



# Remote Management

Jaap Vreeswijk



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# Topic Definition

For the foreseeable future, safe and comfortable L4 autonomous mobility applications in mixed traffic (i.e. without steward or fall-back on board), will rely on remote management.

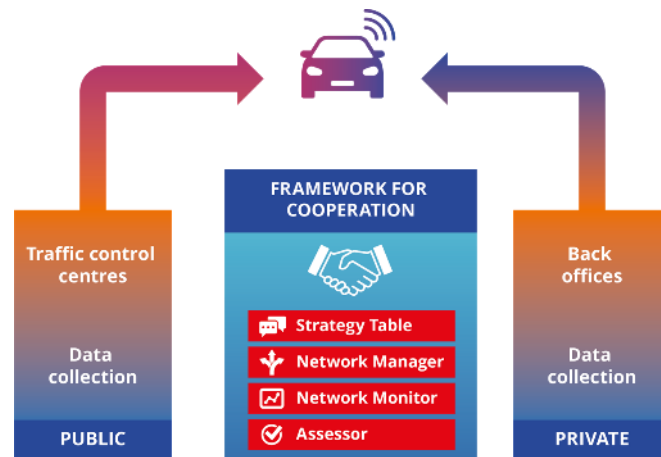
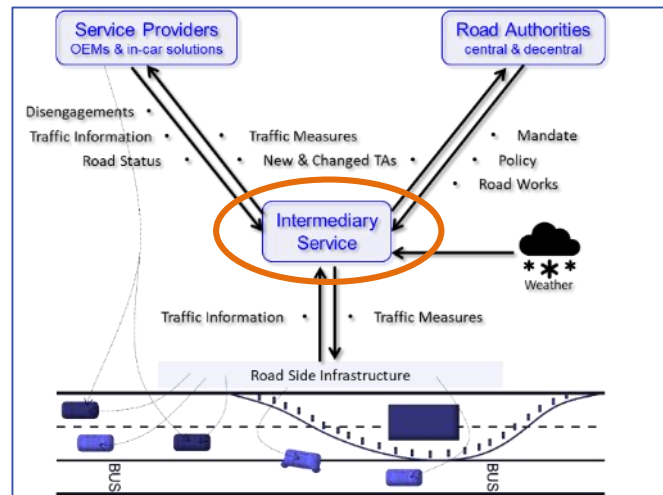


*Common synonyms:*

- *Remote monitoring and control*
- *Remote operations centre*
- *Tele-operation*
- *Command centre*
- *Vehicle operations management*
- *Vehicle control centre*
- *Real-time fleet supervision*
- *Transit operations monitoring and supervision*
- *Supervision platform*

# TransAID finding

- Single point of access, possibly mandated by both RAs and OEMs.
- Integrating *traffic management* and *fleet management*:
  - Generate trust
  - Create understanding
  - Align measures (space, time, type)
- Apply across road authority borders (incl. those without a TMC).



Source: SOCRATES 2.0

# Remote management services

Functional (safety),  
telemetry, technical  
surveillance

Service scheduling,  
vehicle mission  
mngt. & routing

Support the sense-  
plan-act stages of  
the ADS

Status of network  
traffic, road works  
and incidents

Infrastructure segment  
information and  
guidance (V2X)

Facilitate stakeholder  
interaction and  
manage clearance

1st and 2nd line  
help desk services &  
escalation protocols

The presence of remote operators also contributes to the **public acceptance** of autonomous transport.

# Prospect

- Cross-domain service centre
- Centralising related operational processes
- Stakeholder intermediary
- Multi-brand, multi-application, anywhere
- Certified, mandated and trained
- Scalable

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Facilitate stakeholder interaction and manage clearance

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# The panel

**Olav Madland**  
Applied Autonomy

**Dries Declercq**  
De Lijn

# Discussion statement (1/2)

We recommend that...

***Road authorities and vehicle manufacturers cooperate and align measures through stronger integration of traffic management and fleet management, by means of a mandated single point of access.***

# Discussion statement (2/2)

We recommend that...

**CAV's must be intrinsically safe at all times and remote management never takes over the control of the vehicle (i.e. remote driving).**

**However, AD systems of all brands and makes must be able to adhere to tactical information and guidance imposed by an operator.**





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