action Plan 2002.

⁸ 2001/551/EC dated 4.6.2001.

⁹ for example, Council Regulation 1321/2004 (12/07/2004) on the establishment of structure for the management of the European satellite radio-navigation programmes; Draft Council Regulation COM(2004)477 on the implementation of the deployment and commercial operating phases of Galileo

- promoting harmonised, pan-European in-vehicle emergency call services that build on location-enhanced E-112. The European Commission specifically encourages relevant standardisation as part of encouraging establishment of data requirements and transfer protocols, interface specification, routing and handling procedures. Without it, pan-European services would not be possible.
- A Human Machine Interface working group is focusing on nomadic devices and will make recommendations in the light of the existing Statement of Principles. The European Commission is also promoting development of standardised workload assessment, testing and certification methodology and procedures for complex in-vehicle working environments, helping to provide solutions that meet an acceptable level of in-use performance for the end consumer.
- through an RTTI working group, the European Commission is analysing responses to the TTI Recommendation mentioned in paragraph 11 above, with a particular focus on achieving pan-European services and sustainable business models. Securing appropriate standards to enable such services to grow is a key part of the discussion in this area.
- Removal of legal barriers to a time-limited use of 24GHz UWB short-range radar, to help achieve harmonised access to radio spectrum in the EU.

15. Vehicle safety in the EU is protected through type approval legislation governed by a hierarchy of Directives aimed at total harmonisation of vehicle construction requirements relating to safety and the protection of the environment. Currently, a regime of total harmonisation (EC Whole Vehicle Type Approval) applies to cars and motorcycles at entry into service, thus ensuring both high levels of safety and removing all technical trade barriers within the Single Market (all EU and EEA States). This will soon be extended to most commercial vehicles first on a voluntary basis (removing trade barriers) and later on a mandatory basis to ensure high standards but for the time being, partial harmonisation applies to these vehicles through the many (about 50) systems and component Directives. In parallel but independently in legal terms, the World Forum for Harmonisation of Vehicle Regulations (known as Working Party 29 of the Inland Transport Committee of the UNECE¹⁰) has for over 40 years been developing regulations based on type approval under the 1958 Geneva Agreement, which technically are the same or similar to EU Directives

Economic competitiveness

16. Enabling and sustaining economic competitiveness based on an open and single market lies at the heart of European policies.
17. Ensuring a level playing field through appropriate legislative and other measures, including encouraging and supporting standardisation are key elements in the European Commission's approach and are of direct relevance to ITS.
18. The European Commission also promotes innovation and realisation of new technologies into the marketplace through research and development programmes that attract funding. Specifically, the FP6 research programme launched in 2003

¹⁰ For further information on the work of UNECE and the World Forum see www.unece.org

confirms ongoing EC commitment to pre-competitive technology development and ITS within that general scope, opening considerable opportunity for research that has a direct bearing on standardisation.

Section 3 The Role of Standards

19. International, or European, standards have the potential to support delivery of the high level transport, eEurope, eSafety and economic competitiveness policy context both formally through the regulatory process and informally through industry action that responds positively to the context overall. A recent report commissioned by the Dutch EU Presidency¹¹ identifies ICT standards as key to ensuring interoperability and market growth. Standards can – *inter alia* - tackle technical design, quality assurance, system process and performance issues, all of which are relevant in an ITS context.
20. Sections 4 and 5 below identify the key methods and approaches towards the production and maintenance of individual standards. The main challenges for ITS standardisation are to achieve variously inter-operability, compatibility, convergence and accessibility of services across the EU and EEA/EFTA states. In tackling these challenges and meeting the policy context, the standardisation process should also support competition, enable a widened market for products and services, stimulate technological progress and prevent interference between products and services. Individual ITS standards, whilst technical in nature, should be clear and transparent in their presentation.
21. This general role for standardisation is equally relevant in what could be described as the four generic ITS application areas:
- Road and vehicle safety
 - Network efficiency and traffic management, including payment mechanisms
 - Traffic and traveller information
 - Seamless and improved public transport services

Section 4 Standardisation Mandates – a European tool

22. There is a clear context of policy aims and priorities, including regulatory priorities. It focuses on providing better transport and better services through ITS-enabled applications that are demonstrably beneficial to end-users. This context is set out in the paragraphs above.
23. The Commission and EEA/EFTA use a 'standardisation mandate' process where it sees particular priority for ITS standards development work within the regulatory elements of the overall context. Under this process the Commission, together with the EFTA Secretariat, issue a mandate to the European Standardisation Organisations (ESOs) and generally ensures an element of financial support to help secure a timely and relevant standards output. The mandate process involves member states, thereby ensuring fuller understanding at national level. Examples of mandates that fall within this category are:

¹¹ Rethinking the European ICT Agenda; PWC August 2004

- M329 – that calls for harmonisation of standards to support use of 24GHz UWB short-range radar that can be recognised under relevant European legislation¹²
- M338 – that invites the ESOs to draw up a work programme to facilitate the implementation of the proposed EFC interoperability directive.

24. Mandates can also be used as an administrative tool to encourage and support general action, as in the case of

- M270 – that called for a work programme for ITS in road transport to support the aims of the White Paper, which was finalised in August 2002 and included a series of detailed actions; and
- the anticipated mandate to identify and address gaps in standards to support in-vehicle ITS within the eSafety context (as mentioned in the EC Communication).

Section 5 Other routes to standardisation

25. Where a quorum of industry sees potential in new technologies and ITS services, and seeks to standardise the design or performance requirements for market entry or commercial reasons, individual work items are taken forward. This 'bottom up' approach is the usual process used within the ESOs and tends not to attract or require funding support from the EC or EFTA, although there can be support given to the *principle* of exploring that particular issue either for competition or policy reasons.

26. In addition, 'bottom up' proposals may be presented to the EC and EFTA for financial support specifically, for example under the eEurope standards action plan or other specific policy initiatives. In these circumstances, the EC and EFTA may act without issuing a more formal Mandate.

Section 6 Role of ITSSG and Next Steps

27. ITSSG aims to provide a strategic focus and direction that will enable each of the participating organisations to have an effective understanding of standards requirements, and where and how they should be delivered. It is not the function of ITSSG to draw up detailed work programme(s) for standardisation.

28. This document sets out the overall context to which ITS standardisation activity should respond. ITSSG will take the following actions to facilitate and monitor progress:

- **disseminate** this framework document during 2004 throughout the ITS standards community in order to encourage industry innovation that remains and is seen to remain relevant to the overall context
- **consider** how far the existing standardisation process and current composition of technical committees and working groups enables successful ITS standards development, and make recommendations for ICTSB endorsement to overcome any barriers or gaps to achieving ITS deployment that are caused by the standardisation process itself

¹² Directive 1999/5/EC

- where relevant, **work with** the Commission in drafting meaningful new mandates that reflect the policy context; and **seek** new mandates where appropriate as part of an ongoing dialogue with the Commission and other international organisations on the role and effectiveness of ITS standards
- **encourage** ITSSG member ESOs to deliver against mandates and other measures and to ensure their work programmes adequately respond to the overall context through their technical committees
- **ensure** effective interfaces between research and other activities such as pilot implementations or test-beds and standardization, encouraging stakeholders as appropriate.
- **promote** the role of consensus standardization towards all stakeholders, as the primary tool for providing technical solutions to market requirements in the ITS arena
- **review** at a high level the work programmes of each member standardisation organisations on an annual basis to ensure its relevance to the strategic context overall, and give consideration to development of a matrix approach to illustrate gaps/priorities. The attached annexes, authored by each respective organisation, provide a starting point for this review.
- **update** this framework document, its annexes and any emerging matrix with priorities each year, including to develop ways to measure the success of its work.

Annex A: CEN/TC 278

The work of CEN/TC 278 *Road Transport and Traffic Telematics* (see <http://www.nen.nl/cen278>) covers all functional aspects of ITS. TC 278 works closely together with ETSI, under a repartition agreement that basically allocates communication infrastructure aspects to ETSI, and functional and application aspects to TC 278. Furthermore, TC 278 has a number of joint work items with ISO/TC 204 *Intelligent Transport Systems* and ISO/TC 22 *Road Vehicles*.

TC 278 has formal external liaison with ASECAP, ECBS, ERFA, ERTICO and UITP.

Below a selection of TC 278's activities in some key areas is described.

Electronic Fee Collection (EFC)

TC 278 has published a full set of standards on EFC, including aspects such as security, clearance between operators, and equipment test specifications. The standards are fully complementary to the DSRC-stack of TC 278 (see below) and smartcard standards developed in CEN/TC 224, but are in essence technology-independent. Standard API's for both DSRC and cellular networks are on the programme of work.

In response to Mandate M/338 and within the framework of the "EFC Directive" TC 278 recommends that it should define a common European EFC service/transaction, as well as standards to support different national HGV charging systems. The overall standardisation programme for EFC should be reshaped in such a way that it enables EFC to be used as a generic and integrated payment system.

Dedicated Short-Range Communication (DSRC)

In early 2004 TC 278 completed the upgrade of its DSRC stack for microwave using 5.8 GHz (layers 1, 2 and 7 and application profiles) to European Standards. At the request of TC 278 ETSI has started work on test specifications for compliance with the CEN standards, and is bringing its ETSI EN 300674 in line with them.

Road and vehicle safety

TC 278 addresses road and vehicle safety aspects through the standardisation of electronic vehicle identification (see below) and HMI. HMI standards are developed jointly with ISO/TC 22, and focus on driver interaction with the vehicle.

Electronic Vehicle Identification (EVI)

Electronic vehicle identification has always been recognised by TC 278 as a key element in the deployment of ITS. Lead by TC 278, a complete stack of international base standards, including those for multimodal application, has been published. A standard Electronic Registration Identification (ERI) is in an advanced state of development.

TC 278 maintains a registration scheme based on its EN ISO 14816, for the assignment to vehicles and equipment of unique identification codes for ITS applications. At present 31 manufacturers and 12 national tax authorities have been registered, primarily for EFC applications.

Traffic and Travel Information (TTI)

TC 278 has published a comprehensive set of TTI standards. The work has historically been based on bearer dependent systems such as RDS-TMC, GATS and Medium Range Pre-information over DSRC. Several of the message sets, protocols and location coding schemas have now enjoyed wide scale implementation and can continue into the future on the bearers for which they have been designed. However in the past few years technologies have been employed that offer far higher efficiency and bandwidth. It is vital that both technologies under development and planned for the future enjoy a common ways of expressing their protocols, message sets and coding systems. TC 278 has been progressing work on TTI over high data-rate broadcast bearers (TPEG Binary), and is currently defining standards for TTI over the Internet, based on XML (mpegML). Common standardized message sets and coding schemes should be developed, for use on existing and future bearers.

Network efficiency and traffic management (TM)

TC 278 recognizes a relationship between the traffic management (TM), the traffic and travel information (TTI) and the road traffic data (RTD) areas. Considerable progress has been made in the TTI (see above) and RTD (DATEX) areas, whereas TM has been dormant for a number of years. Future standardisation of TM should build on existing standards and (national) programmes. TC 278 recommends to:

- Identify a framework for data registries. This would cover traffic management, road traffic data and where appropriate traffic and travel information. Encourage the establishment of registries and encourage operators and industry to populate and use the registries.
- Study national programmes which have resulted in technical specifications in the area of traffic management to determine if these could form the basis for European Standards or Technical Reports

Public Transport (PT)

This is another key area where TC 278 is active, recognising the contribution ITS can make to improving public transport delivery.

Annex B: ISO-TC204

See www.iso.org/tc204

Introduction:

ISO Technical Committee TC204 (Intelligent Transport Systems) started in 1993. Secretariat was delegated first to SAE International and since 2003 to ITS-America. 22 voting P-Member nations and 23 O-members (Observers) contribute with two plenary meetings per year, to ensure fast progress. There are 12 active Working Groups (see below)

(ISO applies one vote /country: CEN uses weighted voting)

TC204 cooperated from the outset with CEN TC278, using Joint Working Groups in recognition of CEN's pioneering work on ITS. Both secretariats benefit from a fruitful liaison. Parallel document processing is in accordance with the Vienna Agreement.

Equally important since 1993 is the liaison with ISO TC22 (Road Vehicles), and the fact that ISO standards are referenced in global vehicle regulations, managed by the UN-ECE WP29.

TC22 covers in-vehicle systems and equipment, SC13/WG5 covers Symbols and SC13/WG8 Human Factors

TC204 covers overall systems and ITS infrastructure aspects.

Other liaisons include TC211, Geographic Information, ISO-IEC JTC1 Automatic Identification and Data Capture, TC154 Electronic Data Interchange, ITU-Telecoms, and ITU-Radio, UN/CEFACT Transport Working Group, ETSI TG 37

WG 1 ITS Architecture (glossaries, taxonomy,etc)

WG3 ITS Geographic Data Bases

WG4 Automatic Vehicle Identification

WG5 Fee and Toll Collection

WG7 General Fleet Management & Commercial freight

WG8 Public Transport / Emergency

WG9 Integrated Transport Information, Mgmt & Control

WG10 Traveller Information Systems

WG11 Route Guidance and Navigation

WG14 Vehicle / Roadway Warning and Control Systems

WG15 Dedicated Short Range Communications for ITS

WG16 Wide Area Communications, protocols & interfaces

Summary: The ISO process of international consensus relying on volunteer experts, with one vote per nation, must be speeded up to be relevant to the market. Moreover, to promote European competitiveness, a stronger European involvement is needed. China, Korea, Japan and USA are active, especially in WG 7, 8, 10, 14, 16 (telecommunications/electronics sectors). Significantly, those nations most advanced in applying ITS tend to be geographically and politically insular, unlike the EU - illustrating the ongoing challenge posed by an expanded EU25. Programmes such as US Homeland Security and the Vehicle Information Infrastructure (VII) financially support nationwide use of DSRC as are the Japanese ITS and ADAS efforts. These are being tracked by the eSafety International Cooperation WG.

Below are listed TC204 Work Items which support the 4 generic ITS Applications Areas

1 Roadway and Vehicle Safety

WG 14 (Vehicle / Roadway Warning and Control Systems) is much involved with eSafety and Advanced Driver Assistance systems. It co-operates with **TC22** and liaises with ETSI on radar frequency issues. WG14 has published:

15622 Autonomous Cruise Control.
15623 Collision Warning System.

and is working on :

17361 Lane Departure Warning System
17386 Low Speed Manoeuvring Aid
22839 Collision Avoidance Assist System
22840 Extended Range Backing Aid

WG 7 (General Fleet Management & Commercial freight)

is approaching completion of:

17688 Data Dictionary & Message Sets for Electronic Vehicle Identification/Hazardous Materials

As identified in **eSafety**, approval of the 24GHz Radar for use in Europe is critical and is addressed by the SAGA Project

2 Transport Network Efficiency and Traffic Mangement

WG1 (ITS Architecture, glossaries, taxonomy) has published :-

14817 Data Modelling for ITS
14811 Glossary for Reference Model Architecture
14812 Glossary of ITS Terminology
14813 Reference Architecture for ITS

and is working on:

17452 Using UML: 24531 Using XML: 24352 Using CORBA

WG5 (Fee and Toll Collection) **is a Joint WG with CEN278 WG1**, and is working on:

14904 Interface Spec, clearance between Operators
14906 Electronic Fee Collection using DSRC
14907 Electronic Fee Collection Test Procedures

3 Traffic and Traveller Information Services

WG9 (Integrated Transport Information, Management and Control) is working on :

14827-1 and – 2 Data exchange between traffic Centers
15784-1 to-3 Data Exchange with Roadside Modules
17383 Data Dictionary

WG10 (Traveller Information Systems) **joint WG with CEN278 WG4** (Automatic Vehicle Identification) has published:

14819-1 and -2	ALERT C Protocol and Message Sets
14819-3	ALERT C Location Codes

This work is linked to the **European E-112 Project**, which is receiving high priority, using a Memorandum of Intent

WG16 (Wide Area Communications, protocols & interfaces) liaises with ETSI and CEN, and applies ISO's **Fast Track** process under the acronym "**CALM**" (Continuous Air Long and Medium Range Communications, and is about to publish:

15662	ITS Wide Area Communications Message Protocol Management, and is working on:
21210	CALM Network Protocols
21214	CALM Infra Red
21215	CALM 5 Ma Hz
22837	Vehicle Probe Data for Wide Area

4 Improved Public Transport Services

WG8 (Public Transport / Emergency services) is also active

Annex C: ETSI

See www.etsi.org

The European Telecommunications Standards Institute (ETSI) is committed to support with its standardization the regulations and public interest policies. Intelligent Transport Systems and Services very much depend on mobile communications and navigations. Although ETSI covers all areas of transportation including air and water, this Annex restricts itself to the Road Transport and Traffic Telematics.

ESafety: Emergency Telecommunications

Emergency voice calls i.e. E112 will be enhanced to the eCall requirements which essentially means to include data into the emergency calls. Calls could automatically be triggered by sensors in the vehicle and data will be transmitted to the Public Service Answering Point (PSAP). With the location information provided by the network operator and complementary localization information as generated locally by the call triggering device the PSAPs could reduce the time to provide their service.

Anti-collision radar

Ultra Wideband Automotive Radar covers two purposes the anti collision radar and the automatic cruise control radar. ETSI's work is restricted to the radio standards with the radio parameters, their values (limits) and the test methods. Part of the work is mandated by the European Commission.

TR 101 982 Ver. 1.2.1: System Reference Document for automotive collision warning Short Range Radar

TR 102 347 Ver. 1.1.1 Radar Level Gauges operating in the frequency band 24,05 GHz to 25,50 GHz; System Reference Document

TR 102 263 Ver. 1.1.2: Radio equipment to be used in the 77 GHz to 81 GHz band; System Reference Document for automotive collision warning Short Range Radar

Road Tolling

Network efficiency and traffic management, including payment mechanisms, are supported with standardization for Road Tolling and communications for traffic information and management. While Road Tolling requires technical solutions for interoperability already in the lower layer standards, other areas of communications can use a wide range of existing technical solutions.

DSRC

ETSI/ERRM TG 29 has developed the following DSRC solutions:

EN 300 674-1 Ver. 1.2.1: Electromagnetic compatibility and Radio spectrum Matters (ERM);
Road Transport and Traffic Telematics (RTTT); Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band;
Part 1: General characteristics and test methods for Road Side Units (RSU) and On-Board Units (OBU)

EN 300 674-2-1 Ver. 1.1.1: Part 2: Harmonized EN under article 3.2 of the R&TTE Directive;
Sub-part 1: Requirements for the Road Side Units (RSU)

EN 300 674-2-2 Ver. 1.1.1: Part 2: Harmonized EN under article 3.2 of the R&TTE Directive;
Sub-part 2: Requirements for the On-Board Units (OBU)

These radio standards complement the CEN standards EN 12253 and EN 13372 which are more specific for the intended application. Unlike the CEN standards, the ETSI deliverables provide conformance testing methods. The part 2 documents are harmonized ENs under the R&TTE Directive. Equipment conforming with these standards get the presumption of conformity to the essential requirements of the the R&TTE Directive.

ETSI/ERM TG 37 has scheduled work items for the testing of protocols for the CEN DSRC solutions:

DTS/ERM-TG37-001: Protocol testing for DSRC MAC and LLC layers

DTS/ERM-TG37-002: Protocol testing for DSRC application

GNSS and GPRS

Road Tolling standards using GNSS and GPRS are being planned to follow the ideas of the Road Tolling Directive. CEN/CENELEC and ETSI have already received a standardization mandate. Although the GPRS standards are available, the application of them will be organized by ETSI/ERM TG 37.

Communications

Communications, Air Interface, Long and Medium Range (CALM)

The ISO/TC 204 project CALM is being supported by providing specific underlying DSRC standards and providing information on specific use of mobile communications networks and services such as GSM and 3G.

DTS/ERM-TG37-003: Communications, Air Interface, Long and Medium Range (CALM), Lower-layer Protocols for Infra-Red Profile

DTS/ERM-TG37-006: Framework and architecture for (quasi-) continuous Communications between vehicles and the infrastructure

- DTR/ERM-RM-036: Systems reference document covering Intelligent Transport Systems/Road Transport and Traffic Telematics communications systems operating in the 5,85 GHz to 5,925 GHz band
- DEN/ERM-TG37-007: Harmonised Standard covering Intelligent Transport Systems/Road Transport and Traffic Telematics communications systems operating in the 5,85 GHz to 5,925 GHz band
- DTR/ERM-RM-031: System Reference Document covering Intelligent Transport Systems/Road Transport and Traffic Telematics communications systems operating in the band 63 GHz to 64 GHz
- DEN/ERM-TG37-008: Harmonised Standard covering Intelligent Transport Systems/Road Transport and Traffic Telematics communications systems operating in the 63 GHz to 64 GHz band
- DTS/ERM-TG37-010: Network Service Access Point definition

It should be noted that underlying infrastructures are standardized in a wider context. With this in mind they need to comply with different regulations.

Traffic and Traveller Information

Note: TTI is an important service provided by broadcasters (both Public Service Broadcasters organised within the EBU and Commercial Broadcasters) in their internationally agreed spectrum areas (i.e. FM, DAB, DVB etc). However a new era of information service delivery is emerging with TTI services being carried by the internet, on mobile phones and Wi-Fi. Related standardization is being done by different groups of which the CENELEC/EBU/ETSI Joint Technical Committee Broadcast is one of them.

Annex D: Abbreviations used in this document

Abbreviation	Explanation
3G	3 rd Generation mobile phone services
ADAS	Advanced Driver Assistance Systems
ALERT-C	Advice and Problem Location for European Road Traffic
CALM	Continuous Air Long and Medium Range Communications
CEN	Comité Européen de Normalisation - European Committee for Standardization
CORBA	Common Object Request Broker Architecture
DATEX	Data Exchange
DSRC	Dedicated Short Range Communications
EBU	European Broadcasting Union – association of national coverage broadcasters, predominantly public service
EC	European Commission
EEA	European Economic Area
EFC	Electronic Fee Collection
EFTA	European Free Trade Association
ESO	European Standards Organisation
ETSI	European Telecommunications Standards Institute
EU	European Union
EVI	Electronic Vehicle Identification
GATS	Global Automotive Telematics Standard
GHz	GigaHertz – a unit of frequency in the SHF spectrum
GNSS	Global Navigation Satellite System
GPS	Global Positioning Satellite (system)
GSM	Global System for Mobiles
HGV	Heavy Goods vehicle
HMI	Human Machine Interface
ICT	Information and Communications Technology
ICTSB	ICT Standardisation Board
ISO	International standards organisation
ITS	Intelligent Transport System(s)
ITSSG	ITS Standards Steering Group
PSAP	Public Service Answering Point
RDS-TMC	Radio Data System – Traffic Message Channel
RTD	Road Traffic Data
TC	Technical Committee
TM	Traffic Management
TPEG	Transport Protocol Experts Group
TTI	Traffic and Travel Information
UNECE	United Nations
UWB	Ultra-Wide Band
XML	Extensible Mark-up Language

Annex E: ITSSG Members

Membership rules (taken from terms of reference)

- up to three representatives of public authorities;
- one representative each of industry associations in the road transport field, covering
- Infrastructure/EFC operators;
- Infrastructure users;
- Vehicle manufacturers;
- ITS technology and service providers;
- one representative of CEN/CENELEC/ETSI JPC-Rail;
- one representative of each of the ICTSB members with an interest, including ANEC;
- one representative of each of the European Commission DGs ENTR, INFSO and TREN, and one of the EFTA Secretariat

Current ITSSG participants

Chair	
UK Department for Transport	
Secretary	
ETSI	
Members	
ACEA	EFTA
ANEC	ERTICO
ASECAP	ETSI
CEN	ISO/TC 204
CEN/TC 278	NL Ministry of Transport
CENELEC	NORMAPME
EBU	UNINFO
ECBS	VDA
EDITRANSPORT	W3C (World Wide Web Consortium)
Observers	
European Commission DG Information Society	
European Commission DG Enterprise	

NB: Membership is open to all ICTSB participants.