

2nd ETSI TC ITS Workshop, 10-12 February 2010

Co-operative ITS Systems Standardisation

**CEN TC278, ISO TC204, and ETSI TC ITS Cooperation
regarding the EC Standardisation Mandate M453**

Hans-Joachim Schade

Chair DIN/DKE GK 717

Convenor CEN TC278/WG16 and ISO TC204/WG18



TC278/WG16



TC204/WG18

Content

Co-operative ITS Systems Standardisation

- 1 Standardisation Bodies involved**
- 2 CEN/TC278 and ISO/TC204**
- 3 Co-operative Systems definition**
- 4 CEN/ISO cooperation**
- 5 Co-operative Systems standardisation: TC278/WG16 and TC204/WG18**
- 6 EC Mandate M453**
- 7 CEN/ETSI cooperation**
- 8 CEN/ISO/ETSI cooperation**

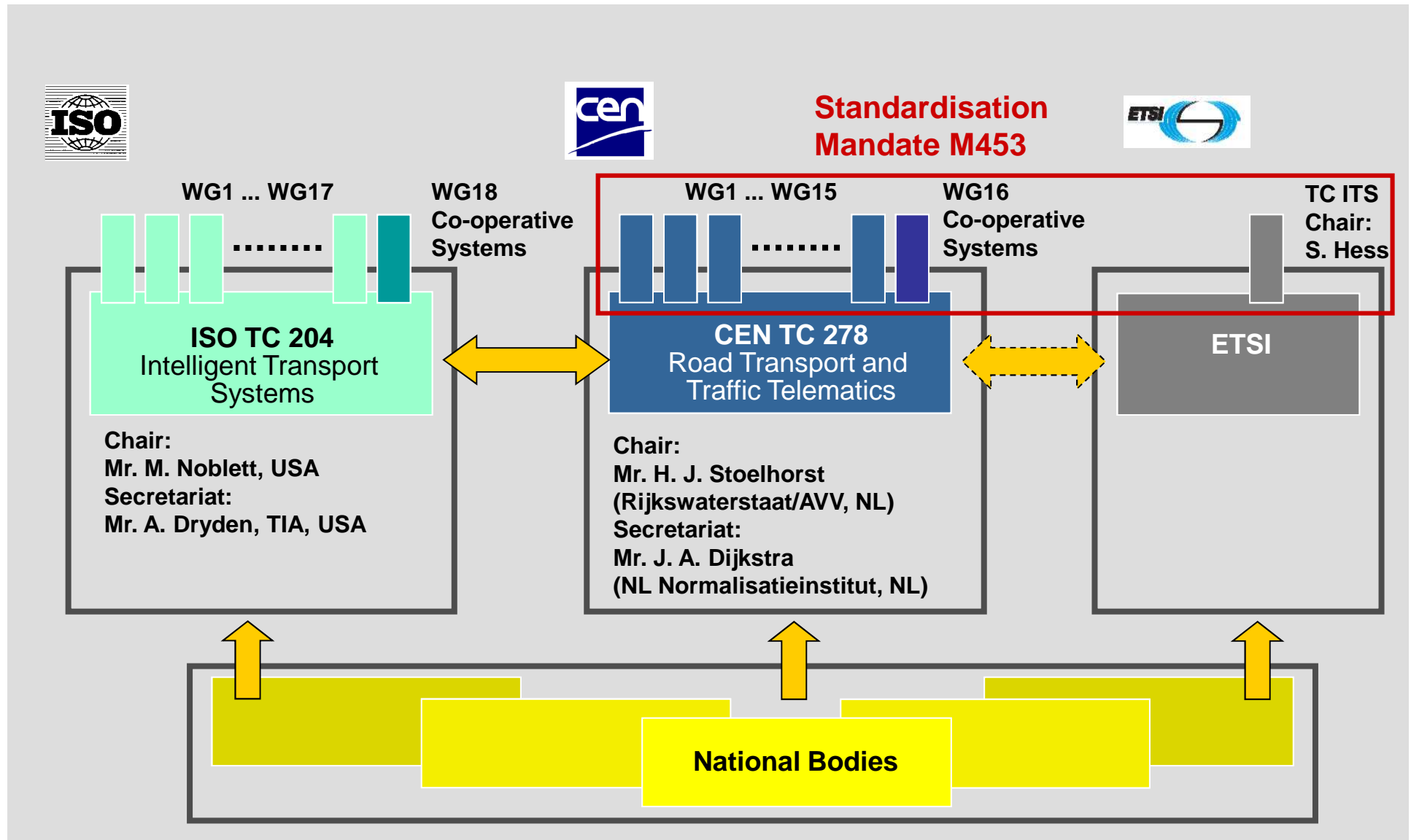


TC278/WG16



TC204/WG18

Standardisation Bodies involved and M453



CEN/TC278 Scope

CEN/TC 278 Road Transport and Traffic Telematics was established in 1991.



Its scope was then defined as follows:

"Standardisation in the field of telematics to be applied to road traffic and transport, including those elements that need technical harmonisation for intermodal operation in the case of other means of transport.

It shall support:

- vehicle, container, swap body and goods wagon identification;
- communication between vehicles and road infrastructure;
- communication between vehicles;
- in-vehicle human machines interfacing as far as telematics is concerned;
- traffic and parking management;
- user fee collection;
- public transport management;
- user information."

ISO/CEN Work Program (1)



ISO/TC204 CEN/TC278

Systems Architecture	WG1	WG 13
Data Bases	WG 3	WG 8
Automatic Vehicle Identification (AVI)	WG 4	WG 12
Electronic Fee Collection (EFC)	WG 5	WG 1
Fleet and Freight Management Systems	WG7	WG 2
Public Transport + Emergency vehicles	WG 8	WG 3
Integrated Traffic Information	WG 9	
Travel and Traffic Information Systems	WG10	WG 4
Route Guidance and Navigation Systems	WG 11	



TC278/WG16



TC204/WG18

ISO/CEN Work Program (2)



ISO/TC204 CEN/TC278

ITS Warning & Control Systems	WG14	
Short Range Communication (DSRC)	WG 15	WG 9
"Wide area" Comm. Systems	WG 16	
Nomadic Devices	WG 17	
Human Machine Interaction(HMI)	ISO TC22	WG 10
Recovery of stolen Vehicles		WG 14
eSafety	WG16	WG 15
Nomadic Devices	WG17	
ITS Co-operative Systems	WG18	WG16



TC278/WG16



TC204/WG18

CS Definition (1)

“Intelligent Transport Systems” (ITS) means applying Information and Communication Technologies (ICT) to the transport sector.

ITS can create clear benefits in terms of transport efficiency, sustainability, safety and security, whilst contributing to the EU Internal Market and competitiveness objectives.

Co-operative systems are ITS systems based on vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I, I2V) and infrastructure-to-infrastructure (I2I) communications for the exchange of information.

Co-operative systems have the potential to further increase the benefits of ITS services and applications.

EC Mandate M453

1

“Road operators, infrastructure, vehicles, their drivers and other road users will co-operate to deliver the most efficient, safe, secure and comfortable journeys. The vehicle-vehicle and vehicle-infrastructure co-operative systems will contribute to these objectives beyond the improvements achievable with stand-alone systems.”

ftp://ftp.cordis.europa.eu/pub/ist/docs/dir_c/trans/towards_coop_sys_road_trans_en.pdf

2



TC278/WG16



TC204/WG18

CS Definition (2)

“A co-operative ITS is a subset of the overall ITS that

- communicates and**
- shares information**

between ITS Stations^{*)} to

- give advice or**
- facilitate actions**

with the objective of improving

- safety, sustainability, efficiency and comfort**

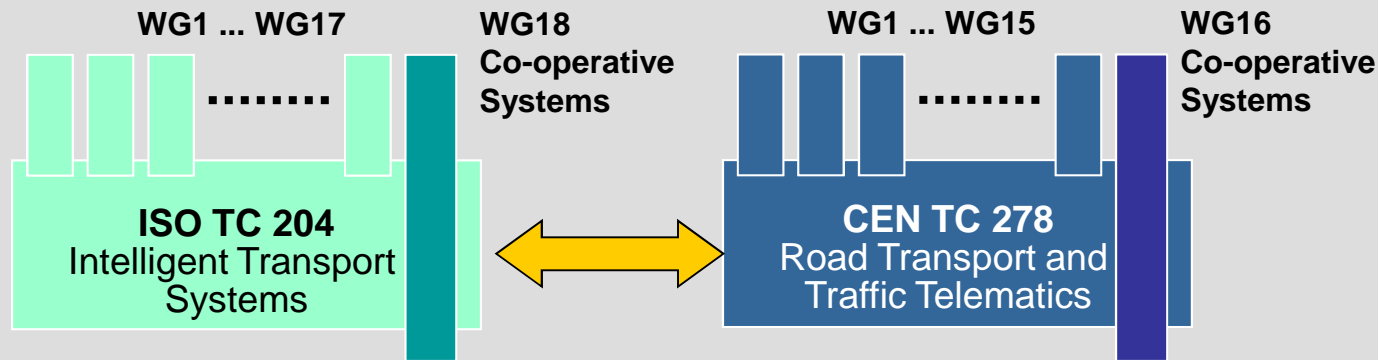
beyond the scope of stand-alone systems”

*CEN/TC278 WG 16
ETSI TC ITS*

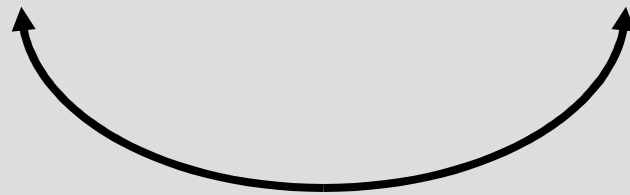
3

^{*)} ITS Station defined in ETSI EN 302 665 / ISO 21217
e. g. units installed in vehicles or at the road side

CEN/ISO cooperation related to CS (1)

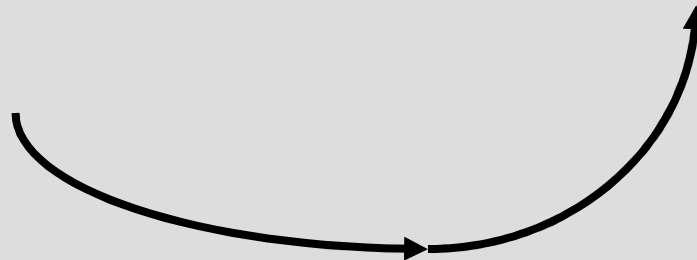


1



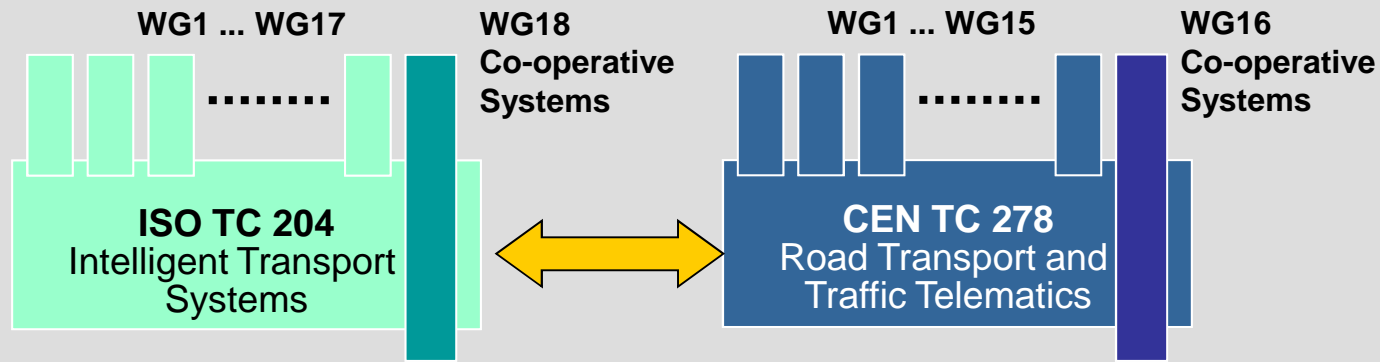
To work collaboratively to develop standards within the domain of ITS CS under the Vienna Agreement.

2



WG16 would be the lead group given that TC278 is very closely linked to the EC mandate.

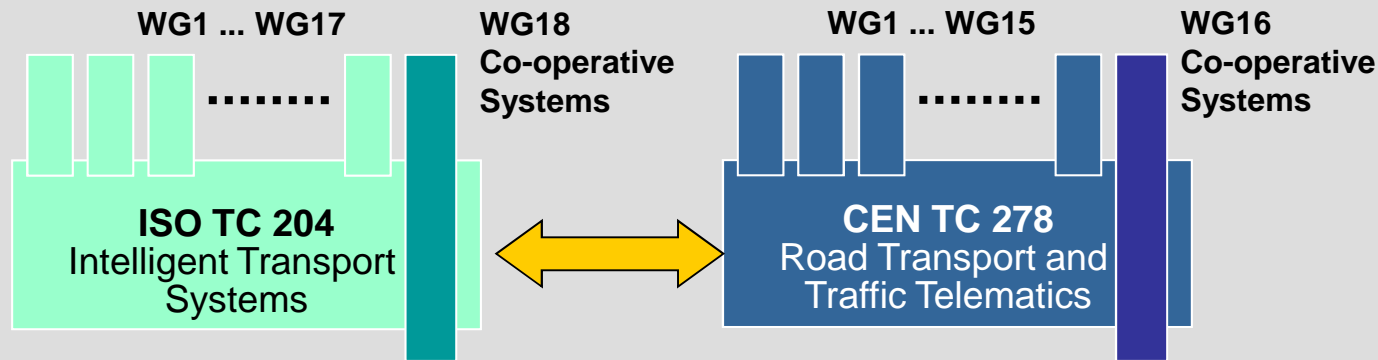
CEN/ISO cooperation related to CS (2)



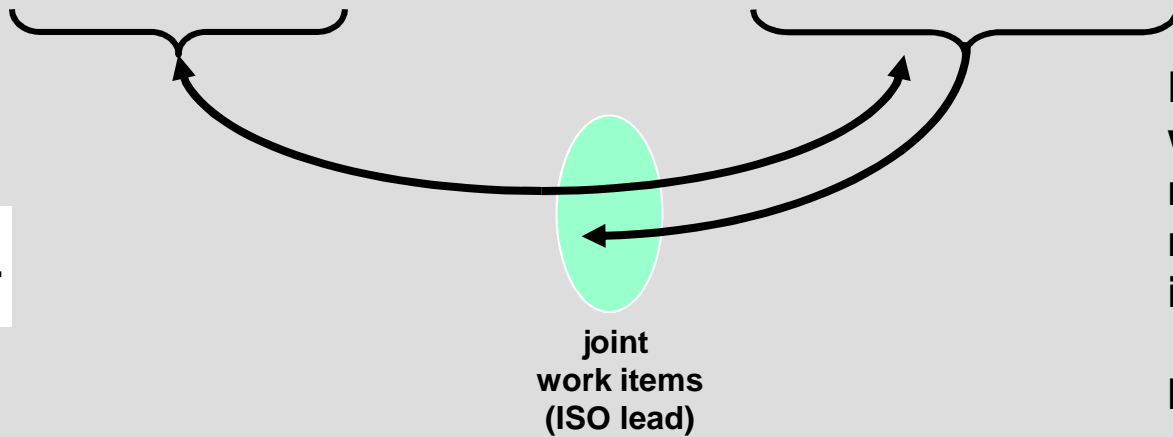
3

WG18 facilitate the interaction between CEN/TC278 and the other ISO/TC204 WGs on matters related to ITS CS.

CEN/ISO cooperation related to CS (3)



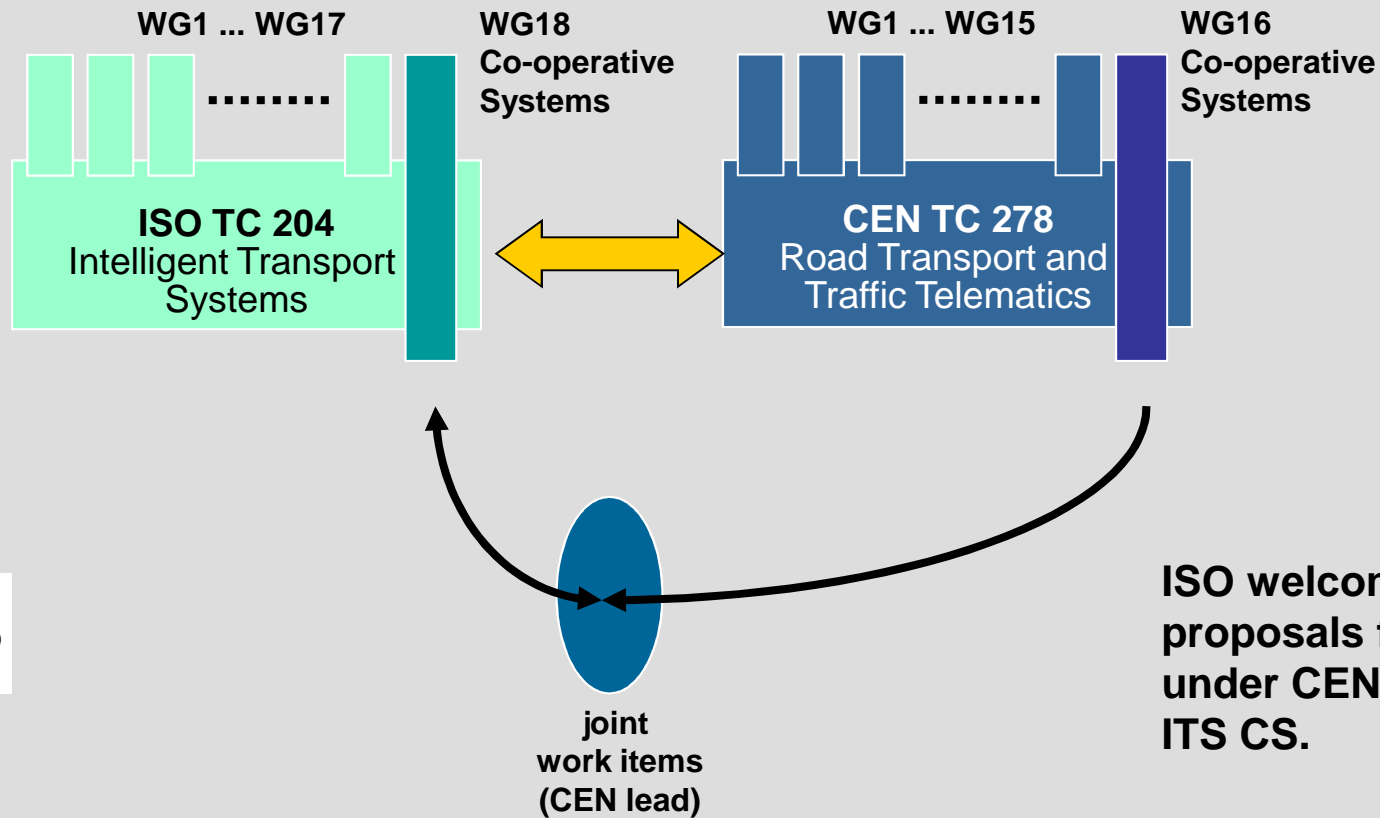
4



Existing ISO/TC204 work items and standards relating to ITS CS should be made CEN-ISO joint work items with ISO lead.

ISO/TC204 fully updates the standards and work products from the in process work items to incorporate CEN member interests.

CEN/ISO cooperation related to CS (4)



CEN TC278/WG16 and ISO TC204/WG18

... are based on the

- intended Standardisation Mandate addressed to CEN, CENELEC and ETSI in the field of ICT to support the interoperability of CS
- EU Action plan for the deployment of ITS in Europe
- experience made by the EFC working group, e. g.
 - EN/ISO 17573 (Architecture),
 - 12855 (Information Exchange),
 - and 17575 (Application interface)
- proposed ITS Station Reference Architecture, with the 6 functional building blocks



TC278/WG16



TC204/WG18

Terms of Reference

1. **Architecture with roles and responsibilities including the management level to assure interoperability**
2. **Co-operative applications and functional requirements for communications/profiles**
3. **Data exchange protocols (applications)**
4. **Information flow (functional description of data flow between ITS stations and inside one ITS station)**
5. **Information flow (technical description of data flow between ITS stations and inside one ITS station)**
6. **Network and transport layer**
7. **Access technologies**

**CEN/TC278
WG16**

**ISO/TC204
WG18
in cooperation
with other
TC204 WGs**



TC278/WG16



TC204/WG18

Preliminary Work Items

1. **WI 00278266 ITS**
Classification and management of ITS applications in a global context
 - Global object and message identification (ISO 14813-6)
 - Priority setting and management for all messages
2. **WI 00278267 ITS**
Co-operative system application messages, protocols and profiles
 - Generic messages incl. safety messages and efficiency messages
 - Definition of protocols and profiles
3. **WI 00278268 ITS**
ITS application requirements for automatic selection of communication interfaces
4. **WI 00278269 ITS**
Definition of LDM concept
 - Exchange format of messages for Local Dynamic Map
 - API for Local Dynamic Map
 - Management of Radar View and Local Dynamic Map

**CEN/TC278
WG16
and
ISO/TC204
WG18**

(Resolutions 43/15 – 43/18, 43rd CEN TC278 Plenary Meeting, London Sept.11th, 2009)



TC278/WG16



TC204/WG18

New Work Items

PWIs to support development of new Standardisation work items of CS based on European projects and other deliverables:

- 1. Evaluation of robustness of APs**
- 2. Definition of Actors, Use Cases and Services**
- 3. Evaluation of data dictionary sets**
- 4. CS Architecture (description of roles, responsibilities, etc.)**
- 5. Harmonization of concepts and terminology**

**CEN/TC278
WG16
and
ISO/TC204
WG18**

CEN TC278/WG16, Dec. 8th, 2009

EC Mandate M453: Description of the Mandated Work

CEN, CENELEC and ETSI are requested to:

- Carry out an analysis of the required European standardisation activity based on the existing roadmaps of the standardisation process for Co-operative ITS services within the European Standardisation organisations.

The analysis should:

- Include a detailed work programme
- Identify which are the potential functionalities that the new systems can supply to drivers, infrastructure providers, emergency services, public administrations, etc.

The work programme should detail the expected economic impact of these new functionalities and their requirements in terms of exchange of information and communications.

- Specify which standards have to be developed in order to implement Co-operative ITS.
- Identify which is the minimum set of standards required in the field of Co-operative systems that would ensure interoperability for V2V-, for V2I, and for I2I-communications.

This set of standards should be divided in communication-, information-, and security standards and should take into account existing work, such as DATEX (CENT TC 278 WG8)

- Develop the identified minimum set of standards contained in the work programme within the stated time schedule with the aim of creating EN's.
- Develop European standards providing test methods for assessing the conformity of the identified minimum set of standards.
- Develop the rest of the identified standards and technical specifications for Co-operative ITS.



EC Mandate M453: Execution of the Mandate

- CEN, CENELEC and ETSI shall establish co-operation mechanisms in view of achieving widest possible consensus amongst all parties concerned.
- The work programme should also take into account the world wide coordination of standardisation activity for the Co-operative ITS services.
- Within **3 months** of the date of acceptance of this Mandate ETSI, CEN and CENELEC shall present a report to the Commission with the work programme to achieve goal of completion of the standardisation process for Co-operative ITS services.
Particular attention shall be given to the involvement of all relevant parties, including public authorities, and to the working arrangements with relevant industry fora and consortia.
- Within **1 year** of the date of acceptance of this Mandate ETSI, CEN and CENELEC shall present a progress report on the achievements.
- **20 months** after the acceptance of this mandate, a comprehensive report shall be presented with the status of the on-going work and the latest available draft of the different standards.
- With finalisation of the work programme, at most **30 months** after its acceptance, a comprehensive report shall be presented with the results of mandate and the European wide and international coordination of the standardisation activities.
- ETSI, CEN and CENELEC are invited to put in place adequate monitoring mechanisms for the execution of the work.

EC Mandate M453: Bodies to be Associated

CEN, CENELEC and ETSI will invite the representative of stakeholders interested in the domain, such as:

- Organisations of consumers' interests (ANEC)
- Organisations of environmental protection (ECOS)
- Organisations of workers (ETUI-REHS)
- Organisations of small and medium-size enterprises (NORMAPME)
- Industrial and multi-stakeholders organisations active in the domain (Car2Car, eSafety forum, ERTICO)
- Toll providers organisations
- Road infrastructure operators and authorities

In order to reduce duplications of efforts, previous work performed in the domain should be taken into account, i.e., the output of projects such as CVIS, SAFESPOT, COOPERS should be taken into consideration.



CEN/ETSI Cooperation

... in the Field of Co-operative ITS Systems Standardisation

- should be based on the OSI layer model in accordance with 3-party agreement (CEN/CENELEC/ETSI) of 1993 which forms the basis of the European standardization activities in the field of RTTT
- have to recognize to CEN/TC278 as well as ETSI TC ITS-activities to date
- have to recognize the CEN/ISO cooperation and the ISO/TC204-activities to date



TC278/WG16

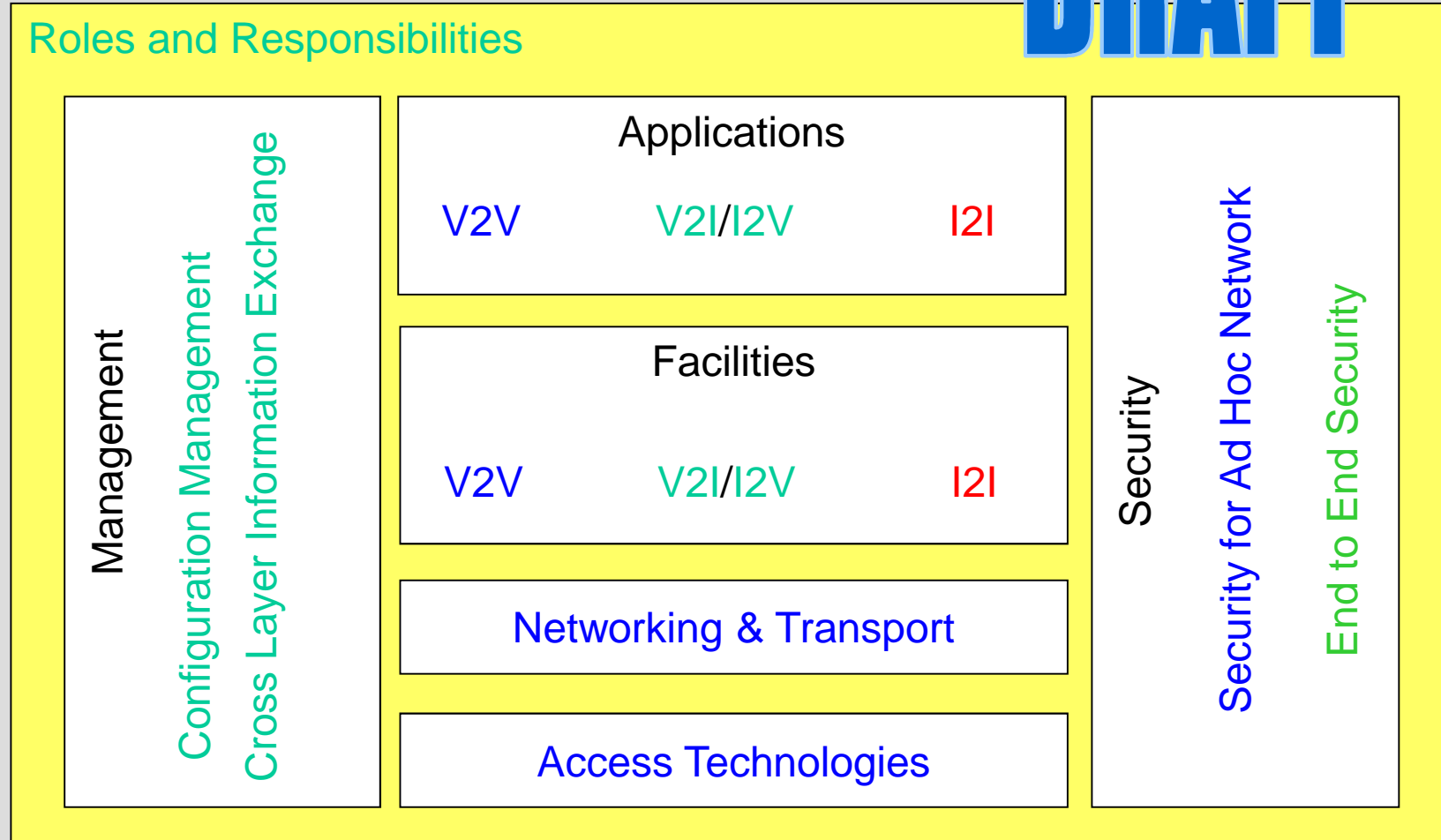


TC204/WG18

CEN/ETSI Cooperation

DRAFT

Roles and Responsibilities



Colour indication:

Work at ETSI

Work at CEN

Common Work of ETSI and CEN



TC278/WG16



TC204/WG18

CEN/ISO/ETSI Cooperation

... in the Field of Co-operative ITS Systems Standardisation

- European coordination of CS belongs to CEN;
but international harmonization is needed from the start.
The CEN/ISO mapping reflects this requirement.
- CEN TC278/WG16 takes lead on European CS interoperability including applications and facilities as well as the regional adaptation.
- ISO TC204/WG18 takes lead on global CS coordination.
- ISO TC204/WG16 takes lead on global communication and interoperability issues, that includes the communication architecture.
- ETSI TC ITS takes European lead on communication and security issues based on requirements from systems level defined by CEN TC278/WG16 and ISO TC204/WG18.
- ETSI takes global lead on formal testing procedures.



TC278/WG16



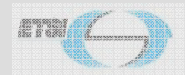
TC204/WG18

CEN/ISO/ETSI Cooperation

... in the Field of Co-operative ITS Systems Standardisation

- European coordination of CS belongs to CEN;
but international harmonization is needed from the start.
The CEN/ISO mapping reflects this requirement.
- CEN TC278/WG16 takes lead on European CS including applications and facilities.
- ISO TC204/WG18 takes lead on international CS harmonization.
- ISO TC204/WG18 takes lead on global communication and security issues that includes the communication architecture.
- ETSI takes European lead on communication and security issues based on requirements from systems level defined by CEN TC278/WG16 and ISO TC204/WG18.
- ETSI takes global lead on formal testing procedures.

Let's find the appropriate agreement soon



TC278/WG16



TC204/WG18