

Electronic Fee Collection Terminology – Version 2.2, February 2018

Date: 2018-02-06

Authors: K. Appel (main editor), J. Engdahl, J. Hedin

Purpose and scope of this document

This document is a collection of terms and definitions within the field of electronic fee collection (EFC), for use in the deliverables produced by CEN/TC278/WG1 & ISO/TC204/WG5 (responsible for standardization of EFC). The terms and definitions have mainly been agreed at a series of WG1&WG5 workshops and meetings held during 2012-2017.

The main purpose of the terminology is to define suitable and harmonised terms for use in EFC standard deliverables, but also to serve as an input to the overall ITS standardization process in CEN/TC278 and ISO/TC204. Over the years these terms and definitions have been incorporated into the WG1&WG5-deliverables during the regular revision processes.

The reader should be aware that this terminology does not represent an official position of CEN or ISO. The official definitions of the terms are the ones contained in the published deliverables. All the terms in ISO-deliverables (i.e. not the CEN-only deliverables) can also be found on ISO's public online browsing platform (OBP; <https://www.iso.org/obp/ui/>).

The terminology work in WG1&WG5 is a continuous process and it is possible that amendments will be made to the terms defined below¹. External experts are encouraged to provide comments. Please send any comments to the secretary of CEN/TC278/WG1 & ISO/TC204/WG5 (e-mail: johan.hedin@hybris.se).

Note on versions of the EFC terminology

Version 1.0 (N1915, March 2014) was the first version of this terminology compilation.

Version 2.0 (N2190, October 2015) was a major update of the first terminology document. The update mainly consisted in correcting source references to terms, as these are regularly updated as part of the standards maintenance process. Some terms were amended. Superseded terms, i.e. redundant or replaced by other terms, were listed in an annex.

In version 2.1 (N2259, June 2016) a few new terms were introduced, and a few minor changes were made. In addition, quite a few source updates were made.

In this version 2.2 (N2454, February 2018) some new terms were introduced, and a few minor changes are made including some updates of the primary sources. This, the latest version, replaces all previous versions.

Note on the terms list

The table below contains the *term* and its *definition*, any *synonyms or acronyms* to the term and the main *source* reference to the term. Efforts have been made to adopt the definitions of suitable and broadly accepted terms from external sources whenever appropriate (i.e. non ITS/EFC-definitions) for the more general terms.

The format is designed to support the editors' use of this terminology when drafting (EFC) standards – i.e. simple copy and paste operations.

¹ For more detailed information about the development process for this terminology, please see an informative Annex 2 at the end of this document.

Agreed terms and definitions

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
absolute charging error	difference between the measured charge (toll) value and the actual value as measured by a reference system where a positive error means that the measurement exceeds the actual value		ISO/TS 17444-1:2012, 3.1	
acceptance testing	examination that a product, process or service is in conformity with the system specification		ISO/TS 14907-1:2015, 3.1	
accepted charging error interval	interval of the relative charging error that the Toll Charger considers as acceptable, i.e. as correct charging		ISO/TS 17444-1:2012, 3.2	
access credentials	trusted attestation or secure module that establishes the claimed identity of an object or application	AC-CR	EN 15509:2014, 3.1	
accountability	property that ensures that the actions of an entity can be traced uniquely to that entity		ISO/TS 19299:2015, 3.1 modified	"may" replaced with "can"; source modified
activist	especially active, vigorous advocate of a cause, especially a political cause		ISO/TS 19299:2015, 3.2	
area charging	charging based on road usage within a given area	area pricing	ISO 17575-1:2016, 3.1	
asset	anything that has value to a stakeholder		ISO/TS 19299:2015, 3.3	
assurance requirement	security requirements to assure confidence in the implementation of functional requirements		ISO/TS 17574:2009, 3.1	
attack	attempt to destroy, expose, alter, disable, steal or gain unauthorized access to or make unauthorized use of an asset		ISO/TS 19299:2015, 3.4	
attribute	addressable package of data consisting of a single data element or structured sequences of data elements		ISO 17575-1:2016, 3.2	
audit	independent review and examination in order to ensure compliance with established policy and operational procedures			end of old definition deleted ("and to recommend associated changes")
authentication	security mechanism allowing verification of the provided identity		EN 301 175 V1.1.1:1998, 3	
authenticator	data, possibly encrypted, that is used for authentication		EN 15509:2014, 3.3	
authenticity	property that an entity is what it claims to be		ISO/TS 19299:2015, 3.5	
availability	property of being accessible and useable upon demand by an authorized entity		ISO/TS 19299:2015, 3.6	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
average relative charging error	ratio between the sum of computed charges (measurement) associated to a set of vehicles during a certain period of time and the actual charge due (reference) minus 1		ISO/TS 17444-1:2012, 3.3	
Back End	part of a back office system interfacing to one or more Front Ends		ISO 17575-1:2016, 3.4	
base standard	approved international standard, technical specification or ITU-T Recommendation Note: This includes but is not limited to approved standard deliverables from ISO, ITU, CEN, CENELEC, ETSI and IEEE.		ISO/IEC TR 10000-1:1998, 3.1.1, modified	
billing detail	information needed to determine or verify the amount due for the usage of a given service		ISO 12855:2015, 3.1	
black list	list of users for which the service provider denies contractual responsibility		ISO 12855:2015, 3.2	
central account	payment means, e.g. electronic values or number of passages in an electronic fee collection (EFC) system, stored in a central system operated by the Toll Service Provider			EFC spelled out in the definition
certificate revocation list	signed list indicating a set of certificates that are no longer considered valid by the certificate issuer		ISO/TS 19299:2015, 3.8	
certification	procedure by which a party gives written assurance that a product, process or service conforms to specified requirements		ISO/TS 14907-1:2015, 3.3	
channel	information transfer path		ISO 7498-2:1989, 3.3.13	
charge object	geographic or road related object for the use of which a charge is applied		ISO 17575-1:2016, 3.5	
charge object detection	event marking the usage of a charge object		ISO/TS 17444-1:2012, 3.5 modified	
charge object detector	functionality of the system responsible for detecting chargeable events associated with a charge object		ISO/TS 17444-1:2012, 3.12 modified	
charge parameter change	event occurring within a tolling system that is relevant for charge calculation, such as change of vehicle category, but not for the detection of a charge object itself		ISO/TS 17444-1:2012, 3.8 modified	
charge report	information containing road usage and related information originated at the Front End		ISO 17575-1:2016, 3.6	
charging data	relevant data on the usage of a certain service		ISO 12855:2015, 3.4	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
charging performance metrics	specific calculations used to describe the charging performance of a system		ISO/TS 17444-1:2012, 3.20	
charging point	location where the toll is charged		ISO 17573:2010, 3.19 modified	
charging scheme	general description of a tolling system and its context including the motivation and strategy for the fee collection and the toll context data			
clearing house	organization re-allocating value generated in the payment system between the various actors, enabling these actors to execute settlement			
communication provider	provider of information transmission services		ISO/TS 19299:2015, 3.10	
compatibility	suitability of products, processes or services for use together under specific conditions to fulfil relevant requirements without causing unacceptable interactions		ISO/TS 14907-1:2015, 3.4	
computational specification	decomposition of a system into objects performing individual functions and interacting at defined interfaces		ISO 12855:2015, 3.5	
confidentiality	prevention of information leakage to non-authenticated individuals, parties or processes		ISO/TS 19299:2015, 3.11	"and/or" changed to "or"
conformance testing	assessment to determine whether an implementation complies with the requirements			
context dependent itinerary	itinerary of which the syntax and semantics depend on the toll domain's context data		CEN/TS 16702-1:2014, 3.6	
context independent itinerary	itinerary of which the syntax and semantics are independent of the toll domain's context data		CEN/TS 16702-1:2014, 3.7	
continuous toll scheme	toll scheme where the charge is calculated based on the accumulation of continuously measured parameter(s), such as distance and time.		ISO/TS 17444-1:2012, 3.11 modified	minor editing; source modified
cordon	border line of an area		ISO 17575-1:2016, 3.7	
cordon charging	charging for the crossing of a cordon	cordon pricing	ISO 17575-1:2016, 3.8	
cryptography	principles, means and methods for the transformation of data in order to hide its information content, prevent its undetected modification or prevent its unauthorized use		EN 15509:2014, 3.6	
data element	coded information, which might itself consist of lower level information structures		ISO 17575-1:2016, 3.9	
data group	class of closely related attributes		ISO 17575-1:2016, 3.10	
data integrity	property that data has not been altered or destroyed in an unauthorized manner	information integrity	ISO 7498-2:1989, 3.3.21	source corrected

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
data privacy	rights and obligations of individuals and organizations with respect to the collection, use, retention, disclosure and disposal of personal information	information privacy	ISO/TS 19299:2015, 3.32	
data protection commissioner	person responsible for the enforcement and monitoring of compliance with the applicable data protection legislation	data privacy commissioner	ISO/TS 19299:2015, 3.12	
data set	logical set of data elements with a semantic relation		ISO 17575-32016, 3.10	
data subject's consent	freely given specific and informed written indication of his wishes by which the data subject signifies his agreement to personal data relating to him being processed		ISO/TS 19299:2015, 3.13 modified	
digital signature	one or more data elements resulting from the digital signature process		ISO/TS 19299:2015, 3.38	
discrete toll scheme	toll scheme where the charge is calculated based on distinct events associated with the identification of charge objects such as crossing a cordon, passing a bridge and being present in an area		ISO/TS 17444-1:2012, 3.10	minor editing
domestic state agency	agency of the state under whose jurisdiction a particular toll scheme is operated		ISO/TS 19299:2015, 3.18	
DSRC on-board unit	minimum component of an on-board equipment, whose functionality always includes at least the support of the dedicated short-range communication (DSRC) interface	DSRC OBU	EN ISO 14906:2011, 3.14	DSRC spelled out in the definition
dynamic toll	toll adjusted in real time in response to the actual traffic situation or other external actual conditions			new term
EFC architecture	description of the key elements of an electronic fee collection (EFC) system, their functions and interrelationships		ISO/TR 19639:2015, 3.3 modified	new source; EFC spelled out in the definition: minor editing
EFC equipment	equipment comprising roadside equipment (RSE) and on-board equipment (OBE) Note 1 to entry: The definition of this term is very restrictive given the scope of the Technical Specification 14907-1		ISO/TS 14907-1:2015, 3.5 modified	
EFC information exchange	to exchange electronic fee collection (EFC) related information between EFC actors			EFC spelled out in the definition

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
EFC-session	exchange of information and interaction, via dedicated short-range communication (DSRC), occurring at a specific electronic fee collection (EFC) station between the roadside equipment and the on-board equipment (OBE)		ISO 14906:2011, 3.19 modified	DSRC, EFC and OBE spelled out in definition
EFC system	system that enables electronic debiting for the use of transport services		ISO/TS 14907-1:2015, 3.6	
electronic fee collection	fee collection by electronic means	EFC	ISO 12855:2015, 3.6	
electronic money	value having its equivalence in real money, electronically stored e.g. on a bank account or an IC-card, which thus can be used by the user for payments	E-money		
Element	dedicated short-range communication (DSRC) directory containing application information in the form of attributes		ISO 14906:2011, 3.11 modified	DSRC spelled out in definition
enforcement	measures or actions performed to achieve compliance with laws, regulations or rules		ISO/TS 19299:2015, 3.17	
equipment access point	point of control and observation of the implementation under test		ISO/TS 16403-2:2012, 3.1.3 modified	
evaluation	systematic process of determining how individuals, procedures, systems or programs have met formally agreed objectives and requirements		ISO 10795:2011, 1.90	
evaluation assurance level	set of assurance requirements, usually involving documentation, analysis and testing, representing a point on a predefined assurance scale, that form an assurance package	EAL		
false positive event	event that was erroneously detected, but did not take place		ISO/TS 17444-1:2012, 3.15 modified	
fare collection regime	set of rules, including enforcement rules, governing the fare system in the public transport domain			
field test	test that is performed under real-life conditions		ISO/TS 14907-1:2015, 3.9	
fixed roadside equipment	roadside equipment located at a fixed position		ISO 12813:2015, 3.6	
fixed toll	toll applied according to a predefined tariff scheme			new term
foreign state agency	agency of any state except the state under whose jurisdiction a particular toll scheme is operated		ISO/TS 19299:2015, 3.16	
freezing per declaration	process that freezes the itinerary related to the toll declaration by sending a cryptographic commit or the whole itinerary to the toll charger		CEN/TS 16702-1:2014, 3.9	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
Front End	part of a tolling system consisting of on-board equipment (OBE) and possibly a proxy where road tolling information and usage data are collected and processed for delivery to the Back End	FE	ISO/TS 19299:2015, 3.17	OBE spelled out in definition
functional requirement	requirement for a function that a system or system component is able to perform			"shall be" changed to "is"
functionality test	assessing the performance of a system, based on specific parameters		ISO/TS 14907-1:2015, 3.10 modified	
hacker	person who attempts or succeeds to gain unauthorized access to protected resources		ISO/TS 19299:2015, 3.19	
implementation conformance statement	statement of capabilities and options that have been implemented defining to what extent the implementation is compliant with a given specification		ISO/TS 14907-2:2016, 3.6	
implementation conformance statement proforma	document, in the form of a questionnaire, which when completed for an implementation or a system becomes an implementation conformance statement (ICS)		ISO/IEC 9646-1:1994, 3.3.40	
implementation extra information for testing	statement containing all of the information related to the implementation under test (IUT) and its corresponding system under test (SUT) which will enable the testing laboratory to run an appropriate test suite against that IUT		ISO/IEC 19105:2000, 3.20	source corrected
implementation extra information for testing proforma	document, in the form of a questionnaire, which when completed for an implementation under test (IUT) becomes an implementation extra information for testing (IXIT)		ISO/IEC 9646-1:1994, 3.3.42 modified	
implementation under test	implementation of one or more open systems interconnection (OSI) protocols in an adjacent user/provider relationship, being part of a real system which is to be studied by testing	IUT		
information asset	knowledge or data that has value to the relevant stakeholder		ISO/TS 19299:2015, 3.20	
information security	preservation of confidentiality, integrity, availability, authenticity, accountability, non-repudiation and reliability of information		ISO/TS 19299:2015, 3.21 modified	
information security event	identified occurrence of a system, service or network state indicating a possible breach of information security policy or failure of controls, or a previously unknown situation that may be security relevant		ISO/TS 19299:2015, 3.22	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
information security incident	unwanted information security event(s) that have a significant probability of compromising business operations and threatening information security		ISO/TS 19299:2015, 3.23	
inspection	conformity evaluation by observation and judgement accompanied, as appropriate, by measurement, testing or gauging		ISO/TS 14907-1:2015, 3.11	
integrated circuit card	card with electronic components performing processing or memory functions and with the capability to communicate with an interrogator	IC card, ICC	ISO 21188:2006, 3.32 modified	
international registrar	organization authorized to register protection profiles at an international level		ISO/TS 17574:2009, 3.12 modified	
international standardised profile	internationally agreed-to, harmonized document which describes one or more profiles		ISO/IEC TR 10000-1:1998, 3.1.2	
interoperability	ability of systems to exchange information and to make mutual use of the information that has been exchanged		ISO/IEC TR 10000-1:1998, 3.2.1 modified	
interoperable application profile	profile for supporting interoperability between systems on an application level	IAP		
issuer	entity responsible for issuing the payment means to the user		ISO/TS 16785:2014, 3.9	
itinerary	travel diary organized in one or more itinerary records enabling assessment of the correctness of the toll declaration		CEN/TS 16702-1:2014, 3.11	
itinerary batch	sequence of sequential itinerary records of the same type all pertaining to a defined set of toll domains		CEN/TS 16702-1:2014, 3.12	
itinerary freezing	registering an itinerary and undeniably committing oneself to it		CEN/TS 16702-1:2014, 3.13	
itinerary sequence	sequence of aggregated data committing to a number of underlying itinerary batches		CEN/TS 16702-1:2014, 3.14	
itinerary record	atomic data element describing use of the road network or use of the vehicle		CEN/TS 16702-1:2014, 3.15	
key certification authority	authority trusted by one or more users to create and assign public-key certificates		ISO/TS 19299:2015, 3.9	
key management	generation, distribution, storage, application and revocation of encryption keys	encryption key control	ISO/TS 17574:2009, 3.13 modified	
laboratory test	test which is performed in a laboratory under specified conditions		ISO/TS 14907-1:2015, 3.13	
layout	technical description of the location of tolled objects including their borders		ISO 17575-3:2016, 3.12	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
level of transport service	operational conditions associated with a traffic stream, based on service characteristics such as speed, travel time, freedom to maneuver, traffic interruptions, comfort or convenience			new term
localization augmentation	information delivered to on-board equipment about the current geographical location or the identity of a charge object (e.g. when the satellite signals are insufficient for positioning)		ISO 17573:2010, 3.8 modified	
maintainability	ability of a system or subsystem to be maintained or restored to specified conditions within a given period of time		ISO/TS 14907-1:2015, 3.14	
message authentication code	string of bits which is the output of a message authentication code (MAC) algorithm	MAC	ISO/TS 19299:2015, 3.26	MAC spelled out in the definition
missed recognition event	usage of a charge object, that is not recorded by the system		ISO/TS 17444-1, 3.16 modified	
mobile roadside equipment	equipment mounted on a mobile unit or handheld equipment to be used along the road		ISO 12813:2015, 3.7	
monitoring	collection and assessment of status data for a process or a system			
non-repudiation	ability to prove the occurrence of a claimed event or action and its originating entities		ISO/TS 19299:2015, 3.27	
OBE personalization	transferring personalization assets to the on-board equipment (OBE)		ISO/TS 21719-1, 3.4	new term
on-board account	payment means, e.g. electronic values, tokens or evidence of passage in an electronic fee collection (EFC) system, stored on-board the payment media held by the user, such as on-board equipment or an IC card			EFC spelled out in definition
on-board equipment	all required equipment on-board a vehicle for performing required electronic fee collection (EFC) functions and communication services	OBE		EFC spelled out in definition
on-board unit	single electronic unit on-board a vehicle for performing specific electronic fee collection (EFC) functions and for communication with external systems	OBU		EFC spelled out in definition
on-road service integrator	Toll Service Provider that in addition delivers services from various value added service providers to his clients			
open payment	system that uses open interfaces for validating payment			new term
overcharging	situation where the calculated charge is above the accepted charging error interval		ISO/TS 17444-1, 3.18	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
payment claim	recurring statement referring to concluded billing details made available to the payer by the payee indicating and justifying the amount due		ISO 12855: 2015, 3.10	
payment means	value (e.g. cash or stored electronic values), a reference to a central account, a credit card account number or a contract (e.g. a ticket) that gives the user access to available services			
payment medium	carrier of payment means EXAMPLE paper ticket, IC-card, smart phone, on-board unit (OBU)			
personal data	information relating to an identified or identifiable natural person		ISO/TS 19299:2015, 3.30	
personalization assets	specific data stored in the on-board equipment (OBE) related to the user and the vehicle		ISO/TS 21719-1, 3.5	new term
personalization equipment	equipment for transferring personalization assets to the on-board equipment (OBE)		ISO/TS 21719-1, 3.6	new term
personalization card	IC card used to transcribe individual data such as vehicle or contract information into on-board equipment (OBE)	set-up card	ISO/TS 17574:2009, 3.15 modified	(OBE) added
point of observation	interface, or other identifiable access to a system, where conformance can be stated and verified		ISO 17573:2010, 3.11 modified	
policy	overall intention and direction as formally expressed by management		ISO/IEC 27000:2014, 2.60 modified	
population	totality of items under consideration		ISO 4006:1991, 5.4	
prebilling operator	entity for clearing of billing data and for informing on payment claims to issuers			
probe data	vehicle sensor information formatted as probe data elements or probe messages that is processed, formatted, and transmitted to a centre for processing to create a good understanding of the driving environment	ISO 22837:2009, 4.3 modified		new term
profile	set of requirements and selected options from base standards or international standardized profiles used to provide a specific functionality		ISO/IEC TR 10000-1:1998, 3.1.4 modified	
profile taxonomy	classification scheme for referencing profiles or sets of profiles unambiguously			
proxy	optional part of a Front End that communicates with external equipment and processes the data received into an agreed format to be delivered to the Back End		ISO 17575-1:2016, 3.13	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
public transport services	shared passenger transport service which is available for use by the general public EXAMPLE bus, tram, train			
quality	degree to which a set of inherent characteristics fulfils requirements		ISO 9000:2005, 3.1.1	
rationale verification	process determining that a product of each phase of the system life cycle development process fulfils all the requirements specified in the previous phase		ISO/TS 17574:2009, 3.18	
real-time freezing	freezing of each itinerary record as soon as its acquisition has terminated using a trusted recorder		CEN/TS 16702-1:2014, 3.17	
relative charging error	ratio between the absolute charging error and the reference value		ISO/TS 17444-1:2012, 3.21	
relative time	point in time relative to a defined event		CEN/TS 16331:2012, 3.11 modified	
reliability	ability of a device or a system to perform its intended function under given conditions of use for a specified period of time or number of cycles		ISO/TS 14907-1:2015, 3.17	
representative trips	trips that are of a distance larger than a defined threshold and so have to be considered by the related metrics		ISO/TS 17444-1:2012, 3.22	
road and traffic manager	manager responsible for a road transport network operation including monitoring of the level of transport service	RTM		new term
road section charging	tolling principle where the fee is due if predefined sections of roads are used	road section tolling	ISO 17575-1:2016, 3.14	
road usage data	travel data accumulated per road user, e.g. used to calculate the toll due		ISO/TS 17575-1:2010, modified	revived term with new definition
roadside equipment	equipment located along the road, either fixed or mobile	RSE		
roaming rules	set of attributes to be used in the electronic fee collection (EFC) communication to enable users to circulate between contracting toll domains		CEN/TS 16331:2012, 3.12 modified	EFC spelled out in the definition
role	set of responsibilities		ISO 17573:2010, 3.13	
sample	subset of a population made up of one or more of its individual parts		ISO/TS 17444-2:2013, 3.24 modified	
secure application module	physical module that securely executes cryptographic functions and stores keys	SAM	ISO/TS 19299:2015, 3.35	
secure monitoring compliance	concept that allows a toll charger to rely on the trustworthiness of toll declarations produced by toll service providers		CEN/TS 16702-1:2014, 3.18	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
security policy	set of rules that regulate how to handle security threats or define the appropriate security level		CEN/TS 19299:2015, 3.36	
security service	service, provided by communicating systems which ensures adequate security of the systems or of data transfers		CEN/TS 19299:2015, 3.37	
security target	set of security requirements and specifications to be used as the basis for evaluation of an identified target of evaluation (TOE)		ISO/TS 17574:2009, 3.25	TOE spelled out in the definition
security threat	potential action or manner to violate the security of a system		ISO/TS 17574:2009, 3.24 modified	
service primitive	elementary communication service provided by the application layer protocol to the application processes		ISO 14906:2011, 3.18 modified	
simulation	representation of selected behavioural characteristics of one physical or abstract system using another system		ISO/TS 14907-1:2015. 3.19	
successful charging	situation where the user has been correctly charged according to the rules of the system		ISO/TS 17444-1, 3.24	
system under test	real system in which the implementation under test resides	SUT	ISO/IEC 9646-1:1994, 3.3.103 modified	
target of evaluation	set of software, firmware or hardware possibly accompanied by guidance	TOE	ISO/IEC 15408-1:2009, 3.1.70	
tariff scheme	set of rules to determine the fee due for a vehicle within a toll domain			
tariff modifier	classes of attributes on which the tariff depends for a given road usage		17575-1:2016, 3.15 modified	
test	procedure designed to measure characteristics of a component or system in specified conditions		ISO/TS 14907-1:2015; 3.20	
test case	description of test purpose, unique test case identifier, test inputs, test execution conditions, test steps, and the results required to pass the test		ISO/IEC 18013-4:2011, 4.1	
test house	third party that carries out the test		ISO/TS 14907-1:2010, 3.25	
test parameter	parameter that specifies one or more characteristics of a system to be tested		ISO/TS 14907-1:2015,3.21	
test procedure	instructions for the set-up, execution, and evaluation of results for a given test case		ISO/TS 14907-1:2015, 3.22	
test type	kind of test, such as inspection, simulation, laboratory test or field test		ISO/TS 14907-1:2015, 3.24	
tester	combination of equipment, humans and processes able to perform specified conformance tests		EN 15876-1: — (to be published)	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
threat	potential cause of an unwanted information security incident, which may result in harm		ISO/TS 19299:2015, 3.39	
threat agent	entity that has the intention to act adversely on an asset		ISO/TS 19299:2015, 3.40	
threat analysis	systematic detection, identification, and evaluation of threats		ISO/TS 19299:2014, 3.41	
time lock	mechanism ensuring that a new operation can only be commissioned after a configurable period of time or processor clock cycles since the previous operation		CEN/TS 16702-1:2014, 3.19	
toll	charge, tax or duty levied in connection to using a vehicle in a toll domain		ISO/TS 19299:2015, 3.42 modified	
toll charger	entity which levies toll for the use of vehicles in a toll domain	TC	ISO 17573:2010, 3.16 modified	
toll cluster	group of toll schemes operating under a common agreement providing interoperability for road users having a contract with a service provider being part of the cluster		ISO 17575-1:2016, 3.11	
toll context	logical view as defined by attributes and functions of the basic elements of a toll scheme consisting of a single basic tolling principle, a spatial distribution of the charge objects and a single behaviour of the related Front End		ISO 17575-1:2016, 3.17	
toll context data	information defined by the responsible Toll Charger necessary to establish the toll due for using a vehicle on a particular toll context and to conclude the toll transaction		ISO 12855:2015, 3.15	
toll context layout	group of attributes of the context data providing the geographic information of a toll domain		CEN/TS 16331:2012, 3.5 modified	
toll declaration	statement to declare the usage of a given toll service to a Toll Charger		ISO/TS 19299:2015, 3.44	
toll declaration period	period covered by a toll declaration		ISO/TS 17444-1, 3.7 modified	
toll domain	area or a part of a road network where a certain toll regime is applied		ISO 17573:2010, 3.18 modified	
toll regime	set of rules, including enforcement rules, governing the collection of toll in a toll domain		ISO 17573:2010, 3.20	
toll scheme	organizational view of a toll regime, including the actors and their relationships		ISO 17575-3:2016, 3.22	
toll service	service enabling users to pay toll			
toll service provider	entity providing toll services in one or more toll domains	TSP	ISO 17573:2010, 3.23 modified	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
toll service user	customer of a toll service provider, i.e. one liable for toll, owner of the vehicle, fleet operator or driver depending on the context			
tolled area	geographic area where a toll is charged for road usage		ISO 17575-3:2016, 3.17	
traffic flow information	traffic related data such as average speed, traffic volumes, or level of congestion			new term
transaction	whole of the exchange of information between two physically separated communication facilities		ISO 17575-1:2016, 3.21	
transaction counter	data value in the on-board unit that is incremented by the roadside equipment at each transaction		EN 15509:2014, 3.23	
transaction model	functional model describing the structure of electronic payment transactions		ISO 14906:2011, 3.25 modified	
transaction type	identifier of a set of transactions that adhere to the same rules for the exchanged application protocol data units in terms of triggers, timings, content and sequence		CEN TS 16986, 3.8	source updated
transit data	road usage data necessary to calculate fees based on used road sections or passage of certain points			new term
transport performance requirement	needed level of service related to a set of operational goals and performance measures, e.g. speed, travel time, freedom to maneuver, traffic interruptions, comfort or convenience			new term
transport service	transport infrastructure related service which is offered to the user		EN 15509:2014, 3.25	
transport service provider	entity providing a transport related service, such as provision of roads			
travel demand model	model for estimating travel demand and behaviour			new term
trip	part of space-time trajectory of a particular vehicle within a toll domain		ISO/TS 17444-1, 3.28 modified	
trust object	information object that is exchanged between entities to ensure mutual trust		ISO 17573:2010, 3.28	
trusted recorder	logical entity capable of cryptographic functions, used to provide the on-board equipment (OBE) with security services, including data confidentiality, data integrity, authentication and non-repudiation		CEN/TS 16702-1:2014, 3.22	OBE spelled out in definition
trusted third party	security authority or its agent trusted by other entities with respect to security related activities	TTP	ISO/IEC 10181-1:1996, 3.3.30 modified	

Term	Definition	Synonyms (acronyms)	Primary source	Changes since v2.1
type approval	approval based on conformity testing on the basis of one or more specimens of a product representative of the production		ISO/TS 14907-1:2015, 3.26	
undercharging	situation where the calculated charge is below the accepted charging error interval		ISO/TS 17444-1:2012, 3.29	
undetected observation	observation of road usage, performed by the toll charger, which is neither known to the driver or on-board equipment (OBE) before nor after the observation		CEN/TS 16702-1:2014, 3.23	OBE spelled out in definition
unexpected observation	observation of road usage, performed by the toll charger, which is unknown to the driver or on-board equipment (OBE) before but might be known after the observation		CEN/TS 16702-1:2014, 3.24	OBE spelled out in definition
user account	centrally or on-board stored transport related service rights of the user in his relationship to a service provider			
user complaint	complaints from users related to a specific service provision		ISO/TS 17444-1, 3.31 modified	
validation	confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled		ISO/TS 14907-1:2015, 3.27	
value added service	service that is offered in addition to the core service in question thus creating additional value	VAS		
value units bearing device	device under the control of the service user that contains value units	VBD		
verification	confirmation by examination and provision of objective evidence that specified requirements have been fulfilled		ISO/TS 14907-1:2015, 3.28	
vulnerability	weakness of an asset or control that can be exploited by an attacker		ISO/TS 19299:2015, 3.51	

Annex 1 – Superseded terms

This annex contains terms that are deemed superseded and that should be deleted or replaced during the maintenance process of the published deliverables. The main motivations for deletion/replacement are;

- that the terms are self-explanatory,
- that it is replaced by another term, or
- that there is no real need to define the term in question.

The main reason for including this list here is to assist editors when editing old versions of standards and to guide them to the preferred term in the main list.

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
<i>action</i>	function that an application process resident at the roadside equipment can invoke in order to make the on-board equipment (OBE) execute a specific operation during the transaction			deleted
<i>added value service</i>	a service that is offered in addition to the core service in question thus creating additional value		CEN/TR 16219:2011, modified	this was proposed but rejected
<i>area pricing</i>	charging process based on road usage occurring within a given area		ISO/TS 17575-1:2010	replaced by "area charging"
<i>associated EFC context</i>	EFC context for which an individual user has the contractual consent that his or her Front End is interoperable		ISO/TS 17575-4:2011	replaced by "contracted EFC context"
<i>business continuity</i>	processes or procedures for ensuring continued business operations			not in use
<i>Central Communication Unit</i>	part of the central equipment serving as a mobile communication interface to the OBE		ISO/TS 17574:2009	deleted
<i>central equipment</i>	system components at fixed centralized locations NOTE Central equipment is not the same as central system. Central equipment is used in the GNSS/CN based EFC system.		ISO/TS 17574:2009	deleted
<i>certification authority</i>	authority trusted by one or more users to create and assign public-key certificates Note 1 to entry: Optionally the Certification Authority may create the users' keys. [SOURCE: ISO/IEC 9594-8:2008, modified □ new structure for the definition]		CEN/TS 16439	replaced by "key certification authority"
<i>Charge Area</i>	anywhere within the width of the carriageway (all lanes in both directions) at the charge point + 1.0 meter outside the carriageway on both sides of the carriageway limited in the travelling direction by the footprint of the DSRC beacons NOTE The term is also in other references used for describing the whole geographical area covered by the EFC system.		CEN/TR 16040:2010	replaced by "payment obligation area"
<i>Charge-Relevant Event</i>	event occurring within a tolling system, which is relevant for charge calculation, but not for the detection of a Charge Object itself NOTE Examples of this type of event are changes in vehicle category or time zone.	ISO/TS 17444-1	ISO/TS 17444-1, modified	replaced by "charge parameter change"
<i>Chargeable Event</i>	event in which a vehicle passes through a Charge Object that implies that vehicle has to be charged or a different rate (e.g. price per kilometre) applied. NOTE This event refers to the use of a certain object and not to the mechanisms by which detection is produced.		ISO/TS 17444-1	replaced by "charge object detection"

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
<i>Charging Period</i>	period of time which is used to define the frequency of the Toll Declarations, when Charge Reports are aggregated to form Toll Declarations. NOTE If the Charging Period is set to 24 hrs then in the Toll Context Data a single Toll Declaration is submitted for each 24 hr period for each Service User.		ISO/TS 17444-1	replaced by "toll declaration period"
<i>Charging System</i>	system for Electronic Fee Collection supporting and fulfilling the requirements of a Charging Scheme		CEN/TR 16040:2010	deleted
<i>component</i>	logical and physical entity composing an on-board equipment, supporting a specific functionality		ISO 14906:2011	deleted
<i>context data</i>	information defined by the responsible Toll Charger necessary to establish the toll due for circulating a vehicle on a particular Toll Domain and to conclude the toll transaction		ISO 17573:2010	replaced by "toll context data"
<i>context layout</i>	group of attributes of the context data providing the geographic information of the EFC domain		CEN/TS 16331:2012	replaced by "toll context layout"
<i>contract</i>	expression of an agreement between two or more parties concerning the use of the road infrastructure		ISO 14906:2011	deleted
<i>contracted EFC context</i>	decomposition of a system into objects performing individual functions and interacting at well defined interfaces		new	replaces "associated EFC context"
<i>cordon pricing</i>	charging process based on registering passages of a cordon		ISO/TS 17575-1:2010	replaced by "cordon charging"
<i>currencies minor unit</i>	minor unit of a currency (e.g. cent, pence or Rappen)		ISO/TS 17575-3:2011	deleted
<i>customer</i>	person or legal entity that uses the service of a toll service provider NOTE Depending on the local situation the customer may be the owner, lessor, lessee, keeper, (fleet) operator, holder of the vehicle's registration certificate, driver of the vehicle, or any other third person.		ISO/TS 17574:2009	deleted
<i>customer (of a Toll Service Provider)</i>	person or legal entity that uses the service of a Toll Service Provider NOTE Depending on the local situation, the customer can be the owner, lesser, lessee, keeper, (fleet) operator, holder of the vehicle's registration certificate, driver of the vehicle, or any other third person.		ISO 17573:2010	deleted
<i>data integrity</i>	assurance that data has not been altered or destroyed in an unauthorised manner		ISO 7498-2:1989	deleted
<i>driver</i>	person who drives a vehicle Note 1 to entry: The driver is assumed to operate (use / serve) the OBE.		CEN/TS 16439	deleted
<i>EFC cluster</i>	a group of toll schemes operating under a common agreement providing interoperability for vehicles equipped with an appropriate OBE and being contracted under a Toll Service Provider being part of the cluster			replaced by "toll cluster"
<i>EFC domain</i>	area or part of a road network where a toll regime is applied		17573 ??	see "toll domain"
<i>EFC object</i>	distinguished part of a toll domain for which one or more tariff schema applies EXAMPLE An EFC object may be e.g. an area, all public roads within an area, a bridge, a zone, or a stretch of a road (network).		CEN/TR 16092:2011	see "charge object"
<i>EFC platform for</i>	an EFC platform for telematics service		CEN/TR	deleted

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
VAS	delivery comprises a set of one or more in-vehicle components, commonly termed OBE, potentially roadside and central equipment, but also a set of business rules and a legal framework. Business rules include an institutional setup, with defined responsibilities, ownership, governance, certification, and contractual relationships		16219:2011	
<i>EFC point</i>	location within a toll domain where the OBE has to issue a toll declaration		CEN/TR 16092:2011	see "charging point"
<i>EFC regime</i>	set of rules, including enforcement rules, governing the collection of toll in a toll domain		CEN/TR 16092:2011	see "toll regime"
<i>EFC service</i>	service for electronic payment offered by a payment service provider			deleted, but was proposed to partly replace "service"; see also "transport service"
<i>empty list</i>	container for attributeValues (OCTET STRING) with the length equal to zero		ISO 14906:2011	deleted
<i>enterprise</i>	company organised for lawful or unlawful commercial purposes		CEN/TS 16439	deleted
<i>equipment access port</i> <i>eaPort</i>	port used to control the implementation under test		ISO/TS 16403-2:2012	replaced by "equipment access point"
<i>equipment interoperability</i>	ability of two or more pieces of equipment to operate in conjunction		ISO 17573:2010	deleted
<i>Event Detection</i>	element of the system responsible for detecting Chargeable Events associated with a Charge Object. NOTE The output of this element provides the key information to compute a charge in a discrete scheme, or act as input for a function in a continuous scheme (e.g. for zones where distance tariffs apply).		ISO/TS 17444-1	replaced by "charge object detector"
<i>Front End application</i>	part of the Front End above the API		ISO/TS 16401-1:2012	deleted
<i>functionality</i>	group of parameters which are able to measure the performance of an EFC-system NOTE Functionality parameters can include communication, application, and vehicle and traffic characteristics.		ISO/TS 14907-1:2010	deleted
<i>government</i>	government or any agency of the state of nation under whose jurisdiction a particular toll schema is being operated		CEN/TS 16439	replaced by "domestic state agency"
<i>impact</i>	adverse change to the level of business objectives achieved		ISO/IEC 27000:2009	deleted
<i>integrity</i>	the property that data has not been altered or destroyed in an unauthorized manner		ISO/TS 17574:2009, 3.11 modified	replaced by "data integrity"
<i>interface</i>	abstraction of the behaviour of an object that consists of a subset of the interactions of that object together with a set of constraints on when they may occur		CEN/TS 16439	deleted
<i>interval scale parameters</i>	scale of measurement of data, according to which the differences between values can be quantified in absolute but not relative terms and for which any zero is merely arbitrary NOTE Interval scaled parameters are applicable in mathematical equations using the operators plus or minus. Interval scales having a zero offset are equal to ratio scales. EXAMPLE The temperature scale in Celsius is an interval scale, in Kelvin it's a ratio scale.		ISO/TS 17575-3:2011	deleted

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
<i>nominal scale parameters</i>	discrete classification of data, in which data are neither measured nor ordered but subjects are merely allocated to distinct categories NOTE Nominal scaled parameters are applicable in Boolean equations using the operators equal or not equal. EXAMPLE A nominal scale parameter for vehicles could consist of cars, trucks, vans and motorcycles.		ISO/TS 17575-3:2011	deleted
<i>on-board unit</i>	minimum component of an on-board equipment, whose functionality always includes at least the support of the DSRC interface	OBU	EN ISO 14906:2011, 3.14	
<i>one(s) liable for toll</i>	person(s) or legal entity(ies) liable to pay toll under the operation of a toll regime NOTE A toll regime can designate more than one person to be (jointly and severally) liable for paying the toll.		ISO 17573:2010	deleted
<i>operator</i>	entity involved in the process outside the user NOTE An operator is a generic term which can be used for a toll service provider or a toll charger.		ISO 14906:2011	deleted
<i>ordinal scale parameters</i>	scale on which data is shown simply in order of magnitude since there is no standard of measurement of differences NOTE Ordinal scaled parameters are applicable in Boolean equations using the operators greater, greater or equal, less or less or equal.		ISO/TS 17575-3:2011	deleted
<i>overview</i>	attribute and group of data elements providing the information if an EFC context is relevant for a specific vehicle or not		CEN/TS 16331:2012	deleted "toll context overview" proposed as term, but no better definition found
<i>performance metrics</i>	specific calculations used to describe the charging performance of a system NOTE These calculations are technology and schema-independent.		ISO/TS 17444-1	replaced by "charging performance metrics"
<i>payment obligation area</i>	physical location, usually a limited road section, where the charging is supposed to take place enabling the relevant authority or the actual toll charger to enforce users that did not pay the toll before, during or after having passed the location in question		new	replaces "charge area", but then deleted in WS 06/15
<i>privacy</i>	right of individuals to control or influence what information related to them may be collected and stored and by whom and to whom that information may be disclosed		ISO/TS 17574:2009	replaced by "data privacy"
<i>processing of personal data</i>	operation or set of operations which is performed upon personal data, whether or not by automatic means, such as collection, recording, organisation, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, blocking, erasure or destruction		CEN/TS 16439	deleted
<i>processor (privacy)</i>	natural or legal person, public authority, agency or any other body which processes personal data on behalf of the controller		CEN/TS 16439	deleted
<i>protection</i>	act of protecting, or the state of being protected		ISO/TS 17574:2009	deleted

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
	EXAMPLE Preservation from loss, theft, damage or unauthorized access.			
<i>quality of EFC equipment</i>	quality of EFC equipment expressed by qualitative and quantitative means using a group of parameters such as reliability, availability and maintainability		ISO/TS 14907-1:2010	deleted
<i>ratio scale</i>	scale of measurement of data, according to which the differences between values can be quantified in absolute and relative terms NOTE Ratio scaled parameters are applicable in mathematical equations using also the operators multiplication and division.		ISO/TS 17575-3:2011	deleted
<i>responsibility</i>	state of being responsible, accountable or answerable, as for an entity, function, system, security service or obligation		ISO/TS 17574:2009	deleted
<i>road</i>	any stretch of land that can be navigated by a vehicle		ISO/TS 17575-1:2010	deleted
<i>road section tolling</i>	processes for EFC based on charges for individual road sections		ISO/TS 17575-1:2010	replaced by "road section charging"
<i>road usage</i>	moving on a road with a vehicle		ISO/TS 17575-1:2010	deleted
<i>road usage data</i>	data necessary to calculate the fees accumulated by a road user		ISO/TS 17575-1:2010	Not in 17575-1...3:2015
<i>service</i>	road transport related facility provided by a service provider, normally a type of infrastructure, the use of which is offered to the user, for which the user may be requested to pay		ISO 14906:2011	replaced by "EFC-service" (that was deleted as well) and "transport service"
<i>service provider (EFC)</i>	operator that accepts the user's payment means and in return provides a road-use service to the user		[EN ISO 14906:2004]	replaced by "toll service provider"
<i>service user</i>	customer of a toll service provider, i.e. one liable for toll, owner of the vehicle, fleet operator or driver depending on the context		CEN/TR 16092:2011	deleted, but reintroduced 06/15 under new term: "toll service provider"
<i>session</i>	exchange of information and interaction occurring at a specific EFC station between the roadside equipment and the user/vehicle		ISO 14906:2011	replaced by "EFC-session"
<i>signature</i>	one or more data elements resulting from the signature process		ISO/IEC 14888-1:2008	replaced by "digital signature"
<i>simulation of an EFC-system</i>	simulation of a DSRC-based EFC-system, where selected behavioural characteristics of the EFC-system are represented by a computer model to enable testing of the EFC equipment in a realistically modelled environment		ISO/TS 14907-1:2010	deleted
<i>system</i>	something of interest as a whole or as comprised of parts NOTE A system can be referred to as an entity. A component of a system can itself be a system, in which case it can be called a subsystem.		ISO/TS 17575-2:2010	deleted
<i>tariffication</i>	determination of the tariff		ISO/TS 17575-1:2010	deleted (no such word exists)
<i>test status</i>	the nature of a test, either basic or conditional		ISO/DTS 14907-1:2015, 3.23	Deleted in TF 09/15. To be replaced in table heads of 14907-1 with "test character" Post adoption commenting for 14907-1; remove

Superseded term	Superseded definition	Synonyms (acronyms)	Primary source	Notes
				'test status' from the WG agreed term
<i>toll point</i>	location within a toll domain where the OBE has to issue a toll declaration EXAMPLE A part of a toll plaza for electronic fee collection.		ISO 17573:2010	replaced by "charging point"
<i>toll schema</i>	generic term used for EFC regime and/or toll domain and/or toll system depending on the context		CEN/TR 16092:2011	deleted
<i>toll system</i>	off board equipment and possible other provisions used by a toll charger for the collection of toll for vehicles		CEN/TR 16092:2011	deleted
<i>tolled object</i>	distinguished part of a toll domain for which one or more tariff schemata apply EXAMPLE An area, all public roads within an area, a bridge, a zone, or a stretch of a road (network).		ISO 12855:2012	deleted
<i>tolled passage</i>	location where a toll is applied for passing vehicles		ISO/TS 17575-3:2011	deleted
<i>tolled road</i>	road where a toll is applied for vehicles		ISO/TS 17575-3:2011	deleted
<i>tolled road network</i>	road network where a toll is applied for vehicles		ISO/TS 17575-3:2011	deleted
<i>tolled road section</i>	road section where a toll is applied for vehicles		ISO/TS 17575-3:2011	deleted
<i>Urban Charge Point</i>	physical and geographically limited area equipped with, as a minimum, Roadside Equipment, gantries, poles and outriggers, powers supply, cabinets and cabling and Central Equipment communication where the installed equipment performs the necessary data exchange with OBEs passing in the charging direction(s) NOTE The Urban Charge Point will also in a more enhanced mode collect information about non-equipped vehicles and vehicle characteristics, e.g. information used for classification.		CEN/TR 16040:2010	deleted
<i>user</i>	entity that uses transport services provided by the service provider according to the terms of a contract		EN 15509:2007	deleted
<i>validity</i>	quality or state of being valid; having legal force		ISO/TS 17574:2009	deleted
<i>vehicle-related data</i>	any kind of data related to the vehicle's characteristics including trailer, its movements, cargo or driver		CEN/TR 16219:2011, 3.6 modified	deleted

Annex 2 – Note on the process for terminology work in CEN/TC278/WG1 & ISO/TC204/WG5

An inventory and repository of EFC-terms were finalised in 2012 (WG1 N1677²). This document was also distributed in CEN/TC278 (as N2799) and ISO/TC204 (as N3041). The survey identified some 685 definitions (i.e. terms contained in clauses 3 of the deliverables originated from WG1&WG5).

Based on this repository, the work on revised and harmonised terms and definitions was conducted at a series of WG1&WG5 workshops held during 2012-2017. CEN and ISO regulations for terms have been followed for best practice when defining the EFC terms. A first, internal interim version, was published as N1915 in March 2014.

The main working document, reflecting the result from the workshops, is an *Excel sheet* containing all information on the terms and the proposals. The Excel file also contains some features to filter information and manage the process. For easy reference the main output is summarized in separate documents (N2190, N2259, N2454). The Excel-file will not be distributed publically but can be obtained for those wishing to make a more advanced use of the terms (e.g. for tagging, sorting, making csv-format excerpts, etc.). The pdf-version of this document is made available in the TCs, while a Word-version can be obtained from the WG for easier copy and paste into standards.

The official definition of terms remains what is contained in the published deliverables. WG1&WG5 intend to use the WG agreed definitions in the deliverables as soon as they are revised (in CEN and ISO)³. This may take some time. Special attention will be given to so-called "node standards" that will contain all the terms associated with a specific area of EFC, hence enabling easy reference for other deliverables. These "node standards" are;

- ISO 17573 ("EFC architecture"),
- EN ISO 12855 ("EFC back office information flows"),
- CEN/ISO TS 19299 ("EFC security"),
- EN ISO 14906 ("DSRC-EFC"),
- CEN ISO/TS 14907-1 ("EFC testing") and
- EN ISO 17575-1 ("autonomous EFC")⁴.

We expect the future terminology work to be an ongoing activity in WG1&WG5 (for revisions, new terms, improvements, etc.). The overall process was agreed at m91 of WG1 (see minutes in N1895, and the process as outlined in N1902).

Inputs, suggestions and proposals are most welcome (WG-secretary; e-mail: joan.hedin@hybris.se).

² A previous inventory of terms and definitions was made in May 2001 (WG1 N609).

³ Hence, EFC-terms are available in three formats 1) the (internal) Excel-file, 2) the (public) EFC-terminology (this document) and 3) all the clauses 3 in CEN/ISO EFC deliverables.

⁴ Please note that this structure is not "carved into stone" and may be subject to modifications, reflecting the future and revised standards produced by WG1(&WG5).