



Intelligent transportation system “Insights on Standards & Policy in Europe”

Indo-German Exchange on technical cooperation in the
Automotive sector



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European Project SESEI in India



European Project SESEI

SESEI (Seconded European Standardization Expert in India) is a local face for the European standardization community in India: Dinesh Chand Sharma



Why SESEI: India is a major trade partners for Europe, Increasing role of standards to gain market access and Evolving & complex nature of regulatory and standardization landscapes, Sharing best practices, work together

Sector: 1. ICT: M2M/IoT, Security, 5G, NFV/SDN, e-Accessability, eHealth, eCALL... **2. Electrical equipment including Consumer Electronics:** Smart Grid, Smart Meter, LVDC, Micro- Grid, Lift Escalator... **3. Automotive:** Connected Cars, ITS, e-Mobility... **4. Smart Cities:** Mobility, Waste, Energy, ICT..

www.sesei.eu , www.sesei.in , www.eustandards.in



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Why ITS



Why ITS

Intelligent Transport Systems (ITS) add information and communications technology to transport infrastructures and vehicles in an effort:

- to improve safety and reliability
- efficiency and quality

ITS services are also designed to optimize transport times and fuel consumption thus providing greener and safer transportation.



Role of European Govt.

- Policies and Standards, Research Programs & Budgets

European Policies

- **Roadmap to a Single European Transport Area**

Objective: March Towards a competitive and resource efficient transport system

- Curbing mobility is not an option
- **To meet the challenges**, transport has to:
 - Use less energy
 - Use cleaner energy
 - Exploit efficiently a multimodal, integrated and 'intelligent' network
- **By 2050 reduce emissions by 60%**, and 20% by 2020 (2008 level)
- **By 2050 move close to zero fatalities** in road transport, halving road casualties by 2020

DAE: "Every Car Digital, Every Car Connected"



European Policies/Initiatives

ITS rollout to be effective, coherent and properly coordinated across the EU.

- **ITS Action Plan, launched in December 2008 by EC**
 - accelerating and coordinating deployment of (ITS) in road transport, interfaces with other transport modes
 - enhanced road safety, improved transport efficiency & reduced environmental impact
 - to speed up market penetration of ITS applications and services.
- **Cooperative-ITS (C-ITS)**
 - next generation of ITS solutions
 - allow road users and traffic managers to share information and use it to coordinate their actions
- **Action Plan on Urban Transport** : The Action Plan for sustainable urban & green mobility.
- **EASYWAY Programme (2007-20)**: Provides a reference to develop guidelines for harmonisation, to build consensus, to exchange best practice and disseminate knowledge, to assess impacts of ITS and evaluate European deployment. to realise until 2020 ambitious objectives: 25% reduction of congestion, 25% reduction of fatalities 10% less GHG-emissions from traffic.
- **Studies - Intelligent Transport Systems- European Commission**

EC SUPPORT TO STANDARDISATION

Instruments:

- Setting of the priorities : *ITS Directive legal Framework (2010/40/EU), Radio Spectrum Decision 2008/671/EC; Communications (EU-C-ITS Strategy, 5G AP)*
- Research Framework program/ H2020/ CIP / C-Roads / PPP
- EC Mandates for standardisation: M/338 (EFC), [M/453 \(C-ITS\)](#), [M/546 \(Urban ITS\)](#)

Groups:

- ITS Committee; ITS Advisory group
- ITS Standardisation Coordination Group
- iMobility Forum (Formerly eSafety initiative)
- C-ITS Platform
- EATA, 5GPPP

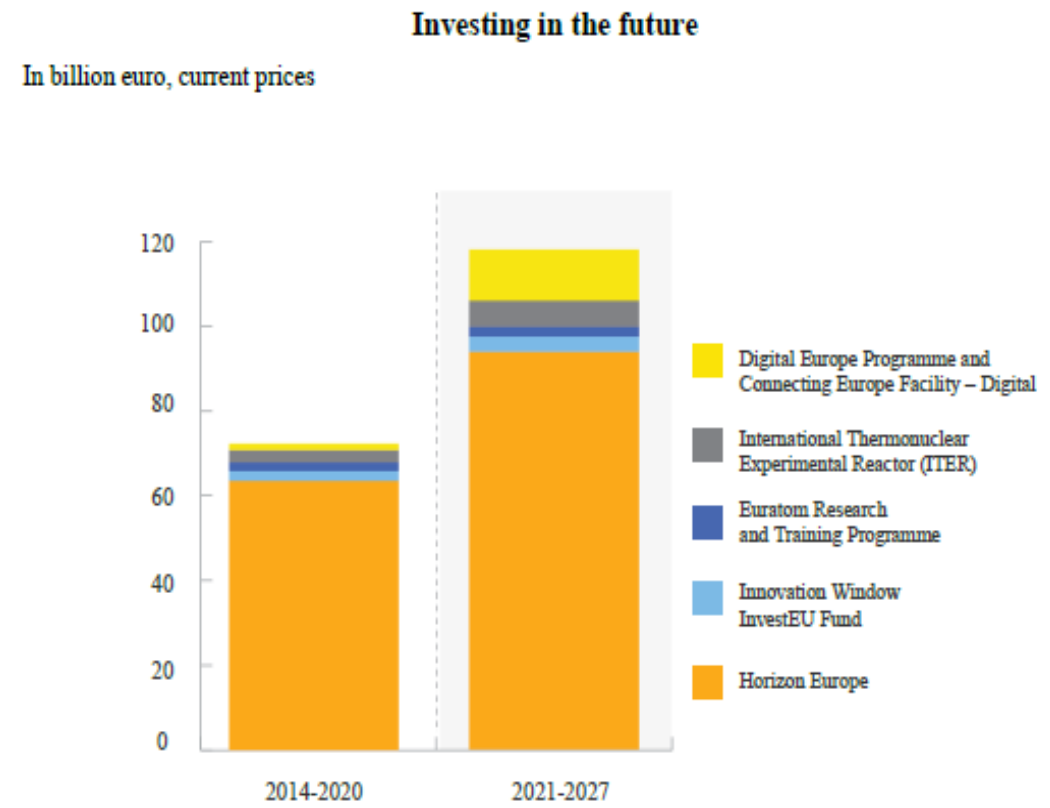
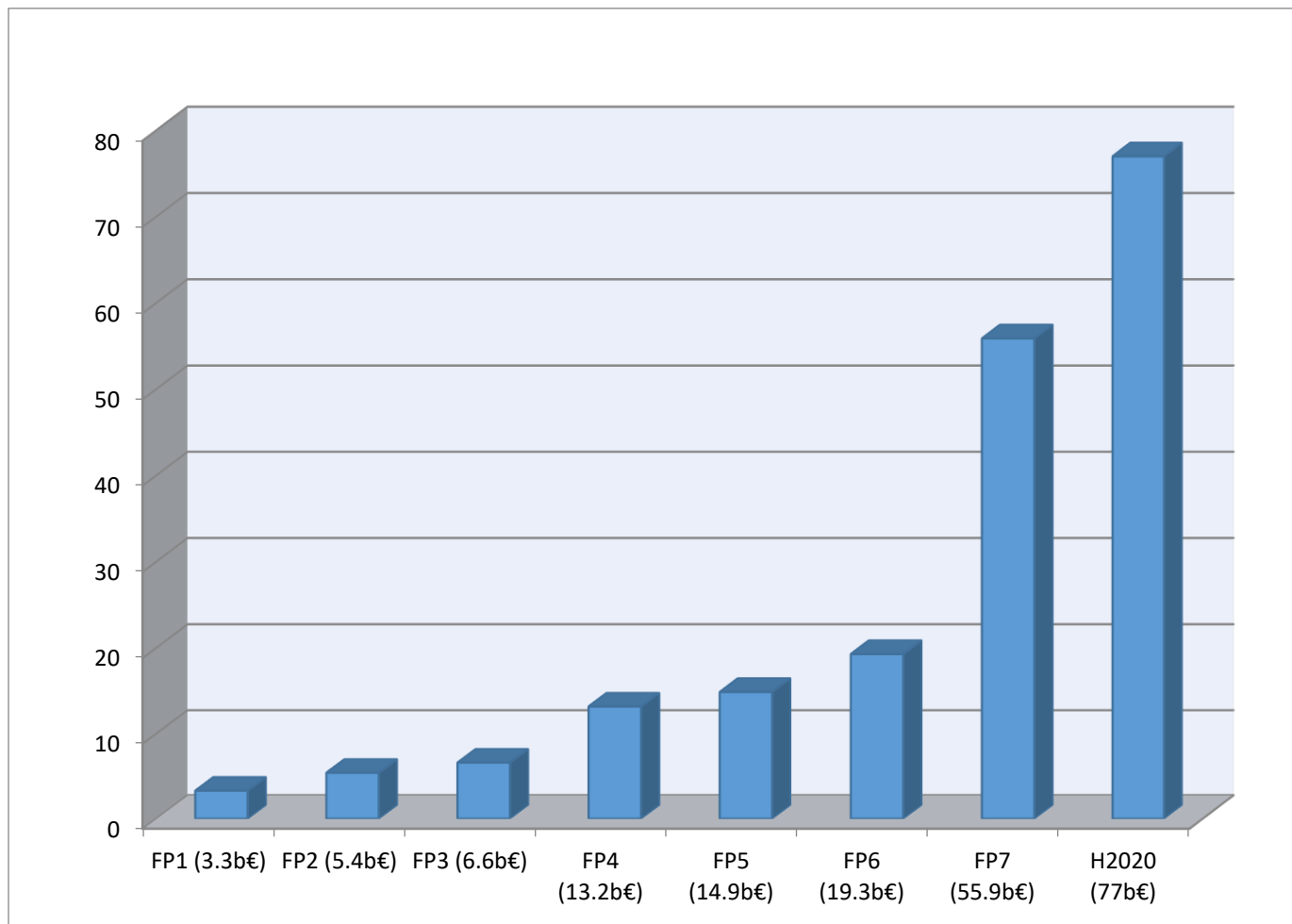
Support to International Cooperation

Funding of standardisation activities:

- **Mandates and ICT Standardisation Rolling Plan**
 - Specialist Task Forces on EETS
 - Specialist Task Forces on coop. systems
 - Specialist Task Forces on eCall
 - Specialist Task Forces on Urban ITS
- **Results from EU funded RTF projects/FOTs/Pilots**



EUROPEAN RESEARCH PROGRAMS & BUDGETS



Note: Compared to the Multiannual Financial Framework 2014-2020 at EU-27 (estimate)
 Source: European Commission

1984-87 2014-2020



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EUROPEAN Research Programs - ITS

- H2020 - making available a total of nearly €355 million:
2019

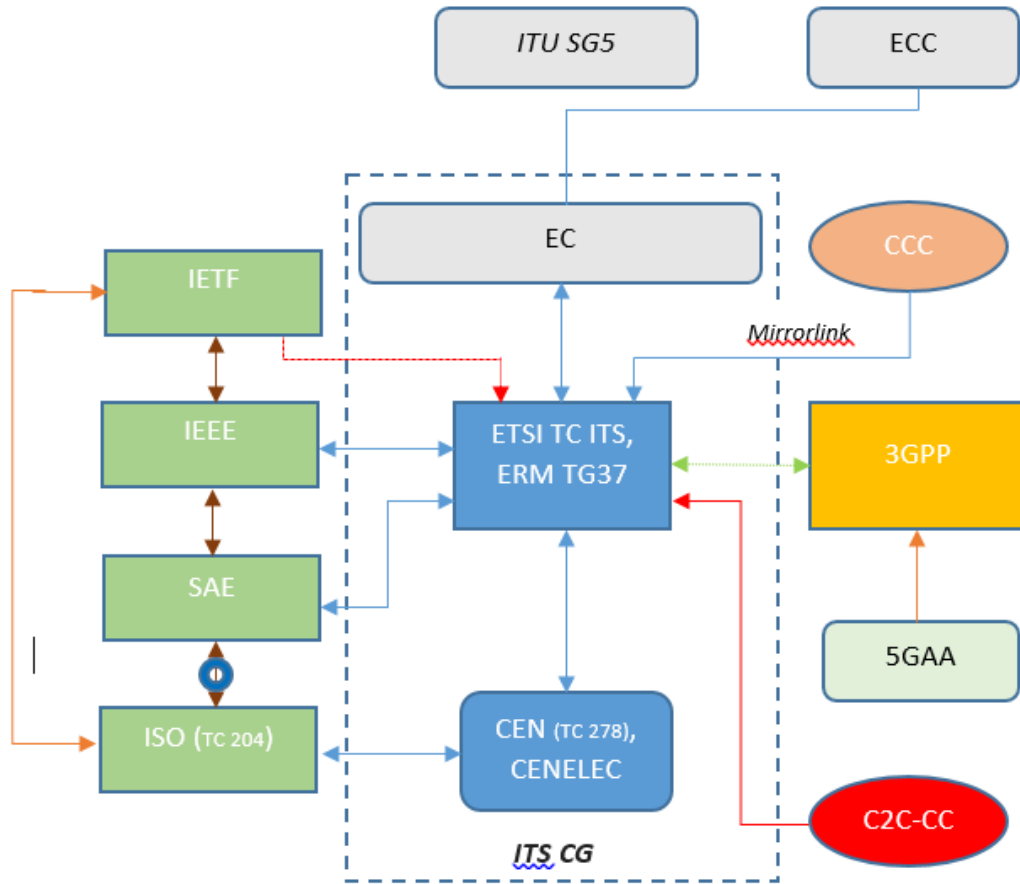
- ✓ Mobility for Growth (MG)
- ✓ Automated Road Transport (ART)
- ✓ Green Vehicles (GV)
- ✓ Next Generation Batteries (BAT)

- ERTICO – ITS Europe is a public/private partnership of 120 companies and organizations, promoting the development and deployment of ITS

Standardization



ITS Standardisation world



- Coordination and international harmonization of standards with IEEE 802.11 and IEEE 1609 as well as SAE
- Coordination with CEN in ITS-CG
- Link to the EC via ITS-CG
- Link to CCC and C2C-CC
- Link to IETF WG IPWAVE (IP Wireless Access in Vehicular Environments)

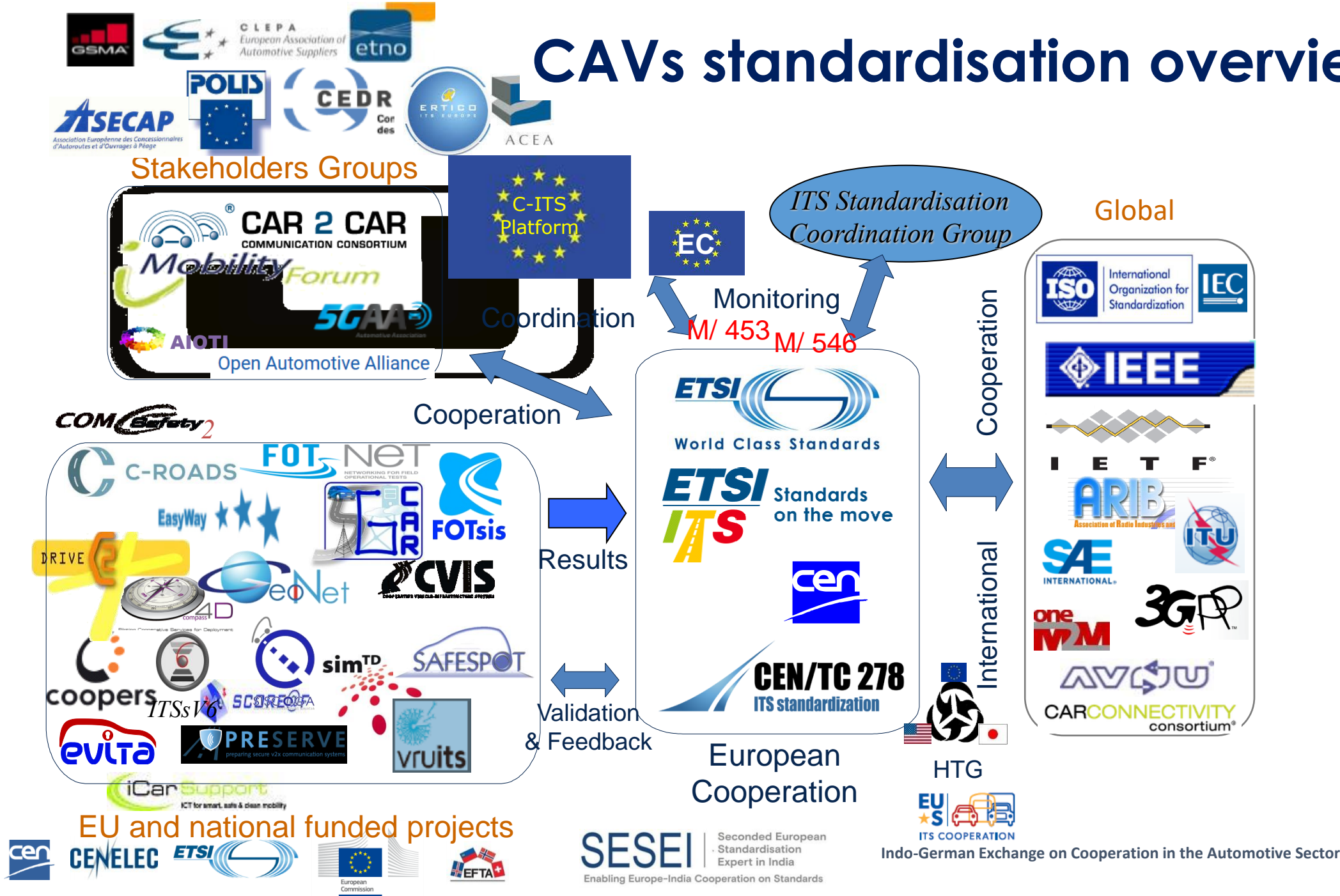
CCC: Car Connectivity Consortium

C2C-CC: Car 2 Car Communication Consortium

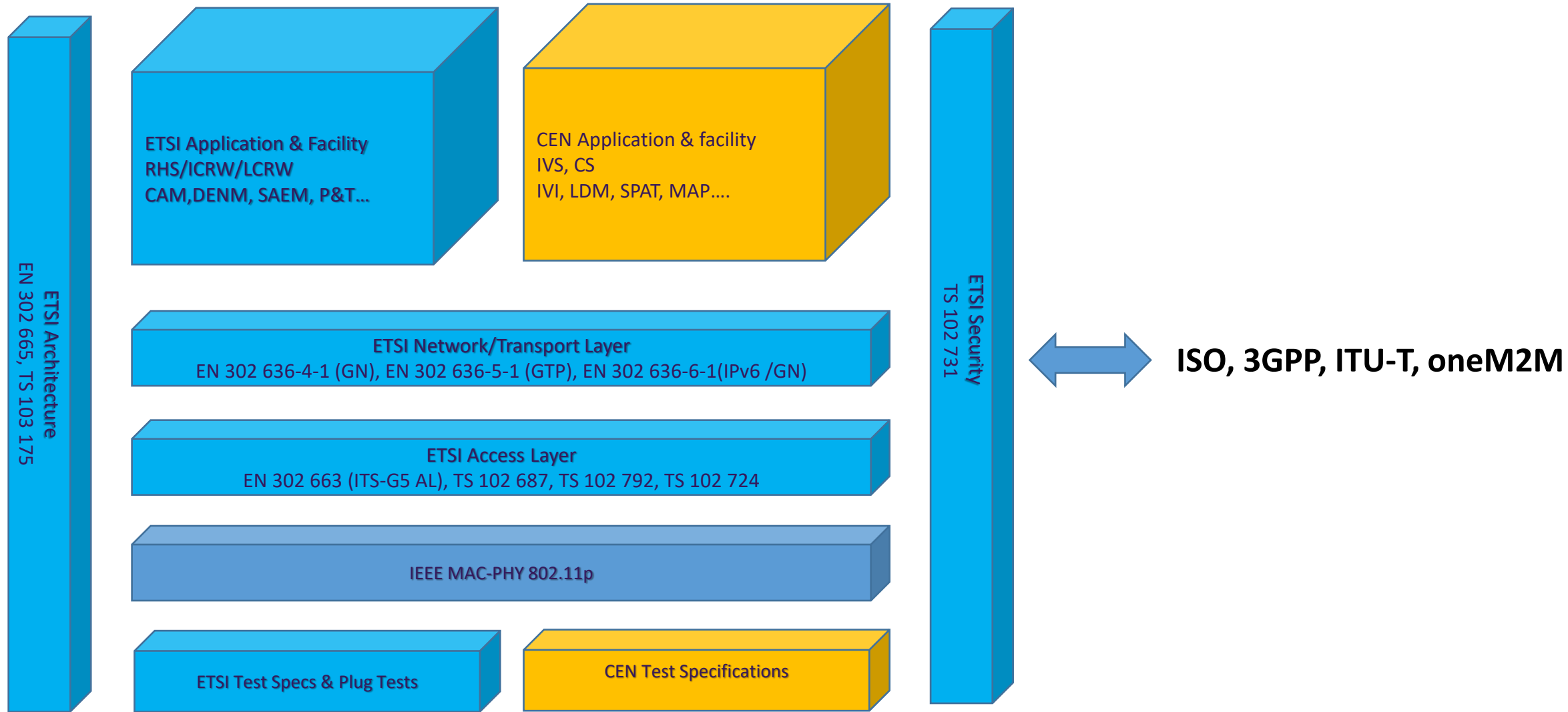
5GAA: 5G Automotive Association



CAVs standardisation overview



ITS: EU Standards & Specifications

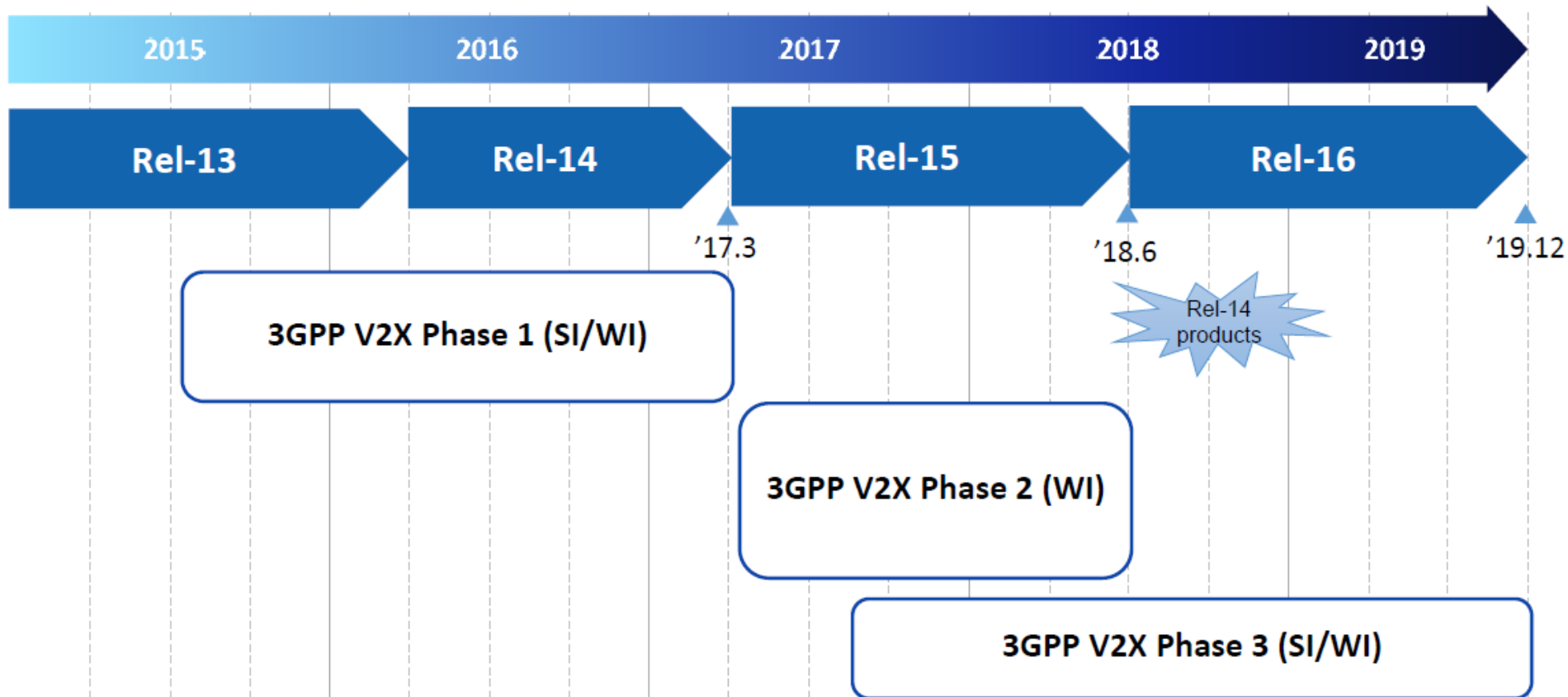


C-V2X Technology



3GPP V2X standardisation timeline

- LTE based V2X (Phase 1) specification completed in March 2017
 - LTE Uu and PC5 enhancement for enabling V2V/V2X communication
- C-V2X standardization continuing with backward/forward compatibility
 - Phase 2 to support 8 carriers aggregation, 64QAM, TX diversity, and latency reduction
 - Phase 3 to address advanced use cases and evaluate additional requirements with 5G New Radio (5G-V2X)



Conclusions

- ITS Standardisation is ICT and ICT can be local but global
- ITS Standardisation is happening at multiple places such as 3GPP, ISO, JTC1, oneM2M, ETSI etc. hence international cooperation, participation is important to get Indian requirement included
- ITS rollout based on standards shall ensure safety services for all users
- Wireless Communication will play an important role hence efficient & Technology neutrality of spectrum use is must
- 5G will also play key role for the further development of Connected, Cooperative and Automated Mobility (CCAM)

Thank you!

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