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NSAI Standards

Irish Standard
I.S. EN 15531-3:2015

# Public transport - Service interface for real-time information relating to public transport operations - Part 3: Functional service interfaces

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## National Foreword

I.S. EN 15531-3:2015 is the adopted Irish version of the European Document EN 15531-3:2015, Public transport - Service interface for real-time information relating to public transport operations - Part 3: Functional service interfaces

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 15531-3

August 2015

ICS 35.240.60

Supersedes CEN/TS 15531-3:2007

English Version

# Public transport - Service interface for real-time information relating to public transport operations - Part 3: Functional service interfaces

Transport public - Interface de service pour les informations en temps réel relatives aux opérations de transport public - Partie 3 : Modules d'interface d'application individuels

Öffentlicher Verkehr - Serviceschnittstelle für Echtzeitinformationen, bezogen auf Operationen im öffentlichen Verkehr - Teil 3: Funktionelle Serviceschnittstelle

This European Standard was approved by CEN on 20 June 2015.

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# European foreword

This document (EN 15531-3:2015) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2016 and conflicting national standards shall be withdrawn at the latest by February 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 15531-3:2007.

This presents Part 3 of the European European Standard known as “SIRI”. SIRI provides a framework for specifying communications and data exchange protocols for organizations wishing to exchange Real-time Information (RTI) relating to public transport operations.

The SIRI European Standard is presented in three parts:

— Context and framework, including background, scope and role, normative references, terms and definitions, symbols and abbreviations, business context and use cases (Part 1).

— The mechanisms to be adopted for data exchange communications links (Part 2).

— Data structures for a series of individual application interface modules (Part 3).

— Two additional parts define additional functional services as CEN Technical Standards:

— Additional data structures for additional application interface module FM (Facility Monitoring: Part 4).

— Additional data structures for additional application interface module SX (Situation eXchange: Part 5).

The XML schema can be downloaded from http://www.siri.org.uk/, along with available guidance on its use, example XML files, and case studies of national and local deployments.

It is recognized that SIRI is not complete as it stands, and from time to time will need to continue to be enhanced to add additional capabilities. It is therefore intended that a SIRI Management Group should continue to exist, at European level, based on the composition of SG7.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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# Introduction

Public transport services rely increasingly on information systems to ensure reliable, efficient operation and widely accessible, accurate passenger information. These systems are used for a range of specific purposes: setting schedules and timetables; managing vehicle fleets; issuing tickets and receipts; providing real-time information on service running, and so on.

This European Standard specifies a Service Interface for Real-time Information (SIRI) about Public Transport. It is intended to be used to exchange information between servers containing real-time public transport vehicle or journey time data. These include the control centres of transport operators and information systems that utilise real-time vehicle information, for example, to deliver services such as travel information. SIRI 2 has also added, with SITI Lite, a possible exchange between server and end-user devices like smartphones or web browsers.

Well-defined, open interfaces have a crucial role in improving the economic and technical viability of Public Transport Information Systems of all kinds. Using standardized interfaces, systems can be implemented as discrete pluggable modules that can be chosen from a wide variety of suppliers in a competitive market, rather than as monolithic proprietary systems from a single supplier. Interfaces also allow the systematic automated testing of each functional module, vital for managing the complexity of increasing large and dynamic systems. Furthermore, individual functional modules can be replaced or evolved, without unexpected breakages of obscurely dependent function.

This European Standard will improve a number of features of public transport information and service management:

— Interoperability – the European Standard will facilitate interoperability between information processing systems of the transport operators by: (i) introducing common architectures for message exchange; (ii) introducing a modular set of compatible information services for real-time vehicle information; (iii) using common data models and schemas for the messages exchanged for each service; and (iv) introducing a consistent approach to data management.

— Improved operations management – the European Standard will assist in better vehicle management by (i) allowing the precise tracking of both local and roaming vehicles; (ii) providing data that can be used to improve performance, such as the measurement of schedule adherence; and (iii) allowing the distribution of schedule updates and other messages in real-time.

— Delivery of real-time information to end-users – the European Standard will assist the economic provision of improved data by; (i) enabling the gathering and exchange of real-time data between VAMS systems; (ii) providing standardized, well defined interfaces that can be used to deliver data to a wide variety of distribution channels.

Technical advantages include the following:

— Reusing a common communication layer for all the various technical services enables cost-effective implementations, and makes the European Standard readily extensible in future.

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# 1 Scope

There are many potential ways for passenger transport operations centres to interact. The approach taken by SIRI is for an open-ended set of standard data structures, carried over a communications channel constructed using one of a small number of specific options.

Part 2 of this European Standard specifies the communications channel. Part 3 specifies a number of functional modules, based on the ‘use cases’ identified in Annex B to Part 1:

— Production Timetable (PT): this service enables the provision of information on the planned progress of vehicles operating a specific service, identified by the vehicle time of arrival and departure at specific stops on a planned route for a particular Operational Day.

— Estimated Timetable (ET): this service enables the provision of information on the actual progress of Vehicle Journeys operating specific service lines, detailing expected arrival and departure times at specific stops on a planned route. There will be recorded data for stops which have been passed, and predicted data for stops not yet passed. In addition the Estimated Timetable service allows Vehicle Journeys to be cancelled, added or changed.

— Stop Timetable (ST): this service provides a stop-centric view of timetabled vehicle arrivals and departures at a designated stop. It can be used to reduce the amount of information that needs to be transmitted in real-time to stops and displays, as reference data for a Stop Monitoring Service; and provides a data feed of the static timetables.

— Stop Monitoring (SM): this service provides a stop-centric view of vehicle arrivals and departures at a designated stop. It can be used by displays and other presentation services to provide departure board and other presentations of timetable and real-time journey information both at stops and at a distance.

— Vehicle Monitoring (VM): this service enables the provision of information on the current location and status of a set of vehicles. It provides all the current relevant information from one AVMS relating to all vehicles fulfilling a set of selection criteria.

— Connection Timetable (CT): this service may be used to provide information about the scheduled arrivals of a feeder vehicle to the operator of a connecting distributor service. The distributor operator can then plan how to guarantee the connection, either with the expected vehicle or a different vehicle.

— Connection Monitoring (CM): this service is used to provide information about the expected arrival of a feeder vehicle to the operator of a connecting distributor service. The distributor operator can then manage the service to guarantee the connection, based on actual vehicle running.

— General Message (GM): the SIRI "General Message” service is used to exchange informative messages between identified individuals in free or an arbitrary structured format. It enables messages to be sent and to be revoked. Messages are assigned validity periods in addition to the actual content.

# 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15531-1:2015, *Public transport - Service interface for real-time information relating to public transport operations - Part 1: Context and framework*

# 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15531-1:2015 apply.

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