



CEN/TC278/WG1 & ISO/TC204/WG5 Status report to CEN/TC278 August 2012

Jesper Engdahl

Jesper Engdahl, WG Convenor
Rapp Trans AG
Hochstrasse 100
CH-4018 Basel, Switzerland
Phone: +41 61335 78 53
e-mail: jesper.engdahl@rapp.ch

Johan Hedin, WG Secretary
Hybris Konsult AB
Ormbergsvägen 16
S-117 67 Stockholm, Sweden
Phone: +46 8 658 15 25
e-mail: johan.hedin@hybris.se

Overview of work items under development (1)

Architecture and technology independent

- FprCEN ISO/TS 17444-1 **Charging performance – Part 1: Metrics** (CEN WI 273, WI adopted in Feb 2011, TC278 N2430; ISO NP adopted in 2011-08, TC204 N2830)
- prCEN/TS 17444-2 **Charging performance – Part 2: Examination framework** (CEN WI 328, WI adopted in March 2012, TC278 N2666; ISO NP adopted in 2012-06, TC204 N2944)
- prCEN/TR **Guidelines for EFC-applications based on in-vehicle ITS Stations** (CEN WI 315, adopted in 2011-08, TC278 N2538)
- “How to apply **EFC** standards to multi-modal transport services **using common payment media**” – ISO/TR is being drafted

Overview of work items under development (2)

DSRC-based EFC

- ISO/WD-TS 16875 **Interface definition between DSRC – OBE and external in-vehicle devices** (ISO WI adopted in 2012-03, TC204 N2912)
- EN 15509 **Interoperability application profile for DSRC** (CEN WI 327, revision)

Overview of work items under development (3)

Autonomous EFC

- prCEN/TS Secure monitoring for autonomous toll systems — **Compliance checking** (CEN WI 282, adopted in 2011-08, TC278 N2539)
- prCEN/TS EFC - Secure monitoring for autonomous toll systems — **Trusted recorder** (CEN WI 338, adopted in 2012-05, TC278 N2694)

EFC application standards overview (4)

	DSRC-based EFC		EFC-tech. independent	Autonomous-EFC	
	Tests	Requirements		Requirements	Tests
Frameworks	14907-1 Test Procedures		17573 EFC Architecture 17574 Security Profiles 16439 Security Framework		
Toolboxes	14907-2 DSRC-OBUs Tests	14906 AID for DSRC-EFC 25110 AID, IC-cards 16875 Interface OBE+	12855 Info Exchange 17444-1/2 Charging Perf. Indic.	17575-1/2/3/4 AID Auto.-EFC XXXXX Sec.Mon: CC XXXXX Sec.Mon: TR	16401, etc Auto-test (4*2 parts)
Profiles	15876-1/2 IAP Test	15509 IAP for DSRC-EFC	TS XXXX IAP for Info Exchange	16331 IAP for Auto-EFC 12813 CCC for Auto-EFC 13141 LAC for Auto-EFC	13143-1/2 CCC Test 13140-1/2 LAC Test
Technical Reports		TR 16040 Urban DSRC	TR 16152 First Mount OBE TR 16092 Pre-Paid Req. TR 16219 Value Added Serv. TR XXXXX EFC on ITS stations TR XXXXX "Common payment media"		

FprCEN ISO/TS 17444-1 Charging performance – Part 1: Metrics

- **Objectives**

- Charging performance metrics for discrete and continuous charging schemes to support procurement and service level agreements

- **Scope**

- Charging performance metrics information:
 - Charge reports
 - Toll declarations
 - Billing details
 - Invoicing accuracy on the level of user accounts

- **Status**

- WI adopted in Feb 2011 (TC278 N2430)
- For TC information (TC278 N2522) and internal WG review, closing on 2011-08-31. ISO NP adopted in 2011-08 (TC204 N2830).
- CEN TC review / ISO working draft comments: TC278 N2607
- CRR (TC278 N2651)
- Draft (WG N1572) submitted in 2012-02 for CEN FV / ISO DTS ballot
- **FV / DTS period closes on 2012-09-21**

- Drafting is supported by PT134

prCEN ISO/TS 17444-2 Charging performance – Part 2: Examination framework

- **Objectives**
 - Charging performance evaluation and monitoring for discrete and continuous charging schemes to support procurement and service level agreements
- **Scope**
 - Definition of the methods (data collection, processing...) to support the evaluation and monitoring of the Charging performance metrics defined in part 1
- **Outside the scope**
 - Specific numeric performance bounds, or average or worst-case error bounds in percentage or monetary units
 - Evaluation of the expected performance of a system based on modelling and measured data from trial at another place
- **Status and target**
 - CEN WI adopted in March 2012 (TC278 N2666)
 - ISO NP letter ballot, replies by 2012-05-28 (TC204 N2909)
 - **Parallel "TC review" (TC278 N2714) closes on 2012-09-21**
 - CEN FV / ISO DTS ballot: 2013-02
- Drafting is supported by PT134

prCEN TR WI 278315 Guidelines for EFC-applications based on in-vehicle ITS stations

- **Objective :**

- Assessment of the technical and operational feasibility of using a generic ITS Station @ ETSI EN 302 665 "ITS - Com arch" for EFC applications

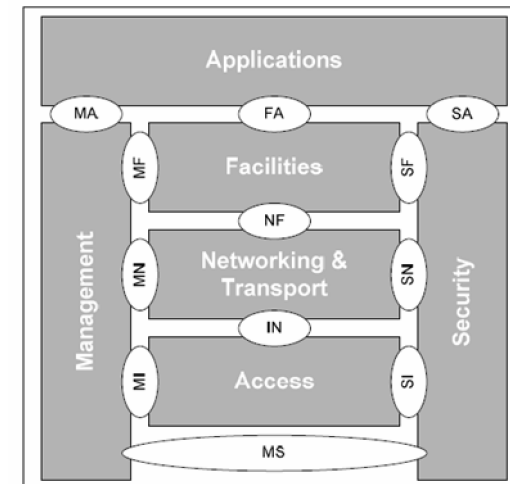
- **Scope**

- Comparison of the ITS and EFC architectures
- Core requirements for operation of an EFC app on an ITS Station
- Potential synergies between EFC and ITS applications
- Requirements for the ITS Station to support EFC apps
- Recs on standards needed to support deployment of or actions to reduce barriers for deployment of EFC applications on an ITS Station

- **Status and target**

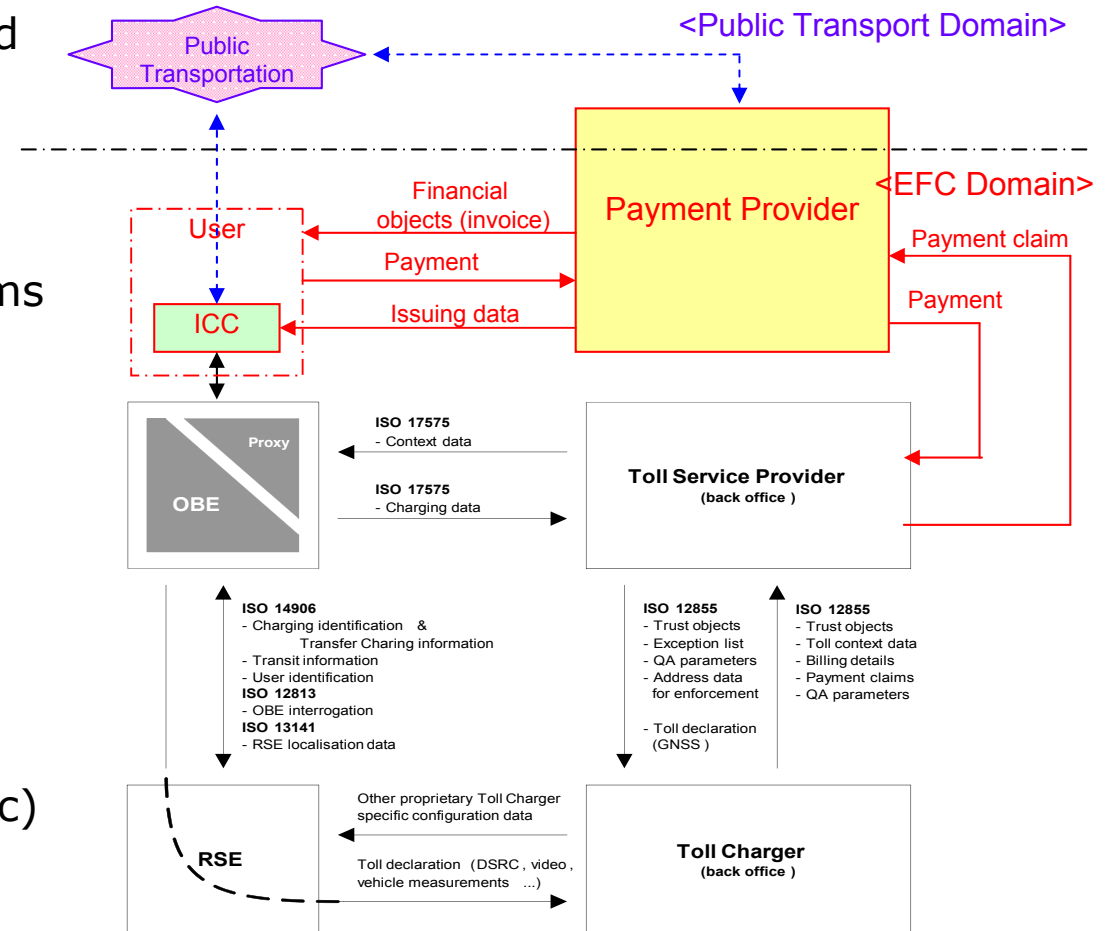
- WI adopted in 2011-08 (TC278 N2538)
- TC review: 2012-10
- FV: 2013-04

- Drafting is supported by PT136



How to apply EFC standards to multi-modal transport services using common payment media

- **Objective and scope**
 - Assess the need to extend the EFC standards suite (e.g. ISO 17573 and EN ISO 12855) to provide a suitable support for on-board account EFC systems
 - Assess the need for a standardised interface between EFC and other transport services, e.g. public transport



- **Status and target**
 - ISO/TR is being drafted
 - "TC review": 2013-02 (tbc)
 - DTR: 2013-07 (tbc)

ISO/WD-TS 16785 - Interface definition between DSRC-OBE and external in-vehicle devices

- **“Interface definition between DSRC-OBE and external in-vehicle devices”**
 - Idea originating from Japan (editorial support from Korea, Singapore ...)
 - DSRC-based OBU that might be combined with external devices (GNSS, cellular etc)
 - Scope: To define the interface between DSRC based OBE and external unit to cope with diversified tolling schemes
- **Status and target**
 - PWI TS adopted in Nov 2010 (TC204 N2674, Nov 2010)
 - Latest working draft (WG N1547)
 - **ISO TS WI adopted in March 2012 (N2912, NP letter ballot result)**
 - “TC review”: 2013-02
 - ISO DTS ballot: 2013-07

EN 15509 Interoperability application profile (IAP, rev)

- **Objectives**

- Interoperability, equipment compatibility, best industry practice
- Support the European EFC Directive (2004/52/EC)

- **Scope**

- DSRC requirements
- EFC functions and data, security and ICS proforma

- **Status and target**

- Result of review enquiry (TC278 N2556, 2009-09)
- Decision to revise 15509 (TC278 Res 025-2011)
- **CEN Enquiry: draft (WG N1627; CRR TC N2709) submitted in 2012-07**
- Draft ready for FV: 2013-04

prCEN/TS WI 278282 “Secure monitoring for autonomous toll systems – Compliance checking”

- **Objective**

- Support for the Toll Charger to check the trustworthiness of the toll declarations from the Toll Service Provider whilst respecting the privacy of the user

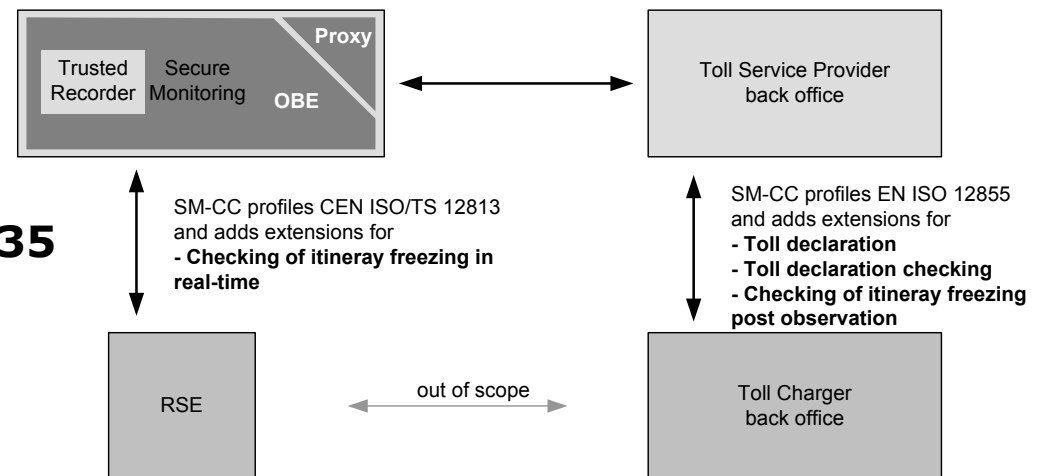
- **Scope**

- Secure monitoring concept and stake holder reqs
- Transactions and data
- Using whenever possible existing standards (CEN/ISO TS 12813, EN CEN/ISO 12855, CEN/ISO TS 17575-1...)

- **Status and target**

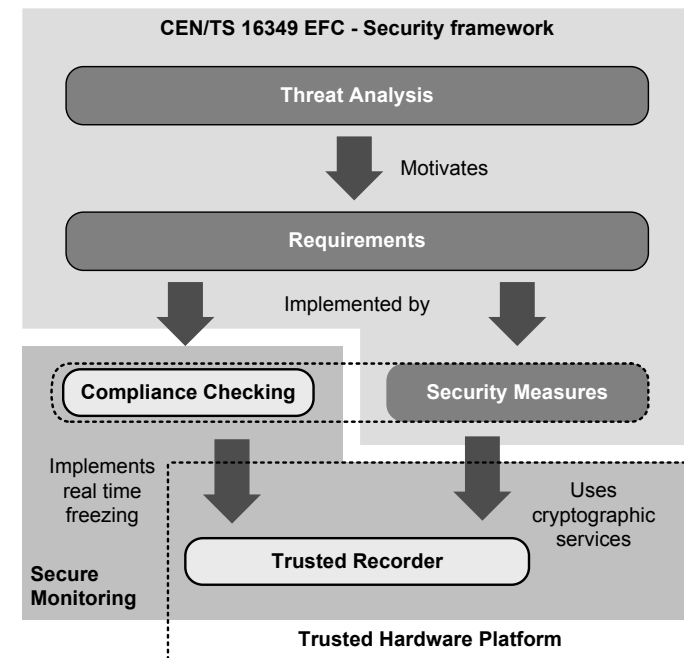
- CEN WI adopted in 2011-08 (TC278 N2539)
- TC review: 2012-10
- FV: 2013-04

- **Drafting is supported by PT135**



prCEN/TS WI 278338 "Secure monitoring for autonomous toll systems – Trusted recorder"

- **Objective**
 - Support for the Toll Charger to check the trustworthiness of the toll declarations from the Toll Service Provider whilst respecting the privacy of the user
- **Scope**
 - Secure monitoring concept and stake holder reqs
 - Transactions and data
 - Using whenever possible existing standards (CEN/ISO TS 12813, EN CEN/ISO 12855, CEN/ISO TS 17575-1...)
- **Status and target**
 - CEN WI adopted in 2012-05
 - TC review: 2013-02
 - FV: 2013-07
- **EC grant 2012-21 being signed**



Miscellaneous (1)

- **CEN/TS 16439 EFC – Security framework**
 - Approved in 2012-08 (TC278 N2715), 22 NSBs approved, AFNOR disapproved
- **CEN ISO/TS 25110 EFC - Interface definition for on-board account using ICC on-board account using ICC**
 - SR closed on 2012-03-15; 11 confirmed the TS, 1 with minor corrections (TC204 N2914)
 - **Draft for ISO DTS / CEN FV submitted in 2012-07**
- **Ideas for future work**
 - **Profile standard for EN ISO 12855** “Information exchange between Service provision and Toll charging”; a questionnaire (TC278 N2655) circulated to collect stakeholders’ requirements and experiences. 12 responses received. NWI proposal is being drafted
 - Potentially “Framework to support **suitability for use assessment**”

Miscellaneous (2) QA - Initial thoughts

- **Current situation**

- Room for improvement
- Importance of QA grows with the number of EFC standard compliant systems and published standards

- **Needs (WG N1583)**

- Ensure harmonised definitions of terms across the ITS/EFC suite of standards
- Ensure correct ASN.1 data definitions and use of existing definitions whenever applicable
- Early identification and resolution of conflicting definitions
- Effective procedures for maintenance of our standards (corrections, extensions ...)
- Appropriate dissemination of corrections and anticipated future extensions

- **Solutions - terms and definitions**

- ISO database for standardized terms and definitions, ought to be complemented with the CEN only terms (see rec 1 on slide 19)
- Central repository of standardised EFC terms (WG N1605) - a blueprint for CEN/TC278 & ISO/TC204?

Miscellaneous (3) QA - Initial thoughts

- **Solutions - data definitions**
 - Central repository of the proposed changes and their provisional handling (WG N1606), incl maintenance of the ASN.1 modules
 - Rec to include **ASN.1 module as electronic inserts** in future ITS/EFC stds
 - Best practice and recs on how to present (EFC) data definitions – action on-going in the WG. ISO/DTR 2100 “Harmonization of ITS data concepts” will be taken into account in this review action
- **Solutions – maintenance on top-up of the formal systematic review**
 - Provisional handling of post adoption comments on published stds – WG internal repository (WG N1628)
 - Preparation of corrigenda, when appropriate
- **Do other WGs face similar challenges? WG1 is interested to exchange lessons learnt and best practice**

Miscellaneous (4)

- **Corrigenda are being prepared for**
 - CEN ISO/TS 12813
 - CEN ISO/TS 13141
 - CEN ISO/TS 17575-1 & 3
 - EN ISO 12855
 - EN ISO 14906
 - EN ISO 14816 (sent to the convenor of WG12)**predominantly correcting ASN.1 syntax errors**
- EFC stds vs 15638-6 “TARV – Regulated applications”. Recommended to align the scope of 15638 suite with the existing stds (i.e. to remove “charging”) and reuse existing ITS/EFC standardized terms and definitions, where appropriate
- **Intellectual property and patent rights** – Monitoring and initial assessment of potentially relevant new patent or patent applications (**WG N1584** and **N1616**)

Miscellaneous (4)

- EFC 2006 Grant Agreement
 - 2 ENs and 4 TS
- EFC 2007 Grant Agreement
 - 1 EN, 15 TS and 4 TRs
- **EFC 2010 Grant Agreement**
 - Security framework & Charging performance metrics (TC278 N2362)
 - Target : 3 TS - approval expected by H1/2013
- **EFC 2011 Grant Agreement (2011-38)**
 - Secure monitoring for autonomous toll systems – Compliance checking
 - Guidelines for EFC-applications based on in-vehicle ITS stations
 - Target : 1 TS and 1 TR – approval expected by mid 2014
- **EFC 2012 Grant Agreement Application (2012-21)**
 - Secure monitoring for autonomous toll systems – Trusted recorder
 - Interoperable application profiles for information exchange between Service Provision and Toll Charging
 - Coordination of PTs and support to the EC
 - **Agreement is being signed**

CEN/TC278/WG1 and ISO/TC204/WG5

Recent meetings: 27-28 June 2012, Zürich (Switzerland)

Next meetings: 16-17 October 2012, Moscow (Russia)
17 Oct joint meetings (tbc) with WGs on PT & C-ITS
23-24 January 2013, London (UK)
April 2013, Paris (tbc)
26-27 June 2013, Helsinki (Finland)
8-9 October 2013, Kobe (Japan)

Members: Australia, Austria, Canada, China, Czech Republic, Finland, France, Germany, Italy, Japan, Korea, Netherlands, Norway, Poland, Portugal, Slovenia, South Africa, Spain, Sweden, Switzerland, United Kingdom

In total **47 expert members** from 21 countries (15 CEN)

Subgroups: SG1 - Trond Foss: Info exchange, architecture, security
SG2 - Jean François Jouen: DSRC based EFC, testing
SG5 - Ian Catling: GNSS/CN based EFC

Liaisons: EC DG TREN, EC Electronic Toll Committee, ETSI ITS, CEN/WG3 & ISO/WG8, CEN WG16 & ISO /WG18, ISO/WG16, IEEE 1609, CEN/TC224/WG11

Convenor's recommendations to TC278

1. CEN/TC278 decides to encourage CEN CMC to implement a database for CEN standardized terms and definitions, analogous to ISO's (<http://cdb.iso.org>), in order to foster broad adoption of common definitions and to avoid duplications and contradictions
2. Considering the need to speed up the production process and noting ISO's recent reduction of the ISO DIS ballot from 5 months to 3 months for ISO only work items (cf. TMB Res 14/2012), CEN/TC278 requests CEN CMC to consider to reduce the CEN Enquiry from 5 months to 3 months.
3. Considering the role of satellite-based location services in intelligent transport systems applications, which are in the scope of CEN/TC278 work programme, and that the related services are standardized in CEN/TC5 on "Space" and ETSI/TC on "Satellite communication and navigation", CEN/TC278 decides to seek to establish an informative co-operation mode with these TCs.

Completed Work (1) - Architecture and technology independent

EN ISO 12855	EFC - Information exchange between service provision and toll charging (published in 2012-02)
ISO 17573	EFC - System architecture for vehicle-related tolling (published in 2010-12, replacing ISO TS 17573:2004)
CEN/TS 16439	EFC – Security framework (approved in 2012-08)
CEN ISO/TS 17574	EFC – Guidelines for security protection profiles (2nd ed published in 2009-09)
CEN TR 16092	EFC - Requirements for pre-payment systems (adopted in 2010-08, target publication date 2011-03-02)
CEN TR 16152	EFC – Personalisation and mounting of first mount OBE (published in 2011-03)
CEN TR 16219	EFC – Value added services based on EFC on-board equipment (published in 2011-07)
CEN ITR	Integration of payment systems for transport services (CEN/TC278 N278, 1994-03-17)
CEN ITR	Definition of Threats and Security Controls for the Charging Interface in Electronic Fee Collection (CEN/TC278 N780, 1997-10)

Completed Work (2) – DSRC-based EFC

EN ISO 14906	EFC - application interface definition for DSRC (3rd edition published in 2011-10)
CEN ISO/TS 14907	EFC - Test procedures user and fixed equipment Part 1: Description of test procedures (3rd ed published in 2010-06) Part 2: Conformance test for the onboard unit application interface (2nd ed in 2011-11)
EN 15509	EFC - Interoperable application Profile for DSRC (published 2007-05)
EN 15876	EFC – Conformity evaluation of on-board and roadside equipment to EN 15509 Part 1: Test suite structure and test purposes (2010+A1:2012) Part 2: Abstract test suite (published 2011-04)
CEN ISO/TS 25110	EFC - Interface definition for on-board account using ICC (approved in 2008-10)
CEN TR 16040	EFC - Requirements for urban DSRC systems (published in 2010-06)
CEN ITR	AFC requirements for DSRC (CEN/TC278 N318, 1994-08)
CEN ITR	EFC - Requirements for Integrated Circuit Cards (CEN/TC278 N779, 1997-10)

Completed Work (3)

Autonomous and support for autonomous EFC systems

- CEN ISO/TS 17575** EFC - **Application interface definition for autonomous systems**
- Part 1: **Charging** (published in 2010-06)
 - Part 2: **Communication and connection to the lower layers** (published in 2010-06)
 - Part 3: **Context data** (published in 2011-04)
 - Part 4: **Roaming** (published in 2011-04)
- CEN/TS 16331** EFC – **Interoperable application profiles for autonomous systems** (published in 2012-03)

Completed Work (4)

Autonomous and support for autonomous EFC systems

CEN ISO/TS 16407 EFC – Evaluation of equipment for conformity to CEN ISO / TS 17575-1

Part 1: Test suite structure & test purposes (published in 2011-10)

Part 2: Abstract test suite (published in 2012-03)

CEN ISO/TS 16401 EFC – Evaluation of equipment for conformity to CEN ISO / TS 17575-2

Part 1: Test suite structure & test purposes (published in 2012-03)

Part 2: Abstract test suite (published in 2012-03)

CEN ISO/TS 16410 EFC – Evaluation of equipment for conformity to CEN ISO / TS 17575-3

Part 1: Test suite structure & test purposes (published in 2011-10)

Part 2: Abstract test suite (published in 2012-03)

CEN ISO/TS 16403 EFC – Evaluation of equipment for conformity to CEN ISO / TS 17575-4

Part 1: Test suite structure & test purposes (published in 2012-03)

Part 2: Abstract test suite (published in 2012-03)

Completed Work (5)

Autonomous and support for autonomous EFC systems

- CEN ISO/TS 12813** EFC - **Compliance check communication** (Published in 2009-11)
- CEN ISO/TS 13143** EFC - **Evaluation** of on-board and roadside equipment for conformity to **CEN ISO/TS 12813**
Part 1: **Test suite structure and test purposes** (published in 2011-04)
Part 2 : **Abstract test suite** (published in 2011-05)
- CEN ISO/TS 13141** EFC – **Localisation augmentation communication** (published in 2010-02)
- CEN ISO/TS 13140** EFC - **Evaluation** of on-board and roadside equipment for conformity to **CEN ISO/TS 13141**
Part 1: Test suite structure and test purposes (published in 2011-04)
Part 2: Abstract test suite (published in 2012-03)
- CEN ITR** Application **requirements** for EFC systems based on **GNSS/CN** (CEN/TC278 N798, 1997-11)