DATEX II – The European Exchange Standard for ITS on Roads

DATEX II has been developed to provide a standardised way of communicating and exchanging traffic information between traffic centres, service providers, traffic operators and media partners. The specification provides for a harmonised way of exchanging data across boundaries, at a system level, to enable better management of the European road network. DATEX II will play a strong role for the implementation of integrated ITS in Europe. This facts sheet has been produced to describe the remit of DATEX II, its basic design principles, its ownership and the state of development.

Service Definition

A DATEX II service exchanges information for road traffic which can be dynamic and is usually relevant for traffic management and traffic information. This exchanged data is modeled and structured in a common and standardized way, which facilitates its re-use and lowers development costs. Collecting information is only part of the story – in most cases data needs to be exchanged with both other centers and, in more recent developments, with those developing pan-European services provided directly to road users.

CEN/TS 16157 - The key to successful information exchange

DATEX II is a multi-part Standard, maintained by CEN Technical Committee 278, Road Transport and Traffic Telematics, see www.itsstandards.eu. The first three Parts of the CEN DATEX II series CEN/TS 16157 have already been approved as Technical Specifications in October 2011:

Intelligent transport systems – DATEX II data exchange specifications for traffic management and information.

There are four Parts that deal with the most mature and widely used parts of DATEX II:

- Part 1: Context and framework
- Part 2: Location referencing
- Part 3: Situation publication
- Part 4: Variable Message Sign (VMS) Publications
- Part 5: Measured and Elaborated Data Publications

Next following part is:

- Part 6: Parking Publication

More parts are to follow as new content requirements emerge.

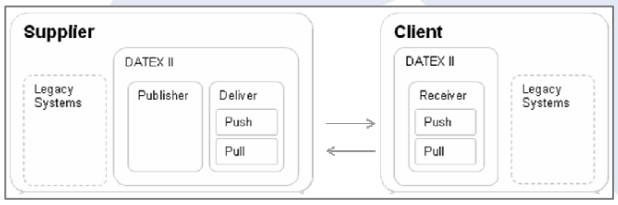
Technical view

In an exchange system there are two roles, supplier and client. The supplier publishes information, whereas the client subscribes it and receives traffic information.
A supplier exchange system is composed of two main subsystems:

- A Publisher subsystem, which makes data available and creates the payload publications (Situations, Traffic View, Measured and Elaborated Data, Locations)
- A Delivery subsystem, which adds exchange specific information and performs the physical delivery, supporting pull and push methods;

A client exchange system is composed of one main subsystem:

- A Receiver subsystem, which is responsible for receiving information, either by calling the supplier services (Pull) or receiving a service call made by the supplier (Push);



- A subscription is a mechanism set up between a Client and a Supplier that specifies the payload type to be exchanged. It can be defined by the supplier or by the client. DATEX II allows users to have the freedom to develop subscriptions with the refinements they need.

Technology Approach

From a comprehensive UML data model to XML messages

- Using widespread technology: UML & XML
- Abstract model separated from concrete implementation: supports multiple platforms
- Separation of data model and exchange specification
- Comprehensive domain model for traffic management and information services
- Tool based mapping to XML schemas
- Profiles allow for tailoring to specific applications and services
- Extensible with full backwards compatibility

ITS DEPLOYMENT GUIDELINES

FACT SHEET - UPDATE 2015

DATEX II Deployments

Applications

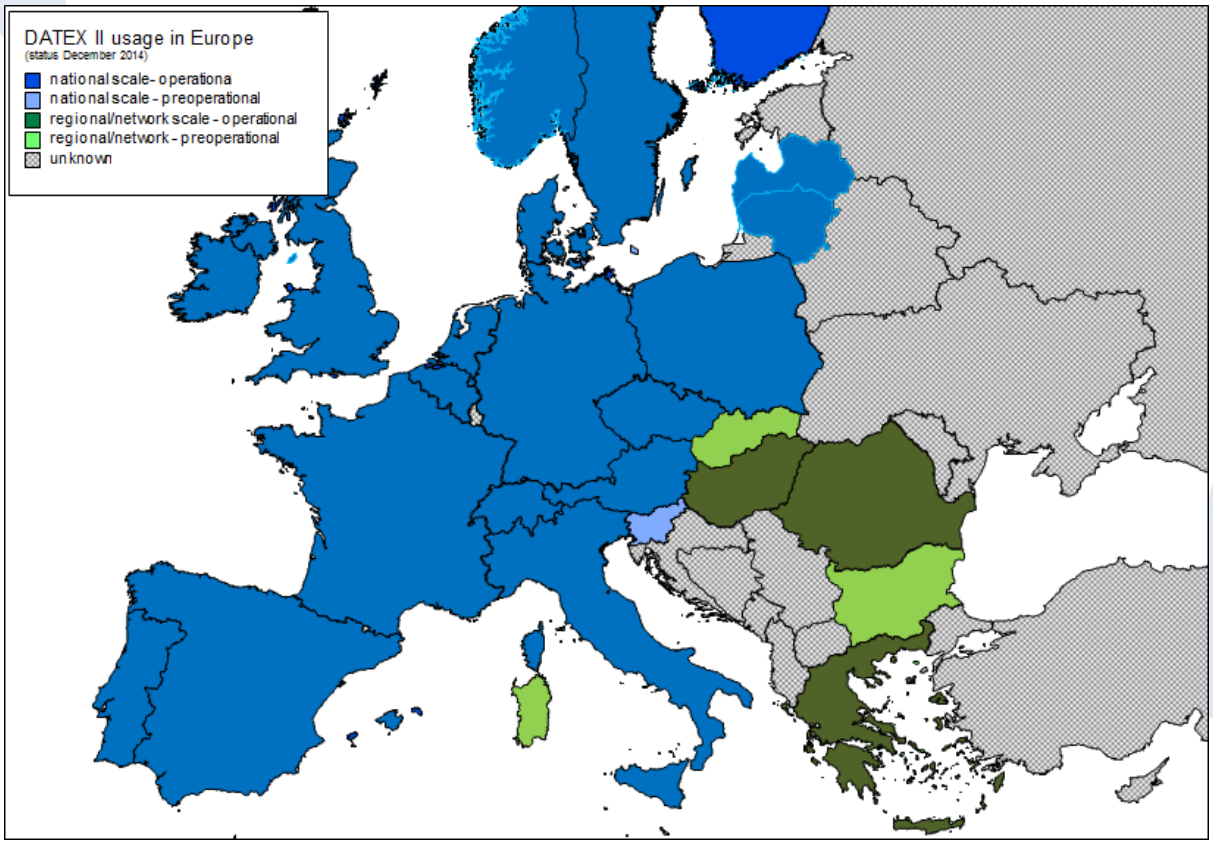
DATEX II is of relevance for all applications where dynamic information on the transport systems and notably the road system is concerned. The main usage areas are:

- Rerouting, network management and traffic management planning. Motorway networks and urban networks are regarded as closely connected here
- Lane or line control systems and related applications like ramp metering, dynamic speed limits and overtaking control
- Linking traffic management and traffic information systems
- Applications where information exchange between individual vehicles and traffic management is crucial, like for Car-to-infrastructure systems.
- Applications where information exchange between management systems for different modes is crucial, like multi-modal information systems
- Applications where the exchange of measured data is important
- Provision of services in the framework of road management with a strong link to network safety or performance like Truck Parking

For all these domains DATEX II pays special attention to interoperability issues resulting from the need for multiple operator cooperation and the unhindered exchange of data or information. However DATEX II is also designed to be used within single operator systems.

Status of DATEX II usage in Europe

Vision for the future: All the actors in Europe will have DATEX II nodes covering the entire TEN-T Network.



Further Information

dg.its-platform.eu

Questions and help

dg.its-platform.eu/user-support

www.its-platform.eu

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