Introduction to Standards and Standardisation

Introduction

The word ñstandardò is often misunderstood and misused. A dictionary definition of standard may refer to ña level of quality or attainmentò or ñfalling within an accepted rangeò. A technical specification, a code of practice or a widely used practice may also be loosely referred to as standards. These are actually examples of *de facto (*which means "in fact") standards.

However, this guide is concerned with more formal standards that are *de jure* (an expression that means "based on lawò) and the result of the formal standardization process. Such Standards might be called Standards with a capital ñSò

There is a wealth of information available on the process and products of standardisation (if you are really interested and have the tenacity to find it!). The British Standards Institution (BSi) should be the formal point of enquiry, although BSi staff are involved in the process more than the content of standardisation. Often the most useful information is unpublished and only available to those directly involved in its development; the information then becomes available when it approaches its final form and the draft standards are circulated for comment or vote.

The following is a brief guide to standards and standardisation and although every care has been taken in compiling the information, users of this text should not rely on its accuracy or completeness.

What is a standard?

A standard is a specification approved by a body recognised at the national, regional or international level and made available to the public.

The development of standards is based on voluntary work through a formal process of development, review and ratification. Development of the text of a standard proceeds by consensus of the parties involved and ratification is subject to voting at national and international levels. Development of a full Standard takes at least 3 years, although useful results are often available well before the final ratification date.

As well as full standards ï British Standards (Identified as for example BS 16104), European Standards (identified as EN 14892) World Standards (Identified as ISO 14825), there are a number of other standardisation ñproductsò

- Additional European (CEN) deliverables include Technical Specification (TS), Technical Report (TR), and CEN Workshop Agreement (CWA)

- Additional (ISO) deliverables include Internal Technical Reports, Technical Reports (Published), Technical Specifications, Publicly Available Specifications (PAS)and National Standards

What are the benefits?

Standards contribute significantly to:

- Diminishing trade barriers
- Promoting interoperability of products, systems and services
- Promoting common technical understanding
- Supporting the EUôs policies of free technical integration and protection of the consumer

Being able to claim conformance to a Standard may also be considered to endow commercial, ethical or moral advantage.

What organisations are involved in development?

- **BSI**: British Standards Institution (www.bsi-global.com) is the British standardisation body, which develops and votes for the ratification of European and world-wide standards produced by CEN, CLC, ISO & IEC. BSI must adopt European Standards prepared by CEN & CLC (these are identified by a number prefixed with ñBS ENò, eg. BS EN 14892) and withdraw any conflicting national standards. It may adopt ISO and IEC standards if there is a British need or interest (these are identified by a number prefixed with ñBS-ISOò, eg. BS-ISO 14825). BS can only develop national standards where there is no interest in the development of a European Standard and it is expected that any national standard would be based-on or build-on any existing ISO standard ï these covers all of the ITS area and explains why the UK resource is targeted at the CEN & ISO developments. Whereas BSI provides process related standardisation support, the technical contributions to and positions on proposals are formed by British experts working through the national committee BSI/EPL 278. BSI does not fund experts for their participation in the standards work, although there is limited funding to cover travel expenses for BSI delegates attending some overseas formal standards meetings.
- **NEN**: Apart from being BSI counterpart in the Netherlands, the Dutch Standardisation Institute (Nederlands Normalisatie-instituut) has the secretariat of and ensures the process related support for the technical committee (CEN/TC278, www3.nen.nl/cen278/) that is responsible for ITS standardisation in Europe.
- **CEN**: European Committee for Standardization (Comité Européen de Normalisation, www.cenorm.be) has the mission to promote voluntary technical harmonization in Europe in conjunction with worldwide bodies and its partners in Europe. CEN covers a wide area with the aim to diminish trade barriers, promote safety, allow interoperability of products, systems and services, and to promote common technical understanding. In Europe, CEN works in partnership with the European Committee for Electrotechnical Standardization (**CENELEC**, www.cenelec.org/) and the European Telecommunications Standards Institute (**ETSI**, (www.etsi.org/). European ITS standardisation work is primarily, but not exclusively, carried out under CEN (and its technical committee **TC 278** on Road Transport and Traffic Telematics).
- **ETSI**: European Telecommunications Standards Institute (www.etsi.org/) is a not for profit organization whose mission is to produce the telecommunications standards that will be used for decades to come throughout Europe and beyond. The ETSI Technical Committee for ITS (**ETSI TC ITS**) was established in December 2007. Current work includes: Dedicated Short-Range Communications (DSRC); continuous ñCALMô communications between a vehicle and the roadside using a variety of communication media; architecture and security. ETSI has also produced standards relating to reservation of bandwidth Europe-wide for ITS.

- **ISO**: International Organization for Standardization (www.iso.ch) is the world's largest developer of standards. ISO is a network of national standards institutes from 147 countries working in partnership with international organizations, governments, industry, business and consumer representatives. ISO is the source of 13 700 International Standards for business, government and society, although its principal activity is the development of technical standards. ISO (and its technical committee **TC204**) develops ITS standards in collaboration with CEN (and its TC278).
- **ICTSB**: Information Communications Technologies Standards Board (www.ictsb.org/home.htm) is a collaboration of the European Standardisation Organisation and other organisations whose key aspiration is to support an effective European standardization system. Its Intelligent Transport Systems Steering Group (ITSSG) aims to provide a strategic focus and direction in the ITS area.

What is the legal position of standards?

In most cases, a Standard should be regarded as a voluntary code. However, there are situations where the use of a Standard is required across Europe to enable the European Single Market to operate fairly, or in support of pan European Health, Safety, or working conditions related measures. Such measures are formulated in "Directives" which must be adhered to by EU member countries. The Directives (Particularly the new-approach Directives where the directive itself contains only the policy objectives and is designed to be supported by other documents containing the essential requirements and technical detail www.newapproach.org) are often backed by the development of "harmonised" standards, in which the required aspects to fulfil the requirements of the Directive are defined. In these circumstances the EU will sometimes pay for the preparation of essential standards. The standards are not mandatory, but products manufactured according to such 'harmonised' standards gives a 'presumption of conformityóand compliance results in the right of the product to bear the CE marking of conformity and for market release throughout Europe.

Within any country, a Government can require adherence to an International, European, or National Standard, and this is not uncommon. However, within Europe, EU member countries are obliged to ensure that the use of such National Standards does not inhibit the European Single market.

There is also a requirement that in public tendering within EU countries, "relevant" standards have to be taken into account. However "relevant" does not appear to be defined, and ñtaken into accountòmeans that they need not be used if there is a reason for developing another specification.

Information concerning standards and intellectual property can be accessed at:
http://www.nssf.info/resources/documents/Standards_and_Intellectual_PR.pdf

Where can I get further advice?

The BSI British Standards Draft Review system provides access to draft British Standards, selected draft international and European standards and draft Publicly Available Specifications (PAS) in order to allow feedback from the widest possible audience before publication.

http://drafts.bsigroup.com/

innovITS who run the **ITS Knowledge Transfer Network** (ITS-KTN) have initiated a group called ñBSI technical committee EPL/278 draft standardsòwhich is open to KTN members

with a legitimate professional or commercial interest in BSI technical committee EPL/278. Draft standards are available for comment subject to BSI copyright and terms & conditions.

http://www.innovits.com/its-ktn/network/group.php?group_id=28

ITS Radar International is a project sponsored by the Highways Agency to provide news and intelligence on ITS developments in Europe and around the world. ITS Standards is one of six topics, for which monthy newsletters are published on the open access website. It is possible to receive the newsletter by signing up to a monthly email.

http://www.itsradarinternational.info/Standards/

In addition to monthly news, the Standards Tracking Spreadsheet is periodically maintained, which lists the key international ITS standards working groups, status of relevant CEN, ISO and ETSI standards and convenor contact details.

Also, there are individual pages giving an overview of specific standards topics, such as:

- INSPIRE Directive and Spatial Data Infrastructure (SDI)
- Wireless Communications for Co-operative Systems
- Traffic and Traveller Information
- Location Referencing
- Data Exchange
- eCall

Each page includes fact sheets, previous articles and external links.

If the above information and web links do not provide the required information, or you would like further advice, it may be helpful to talk to someone directly involved in standardisation.

The formal route is via BSi and through the Secretary of EPL/278 (that is the UK group most directly involved in ITS matters), Alex Price:

Email: Alex.Price@BSI-global.com

Tel: 0208 996 7261

Or the Chairman, Jonathan Booth

Email jon@harrodbooth.com

Mob: 07990 520 404

Alternatively, ITS (UK) may be able to suggest another Member who may be able to assist you.

Appendix: Standardisation Areas and Contacts

The aim of this section is to provide a key into standardisation experts knowledgeable within specific areas. It is approached as a 3-stage process:

1. Identification of ITS topics likely to be of interest to ITS(UK) Members
2. Mapping of those topics onto the relevant standardisation Working Groups
3. Identification of experts with knowledge of the Working Groups (and indication of whether they are members of ITS(UK))

Some important ITS standardisation themes and topics are identified below:

ITS standardisation themes and topics

ITS Standardisation Themes	Topics
Enablers	- Architecture - Databases - Smartcards
Services and Functions	- Road User Charging - Public Transport - Freight & Fleet - Real Time Traffic Information (RTTI) and Navigation - Urban Traffic Management and Control (UTMC) - Co-operative Vehicle-Highway Systems (CVHS)
Vehicle	- Human Machine Interfaces - Driver Assistance - Electronic Vehicle Identification (EVI)
Communications	- Vehicle ï Vehicle - Vehicle - Roadside - Roadside ï Back Office

The Table below provides a possible mapping of the ITS standards themes onto the standardization working groups.

Mapping standards themes on working groups

Standards Theme - Topic	Standardisation Working Group	Further Information / Useful Links
Enablers - Architecture	ISO/TC204/WG1 CEN/TC278/WG13 ETSI/TC ITS/WG2	COMeSafety European ITS Communication Architecture - This document describes the baseline for a European ITS communications architecture for cooperative systems. It has been developed by COMeSafety and various EC co-

Standards Theme - Topic	Standardisation Working Group	Further Information / Useful Links
		operative systems projects.
Enablers ï Databases	ISO/TC204/WG3 CEN/C278/WG8	
Enablers ï Smart cards	CEN/TC224/WG11	www.itso.org.uk/ - ITSO (Integrated Transport Smartcard Organisation) aims to define a common specification at both the card and application level, to enable the use of interoperable smart cards in transport
Service and Functions ï Road User Charging	ISO/TC204/WG5 CEN/TC278/WG1 CEN/TC224/WG11	
Service and Functions ï Public Transport	ISO/TC204/WG8 CEN/TC278/WG3	
Service and Functions ï Freight & Fleet	ISO/TC204/WG7	
Service and Functions ï RTTI and Navigation	Traveller Information Systems: ISO/TC204/WG10 CEN/TC278/WG4 Route Guidance and Navigation: ISO/TC204/WG11	www.tisa.org/ - Traveller Information Services Association (TISA) is the amalgamation of the TMC Forum and the TPEG Forum.
Service and Functions ï UTMC	ISO/TC204/WG9	utmc.uk.com/ - UTMC Development Group (UDG) includes the UTMC Technical Specifications, the workings of the UDG and its sub-groups, UTMC related events
Service and Functions ï CVHS	ISO/TC204/WG14	
Vehicle ï Human Machine Interface	ISO/TC22/SC13/WG8	
Vehicle ï Driver Assistance	ISO/TC204/WG14	
Vehicle ï EVI	ISO/TC204/WG4 and CEN/TC278/WG12	
Communications ï Within Vehicle	??	
Communications ï Vehicle-	ISO/TC204/WG16	www.car-to-car.org/ - CAR 2 CAR Communication Consortium: industry coalition for development for V2V communication

Standards Theme - Topic	Standardisation Working Group	Further Information / Useful Links
Vehicle		
Communications ï Vehicle-Roadside	Dedicated Short Range Communication (DSRC): ISO/TC204/WG15 CEN/TC278/WG9 ETSI/TC ITS Communication Air Interface Long and Medium Range (CALM): ISO/TC204/WG16 CEN/TC278/WG16 ETSI/TC ITS	www.calm.hu/ - official website of ISO TC 204 WG 16; CALM is a set of standards that aims to produce continuous communications for vehicles regardless of type of media www.etsi.org/ - ETSI Technical Committee for ITS www.comesafety.org/ - Communcations for eSafety
Communications ï Roadside ï Back Office	ISO/TC204/WG16	
eSafety	CEN/TC278/WG15	www.esafetysupport.org/ - The eSafety initiative brings together the EC, public authorities, industry and other stakeholders in a drive to accelerate the development, deployment and use of eSafety systems, with the primary aim of reducing road deaths; includes section on eCall standardisation ec.europa.eu/information_society/activities/esafety ï EC website for eSafety

Useful Documents

ITS Radar International Standards Tracking Spreadsheet (June 2009)

ISO TC 204 Draft Business Plan (June 2008)

COMeSafety European ITS Communication Architecture (March 2009)

COMeSafety Standardization Overview (August 2006)

For identification of Experts by Group, please contact ITS (UK) mailbox@its-uk.org.uk