

Towards a pan European architecture for cooperative systems



Status on Standardization

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ETSI ESP

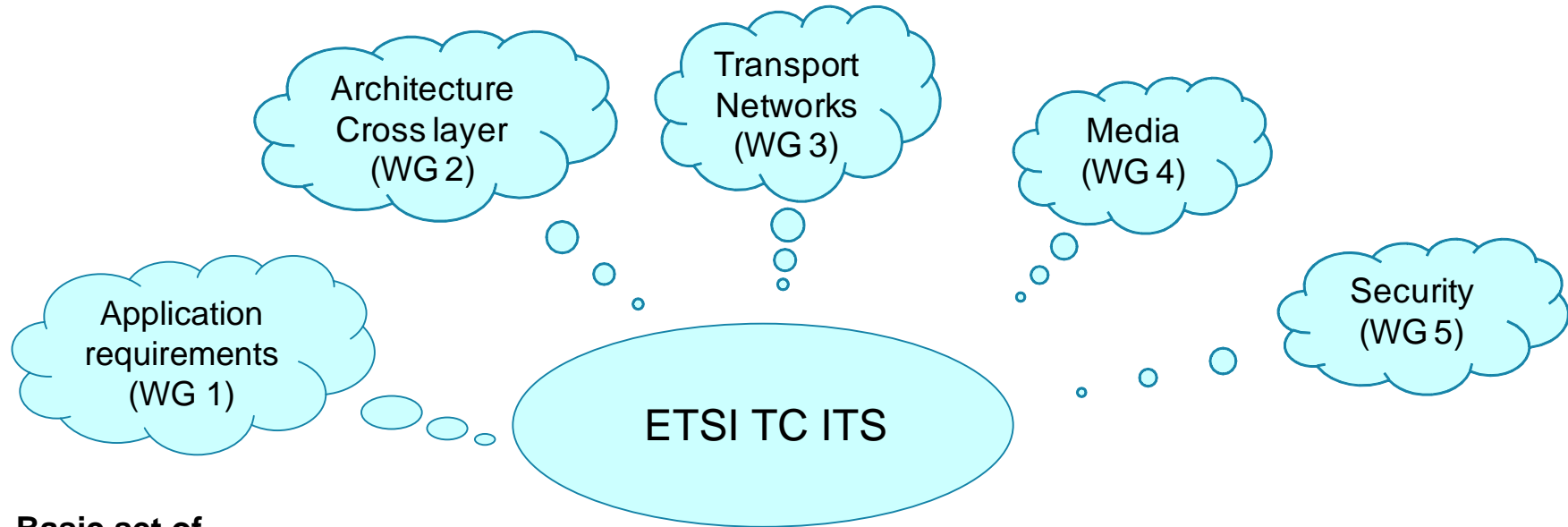
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World Class Standards



ETSI TC ITS Organization



Basic set of applications

- Definitions
- Functional requirements
- Cooperative awareness
- Decentralized environment
- Operational requirements

Architecture

- Architecture
- Cross layer issues
- Test specifications for
 - ISO 21218
 - ISO 24102
 - EFC DSRC

GeoNetworking

- Requirements
- Scenarios
- Network architecture
- Addressing and forwarding
- Transport protocols
- IPv6 integration
- Media dependent functionalities

Media

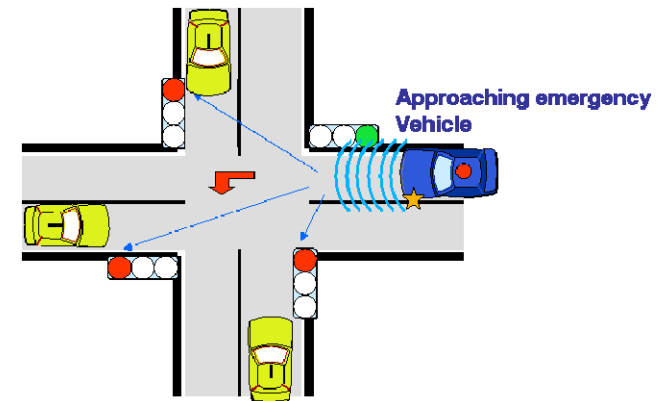
- European profile standard 5,9 GHz
- Transmitter Power Control
- Mitigation 5,8/5,9 GHz
- 63-64 GHz CALM
- Test procedures for infra-red based systems

Security

- Secure and privacy preserving Vehicular Communications.

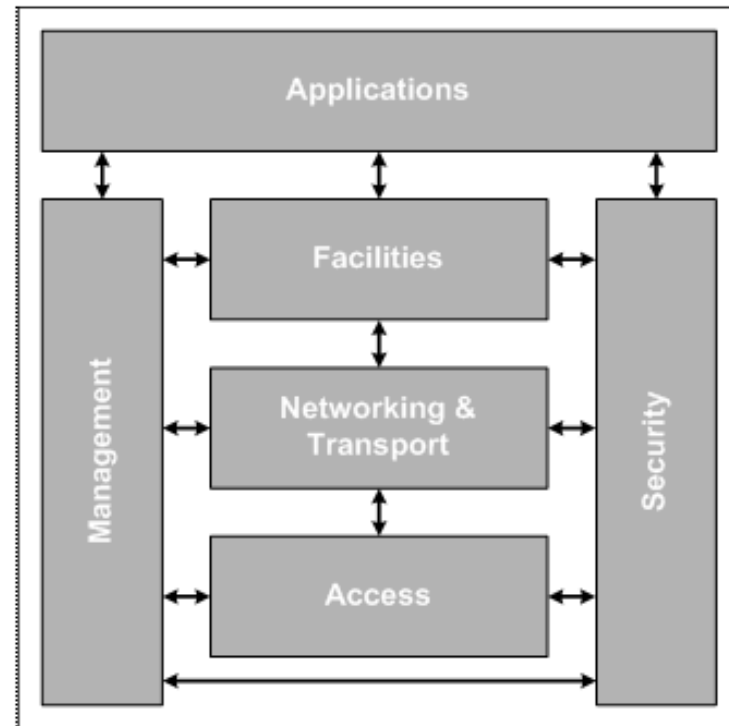
Application requirements

- ❑ **Basic set of application requirements**
 - Definition of Basic Set of Applications
 - Functional and operational requirements
 - Basic Services
- ❑ **Close cooperation and coordination with**
 - PRE-DRIVE C2X Results
 - European Project partners
 - C2C-CC, CVIS, SAFESPOT, Coopers
- ❑ **First set of deliverables expected for 2009**
 - ETSI TR 102 638
 - published June 2009
 - ETSI TS 102 637-x series
 - to be published in October 2009
- ❑ **Extended set of application requirements will follow**



ITS Architecture

- ❑ Developed within COMeSafety with ETSI support
- ❑ The basis for architecture work in ETSI TC ITS
 - ETSI TS 102 665
 - to be published in October 2009
- ❑ Synchronized with and accepted by ISO – IEEE – IETF
 - excellent cooperation result
 - global reference for ITS standards
- ❑ Cross layer specifications
 - ETSI TS 102 723-x series
 - to be published in October 2009

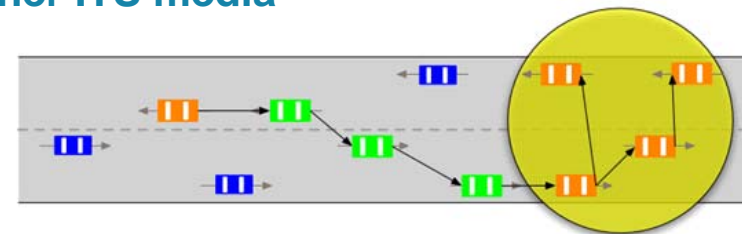


ITS Station Reference Architecture

Transport and Network

□ ETSI TS 102 636-x series

- Requirements, Network Scenarios, Network Architecture
- GeoNetworking
 - Media-independent functionalities
 - Medium-dependent functionalities for 5,9 GHz
 - Media-dependent functionalities for 2,4 GHz & 5 GHz
 - Media-dependent functionalities for other ITS media
- Transport protocols
 - Basic transport protocol
 - Other transport protocols
- Internet Integration
 - IPv6 over GeoNetworking
 - IP mobility extensions for ITS (Mobile IPv6, NEMO)
 - Interoperation of IP version 4 and 6
- Network management



Geographical Broadcast

Media and Medium related

- ❑ **Harmonized Standard for 5,9 GHz published (ETSI EN 302 571)**
 - **complies with EU Spectrum Decision on ITS (2008/721/EC)**
- ❑ **5,9 GHz profile standard for Europe (ETSI TS 202 663)**
 - **Based on 802.11p and TC 204 CALM M5 (21215) PHY & MAC layer**
 - **to be published in October 2009**
- ❑ **Specification on harmonized channel usage under development**
 - **ETSI TS 102 724**
- ❑ **Specification on transmit power control under development**
 - **ETSI TS 102 687**
- ❑ **Elaboration of conformance test specifications will follow**



Security

- ❑ Specifications for security objectives and requirements
 - Security and Privacy aspects (ETSI TS 102 731)
 - Threat Vulnerability and Risk Analysis (TVRA)
 - Objectives and functional requirements
- ❑ ITS security for 5 GHz systems to be addressed
- ❑ Security for cross layer management
 - ETSI TS 102 723-x series
- ❑ Approvals envisaged for October 2009

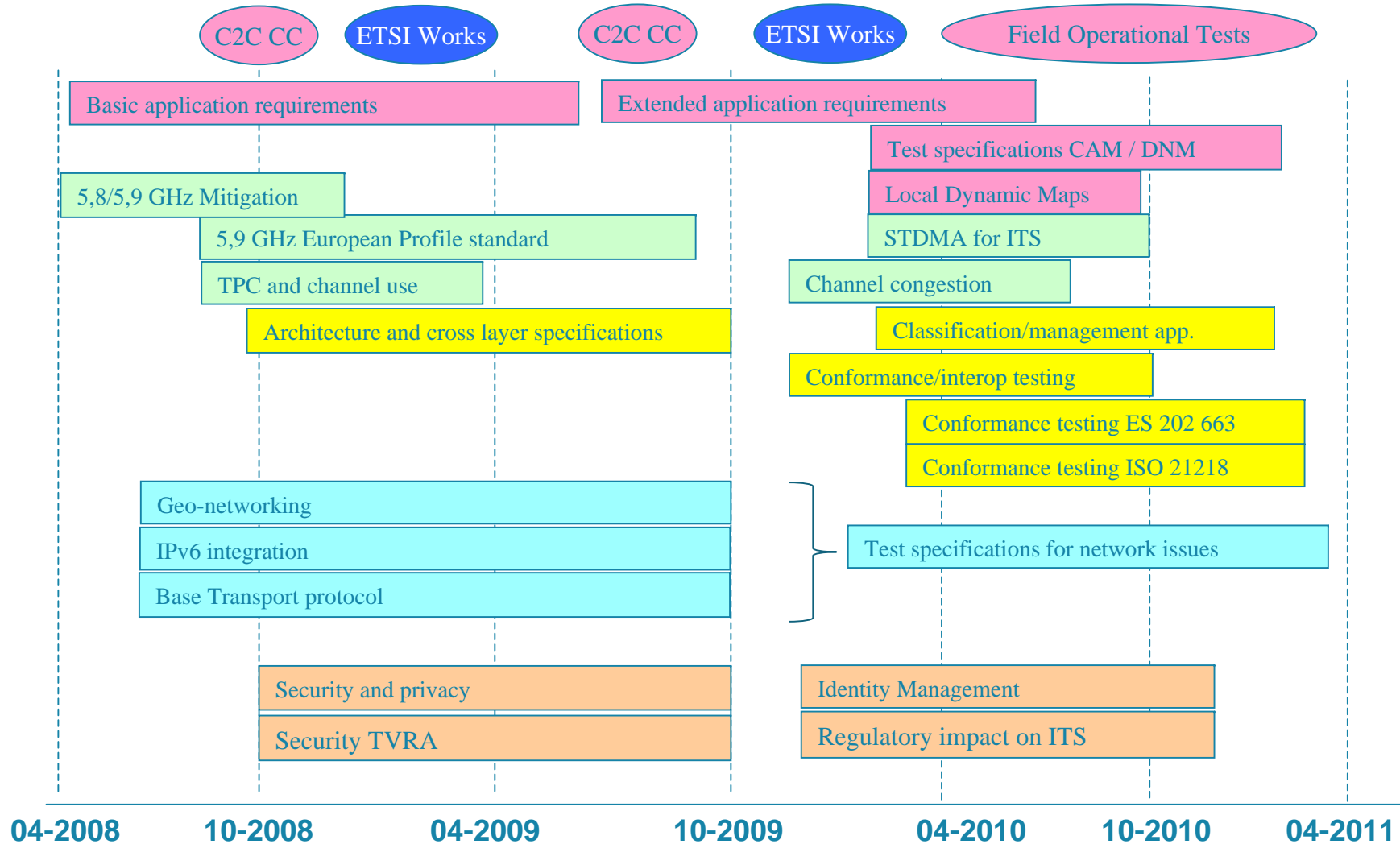
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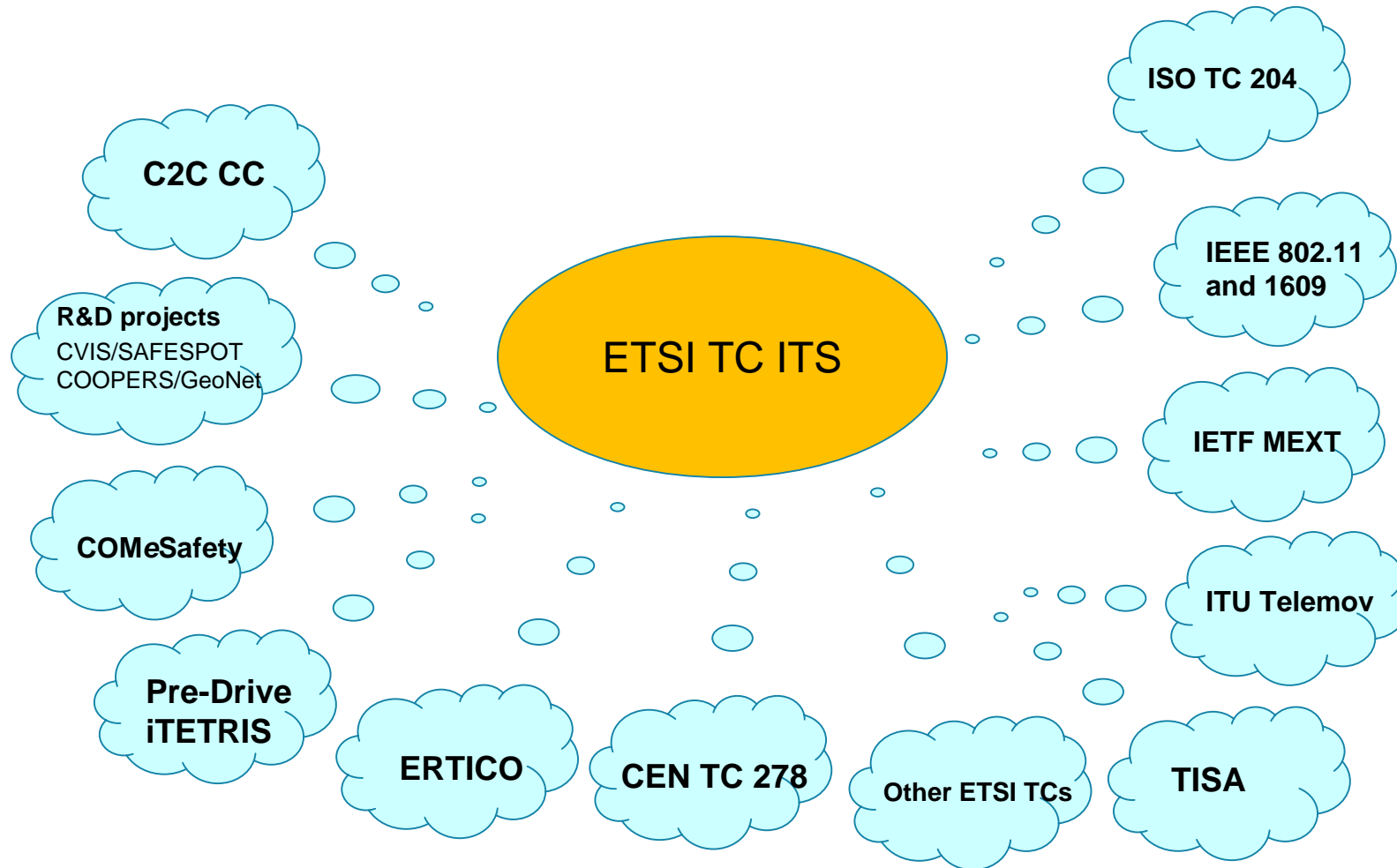


World Class Standards

ITS standardisation Roadmap 2009-2011



Cooperation and Liaisons



Conclusions

- ❑ **ETSI TC ITS is an excellent home for creating ITS standards and associated test specifications**
- ❑ **Close cooperation has been established between the European projects, Car-to-Car Communication Consortium and ETSI**
- ❑ **A variety of activities has been initiated within ETSI and jointly with the European projects (e.g. COMeSafety, PRE-DRIVE C2X)**
- ❑ **Strong liaison with European and international stakeholders**
- ❑ **New joint international standardization activities has started with ETSI TC ITS as a leading partner**
- ❑ **The close cooperation in Europe between industry – projects – European Commission and ETSI must be continued to achieve the goals**

Contact

❑ Meeting activities

- TC ITS#05 meeting, 12-16 October 2009, ETSI HQ
- ETSI TC ITS Workshop, 10-12 February 2010, ETSI HQ

❑ TC ITS Officials

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