This is a free page sample. Access the full version online.

National Standards Authority of Ireland

IRISH STANDARD

CLC/TR 50501-1:2007

ICS 35.240.60
45.020

ROLLING STOCK - INTERCOMMUNICATION BETWEEN VEHICLES AND TRAIN/WAYSIDE -- PART 1: DATA DICTIONARY AND RULES FOR FUNCTIONAL STANDARDISATION

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland
Tel: +353 1 807 3800
Fax: +353 1 807 3838
http://www.nsai.ie

Sales
http://www.standards.ie

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on:
30 May 2007

NO COPYING WITHOUT NSAI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

© **NSAI 2007**

Price Code N

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

This is a free page sample. Access the full version online.

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CLC/TR 50501-1

May 2007

ICS 35.240.60; 45.020

English version

Rolling stock – Intercommunication between vehicles and train/wayside – Part 1: Data dictionary and rules for functional standardisation

Matériel roulant – Communications entre véhicules et communications sol/train – Partie 1: Dictionnaire de données et règles pour la standardization fonctionnelle

Bahnanwendungen – Interkommunikation zwischen Fahrzeugen und Fahrweg – Teil 1: Datenwörterbuch und Regeln für die funktionale Normung

This Technical Report was approved by CENELEC on 2007-01-01.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

© 2007 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. CLC/TR 50501-1:2007 E

This is a free page sample. Access the full version online.

Foreword

This Technical Report was prepared by SC 9XB, Electromechanical material on board rolling stock, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to vote and was approved by CENELEC as CLC/TR 50501-1 on 2007-01-01.

_____

This is a free page sample. Access the full version online.

Contents

Page

Introduction **4**

1 Scope **7**

2 Normative references **7**

3 Terms and definitions **7**

4 Reference architecture **10**

4.1 Introduction 10

4.2 Reference Architecture concept 10

4.3 Requirement for the STD1 Reference Architecture definition 11

4.4 Interacting objects 12

4.5 Functional Architecture 20

5 Methods for functional modelling **24**

5.3 Process of function class decomposition 30

5.4 Modelling accessibility of entities and functions: the pattern view 30

5.5 General modelling rules 31

5.6 Metric Evaluation Criteria 33

5.7 Testing 33

5.8 XML usage 33

5.9 Deliverables 38

6 The Data Dictionary **39**

6.1 Introduction 39

6.2 Structure 39

6.3 Requirements for management of the Data Dictionary/model repository 40

Annex A (informative) **Related works** **41**

Annex B (informative) **Functional addressing in railway specifications** **44**

Annex C (informative) **Process of function class decomposition** **46**

Bibliography **47**

Figure 1 – Reference Architecture: Relation cases in the functional communication architecture 17

Figure 2 – General model structure – Example 25

Figure 3 – UML Use case diagram – Example 26

Figure 4 – UML Component diagram – Example 27

Figure 5 – UML Class diagram – Example 28

Figure 6 – UML Statechart diagram – Example 29

Figure 7 – UML Sequence diagram – Example 30

This is a free page sample. Access the full version online.

Introduction

Survey Group SC9XB/SGB1 conclusions

From the conclusion of the works of Survey Group SC 9XB/SGB1, in document CLC/SC9XB(Sec)174 (Bibliography [9]), a series of standards is to be prepared, with the following guiding principles:

- the overall objective is to develop standards for data exchange involving railway vehicle consists, between themselves or with fixed installations;
- standardisation is focussed to what is necessary for implementing interoperability as defined in Directive 2001/16/EC (on the interoperability of the Trans-European conventional railway system), and as will be specified by the bodies in charge of drafting Technical Specifications for Interoperability (TSI);
- the scope of the work is then limited to international Passenger trains and freight trains in The Trans-European conventional rail system, excluding the signalling and control-command subsystem. This does not explicitly exclude High Speed Trains (HST), but excludes formally trams, metros and urban or suburban trains.

Separate functional standards will be established for freight and Passenger trains. Requirements for interoperability, including those specified in a set of Technical Specifications for Interoperability (TSI), are different for these two categories of rolling stock.

The series of standards has been structured as follows, with four categories:

- STD1: data dictionary and rules for functional standardisation;
- STD 2: functions in freight traffic (for a selected set of functions);
- STD 3: functions in passenger traffic (for a selected set of functions);
- STD 4: standardisation of communications procedures.

This document is the first part, in category STD1, of the series of functional standards, aiming to define a common modelling framework, to be used for the development of the subsequent standards: common methods and rules, a unique Reference Architecture, and common Data Dictionary.

The Trans-European conventional rail system

Trans-European conventional rail system shall be considered as defined in Article 2 of the Council Directive 2001/16/EC on the interoperability of the Trans-European conventional railway system:

For the purposes of this Directive: "Trans-European conventional rail system" means the structure, as described in Annex I, composed of lines and fixed installations, of the Trans-European transport network, built or upgraded for conventional rail transport and combined rail transport, plus the rolling stock designed to travel on that infrastructure.

The Trans-European rail system is broken down into subsystems, as described in Annex II of the Directive:

a) structural area
   - *infrastructure*, in particular access / egress points that define the boarders of an infrastructure managed by a given organisation, and also shunting, freight terminals and stations,
   - *energy*, electrification system…,
   - *control and command and signalling*, to command and control train movement,
   - *traffic operation and management*, including train driving, traffic planning and management,

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation