



CEN/TC278/WG1 & ISO/TC204/WG5 Electronic Fee Collection (EFC) Status report to ISO/TC204 April 2013

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Updated by Johan Hedin (acting convenor)

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Overview of work items under development (1)

Architecture and technology independent

- 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)
- prCEN/TS **Interoperable application profiles for information exchange between Service Provision and Toll Charging** (“IAP for info exchange between SP and TC”, CEN WI 348, adopted in 2013-01, TC278 N2817)
- “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)

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 Secure monitoring for autonomous toll systems — **Trusted recorder** (CEN WI 338, adopted in 2012-05, TC278 N2694)

Overview of publications under revision/conversion

Revision:

- CEN ISO/TS **25110**:2008 Interface definition for **on-board account using ICC** (DTS-ballot closes 2013-04)
- EN **15509**:2007 **Interoperability application profile for DSRC** (CEN WI 327, revision), (FV targeted for 2013-06)
- EN ISO **12855**:2012 **Information exchange** between service provision and toll charging (ISO/TC204 res 961, 2012-10), updated draft for DIS ballot / CEN Enquiry, targeted for 2013-04

Revision and conversion into Standards, updated drafts for launching of the DIS ballots / CEN Enquiries (ISO/TC204 res 960, 2012-10), targeted for 2013-06 :

- CEN ISO/TS **17575-1**:2010 Application interface definition for autonomous systems – Part 1: **Charging**
- CEN ISO/TS **17575-2**:2010 Application interface definition for autonomous systems – Part 2: **Communication and connection to the lower layers**
- CEN ISO/TS **17575-3**:2011 Application interface definition for autonomous systems – Part 3: **Context data**
- CEN ISO/TS **17575-4**:2011 Application interface definition for autonomous systems – Part 4: **Roaming**
- CEN ISO/TS **12813**:2009 **Compliance check** communication for autonomous systems
- CEN ISO/TS **13141**:2010 **Localisation augmentation** communication for autonomous systems

Proposed new revisions and amendments

Proposal for an amendment to EN ISO 14906 to be launched

- Addition EEV environmental characteristics hybrid vehicle data

Revision to start for CEN TS 16439 "Security Framework"

- Proposed to be launched in ISO as well
- Parallel joint WI as well (TS-track). NP-proposal will follow soon.

EFC application standards overview

	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		

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" closed in 2012-09 (TC278 N2777). CRR in TC278 N2841
- **Submitted for CEN FV / ISO DTS ballot in 2013-02**

- Drafting is supported by PT134

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

- **Objective :**

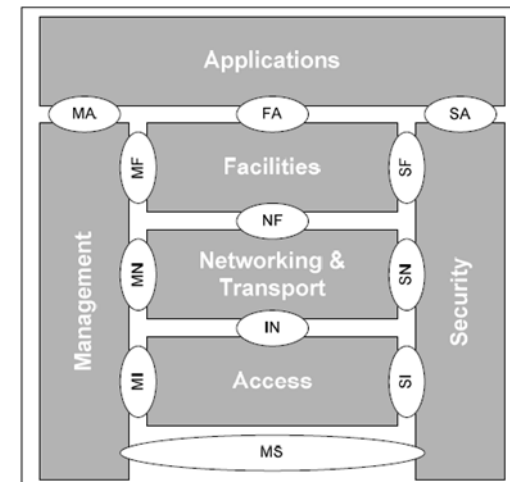
- Assessment of the technical and operational feasibility of using a generic ITS Station @ ETSI EN 302 665 "ITS - Com arch" for EFC applications

- **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)
- Working draft (WG N1654)
- **TC review (N2822) closes on 2013-04-12**
Comments welcome also from TC204 and ETSI experts (TC204 N3102)
- FV: 2013-07



- Drafting is supported by PT136

prCEN/TS IAP for information exchange between SP and TC

- **Objective :**
 - Technical interoperability support for the EFC information exchange between Service Providers (SPs) and Toll Chargers
- **Scope**
 - Interoperable application profiles (IAP) – coherent definition of specific sets of options and values provided by EN ISO 12855
- **Status and target**
 - **WI adopted in 2013-01 (TC278 N2817)**
 - TC review: 2014-02
 - FV: 2014-07
- Is dependent on an updated and stable EN ISO 12855 (WG N1676)
- **Drafting is supported by PT138**

- **“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 N1613)
 - ISO TS WI adopted in March 2012 (N2912, NP letter ballot result)
 - **Being submitted for “TC review”: 2013-03 (end date 2013-06-05)**
 - 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. Enquiry closes on 2013-03-11**
- Draft ready for FV: 2013-06

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**

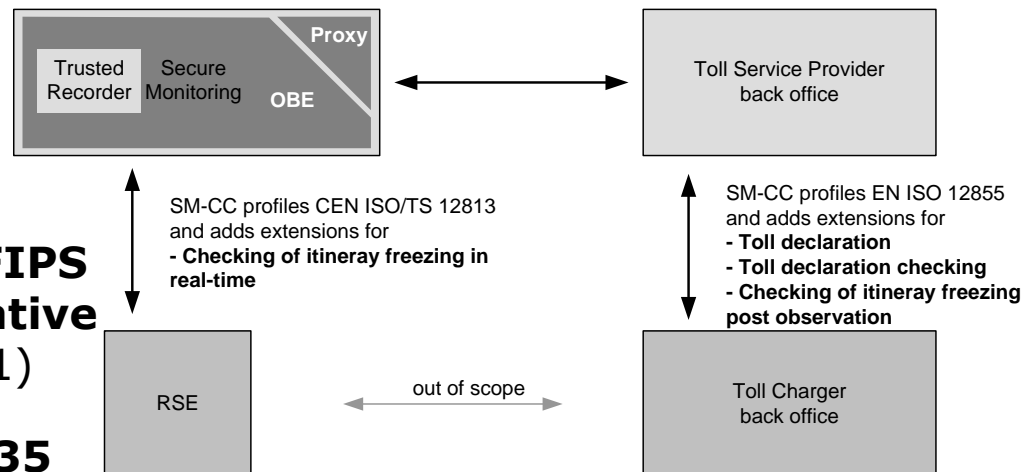
- Secure monitoring concept and stake holder reqs
- Transactions and data
- Using whenever possible existing standards (CEN/ISO TS 12813, EN CEN/ISO 12855, CEN/ISO TS 17575-1...)

- **Status and target**

- CEN WI adopted in 2011-08
- TC review completed (TC N2841, 2013-01)
- FV: 2013-06

- **Proposed TC decision to ref FIPS & IETF publications as normative** (TC N2821, deadline 2013-03-21)

- **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

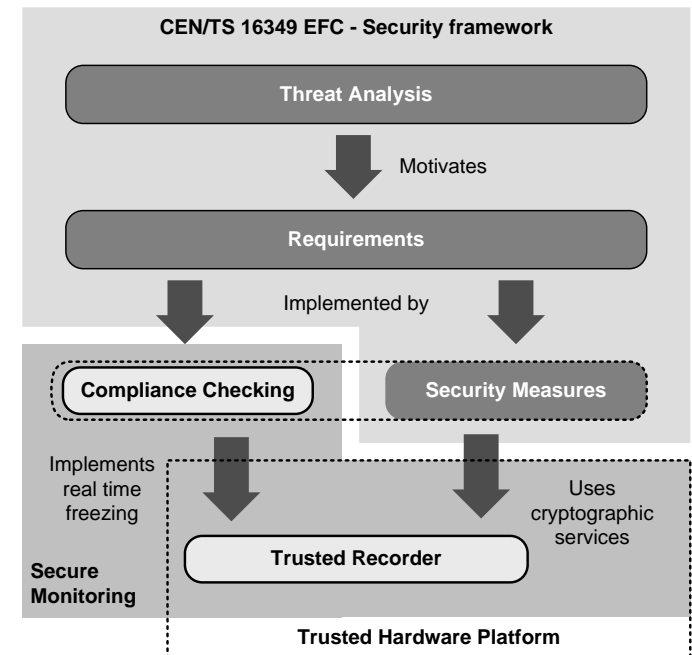
- **Scope**

- 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
- Working draft (WG N1611)
- TC review: 2013-10
- FV: 2014-04

- **Drafting is supported by PT137**



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

- **Objective and scope**

- Overall assessment of requirements and models for multi-modal transport services using on-board accounts.
- 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**

- Input to the revision of EN ISO 12855 accepted.
- Proposals for additions to ISO 17573 drafted.
- Possible ISO/TR is being considered (WG N1740)
- Possible "TC review" and DTR not known at this time.

Miscellaneous (1)

- **WG5 convenor's feedback to the proposed TC204 reorganisation (WG N1726)**
 - Comments are incorporated into TC204 N3122
- **Recently approved publication**
 - CEN ISO/TS 17444-1 EFC - **Charging performance** – Part 1: Metrics approved in ISO and CEN in 2012-10 (TC278 2776)
- **ISO DTS ballot / CEN FV**, closes on 2013-04-10
 - CEN ISO/TS 25110 EFC - Interface definition for **on-board account using ICC**
- **IS 14813-1** ITS -- Reference model architecture(s) for the ITS sector -- Part 1: ITS service domains, service groups and services: Requested **EFC-related input provided in 2013-02**

Miscellaneous (2)

- **Corrigenda for the following standards approved (published on 15 March):**
 - ISO EN 14906, Cor1:2013
 - ISO EN 12855, Cor1:2013
 - ISO/CEN TS 13141, Cor1:2013
 - ISO/CEN TS 17575-1, Cor1:2013
 - ISO/CEN TS 17575-3, Cor1:2013
- **Input with suggested improvements in TARV 15638-13 provided to WG7 on 2013-04-12.**

Miscellaneous (3) Initial QA thoughts re terms & data defs

- **Current situation**

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

- **Needs (WG N1583)**

- Ensure harmonised definitions of terms across the ITS/EFC suite of stds
- 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
- **Central repository of standardised EFC terms (TC278 N2799 & TC204 N3041)**

Miscellaneous (4) Initial QA thoughts re terms & data defs

- **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 (WG N1684)**. ISO/TR 25100:2012 "Harmonization of ITS data concepts" and ISO 14813-6:2009 "ITS ref model – Data presentation in ASN.1" taken into account in the analysis

- **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. **Cor 14906, 13141, 17575-1 & -3 and 12855 submitted in 2013-02 to ISO/TC for publication**

Miscellaneous (5)

- 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 signed in 2012-09
 - **Experts selected in 2013-02 (TC278 N2820)**

CEN/TC278/WG1 and ISO/TC204/WG5

Recent meetings: 16-17 October 2012, Moscow (Russia)
17 Oct **joint meeting with C-ITS**
23-24 January 2013, London (UK)
9-11 April 2013, Vienna (Austria)

Next meetings: 25-27 June 2013, Helsinki (Finland)
8-9 October 2013, Kobe (Japan)
15-16 January 2014, Paris (France, tbc)

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 **50+ expert members** from 21 countries (15 CEN)

Subgroups: SG1 - Wolfgang Beier: 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 TC204 (1)

- 1. Resignation of Mr. Trond Foss as convenor of WG5/SG1**
TC204 notes with regret the resignation of Mr. Foss as the convenor of WG5/SG1, effective from 2012-12-31. The TC expresses its sincere appreciation to Mr. Foss for his successful chairmanship of WG5/SG1 the past 19 years. The TC wishes Mr. Foss good fortune for the future, and hopes to enjoy his continued contributions as an expert in TC204.

TC204 Moscow WG5-related resolutions - status

Res no	Content	Status
959	ISO/TC204 resolves to launch the DTS ballot for the following work item, under CEN lead, subject to prior decision by CEN/TC278: CEN ISO/TS 17444-2 Electronic fee collection – Charging performance – Part 2: Examination framework	Updated 17444-2 and CRR (TC278 N2841) submitted to TC278 secretariat in 2013-02 for launching of the parallel CEN FV / ISO DTS ballot.
960	ISO/TC204 resolves to initiate the revision and conversion of the following work items into International Standards, and requests its WG5 to prepare updated drafts for launching of the DIS ballots / CEN Enquiries: CEN ISO/TS 17575-1: 2010, CEN ISO/TS 17575-2: 2010, CEN ISO/TS 17575-3: 2011, CEN ISO/TS 17575-4: 2011, CEN ISO/TS 12813:2009 and CEN ISO/TS 13141:2010	WG internal review as part of the updating process (WG N1672) completed in Jan 2013. WG internal comments in WG N1694-1699. Updated draft for DIS ballots / CEN Enquiries targeted for 2013-06
961	ISO/TC204 resolves to initiate the revision of the following work item, and requests its WG5 to prepare an updated draft for launching of the DIS ballot / CEN Enquiry: EN ISO 12855:2012	WG internal review as part of the updating process (WG N1672) completed in Jan 2013. WG internal comments in WG N1693. Updated draft for DIS ballot / CEN Enquiry targeted for 2013-04

WG5 room requirements for upcoming TC204 meetings

- **No WG5 meeting is scheduled to take place in conjunction with the TC204 meeting in Seattle (USA), in April 2013**
- **WG5 plans to have a WG meeting on 8-9 October 2013 in conjunction with the TC204 meeting in Kobe (Japan). Provisional meeting room needs:**
 - 8 Oct: 2 rooms (15 + 25 persons) for SG meetings
 - 9 Oct: 1 room (25 persons) for WG plenary meeting
 - Potentially a joint WG5 and WG8 meeting – to be agreed with WG8
 - WG5 would need a fixed meeting schedule for the TC204 week at latest 25 June, in order to plan for the meeting.