

Meeting ARTEMIS Brokerage, Berlin
Speaker Margriet van Schijndel*
Date 7th February 2018

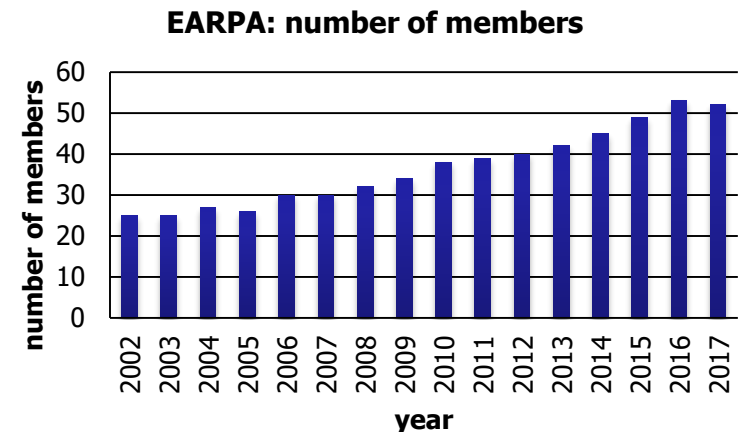
* EARPA Secretary General

EARPA Mission

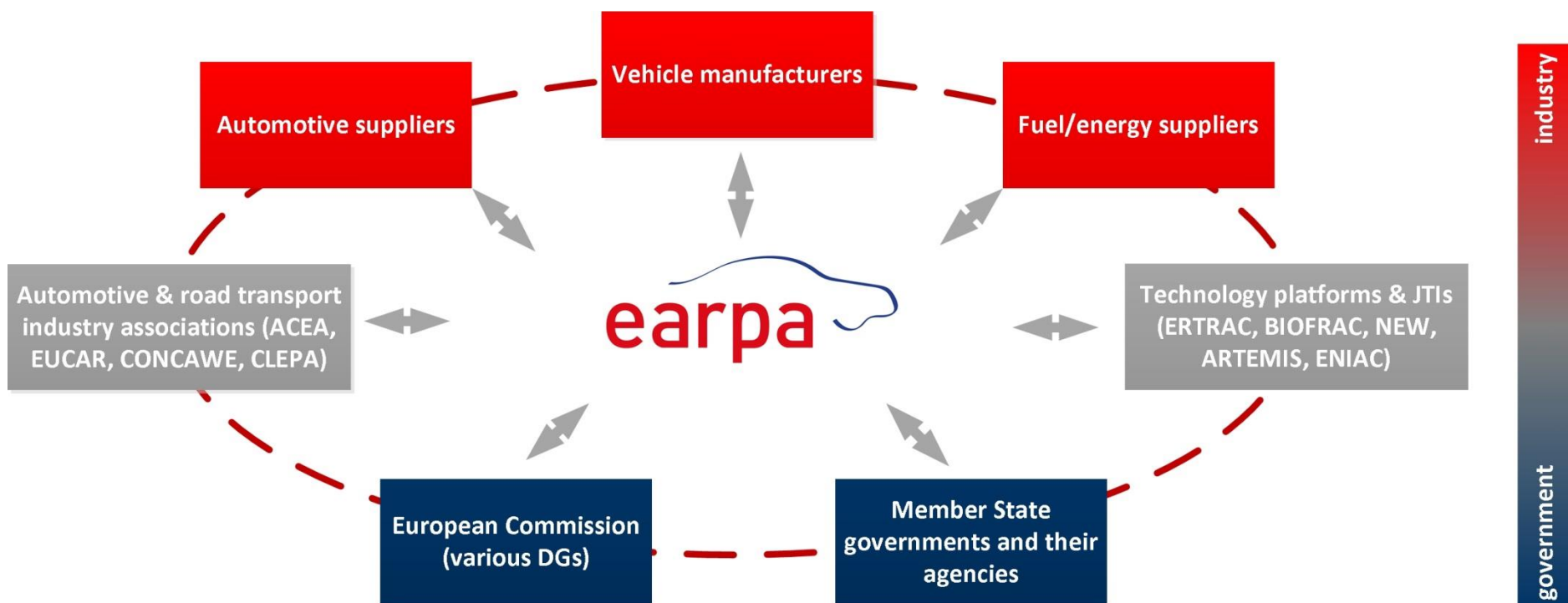
- To take on a **positive role in enhancing networks** of excellence and creating specific thematic networks within the framework of the EU.
- To support and facilitate the **forming of consortia**, the **preparation and co-ordination of projects** / program proposals in the context of the European research area and Framework programs.
- To **promote the awareness and understanding in the automotive industry –and beyond-** of the specific role and contribution of the members.
- To promote the high-tech character of the automotive industry and its **great potential for future innovation** and new opportunities.
- To enhance the **mobility of automotive scientists** and engineers within Europe.
- To supply assistance and collective services for its members such as the **organisation of conferences** and seminars, the **publication of newsletters**, etc.

The most prominent independent R&D providers

- 51 members in 17 countries, including Turkey & Norway
- About half are companies and RTOs
- About half are universities
- A strong and pro-active network
- High level research, supporting the industry & policy makers
- EARPA members offer a comprehensive portfolio of RTD
- Leading knowledge across all relevant technology areas
- Independent

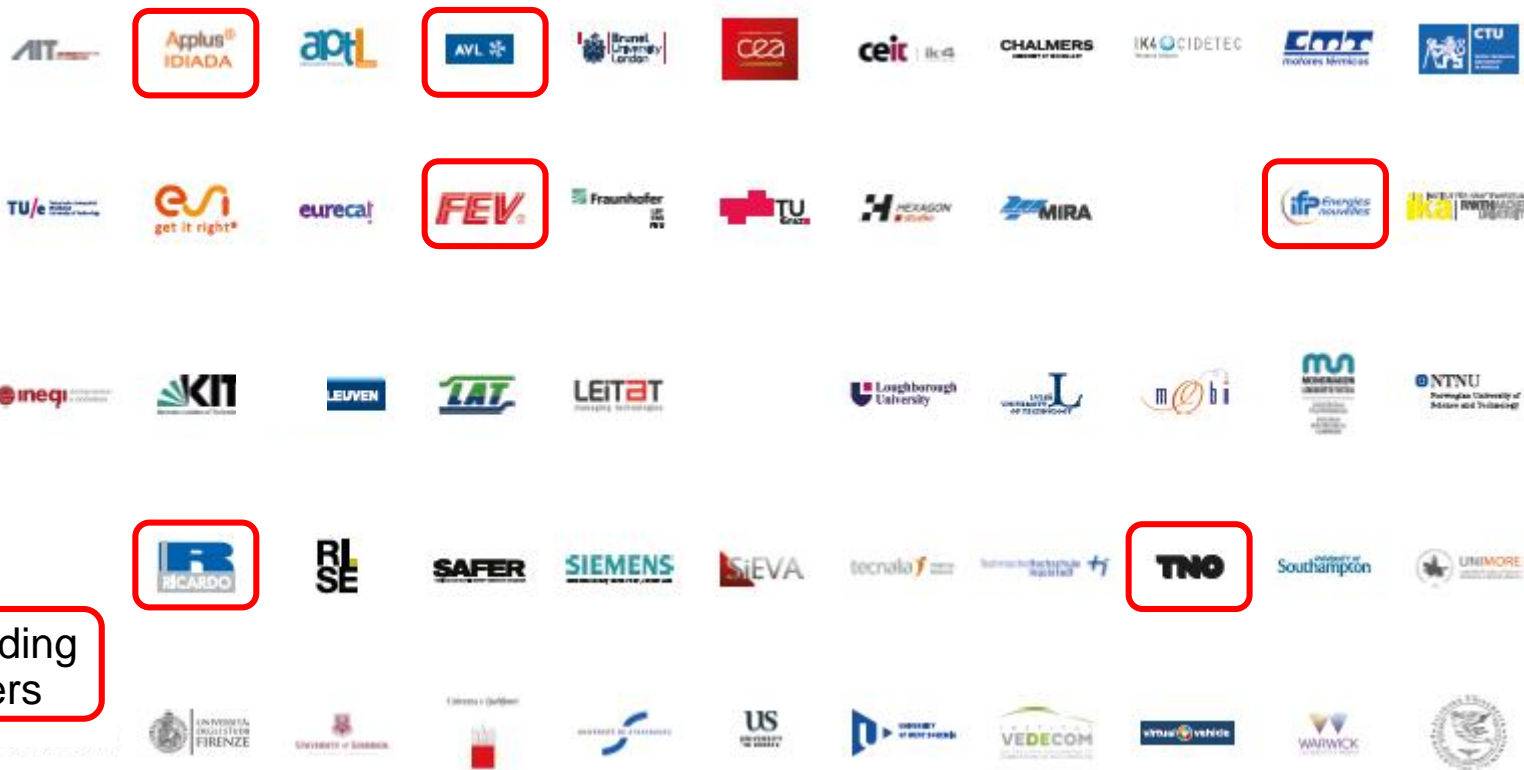


EARPA's neutral but involved position amongst many stakeholders



Our Membership

Within the 51 member organisations, there are about 660 researchers who are active in EARPA.



EARPA Board & Contact



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IDIADA

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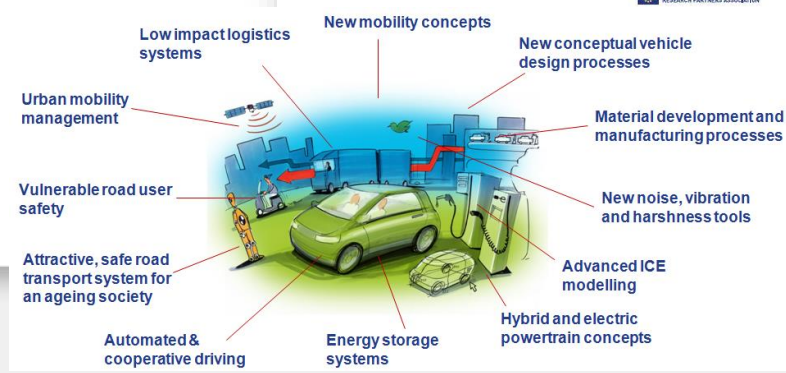
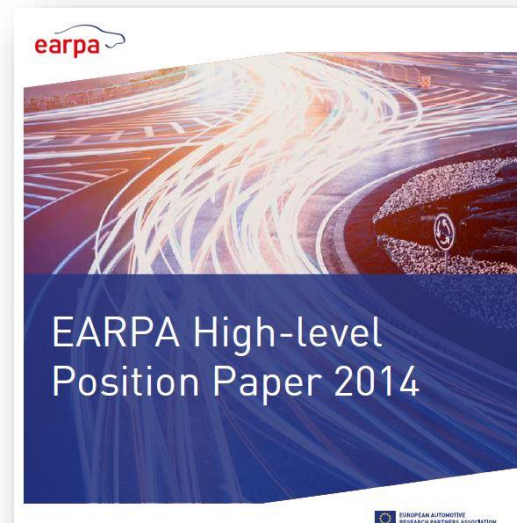
Noshin Omar
VUB

Bertrand Gatellier
IFPEN

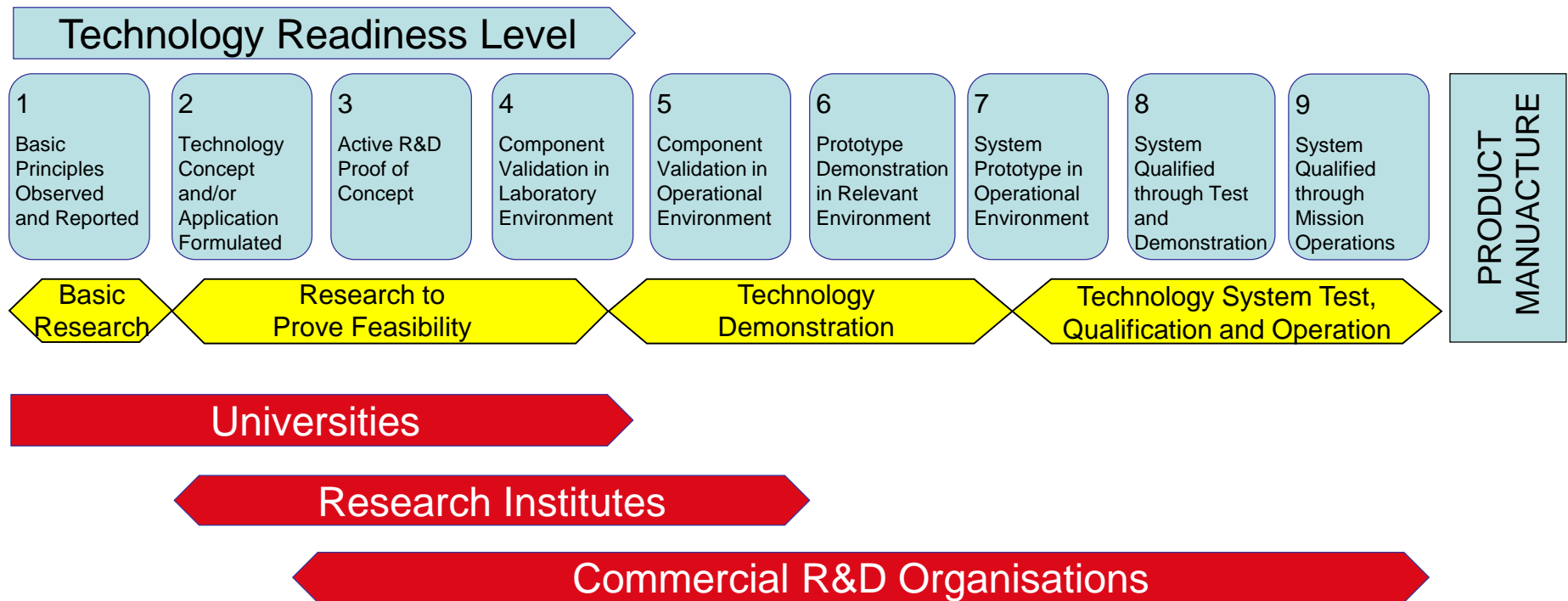
Point of contact
EARPA Secretary General
Margriet van Schijndel
+ 31 888665755
+ 31 653846379
Margriet.vanschijndel@earpa.eu
www.earpa.eu

EARPA contributions to Horizon 2020

1. EARPA's high-level position paper
2. Regularly updated position papers from each EARPA Task Force – each focused on part of automotive R&D
3. Cross-cutting issue position papers: strengthening our system approach
 - Cyber security
 - Automated driving
 - Urban Mobility Services
4. Participation in Experts Groups, Answering EU Consultations
5. Contributions to European Visions and RTD Roadmaps



EARPA: Members operate over the full innovation process from basic research to product validation



EARPA's system approach to face the Society's Grand Challenges



Safety



Electric Vehicle Systems and Components

Ten Task Forces, connected by cross-cutting issues
www.earpa.eu



Hybrid Powertrains and Alternative Fuels



Materials, Design & Production



Noise, Vibration & Harshness



Methods and Tools for Virtual Development and Validation



Electronic & Communication Systems



Urban Mobility

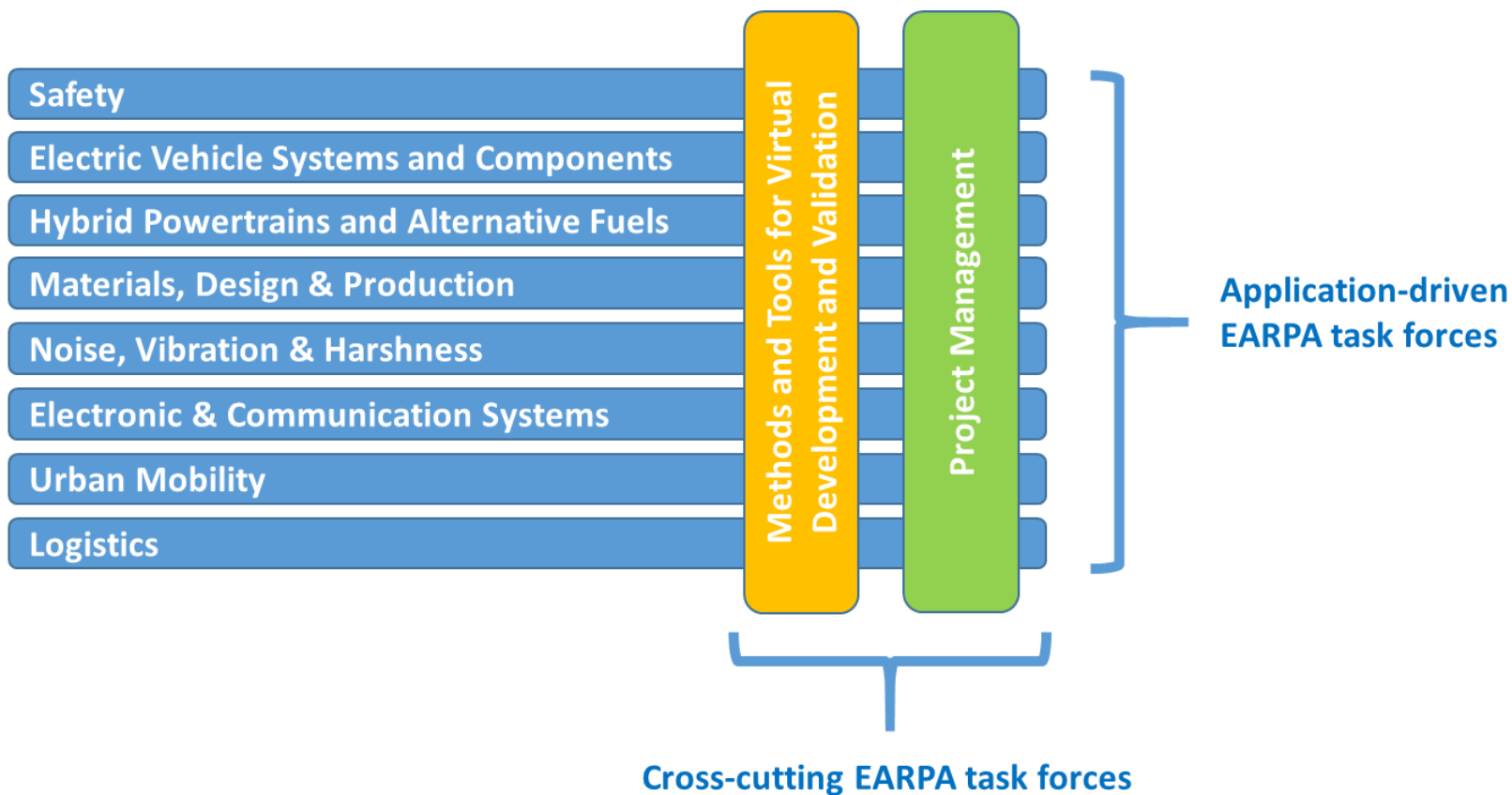


Logistics



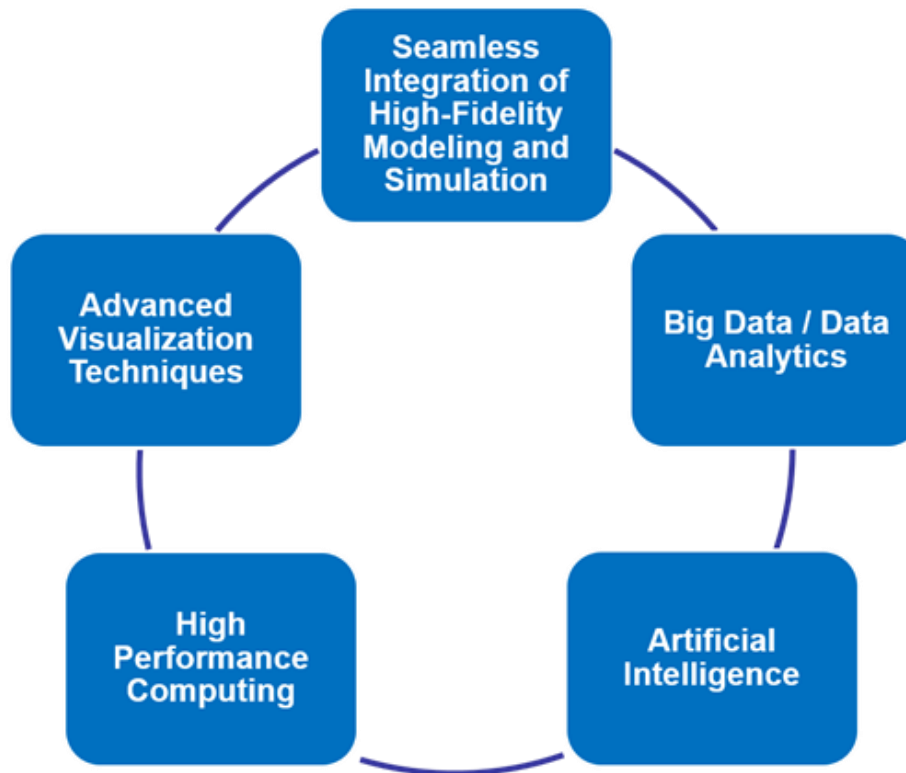
Project Management

EARPA's system approach to face the Society's Grand Challenges

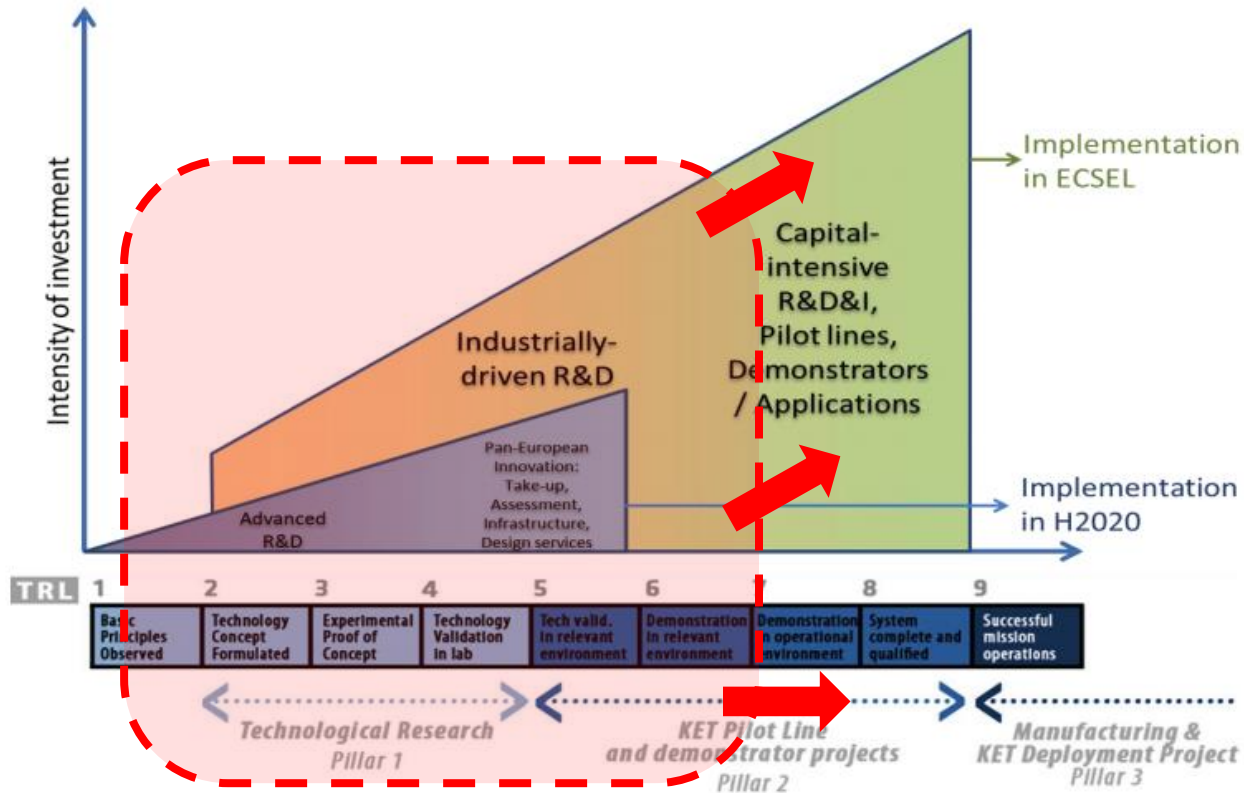


One quick example:

The 5 pillars of EARPA's Task Force "Methods and Tools for Virtual Development and Validation (MT4V)"

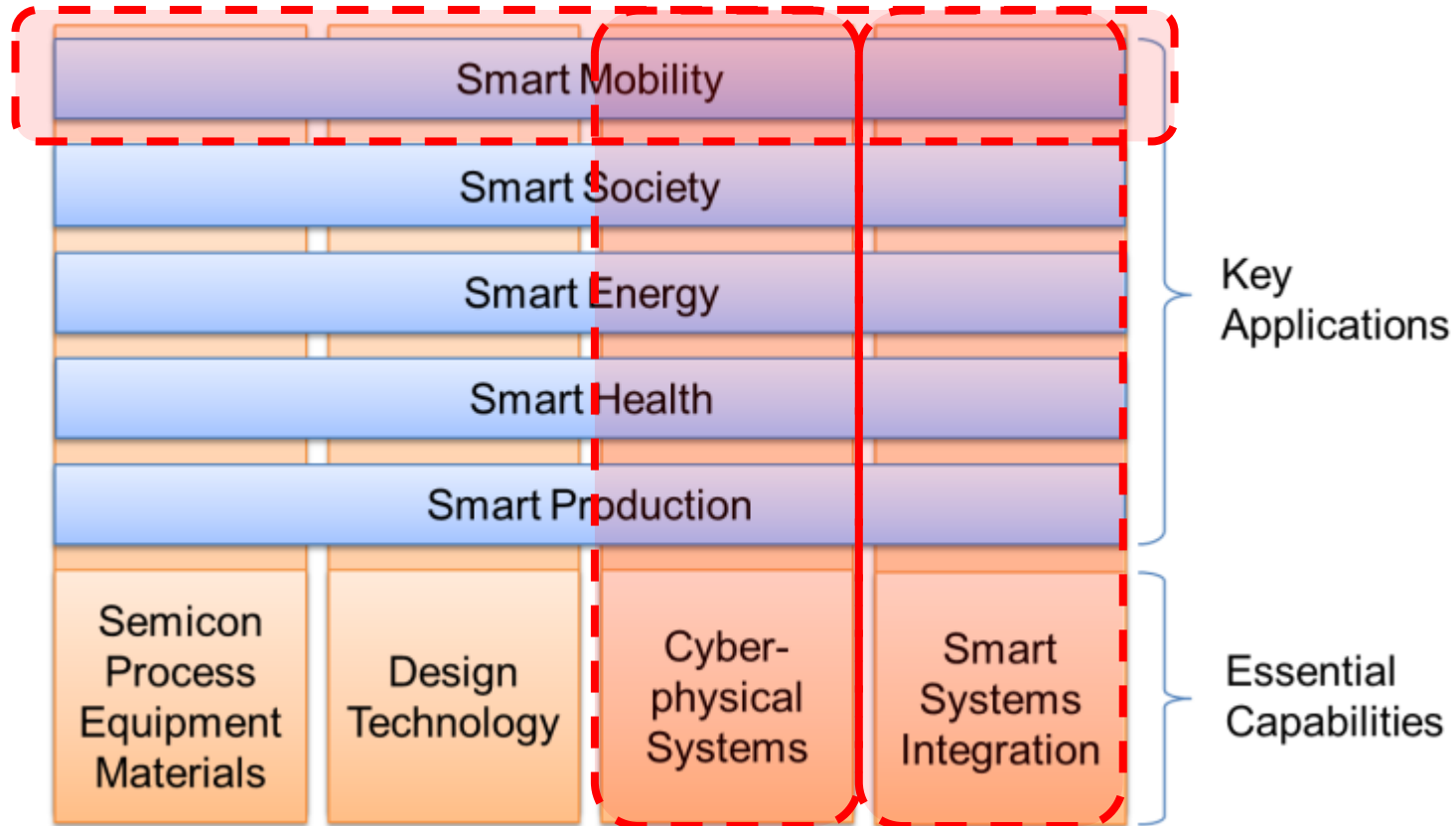


EARPA members TRL level of expertise



- Expertise and know-how in lower TRL levels
- Several projects with higher TRLs working with the whole automotive value chain

EARPA members areas of expertise



- Area of expertise in automotive and transport R&D
- Members' expertise in CPS and Smart Systems Integration: Safety, Embedded systems, telecommunications, EE architectures, Powertrains...

Key applications: Smart Mobility & Design Technology

Challenges to be addressed under the ECSEL program and potential support within the EARPA members

- **Roadmap: Resource Efficient Vehicles**
 - Advanced modelling for Green Vehicles
 - ECS: HVAC, Power electronics, dual fuel / LNG / CNG / Hydrogen
 - Connectivity for green vehicles (Charging points, infotainment)
 - Certification: Component and vehicle level
 - Demonstrators and piloting
- **Roadmap: ECS for integrated and multimodal mobility networks**
 - Urban mobility and shared logistics
 - ITS & smart city technology for the multimodal environment
 - New mobility concepts based on connectivity and AD

Key applications: Smart Mobility & Design Technology

Challenges to be addressed under the ECSEL program and potential support within the EARPA members

- **Roadmap: Highly automated and autonomous transport**
 - New robust, secure and affordable EE architectures → ECU / CPS integration, development and/or validation
 - Connectivity and cooperative systems for the HAD from heterogeneous access technologies: 4G, Advanced LTE, ETSI G5, etc...
 - Embedded systems for advanced comfort, integrated safety and road user interaction:
 - Functional safety / HIL / SIL / MIL
 - Vulnerable road user protection through passive and active safety
 - ADAS 2.0 development and validation
 - Implementation of pilots, demonstrators and FOTs
 - New certification and validation methodologies and tools

Potential cooperation

“One stop” to gather expertise for industrially and societal driven projects

- Decades of experience in the automotive R&D field
- Broad range of TRL covered:
 - Research & Industry members in the mobility value chain
- Successfully prepared several RIA and IA project proposals in different European calls
- Experience in the implementation of demonstrators, pilots and FOTs in Europe

Recently accepted ECSEL projects with EARPA members

Partners: AVL, TNO, Tecnalia, IDIADA, Virtual Vehicle, Fraunhofer, etc

High performant Wide Bandgap Power Electronics
for Reliable, energy efficient drivetrains and
Optimization through Multi-physics simulation



Programmable Systems for Intelligence
in Automobiles



Recently accepted ECSEL projects with EARPA members

Partners: AVL, TNO, Tecnalia, TU/e, RISE, Fraunhofer, TUG, AIT, FEV, CEA, etc

Cyber Security for Cross Domain Reliable
Dependable Automated Systems



Automated Driving enabled by systems
on chip

Auto Drive

Further examples

From TF ECS and EVSC



- **ModuED** – Modular Electric Drivetrain (funding: H2020)
- EARPA's involvement: CEA coordinator, Siemens, Chalmers, TU/e, IKA
- New powertrain integrating inverter directly in the motor using the latest wide bandgap semiconductor (GaN) generation

From TF ECS



- **TRACE** - Technology Readiness Process for Consumer Electronics (funding: CATRENE – EUREKA)
- EARPA's involvement: CEA, Siemens, FhG, VeDeCom
- Develop and demonstrate methods, processes, tools to facilitate usage of Consumer Electronics components to be deployable more rapidly in the life-critical automotive domain.

A platform for discussion and exchange of views



- Selected Impressions from the FORMForum 2016:
- Panel Discussion, Poster Presentations and Exhibition
- FORMForum 2018: 17th of October 2018

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