Organic Traffic Control Collaborative (OTC²)
## DFG SPP 1183 Organic Computing

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OTC² aims at the realisation of an organic traffic control system capable of controlling and optimising traffic signals in urban road networks. An architecture for adaptive learning intersection controllers is extended with collaboration capabilities to allow for coordinated operation.
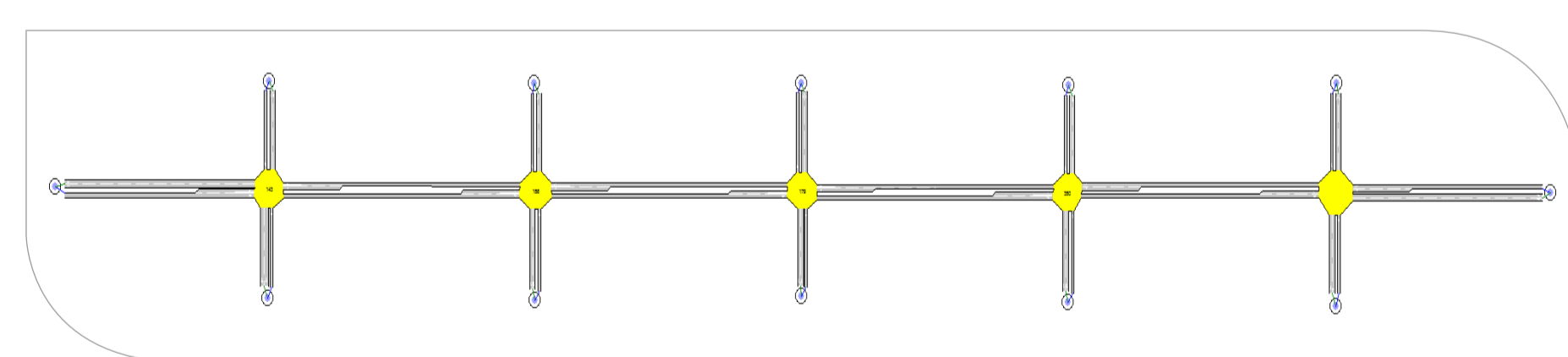
Local intersection control

- An Evolutionary Algorithm (EA) optimises the configuration of the intersection's traffic light controller based on simulation results.
- A Learning Classifier System (LCS) selects an appropriate configuration for the current traffic demand.
- The traffic light controller sets the intersection's traffic lights according to the selected configuration.
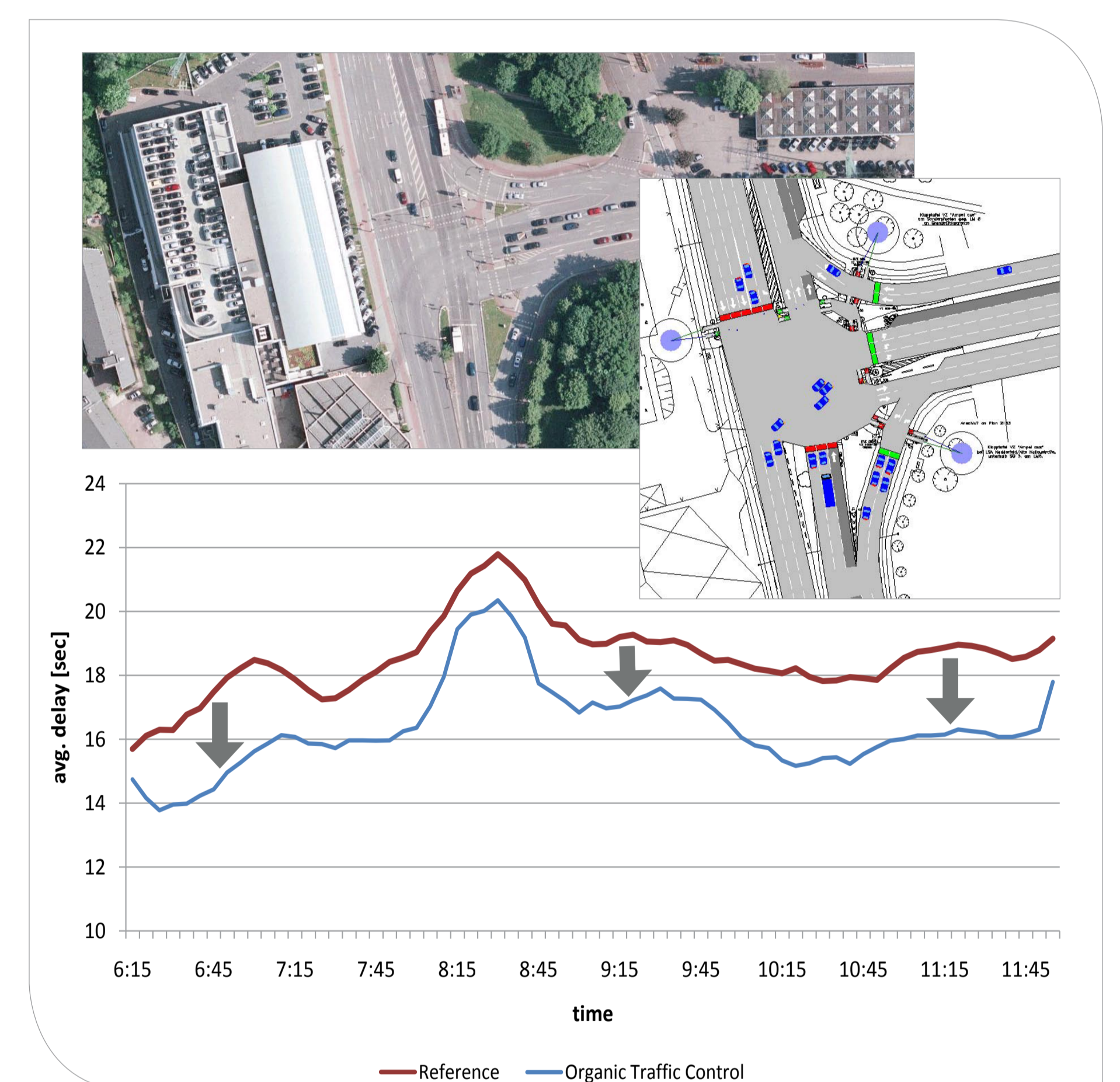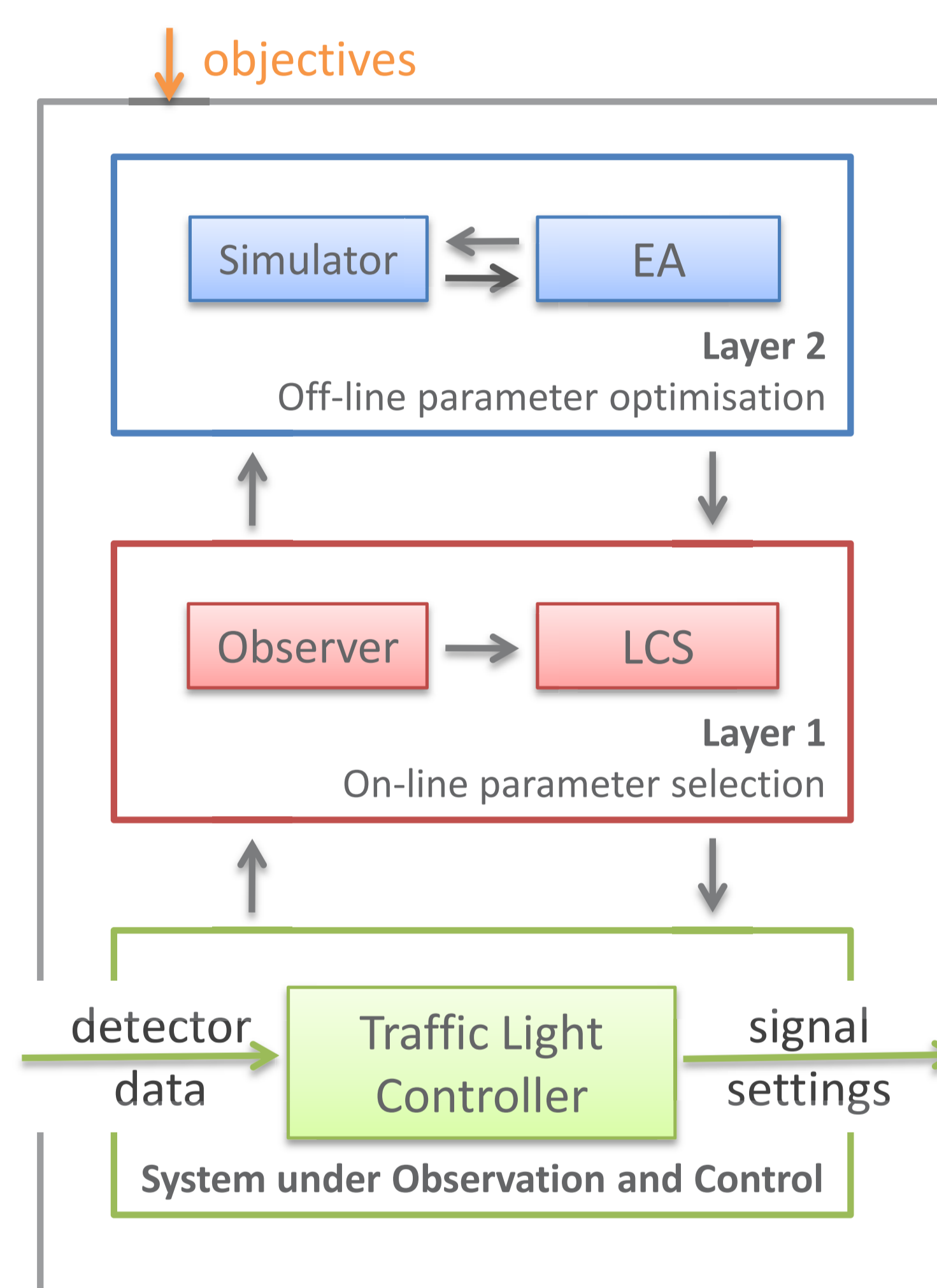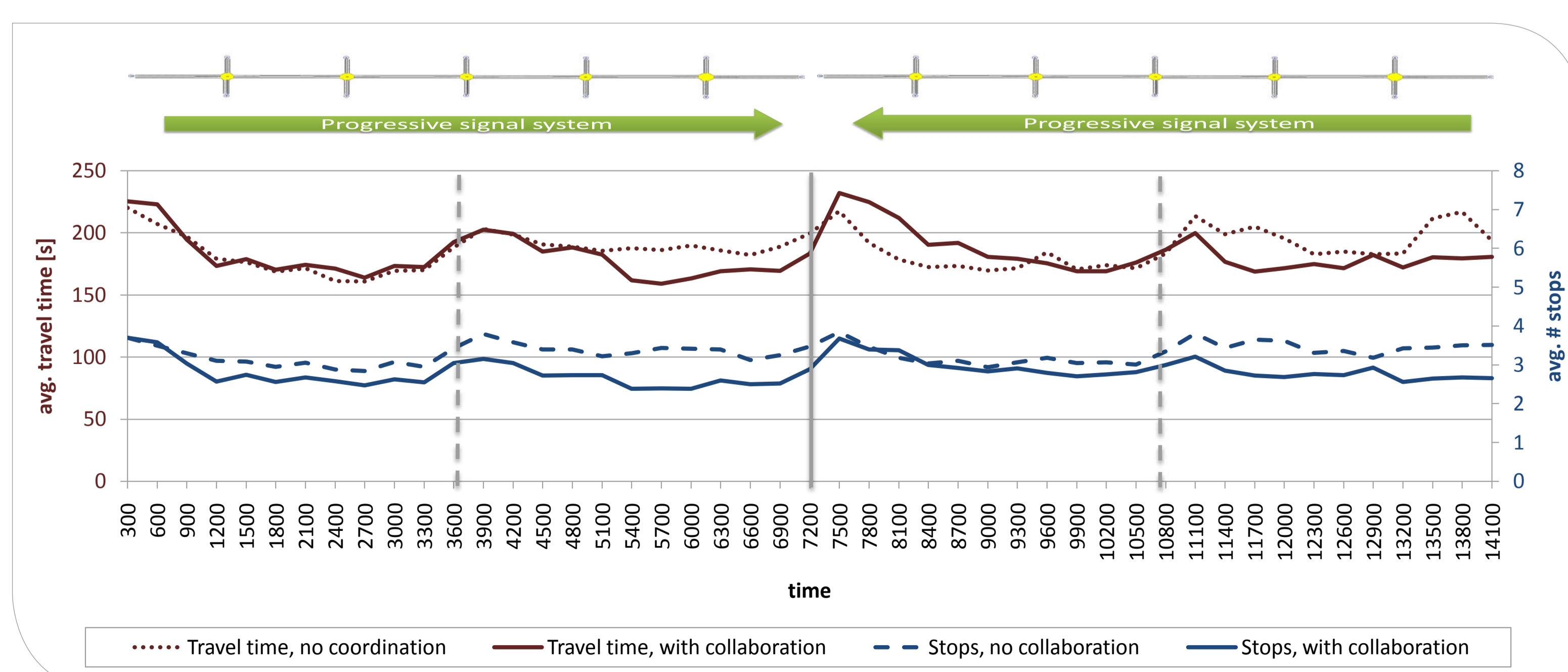

Delay reduction by Organic Traffic Control

Collaborative Control: Decentralised

Neighbouring intersections coordinate their operation using a decentralised consensus mechanism to reduce the network-wide number of stops.

Test network with changing traffic demands

Reduced number of stops by collaborating intersections

Hierarchical

A central observer/controller (O/C) observes the network's intersections to provide *controlled self-organisation*.

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