



TECHNICAL REPORT

**Intelligent Transport Systems (ITS);  
ITS Framework;  
Terms, Symbols and Abbreviations;  
Release 2**

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# Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Intelligent Transport Systems (ITS).

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# Modal verbs terminology

In the present document "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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# Introduction

The present document is one of the guiding documents of an ETSI ITS Release.

The present document includes all commonly used definition of terms, symbols, and abbreviations of the Release it belongs to.

Only those definitions of terms, symbols, and abbreviations are included which are not specific for only one specific document of the release. Otherwise, the definitions of terms, symbols, and abbreviations are included in the specific document where that definition of terms, symbols, and abbreviations are specifically used.

Some the included abbreviations have more than one meaning. This is allowed because they are used in a different context.

The present document includes only terms, symbols and abbreviations for the Facilities layer message services except for the VRU message service documents. For other ITS documents they are still in the related documents and are expected to be included at the appropriate time.

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# 1 Scope

The present document defines all common ITS Release 2 terms, symbols and abbreviations ensuring consistency and compliancy for the ETSI ITS Release 2 specifications.

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## 2 References

### 2.1 Normative references

Normative references are not applicable in the present document.

### 2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long-term validity.

The following referenced documents may be useful in implementing an ETSI deliverable or add to the reader's understanding, but are not required for conformance to the present document.

- [i.1] ISO 26262-1 (2018): "Road vehicles — Functional safety — Part 1: Vocabulary".
- [i.2] ISO 1176:1990: "Road vehicles — Masses — Vocabulary and codes".
- [i.3] Recommendation ITU-T X.680: "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [i.4] [Directive 2010/40/EU](#) of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport Text with EEA relevance.
- [i.5] [Directive \(EU\) 2023/2661](#) of the European Parliament and of the Council of 22 November 2023 amending Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport.
- [i.6] ISO 21448 (2022): "Road vehicles — Safety of the intended functionality".
- [i.7] [Recommendation ITU-T I.350](#): "General aspects of quality of service and network performance in digital networks, including ISDNs".
- [i.8] [World Geodetic System 1984 \(WGS84\)](#).
- [i.9] ISO/IEC TS 5723:2022: "Trustworthiness — Vocabulary".

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## 3 Definition of terms, symbols, and abbreviations

### 3.1 Terms

#### 3.1.0 Introduction

For the purposes of the present document, the following terms apply.

##### 3.1.1 A

**absolute accuracy:** degree to which a measurement, or the position of an object, precisely corresponds to its true, real-world location within an established coordinate system

NOTE: It answers the question: "How close is this measurement to the actual, known position in the real world?".

**access layer:** ITS layer composed of the OSI model physical and data link layers

**accuracy:** performance criterion that describes the degree of correctness with which a function is performed

NOTE 1: The function may or may not be performed with the desired speed.

NOTE 2: It is defined in Recommendation ITU-T I.350 [i.7].

**agile methodology:** approach development method seeking for continuous delivery of working functionalities created in rapid iterations

NOTE 1: It is the ability to create and respond to change. It is a way of dealing with, and ultimately succeeding in, an uncertain and turbulent environment.

NOTE 2: See <https://www.agilealliance.org/agile101/>.

**anycast:** delivery of data to any node out of a group of nodes, typically the one nearest to the source using a one-to-one-of-many associations where datagrams are routed to any single member of a group of potential receivers that are all identified by the same destination address

NOTE: The routing algorithm selects the single receiver from the group based on which is the nearest according to some distance or cost measure.

**application:** process (often implemented as software program) which processes technical input information and provides a functional result which delivers a user service to a user

NOTE: In an ITS-S, applications may have sourcing parts sharing their information with sinking parts in other ITS-Ss.

**area of relevance:** geographical zone in which the information disseminated is of relevance

**architecture:** abstract representation of a communication system

**architecture enterprise:** architecture of a complete organization, a top-level architecture

NOTE: It recognizes general aspects, mission, objectives, organization considering common aspects often identified as part of Ecosystem requirements.

**architecture functional:** architecture describing the purpose of a design

**architecture solution:** architecture describing what functionalities a specific system needs to perform

NOTE: It is a description of the functionalities needed to meet the functional objectives (services) meeting the Ecosystem requirements, the logic that governs them, and the information associated with them. Within ITS reference is made to the functional architecture of an application or a system. It is specific for the system and therefore relevant for profiling but not for functionality standardization.

**architecture technical:** technical architecture providing descriptions of technical components; their relations and the data associated with them

NOTE: At the higher level, the technical architecture shows the relations of software and hardware architectures and can have a direct relation with solution architectures when considering systems.

**automated system:** computer (ICT) system that collects information and can react and perform tasks based on the data

NOTE: Automated systems are made using three components:

- Sensors.
- Microprocessors.
- Actuators.

**awareness area:** geographic area in which information concerning the event is potentially applicable for use or for further distribution.

### 3.1.2 B

**backward compatibility of a system:** property according to which an ITS-S based on Release x+1 (Rx+1) system is able to obtain the same level of service of a Rx station in an environment based on Rx.

NOTE 1: Cooperative Intelligent Transportation Systems (C-ITS) supporting ITS-S based on Rx are able to maintain their full functionality in an environment based on Rx+1

NOTE 2: This definition is a technical translation of the original requirement which comes from the EU ITS regulation Directive 2010/40/EU [i.4] defined in article 4, compatibility as "the general ability of a device or system to work with another device or system without modification".  
In the Annex II of the Directive 2010/40/ EU [i.4], the ITS backward compatibility is identified as "ensuring, where appropriate, the capability for ITS systems to work with existing systems that share a common purpose, without hindering the development of new technologies". These have been increased clarified in Directive 2023/2661/EU [i.5].

NOTE 3: A Release x+1 ITS-S can provide additional services not available in Rx.

**backward compatibility of encoded protocol:** property according to which changes made to an ASN.1 module directly or indirectly modify a type representing a protocol (of encoded protocol) data unit only in such a way that the new version of the modified type is not "extension-related" to the older version of the type according to Recommendation ITU-T X.680 [i.3]

NOTE: This means that the protocol data unit encoded according to the new version of the module cannot be decoded according to the previous version(s) of the same module.

**backward compatibility in ASN.1 encoding:** property according to which changes made to a module potentially do not affect the IMPORT statement of other modules such that the compiler will produce errors when compiling those modules together with the new version of the revised module

**Basic Set of Applications:** group of applications, supported by the vehicular communication system

**bounding box:** rectangular shape covering all parts of an empty load vehicle projected from top view

**broadcasting:** communication capability which denotes unidirectional distribution from a single source to all users connected to the network.

### 3.1.3 C

**C-ITS ecosystem:** Cooperative ITS specific ecosystem

**C-ITS functionality:** functionality which complies to C-ITS Ecosystem requirements

**classification confidence level:** measure related to the certainty, generally a probability, with which a perceived object can be linked to a specific object class or type (e.g. with X % probability the object is of type A)

NOTE: The sum of the object classification confidence levels for each perceived object may not exceed 100 % (e.g. in the example above, the classification confidence for an object to be of type B will not exceed (100-X) %).

**communication flows:** data path the information follows through ITS from the source ITS-S to the sinking ITS-Ss or within an ITS-S

**component:** concrete part or element that contributes to the function of a larger system, including hardware (like CPUs and hard drives), software (such as operating systems and applications), and other elements like data, procedures

**confidence:** degree of certainty or trust in the given information or parameter

**confidence level:** probability with which the estimate of a statistical parameter (e.g. an arithmetic mean) in a sample survey is also true for the entire population from which the samples were taken

**confidence value:** estimated absolute accuracy of a measured value of a parameter with a specified confidence level (generally 95 % in the present document)

**confidence interval:** range of values, calculated from sample data, that is likely to contain the true population parameter

**Cooperative Intelligent Transportation Systems (C-ITS):** Intelligent Transportation Systems in which ITS stations share information in a non-discriminating manner and without costs, allowing road users to realize safety relevant and traffic efficiency related information for all benefit

NOTE: The European legal definition is provided by the Regulation Directive 2010/40/EU [i.4].

### 3.1.4 D

**data element:** data type that contains one single data

**data frame:** data type that contains more than one data element in a predefined order

**destination area:** geographical area in which the message is intended to be disseminated

NOTE: In case of intended, then it is the target destination area.

**direct V2X (Short V2X):** vehicle to everything interface used for localized data exchange directly between data sourcing ITS-Ss and data sinking ITS-Ss, without involvement of intermediary IP networks, base-stations or routing functions such as Internet

**documents:** within the context of standardization these are ENs, ESs, EGs, TSs, TRs, SRs, GSs and GRs

**domain:** area of interest

NOTE: In case used in the context of communications, it refers to any group of users, workstations, devices, printers, computers and database servers that share different types of data via network resources.

**downstream traffic:** portion of road traffic in a given direction that is beyond (past) a certain point and is going away from it

**driver awareness zone:** area in which the driver will be informed about upcoming situations

### 3.1.5 E

**ecosystem:** concept in which technical systems e.g. information, technologies, applications, are considered in their user and environmental context e.g. policies, strategies, and organizational processes

**empty vehicle:** complete vehicle kerb mass as defined in ISO 1176 [i.2], clause 4.6

**entity:** abstract thing that exists, did exist, or can possibly exist, including associations among these things

**equivalent bandwidth:** computed value coming from a computation of relevant statistical properties of the traffic source (e.g. Markov-modulated arrivals, moment generating functions, or large-deviation techniques), ensuring that the probability of exceeding resource limits remains below a defined threshold

NOTE: Equivalent bandwidth originates from wired networks and refers to the bandwidth that a given service effectively requires to meet its QoS constraints.

**event:** road hazard, driving environment, or traffic condition

**event reference position:** position that is used as a reference to describe the location of the event

**extra ITS:** external ITS-S communication using a non-interoperable ITS or interference from non-ITS sources, also inter ITS

### 3.1.6 F

**facilities layer:** ITS layer representing the OSI layers five, six and seven layers

**facility:** functionality, service or data provided by the ITS facilities layer

**farm animal:** animal living under the supervision of an owner

**forwarding (ITS-S):** Intelligent Transport System Station (ITS-S) that forwards messages according to any specific protocol

**function:** self-contained element that accomplishes a specific technical task. Functions usually "take in" data, process it, and "return" a result and are realized by an entity

**functional safety:** absence of unreasonable risk due to hazards caused by malfunctioning behaviour of electrical or electronic systems

NOTE: For Road Vehicles Functional Safety ISO 26262-1 [i.1] applies.

**functionality:** abstraction of a collection of functions realizing a specific functional process and can be realized by one or more components and/or processes. Proving a service to other functionalities, users or systems

### 3.1.7 G

Void.

### 3.1.8 H

**heading:** orientation of the horizontal velocity vector with respect to the WGS84 [i.8] North (clockwise), unless otherwise noted

**horizontal speed:** magnitude of horizontal velocity-vector of the reference position point

**horizontal velocity vector:** projection of the 3D velocity vector on the WGS84 [i.8] ellipsoid

### 3.1.9 I

**in radio media:** distribution of information to a dispersed audience via any electronic mass communications medium, but typically one using the electromagnetic spectrum (radio waves), in a one-to-many model

**indirect V2X:** vehicle to everything interface that uses IP-based protocols over a cellular/mobile and of fixed line network for the data exchange between ITS-Ss and between ITS-Ss and service providers

**information:** data with specific meaning

**innovation cycle:** continuous cycle of product discovery, development and commercialization that enables companies to keep reinvesting in the next generation of technology

**Intelligent Transport Systems (ITSs):** Systems that integrate information and communication technologies with transport infrastructure and vehicles to improve safety, efficiency, and sustainability in transport networks

NOTE 1: A system in which ITS Stations (ITS-S) exchange information.

NOTE 2: The European legal definition is provided by European Regulation Directive 2010/40/ EU [i.4].

**interface:** medium through which components or systems exchange data

**interoperability:** ability of systems to exchange information and to make mutual use of the information that has been exchanged

NOTE: The European legal definition is provided by European Regulation Directive 2010/40/EU [i.4].

**intra ITS:** internal ITS communication using interoperable ITS

**ITS application:** functionality providing a service to an ITS-S external user.

NOTE1: This could be an HMI functionality communicating with the driver or an automated system, or a functionality detecting road transport specific events and triggering the dissemination of a message or messages for the purpose of informing applications at syncing ITS-Ss

NOTE 2: The European legal definition for the syncing applications is provided by European Regulation Directive 2010/40/ EU [i.4].

**ITS common data dictionary:** repository of the commonly data elements and data frames used in the ITS applications and ITS facilities layer

**ITS Constellation (ITS-C):** group of ITS-Ss which actively exchange information

**ITS domain:** everything what can be considered part of ITS including ITS/ITSC elements specified in ITS/ITSC standards and by relevant regulations

**ITS ecosystems:** all ITS Ecosystems excluding all defined ITS Ecosystems such as the C-ITS Ecosystem

**ITS messages:** data frames including ITS information which are generated and disseminated by ITS-S and exchanged between ITS-Ss

**ITS service:** service provided by an ITS application to an end user or automated system outside ITS (considering ITS in the overall equipment context)

NOTE: The European legal definition is provided by European Regulation Directive 2010/40/ EU [i.4].

**ITS-S service:** facilities Layer functionality which provides a service to applications by generating or processing data, triggered by an application, provided by or gathered from other ITS-S Services or from lower layers

NOTE: A Facilities Layer service could also execute control functions for the support of the operation of other ITS-S services or applications.

**ITS station (ITS-S):** functional entity specified by the ITS station (ITS-S) reference architecture realizing ITS specific services

### 3.1.10 J

Void.

### 3.1.11 K

Void.

### 3.1.12 L

**layering:** organization of functionalities that interact in some sequential and hierarchical way, with each layer usually providing a service for the layer above

**Local Dynamic Map (LDM):** ITS-S service which stores and maintains Data Objects that are timestamped and location referenced as long as relevant for the ITS-S functionalities

**logic:** logical representation

**low-risk geographical area:** area part of the road infrastructure where the safety related traffic context is relaxed

### 3.1.13 M

**minimum dissemination area:** minimum area where an information is disseminated by an ITS-S based on application requirements

**misbehaviour:** act by which a C-ITS station transmits false or misleading information, or information that was not authorized by a commonly agreed policy, either purposefully or unintendedly

**Multi-Modal:** Multimodal transport (also known as combined transport) is the transportation of goods or people realized by least two different modes of transport

**multicast:** delivery of a message to a group of nodes that have expressed interest in receiving the message using a one-to-many-of-many or many-to-many-of-many associations; datagrams are routed simultaneously in a single transmission to many recipients

NOTE: Multicast differs from broadcast in that the destination address designates a subset, not necessarily all, of the accessible nodes.

### 3.1.14 N

**networked V2X (V2N2X):** data exchange in which the data sourcing ITS-Ss provides the data to intermediary networks, base-stations or routing functions such as Internet, which transfers it to the interested data sinking ITS-Ss

**networking configuration:** method in which there is a process of assigning network settings, policies, flows and controls

NOTE: This process could be physically or virtual. IP networks are configuration based.

**networking constellation:** method in which there is no configuration process but where the network settings, policies, flows and controls are commonly agreed

**Networking & Transport Layer:** ITS layer representing the OSI layers three and four

**non-reversible countermeasures:** measures that are taken to limit the impact on personal wellbeing and limit the material damage leading to a situation that is different from the intended one

### 3.1.15 O

**object:** material thing that can be seen and touched and therefore detected and with which parameters can be associated that can be measured and/or estimated

**object list:** collection of objects

**originating ITS-S:** Intelligent Transport System Station that generates messages and implements the related message protocol

### 3.1.16 P

**party:** singular individual, stakeholder, organization, governmental institution or business entity. It is sole responsible

**plane:** logical grouping of functions in a networking context, over different layers

NOTE: The main planes recognized are the management or control plane, the data plane, and the security plane.

**prescriptive document:** document that specifying specific requirements to which other documents within a certain context need to comply to

**private organizations:** organizations which are owned, controlled and managed by individuals, groups or business entities

**public organizations:** organizations which are owned, controlled and managed by governmental or other state or locally managed bodies

### 3.1.17 Q

Void.

### 3.1.18 R

**receiving ITS-S:** Intelligent Transport System Station that receives messages and implements the relevant specific protocol

**reference direction:** direction which is used as reference to indicate the applicability of the event

**release:** handover of a consistent set of specifications at a defined level of maturity

**relevance zone:** area where the information is applicable

### 3.1.19 S

**safety of the intended functionality:** absence of unreasonable risk due to hazards resulting from functional insufficiencies of the intended functionality or by reasonably foreseeable misuse by persons

NOTE: For Road Vehicles, Safety of the Intended Functionality ISO 21448 [i.6] applies.

**safety related:** everything which can have a direct or indirect positive impact on the safety situation.

NOTE 1: Direct (tactical) in terms of having a direct impact on the cause of action as a response to immediate situations. Indirect (strategical) in terms of bringing awareness about possible upcoming safety situations to be managed

NOTE 2: This includes preventive measures like traffic lights.

**service:** process which processes technical input information and provide a technical result

NOTE: In case this is a translation from technical values in other technical values e.g. Decentralized Environmental Notification Service (DENS) it acts as a facilities layer service. In case input information is technical or functional but at least represents functional aspects the service includes both application layer as well as facilities layer entities e.g. Cooperative Awareness Service (CAS).

**service access point:** access point between layers via interfaces are realized connecting entities from different layers

NOTE: These could be connections between entities of the same but also between entities of different functionality.

**service animal:** animal which supports a specific service to a human, like a guiding dog or a police horse without person

**sink:** type of computer program or device that collects, stores and possibly processes data from other devices, programs or sources

NOTE: It can be thought of as a destination point for data, where it is stored and processed for later use.

**sinking applications:** application that only consumes information from other applications

**source:** location where data originates from

NOTE 1: A data source may be the initial location where data is born or where physical information is first digitized.

NOTE 2: Even the most refined data may serve as a source, as long as another process accesses and utilizes it.

**sourcing applications:** application that only provides information to other applications

**specifications:** documents including normative measurable requirements for the interoperable implementation or testing of functions and functionalities

**state space representation:** mathematical description of a detected object consisting of state variables such as position, velocity, attitude, angular rate, etc.

**strategical:** information which brings awareness about possible upcoming safety situation to be managed

NOTE: There is no direct impact.

### 3.1.20 T

**tactical:** information or processes which have direct impact on the cause of action as a response to

**trust domain:** defined scope (logical, organizational, technical or regulatory) within which entities adhere to common trust assumptions, policies, technical specifications, and validation/identity standards

**trust model:** arrangement of entities and the trust relationships between them that define how trust is established and evaluated in a given context

**trust/trustworthiness:** ability to meet stakeholders' expectations in a verifiable way

NOTE: Source ISO/IEC TS 5723 [i.9].

### 3.1.21 U

**unicast:** delivery of a data frame to a single specific node using a one-to-one association between a sender and destination: each destination address uniquely identifies a single receiver endpoint

**upstream traffic:** portion of road traffic in a given direction that has not yet arrived at a certain point and is going towards it

**user:** human, animal, technical system e.g. automation system

**user services:** service provided by an application to the user

### 3.1.22 V

**Vehicle-to-Everything (V2X):** endpoint to endpoint communication such as Vehicle-to-Vehicle (V2V), Vehicle-to-Infrastructure (V2I), Infrastructure-to-Vehicle (I2V)

**V-model:** graphical representation of a systems development lifecycle

NOTE: See Wikipedia: <https://en.wikipedia.org/wiki/V-model>.

**velocity:** vector indicating speed in a particular direction

**vertical velocity vector:** projection of the 3D velocity vector on the normal vector of the WGS84 [i.8] Ellipsoid

### 3.1.23 W

**wild animal:** animal living without any supervision

### 3.1.24 X - Z

Void.

## 3.2 Symbols

Void.

## 3.3 Abbreviations

### 3.3.0 Introduction

For the purposes of the present document, the following abbreviations apply:

#### 3.3.1 0-9

3GPP	3 <sup>rd</sup> Generation Partnership Project
5G-NR	5 <sup>th</sup> Generation New Radio

#### 3.3.2 A

ADU	Application Data Unit
AI	Artificial Intelligence
AID	Application IDentifier
AIF	Arbitration Inter-Frame
AL	Access Layer
ALI	Access Layer Instance
ALN	Access Layer Notifications
API	Application Programming Interface
ASIL	Automotive Safety Integrity Level
ASN	Abstract Syntax Notation
ASN.1	Abstract Syntax Notation One
AVM	Automated Vehicle Marshalling

#### 3.3.3 B

BE	Best Effort
BME	Bandwidth Management Entity
BSA	Basic Set of Applications
BTP	Basic Transport Protocol

#### 3.3.4 C

C2C-CC	Car to Car Communication Consortium
C2C-CC	Car to Car Communication Consortium
CA	Certification Authority
CAM	Cooperative Awareness Message
CAS	Cooperative Awareness Service
CBR	Channel Busy Ratio
CC	Congestion Control
CCAM	Cooperative, Connected and Automated Mobility
CCMS	C-ITS Security Credential Management System

CDD	Common Data Dictionary
CDF	Cumulative Distribution Function
CEN	Commission Européen de Normalization
C-ITS	Cooperative Intelligent Transportation Systems
C-ITS-ECOS	Cooperative Intelligent Transportation Systems Ecosystem
C-ITS-S	Cooperative ITS-Station
CL	Channel Load
CP	Collective Perception
CPM	Collective Perception Message
CPS	Collective Perception Service
CSMA	Carrier Sense Multiple Access
CSP	Communication Service Parameter
CW	Continues Wave

### 3.3.5 D

DATEX	Data Exchange
DAZ	Driver Awareness Zone
DCC	Decentralized Congestion Control
DDP	Device Data Provider
DE	Data Element
DEN	Decentralized Environmental Notification
DENM	Decentralized Environmental Notification Message
DENS	Decentralized Environmental Notification Service
DF	Data Frame
DFRS	Data For Road Safety
DLC	Data Link Layer
DoS	Denial of Service
DPIA	Data Protection Impact Assessment
DSRC	Dedicated Short Range Communication

### 3.3.6 E

ECC	Electronic Communications Committee
ECO	ECOLOGical
ECOS	ECOSystem
ECU	Electronic Control Unit
EEBL	Electronic Emergency Break Light
EG	European Guide
EIRP	Effective Ideal Radiated Power
EN	European Norm
ES	European Standard
EU	European Union

### 3.3.7 F

FAC	FACility
FL	Facilities Layer
FL-SDU	Facilities Layer Service Data Unit
FoV	Field of View
FuSa	Functional Safety

### 3.3.8 G

GBC	GeoBroadCast
GCBR	Global Channel Busy Ratio
GCRA	Generic Cell Rate Algorithm
GDPR	General Data Protection Regulation
GN	GeoNetworking
GNSS	Global Navigation Satellite System

GPC	GNSS Positioning Correction
GPCH	General Purpose CHannel
GPRS	General Packet Radio Service
GR	Group Report
GS	Group Specification

### 3.3.9 H

H	Header
HDL	Hardware Description Language
HEN	Harmonised European Norm
HF	High Frequency
HMI	Human Machine Interface
HSM	Hardware Security Modules

### 3.3.10 I

I2V	Infrastructure to Vehicle
I2X	Infrastructure to Everything
ICT	Information Communication Technology
ID	IDentifier
IETF	Internet Engineering Task Force
IN	INterface
IP	Internet Protocol
IPv6	Internet Protocol version 6
IR	Infra-Red incoherent light
IS	Infrastructure Services
ISO	International Standardization Organisation
ITIS	International Traveller Information Systems
ITS	Intelligent Transport Systems
ITS-AID	ITS-Application IDentifier
ITS-C	Intelligent Transportation Systems Constellation
ITS-C	Intelligent Transportation Systems Communications
ITS-S	Intelligent Transportation Systems Station
ITU-T	International Telecommunication Union - Telecommunication
IVI	Infrastructure to Vehicle Information
IVIM	Infrastructure to Vehicle Information Message
IVN	In-Vehicle Network

### 3.3.11 J

Void.

### 3.3.12 K

KAF	Keep Alive Forwarding
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### 3.3.13 L

LCLR	Local Channel Load Ratio
LDM	Local Dynamic Map
LF	Low Frequency
LLC	Logical Link Control layer
LTE	Long-Term Evolution

## 3.3.14 M

MAC	Medium Access Control
MAP	Road topology
MAPEM	MAP (topology) Extended Message
MCI	MCO Control Information
MCM	Manoeuver Coordination Message
MCS	Manoeuver Coordination Service (type of message in ITS)
MCS	Modulation and Coding Scheme (technology term in radio communication)
MDA	Minimum Dissemination Area
MHE	Message Handling Entity
MIM	Marshalling Infrastructure Message
MM	Multi Model
MSB	Most Significant Bit
MTU	Maximum Transmit Unit
MVM	Marshalling Vehicle Message

## 3.3.15 N

N&T	Networking & Transport layer
NAP	National Access Point
NAPCORE	National Access Point Coordination Organisation for Europe
NL	Networking & transport Layer
NR	New Radio
NWI	New Work Item

## 3.3.16 O

OID	Object IDentifier
OS	Operating System
OSI	Open System Interconnection

## 3.3.17 P

PA	Parking Availability
PAS	Parking Availability Service
PCI	Protocol Control Information
PDU	Protocol Data Unit
PHY	PHYSical layer
PI	Parking Information
PIM	Parking Information Message
PLCP	Physical Layer Convergence Protocol
POI	Point Of Interest
POIM	Point Of Interest Message
POIM-PA	Point Of Interest Message - for Parking Availability
PoTi	Position and Time
PRR	Packet Reception Ratio
PTW	Power Two-Wheeler
PVD	Probe Vehicle Data

## 3.3.18 Q

QAM	Quadrature Amplitude Modulation
QM	Quality Management
QoS	Quality of Service
QPSK	Quadrature Phase Shift Keying

## 3.3.19 R

R	Release
R-ITS-S	Roadside ITS Station
RLT	Road and Lane Topology
RM	Resource Management
RRM	Radio Resource Management
RSE	Road Side Equipment
RSSI	Received Signal-Strength Indicator
RSU	Roadside Unit
RTCM	Radio Technical Commission for Maritime services
RTCMEM	RTCM Extended Message
RTK	Real Time Kinematic
RWW	Roads Works Warning
RZ	Relevance Zone

## 3.3.20 S

SA	Service Announcement
SAM	Service Announcement Message
SAS	Service Announcement Service
SCH	Service CHannel
SCI	Security Control Information
SCO	Single Channel Operations
SDO	Standards Development Organisation
SDU	Service Data Unit
SDV	Slow Driving Vehicle
SHA	Secure Hash Algorithm
SHB	Single Hop Broadcast
SIB	Security Information Base
SINR	Signal to Noise Interference Ratio
SL	Service (Application) Layer
SNMP	Simple Network Management Protocol
SOA	Service-Oriented Architecture
SOTIF	Safety Of The Intended Functionality
SP	Service Provider
SPATEM	Signal Phase and Timing Extended Message
SR	Special Report
SREM	Signal Request Extended Message
SRTI	Safety Related Traffic Information
SSEM	Signal request Status Extended Message
SSP	Service Specific Permissions

## 3.3.21 T

TB	Technical Body
TC ID	Traffic Class IDentity
TC	Technical Committee
TCC	Traffic Control Centre
TLC	Traffic Light Control
TLM	Traffic Light Manoeuver
TMC	Traffic Management Centre
TOGAF	The Open Group Architecture Framework
TPEG	Transport Protocol Experts Group
TR	Technical Report
TS	Technical Specification
TVRA	Threat and Vulnerability Risk Assessment

### 3.3.22 U

UC	Use Case
UML	Unified Modelling Language
UMTS	Universal Mobile Telecommunications System
UPER	Unaligned Packed Encoding Rule
USB	Universal Serial Bus

### 3.3.23 V

V2I	Vehicle to Infrastructure
V2N	Vehicle to Network
V2N2X	Vehicle to Network to Everything
V2V	Vehicle to Vehicle
V2X	Vehicle to Everything
VAM	VRU Awareness Message
VBS	VRU Basic Service
V-ITS-S	Vehicular and personal ITS Station
VoI	Value of Information
VRU	Vulnerable Road User

### 3.3.24 W

WG <sub>X</sub>	Working Group X (where X is a number)
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### 3.3.25 X

X2X	Everything to Everything
X2N2X	Anything to Network to Anything

### 3.3.26 Y - Z

Void.

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## History

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