CEN/TC 278 PT1605

Webinar 2020-12-10

14:00 – 16:00 CET

Keep your microphones muted!

Keep your cameras switched off!

Indicate your presence in the chat box by typing your name and affiliation!

Present your questions with reference to the slide number in the chat box.

Present also your email address if you want your questions to be answered by email.

The webinar will be recorded!

Agenda

1. H.-J. Fischer:
   a. Introduction to PT 1605 and on global standardization in the ITS domain
   b. Basic principles of ITS and communications

2. T. Ernst:
   a. Functionalities of the ITS station architecture to support hybrid communications in C-ITS services

3. Questions and answers

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Introduction to PT 1605

Webinar 2020-12-10

Dr. Hans-Joachim Fischer

Mandates and Project Teams

The European Commission's mandates are tools to fund development of standards at CEN, CENELEC and ETSI.

Related to ITS standards, so far two mandates were published and are in use:

- M/453 on C-ITS, published on 6th October 2009
  answered by CEN/TC 278 and ETSI/TC ITS
- M/456 on urban ITS, published on 12th February 2016
  answered by CEN/TC 278

For such funded development of standards, CEN is using Project Teams (PT).

M/453 on C-ITS

- M/453, published on 6th October 2009
  STANDARDISATION MANDATE ADDRESSED TO CEN, CENELEC AND ETSI IN THE FIELD OF INFORMATION AND COMMUNICATION TECHNOLOGIES TO SUPPORT THE **INTEROPERABILITY OF CO-OPERATIVE SYSTEMS** FOR INTELLIGENT TRANSPORT IN THE EUROPEAN COMMUNITY
  - ✓ CEN developed a number of base standards of general applicability (https://www.itsstandards.eu/25-2/wp-5-3/)
    - PT1601: EN ISO 17419, EN ISO 17423
    - PT1602/PT1603: EN ISO 17427
    - PT1604: EN ISO 18750
    - PT1605: working on hybrid communications, cyber security for sessions and access control, and on facilities (access to sensor and control networks, position-time-velocity service)

Status of PT1605

PT1605 started work in April 2019. The end is scheduled for June 2021. Standard development is finished.

- Technical Specifications
  1. CEN/ISO TS 21177 "Secure sessions" (already published)
  2. CEN/ISO TS 21176 "Position, velocity, time facility" (already published)
  3. CEN/ISO TS 21184 "Global transport data management (GTDM) framework" (in the process of publication)
  4. CEN/TS 17496 "Communication profiles" (in the process of publication)
- Technical Reports providing guidelines on the usage of C-ITS standards
  1. CEN/ISO TR 21186-1 "Global standardisation landscape" (in the process of publication)
     - C-ITS Brochure
  2. CEN/ISO TR 21186-2 "Hybrid communications" (in the process of publication)
  3. CEN/ISO TR 21186-3 "Cyber security" (in final ballot)

PT1605 (http://its-standards.eu/PTs/PT1605/index.html) is offering a sequence of webinars. Please contact webinar@its-standards.eu.

CEN/TC 278 PT1605

Global standardization in the ITS domain

Webinar 2020-12-10

Dr. Hans-Joachim Fischer

Basics on ITS

"*Intelligent Transport Systems*" (ITS) means to apply "*Information and **Communication** Technologies*" (ICT) in the domain of surface transportation; where "surface transportation" means transportation on the ground such as done with vehicles, motorcycles, non-motorized cycles, trams, trains and also by feed (pedestrians) that can meet each other somewhere on the ground.

The term *C-ITS* indicates Cooperative behavior in ITS.

C-ITS **does not mean** a new ITS service domain!

ITS communication technologies are applicable for a very wide range of use-case domains!

Goals of standardization

The goal is to enable or facilitate service provisioning of the respective standardization domain, i.e. C-ITS services provided by ITS applications for the ITS service domains. Particularly, the purpose of standardization is manifold, aiming on e.g.:

- ✓ technical interoperability at observable interfaces;
- ✓ portability of applications, enabling e.g. online download of applications from station management centres and execution of them on different technical platforms;
- ✓ syntactical and semantical interoperability in terms of data and messages;
- ✓ minimum (/maximum) functionality from the users point of view;
- ✓ minimum performance to ensure reliable execution of use-cases;
- ✓ facilitation of implementations;
- ✓ reliable protected operations in terms of privacy and (cyber) security;
- ✓ provision of commonly agreed terms and definitions, i.e. a common language;
- ✓ commonly agreed modes of operation, i.e. work methods;
- ✓ a global market;
- ✓ prevention of vendor-lock-in;
- ✓ evidence of compliance.

Standardization at SDOs

Standard Development Organizations (SDOs) involved in global activities on Cooperative Intelligent Transport Systems (C-ITS) are:

1. ISO/TC 204 (International) – ITS in general
2. CEN/TC 278 (Europe) – ITS in general
3. ETSI TC ITS (Europe) – vehicle-centric C-ITS
4. IEEE 1609 WG (USA) – ITS for USA
5. SAE (USA) – ITS for USA

Standardization in general is the process of generating specifications by a recognized SDO, applying the principle of consensus finding prior to formal approval by voting according to the rules of the SDOs. This may be a somehow slow process compared to the development of "private" specifications.

Standards may be enabling, and thus require profiling by system specifications in order to ensure interoperability and portability of applications.

Cooperation of SDOs

CEN/TC 278	ISO/TC 204
WG1: Electronic Fee Collection (EFC)	WG5: Fee and Toll Collection
WG4: Traffic and Traveller Information (TTI)	WG10: Traveller Information Systems
WG16: Cooperative ITS (C-ITS)	WG18: Cooperative Systems (C-ITS)
WG17: Mobility Integration	WG19: Mobility Integration
WG3: Public Transport	WG1: Architecture
WG7: ITS Spatial Data	WG3: ITS Database Technologies
WG8: Road Traffic Data	WG7: General Fleet Management and Commercial / Freight
WG15: eSafety (eCall)	WG8: Public Transport / Emergency
	WG9: Integrated Transport, Management and Control
	WG14: Vehicle / Roadway Warning and Control Systems
	WG16: ITS Communications (C-ITS, DSRC)
	WG17: Nomadic devices in ITS

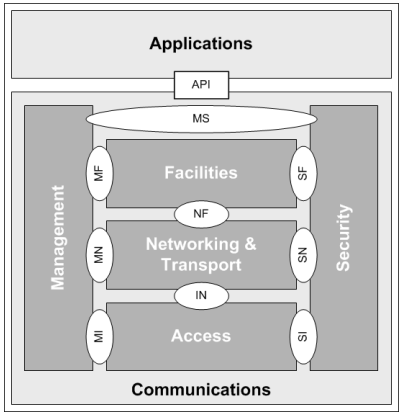
CEN and ISO are the major "advocates" for ITS, and partly cooperate under the "Vienna Agreement" to produce CEN/ISO deliverables.

Working Groups (WGs) are "dynamic" elements in a TC developing standards in a specific technical field.

Areas and categories

TR 21186-1 and the related *C-ITS Brochure* introduce the concepts of "standardization areas" and "standardization categories" to classify standard deliverables.

A-1: System level issues
A-2: Station architecture
A-3: ITS applications, messages, data
A-4: Station management
A-5: Security
A-6: Access layer technologies
A-7: Network and transport layer technologies
A-8: Facility layer technologies
A-9: Protocol stack / cross-layer



Most of the areas map to the entities and layers of the ITS station and communication architecture

C-1: Preparatory investigations
C-2: Functional requirements
C-3: Use cases
C-4: Data and messages
C-5: Protocols
C-6: Profiles
C-7: Testing
(C-8: Regulations)
(C-9: Registries)
C-10: Tutorials and guidelines
C-11: Reports
(C-12: Research)
C-13: Process

Evaluation of standards

Just one example how standards are presented in TR 21186-1:

Reference:	Latest edition:	Other editions:	SDO:	Status:	Standard area	Standard category
ISO 21217 [38]	2	None	ISO	Published	A-2	C-2

Description:
Describes the communications reference architecture of nodes called "ITS station units" designed for deployment in intelligent transport systems (ITS) communication networks.

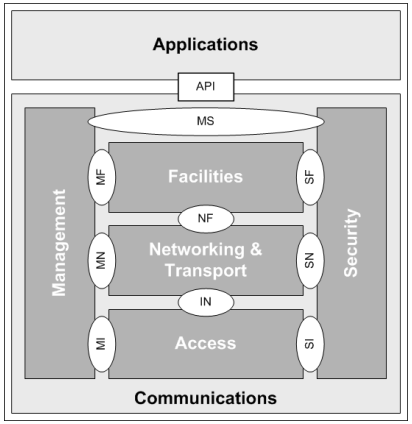
Describes the various communication modes for peer-to-peer communications over various networks between ITS communication nodes. These nodes can be ITS station units as described in ISO 21217 or any other reachable nodes.

Specifies the minimum set of normative requirements for a physical instantiation of the ITS station based on the principles of a bounded secured managed domain.

Comments:
Edition 2 (2014) includes EN 302 665 [78].

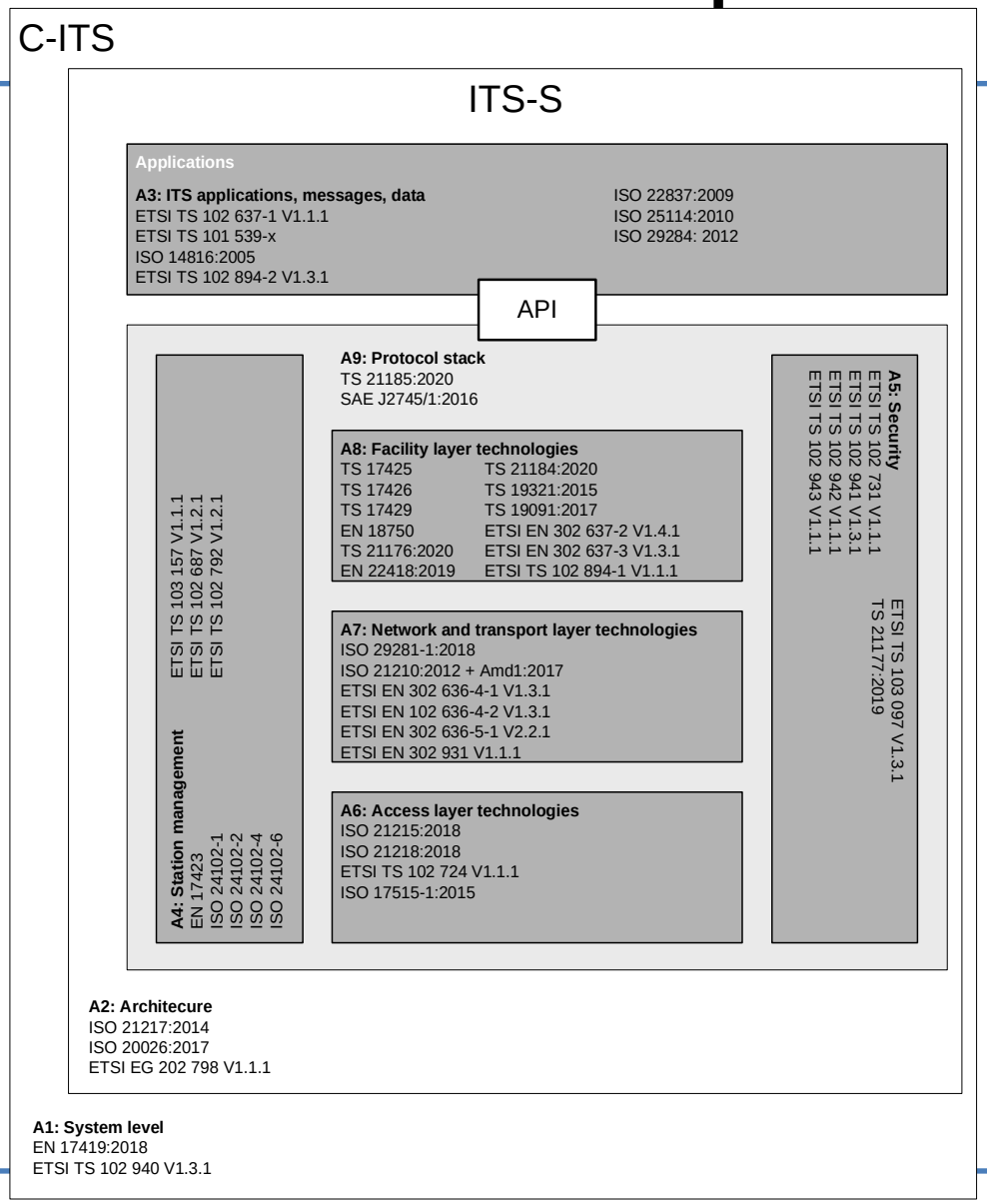
Under revision in 2020 to align with latest developments in C-ITS standardization..

Testing:
Conformance testing is not applicable.



The "famous" ITS station architecture from ISO 21217 / EN 302 665.

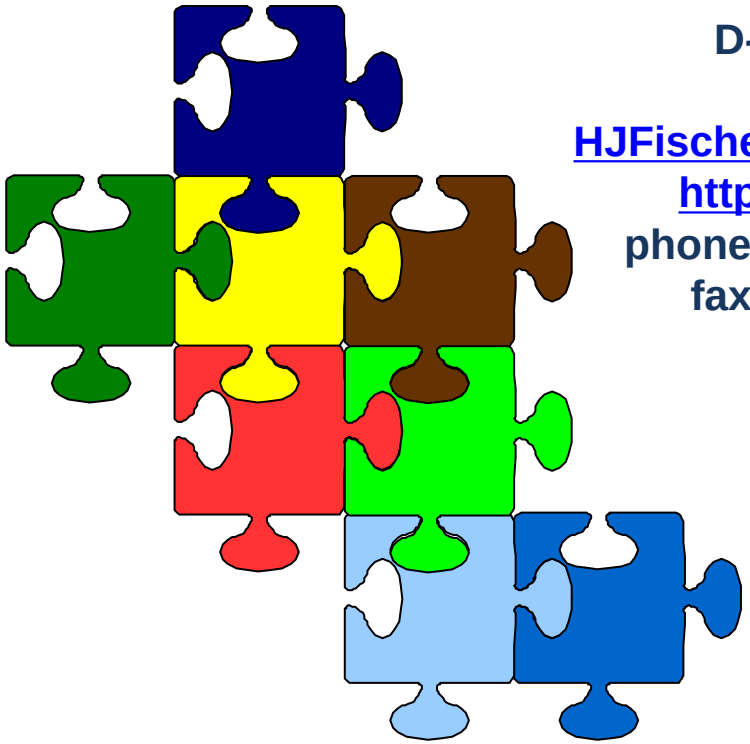
Example release



This "example release" covers the technology specified in the Technical Annex of the C-ITS Delegated Act from the European Commission, extended by suitable functionality for further C-ITS services currently investigated in field trials.

PT1605

http://its-standards.eu/PTs/PT1605/



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