Cooperative Systems for Sustainable Mobility and Energy Efficiency

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Content

- Project objectives and background
- Approach to validation
- Insight on Pilot configurations
- Expected output

Objectives

***To facilitate the uptake and best use of
co-operative mobility services in Europe***

➢ **Implement a set of cooperative applications**

➢ **Install three Pilot Sites (Italy, Austria, Sweden)**

➢ **Measure energy-efficiency of the systems**

➢ **Define detailed specifications**

- Not research but **integration**
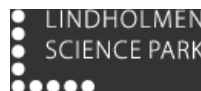- Validation -> **measured results**
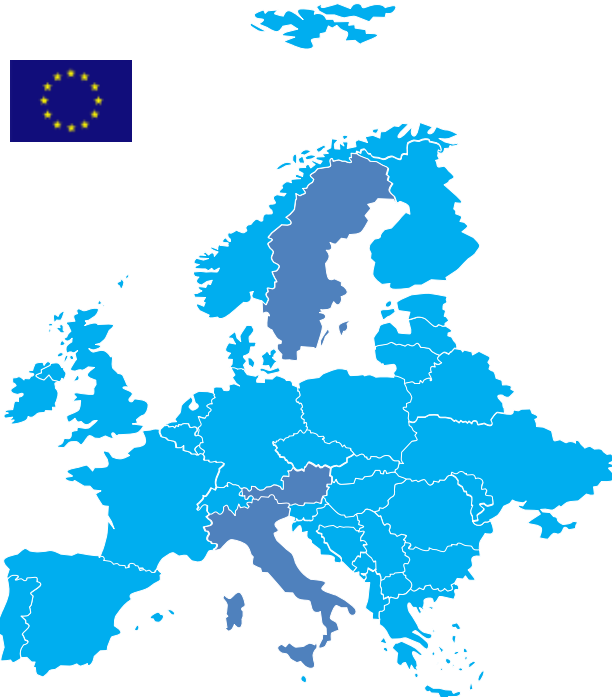
- ✓ System-wide approach to energy saving
- ✓ Eco-traffic management and congestion avoidance
- ✓ Eco-transit and dynamic parking management
- ✓ Eco-dynamic access management
- ✓ Eco-driving and driver behaviour change

Total cost: 4M€ Duration 32 months

Background

- Solutions from Coopers, CVIS, Safespot
  - HW prototypes, list of services, architecture, …

- Results of Field Operational Tests
  - Best practice, re-use of infrastructure, …

- Compliance with Standards
  - ETSI TC ITS WG1
  - ISO TC204 WG14 ….

New Generation Traffic Management

Expected impacts:
26% energy saving, - 8% fatalities,
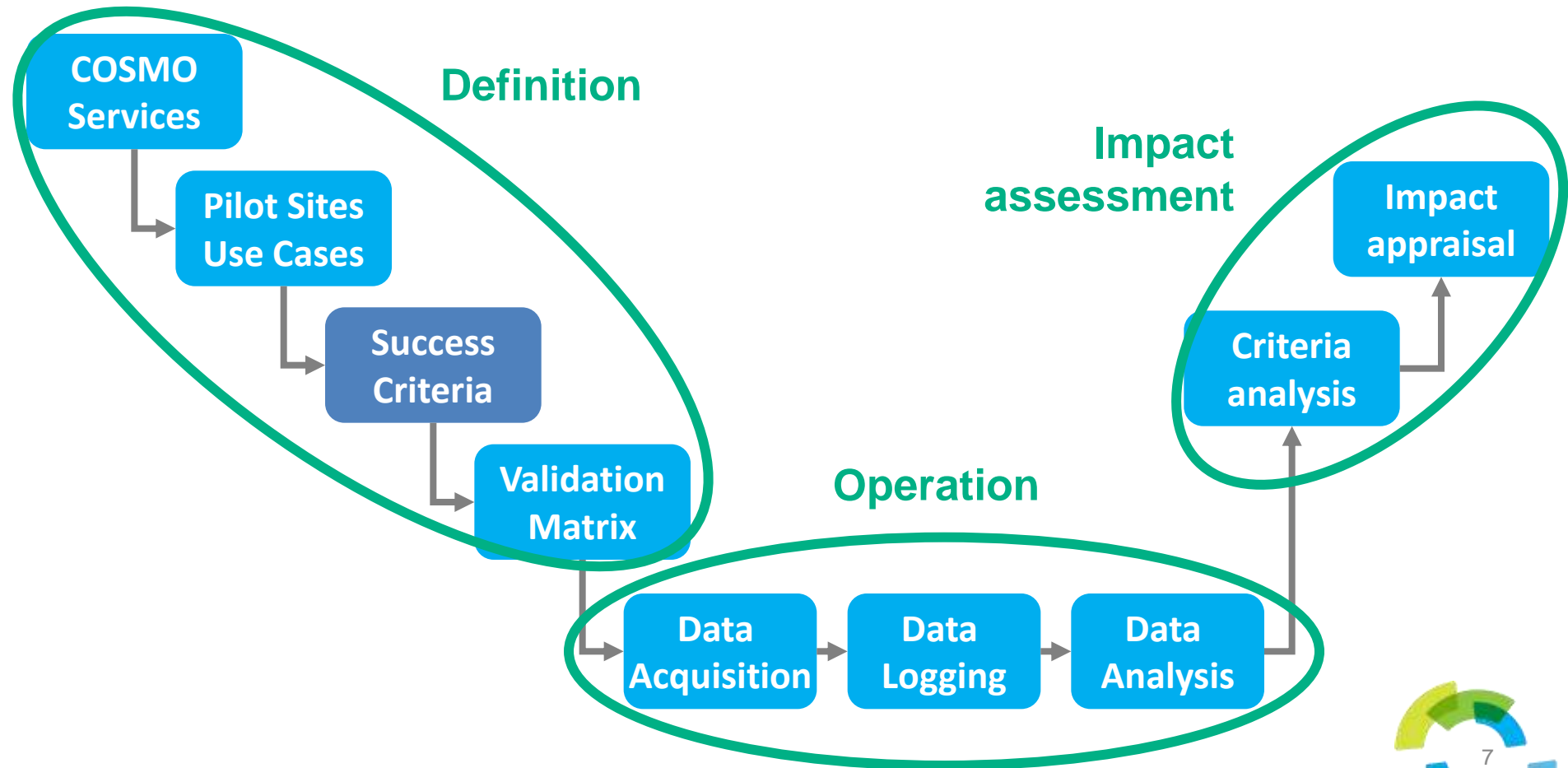**congestion costs reduced (now 2% EU GDP)**

(Source: eSafety Forum, Working Group)

- **Reduced costs for operators in long term**
- **Technologies and technical solutions are now available**

Validation V-model

Definition

COSMO Services → Pilot Sites Use Cases → Success Criteria → Validation Matrix

Operation

Data Acquisition → Data Logging → Data Analysis

Impact assessment

Criteria analysis → Impact appraisal

Validation approach

For each test site:

- Validation test cases defined
  – Application by application
  – Timing plan
  – Panels, test drives, surveys, …

- Impact indicators identified
  – Objective by objective
  – Method of measurement

- Progress indicators agreed
  – Monitor the installation progress

Connected to
the traffic Mgmt
Centre

Linked to the
Wireless sensor
network
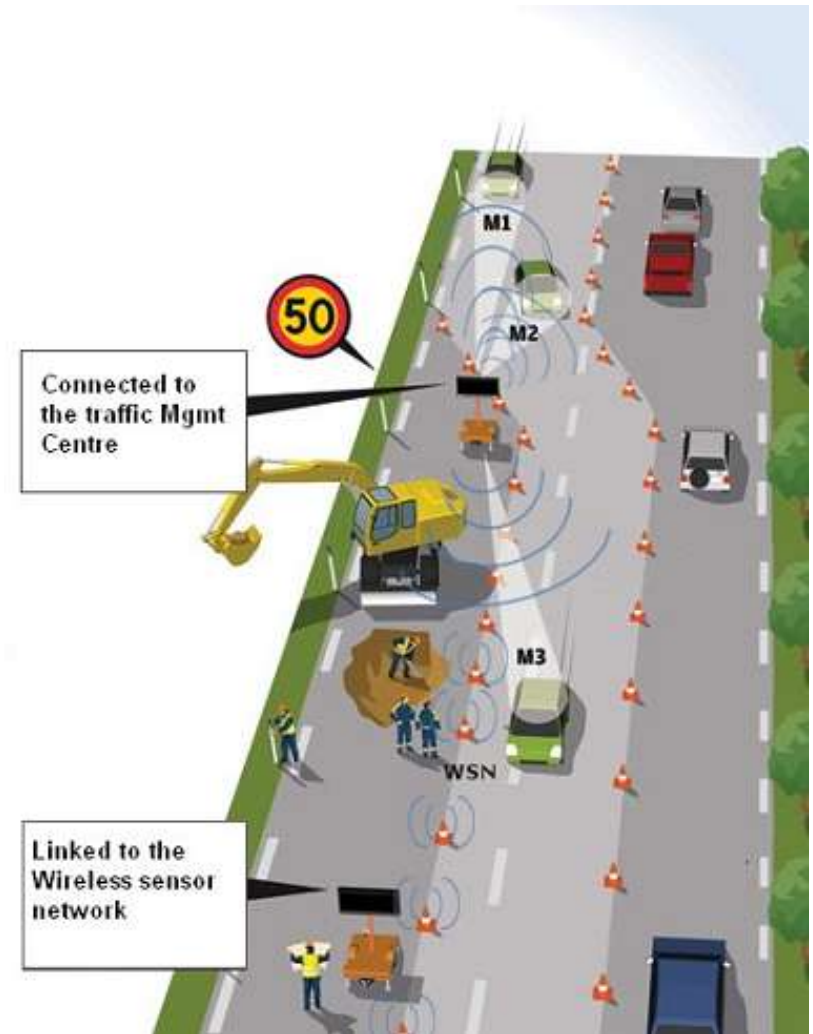
Italian Test Site: Urban

Applications:

- **Environmentally sensitive traffic control strategies**

- **Eco-driving for vehicles**

- **Multimodal real-time info**

- **Traffic-sensitive street lighting**

- **Dynamic Access Management**
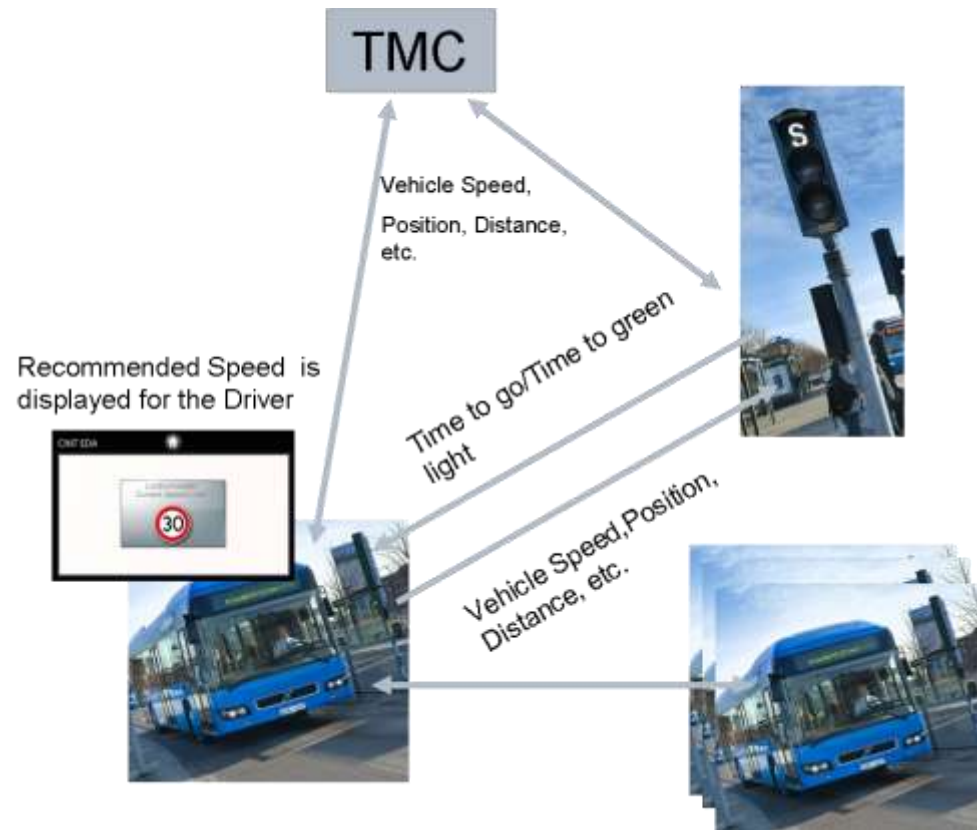
Italy @ Salerno

Key indicators:

- **Energy saving of equipment**

- **Fuel saving for private cars**

- **User behaviour changes**

- **Private car/public transport modal shift**

Swedish Test Site: Public Transport

Applications:

- **Bus management at intersections**

- **Congestion prevention**

- **Eco driver support**

- **Intelligent Speed Adaptation**

TMC

Vehicle Speed, Position, Distance, etc.

Recommended Speed is displayed for the Driver

Time to go/Time to green light

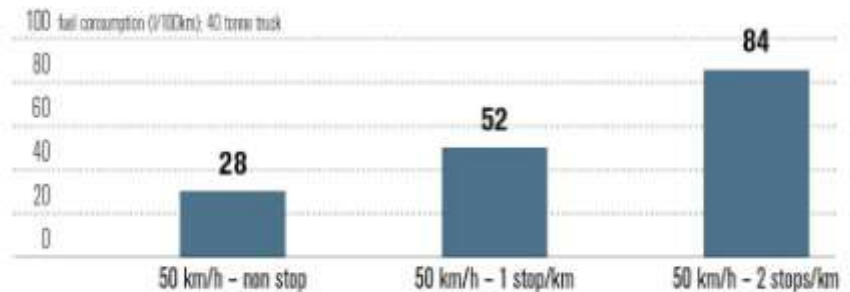Vehicle Speed,Position, Distance, etc.

Sweden @ Gothenburg

Key Indicators:

- **Fuel consumption**

- **Travellers' comfort**

- **Reduction of incidents**

Traffic Congestion increases fuel consumption — SOURCE VDA

fuel consumption (l/100km); 40 tonne truck

		84
	52	
28		
50 km/h – non stop	50 km/h – 1 stop/km	50 km/h – 2 stops/km

Austrian Test Site: Interurban

Applications:

- **Congestion avoidance**

- **Roadworks management**

- **Traffic flow optimization**

- **Real-time traffic info**

Austria @ Vienna

Key indicators:

- **Vehicle fuel consumption**

- **Reduction of accidents**

- **Traffic efficiency**

- **Drivers' comfort**

Synergies

- Sharing of resources with CO-Cities (Vienna)
  - test drives, equipment, integrated services, ….

- Liaison with Eco-Move and In-Time
  - results, evaluation methodologies, PDA app, …

- Demonstration during the ITS2012
  - Construction work monitoring on motorway

Project Timing

- Started: November 2010
- Pilot sites being implemented
- Pilot Site operation: June 2011 – Dec 2012
- First results will be published: April 2012
- Specifications will be issued in June 2013

Conclusions

Pilots will deliver:

- A set of specifications for cities and road operators
  - cooperative traffic management systems and services
  - procurement, testing, installation
  - operation and monitoring

- Validated achievable impacts
  - CO_2 emissions
  - Systems energy efficiency
  - Travellers' safety, comfort, behavior, …

Thank you for your attention

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