

# MAVEN (Managing Automated Vehicles Enhances Network)

## MAVEN transition roadmap

**MAVEN final event**

6 June 2019



MAVEN is funded by the EC Horizon 2020 Research and Innovation Framework Programme, under Grant Agreement No. 690727



# MAVEN premise

- ❑ Infrastructure applications will continue to play a vital role in the management of the traffic network.
- ❑ Traffic control systems will have a coordinating, orchestrating and sometimes dictating influence on traffic flows and dynamics, in support of societal and collective objectives.

*Eg, infrastructure applications may organise the formation of dynamic platoons, set targets for such platoons, but leave the details of its progress to the platoon as a self-organizing unit.*



# Scope & purpose of transition roadmap

- ❑ Raise awareness of the concept of infrastructure-supported road transport automation
- ❑ Support road authorities in understanding potential future changes in their role and in the tasks of traffic management
- ❑ Describe the building blocks of infrastructure-assisted road transport automation
- ❑ Give indication of potential phases in the transition towards infrastructure-supported road transport automation



# What the transition roadmap does not cover

- ❑ Prediction of societal & mobility impacts of automated driving
- ❑ Transport planning and policy making in relation to CAVs
- ❑ Piloting and testing of CAVs



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# Building blocks for the MAVEN approach

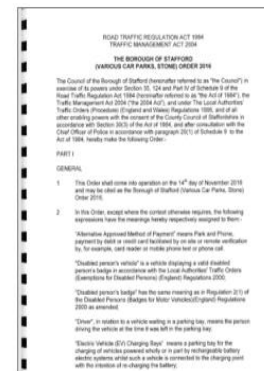
- **Infrastructure systems**

- **Traffic control:** *which types of traffic controllers (from fixed time to adaptive) are better suited to which MAVEN use cases?*
- **Sensors:** *for queue modelling, queue lengths & detection of VRU*
- **Communications:** *Traffic controller <-> vehicle through road-side unit using ETSI ITS G5 technology (and possibly traffic controller <-> control centre?)*

- **Physical infrastructure**



- **Digital infrastructure**



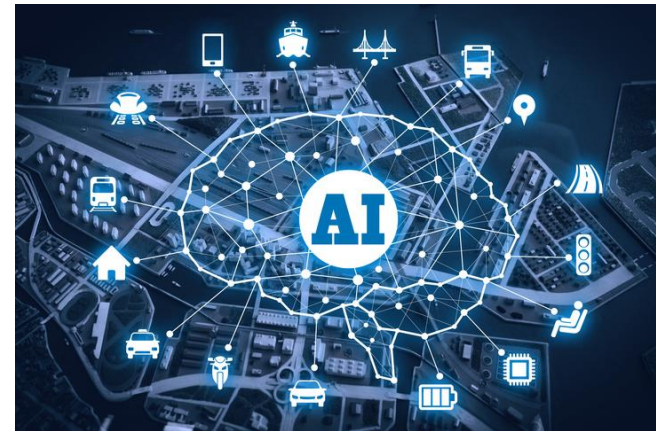
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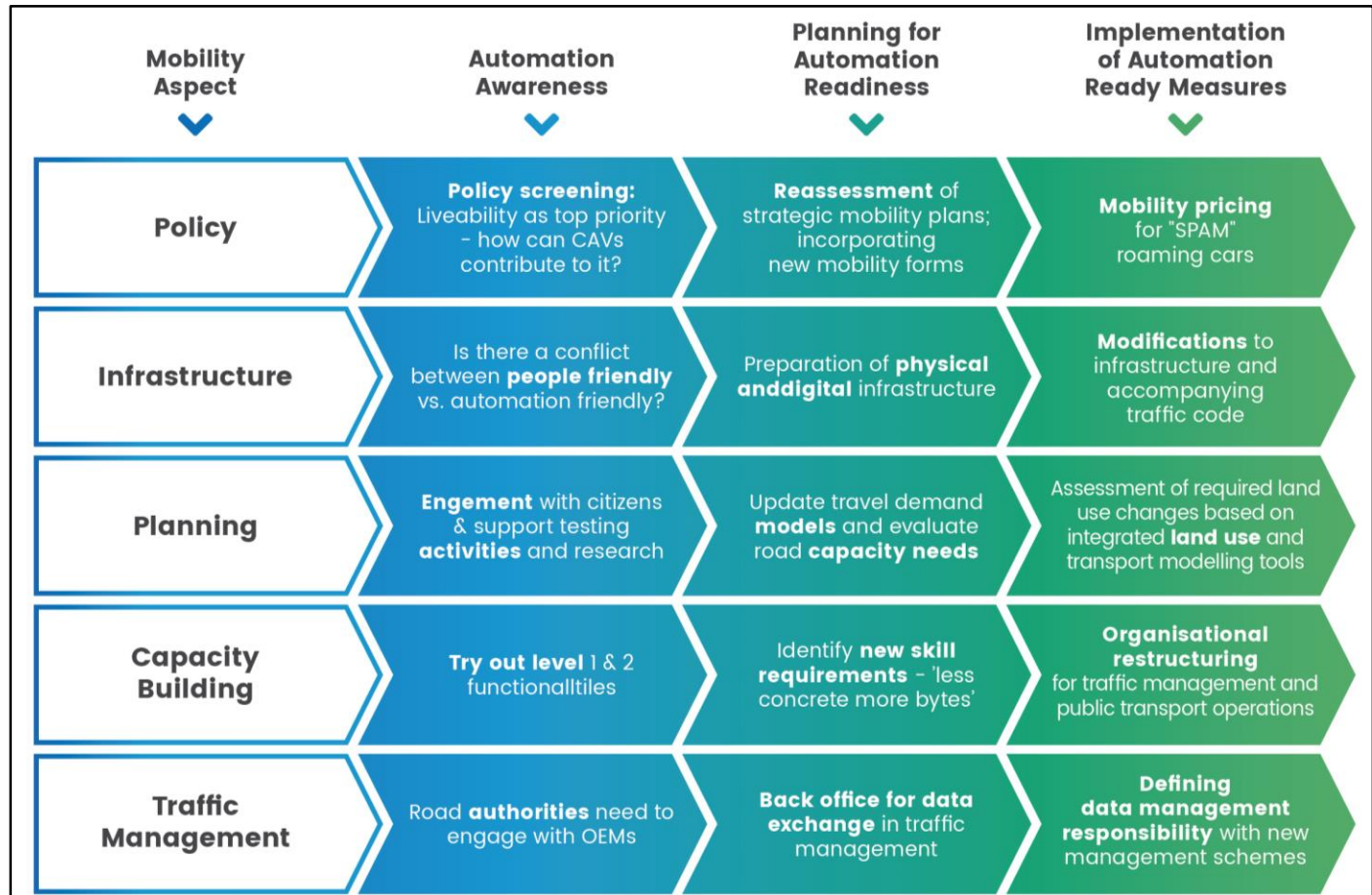


- **Traffic management aspects**





# Transition phases



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# MAVEN transition phases

1. Increasing awareness of CAV from a traffic management perspective
2. Planning for CAVs from a traffic management perspective
3. Implementation of traffic management measures for CAVs





# Transition phase - planning

- **Traffic management strategy assessment:**
  - How will cooperative perception and cooperative driving help me to do my job better as traffic manager?
  - Which MAVEN use cases hold most value for my city/region? Will the benefit be greater if implemented together or can it be done incrementally?
  - Which intersections/corridors should be prioritised?
  - How will my role as traffic manager evolve?
  - What influence will I have on vehicle movements as connected and automated motoring advances?



# Transition phase - planning

- **Organisational change**

**assessment:**

- Do TM staff have right knowledge and skills?
- How will the use cases affect existing TM procedures?
- New guidelines for vehicle guidance and control

- **Traffic management**

**infrastructure assessment:**

- Traffic signals readiness
- Additional infrastructure needed
- Integration with legacy systems, systems upgrading?



# Transition phase - planning

- **Physical & digital infrastructure assessment:**
  - Which roads to prioritise for making physically AV-ready?
  - Digitise infrastructure – what, who and how?
  - Provide access to traffic & infrastructure related data
- **Procurement**
  - Market readiness: is infra/systems on market already?
- When will equipped vehicles be there in sufficient numbers to justify action/investment?
- Procurement guidance
- **Business plan development:**
  - What benefit will it bring?
  - How much will it cost and who will pay?
  - What if I do nothing?



# Thank you



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