This project is funded by
the European Union

Standardisation, certification and testing activities in the European VRA Support Action

SIP – ADUS Workshop

Álvaro Arrúe – Applus IDIADA

VRA NETWORKING IN AUTOMATION

VRA in Short

VRA – Vehicle and Road Automation is a support action funded by the European Union to create a collaboration network of experts and stakeholders working on deployment of automated vehicles and its related infrastructure

VRA NETWORKING IN AUTOMATION

Objectives of VRA Support Action

Create an active European network of experts on Vehicle and Road Automation and foster cooperation within the Automation WG

Contribute to EU-US-JPN trilateral WG on road vehicle automation (EC – US DoT – MLIT)

Identify deployment needs for Vehicle and Road Automation

Deployment paths, Regulatory issues, Roadworthiness Testing, Connectivity, Human Factors, Digital Infrastructure, Evaluation of Benefits, Decision and Control Algorithms

VRA-net.eu/wiki

Promote the Research on Vehicle and Road Automation

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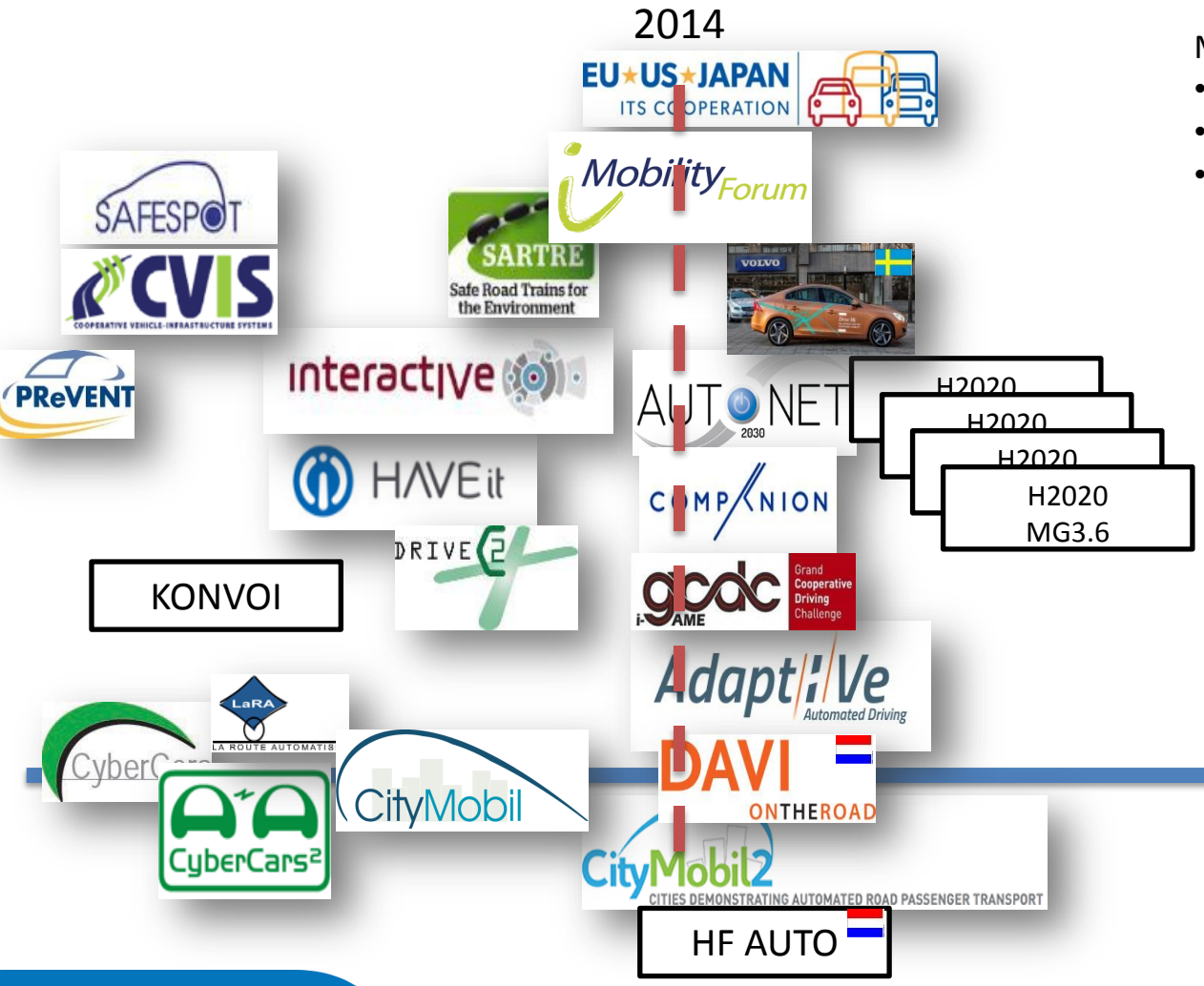
Role of VRA as facilitator for collaboration between national and EU-funded activities



Mission

- Identify relevant activities
- Identify common partners
- Propose collaboration
  - What: topics, gaps
  - How: Level of collaboration
  - When: Timeline

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VRA: hot topics discussed in Sub-WGs of the iMF Automation WG

Deployment paths (VOLVO)	• Viable business models and deployment paths including socio-economic implications
Regulatory issues (ERTICO)	• Clarify current regulatory and liability issues among European countries
Road Worthiness Testing (IDIADA)	• Identify needs for standardisation, testing, compliance and certification
Connectivity (ICCS)	• Identify additional requirement on C-ITS
Digital infrastructure (HERE - ERTICO)	• Identify role of digital maps for automation
Human factors (DLR-TRL-LEEDS)	• Identify solutions for driver and other road user interactions
Evaluation of benefits (CTL)	• List potential direct and indirect benefits of automation
Controls and decisions (DLR)	• Identify gaps in current control and decision solutions
Reliability and CyberSecurity (→HTG6)	• Clarify reliability concerns and make recommendations

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Standardisation and certification

- Objectives
  - Convene discussion group meetings to agree on the approach towards standardisation and certification
  - Lead and contribute to the European position on standardisation and certification of automation and automated vehicles in Europe
  - Contribute to the Tri-Lateral meetings US-EU-Japan
  - Promote cooperation between R&D projects through concertation
  - Issue a position or white paper on the topic at the end of the project

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VRA & AWG activities

- Meetings & Telecalls
  - Joint VRA and AWG workshops
  - Dedicated sessions on Standardization and Certification
  - Main challenges & action points identified
- AWG - Roadworthiness testing discussion group
  - Specific discussion group
  - Roadworthiness and development testing
  - Potential topic on standardization and certification
- Presentations at forums
  - SIS on ITS Helsinki on testing and standardisation
  - SIS organized in ITS Detroit
  - Workshop on Connected and Automated Driving Systems (Tokyo)

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Activity Outputs

- Topic list regarding standards and testing needs
  - On the scope of the AWG
  - Topic list to discuss during the trilateral meetings
- Action points on the AWG objectives
  - Glossary of terms
  - Standard baseline
  - Testing tools and methodologies
- Main technical challenges and needs identification

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Challenges & Needs identified

- Standardisation
  - *Gap identification on current standards*
  - *Generic architecture / E/E Architecture*
  - *V2X extension*
  - *Cybersecurity at all levels*
  - *Scenario definition*
  - *Roadworthiness – Performance requirements*
  - *Functional safety*
  - *Human factors*
- Certification
  - Basic technology certification: System, component, subcomponent level
  - V2X communications extension
  - Interoperability and vehicle interaction e.g. scenario based
  - Road capabilities for automation
  - Type approval (safety minimum performance)

Issues

- Prioritize topics for standardization and thus, certification, as for instance:
  - Human factors: mandatory mechanisms to get driver in the loop?
  - Connected vehicles – open comm. Interfaces – vehicle interaction
  - Digital map information – open data format
  - Safety relevant minimum performance features
  - GNSS performances
- Dependence with level of automation is very high
- Technology agnostic standards
- Introduce international SDOs in the process
- Link standardistaion and certification with national and international research programs
- Foster interoperability through TESTFEST and field tests
- Follow up current certification (EMC, Crash,…)
- Legal issues on certification (type approval)

Next steps

- Continue cooperation among the AWG discussion groups
- International cooperation and harmonisation
  - Concertation with R&D projects not only at European level
  - Trilateral cooperation
  - International legislation and standardisation and certification impact
  - Identify standardisation initiatives in US and Japan
  - Identify certification requirements and needs at international level
- Continue the networking activity

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Thank you very much for your time!

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