



Aalto University
School of Engineering

Smart Junction

*Opening of the
Jätkäsaari Smart Mobility Lab
1.11.2019*

Aalto University
Conveqs Oy

Aalto Smart Mobility Team

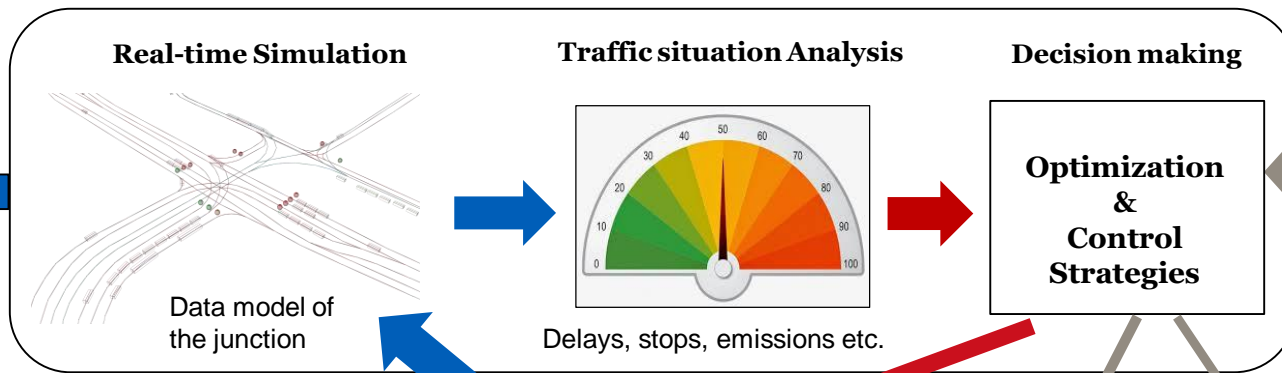


Smart Junction

@Jätkäsaari Smart Mobility Lab

Open
API

4-5G IoT



Air quality
Emissions, Noise



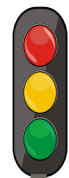
Data from
Individual
Vehicles

Data from
Vehicle Groups
Sensor Unit:
Radar & Camera

Control of
Vehicle Groups

Control of
Individual
Vehicles

Alerts to
Pedestrians
& bikers



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Phase 1



Phase 2

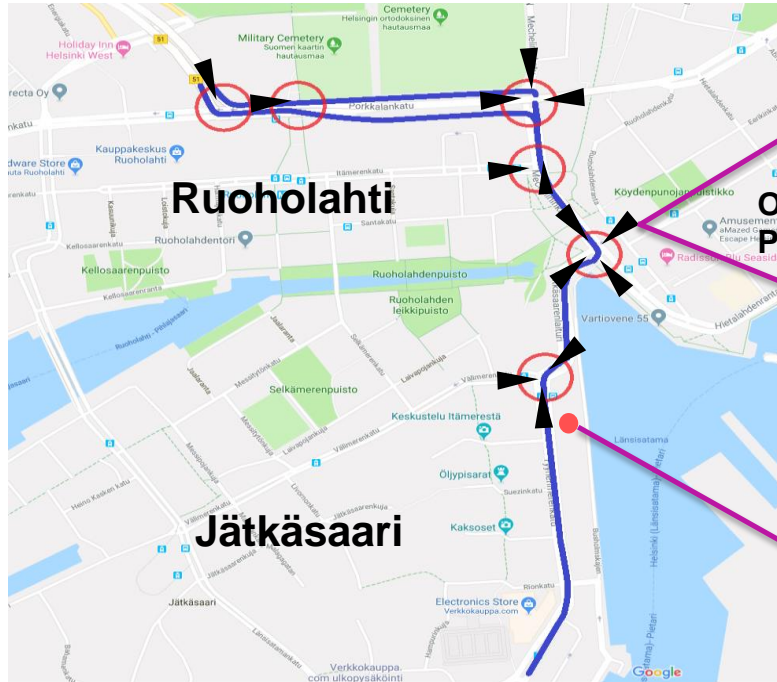


Phase 3

Iisakki Kosonen & Aalto Smart Mobility Team



Sensor Arrangements



One sensor station
Per approach

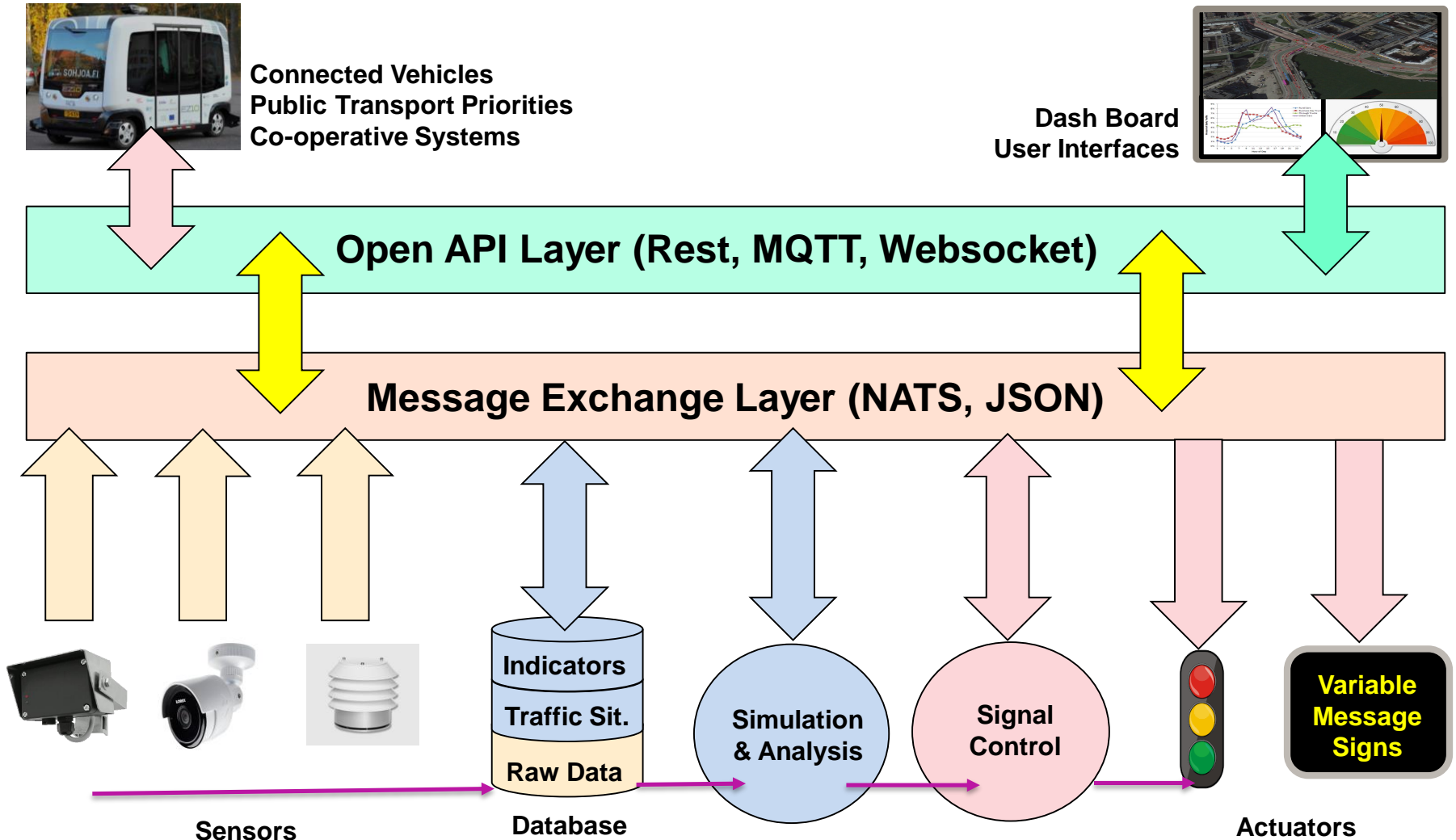


Air Quality
& Emissions

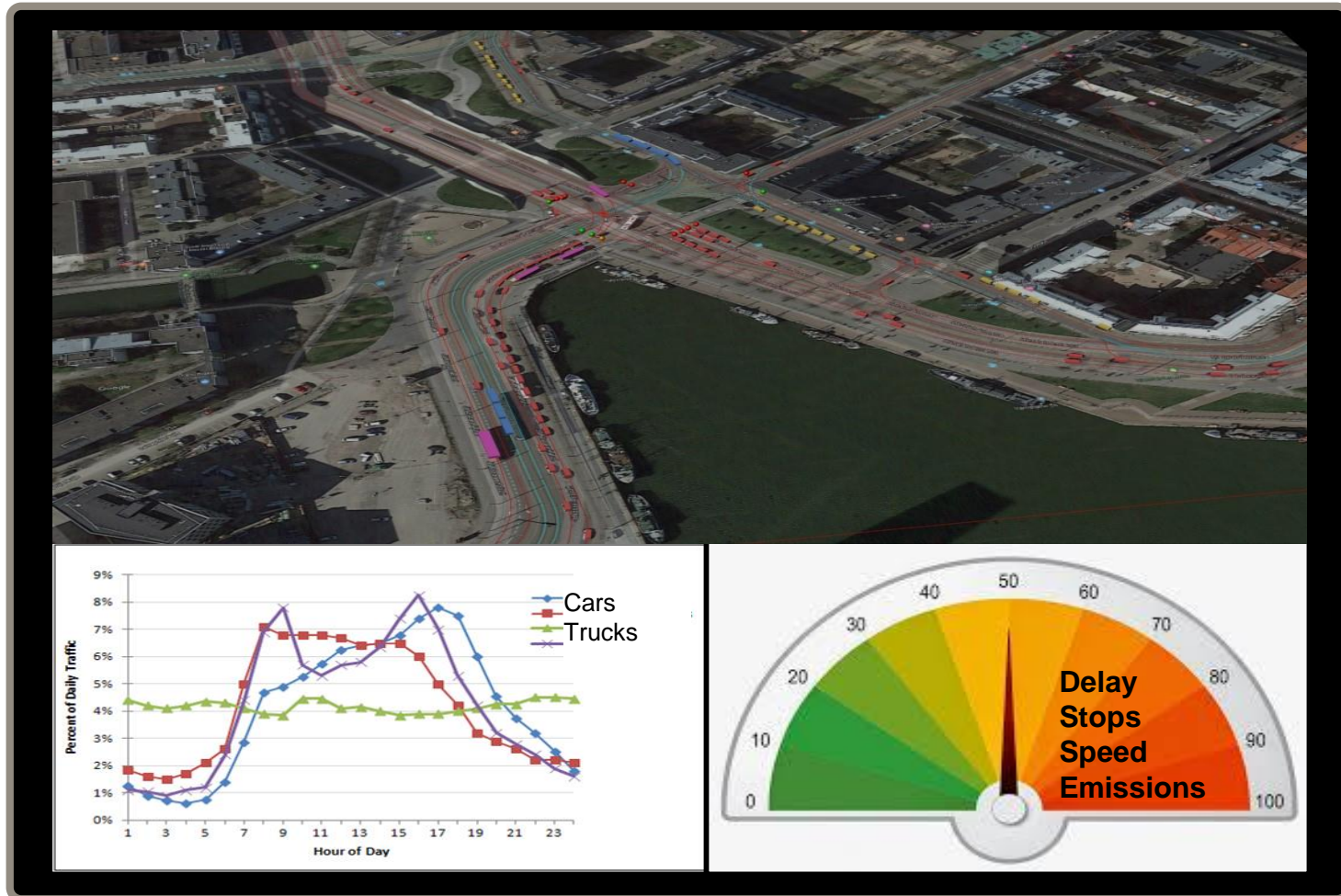
The Jätkäsaari Mobility Lab



Smart Junction Platform

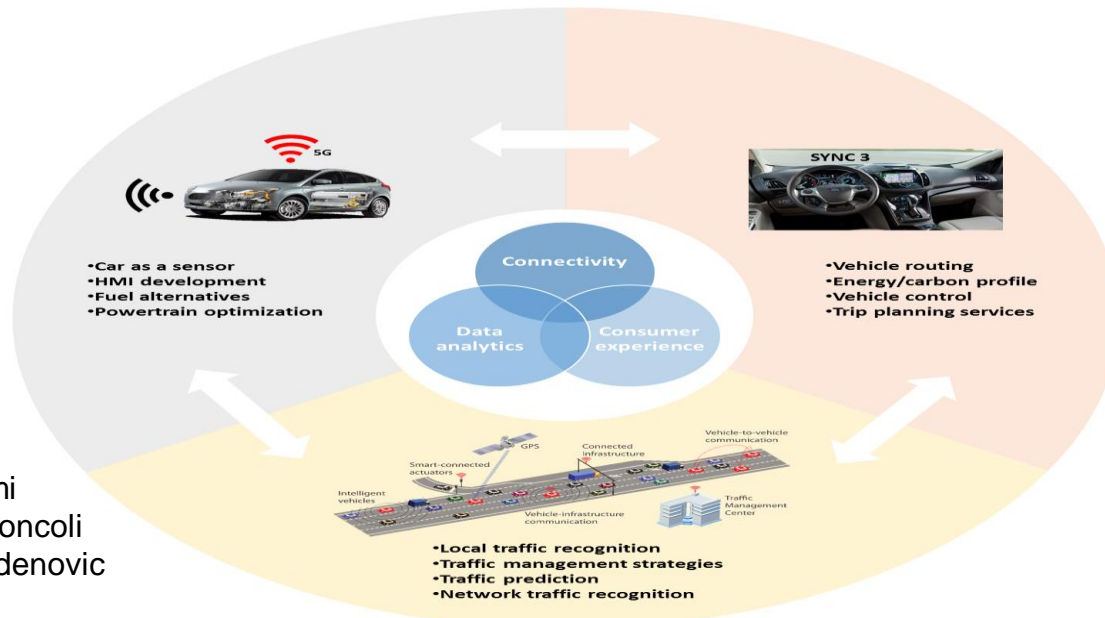


Simple Outline of the Dashboard



Ford Smart Mobility (C'MON)

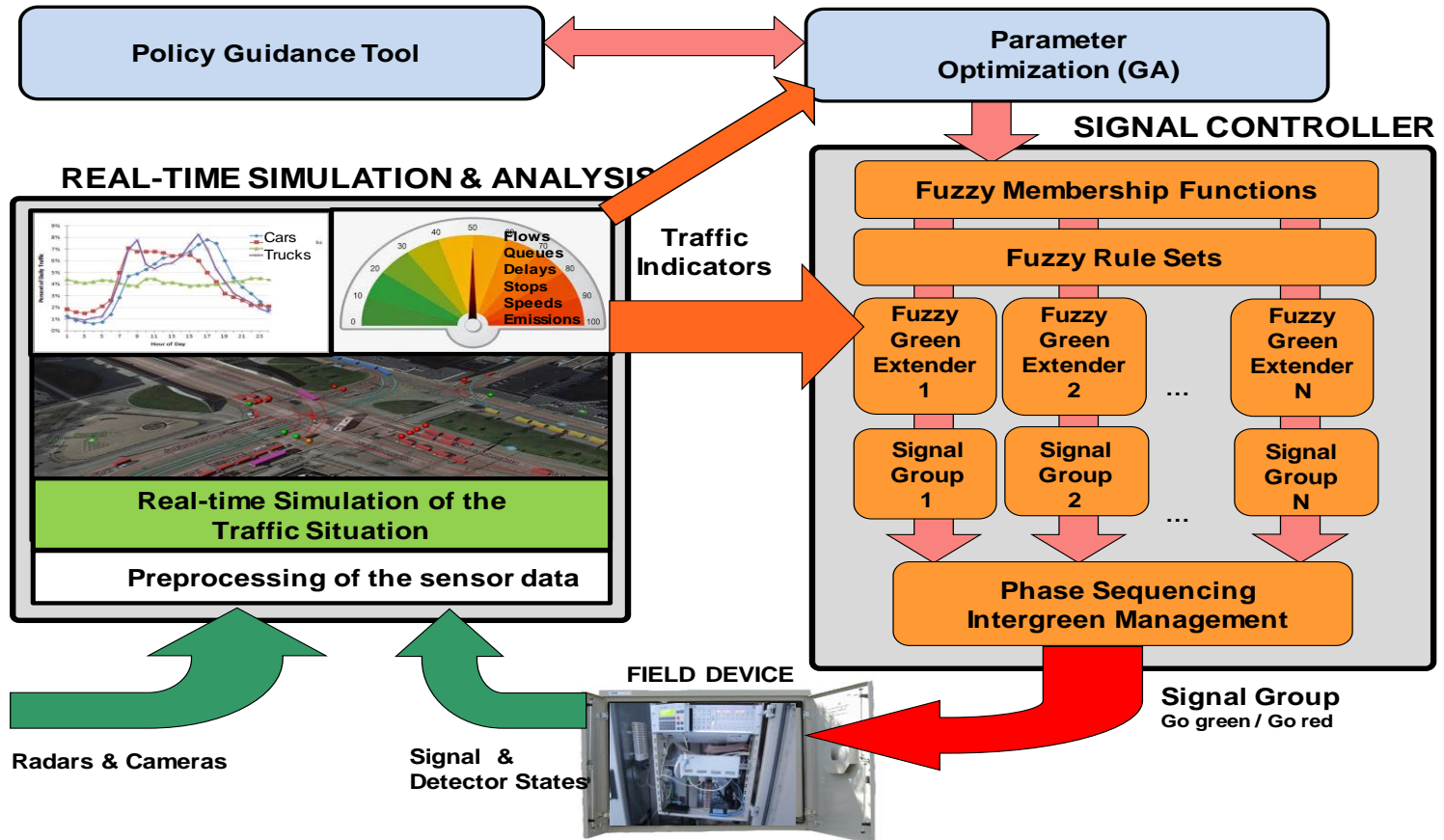
- Funded by Henry Ford Foundation (HFF)
 - 3 PhD Candidates / working 4 years in the Aalto University
 - Instrumented & connected car for research purposes
- Closely related topic to the smart junction
 - The connected car could interact with the smart junction



Kari Tammi
Claudio Roncoli
Milos Mladenovic



Intelligent Traffic Signal Control



Research Topics at Aalto University

- **Policy-driven traffic control optimization**
 - Tuomas Toivio
- **Platoon recognition and optimization**
 - Kirsti Mäenpää
- **Passenger flow based optimization**
 - Roozbeh Mohammadi
- **X-Ray vision (seeing behind the corners)**
 - Risto J. Ojala



Further Extensions

- Safety
 - *Monitoring of speeds, red driving, near accidents*
- Connected cars
 - *Warnings, speed & lane change advising*
 - *For cars, pedestrian, cyclists*
- Automated vehicles
 - *Safe passage through the intersections*
 - *Smart priorities for the robot buses*
- 5G
 - *Applying 5G for safety critical communication*
 - *Sensors, infrastructure, vehicles, pedestrians*



Smart Junction

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