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ARCADE Y1 deliverable

Systems and Services

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Topics

- Introduction to Deliverable 3.4
- Thematic Areas involved
- Prioritized actions per TA
- Main conclusions and outcomes for Year 1

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What is Deliverable 3.4 about

- **Challenges and scenarios** for the layer Systems and Services
- Through the analysis of **4 scenarios**
  - 0 : short-term issues
  - A : Disruption through market-driven services
  - B : Authority driven with focus on collective transport
  - C : privately owned automated vehicles
- First step to deliver the requirements towards **research actions**
- Identify and **prioritize actions** for each thematic area involved

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Involved Thematic Areas

- **Physical and Digital Infrastructure** (the digital representation of the road environment).
- **New Mobility Services** based on connected and automated vehicles, (SAE L3 or L4): integrated in the city transport network and MaaS platforms, accessible via public transport or private operators' platforms or apps.
- **Big Data and Artificial Intelligence**: all data, from traffic related data gathered from road infrastructure sensors, to weather database, to feed the machine learning algorithms driving the improvement of AI based CAD systems and services towards higher-level automation
- **Freight and Logistics** cover research, development and pre-deployment activities ranging from confined areas, automated hub-to-hub freight transport, open road transport, truck platooning to last mile delivery

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Prioritized Actions – Physical and Digital Infrastructure

- Define common EU standards for the interaction of PDI and AVs
- Define how to use ISAD for commercial freight vehicle operation
- Define classification of PDI
- Create living labs with PDI

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Prioritized Actions New Mobility Services

- Define the involvement of public authorities in the early stage of deployment
- Foster the development of new ecosystems, new types of partnerships, new business models
- Develop and test use case for new mobility services
- Integration of new services with existing ones from start (intermodal and interoperable services within cities and countries)
- Further develop urban delivery AD solutions
- Explore the opportunities of peer to peer sharing
- Ensure the availability of automated fleets for tests, pilots and FOTs,
- Pilots and FOTs to validate business cases, operational models and specifications

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Prioritized Actions IA and Big Data

- Develop standard model for sharing data ensuring data privacy and security
- Develop new AI-concepts for cyber-physical road traffic systems
- Standardised data storage and management facilities (Hardware and software) to enable data sharing
- Harmonisation, alignment needed for development and validation of AI functionalities for AV
- Develop new AI concept, techniques and models to fulfil the challenges of CAD functionalities and responsibilities for all development paths

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Prioritized Actions Freight and Logistics

- Provide clarity about relaxed driving time regulation for automated truck driving
- Draft ad-hoc regulation related to liability for the different automation levels
- Identify the impacts of AD on the freight and delivery business models (TCO)
- Prepare and equip hub-to-hub corridors for AD truck

*After Year 1, **Freight and Logistics** is removed from the list of Thematic areas, and treated as a Development Path*

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Main conclusions and outcomes for Year 1

- Key differentiation factor between scenarios : level of support and involvement of the public authorities
- Impact : ability to deploy the systems and services in a optimal way, maximize the benefits for individual users and society
- Intensify large-scale testing, inc. long-term periods
- Foster the integration of European and National projects, to consolidate results
- Recommendation to align stakeholders on common methodologies, vocabulary, data format, use case descriptions, architectures in all areas

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Thank you for your attention

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