



BSI Standards Publication

Intelligent transport systems — Vocabulary

National foreword

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Intelligent transport systems — Vocabulary

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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 document 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).

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

This second edition cancels and replaces the first edition (ISO/TS 14812:2022), which has been technically revised. The main changes are as follows:

— the following terms and groups of terms have been modified:

- information security terms ([3.1.14](#));
- connected vehicle roadside equipment ([3.2.3.3](#));
- connected vehicle ([3.2.3.7](#));
- device component terms ([3.2.10](#));
- carriageway ([3.3.1.5](#));
- single carriageway ([3.3.1.7](#));
- dual carriageway ([3.3.1.8](#));
- multiple carriageway ([3.3.1.9](#));
- motorway ([3.3.1.21](#));
- physical traffic separator ([3.3.2.1](#));
- kerb ([3.3.2.4](#));
- footpath ([3.3.3.3](#));
- sidewalk ([3.3.3.4](#));
- escalator ([3.3.3.5](#));

- moving walkway ([3.3.3.6](#));
- pedestrian crossing ([3.3.3.7](#));
- shared space ([3.3.3.8](#));
- block-face ([3.3.3.9](#));
- alley ([3.3.5.11](#));
- road identifier ([3.3.5.12](#));
- service road ([3.3.5.13](#));
- service alley ([3.3.5.14](#));
- facility terms ([3.3.7](#));
- kerbside usage terms ([3.3.8](#));
- road equipment terms ([3.3.9](#));
- geographic feature ([3.4.1.7](#));
- point destination ([3.4.1.8](#));
- area destination ([3.4.1.9](#));
- coordinate tuple ([3.4.1.10](#));
- point coordinates ([3.4.1.11](#));
- network location ([3.4.2.8](#));
- geographic descriptor ([3.4.2.9](#));
- infrastructure descriptor ([3.4.2.10](#));
- jurisdictional terms ([3.4.3](#));
- vulnerable road user ([3.6.1.5](#));
- protected road user ([3.6.1.6](#));
- anonymized vehicle reference ([3.7.2.3](#));
- vehicle equipment ([3.7.2.4](#));
- vehicle fuel type ([3.7.2.5](#));
- vehicle identifier ([3.7.2.6](#));
- vehicle load type ([3.7.2.7](#));
- vehicle registration plate identifier ([3.7.2.8](#));
- gross vehicle mass ([3.7.2.9](#));
- gross vehicle mass rating ([3.7.2.10](#));
- payment terms ([3.8.1](#)).

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.

Introduction

The definitions found in this document have been formulated in accordance with ISO International Standards such as ISO 704 and are based on a consistent concept model. It is recognized that the contents of this document are not exhaustive and that terminology evolves over time.

In most cases, the definitions provided within this document are suitable for general application throughout intelligent transport systems (ITS). In those circumstances where a term is intended for a specific domain of discourse or where the term can be used in multiple domains, the intended context is indicated at the beginning of the definition as bracketed text (e.g. "<ITS-S>").

In addition to a Bibliography, this document provides an index that provides an alphabetical listing of all preferred, admitted and deprecated terms contained in this document.

Other standardization groups and organizations are encouraged to adopt the terminology in this document to promote better understanding of terms among ITS professionals worldwide. The terms and definitions contained within this document can be searched online at ISO's Online Browsing Platform available at <https://www.iso.org/obp>.

Additional related terms can be found in ISO/IEC/IEEE 24765.

Intelligent transport systems — Vocabulary

1 Scope

This document defines terms relating to intelligent transport systems (ITS).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Core terms

3.1.1 Entity terms

NOTE [Figure A.1](#) depicts the concept model for the terms defined in this subclause.

3.1.1.1 entity

concrete or abstract thing that exists, did exist, or can possibly exist, including associations among these things

EXAMPLE *Person* ([3.1.1.6](#)), object, event, idea, process, etc.

3.1.1.2

immaterial entity

entity ([3.1.1.1](#)) that does not occupy three-dimensional space

EXAMPLE *Idea, process, organization, etc.*

3.1.1.3

material entity

entity ([3.1.1.1](#)) that occupies three-dimensional space

Note 1 to entry: All material entities have certain characteristics that can be described and therefore this concept is important for ontology purposes.

3.1.1.4

non-biological entity

material entity ([3.1.1.3](#)) that is not and has never been a living organism

3.1.1.5

biological entity

material entity ([3.1.1.3](#)) that was or is a living organism

3.1.1.6

person

biological entity ([3.1.1.5](#)) that is a human being

3.1.2 General system terms

NOTE [Figure A.2](#) depicts the concept model for the terms defined in this subclause.

3.1.2.1

system

combination of interacting *elements* ([3.1.3.10](#)) organized to achieve one or more stated purposes

3.1.2.2

transport system

system ([3.1.2.1](#)) of infrastructure *elements* ([3.1.3.10](#)) and optionally *vehicles* ([3.7.1.1](#)) that are jointly designed to move *material entities* ([3.1.1.3](#)) from an origin to a destination

Note 1 to entry: Transport systems can also include any supporting system, such as information and control systems.

3.1.2.3

surface transport system

transport system

transport system ([3.1.2.2](#)) designed to move *material entities* ([3.1.1.3](#)) across the surface or near-surface of the Earth

Note 1 to entry: A surface transport system can include tunnels, *bridges* ([3.3.7.3](#)) and similar *elements* ([3.1.3.10](#)).

Note 2 to entry: There is not complete agreement on the precise limitations of a "surface transport system" within the ITS community. Currently, the term is almost exclusively applied to ground-based travel of goods and people over significant distances. The term is viewed as including ferry systems, which often form an integral part of a local surface transport system; it is less clear if it includes long-distance sea-fairing ships. The term "surface transport systems" is also generally limited to transport systems that cover a considerable distance (e.g. factory conveyance technologies are not often referred to as "surface transport systems"). It has been suggested that air travel, which is arguably a transport system designed to move physical entities between points on the surface of the Earth, ought to be included in the scope of the term, but this perspective is not universally accepted. It is expected that the exact limitations of the term will be further refined as ITS matures.

Note 3 to entry: Due to the defined scope of ITS, the term "transport system" is intended to be interpreted as being synonymous with the term "surface transport system" unless explicitly specified otherwise.

3.1.2.4

intelligent transport system

ITS

intelligent transportation system

system ([3.1.2.1](#)) comprised of information, communication, sensor and control technologies and that is designed to benefit a *surface transport system* ([3.1.2.3](#))

Note 1 to entry: "Intelligent transportation system" is the American English equivalent.

Note 2 to entry: Benefits potentially include, but are not limited to, increased safety, sustainability, efficiency and comfort.

Note 3 to entry: The full term (i.e. "intelligent transport system") is often used when the noun is used as a subject, whereas the abbreviated term (i.e. "ITS") is often used to modify another noun (e.g. "Intelligent transport systems provide ITS services.").

3.1.2.5

cooperative ITS

C-ITS

subset of *intelligent transport systems* ([3.1.2.4](#)) where information is shared among *ITS stations* ([3.2.7.3](#)) in a manner that enables its use by multiple *ITS services* ([3.5.3.1](#))

3.1.3 General architecture terms

NOTE [Figure A.3](#) depicts the concept model for the terms defined in this subclause.

3.1.3.1

architecture

system architecture

<system> fundamental concepts or properties of a *system* (3.1.2.1) in its *environment* (3.1.3.11) embodied in its *elements* (3.1.3.10), *relationships* (3.1.6.8) and in the principles of its design and evolution

3.1.3.2

architecture description

work product used to express an *architecture* (3.1.3.1)

[SOURCE: ISO/IEC/IEEE 42010:2022, 3.3]

3.1.3.3

architecture framework

conventions, principles and practices for the description of *architectures* (3.1.3.1) established within a specific domain of application or community of *stakeholders* (3.1.3.4)

EXAMPLE 1 Generalised Enterprise Reference Architecture and Methodologies (GERAM) [ISO 15704] is an architecture framework.

EXAMPLE 2 Reference Model of Open Distributed Processing (RM-ODP) [ISO/IEC 10746 series] is an architecture framework.

[SOURCE: ISO/IEC/IEEE 42010:2022, 3.4, modified — the preferred term from ISO/IEC/IEEE 42010, "architecture description framework", has been shortened to "architecture framework" in this document. Notes 1 and 2 to entry have been removed and replaced with new Notes to entry.]

3.1.3.4

stakeholder

system stakeholder

<system> individual, team, organization or *classes* (3.1.12.2) thereof, having an interest in a *system* (3.1.2.1)

3.1.3.5

concern

system concern

<system> interest in a *system* (3.1.2.1) relevant to one or more of its *stakeholders* (3.1.3.4)

Note 1 to entry: A concern pertains to any influence on a system in its *environment* (3.1.3.11), including developmental, technological, business, operational, organizational, political, economic, legal, regulatory, ecological and social influences.

3.1.3.6

architecture viewpoint

work product establishing the conventions for the construction, interpretation and use of *architecture views* (3.1.3.7) to frame specific system *concerns* (3.1.3.5)

3.1.3.7

architecture view

work product expressing the *architecture* (3.1.3.1) of a *system* (3.1.2.1) from the perspective of specific system *concerns* (3.1.3.5)

3.1.3.8

model kind

conventions for a type of modelling

Note 1 to entry: Examples of model kinds include *data flow* (3.1.7.1) diagrams, *class* (3.1.11.2) diagrams, Petri nets, balance sheets, organization charts and state transition models.

3.1.3.9

architecture model

work product representing one or more *architecture views* (3.1.3.7) and expressed in a format governed by a *model kind* (3.1.3.8)

3.1.3.10**element****architecture element**

<architecture> component member of an *architecture model* (3.1.3.9) included in an *architecture view* (3.1.3.7)

3.1.3.11**environment****system environment**

<system> context determining the setting and circumstances of all influences upon a *system* (3.1.2.1)

Note 1 to entry: The environment of a system includes developmental, technological, business, operational, organizational, political, economic, legal, regulatory, ecological and social influences.

3.1.4 Architecture view terms

NOTE [Figure A.4](#) depicts the concept model for the terms defined in this subclause.

3.1.4.1**communications view**

architecture view (3.1.3.7) from the *communications viewpoint* (3.1.4.2)

Note 1 to entry: Within ITS, the preferred model for describing the communications view is based on the *ITS-S reference architecture* (3.1.9.4).

3.1.4.2**communications viewpoint**

architecture viewpoint (3.1.3.6) used to frame *concerns* (3.1.3.5) related to all layers of the Open Systems Interconnection (OSI) stack and related management and security issues

3.1.4.3**enterprise view**

architecture view (3.1.3.7) from the *enterprise viewpoint* (3.1.4.4)

3.1.4.4**enterprise viewpoint**

architecture viewpoint (3.1.3.6) used to frame the policies, funding incentives, working arrangements and jurisdictional structure that support the technical layers of the *architecture* (3.1.3.1)

3.1.4.5**functional view**

architecture view (3.1.3.7) from the *functional viewpoint* (3.1.4.6)

3.1.4.6**functional viewpoint**

architecture viewpoint (3.1.3.6) used to frame *concerns* (3.1.3.5) related to the definition of *processes* (3.1.7.2) that perform surface transport functions and *data flows* (3.1.7.1) shared between these processes

3.1.4.7**physical view**

architecture view (3.1.3.7) from the *physical viewpoint* (3.1.4.8)

Note 1 to entry: The term "deployment view" is sometimes used within the broader ICT community, but the term "physical view" is preferred to prevent confusion between the physical view of a reference architecture and any part of a *deployment architecture* (3.1.9.3).

3.1.4.8**physical viewpoint**

architecture viewpoint (3.1.3.6) used to frame *concerns* (3.1.3.5) related to the assignment of functionality to *physical objects* (3.1.8.1) and the interfaces among these physical objects

3.1.5 Architecture — Communication view terms

NOTE [Figure A.5](#) depicts the concept model for the terms defined in this subclause.

3.1.5.1

application entity

ITS-S application entity

DEPRECATED: information layer

part of the *ITS station reference architecture* ([3.1.9.4](#)) that is responsible for providing ITS-related functionality

Note 1 to entry: Within the US, the National Transportation Communications for ITS Protocol (NTCIP) standards identify an "information layer" on top of the traditional OSI stack. However, the purpose of this layer includes both information configuration and functionality. The ITS-S reference architecture separates these two roles between the *management entity* ([3.1.5.6](#)) and the application entity.

3.1.5.2

access layer

link layer

subnet layer

communications layer that corresponds to the physical and data link layers of the OSI model

Note 1 to entry: Within the Internet Engineering Task Force (IETF), the term "link layer" is used to describe the same functionality as the access layer.

Note 2 to entry: Within the US, the National Transportation Communications for ITS Protocol (NTCIP) standards use the term "subnet layer" to describe the same functionality as the access layer.

3.1.5.3

ITS-S access layer

communications layer in the *ITS station reference architecture* ([3.1.9.4](#)) corresponding to the physical and data link layers of the OSI model for ITS communications

3.1.5.4

transnet layer

ITS-S networking and transport layer

networking and transport layer

communications layer in the *ITS station reference architecture* ([3.1.9.4](#)) corresponding to the network and transport layers of the OSI model

Note 1 to entry: The full name of this layer is the networking and transport layer, but the term "transnet layer" provides a more concise name.

3.1.5.5

facilities layer

ITS-S facilities layer

DEPRECATED: application layer

communications layer in the *ITS station reference architecture* ([3.1.9.4](#)) corresponding to the session, presentation and application layers of the OSI model

Note 1 to entry: Within the US, the National Transportation Communications for ITS Protocol (NTCIP) standards call the facilities layer the "application layer". However, as this term is easily confused with both the OSI application layer and the *application entity* ([3.1.5.1](#)), it is preferable to avoid the term and to qualify it when used (e.g. OSI application layer).

3.1.5.6

management entity

ITS-S management entity

part of the *ITS station reference architecture* ([3.1.9.4](#)) that is responsible for management and configuration of all layers and entities within the ITS-S

3.1.5.7**security entity****ITS-S security entity**

part of the *ITS station reference architecture* (3.1.9.4) that is responsible for providing communication security and *system* (3.1.2.1) security

3.1.6 Architecture — Enterprise view terms

NOTE [Figure A.6](#) depicts the concept model for the terms defined in this subclause.

3.1.6.1**enterprise object**

element (3.1.3.10) within an *enterprise view* (3.1.4.3) that represents an organization or individual

3.1.6.2**resource****enterprise view resource**

<enterprise view> *element* (3.1.3.10) that represents an *entity* (3.1.1.1) that is managed, operated, referenced and/or used to develop and provide *ITS* (3.1.2.4)

3.1.6.3**document**

uniquely identified unit of information for human use

EXAMPLE A report, specification, manual or book, in printed or electronic form.

Note 1 to entry: A document can be a single information item, or part of a larger information item.

[SOURCE: ISO/IEC/IEEE 15289:2019, 3.1.10]

3.1.6.4**interaction****enterprise view interaction**

<enterprise view> *element* (3.1.3.10) that represents coordination between two *enterprise objects* (3.1.6.1)

3.1.6.5**formal coordination****enterprise view formal coordination**

<enterprise view> *interaction* (3.1.6.4) between two *enterprise objects* (3.1.6.1) governed by a documented agreement

EXAMPLE A road operator can enter into formal agreement(s) with the owner of a *road* (3.3.5.1) and the owner(s) of the associated *roadside* (3.3.1.10) equipment.

3.1.6.6**informal coordination****enterprise view informal coordination**

<enterprise view> *interaction* (3.1.6.4) between two *enterprise objects* (3.1.6.1) governed by an understanding that is not documented in a formal agreement between the two parties

3.1.6.7**role****enterprise view role**

<enterprise view> *element* (3.1.3.10) that represents the specified responsibilities between an *enterprise object* (3.1.6.1) and another *enterprise view* (3.1.4.3) element

3.1.6.8**relationship****enterprise view relationship**

<enterprise view> *element* (3.1.3.10) that represents an association between two *resources* (3.1.6.2)

3.1.6.9

include

enterprise view include

<enterprise view> *relationship* (3.1.6.8) where one *resource* (3.1.6.2) contains another resource

EXAMPLE Every ITS component includes one or more *modules* (3.1.8.7).

3.1.6.10

extend

enterprise view extend

<enterprise view> *relationship* (3.1.6.8) where one *resource* (3.1.6.2) supplements another resource

EXAMPLE A *module* (3.1.8.7) can extend the functionality of another module.

3.1.7 Architecture — Functional view terms

NOTE [Figure A.7](#) depicts the concept model for the terms defined in this subclause.

3.1.7.1

data flow

representation of data flowing between two *processes* (3.1.7.2) or between a process and a *terminator* (3.1.8.3)

3.1.7.2

process

functional view process

<functional view> series of one or more *functions* (3.1.7.3) in support of an *ITS service* (3.5.3.1)

3.1.7.3

function

functional view function

<functional view> series of actions or activities performed by a given object to achieve a goal

Note 1 to entry: A function transforms inputs into outputs that can include the creation, modification, monitoring or destruction of *elements* (3.1.3.10).

3.1.7.4

process specification

document (3.1.6.3) that defines a lowest-level *process* (3.1.7.2)

3.1.8 Architecture — Physical view terms

NOTE [Figure A.8](#) depicts the concept model for the terms defined in this subclause.

3.1.8.1

physical object

ITS physical object

<physical view> abstraction of a *material entity* (3.1.1.3) that interacts with other abstract material entities in the provision of *ITS services* (3.5.3.1)

Note 1 to entry: Physical objects are represented as *elements* (3.1.3.10) within the *physical view* (3.1.4.7) and perform a role. Physical objects can be implemented as cloud-based *systems* (3.1.2.1).

Note 2 to entry: Within many *ITS reference architectures* (3.1.9.5), physical objects are placed into one of five categories: centre, support, field, vehicle or *traveller* (3.6.1.1).

3.1.8.2**ITS component**

physical object (3.1.8.1) that has been assigned one or more *functional objects* (3.1.8.6) in the provision of one or more *ITS services* (3.5.3.1)

Note 1 to entry: Physical objects are ITS components if they are an integral part of the *system* (3.1.2.1); otherwise they are *terminators* (3.1.8.3).

3.1.8.3**terminator****ITS terminator**

entity (3.1.1.1) that is external to the *ITS service* (3.5.3.1) implementation but either with which the implementation communicates to obtain inputs or to which it can send outputs

Note 1 to entry: A terminator can exist within *functional* (3.1.4.5) and *physical views* (3.1.4.7).

3.1.8.4**information flow**

information that is exchanged between *physical objects* (3.1.8.1)

3.1.8.5**information transfer**

information flow triple

information flow (3.1.8.4) from a *physical object* (3.1.8.1) acting as an information provider and sent to another physical object acting as an information consumer

Note 1 to entry: The term "information flow triple" is used extensively in the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT; see Reference [42]).

3.1.8.6**functional object****ITS functional object**

set of related *processes* (3.1.7.2) that are performed by a *physical object* (3.1.8.1) to fulfil aspects of an *ITS service* (3.5.3.1)

EXAMPLE A vehicle OBE can include a "vehicle basic safety" functional object.

Note 1 to entry: The term "module" is used by the European FRAME architecture while the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) uses the term "functional object".

3.1.8.7**module****ITS module**

functional object (3.1.8.6) that can be replaced and has defined interfaces

3.1.9 Architecture type terms

NOTE [Figure A.9](#) depicts the concept model for the terms defined in this subclause.

3.1.9.1**reference architecture**

architecture (3.1.3.1) that provides a template solution for *planning* (3.1.9.2) and *deployment architectures* (3.1.9.3)

Note 1 to entry: Interface standards are based on a reference architecture, which should be explicitly described in the standards.

3.1.9.2**planning architecture**

regional architecture

architecture (3.1.3.1) that provides a long-term vision of *system elements* (3.1.3.10) that can be deployed and managed by different projects or *entities* (3.1.1.1), or both, within a geographic area

Note 1 to entry: Some countries use the term "regional architecture", but in International Standards, the term "regional" is avoided due to its multiple meanings.

3.1.9.3**deployment architecture**

architecture (3.1.3.1) that provides a vision of a specific deployment of a *system* (3.1.2.1) within a geographic area

3.1.9.4**ITS-S reference architecture**

reference architecture (3.1.9.1) for handling communications within a *physical object* (3.1.8.1) as defined in ISO 21217

Note 1 to entry: The ITS-S reference architecture provides a model for describing communication.

3.1.9.5**ITS reference architecture**

reference architecture (3.1.9.1) for one or more *ITS services* (3.5.3.1)

Note 1 to entry: An ITS architecture can be a reference, planning or *deployment architecture* (3.1.9.3).

Note 2 to entry: The Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT; [see](#) Reference [42]) is an example of an ITS reference architecture.

3.1.9.6**ITS planning architecture**

planning architecture (3.1.9.2) for one or more *ITS services* (3.5.3.1)

3.1.9.7**ITS deployment architecture**

deployment architecture (3.1.9.3) for one or more *ITS services* (3.5.3.1)

3.1.10 Data concept management terms

NOTE [Figure A.10](#) depicts the concept model for the terms defined in this subclause.

3.1.10.1**data concept**

data element (3.1.11.1), *class* (3.1.11.2), *value domain* (3.1.11.3), *data frame* (3.1.11.4), *message* (3.1.11.5) or *interface dialogue* (3.1.11.6) defined, at a minimum, with an unambiguous identifier and a definition

Note 1 to entry: In order to exchange a value corresponding to a data concept, more information than an identifier, a name and a definition can be needed. For a property, a data type is needed. Depending on the kind of property, other data elements such as unit of measure and language can be needed as well. The additional information can be given in the *data dictionary* (3.1.10.3), in a data specification that references the data concept, or associated with the data themselves.

3.1.10.2**meta-attribute**

documenting characteristic of a *data concept* (3.1.10.1) that is stored in a *data dictionary* (3.1.10.3)

3.1.10.3**data dictionary**

collection of *data concepts* (3.1.10.1) that allows lookup by *entity* (3.1.1.1) identifier

[SOURCE: ISO 22745-2:2010, B.2.16, modified — "collection of data dictionary entries" has been replaced with "collection of data concepts".]

3.1.10.4**data concept registry**

electronic *data dictionary* ([3.1.10.3](#)) that follows precise documented rules for the registration and management of stored *data concepts* ([3.1.10.1](#))

Note 1 to entry: The data concept registry contains *meta-attributes* ([3.1.10.2](#)) about data concepts in terms of their names and representational forms as well as the semantics associated with the data concepts. A data concept registry can contain metadata that assists information interchange and re-use, both from the perspective of human users and for machine-interpretation of data concepts.

Note 2 to entry: A data concept registry typically includes advanced features for adding, retrieving and working with its contents.

3.1.11 Data concept type terms

NOTE [Figure A.11](#) depicts the concept model for the terms defined in this subclause.

3.1.11.1**data element**

unit of data that is considered in a given context to be indivisible and which includes an unambiguous representational form

Note 1 to entry: This definition states that a data element is "indivisible" in a given context. This means it is possible for a data element considered indivisible in one context [e.g. *location* ([3.4.1.1](#))] to be divisible in another context (e.g. latitude, longitude and elevation).

3.1.11.2**class**

object class

set of ideas, abstractions or things in the real world that are identified with explicit boundaries and meaning and whose properties and behaviour follow the same rules

Note 1 to entry: Some ISO/TC 204 documents use the term "object class" for consistency with ISO/IEC 11179-1, but within ITS, the term "class" is more generally understood.

Note 2 to entry: This is semantically equivalent to a "class" as used within UML (ISO/IEC 19505-2:2012).

[SOURCE: ISO/IEC 11179-1:2023, 3.3.1, modified — the preferred term has been changed from "object class" to "class" and "object class" has been included as an admitted term. Notes 1 and 2 to entry have been added.]

3.1.11.3**value domain**

set of permissible values

3.1.11.4**data frame**

specific grouping of *data elements* ([3.1.11.1](#)) that describes information of interest through a useful grouping of more atomic properties about one or more *classes* ([3.1.11.2](#))

Note 1 to entry: The grouping can be a set, sequence or a choice.

Note 2 to entry: A data frame can contain other data frames.

3.1.11.5**message**

grouping of *data elements* ([3.1.11.1](#)), *data frames* ([3.1.11.4](#)), or data elements and data frames that is used to convey information

3.1.11.6

interface dialogue

dialog

dialogue

bi-directional communication sequence between two parties in accordance with predetermined protocols

Note 1 to entry: The term "dialog" represents the American English spelling.

Note 2 to entry: The term "dialogue" can be used when the interface context is known.

3.1.12 System engineering terms

NOTE [Figure A.12](#) depicts the concept model for the terms defined in this subclause.

3.1.12.1

use case

description of the behavioural requirements of a *system* ([3.1.2.1](#)) and its *interaction* ([3.1.6.4](#)) with a *user* ([3.5.1.3](#))

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.15, modified — Note 1 to entry has been removed.]

3.1.12.2

scenario

use case scenario

<use case> description of the sequence of events from the *user's* ([3.5.1.3](#)) perspective to perform a task in a specified context

3.1.12.3

role

specified responsibilities

[SOURCE: ISO/IEC 11179-3:2023, 3.2.83]

3.1.13 Time terms

NOTE [Figure A.13](#) depicts the concept model for the terms defined in this subclause.

3.1.13.1

instant

0-dimensional geometric primitive representing position in time

[SOURCE: ISO 19108:2002, 4.1.17, modified — Note 1 to entry has been removed.]

3.1.13.2

duration

time between two *instants* ([3.1.13.1](#))

3.1.14 Information security terms

NOTE [Figure A.14](#) depicts the concept model for the terms defined in this subclause.

3.1.14.1

authentication

verification that a *message* ([3.1.11.5](#)) was sent by the purported originator to the intended recipient and that the message was not changed in transit

[SOURCE: ISO/IEC 2382:2015, 2126252, modified — the preferred term has been changed from "message authentication" to "authentication", and Notes 1 and 2 to entry have been removed.]

3.1.14.2

authenticator 3.1.13.1

network entity that executes an *authentication* ([3.1.14.1](#)) process on a *message* ([3.1.11.5](#))

3.1.14.3

control

measure that is modifying *risk* ([3.1.14.12](#))

[SOURCE: ISO/IEC 27000:2018, 3.14, modified — Notes 1 and 2 to entry have been removed.]

3.1.14.4

cryptography

discipline that embodies the principles, means and methods for the transformation of data in order to hide their semantic content, prevent their unauthorized use, or prevent their undetected modification

[SOURCE: ISO 22739:2024, 3.16]

3.1.14.5

data privacy

rights and obligations of individuals and organizations with respect to the collection, use, retention, disclosure and disposal of personal information

[SOURCE: ISO 17573-2:—,¹⁾ 3.60]

3.1.14.6

digital signature

data appended to a message, that allow the recipient of the *message* ([3.1.11.5](#)) to verify the source of the message

[SOURCE: ISO/IEC 2382:2015, 2126378]

3.1.14.7

information security event

occurrence indicating a possible breach of information security or failure of *controls* ([3.1.14.3](#))

[SOURCE: ISO/IEC 27035-1:2023, 3.1.4]

3.1.14.8

information security incident

related and identified *information security event(s)* ([3.1.14.7](#)) that can harm an organization's assets or compromise its operations

[SOURCE: ISO/IEC 27035-1:2023, 3.1.5]

3.1.14.9

non-repudiation

ability to prove the occurrence of a claimed event or action and its originating entities

[SOURCE: ISO 27000:2018, 3.48]

3.1.14.10

objective

result to be achieved

[SOURCE: ISO/IEC 27000:2018, 3.49, modified — Notes 1 to 4 to entry have been removed.]

3.1.14.11

resilience

capability of a system to maintain its functions and structure in the face of internal and external change, and to degrade gracefully when this is necessary

[SOURCE: ISO 23257:2022, 3.18]

1) Under preparation. Stage at the time of publication: ISO/FDIS 17573-2:2025.

3.1.14.12

risk

effect of uncertainty on *objectives* ([3.1.14.10](#))

[SOURCE: ISO/IEC 27000:2018, 3.61, modified — Notes 1 – 6 to entry have been removed.]

3.1.14.13

threat

potential cause of an unwanted incident, which can result in harm to a system or organization

[SOURCE: ISO/IEC 27000:2018, 3.75]

3.1.14.14

transparency

open, comprehensive and understandable presentation of information

[SOURCE: ISO/IEC 19944-1:2020, 3.6.2]

3.1.14.15

trustworthiness

ability to meet stakeholders' expectations in a verifiable way

[SOURCE: ISO/IEC TS 5723:2022, 3.1.1, modified — Notes 1 – 4 to entry have been removed.]

3.1.14.16

vulnerability

weakness of an asset or *control* ([3.1.14.3](#)) that can be exploited by one or more *threats* ([3.1.14.13](#))

[SOURCE: ISO 27000:2018, 3.77]

3.1.15 Concept realization terms

NOTE [Figure A.15](#) depicts the concept model for the terms defined in this subclause.

3.1.15.1

design

process or the result of the process to define the architecture, system elements, interfaces and other characteristics of a system or system element

EXAMPLE Complete documentation for building a specific model of a smartphone

Note 1 to entry: Design provides the detailed implementation-level physical structure, behaviour, temporal relationships, and other attributes of system elements. It is information including specification of system elements and their relationships, that is sufficiently complete to support a compliant implementation of the architecture,

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.1125, modified — definitions 1 and 2 have been merged and the Example has been added.]

3.1.15.2

implementation

process or the result of the process of translating a design into hardware components, software components, or both

EXAMPLE The process of building a specific model of a smartphone or the resultant model of smartphone.

Note 1 to entry: An implementation is the conceptual set of all instances of a product resulting from the translation. The set of all instances can consist of a single instance.

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.1891, modified — definitions 1 and 2 have been merged and the Example and Note 1 to entry have been added.]

3.1.15.3

instance

discrete, bounded object with an intrinsic, immutable, and unique identity

EXAMPLE A specific smartphone (e.g. having a unique serial number).

Note 1 to entry: An instance of an implementation can also be called a physical instantiation, in the case of a hardware component.

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.2008, modified — only definition 1 is used and the Example and Note 1 to entry have been added.]

3.1.15.4

realization

implementation of a system concept

Note 1 to entry: A realization requires the development of a design and the translation of this design into hardware components or software components, or both.

3.1.15.5

requirement

provision that contains criteria to be fulfilled

EXAMPLE A measurable characteristic of a smartphone.

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3431, modified — only definition 3 is used. The original Example and Note 1 to entry have been removed and a new Example has been added.]

3.1.15.6

requirements specification

document that specifies the requirements for a system or component

EXAMPLE Wi-Fi 7, 5G, Bluetooth® 5.3 (Bluetooth is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO).

Note 1 to entry: A device can conform to multiple requirements specifications, each with a different focus.

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3447, modified — the original Note 1 to entry has been removed and a new Example and Note 1 to entry have been added.]

3.2 Technology terms

3.2.1 Top-level physical object terms

NOTE [Figure A.16](#) depicts the concept model for the terms defined in this subclause.

3.2.1.1

central system

ITS central system

ITS component ([3.1.8.2](#)) that provides application, management and/or administrative functions from a centralized *location* ([3.4.1.1](#)) [i.e. not at the *roadside* ([3.3.1.10](#))]

3.2.1.2

field system

ITS field system

roadside system

infrastructure-based *ITS component* ([3.1.8.2](#)) located outside of a data centre that is designed to provide local processing or routing services while stationary

EXAMPLE Traffic detector, camera, signal controller, message sign, tolling station.

Note 1 to entry: Typically, field systems are located along the *roadside* ([3.3.1.10](#)).

Note 2 to entry: Typically, the operation of a field system is governed by management functions running in a centre system.

Note 3 to entry: Field systems can be permanently installed or transportable.

Note 4 to entry: The term “roadside system” is typically used to describe field systems along a roadside but can also be used to refer to kiosks.

3.2.1.3

personal system

ITS personal system

traveller system

ITS component (3.1.8.2), other than a vehicle system (3.2.1.5), that is used by a person (3.1.1.6) in relation to a past, current or upcoming journey

3.2.1.4

support system

ITS support system

ITS component (3.1.8.2) that provides services in support of one or more other ITS components

EXAMPLE Data distribution system (3.1.2.1), network time source, cooperative ITS (3.1.2.5) credentials management system.

3.2.1.5

vehicle system

ITS vehicle system

ITS component (3.1.8.2) that is installed as a component of a vehicle (3.7.1.1)

3.2.2 Centre physical object terms

NOTE [Figure A.17](#) depicts the concept model for the terms defined in this subclause.

3.2.2.1

emergency management central system

centre system (3.2.1.1) that allows an entity (3.1.1.1) to manage and respond to crashes, events, disasters, evacuation orders and other incidents

3.2.2.2

fleet and freight management central system

centre system (3.2.1.1) that allows a fleet or freight operator to manage and control its personnel, equipment and/or freight

3.2.2.3

maintenance and construction central management system

centre system (3.2.1.1) that allows an entity (3.1.1.1) to monitor and manage the construction and maintenance of road (3.3.5.1) infrastructure

3.2.2.4

payment administration central system

centre system (3.2.1.1) that allows an entity (3.1.1.1) to manage financial transactions related to transportation, especially the electronic transfer of funds

3.2.2.5

public transport central management system

centre system (3.2.1.1) that allows an entity (3.1.1.1) to manage the activities of a public transport (3.5.6.1) agency

3.2.2.6

traffic management central system

centre system (3.2.1.1) that monitors and controls traffic and the road network (3.3.5.2)

3.2.2.7**traffic regulation central system**

centre system (3.2.1.1) that officially records traffic regulations in electronic form so that they can be distributed to other systems

3.2.2.8**transport information central system**

centre system (3.2.1.1) that provides information of interest to the travelling public

3.2.3 Field physical object terms

NOTE [Figure A.18](#) depicts the concept model for the terms defined in this subclause.

3.2.3.1**field support equipment****ITS field support equipment**

portable *field system* (3.2.1.2) used by field personnel to locally troubleshoot, initialize, reprogram and test infrastructure equipment

3.2.3.2**ITS roadside equipment****ITS roadway equipment**

field system (3.2.1.2) that performs localized *ITS services* (3.5.3.1)

EXAMPLE Traffic signal controller, variable message sign, vehicle detection.

Note 1 to entry: ITS services that can be performed by ITS roadside equipment include surveillance, traffic control, information provision, payment transaction services, and/or enforcement.

Note 2 to entry: "ITS roadway equipment" is used within the current version of the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT; see Reference [42]). The term "*roadway*" (3.3.1.3) has been revised to reflect that the equipment is typically along the roadway rather than a part of the roadway.

Note 3 to entry: While the term "roadside" indicates the typical location of the equipment, ITS roadside equipment (or portions thereof) can be embedded in the roadway itself.

3.2.3.3**connected vehicle roadside equipment****CV-RSE**

ITS *roadside equipment* (3.2.3.2) that perform *ITS services* (3.5.3.1) by exchanging electronic *messages* (3.1.11.5) with nearby *connected vehicles* (3.2.3.7) or *personal systems* (3.2.1.3), or both, via short-range wireless technologies

Note 1 to entry: Connected roadside equipment typically provides ITS-related functionality, but this term includes roadside equipment that only provides the ITS service of routing for short-range wireless technologies.

Note 2 to entry: The term "connected vehicle roadside equipment" is used within the current version of the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT; see Reference [42]).

3.2.3.4**roadside unit****ITS roadside unit****RSU**

part of *connected roadside equipment* (3.2.3.3) that provides wireless connectivity to *vehicle systems* (3.2.1.5) and/or *personal systems* (3.2.1.3)

3.2.3.5**connected unit****ITS connected unit**

electronic device that is *connected* (3.2.3.6) using one or more communication media

3.2.3.6

connected

ITS connected

equipped with enabled (i.e. on) and operational electronic communication technologies to support *ITS services* (3.5.3.1), including the means to send and receive data to and from other connected entities

Note 1 to entry: The term "connected" describes a characteristic of a *material entity* (3.1.1.3).

Note 2 to entry: The term "connected" does not imply support for any specific communications interface or *ITS-S application process* (3.2.9.2).

3.2.3.7

connected vehicle

vehicle (3.7.1.1) that is *connected* (3.2.3.6) using one or more communication media

3.2.4 Personal physical object terms

NOTE [Figure A.19](#) depicts the concept model for the terms defined in this subclause.

3.2.4.1

nomadic vehicle device

carry-in vehicle device

external in-vehicle device

personal system (3.2.1.3) consisting of global navigation satellite system (GNSS) and/or wireless *modules* (3.1.8.7) that are *connected* (3.2.3.6) to a *vehicle* (3.7.1.1) during a trip

3.2.4.2

personal information device

ITS personal information device

personal system (3.2.1.3) that enables personal access to *traveller* (3.6.1.1) information

EXAMPLE Personal computer.

3.2.4.3

nomadic device

ITS nomadic device

personal information device (3.2.4.2) that is taken with and can be accessed by the *traveller* (3.6.1.1) during a journey

EXAMPLE Smartphone.

3.2.4.4

public information device

ITS public information device

personal system (3.2.1.3) that provides *public* (3.5.8.2) access to *traveller* (3.6.1.1) information

EXAMPLE Kiosk.

3.2.5 Support physical object terms

NOTE [Figure A.20](#) depicts the concept model for the terms defined in this subclause.

3.2.5.1

cooperative ITS credentials management system

CCMS

support system (3.2.1.4) that enables trusted communications among *ITS components* (3.1.8.2) and protects data from unauthorized access

3.2.5.2

map provision system

ITS map provision system

support system (3.2.1.4) that provides map databases used to support *ITS services* (3.5.3.1)

3.2.6 Vehicle physical object terms

NOTE [Figure A.21](#) depicts the concept model for the terms defined in this subclause.

3.2.6.1

ITS on-board equipment

on-board equipment

OBE

onboard equipment

vehicle system ([3.2.1.5](#)) that provides all ITS functionality on-board the *vehicle* ([3.7.1.1](#))

Note 1 to entry: ITS on-board equipment relates to any functionality. When there is a need to distinguish between core functionality and that by a special vehicle, the term can be further refined by indicating the type of vehicle to which the on-board equipment relates. For example, emergency vehicle on-board equipment can provide specialized functionality.

Note 2 to entry: The on-board equipment may also perform other functions.

3.2.6.2

ITS on-board unit

on-board unit

OBU

onboard unit

part of *on-board equipment* ([3.2.6.1](#)) that provides wireless connectivity to other *ITS components* ([3.1.8.2](#)) external to the *vehicle* ([3.7.1.1](#))

Note 1 to entry: An OBU implementation can also include ITS functionality.

3.2.7 ITS station terms

NOTE [Figure A.22](#) depicts the concept model for the terms defined in this subclause.

3.2.7.1

bounded secured managed domain

BSMD

abstract *entity* ([3.1.1.1](#)) representing a managed processing and memory *environment* ([3.1.3.11](#)) that provides protection from code and data that has not been determined to meet established security requirements

3.2.7.2

ITS trust domain

set of *bounded secured managed domains* ([3.2.7.1](#)) that meet a defined set of ITS industry security requirements

3.2.7.3

ITS station

ITS-S

bounded secured managed domain ([3.2.7.1](#)) that is able to meet requirements of the *ITS trust domain* ([3.2.7.2](#)) within which it is designed to participate

Note 1 to entry: The ITS station reference architecture is defined in ISO 21217.

Note 2 to entry: This complements the ISO 21217:2020 definition (which identifies the component parts) and is consistent with the text of ISO 21217:2020.

3.2.7.4**ITS-S unit****ITS station unit****ITS-SU**

instance (3.1.15.3) of a physical unit produced by an *ITS station* (3.2.7.3) *implementation* (3.1.15.2)

Note 1 to entry: This is a clarification of the definition provided in ISO 21217:2020. While the definition for ITS station unit in ISO 21217:2020 refers to an implementation, the full text interchangeably describes it as an implementation or a physical instantiation, but does not define those terms explicitly.

3.2.7.5**ITS-S communication unit****ITS station communication unit****ITS-SCU**

physical unit in an *ITS-S unit* (3.2.7.4) containing part or all of the functionality of the *ITS-S* (3.2.7.3)

Note 1 to entry: If an ITS-SU consists of a single physical unit, the ITS-SU and the ITS-SCU are identical. If an ITS-SU consists of more than one ITS-SCU, then these ITS-SCUs are interconnected via the ITS station-internal network of the ITS-SU.

3.2.7.6**ITS-S host****management host**

ITS-S node (3.2.7.8) comprised of *ITS-S* (3.2.7.3) functionalities other than the functionalities of an *ITS-S router* (3.2.7.7), ITS-S border router, ITS-S mobile router or an ITS-S gateway

Note 1 to entry: ITS-S border router and ITS-S mobile router are ITS-S routers with added functionalities, which is why they are separately excluded in the above definition.

Note 2 to entry: "ITS-S border router", "ITS-S mobile router" and "ITS-S gateway" are defined in ISO 21217.

3.2.7.7**ITS-S router**

ITS-S node (3.2.7.8) comprised of routing functionalities of an *ITS station unit* (3.2.7.4) used to connect two networks and to forward packets not explicitly addressed to itself

3.2.7.8**ITS-S node**

node (3.3.5.4) comprised of a set of functionalities in an *ITS-S unit* (3.2.7.4) that is *connected* (3.2.3.6) to the *ITS station* (3.2.7.3) internal network or that comprises an entire ITS-S unit

3.2.8 ITS application terms

NOTE [Figure A.23](#) depicts the concept model for the terms defined in this subclause.

3.2.8.1**ITS application**

requirements for an *ITS service* (3.5.3.1) that involves an association of two or more complementary *ITS-S application processes* (3.2.9.2)

Note 1 to entry: An ITS application can also involve associations with *nodes* (3.3.5.4) that are not ITS stations.

Note 2 to entry: This is a clarification of the ISO 21217:2020 definition, which described this concept as an instantiation.

3.2.8.2**interoperability design**

characteristics necessary to fully define how various *physical objects* (3.1.8.1) interoperate to provide a *service* (3.5.1.1)

Note 1 to entry: Characteristics often include but are not limited to functional, performance and interface requirements.

3.2.8.3**ITS application specification**

one or more *documents* ([3.1.6.3](#)) that detail the *interoperability design* ([3.2.8.2](#)) for an *ITS application* ([3.2.8.1](#))

3.2.8.4**application template****ITS application template**

defined annotated outline for an *ITS application specification* ([3.2.8.3](#))

3.2.8.5**ITS implementation**

integration of each *physical object* ([3.1.8.1](#)) necessary to implement one or more *ITS applications* ([3.2.8.1](#))

Note 1 to entry: An ITS application typically requires multiple components (e.g. an ITS-S acting as a user and another ITS-S acting as a provider). An ITS implementation includes a sample of each component necessary for the service but often does not represent a complete deployment.

Note 2 to entry: An ITS implementation is typically used for a laboratory or other experimental *environment* ([3.1.3.11](#)) prior to a full-scale deployment.

3.2.8.6**ITS deployment**

installation capable of performing one or more *ITS applications* ([3.2.8.1](#))

Note 1 to entry: An ITS deployment typically refers to the support, central and roadside ITS stations coupled with a tacit acknowledgement of the mobile ITS stations that will communicate with the support, central or roadside ITS stations.

3.2.9 ITS-S application process terms

NOTE [Figure A.24](#) depicts the concept model for the terms defined in this subclause.

3.2.9.1**ITS application role**

ITS-S user need ([3.5.4.4](#)) expressed as a formal set of interoperability requirements that need to be fulfilled to satisfy a portion of functionality of an *ITS application* ([3.2.8.1](#))

3.2.9.2**ITS-S application process**

information manipulation within an *ITS station* ([3.2.7.3](#)) for an *ITS-SU service* ([3.5.4.1](#))

Note 1 to entry: ITS-S application processes use ITS-S services to communicate with other *nodes* ([3.3.5.4](#)).

Note 2 to entry: This clarifies the ISO 21217:2020 definition to remove ambiguity and a circular reference to “application”.

3.2.9.3**ITS-S application**

ITS-S application process ([3.2.9.2](#)) residing in the *application entity* ([3.1.5.1](#))

3.2.9.4**ITS-S application implementation**

implementation of an *ITS-S application process* ([3.2.9.2](#)) within the *application entity* ([3.1.5.1](#))

Note 1 to entry: An implementation is typically associated with an implementation name, a version and a release number.

3.2.9.5**ITS-S application process installation**

installation of an implementation of an *ITS-S application process* ([3.2.9.2](#)) on an *ITS station* ([3.2.7.3](#))

Note 1 to entry: An implementation is typically associated with an implementation name, a version and a release number.

Note 2 to entry: An installation is typically associated with a specific licence code or serial number.

3.2.9.6

ITS-S application installation

ITS-S application process installation (3.2.9.5) within the *application entity* (3.1.5.1)

3.2.10 Device component terms

NOTE [Figure A.25](#) depicts the concept model for the terms defined in this subclause.

3.2.10.1

actuator

device with the capability to convert meaningful signals into changes to one or more properties of a *material entity* (3.1.1.3)

Note 1 to entry: For a definition of "device", see ISO/IEC/IEEE 24765:2017, 3.1187.

Note 2 to entry: For a definition of "signals", see ISO/IEC/IEEE 24765:2017, 3.3738.

Note 3 to entry: For a definition of "properties", see ISO/IEC/IEEE 24765:2017, 3.3207.

3.2.10.2

sensor

device with the capability of observing one or more properties of a *material entity* (3.1.1.3) and converting those properties into meaningful signals

Note 1 to entry: For a definition of "device", see ISO/IEC/IEEE 24765:2017, 3.1187.

Note 2 to entry: For a definition of "properties", see ISO/IEC/IEEE 24765:2017, 3.3207.

Note 3 to entry: For a definition of "signals", see ISO/IEC/IEEE 24765:2017, 3.3738.

3.3 Infrastructure terms

3.3.1 Road reservation component terms

NOTE [Figure A.26](#) provides a graphical depiction and [Figure A.27](#) depicts the concept model for the terms defined in this subclause.

3.3.1.1

cross-section

transverse view of *road* (3.3.5.1) geometry

EXAMPLE [Figure A.28](#).

Note 1 to entry: The transverse view provides a vertical section of the ground and *carriageway* (3.3.1.5) at right angles to the centre line of the carriageway.

3.3.1.2

road reservation

easement

area legally reserved for *road* (3.3.5.1) transport purposes and support

Note 1 to entry: Support includes physical equipment such as safety devices, signage and controller cabinets as well as access by maintenance vehicles and personnel.

Note 2 to entry: The road reservation includes all *carriageways* (3.3.1.5) as well as width to allow for *roadside* (3.3.1.10) devices, *shoulders* (3.3.1.18), *verges* (3.3.1.11), *footways* (3.3.3.3), drainage facilities, sound walls, slopes, embankments, etc.

3.3.1.3**roadway**

part of the surface of the *road reservation* (3.3.1.2) primarily designed for the movement of *vehicles* (3.7.1.1) that conform to a specified set of requirements

Note 1 to entry: A roadway is characterized using a *cross-section* (3.3.1.1) of a road facility as the roadway characteristics often change along the length of the road. See "*road*" (3.3.5.1), "*road section*" (3.3.5.7), "*road segment*" (3.3.5.8), and "*road link*" (3.3.5.6) for different types of stretches of roadway.

Note 2 to entry: In practice, the roadway design considers a variety of issues, which can result in suboptimal road segments that violate normal design guidelines. Such *locations* (3.4.1.1) are typically posted with warning signs, but they are still designed for the movement of vehicles.

Note 3 to entry: While the roadway is designed with certain vehicle characteristics in mind, local regulations typically allow a wider set of vehicles to use the roadway.

Note 4 to entry: The roadway includes any contiguous *hardshoulders* (3.3.1.19), *hardstanding* (3.3.1.17) and reserved *lanes* (3.3.1.14).

3.3.1.4**driving space**

area above the *roadway* (3.3.1.3) that is primarily designed for the movement of *vehicles* (3.7.1.1)

Note 1 to entry: In practice, the driving space design considers a variety of issues, which can result in suboptimal *road* (3.3.5.1) segments that violate normal design guidelines. Such *locations* (3.4.1.1) are typically posted with warning signs, but they are still designed for the movement of vehicles.

Note 2 to entry: While the driving space is designed with certain vehicle characteristics in mind, local regulations typically allow a wider set of vehicles to use the driving space.

3.3.1.5**carriageway**

contiguous area of paved *roadway* (3.3.1.3) designed for the use of vehicles along a *road segment* (3.3.5.8)

Note 1 to entry: A carriageway is comprised of one or more traffic *lanes* (3.3.1.13) [i.e. the *usable width* (3.3.1.15)] and can include *shoulders* (3.3.1.18) and *lay-bys* (3.3.1.16).

Note 2 to entry: Carriageways are separated by *physical traffic separators* (3.3.2.1).

Note 3 to entry: When looking at a *cross-section* (3.3.1.1) of the *road reservation* (3.3.1.2), the roadway consists of all of the carriageways.

3.3.1.6**travelled way**

part of the *roadway* (3.3.1.3) that is currently intended for transport purposes

Note 1 to entry: The travelled way does not include *hard shoulders* (3.3.1.19), *hardstanding* (3.3.1.17), or other areas that are not currently intended for normal operational use. In other words, while these other areas are "designed" for transport purposes, they are not "intended" for normal transport purposes (at present); rather these extra areas exist for safety and other exceptional use conditions.

Note 2 to entry: While the limits of the roadway are defined by the design of the physical infrastructure and are generally static; the limits of the travelled way can be dynamic, such as in the case of a *hard shoulder for emergency use* (3.3.4.1) being converted into *hard shoulder running* (3.3.4.2) operation.

3.3.1.7**single carriageway**

having exactly one *carriageway* (3.3.1.5)

Note 1 to entry: This term can be used to describe a road, road section, road link or road segment.

Note 2 to entry: A single carriageway road segment can have multiple *lanes* (3.3.1.12) and can allow travel in opposite directions