
**Intelligent transport systems —
Automatic vehicle and equipment
identification — Intermodal goods
transport architecture and terminology**

*Systèmes intelligents de transport — Identification automatique des
véhicules et de leur équipement — Architecture et terminologie du
transport intermodal de marchandises*

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2005

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Requirements	9
4.1 General requirements	9
4.2 Conceptual architecture	9
4.3 Logical definition	13
4.4 Functional architecture	15
4.5 Application architecture	15
4.6 Information architecture	18
4.7 Object interactions	19
4.8 System security architecture	21
4.9 Resilience issues	21
4.10 Performance issues	21
4.11 Disaster recovery	22
4.12 Migration issues	22
4.13 System specification	22
4.14 Implementation architecture	22
Annex A (informative) Architectural views of logistic and distribution systems	23

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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

ISO/TS 17261 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, Road transport and traffic telematics, in collaboration with Technical Committee ISO/TC 204, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Introduction

This Technical Specification prescribes the overall parameters within which these subsidiary Standards and Technical Specifications are constructed. The Architecture description defined in this document is presented in a form consistent with the recommendations of ISO/TC 204/WG1, and is supported by that working group, and is a consistent extension to EN ISO 14814 (AVI Reference architectures and terminology).

EN ISO 14814 provides an architecture context for AVI/AEI for road transport. CEN ISO/TS 17261 (this Technical Specification) extends this architecture context to include intermodal and multimodal movements.

This document is part of a series of Standards defining AVI/AEI in the Intelligent Transport Systems/Road Transport and Traffic Telematics (ITS/RTTT) environment. The following parts have been/shall also be issued from CEN TC 278/WG12 to form a family of Standards for the Sector.

EN ISO 14814	AVI/AEI Reference architectures and terminology
EN ISO 14816	AVI/AEI Numbering and data structures
EN ISO 14815	AVI/AEI System specification
CEN ISO/TS 17261	AVI/AEI Intermodal goods transport reference architectures and terminology.
CEN ISO/TS 17262	AVI/AEI Intermodal goods transport: Numbering and data structures
CEN ISO/TS 17263	AVI/AEI Intermodal goods transport: System parameters
CEN ISO/TS 17264	AVI/AEI Intermodal goods transport: Interface requirements

An AVI/AEI interaction in an ITS/RTTT environment comprises an identification of On-Board Equipment (OBE) by a reader/interrogator and may transfer additional data.

The data component in an ITS/RTTT environment provides the basis for unambiguous identification of the OBE, and may also share a medium for a bi-directional interactive exchange of data between the host and OBE and to other equipment (such as smart cards etc.).

The principles of data presentation determined in CEN ISO/TS 17262 have been adopted to provide an interoperable architecture within a Standard framework. The use of Abstract Syntax Notation One (ASN.1) PER is therefore an integral part of the data architecture determined in this Technical Specification.

The numbering and data structure shall be capable of operation both by read/write devices, and by read only devices where there is no requirement (and sometimes no possibility) to write to the OBE.

A key feature of the structure is to provide interoperability of data constructs.

Within the ITS/RTTT sector, applications may range from simple vehicle and equipment identification to complex International systems.

The reference architecture model and the data construct schemes described in this family of Standards/Technical Specifications extend the approved AVI conceptual architecture to provide a comprehensive conceptual and logical system architecture to describe the relationships and functionality for a wide range of media so that the currency of the Technical Specification shall remain good for both existing and future technologies. The Technical Specification recognises that there are existing AVI/AEI applications and provides a means of supporting such data constructs within the Technical Specification.

In many cases it is necessary or desirable to use one air carrier frequency and protocol, but this is not always possible nor even desirable in all situations.

In accordance with the resolutions of ISO TC 204 and CEN TC 278 the use of Abstract Syntax Notation One (ASN.1) from ISO 8824 as a data definition structure is adopted. Its usage provides maximum interoperability and conformance to existing ITS/RTTT and related Standards and Technical Specifications