PD ISO/TS 17187:2019

BSI Standards Publication

Intelligent transport systems — Electronic information exchange to facilitate the movement of freight and its intermodal transfer — Governance rules to sustain electronic information exchange methods

Documents
Document Sharing Hub

Full document details: PD ISO/TS 17187:2019

National foreword

This Published Document is the UK implementation of ISO/TS 17187:2019. It supersedes PD ISO/TS 17187:2013, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 539 00437 3

ICS 03.220.01; 35.240.60

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 December 2019.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: PD ISO/TS 17187:2019

TECHNICAL SPECIFICATION

ISO/TS 17187

Second edition
2019-12

Intelligent transport systems — Electronic information exchange to facilitate the movement of freight and its intermodal transfer — Governance rules to sustain electronic information exchange methods

Systèmes intelligents de transport — Échange d'informations électroniques pour faciliter le mouvement du fret et son transfert intermodal — Règles de gouvernance pour soutenir les méthodes d'échange d'informations électroniques

Reference number
ISO/TS 17187:2019(E)

Documents
Document Sharing Hub

© ISO 2019

Full document details: PD ISO/TS 17187:2019

COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/TS 17187:2019

Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviated terms **4**
5 Freight-X governance **5**
5.1 General 5
5.2 Strategic governance requirements 5
5.3 Management 6
5.4 Ownership 6
5.5 Central services/registry 6
5.6 Intellectual property rights 6
5.7 Information security 6
6 Policy **6**
6.1 General 6
6.2 Governance model 7
6.3 Freight-X consortium 8
6.4 Freight-X governing body 9
6.4.1 General 9
6.4.2 Development and maintenance 9
6.4.3 Support 9
6.4.4 Monitoring 10
6.5 Freight-X community providers 10
6.5.1 General 10
6.5.2 Freight-X community provider agreements 10
6.5.3 Freight-X community provider accreditation 11
6.6 Freight-X user communities 12
6.7 Open forum 12
7 Freight-X Standards **12**
7.1 General 12
7.2 Semantic Freight-X standards 13
7.3 Syntactic Freight-X standards 14
7.3.1 General 14
7.3.2 Specific Freight-X implementation guidelines 15
7.3.3 Freight-X code lists and code list schemas 15
7.4 Freight-X document exchange standards 15
7.5 Freight-X communication exchange standards 15
8 Governance of Freight-X standards **16**
8.1 General 16
8.2 Governance of Freight-X message profiles 17
8.3 Governance of Freight-X support data/code lists 17
8.4 Governance of Freight-X communication exchange standards 17
9 Freight-X security **17**
10 Engagement scenario **19**
10.1 General 19
10.2 Maintenance and support policy 19
10.3 Maintenance tools 19
10.4 Intellectual property policy 20
10.5 Financial model 20

AVA Documents
Document Sharing Hub

© ISO 2019 – All rights reserved

Full document details: PD ISO/TS 17187:2019

11 Implementation plan **20**
11.1 General 20
11.2 Set up ICT infrastructure 20
11.3 Implement Freight-X data model 20
11.4 Implement UDDI registry 21
11.5 Implement ESB component 21
11.6 Define message profiles 21
11.7 Implement Freight-X consortium portal 21
11.8 Implement consortium ICT infrastructure services 21
11.9 Implement Freight-X business services 22

Annex A (informative) **ISO/IEC 19845 international freight documents** **23**

Annex B (informative) **ISO/IEC 19845 intermodal freight UBL documents** **24**

Annex C (informative) **ISO/IEC 19845 freight status documents** **25**

Annex D (informative) **ISO/IEC 19845 UBL certificate of orgin** **26**

Annex E (informative) **Code lists and code list schemas** **27**

Bibliography **29**

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This second edition cancels and replaces the first edition (ISO/TS 17187:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Clause 7 and Annexes A to D have been updated to include ISO 19845:2015 (UBL 2.1);

— subclause 7.4 has been updated for Freight-X document exchange standards;

— subclause 7.5 has been updated for Freight-X communication exchange standards.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

Introduction

Electronic commerce offers new opportunities to improve the efficiency of business operations and to reduce costs associated with trade procedures, providing increased competitive advantages to the commercial actors ready to embrace new methods of work and trade. Emerging electronic commerce platforms and the use of the internet provide users with a combination of technologies to communicate data, to contract electronically, as well as to manage new business processes leading to new business models.

Improved information sharing among supply chain partners is one of the key business objectives which enable the participants to improve their operational efficiency and optimize their enterprise resource allocations. Due to the existence of heterogeneous IT environments among supply chain partners, it is a challenge for the implementer to seamlessly integrate information from multiple data sources and in different data formats. Each data source is typically designed for a single, stand-alone purpose within an enterprise, not to be part of an integrated data collection. These disparate data repositories tend to be silos, independent of one another, and not working well together. Business entities wishing to engage with other business partners to facilitate certain standards of practice for information interchange will need to abide by certain rules, otherwise the efficiencies sought using the methodologies in this document will be diminished.

Within this context, and within this document, governance is defined as being the rules, processes, and behaviour that affect the way in which powers are exercised, particularly as regards openness, participation, accountability, effectiveness, and coherence. As discussed in ISO/TS 24533, there needs to be a governance process to tie loose ends together and allow the supply chain partners to keep their data exchange standards viable and effective. Governance is key to this process of maintaining the structures that allow for a high degree of supply chain productivity and for holding together the community partnerships that make such an arrangement economically advantageous. A governance specification is critical to making the process described in this document effective. There is an expectation that this document will provide the guidance that will keep the supply chain standards viable and useful for the community of users wishing to maximize their returns on investment.

The processes and process tools include web services technologies to improve the operating efficiency, safety, and security of freight movement. These technologies are used for sharing information between supply chain partners in a commonly understood manner by capturing it only once and sharing it many times, and by giving all partners the same view of the data.

A service-oriented architecture leverages the web services functionality and necessitates the requirement for data exchange standards. These tools hinge on the successful definition and adoption of data standards published in open and accessible forums. The advantages of using information technology tools are undeniable and their use is now widespread across industry. The freight transport and logistics industry is no exception with all businesses using e-business to some extent.

This document does not address liability of any kind as this is considered within the domain of each participating party. However, liability issues can be lessened by following the tenants of this document as a result of cooperating partners actively managing the data and communication transfer protocols.

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

Intelligent transport systems — Electronic information exchange to facilitate the movement of freight and its intermodal transfer — Governance rules to sustain electronic information exchange methods

1 Scope

This document provides governance rules to be used for executing an organized process for business entities to connect to one another electronically for the conduct of electronic trade in a secure and open environment through a standardized framework for information exchange. This standardized framework includes processes and process tools to ease connections between trading partners, to provide full visibility, and to reduce the time goods spend in transit. The application of these rules and attendant standards and technology applications are expected to allow business entities to engage their legacy systems without the cost of upgrades.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 19845:2015, *Information technology — Universal business language version 2.1 (UBL v2.1)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
bill of lading
document which evidences a contract of the carriage and the taking over or loading of the goods by the carrier, and by which the carrier undertakes to deliver the goods against surrender of the document

Note 1 to entry: A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking. The document has the following functions: 1) a receipt for goods, signed by a duly authorized person on behalf of the carriers, 2) a document of title to the goods described therein, 3) evidence of the terms and conditions of carriage agreed upon between the two parties.

[SOURCE: ISO/TS 24533:2012, 2.5]

3.2
carrier
person or organization, which owns and/or operates a transport means, engaged in the transportation of passengers or property by land, rail, air or water

[SOURCE: ISO/TS 24533:2012, 2.7]

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

3.3
consignee
receiver
person or company to whom goods are shipped

[SOURCE: ISO/TS 24533:2012, 2.11]

3.4
consignor
shipper
transport service buyer
party which, by contract with a carrier, consigns or sends goods with the carrier, or has them conveyed by him

Note 1 to entry: It is the party that gives instructions for the transportation services required for a consignment of goods.

[SOURCE: ISO/TS 24533:2012, 2.13, modified — The third term "transport service buyer" has been added and Note 1 to entry has been added.]

3.5
customs broker
party that is licensed to enter and clear goods through customs

Note 1 to entry: The responsibilities of a broker include preparing the entry form and filing it, advising the importer on duties to be paid, advancing duties and other costs, and arranging for delivery to the importer.

3.6
forwarding instructions
document issued to a forwarder, giving instructions regarding the action to be taken for the forwarding of goods described therein

Note 1 to entry: See Clause A.1.

3.7
freight forwarder
transport service provider
party arranging the carriage of goods, including connected services and/or associated formalities, on behalf of a consignor or consignee

Note 1 to entry: It is the party that is contracted to provide the transportation services.

[SOURCE: ISO/TS 24533:2012, 2.25, modified — The second term "transport service provider" has been added and Note 1 to entry has been added.]

3.8
Freight-X
system through which the national and international freight communities' demand for and supply of electronic business services to support freight operations is directed and controlled

EXAMPLE The Electronic Freight Management (EFM) programme in the US; the eFreight programme and its affiliates in Europe.

3.9
Freight-X community
Freight-X participant
Freight-X user community
community of organizations that has formally agreed to collaborate to operate using the principles defined in this document by joining a Freight-X consortium

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

3.10
Freight-X community provider
organization that implements mechanisms for managing demand and supply of available Freight-X services supporting freight transportation management operations

3.11
Freight-X consortium
organizations that have formally agreed to form a formal association which has established rules and governance procedures to collaborate to operate using the principles defined in this document

3.12
Freight-X community provider agreement
formal agreement by Freight-X community provider in respect of representation rights, access to specifications and services, data and document provision, specification, management, and access and maintenance

3.13
Freight-X governance
Freight-X governing body
system through which national and international freight communities' demand for and supply of electronic business services to support freight operations is directed and controlled

3.14
Freight-X message profile
specification of how one or more Freight-X business processes are executed by specifying the Freight-X business rules governing its business collaborations and the information content of the electronic business transactions exchanged

3.15
Freight-X service
web service created specifically to address business processes related to electronic freight management

EXAMPLE Receive order; confirm booking; obtain status.

3.16
Freight-X specifications
explicit set of requirements to be satisfied by Freight-X

3.17
friends of the shipment
collection of parties whose role in a particular shipment has been established and documented in the Freight-X registry enabling access to the shipment information

3.18
governance
rules, processes, and behaviour that affect the way in which powers are exercised, particularly as regards openness, participation, accountability, effectiveness, and coherence

3.19
level of service
measure to determine the effectiveness of elements of the Freight-X transportation infrastructure

3.20
logistic service provider
party providing logistic services such as warehousing, repacking products, distribution, and assembly

EXAMPLE Third-party logistic provider; container freight station.

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019

3.21
message profile
content of the electronic business transactions exchanged described with an aim to function as part of a formal agreement

3.22
packing list
document stating the distribution of goods in individual packages, such as shipping document issued by shipper to carrier, customs and consignee serving the purposes of identifying detail information of package count, products count, measurement of each package, and weight of each package

3.23
small and medium-sized enterprises
SMEs
entities engaged in an economic activity, irrespective of their legal form, that are characterized by a number of employees, an annual turnover, and/or an annual balance sheet which fall below established limits

3.24
terminal operator
party with operational responsibilities at origin or destination nodes for freight transport journeys

Note 1 to entry: The responsibilities can include overseeing the unloading of goods, checking the quantity of goods against the manifest, transferring of the goods, checking documents and authorizing a carrier to pick up goods.

3.25
transport status document
document issued on individual specific request or through an agreed status reporting procedure by a freight forwarder to communicate to the consignee or consignor or notify party the status of shipments that are currently under the freight forwarder's management

3.26
waybill
document issued by the party that provides the physical transportation services to the party that gives instructions for the transportation services (i.e. shipper, consignor)

Note 1 to entry: A waybill states the details of the transportation, charges, and terms and conditions under which the transportation service is provided. Unlike a bill of lading, a waybill is not negotiable and cannot be assigned to a third-party transport document describing a shipment. It states the instructions for the beneficiary and can contain the details of the transportation, charges, and terms and conditions under which the transportation service is provided.

4 Abbreviated terms

BBIE	Basic business information entity
BIE	Business information entity
CCT	Core component type
CCTS	Core Components Technical Specification
ebXML	Electronic Business Extensible Markup Language
ESB	Enterprise Service Bus
ICT	Information and Computer Technologies
RBAC	Role-based Access Control

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/TS 17187:2019