



## Identifying ITS Opportunities for the HA Standards Newsletter: July 2009

### ■ ITS RADAR INTERNATIONAL PROJECT

This project is providing intelligence for the Highways Agency on ITS developments in Europe and around the world. It is carried out by TRL and AECOM on behalf of the HA. The project summarises key information for decision makers and practitioners on activities related to Intelligent Transport Systems (ITS). The project covers specific areas of key interest to the HA.

Regular newsletters are being produced, covering information which is in the public domain. For more information about the project and the services provided, the web site can be reached at:

<http://www.highways.gov.uk/itsradar>.

To contact us and let us know what you would like this project to deliver please email us at: [ITSRadarInternational@trl.co.uk](mailto:ITSRadarInternational@trl.co.uk)

### ■ ABOUT STANDARDS

A standard is a technical specification or report that is developed with consensus across industry and is then approved by a body recognised at the national or international level. Standards specify how systems, products and services should operate. Standards should facilitate inter-operability without impeding innovation as new technologies and approaches develop.

ITS Radar International aims to keep the HA informed on developments in standards relevant to ITS, at a national (British Standards Institution, BSI), European (Comité de Européen Normalisation, CEN, and European Telecommunications Standards Institute, ETSI) and international (International Organisation for Standardisation, ISO) level.

A document will be periodically maintained, which tracks the progress of new and developing standards, as well as listing published standards with any updates or reviews. The ITS Standards Spreadsheet can be downloaded from [www.itsradarinternational.info/](http://www.itsradarinternational.info/). The main ITS technical committees are:

- ISO TC 204 Technical Committee – Intelligent Transport Systems
- CEN TC 278 Technical Committee – Road Transport & Traffic Telematics
- ETSI TC ITS Technical Committee – Intelligent Transport Systems

These and other relevant bodies are regularly monitored for developments.

In addition, the project provides information about agreements, protocols, common approaches and guidelines relevant to ITS in the Highways Agency, such as location referencing and data exchange.

## ■ MEETINGS

### **INSPIRE / Spatial Data Infrastructure Conference held in Rotterdam, 15-19 June 2009**

Source: [www.gsdi.org/](http://www.gsdi.org/), [inspire.jrc.ec.europa.eu/](http://inspire.jrc.ec.europa.eu/)

The "Spatial Data Infrastructure (SDI) Convergence: Building SDI Bridges to Address Global Challenges" Conference took place in Rotterdam, the Netherlands, 15-19 June 2009.

The conference consisted of:

- the Third INSPIRE Conference
- the Eleventh International Conference of the Global Spatial Data Infrastructure (GSDI) Association
- the National Conference on Dutch Spatial Data Infrastructure: Results and Challenges.

According to the INSPIRE Conference website, [inspire.jrc.ec.europa.eu/](http://inspire.jrc.ec.europa.eu/):

"The INSPIRE Conference provides a forum for stakeholders from government, academia and industry to hear about and discuss the latest developments of the INSPIRE Directive. This year, by teaming with the GSDI and Dutch National conferences, the INSPIRE conference encompasses a conference programme, technical tutorials and workshops, a programme of demonstrations and an exhibition to provide an ideal opportunity to learn and network with like-minded colleagues from around the world."

The INSPIRE sessions aimed to give an accurate and up-to-date picture of the implementation of the INSPIRE Directive. The presentations and recordings from the plenary sessions of the INSPIRE conference are available for download from the INSPIRE Conference website (above). The overview of progress in transport networks was on Thursday 18 June.

INSPIRE, which stands for INfrastructure for SPatial InfoRmation in the European community, is an EC Directive concerning the sharing and harmonisation of spatial datasets across Europe. The INSPIRE Directive has considerable implications for the Highways Agency and other UK road administrations, because such organisations will be required to create standardised metadata (descriptions of the spatial data), as well as having to provide access to data that has been collected or created in standard form.

The Directive covers many types of spatial data; of particular relevance to the Highways Agency, spatial data relating to transport networks is covered in Annex I of the Directive. The Directive came into force on 15 May 2007, and will be transposed into UK legislation later in 2009. Once transposed, public sector agencies will have to implement the Directive in various stages between 2009 and 2019. Further information on INSPIRE can be found in the

[ITS Radar International INSPIRE Factsheet \(April 2009\)](#) and the [March 2009 Newsletter](#).

### **HA recommended to view conference proceedings for further information**

Keywords: European Commission, Geographic Information, Policy, Standard

#### ■ CALLS FOR PROPOSALS

### **Call for tender on the development of technical guidance for the INSPIRE Transformation Service**

Source: [web.jrc.ec.europa.eu/](http://web.jrc.ec.europa.eu/)

The European Commission has issued an open call for tenders for the provision of technical guidance for the implementation of the INSPIRE transformation network service. The 'network services' are a series of capabilities under the Directive that datasets must be able to provide; these include: discover (so that datasets are searchable), view, download and transform. The transform services make it possible to transform the input dataset from one Coordinate Reference System (CRS) into another.

The deadline for submitting an offer is 19 August 2009. More detailed information on the call can be found at [web.jrc.ec.europa.eu/](http://web.jrc.ec.europa.eu/).

INSPIRE, which stands for INfrastructure for SPatial InfoRmation in the European community, is an EC Directive concerning the sharing and harmonisation of spatial datasets across Europe. Further information on INSPIRE can be found in the [ITS Radar International INSPIRE Factsheet \(April 2009\)](#).

Keywords: European Commission, Geographic Information, Policy, Project, Standard

#### ■ HOT TOPICS

### **Dynamic location referencing method AGORA-C tested in action in Japan**

Source: [www.tisa.org/](http://www.tisa.org/)

The dynamic location referencing method AGORA-C has been successfully implemented and tested in Japan by Panasonic. The verification exercise showed that the method achieved 95.6% accuracy on identifying the section of road, and 99.1% accuracy on identifying the length of road.

Location referencing is the task of ensuring compatible referencing of locations when information is exchanged between different applications or systems with different geographic databases. The ISO 17572 series, which was published in [December 2008](#), defines two methods for location referencing.

The first method (ISO 17572-2) "Pre-coded Location Referencing", assumes common pre-coded tables, such as the European Traffic Message Channel (TMC) or the equivalent Japanese Vehicle Information and Communication System (VICS).

The second method (ISO 17572-3), "Dynamic Location References" (DLR), works by encoding locations on the road network, such as intersections and road sections. It anticipates differences between map versions at the time of decoding and snaps to the corresponding map location when placed on a target map. DLR has evolved from the European "AGORA-C" proposal, developed in the European Commission's Fifth Framework AGORA Project (implemEntation of Global lOcation Referencing Approach). AGORA-C supports location referencing without needing pre-encoded locations or needing the source and destination of a message to use the same reference map.

Panasonic have published a short document detailing their verification trial, which can be downloaded from [www.tisa.org/](http://www.tisa.org/). Further information can be found in the [ITS Radar International November 2008 Newsletter](#).

**HA recommended to view the [Panasonic report](#) for further information**

Keywords: European Commission, Geographic Information, Project, Standard, Traffic Centre

## **IEEE 802.11p Wireless Access in Vehicular Environments (WAVE) Standard to move to next level of draft status**

Source: [grouper.ieee.org/](http://grouper.ieee.org/)

Voting on Draft 7.0 of the IEEE 802.11p standard for Wireless Access in Vehicular Environments (WAVE) closed on June 13th 2009. This is an intermediate draft status before publication. The current work programme predicts that the standard will achieve working group approval by January 2010.

According to the [IEEE 802.11 Task Group p update](#):

"This Task Group will define enhancements to 802.11 required to support Intelligent Transportation Systems (ITS) applications. WAVE is a mode of operation for use by IEEE Std 802.11™ devices in environments where the physical layer properties are rapidly changing and where very short-duration communications exchanges are required. The purpose of this standard is to provide the minimum set of specifications required to ensure interoperability between wireless devices attempting to communicate in potentially rapidly changing communications environments and in situations where transactions must be completed in time frames much shorter than the minimum possible with infrastructure or ad hoc 802.11 networks."

IEEE 802.11p is based on earlier work conducted by international standards organisation ASTM International (formerly the American Society for Testing and Materials). The results of these efforts were documented in "ASTM E 2213-03", "Standard Specification for Telecommunications and Information Exchange Between Roadside and Vehicle Systems - 5.9 GHz Band Wireless Access in Vehicular Environments (WAVE) / Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) and Physical Layer (PHY) Specifications".

IEEE 802.11p is also closely related to the [IEEE 1609 family of standards](#) for Wireless Access in Vehicular Environments (WAVE). IEEE 1609 is a higher layer standard on which IEEE 802.11p is based.

The IEEE 802 LAN/MAN Standards Committee is responsible for the development of standards for Local Area Networks and Metropolitan Area Networks. The IEEE 802.11 Working Group develops standards for Wireless Local Area Networks (WLAN). IEEE 802.11b and 802.11g are the widely accepted standards used in home and office wireless computer networks.

The IEEE 802.16 Working Group is responsible for the development of broadband wireless metropolitan area networks. Metropolitan Area Networks (MAN) cover wider areas, up to city-wide. The 802.16e standard was published in 2005 and is the most commonly implemented standard of the 802.16 family. The IEEE 802.16 standards are also commonly referred to as Wi-MAX.

### **ITS Radar International will monitor developments in IEEE 802.11p**

Keywords: Communications, In-vehicle systems, Standard

### **New draft standard on linear referencing**

Source: HA

A new ISO standard on linear referencing is to move to Draft International Standard (DIS), following a comments resolution meeting on the remaining technical issues. Linear Referencing is the way in which position is defined along linear objects, such as roads and rivers.

This standard is of interest to the Highways Agency and other transport administrations, because it forms a critical contributing element to how systems complying with the EC INSPIRE Directive will locate objects within transport networks. This is perhaps the first time that an approach to linear referencing has been defined as a formal standard and it also has applications in many other fields.

The revised draft, ISO/DIS 19148, "Geographic information -- Location based services -- Linear referencing system", sits within ISO Group TC 211, "Geographic Information". The draft will be prepared for a FDIS (Final Draft International Standard) ballot during the summer of 2009. This is the final formal vote before adoption as a full International Standard.

Further information on INSPIRE can be found in the [ITS Radar International INSPIRE Factsheet \(April 2009\)](#).

### **HA recommended to review revised draft when available**

Keywords: Geographic information, Standard

### **HA ITS Registry Update**

Source: [www.itsregistry.org.uk](http://www.itsregistry.org.uk)

Two models have recently been updated on the HA's ITS Registry.

The Highways Agency ITS Registry is a repository of data definitions and data models, with an associated supporting process for improving quality and for

harmonisation across different systems. The registry aims to cut across work in isolated 'silos' and avoid re-invention and duplication of effort.

The ITS Registry website states that:

- "UTMC Roadside model has been added at draft level.
- NTCC Enhanced Travel Information Highway (TIH) model has been added at recorded level."

For further information visit [www.itsregistry.org.uk](http://www.itsregistry.org.uk) and the [ITS Radar International ITS Registry Factsheet \(February 07\)](#).

### **ITS Radar International will continue to monitor developments on the ITS Registry**

Keywords: Geographic information, Monitoring, Standard, Traffic Information, Traffic Management

#### ■ PROJECTS

None to report.

#### ■ RECENT PUBLICATIONS

### **Article on standardisation in IntelliDrive (formerly VII)**

Source: Traffic Technology International

An article in the April/May 09 Issue of Traffic Technology International discusses the standardisation direction for IntelliDrive, the American co-operative systems initiative. The article discusses the need for an open platform open architecture and the challenges in having multiple stakeholders in the ITS environment.

Keywords: Architecture, Co-operative vehicle systems, Standard

#### ■ GLOSSARY

AGORA-C	(implementAtion of Global lOcation Referencing Approach): Dynamic method for location referencing, which forms the basis of ISO 17572, Part 3.
ASTM International	Standardisation organisation, formerly the American Society for Testing and Materials
BSI	British Standards Institution
CEN	Comité de Européen Normalisation
CRS	Coordinate Reference System
DIS	Draft International Standard
DLR	Dynamic Location References
DSRC	(Dedicated Short Range Communication): Standard enabling data transmission at a frequency of 5.8 GHz. Radio system with focus on short range communication, which is intended for electronic toll collection systems.
EC	European Commission

ETSI	European Telecommunications Standards Institute
FDIS	Final Draft International Standard
GSDI	Global Spatial Data Infrastructure Association
INSPIRE	(INfrastructure for SPatial InfoRmation in the European community): EC Directive concerning the sharing and harmonisation of spatial datasets across Europe
ISO	International Organisation for Standardisation
ITS	(Intelligent Transport Systems): "The integration of information and communications technology with transport infrastructure, vehicles and users" [ERTICO]
ITS Registry	A repository of data definitions and data models for use by the Highways Agency data, with an associated supporting process for improving quality and for harmonisation across different systems
LAN	Local Area Networks
MAC	Medium Access Control
MAN	Metropolitan Area Networks
NTCC	National Traffic Control Centre
PHY	Physical Layer
SDI	Spatial Data Infrastructure
TIH	(Travel Information Highway): An independent association of Information Publishers and Receivers who have an interest in exchanging travel information using an agreed set of Principles.
TISA	The Traveller Information Services Association
TMC	(Traffic Message Channel): Digital channel used to provide silent, coded messages to in-vehicle applications in order to display route and traffic information in a user's native language.
UTMC	Urban Traffic Management and Control
VICS	Vehicle Information and Communication System
WAVE	Wireless Access in Vehicular Environments, based on IEEE 802.11p and the IEEE 1609 series of standards
Wi-MAX	Wireless broadband connectivity over several kilometres, based on the IEEE 802.16 series of standards
WLAN	Wireless Local Area Networks