



Title : Discussion paper on the harmonisation of ITS terminology

Source : CNI

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Status : For discussion

Note : This input from the Czech member was prepared in response to resolution 037/08/2006:

RESOLUTION CEN/TC 278/037/08/2006 taken by CEN/TC 278 on 2006-09-22
Location of the meeting: Budapest
Subject: CEN/TC 278 – Czech proposal for work on terminology

CEN/TC 278 *Road Transport and Traffic Telematics*,

- considering the presentation made by the Czech delegate on proposed new work on terminology
- accepting the importance of a harmonized ITS terminology;
- considering that ISO NP 25106 will provide for a mechanism to populate and maintain a database of terms;

- accepts the offer from CNI to collate CEN input to an NP 25106 compliant glossary, and
- invites its members to provide input for this effort.

The decision was taken by unanimity

CEN/TC 278 TERMINOLOGY HARMONIZATION

This document attempts to identify main supportive ideas for creation of a project that would harmonize the terminology of CEN technical committee of traffic and transport telematics CEN/TC 278. The document of CEN/TC 278 N1866 contains Czech proposal for terminology harmonization and offers possible approaches to reach the goal. The document was presented at the plenary meeting of the committee in Budapest, September 2006. The minutes of the meeting in the document N1865 have not accepted nor rejected the proposal, but the collaboration on ISO 25106 has been recommended.

This document analyses common points and differences in the mentioned approaches, the Czech proposal and the procedure according to ISO 25106.

This document also provides a **“demo” version** of future European standard draft which would according to the Czech proposal harmonize the terminology in the field of road telematics.

Experience with terminology work

In the meeting in Budapest the Czech terminology dictionary was presented. When working with sources of the terminology, especially European standards or their drafts, some shortcomings and discrepancies have been found. It was mainly the case that one term within the terminology of a working group of CEN/TC 278 had more than one definition – the definitions used in European RTTT standards for one term differ from each other within several standards of one specific group.

Solution to the terminology work in the Czech Republic

In the Czech Republic the terminology of road building sector has been defined within one national standard, published in 1983 (ČSN 73 6100). It contains about 500 terms and definitions that describe e.g. road classifications, road design, road construction, road equipment etc. After implementing tens of European standards into the national framework the relevant terminology has expanded by hundreds of new terms. To stabilize the situation an analysis has been ordered. The analysis has resulted in a realization project with these specified steps:

1. Accumulation of all the terminology from relevant sources (EN, national standards and regulations)
2. Classification of the terms, annulations of the duplicities
3. Framework definition – structure of future terminology standards
4. Structure of a terminology standard
5. Schedule of the implementation work

The accumulated terms represented 10 000 terms with their definitions. It was absolutely clear there could hardly be a power to treat such a volume and more there could hardly be anyone to use such a **“terminology monster”**. The terms have then been classified and the structure of the terminology standard has been established as follows:

The future terminology standard has been divided into five parts:

ČSN 73 6100-1 Terminology of roads – Part 1: General terminology

ČSN 73 6100-2 Terminology of roads – Part 2: Road design

ČSN 73 6100-3 Terminology of roads – Part 3: Road equipment (CEN/TC 226)

ČSN 73 6100-4 Terminology of roads – Part 4: Road construction (CEN/TC 227)

ČSN 73 6100-5 Terminology of roads – Part 5: Road traffic and transport telematics (CEN/TC 278)

The first part is indeed the revision of the original standard; it is structured into chapters which represent all the areas of roads (selection of the general terminology from parts 2-5, and such terminology areas that have not contained enough terms to form a single Part, e.g. bridges, tunnels, road maintenance, soil treatment etc.). The other parts have been

initiated due to a high volume of terms within one area. Relevant experts have been empowered to create an internal structure of the future set of terminology standards. Such an expert treats new European terminology, classifies it and adds the national framework – terms, which are not defined in European standards. European standards are lacking in basic (general) terminology – e.g. there is no definition of RTTT. The result of the standard is well-structured standard that offers one term with only one “best” definition which is easy to find, such a standard serves as a reference document and also as a support for technical documentations.

The CTN centre – coordination

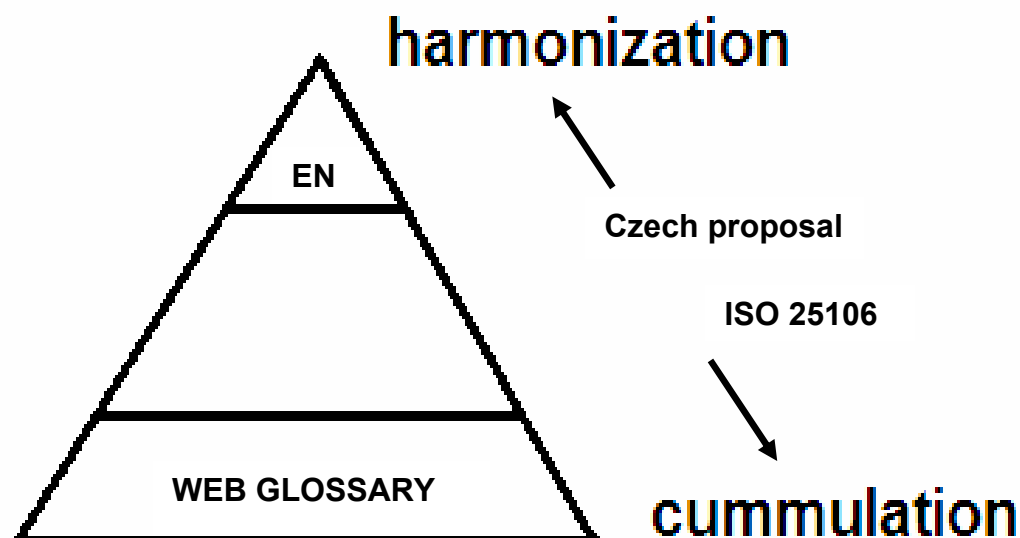
The expert cooperates with CTN (the Centre of Technical Normalisation) that coordinates the work, makes analysis and makes sure the work will be unified and harmonized. The centre also provides the experts with strategic issues, documents and schedules of realization and implementation; the centre is supported by the Ministry of Transport and the status of CTN has been appointed by CNI (Czech Standards Institute).

RTTT

Part 5: Road traffic and transport telematics is planned to be completed within the years 2008-2009. It will be the time when almost all the relevant standards of RTTT have already been approved on the European level. The idea was based on the premise that the terminology coming from European standards is harmonized – for one term one definition is used in all the relevant standards. Then a national terminology standard for RTTT could be solved by translating the terms into Czech as it has been done when creating RTTT Dictionary.

Comparison of the Czech proposal and procedure according to ISO 25106 – two different activities

It is important to make clear distinction between the proposal and the procedure according to ISO 25106. The following table gives possible comparison of both approaches, it is not made to show a better way but to prove those procedures are different and without any interconnection. Brief summarization of the two approaches could be illustrated by a pyramid, where Czech proposal is heading to the top direction (harmonization) and ISO 25106 approach to the bottom direction (accumulation).



Project	Czech proposal	ISO 25106
Characteristics	European harmonization	Worldwide accumulation
Purpose	Referencing tool for standard developers, harmonized terminology	Source for worldwide standard developers (web sites, that may be of use for publishing defined terms)
Target status	European standard	Web glossary
Maintenance	5-year period of validity	continuously
Workload	When developing the first EN version	Registrar + ISO TC 204 members, regular workload
Approval-of-term procedure	Once within 5-year period	By a contribution, approval of a bulk of terms is not possible
Charges	Pay for the standard – the cost for the standard is to be regained	Several business cases – pay by session, pay by click (free of charge when institutional support etc.)

The difference of these approaches is evident and it is not possible to combine the procedures. After being approved as European (terminology) standard the terminology discussed within the chapter 3 Terms and definitions of any RTTT standard being developed is referenced to this terminology standard first and only the new terms and definitions are then put in. In 5-year period the new terms from approved standards will be then added to the revision of the standard in bulk. **This procedure guarantees easiness of the revision process of European terminology standard and contributes to the process of European harmonization.**

To illustrate the creation procedure of a draft of the standard the following table of the terms and definition coming from CEN/TC 278 WG 1 is shown. It is necessary to repeat the assessment rules set in the first proposal presented in Budapest (CEN/TC 278 N1866).

To summarize it the following points are given:

- **Preliminary terminology work** done by convenors is not necessary for long-term active working groups because the source = standards have already been approved in the majority of the cases. For short-term active working groups, where there is neither standard nor terminology, the convenor could use some of terminology work that has been done by another authority – e.g. for CEN/TC 278 WG 5 the document CEN/TC 226 WG 4 N214:1996
- **The sources of the terminology** – approved RTTT standards and more those at the formal vote stage – should be gathered and centrally treated
- **The central treatment** results in the table similar to the one below for each of the working group of the committee CEN/TC 278. These tables form together the first draft of the European terminology standard.

The table has been recently created to show actual state of terms and definitions within CEN/TC 278/WG 1. The sources of the terminology were the following standards:

ENV ISO 14904:2002
EN ISO 14906: 2004
CEN ISO TS 14907-1:2005
CEN ISO TS 14907-2:2006
CEN ISO TS 17573:2003
CEN ISO TS 17574:2004
prEN 15509: (Formal vote 12/2006)
and ISO PDTS 17575: (stage 30 – 12/2004)

Table 1 – Terms and definitions from CEN/TC 278 WG 1

English terms and definitions	
WG1.1 acceptance testing	examination that a duly identified product, process or service is in conformity with the system specification CEN ISO TS 14907-1
WG1.2 access credentials	data that is transferred to On-Board Equipment (OBE), in order to establish the claimed identity of a roadside equipment (RSE) application process entity NOTE The access credentials carries information needed to fulfil access conditions in order to perform the operation on the addressed element in the OBE. The access credentials can carry passwords as well as cryptographic based information such as authenticators. CEN ISO TS 14907-2, EN ISO 14906, prEN 15509
WG1.3 action	operation residing in the OBE and being invoked by an event ISO TS 17575 function that an application process resident at the Roadside Equipment can invoke in order to make the On-Board Equipment execute a specific operation during the Transaction CEN ISO TS 14907-2, EN ISO 14906, prEN 15509
WG1.4 actor	class external to the EFC system, e.g. the User and the Vehicle CEN ISO TS 17573
WG1.5 apportionment	allocation of money to transport service operators according to the consumption of the services provided, e.g. a bus operator being paid an amount based on the number of a particular type of customer carried ENV ISO 14904
WG1.6 association	cooperative relationship among entities interconnected for the exchange of information ISO TS 17575
WG1.7 assurance requirement	security requirements to assure confidence in the implementation of functional requirements CEN ISO TS 17574
WG1.8 attribute	application information formed by one or by a sequence of data elements, and is managed by different actions used for implementation of a transaction CEN ISO TS 14907-2, EN ISO 14906, prEN 15509

English terms and definitions	
WG1.9 audit	<p>recognising errors such as illicit systems and/or illicit access; in addition, recording and analysing information related to security relevant activities and events in order to attain proper security control in accordance with security policy</p> <p>CEN ISO TS 17574</p>
WG1.10 authenticator	<p>data appended to, or a cryptographic transformation of a data unit that allows a recipient of the data unit to prove the source and/or the integrity of the data unit and protect against forgery</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.11 availability	<p>definition related to Security: Data and information are available to authorised parties</p> <p>definition related to operation of EFC systems: dependability with respect to the readiness for usage; measure of correct service delivery with respect to the alternation of correct and incorrect service</p> <p>CEN ISO TS 17573</p> <p>dependability with respect to readiness for usage. A measure of correct service delivery based on the alternation of correct and incorrect service</p> <p>CEN ISO TS 17574</p> <p>probability that a unit at a random point in time within a given interval is in least a certain degree of preparedness to function or functioning under given running, environmental and maintenance conditions</p> <p>CEN ISO TS 14907-1</p>
WG1.12 base standard	<p>an approved international standard or ITU-T Recommendation</p> <p>prEN 15509</p>
WG1.13 cellular network	<p>interconnection of entities based on the data exchange via cellular radio</p> <p>ISO TS 17575</p>
WG1.14 central account	<p>account which is containing service rights and which is kept and administrated by the issuer of the payment means or by an entity acting on behalf of the issuer</p> <p>CEN ISO TS 17573</p> <p>account for EFC purposes which is administered by the Service Provider or by an Entity acting on behalf of the Service Provider</p> <p>ISO 17575</p>
WG1.15 central communication unit	<p>part of the Central Equipment serving as a mobile communication interface to the OBU</p> <p>CEN ISO TS 17573, CEN ISO TS 17574</p>

English terms and definitions

WG1.16

central equipment

system components at fixed centralised locations

NOTE Central equipment is not the same as Central system. Central equipment is used in GNSS/CN based EFC systems.

CEN ISO TS 17573, CEN ISO TS 17574

equipment at a fixed location with data processing, data storage and data exchange capabilities via a cellular network

ISO TS 17575

WG1.17

certification

action by a third party, demonstrating that adequate confidence is provided that a duly identified product, process or service is in conformity with a specific standard or other normative document

CEN ISO TS 17574

procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements

CEN ISO TS 14907-1

WG1.18

chained services

combination of services that result in a discount and/or access rights in one or more of the consumed services; the discount or access rights are usually given to the User as a result of having consumed a previous service

ENV ISO 14904

WG1.19

channel

an information transfer path

CEN ISO TS 14907-2, EN ISO 14906, prEN 15509

WG1.20

charge object

information locating shape on the surface of the earth used to determine a vehicle's usage of a road infrastructure subject to fee based on the comparison of its position with the shape

ISO TS 17575

WG1.21

charging point

physical point or zone where the use of the transport service is registered; in case of a DSRC based system the communication between the OBE/OBU and RSU takes place to exchange the information needed to charge the user by EFC; charging point also covers the physical point or zone where a fee is collected manually

CEN ISO TS 17573

WG1.22

charging point equipment

equipment installed at a charging point, e.g. a toll station, enabling the operator to collect the fee by the different payment methods offered to the users

CEN ISO TS 17573

English terms and definitions	
WG1.23 class	descriptor for a set of objects with similar structure, behaviour and relationships CEN ISO TS 17573
WG1.24 class diagram	a diagram that shows the classes of the system and their internal relationships (a static structure of a system) CEN ISO TS 17573
WG1.25 classification	process of dividing vehicles into various classes according to certain classification parameters (e.g. weight, length, purpose of use, engine type, number of axles, actual number of passengers) CEN ISO TS 17573
WG1.26 clearing	operation of re-allocating value generated in the payment system(s) between the various operators in a payment system or between payment systems; this operation reflects commercial agreements existing between those parties; an example of such an operation is the exchange of information between Service Providers and an Issuer which enables the transfer of money from the Issuer, collecting the money from the User, to the Service Provider ENV ISO 14904
WG1.27 clearing operator	entity that collects and possibly aggregates transactions from one or more Service Providers for delivery to the Issuer(s); the Clearing Operator can also handle the Apportionment between the Service Providers; in the financial world this operator is equivalent to an Acquirer CEN ISO TS 17574, ENV ISO 14904, CEN ISO TS 17573
WG1.28 collection agent	entity responsible for selling, reloading or delivering the Payment Means to the User and collecting the payment from the User; the Collection Agent can also collect user related application specific data from the User ENV ISO 14904 entity responsible for selling, reloading or delivering the Payment Means to the User and collecting the payment from the User <u>on behalf of the Issuer</u> ; the Collection Agent can also collect user related application specific data from the User; the collection agent is also referred to as Retailer CEN ISO TS 17573, CEN ISO TS 17574
WG1.29 compatibility	suitability of products, processes or services for use together under specific conditions to fulfil relevant requirements without causing unacceptable interactions CEN ISO TS 14907-1

English terms and definitions	
WG1.30 component	<p>logical and physical entity composing an On-Board Equipment, supporting a specific functionality</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.31 conceptual architecture	<p>overall description of an EFC system incorporating operational concepts and user requirements, together with its known inter-relationships with other systems</p> <p>CEN ISO TS 17573</p>
WG1.32 confidentiality	<p>sensitive data and information are available only to authorised parties (confidentiality of contents)</p> <p>CEN ISO TS 17573</p> <p>prevention of information leakage to non-authenticated individuals, parties and/or processes</p> <p>CEN ISO TS 17574</p>
WG1.33 context (EFC)	<p>part of the EFC application under the responsibility of one service provider and installed to collect fees for a specific part of the road infrastructure in a connected area, based on a consistent set of rules applying to the whole road infrastructure subject to fee</p> <p>ISO TS 17575</p>
WG1.34 contract	<p>expression of an agreement between two or more parties in a payment system or between payment systems; an example of a contract is the specific relationship between a User and an Operator in a payment system; the contract in this case defines the conditions under which the user may use the services and the amount to be charged</p> <p>ENV ISO 14904</p> <p>expression of an agreement between two or more parties in a payment system or between payment systems; an example of a contract is the specific relationship between a User and an Issuer in a payment system where the contract may be explicit or implicit</p> <p>CEN ISO TS 17573</p> <p>expression of an agreement between two or more parties concerning the use of the road infrastructure</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p> <p>expression of an agreement between two or more parties on guarantees for the payment and fees</p> <p>ISO TS 17575</p>
WG1.35 contract operator	<p>entity establishing contracts with users of the road infrastructure subject to fee</p> <p>ISO TS 17575</p>

English terms and definitions	
WG1.36 contractual interoperability intention of operators to co-operate recorded in a contractual agreement CEN ISO TS 17573	
WG1.37 corridor charge object with the shape of an open polygon line ISO TS 17575	
WG1.38 counter piece of information consisting of one value with the capability of being updated as a response to specific information received ISO TS 17575	
WG1.39 cryptography discipline which embodies principles, means, and methods for the transformation of data in order to hide its information content, prevent its undetected modification or/and prevent its unauthorised use CEN ISO TS 14907-2, EN ISO 14906, prEN 15509	
WG1.40 data group collection of closely related EFC data attributes which together describe a distinct part of an EFC transaction CEN ISO TS 14907-2, EN ISO 14906	
WG1.41 data integrity property that data has not been altered or destroyed in an unauthorised manner CEN ISO TS 14907-2, EN ISO 14906, prEN 15509	
WG1.42 declared vehicle characteristics data set stored in the OBE/OBU containing vehicle characteristics of the vehicle the OBU is related to CEN ISO TS 17573	
WG1.43 electronic fee collection (EFC) collection of a fee for a transport service where the fee is collected via the exchange of data, e.g. via an air-link communication, enabling the user to pay for the transport service with electronic values, e.g. an electronic purse or values stored in a central account ENV ISO 14904, CEN ISO TS 17573 collection of fees for the use of a road infrastructure based on the exchange of data enabling the user to pay with electronic values ISO TS 17575	

English terms and definitions	
WG1.44 EFC equipment	EFC Equipment consists of Roadside Equipment (RSE) and On-Board Equipment (OBE) CEN ISO TS 14907-1
WG1.45 EFC system	system that enables electronic debiting, i.e. paying for a transport service, without any action from the user at the moment of the use of the service CEN ISO TS 14907-1
WG1.46 electronic purse	application on an IC-card (integrated circuit card) or a similar device that can store, credit, debit and protect electronic values having their equivalent in money CEN ISO TS 17573 application in an Integrated Circuit Card which stores and manipulates electronic value in a secure way and which replaces cash for payments by the User ENV ISO 14904
WG1.47 element	in the context of DSRC, a directory containing application information in form of Attributes CEN ISO TS 14907-2, EN ISO 14906, prEN 15509
WG1.48 enforcement	measures or actions performed by enforcement authorities or other organisations to achieve compliance with laws, rules and regulations CEN ISO TS 17573
WG1.49 enforcement operator	entity handling the enforcement of users CEN ISO TS 17573 entity with the task to uncover possible discrepancies between the use of the road infrastructure subject to fee and the fee paid or intended to be paid for it ISO 17575 entity responsible for prosecution on the basis of violation information provided by the Service Providers ENV ISO 14904
WG1.50 entity	holder of information within a system who may be identified and addressed by other holders of information for information exchange ISO TS 17575

English terms and definitions	
WG1.51 evaluation	<p>systematic examination of the extent to which an entity e.g. system, process, product, or a unit is capable of fulfilling specified requirements</p> <p>CEN ISO TS 14907-1</p>
WG1.52 evaluation assurance level (EAL)	<p>assurance levels to evaluate securities for products and systems</p> <p>CEN ISO TS 17574</p>
WG1.53 event	<p>occurrence detected by the OBE according to criteria determined by a context</p> <p>ISO TS 17575</p>
WG1.54 event trigger	<p>immediate cause of an event determining the time of its occurrence</p> <p>ISO TS 17575</p>
WG1.55 exception handling	<p>process of dealing with system errors or passages that might possibly not be paid for; the outcome of the Exception handling might lead to that the user is enforced or that the fee can be collected, e.g. by correlating a pictured licence plate number with the contract register</p> <p>CEN ISO TS 17573</p>
WG1.56 field tests	<p>tests which are performed under real life conditions</p> <p>CEN ISO TS 14907-1</p>
WG1.57 functional architecture	<p>description of the system in terms of functions and information flows between the functions</p> <p>CEN ISO TS 17573</p>
WG1.58 functional requirement	<p>security requirements to determine the security functions, which are required for systems and/or products</p> <p>CEN ISO TS 17574</p>
WG1.59 functionality	<p>group of parameter which are able to measure the performance of an EFC system, e.g. communication, application, vehicle and traffic characteristics</p> <p>CEN ISO TS 14907-1</p>

English terms and definitions	
WG1.60 geographic domain	information locating an area on the surface of the earth that surrounds the road infrastructure subject to fee of a context ISO TS 17575
WG1.61 global navigation satellite systems (GNSS)	system allowing to determine the position and movements of a receiver based on the ephemeris of satellites and the propagation time of radio signals sent out by these satellites ISO TS 17575
WG1.62 hash function	a function which maps strings of bits to fixed-length strings of bits satisfying the following properties: – for a given output, it is computationally infeasible to find an input which maps to this output – for a given input, it is computationally infeasible to find a second input, which maps to the same output ISO TS 17575
WG1.63 implementation conformance statement	statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented CEN ISO TS 14907-2
WG1.64 implementation conformance statement pro forma	document, in the form of a questionnaire, which when completed for an implementation or system becomes an implementation conformance statement CEN ISO TS 14907-2
WG1.65 implementation extra information for testing	statement made by the supplier or an implementer of an IUT which contains or references all of the information (in addition to that given in the implementation conformance statement) related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT CEN ISO TS 14907-2
WG1.66 implementation extra information for testing pro forma	document, in the form of a questionnaire, which when completed for an IUT becomes an implementation extra information for testing CEN ISO TS 14907-2
WG1.67 inspection	conformity evaluation by observation and judgement accompanied as appropriate by measurement, testing or gauging CEN ISO TS 14907-1

English terms and definitions

WG1.68

integrated payment systems

common framework of payment methods and information exchange between operators or payment systems that makes transfer of money from one payment system or operator to another possible (Clearing/Apportionment)

ENV ISO 14904

WG1.69

integrity

sensitive data, information and message sequencing are guarded in such a way that any alteration or destruction by unauthorised parties is detected (integrity of contents, integrity of message sequence)

CEN ISO TS 17573

the property that information (data) has not been altered or destroyed in an unauthorised manner

CEN ISO TS 17574

WG1.70

international standardised profile

an internationally agreed-to, harmonised document which describes one or more profiles

prEN 15509

WG1.71

interoperability

ability of systems to provide services to and accept services from other systems and to use these services to enable the systems to operate effectively together (see contractual, procedural and technical interoperability)

CEN ISO TS 17573

the ability of two or more IT systems to exchange information and to make mutual use of the information that has been exchanged

prEN 15509

interoperability is the ability of systems to provide services to and accept services from other systems and to use the services so exchanged to enable them to operate effectively together

CEN ISO TS 14907-1

WG1.72

issuer

entity responsible for the payment system and responsible for issuing the Payment Means to the User

CEN ISO TS 17574, ENV ISO 14904, CEN ISO TS 17573, prEN 15509

WG1.73

key management (encryption key control)

the generation, distribution, storage, application and deletion of encryption keys

CEN ISO TS 17574

WG1.74

laboratory tests

tests which are performed in a laboratory under specified conditions

CEN ISO TS 14907-1

English terms and definitions

WG1.75

location state

state residing at the OBE relating to a charge object or to a set of charge objects and depending on the position of the vehicle as compared to the charge object

ISO TS 17575

WG1.76

logical architecture

determines the nature of the system as being based on Information, Control, or Functions, and describes the inter-relationships of these aspects; a logical architecture is independent of any hardware or software approach and can be described either from an Object oriented or Process oriented perspective

CEN ISO TS 17573

WG1.77

maintainability

ability of a device to be maintained or restore to specified conditions within a given period of time

CEN ISO TS 14907-1

WG1.78

non-repudiation

protection against the denial, by one of the parties involved in the communication through the interface, of having participated in all or part of the communications

CEN ISO TS 17573

WG1.79

on-board account

account, which is containing service rights and which is being held under the responsibility of the user, e.g. data stored on an IC-card

CEN ISO TS 17573

account established at the OBE to manage the funds contained in a Token sent to the OBE

ISO TS 17575

WG1.80

on-board equipment (OBE)

equipment located within the vehicle and supporting the information exchange with the Road Side Equipment; it is composed of the On-Board Unit and other sub-units whose presence have to be considered optional for the execution of a Transaction

CEN ISO TS 14907-2, EN ISO 14906, prEN 15509

equipment located within the vehicle and supporting the information exchange with the Road Side Unit or the Central Communication Unit; it is composed of the On-Board Unit and other sub-units whose presence have to be considered optional for the execution of a Transaction

CEN ISO TS 17573, CEN ISO TS 17574

equipment located within the vehicle and supporting the information exchange across the interfaces of its sub-units. It is composed of the On-Board Unit (OBU) and other sub-units whose presence has to be considered optional for the execution of the DSRC interface

CEN ISO TS 14907-1

equipment located within a vehicle with data processing, data storage and data exchange capabilities via a cellular network

ISO 17575

English terms and definitions	
WG1.81 on-board unit (OBU)	<p>minimum component of an On-Board Equipment, whose functionality always includes at least the support of the DSRC interface or/and the Central Communication Unit and the protection of the data stored in the OBU</p> <p>CEN ISO TS 17574, CEN ISO TS 17573</p> <p>minimum component of an On-Board Equipment, whose functionality always includes at least the support of the DSRC interface</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.82 operator	<p>generic term for the entities Issuer, Clearing Operator, Collection Agent, Transport Service Provider, Enforcement Operator or Trusted Third Party</p> <p>ENV ISO 14904, CEN ISO TS 17573</p> <p>generic term for the entities: Issuer, Clearing Operator, Collection Agent and Service Provider</p> <p>CEN ISO TS 17574</p>
WG1.83 payment means	<p>expression of a Contract between the User and the Issuer (or via a Collection Agent) that allows the User to access the services available in the Payment System, e.g. an account in a credit card system or an Electronic Purse</p> <p>ENV ISO 14904, CEN ISO TS 17573</p> <p>expression of a contract between a user of a service and an entity being part of a financial system, allowing the user to pay for the service</p> <p>ISO TS 17575</p>
WG1.84 payment medium	<p>carrier of payment means (such as ticket, card or on-board unit)</p> <p>CEN ISO TS 17573</p>
WG1.85 payment method	<p>combination of a Payment Means, a Payment Mode and a Payment Scope</p> <p>ENV ISO 14904, CEN ISO TS 17573</p>
WG1.86 payment mode	<p>parameter defining the time dimension in payment by the User, e.g. Pre-payment, Immediate payment or Post-payment</p> <p>ENV ISO 14904, CEN ISO TS 17573</p>
WG1.87 payment scope	<p>application extent of the Payment Method, e.g. national transport or inter-sector</p> <p>ENV ISO 14904, CEN ISO TS 17573</p>

English terms and definitions	
WG1.88 payment system	financial system that includes the complete process of Issuing and use of Payment Means, Clearing and Settlement of transactions ENV ISO 14904, CEN ISO TS 17573
WG1.89 permanent display	set of information relating to a context and being presented on the display of an OBE up to the time it is replaced by a different set ISO TS 17575
WG1.90 personalisation card (set-up card)	an IC card to transcribe individual data such as vehicle information into an On-Board unit CEN ISO TS 17574
WG1.91 preset conditions	condition with an event only occurring if it is fulfilled at the time of the event trigger ISO TS 17575
WG1.92 privacy	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 CEN ISO TS 17574, CEN ISO TS 17573
WG1.93 procedural interoperability	existence of common data element definitions, the same working procedures and data delivery and common format of presentation in different sets of equipment required to communicate CEN ISO TS 17573
WG1.94 profile	a set of one or more base standards and/or ISP, and where applicable, the identification of chosen classes, conforming subsets, options and parameters of those base standards, or ISPs necessary to accomplish a particular function prEN 15509
WG1.95 protection	the act of protecting, or the state of being protected; preservation from loss, theft, damage or unauthorised access CEN ISO TS 17574
WG1.96 quality	all of the features and characteristics of the capability of a product or service to satisfy the requirements of the users (easiness of use, safety, availability, reliability, sturdiness, economy, environmental safety) whether given explicitly or implicitly CEN ISO TS 14907-1

English terms and definitions
<p>WG1.97 quality of EFC equipment</p> <p>group of parameter (reliability, availability, maintainability) which are able to define the quality of EFC equipment by qualitative and quantitative figures</p> <p>CEN ISO TS 14907-1</p>
<p>WG1.98 rationale (verification)</p> <p>a process determining that a product of each phase of the system life cycle development process fulfils all the requirements specified in the previous phase</p> <p>CEN ISO TS 17574</p>
<p>WG1.99 receipt</p> <p>confirmation of the reception and acceptance of data relevant for fee collection, issued by the Service Provider and sent to the OBE</p> <p>ISO TS 17575</p>
<p>WG1.100 record</p> <p>information collected at the OBE as an action and stored for later use</p> <p>ISO TS 17575</p>
<p>WG1.101 reliability</p> <p>an attribute of any system that consistently produces the same results, preferably meeting or exceeding its specifications</p> <p>CEN ISO TS 17574</p> <p>ability of a device to perform its intended function under given conditions of use for a specified period of time</p> <p>CEN ISO TS 14907-1</p>
<p>WG1.102 responsibility</p> <p>the state of being responsible, accountable, or answerable, as for an entity, function, system, security service or obligation</p> <p>CEN ISO TS 17574</p>
<p>WG1.103 roadside equipment (RSE)</p> <p>equipment located at a fixed position along the road transport network, for the purpose of communication and data exchanges with the On-Board Equipment of passing vehicles</p> <p>CEN ISO TS 17574, CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p> <p>equipment located at a fixed position along the road transport network, allowing for the communication and data exchange with the on-board equipment</p> <p>CEN ISO TS 14907-1</p> <p>equivalent to Transport service Provider Equipment in those charging point where DSRC is used for communication between the On-Board Equipment and Transport service Provider Equipment, e.g. in a traditional toll station</p> <p>CEN ISO TS 17573</p>

English terms and definitions	
WG1.104 roadside unit (RSU)	<p>DSRC part of the Roadside Equipment whose functionality is to communicate and exchange data with vehicles passing the charging point</p> <p>CEN ISO TS 17573</p>
WG1.105 sector	<p>information locating an area on the surface of the earth and allowing the OBE in a vehicle entering this area to establish associations to entities providing information relevant for EFC in this area</p> <p>ISO TS 17575</p>
WG1.106 sector manager	<p>entity responsible for a sector</p> <p>ISO TS 17575</p>
WG1.107 secure application module (SAM)	<p>a module intended to contain algorithm(s), related keys, security procedures and information to protect an application in such a way that unauthorised access is not possible; this can be achieved through physically, electrically and logically protection of the module</p> <p>CEN ISO TS 17574</p>
WG1.108 security policy	<p>a set of rules that regulate how to cope with security threats or what degree of security levels should be kept</p> <p>CEN ISO TS 17574</p>
WG1.109 security target	<p>a set of security requirements and specifications to be used as the basis for evaluation of an identified TOE</p> <p>CEN ISO TS 17574</p>
WG1.110 security threat	<p>a potential action or manner to violate security systems</p> <p>CEN ISO TS 17574</p>
WG1.111 segment	<p>information locating an area on the surface of the earth around the border between two neighbouring sectors</p> <p>ISO 17575</p>
WG1.112 service (EFC)	<p>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</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>

English terms and definitions	
WG1.113 service terms	ISO TS 17575
WG1.114 service primitive (communication)	<p>elementary communication service provided by the Application layer protocol to the application processes</p> <p>NOTE The invocation of a service primitive by an application process implicitly calls upon and uses services offered by the lower protocol layers.</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.115 service provider (EFC)	<p>operator that accepts the user's payment means and in return provides a road-use service to the user</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p> <p>entity operating CE with the responsibility for the fee collection in a context</p> <p>ISO TS 17575</p> <p>person, company, authority or abstract entity offering a service to the User for which the user has to pay a fee (the fee can in some cases be zero, e.g. emergency vehicles)</p> <p>CEN ISO TS 17574, ENV ISO 14904</p>
WG1.116 session	<p>exchange of information and interaction occurring at a specific EFC station between the Roadside Equipment and the user/vehicle</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.117 settlement	<p>transfer of funds from one Operator to another according to the Clearing rules</p> <p>ENV ISO 14904</p>
WG1.118 signature (digital)	<p>data appended to, or cryptographic transformation of, a data unit that allows the recipient of the data unit to verify and prove the origin and integrity of the data unit</p> <p>ISO TS 17575</p>
WG1.119 simulation	<p>simulation is the representation of selected behavioural characteristics of one physical or abstract system by another system</p> <p>CEN ISO TS 14907-1</p>
WG1.120 simulation of an EFC system	<p>in a simulation of an DSRC-based EFC system, selected behavioural characteristics of the EFC system are represented by a computer model to enable the testing of the EFC equipment in a realistically modelled environment</p> <p>CEN ISO TS 14907-1</p>

English terms and definitions	
WG1.121 system architecture	<p>an overall description of an Electronic Fee Collection system incorporating the main elements, the main interfaces and the main functions of the system</p> <p>CEN ISO TS 17573</p>
WG1.122 target of evaluation (TOE)	<p>information security product or system for the subject of security evaluation</p> <p>CEN ISO TS 17574</p>
WG1.123 technical interoperability	<p>capability of different sets of equipment to work together through interconnection, co-ordinated execution or sharing of resources</p> <p>CEN ISO TS 17573</p>
WG1.124 test	<p>technical operation that consists of the determination of one or more characteristics of a given product, process or device according to a specified procedure</p> <p>CEN ISO TS 14907-1</p>
WG1.125 test parameter	<p>one or more test parameter which are able to specify one or more characteristics of an EFC system</p> <p>CEN ISO TS 14907-1</p>
WG1.126 test procedure	<p>specific procedure for performing a test</p> <p>CEN ISO TS 14907-1</p>
WG1.127 test status	<p>indication of the nature of a test. Conditional: A test labelled 'conditional' shall be subject to testing if and only if it is a feature of the system or component according to the specification. Basic: A test labelled 'basic' indicates a highly recommended test as part of a foundation for meaningful evaluation</p> <p>CEN ISO TS 14907-1</p>
WG1.128 test type	<p>kind of test, e.g. inspection, simulation, lab-test and field test</p> <p>CEN ISO TS 14907-1</p>
WG1.129 test house	<p>third party by a person or body that is recognized as being independent of the parties involved, as concerns the issue in question</p> <p>CEN ISO TS 14907-1</p>

English terms and definitions	
WG1.130 tester	<p>combination of equipment and processes which is able to perform conformance tests according to this Technical Specification</p> <p>CEN ISO TS 14907-2</p>
WG1.131 token	<p>information representing a specific amount of funds which is guaranteed to be paid for fees based on contracts</p> <p>ISO TS 17575</p>
WG1.132 toll collection system	<p>the equipment and functions enabling the collection of a fee for the use of road infrastructure</p> <p>CEN ISO TS 17573</p>
WG1.133 toll data	<p>context specific data to be downloaded to an OBE, used to invoke a particular behaviour of this OBE</p> <p>ISO TS 17575</p>
WG1.134 toll data provider	<p>entity providing the toll data to the OBE</p> <p>ISO TS 17575</p>
WG1.135 toll plaza	<p>see Charging point</p> <p>CEN ISO TS 17573</p>
WG1.136 toll station	<p>see Charging point</p> <p>CEN ISO TS 17573</p>
WG1.137 transaction	<p>communication service used by the EFC application at associated instances of OBE and CE for the exchange of data in combination with the processing of these data at the receiving entity</p> <p>ISO 17575</p> <p>whole of the exchange of information between the Roadside Equipment and the On-Board Equipment necessary for the completion of an EFC operation over the DSRC</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.138 transaction counter	<p>data value in the on-board unit that is incremented by the roadside equipment at each transaction</p> <p>prEN 15509</p>

English terms and definitions	
WG1.139 transaction model	<p>functional model describing the general structure of Electronic Payment Fee Collection transactions</p> <p>CEN ISO TS 14907-2, EN ISO 14906, prEN 15509</p>
WG1.140 transport service	<p>road transport facility provided by a Transport Service provider; normally a type of infrastructure, e.g. a toll road or a road network inside a toll ring; the use of which is offered to the User for which the User is requested to pay</p> <p>CEN ISO TS 17573</p>
WG1.141 transport service provider	<p>person, company, authority or abstract entity offering a transport service to the User for which the user has to pay a fee (the fee will in some cases be zero, e.g. emergency vehicles)</p> <p>CEN ISO TS 17573, prEN 15509</p>
WG1.142 transport service provider equipment	<p>all equipment installed at the Charging point being used for EFC, e.g. communication equipment, classification systems, vehicle detection systems and signs and signals to the User</p> <p>CEN ISO TS 17573</p>
WG1.143 trusted third party	<p>entity who might be responsible for operation monitoring, system and security assessment (including security key management) as well as granting licences</p> <p>ENV ISO 14904, CEN ISO TS 17573</p>
WG1.144 type approval	<p>approval based on conformity testing on the basis of one or more specimens of a product representative of the production</p> <p>CEN ISO TS 14907-1</p>
WG1.145 use case	<p>abstraction of similar and closely connected scenarios where a scenario is a typical interaction between one or more actors and the EFC system</p> <p>EXAMPLE Fee collection at the Charging point.</p> <p>CEN ISO TS 17573</p>
WG1.146 use case diagram	<p>graphical model that shows the relationships among the actors and the use cases</p> <p>CEN ISO TS 17573</p>

English terms and definitions

WG1.147

user (client, customer, consumer)

entity that uses services provided by the Service Provider according to the terms of the Contract expressed by the Payment Means; the User receives and reloads the electronic Payment Means through the Collection Agent

CEN ISO TS 17574, ENV ISO 14904

entity that uses transport services provided by the Service Provider according to the terms of a Contract

CEN ISO TS 14907-2, EN ISO 14906, prEN 15509

entity that uses a transport service provided by the Transport Service Provider according to the terms of an agreement; the user may also be described as the subscriber of an EFC contract, the vehicle owner and the driver in those cases where these are not the same person or company

CEN ISO TS 17573

WG1.148

user equipment

any equipment held by the User enabling him to communicate with the collection agent updating his service rights, e.g. with a PC and a modem

CEN ISO TS 17573

WG1.149

validation

confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled

CEN ISO TS 14907-1

WG1.150

validity

the quality or state of being valid; having legal force

CEN ISO TS 17574

WG1.151

verification

confirmation by examination and provision of objective evidence that specified requirements have been fulfilled

CEN ISO TS 14907-1

WG1.152

virtual gantry

charge object consisting of two quadrilaterals with a common edge

ISO TS 17575

WG1.153

zone

charge object with the shape of a connected area

ISO TS 17575

Table 2 – Conclusions outgoing from the table 1

	Number	Percentage
Total of terms	153	100 %
Terms with no definition	1	0,65 %
Terms with 1 definition	129 (106/23)	84,35 %
Terms with more than 1 definition	23	15 %

The table 2 demonstrates the real workload of the decision-making process when commenting relevant part of a terminology standard draft. 85 % of the European terminology has already been harmonized (due to uniqueness of a term (106 terms) or conformance of a term definitions within several standards (23 terms)). 70 % of the terms are unique, 15 % are in conformance (harmonized) and 15 are non-conformant (subject of harmonization process, those in yellow fields within the table 1).

Working group 1 represents an active working group within the committee that has provided and approved several standards or technical specifications and might be identified, for the purposes of this analysis regarding its terminology, as a reference WG. From this point of view such a harmonization process that would be applied on the terminology of CEN TC 278 (approximately 10 working groups) is to consist of 230 terms and their definitions only, the rest would be added unaffected.

CONCLUSIONS

- **The Czech proposal consists in different terminology work**, there is no connection with ISO 25106 and its aim is harmonized European terminology within a European standard;
- **Real workload represents approximately 15 %** of the overall terms and definitions, the rest has already been harmonized within the relevant standards and so it can be used as it is;
- After creating such a standard there will be **a tool of a referencing document** for standard developers;
- **Revision of the standard** is to be made in five-year term **by simple addition** of the terms and definitions that have already been approved in CEN TC 278 standards;
- The analysis provides arguments for **activating a new work item**, the terminology to consider represents only a small part of the total terminology volume;
- **The European terminology standard assures the use of harmonized terminology** when developing ITS standards.