TMC and roadside technologies for ITS

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Enabling vehicle interaction with traffic management
TM 2.0 Platform

- Started in 2014
- Focus on new solutions for advanced and active traffic management
- an ERTICO innovation platform
- Vision: “Enable vehicle interaction with traffic management”
Traffic Management: Traditional Situation

Road Operators & Service Providers

ROAD OPERATOR
- Measure
- Influence traffic

SERVICE PROVIDER
- Guide driver
- Inform driver
TM2.0 - Towards Active Traffic Management

Coherence of:

- Traffic management plans provided by road authorities
  with
- Dynamic traffic information provided by traffic service providers
  with
- Guidance provided by navigation service providers

Drivers of cars, buses, trucks

Visual guidance along route
TM 2.0 – What is needed

**DATA COLLECTION**
- Navigation systems
- V2I
- Cloud
- Traditional detectors

**DATA PROCESSING**
- Modeling
- Statistics
- Control strategies
- Routing
- UTC
- Fleet management
- Traditional signs
- Cloud
- I2V

**IMPLEMENTATION**
- Navigation systems
- TM 2.0 Interactive Traffic Management
Basic aims

Use a set of common interfaces, principles and business models to facilitate the exchange of data between vehicles and TMC.

+ Improve entire value chain for consistent TM and Mobility services.
## TM 2.0 added value for stakeholders

<table>
<thead>
<tr>
<th>City administrators / traffic managers</th>
<th>Drivers</th>
<th>Traffic information service providers</th>
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<tbody>
<tr>
<td>Avoid congestion and traffic collapse</td>
<td>Avoid congestion: more relaxed driving</td>
<td>Provide best route option for the destination (not only fastest)</td>
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<td>Avoid unnecessary emissions</td>
<td>Receive relevant regional information in-vehicle</td>
<td>Provide information that goes beyond congestion</td>
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<td>Improve TMP complementing or replacing loop detectors and enhancing accuracy</td>
<td>Improved road safety through smoother traffic flow</td>
<td>Provide solution (best route option) not the problem (congestion info) well in advance</td>
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<td>TMP measures reach driver directly</td>
<td>Best route options aligned with TMPs</td>
<td>Regional information becomes part of an integrated service</td>
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<td>FCD-enabled TM even in roads with no ITS (scalable)</td>
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TM Cooperation levels

Level 00: TMP and FCD exchange, both optimize their own process.

Level 01: Display or discard the public strategic route after evaluation by SP, user decides.

Level 02: Compulsory display as option of public strategic route, user decides.

Level 03: Mandatory takeover of public strategic route. RA decides.

Level 04: Load balanced routing, traffic will be distributed according to individual destinations and free capacity slots on different routes.
TM 2.0 concept of active moderation

Traffic Centres can use the communication channels of service providers and influence routing

Directly access many drivers and cars

TMC preferred route offered as an option to the driver

Influence via Mobile Apps, In-Dash Navigation and PND’s

Traffic data on highways and on secondary roads

Routes automatically adjusted

A closed road is on your planned route, would you like to avoid this road?

Yes  No
TM2.0 current members (1)

**Associations**
- ERTICO ITS Europe
- austria.tech
- autostrade per l’Italia
- BRABANT STAD
- CNIT
- HELLENIC REPUBLIC REGION OF CENTRAL MACEDONIA
- Port of Antwerp

**Public Authorities**
- Schweizerische Eidgenossenschaft Confédération suisse Confederazione svizzera
- Swiss Confederation
- Swiss Federal Roads Authority FEDRO
- Norwegian Public Roads Administration
- Finnish Transport Safety Agency
- Ministry of Infrastructure and the Environment
- STADT: SALZBURG
- STADT: GENT
- Comune di Verona
- Conceja de Vigo
- OpenTraffic Systems City Association e.V.
TM2.0 current members (2)

Associations:
- CERTH
- CTAG
- EPIZEU
- TNO

Service Providers:
- Atos
- HERE
- PTV Group
- TomTom

Suppliers:
- Continental
- dynniq
- INRIX
- TTI

TTI:
- Albrecht Consult
- Siemens
- Swarco
- Vialis
Concluding

In TM 2.0 Service Providers do not compete on the information but on its quality and on how to best route customers while taking the priorities of public authorities into account.

In exchange, the public authorities open their information on their traffic management plans and measures to all cooperating Service Providers.

TM 2.0 provides an informed view of the road network that leads to optimization of Traffic Management.
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