City of Verona (Compass4D partner)
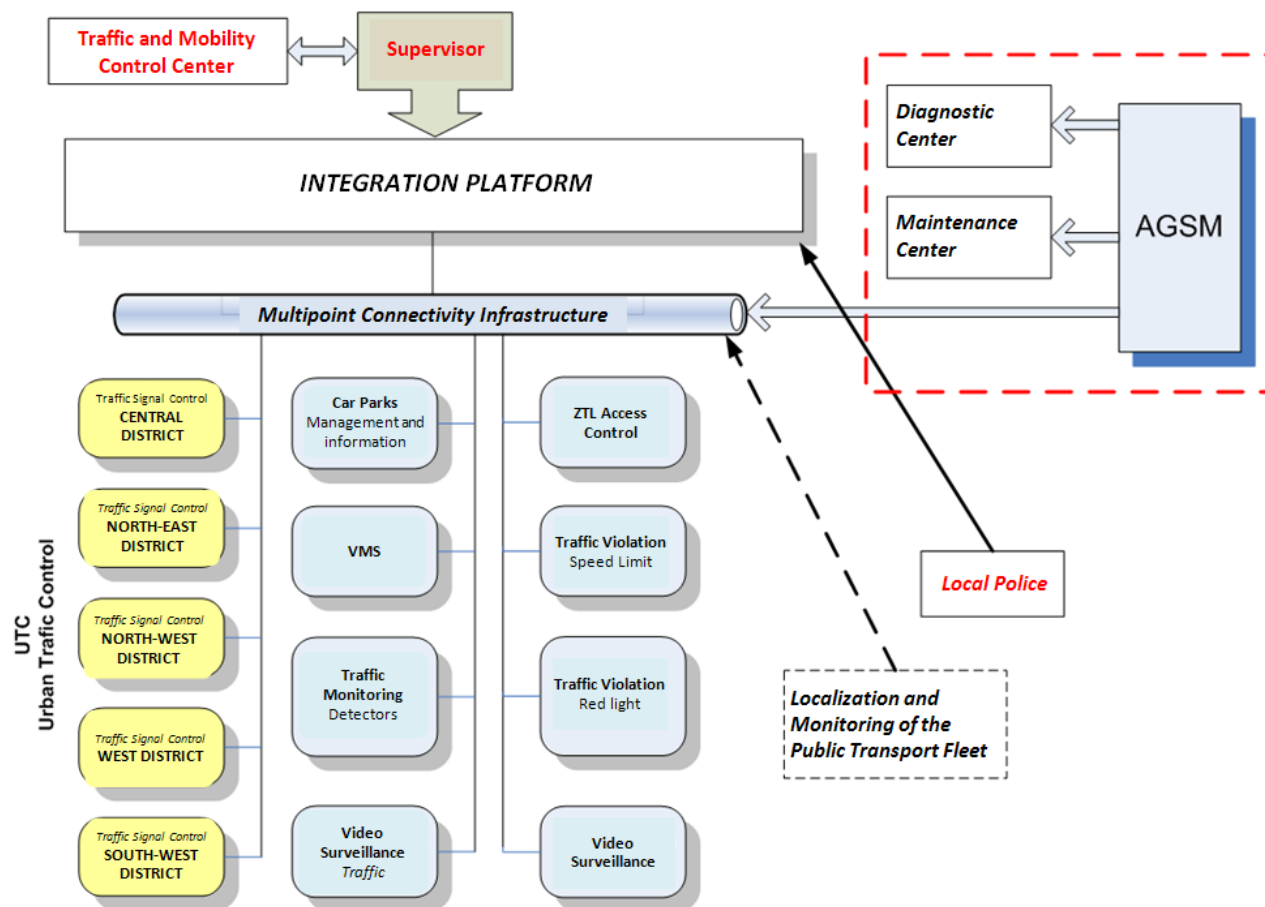
From C-ITS to C-OpenServices

WEBINAR – Compass4D:
Up-scaling C-ITS and market roll-out
June 27, 2016

C-ITS to C-OpenServices. 1

VERONA: C-ITS before Compass4D

Architecture of ITS (optical fibre)

ITS infrastructure

UTC
Urban Control System
62

AVC
Automatic Vehicle Classification
13

VMS
Variable Message System
34

AVI
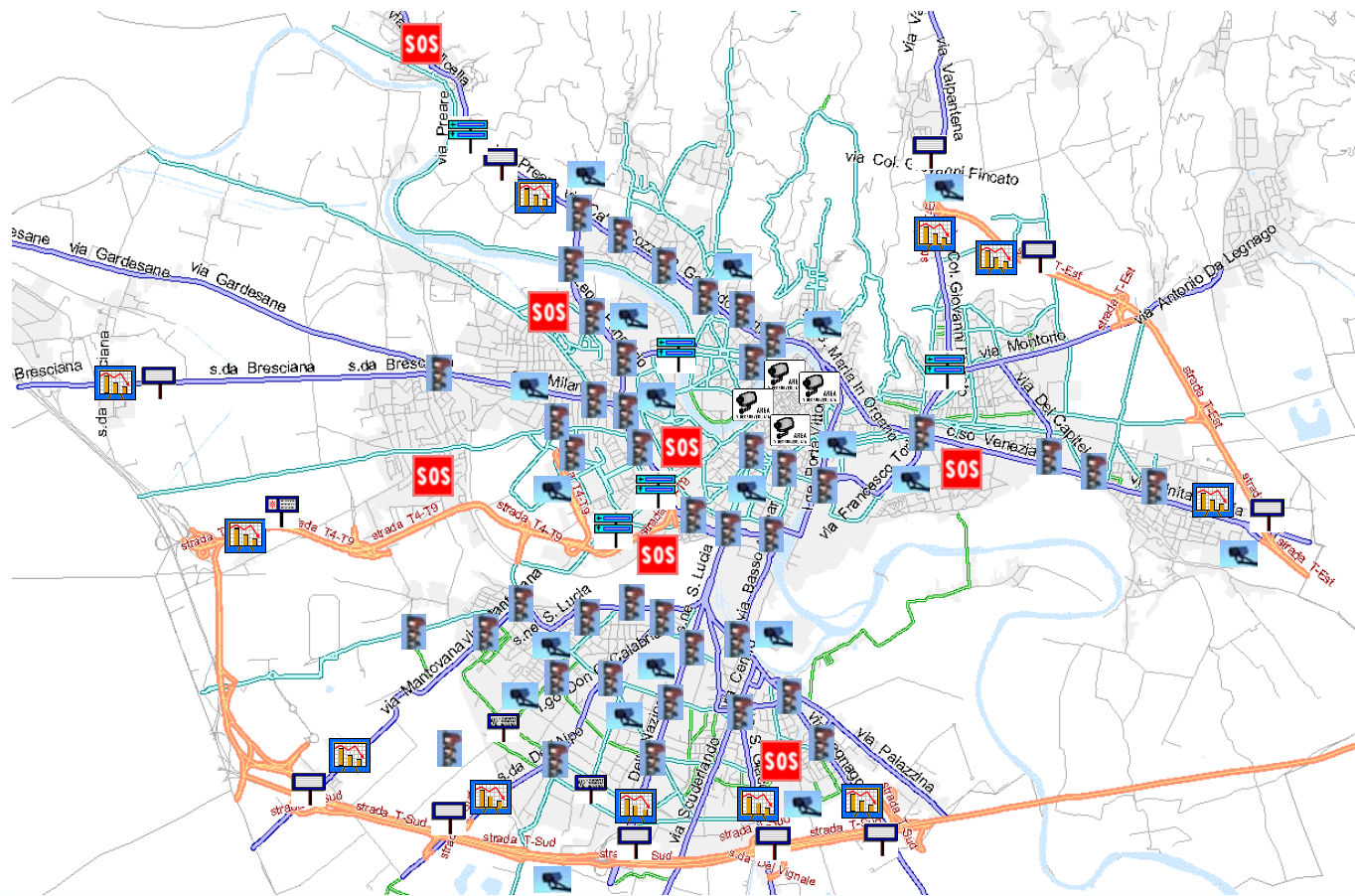*Automatic Vehicle Identification*
13

CcTV
Closed circuit TeleVision Cameras
31

SOS
Emergency Assistence System
13

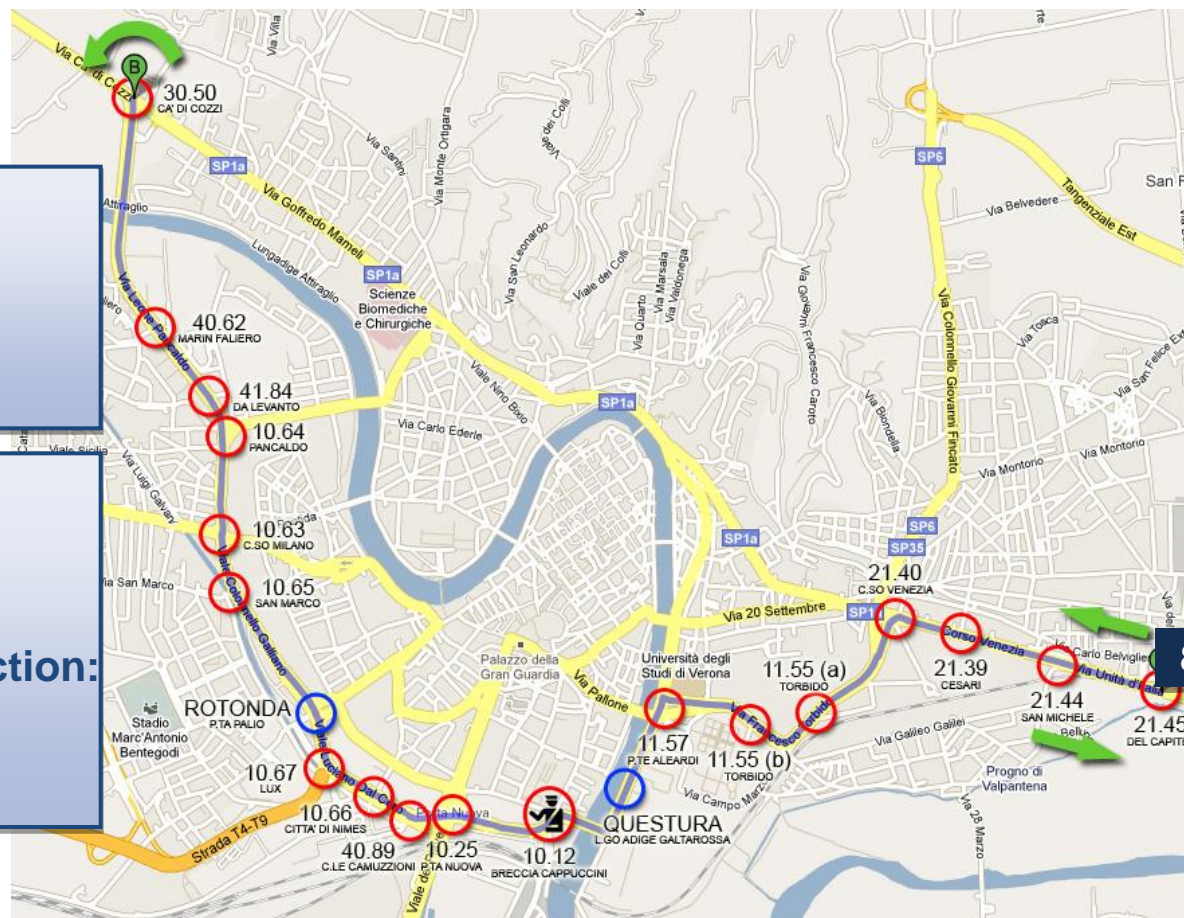# Energy efficiency

Average reduction fuel consumption:
1. *Gas Vehicles:* **17**%
2. *Diesel Vehicles:* **14**%

Travel time reduction:
28,9%
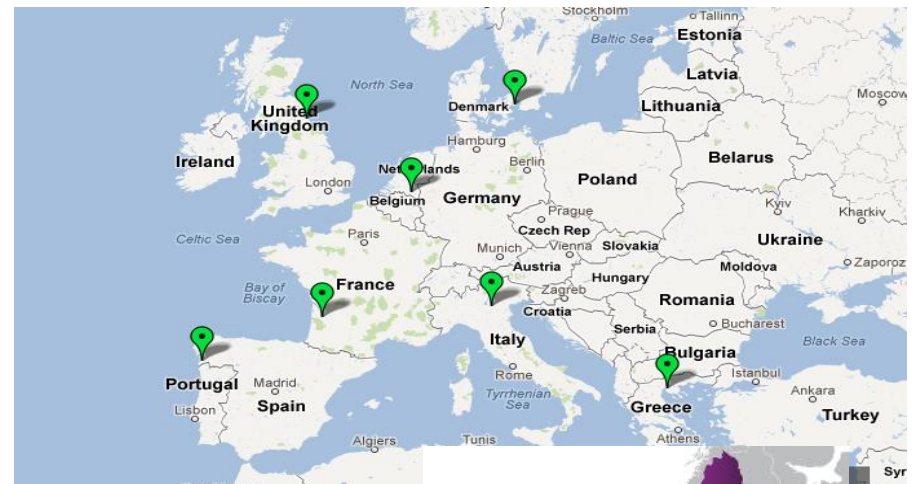**Traffic pollutions reduction:**
14,45%.

8,8 km

(a) Keller, M., & Kljun, N. (2007, ottobre). ARTEMIS Road Model description.
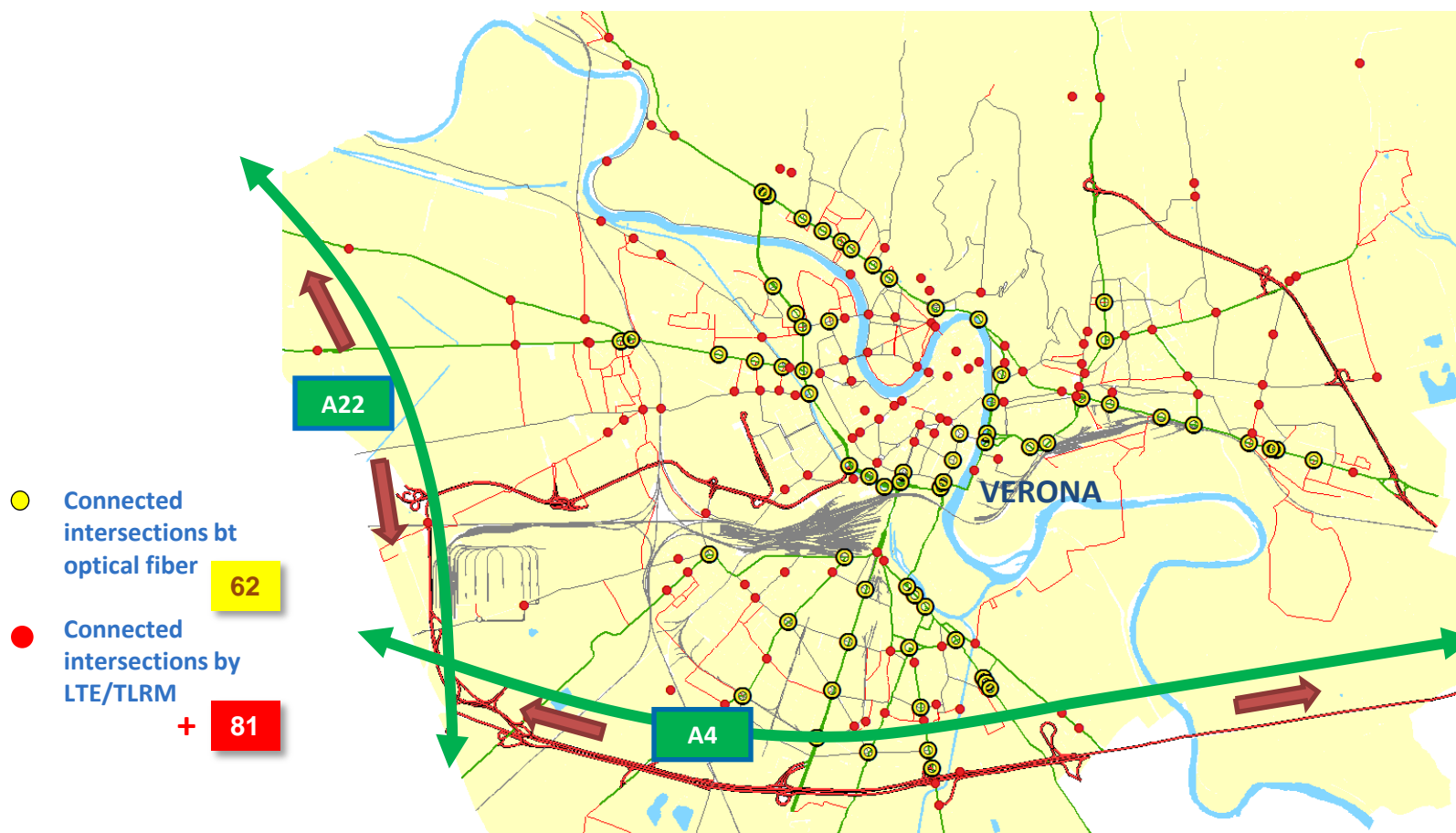
C-ITS to C-OpenServices. 2

VERONA: Compass4d trial results

Compass4D: the future starts with cooperative systems

- Pilot sites
  - Bordeaux
  - Copenhagen
  - Eindhoven–Helmond
  - Newcastle
 - Thessaloniki
  - Verona
  - Vigo

Diffusion of TLRM in Verona

- ○ Connected intersections bt optical fiber **62**

- ● Connected intersections by LTE/TLRM **+ 81**

Our IoT solution (LTE): TLRM *(traffic light remote management)*

- **What is TLRM?**
  - a device full projected and full made by Mobility Department of City of Verona, designed to connect all the older generation intersections;
  - By **TLRM** it's possible to obtain, in real time, the status information of even the older generation crosses and for a nominal cost.
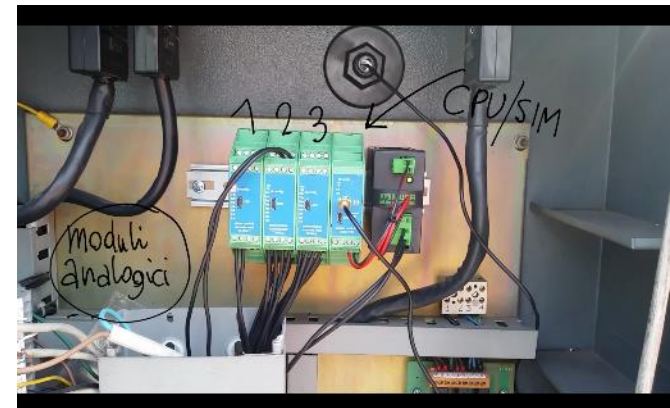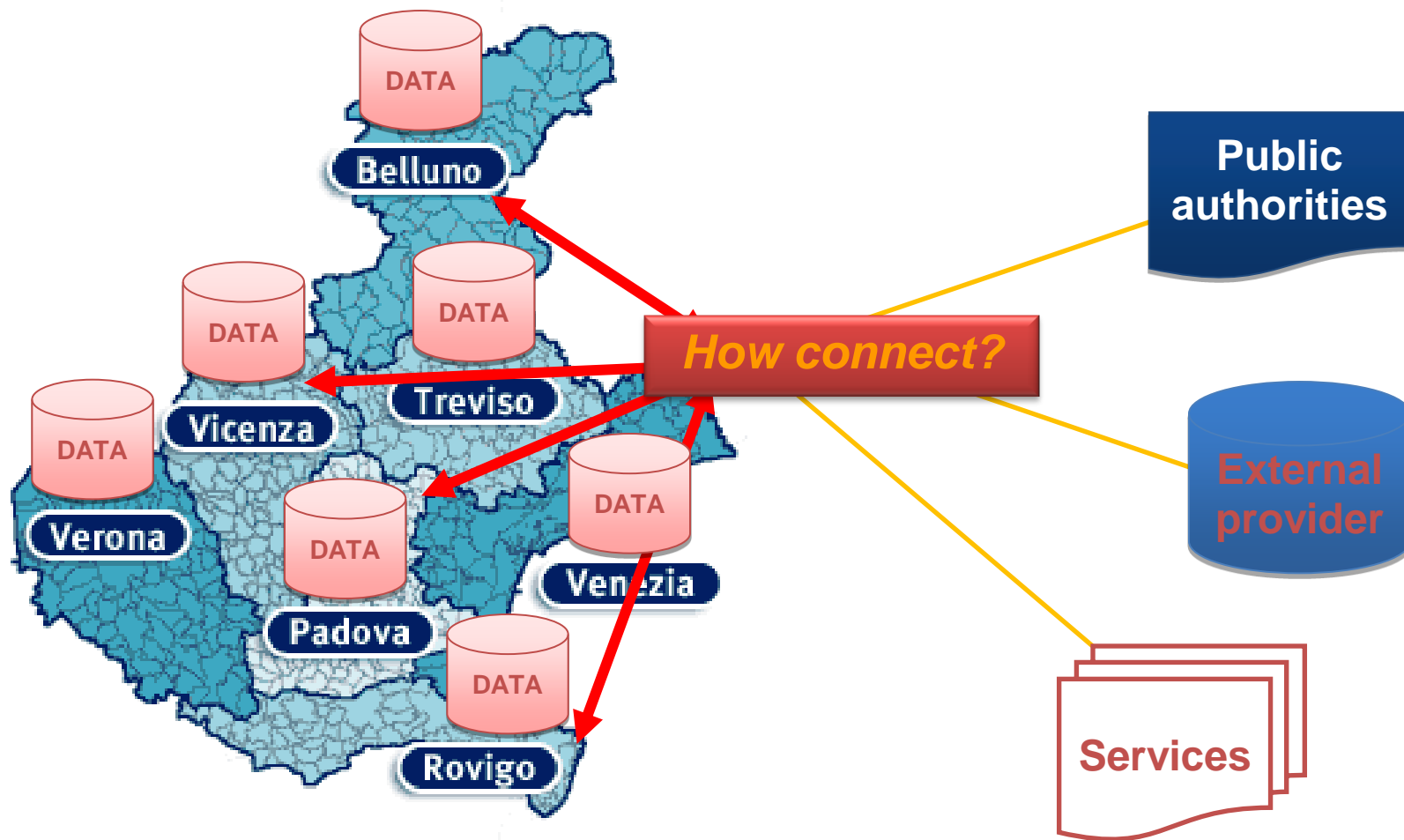
How does TLRM^{v.1} works?
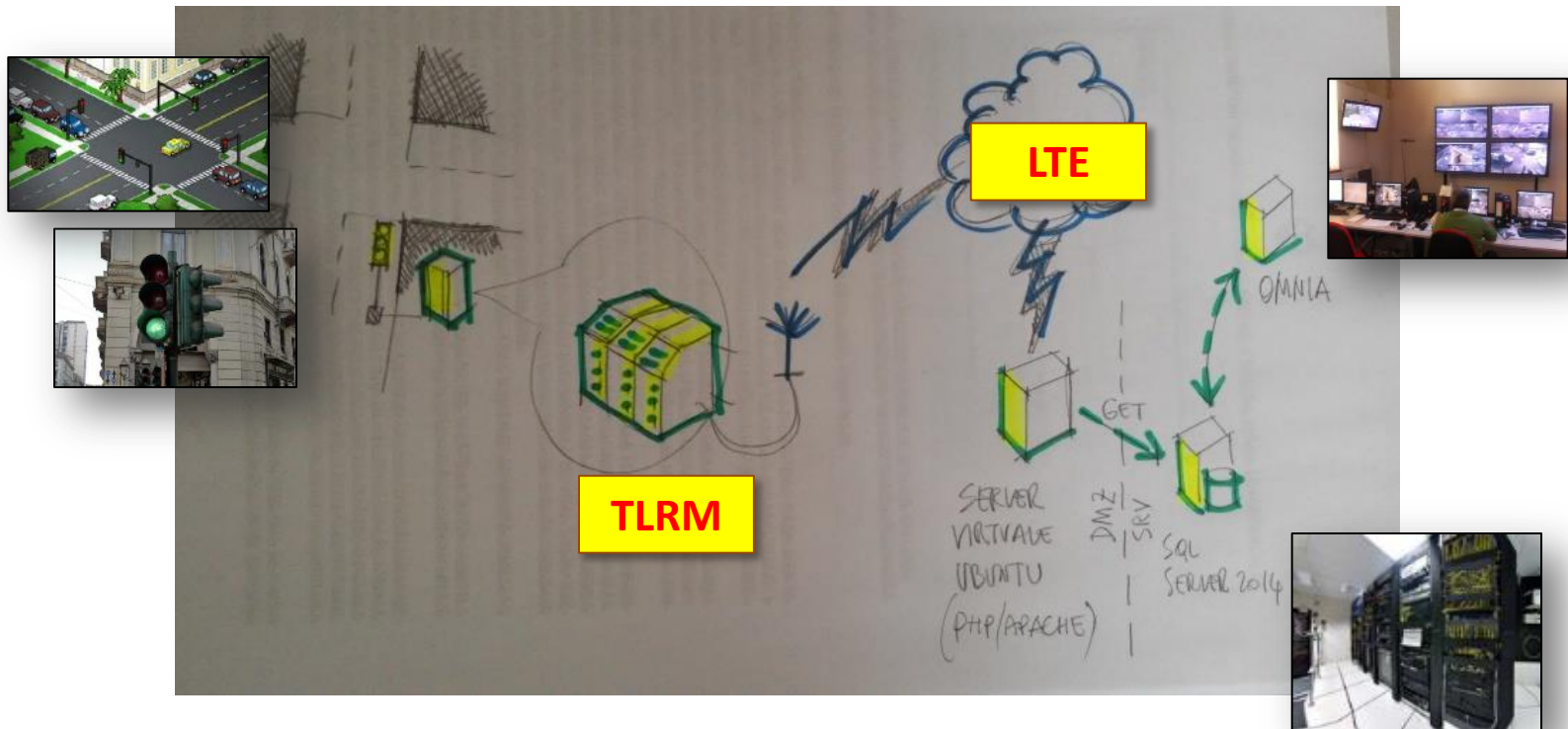
- The master module sends a GET command to an Internet server by LTE network;
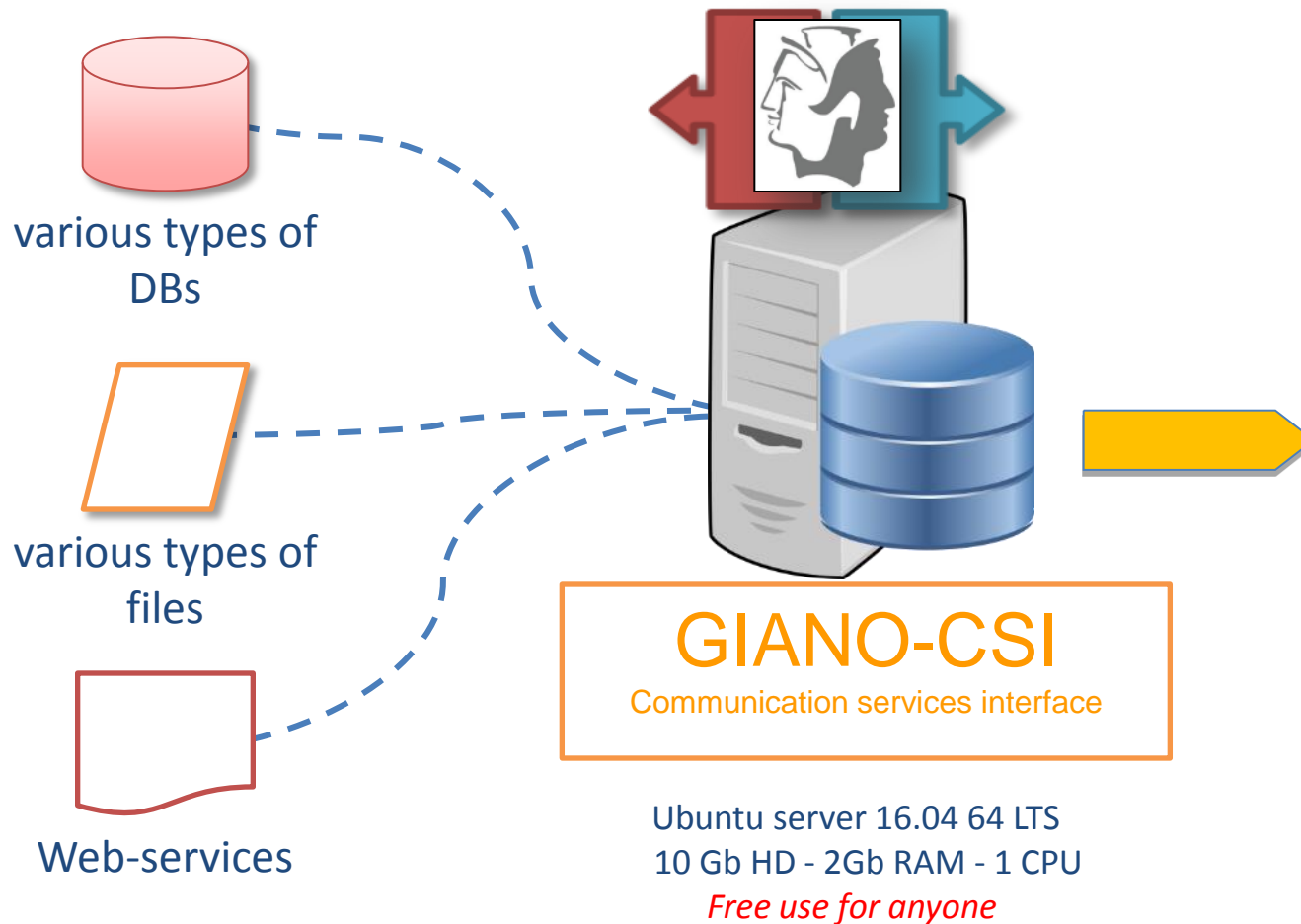
C-ITS to C-OpenServices. 3
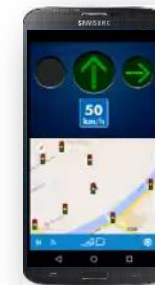
VERONA: Compass4D to be continued

Dissemination & Sharing
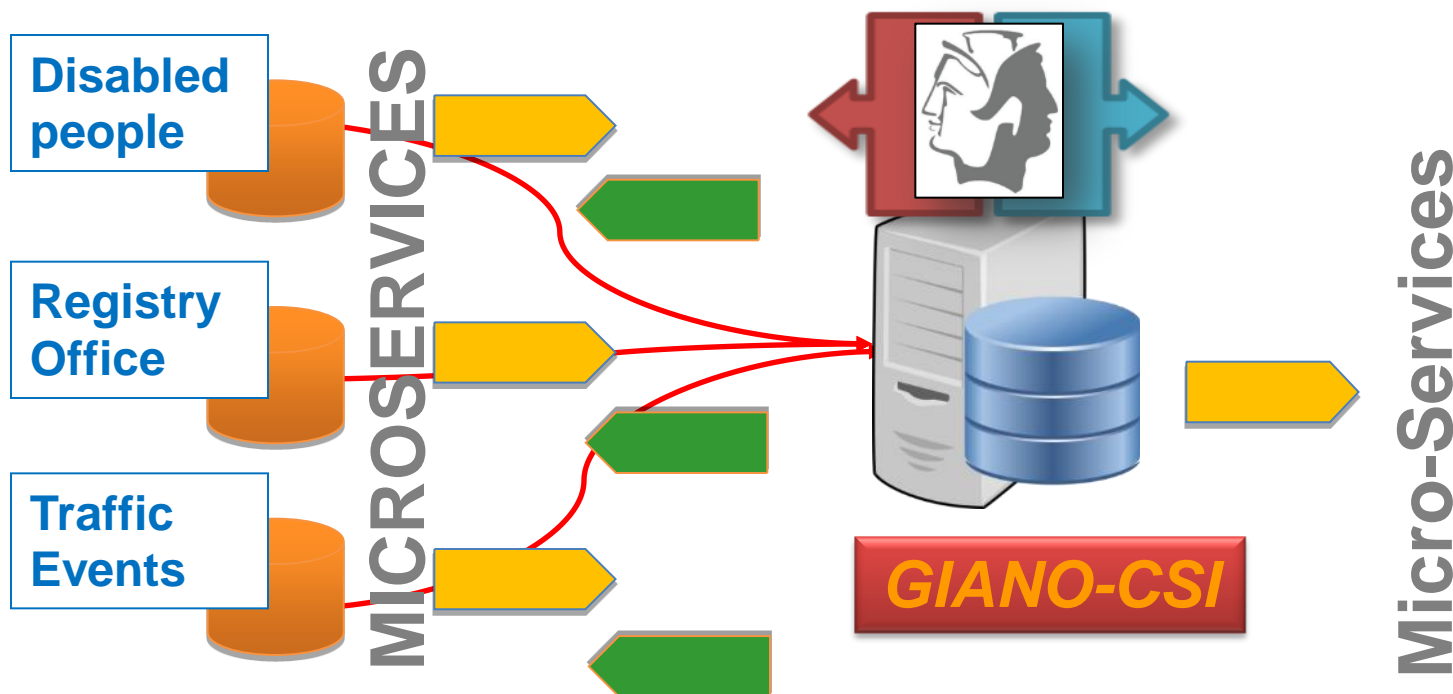
GIANO-CSI: a gateway for sharing

various types of DBs

various types of files

Web-services

GIANO-CSI

Communication services interface

Ubuntu server 16.04 64 LTS
10 Gb HD - 2Gb RAM - 1 CPU
Free use for anyone

Micro-Services

Testing in Verona

Disabled people

Registry Office

Traffic Events

MICROSERVICES

GIANO-CSI

Micro-Services
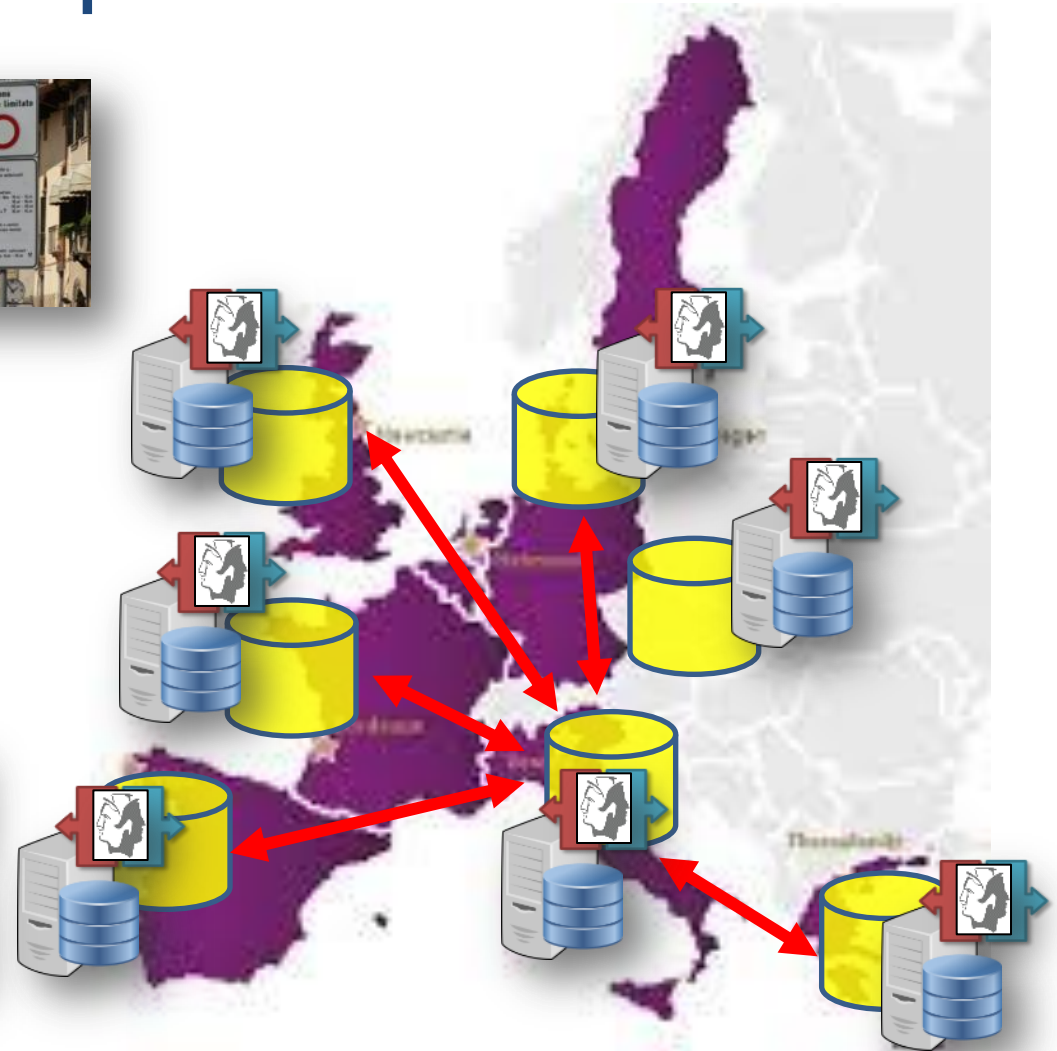
Testing in Veneto Region
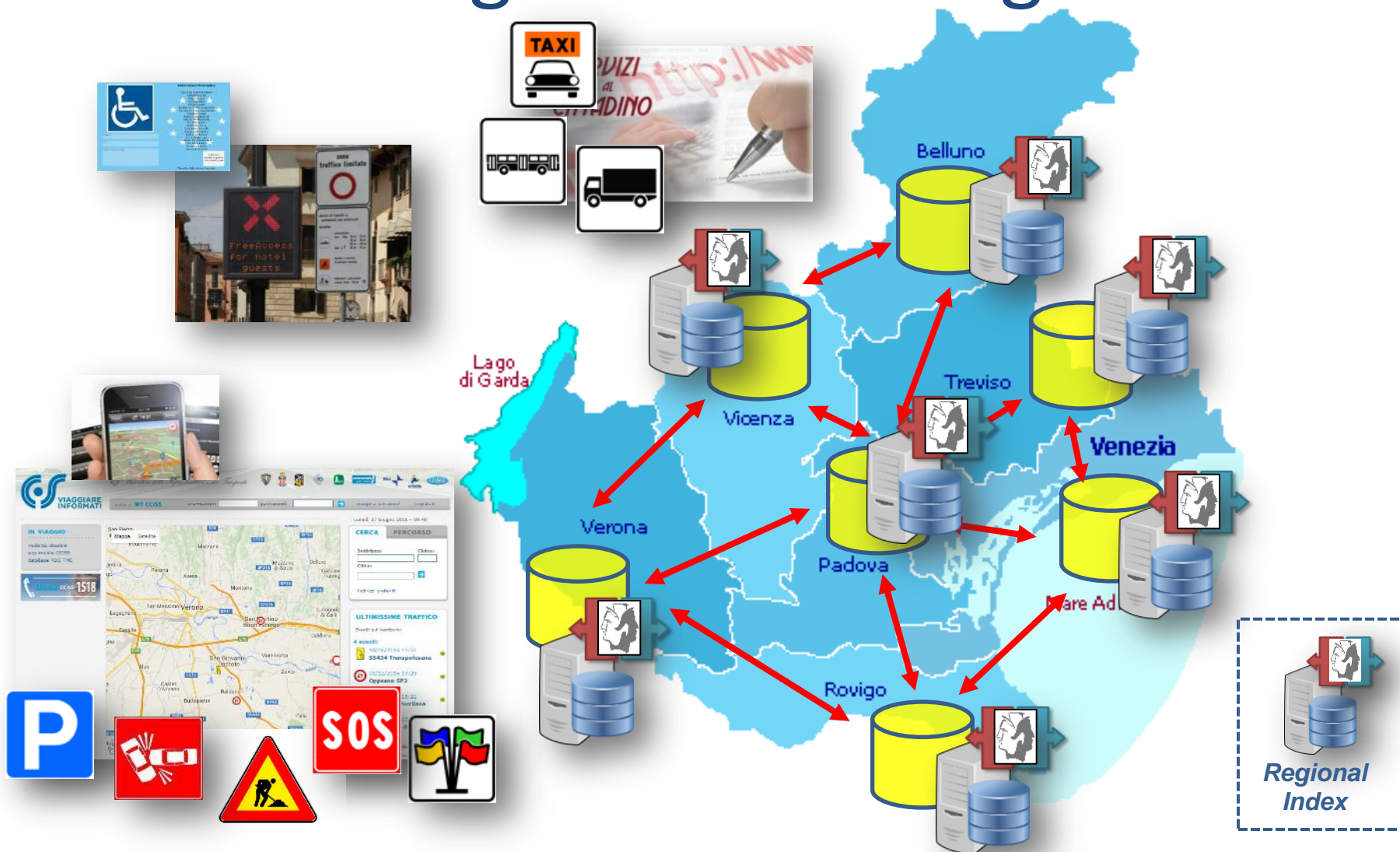
Testing in Compass4D network...

Verona: next steps…

- Road map
  - July 2016:
    - o installing and testing Giano-CSI network in Veneto Region
  - September 2016:
    - o Testing services Giano-CSI with others public authorities in Italy
  - October 2016:
    - o Testing micro-services to get priority at the emergency vehicles
  - November, 2016:
    - o Working Day on Compass4D and Giano-CSI results between public authorities & suppliers
      - ➢ Dissemination and implementation Giano-CSI in other Compass4D partners

Thanks for your attention

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Alberto Verzobio - IT