Huge Data for Connected Vehicles

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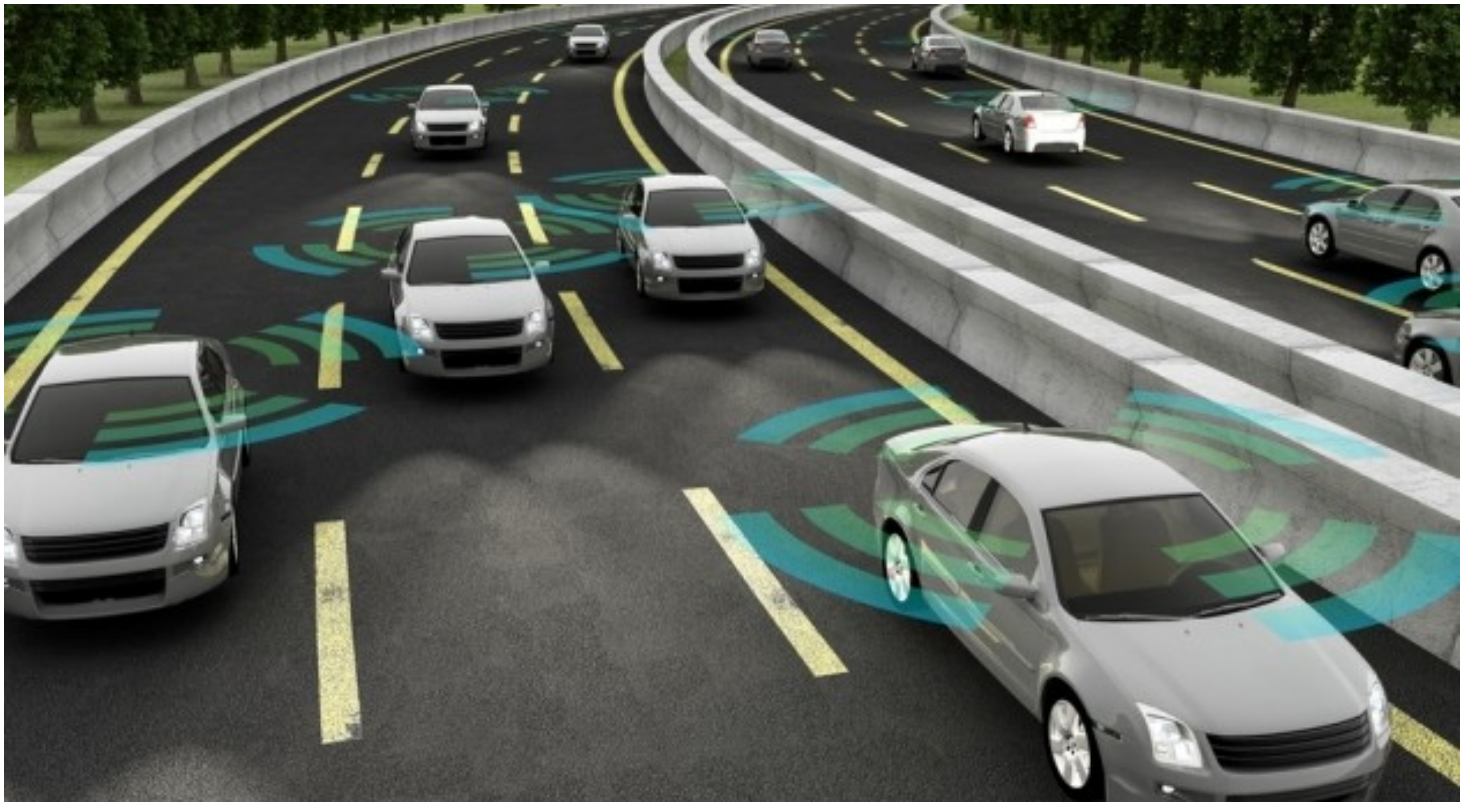


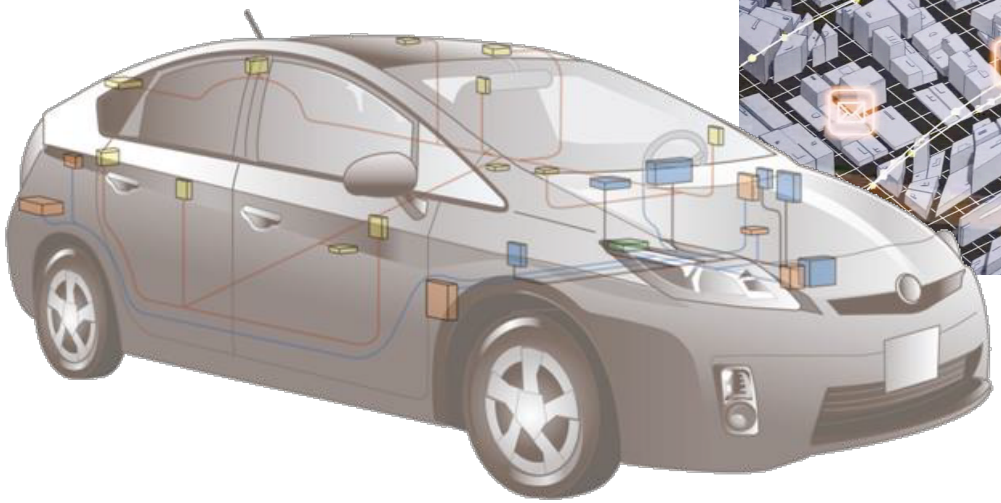
https://medium.com/datadriveninvestor/the-development-of-connected-and-autonomous-vehicles-and-their-ethical-dilemma-a65dfe3d6b73

Connected and Autonomous Vehicle (CAV)

- **is one of the major technological drivers in the automotive domain today**

Global Impact around 2025

1EB~10EB/mo.
Communication

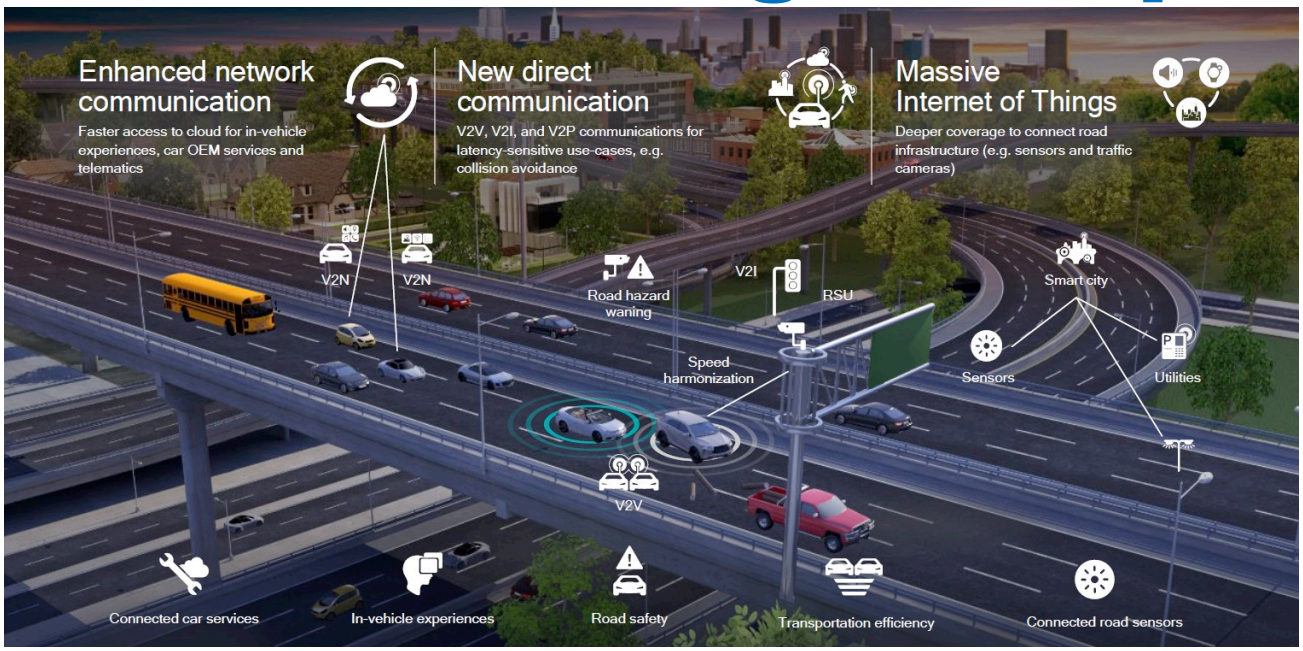


100M units
Connected car

[Connected Car Global Forecast 2015]

[Connected car report 2016]

Motivation for Edge Computing



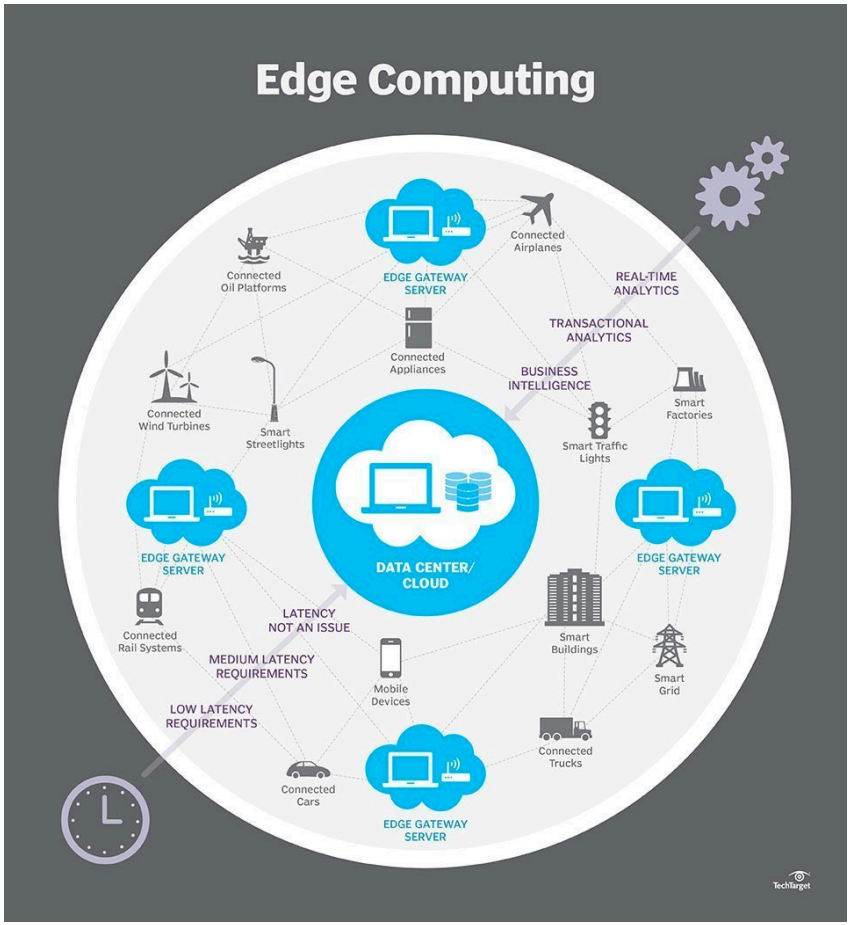
- Accessing cloud-based services
  - total latency in the range of 30-100ms [1]
- Unacceptable for many latency-critical applications
  - autonomous driving, real-time online gaming, virtual sports
  - may require tactile speed with latency approaching 1ms [2]

[1] M. Satyanarayanan, P. Bahl, R. Caceres, and N. Davies, “The case for VM-based cloudlets in mobile computing,” IEEE Pervasive Comput.,vol. 8, no. 4, pp. 14–23, 2009.

[2] G. Intelligence, “Understanding 5G: Perspectives on future technological advancements in mobile,” London, UK, 2014.

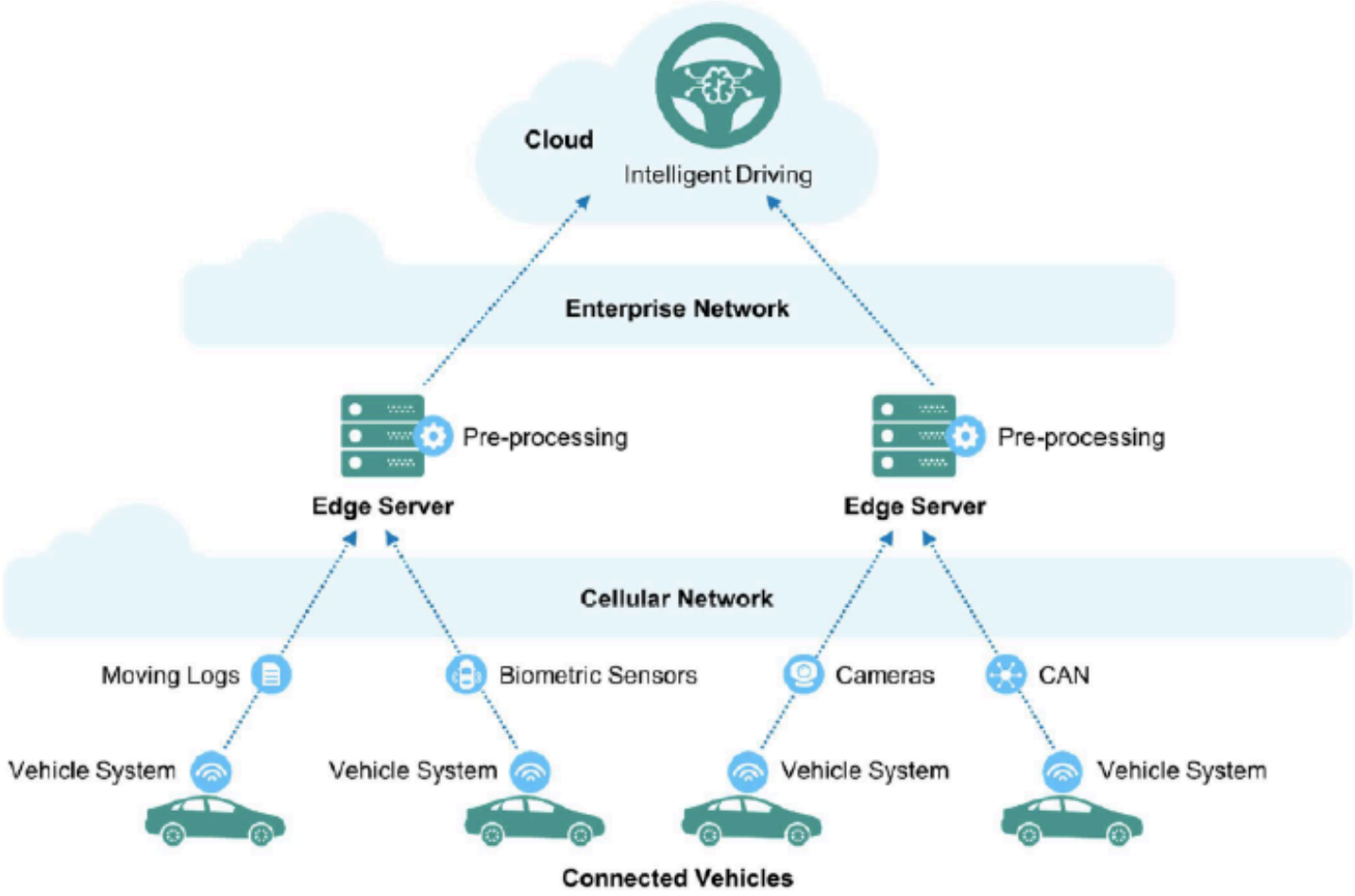
Mobile Edge Computing

- Bring computational resources, storage and services closer to the consumers
- Edge computing helps ensure that the right processing takes place at the right time
- Benefits
  - Latency & bandwidth reduction
  - Computation offloading
    - IoTs, cameras, cars might not have sufficient computing power
    - need to collect data from other sources
  - Context awareness due to proximity



https://searchdatacenter.techtarget.com/definition/edge-computing

Hierarchical data processing architecture for vehicle edge computing



Thank You!

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