AUTOPILOT

AUTOmated driving **P**rogressed by the **I**nternet **O**f **T**hings

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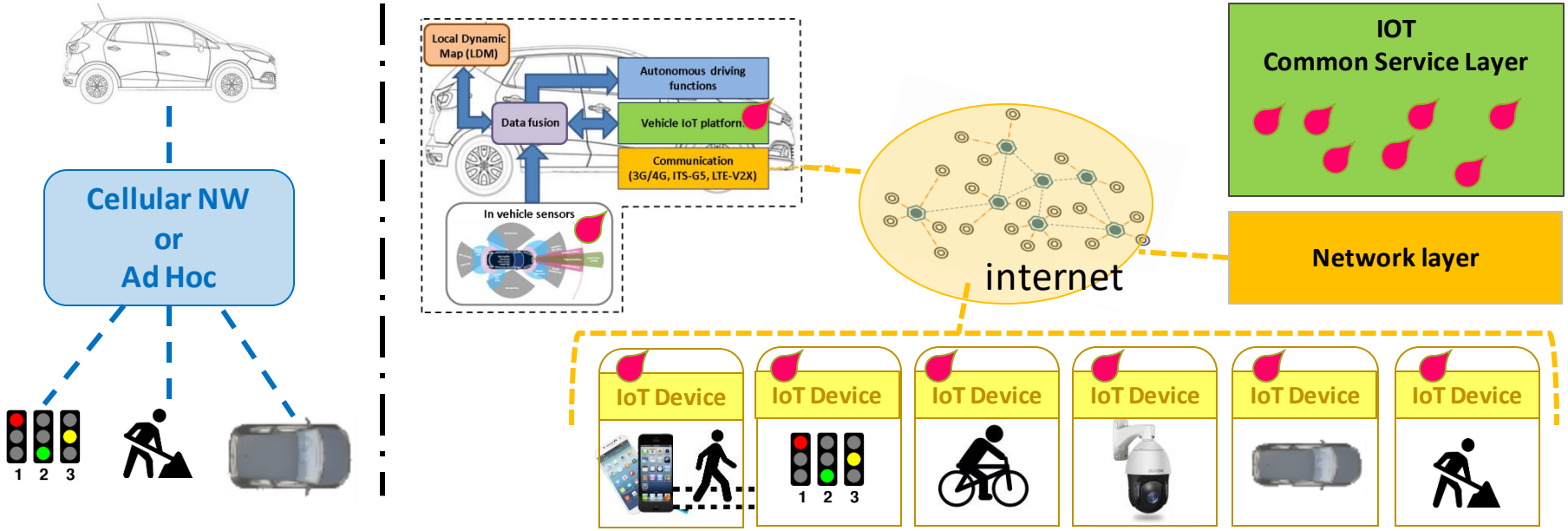
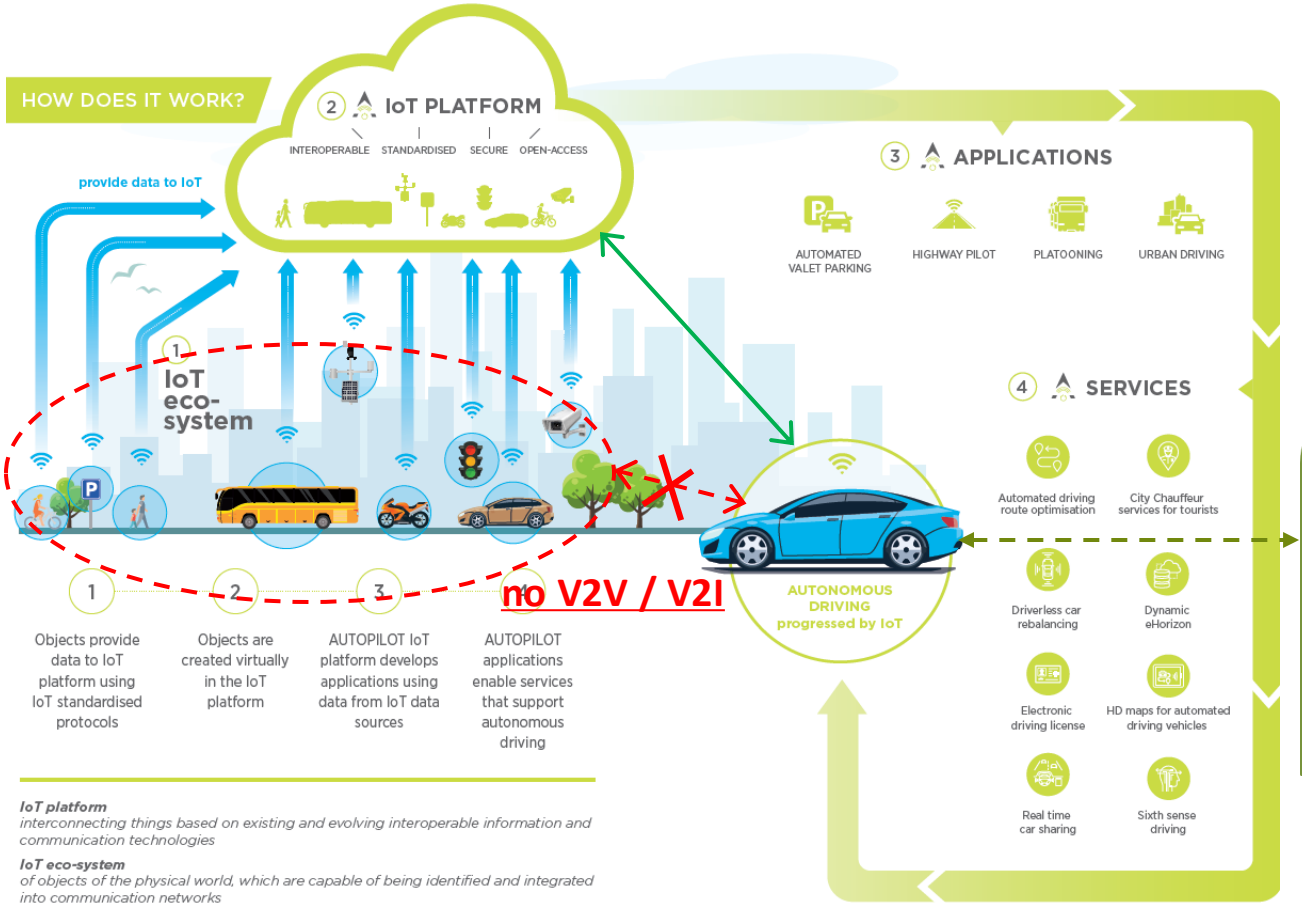
Vehicle centric and Cloud approaches



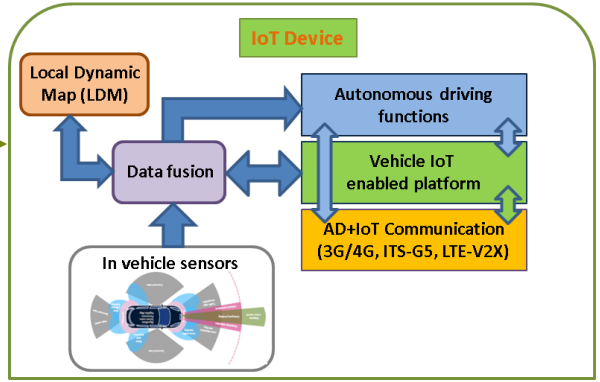
New connectivity paradigm: Cloud and IoT

- V2X approach - vehicle centric
  - limited scope: only device with compatible connectivity
  - Limited functionalities – missing connected devices diversity – “mere” data (no filtering / augmentation)
- Cloud IoT approach – augmented data provided as a service
  - Connectivity agnostic
  - Semantics enhancing device representation (metadata)
  - 2 levels management: device and context
    - “Augmented” data representation out of the context management
    - E.g. traffic jam or other hazards / traffic : environment events from individual Things’ data
  - Easy cross domain service integration - aggregation
  - Standardised data models - platform openness – higher cyber-security

IOT to transform automated driving



Vehicle IoT integration



Perspective of IoT for automated driving

- Current use cases (AUTOPILOT)
  - Enhance driving environment perception for the AD DDT and RT HD maps update
  - Provide SaaS/PaaS for mobility (OEM vehicle management platform or MaaS)
- Future usages
  - Driven by future IT features in the Cloud: e.g. AI
  - Enabled by future Cellular network performances:
    - Massive IOT providing more information for the AD functions – (mMTC)
    - Higher data rates (eMBB) allowing high volume data representation (videos)
    - Lower latency (URLLC) and MEC enabling
    - use of IoT for RT DDT in the vehicle and DDT combined with Infrastructure control
- Effect of relationships between computing and networking performances versus Automation level
- Progress on connectivity increased by a smart management of devices

Thank you

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