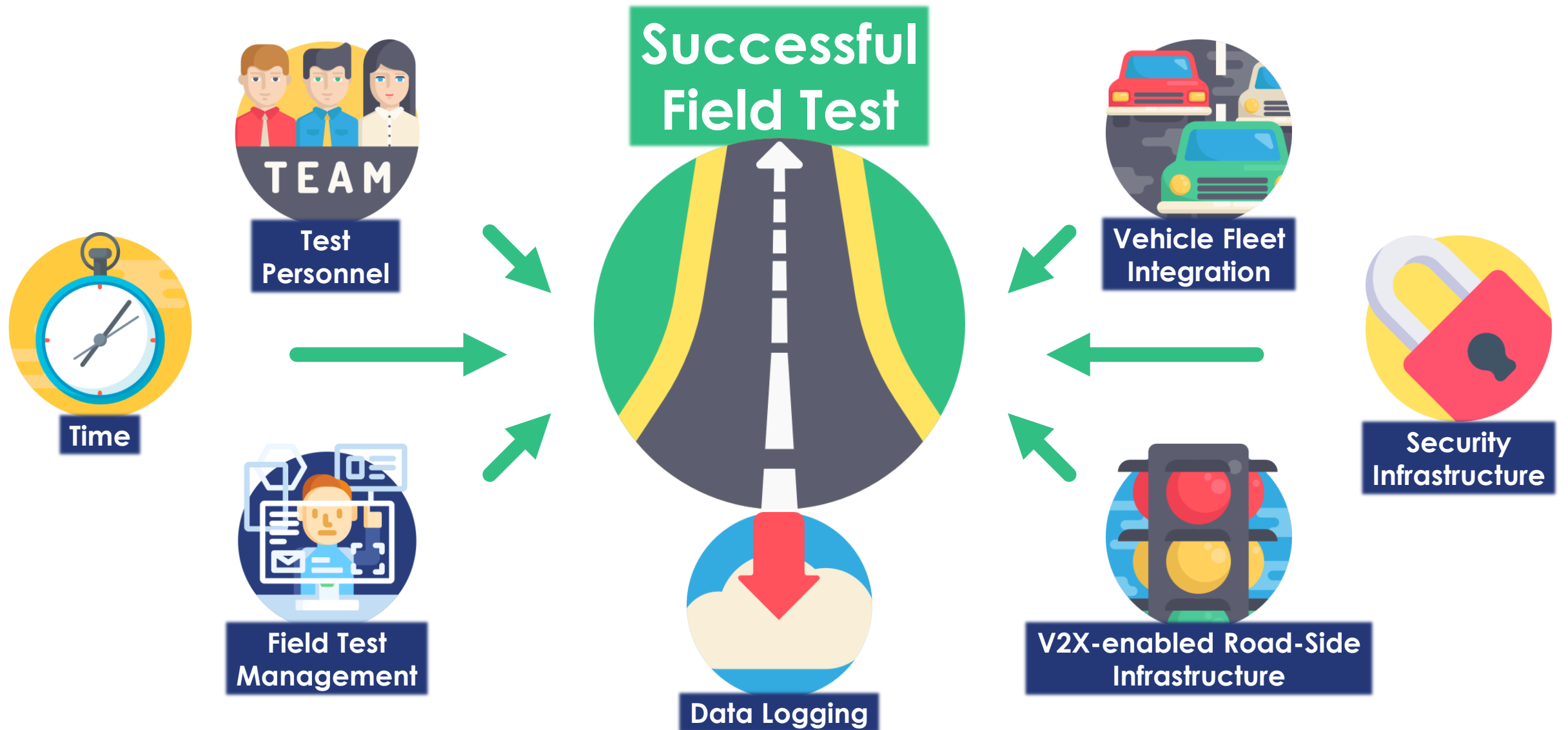# Cooperative and Connected Mobility Field Testing Environment

Václav Mecerod
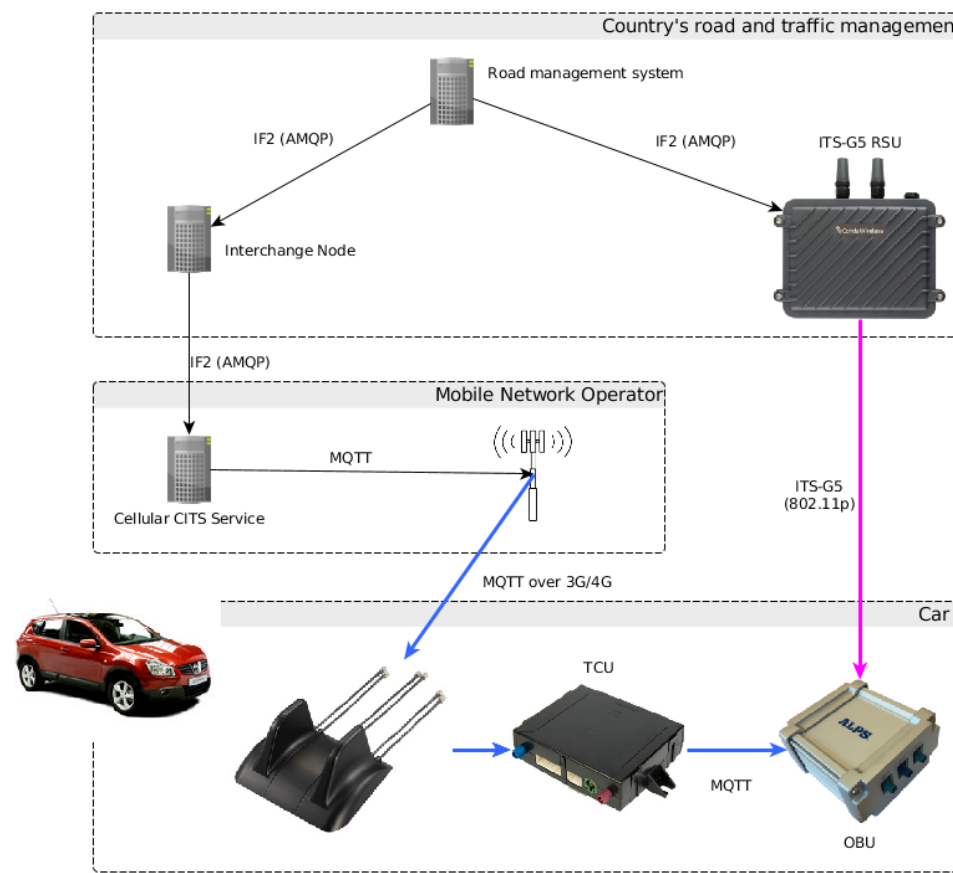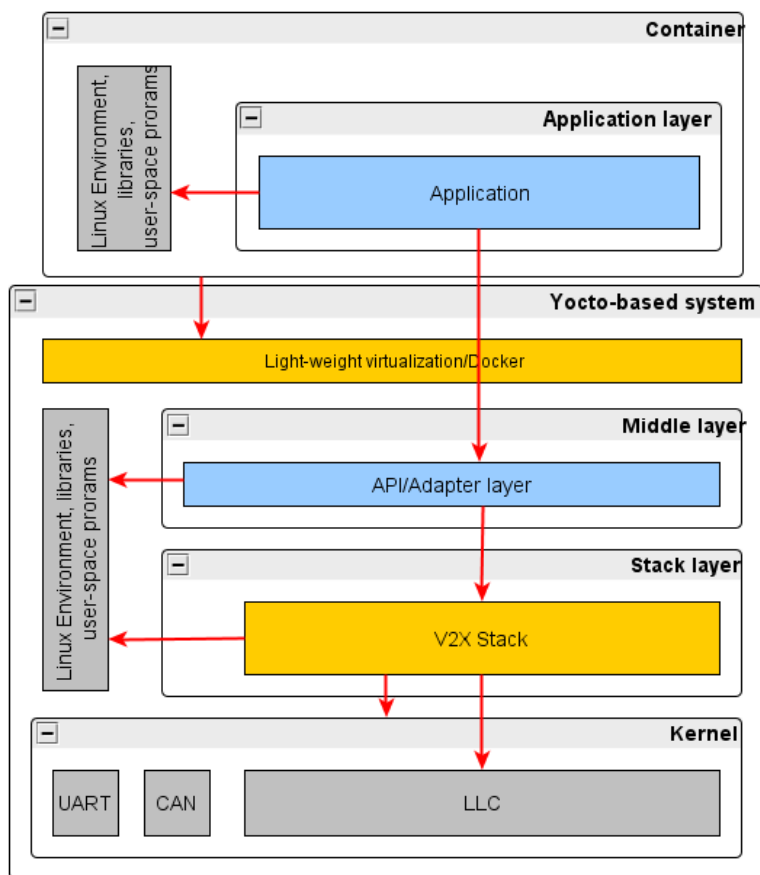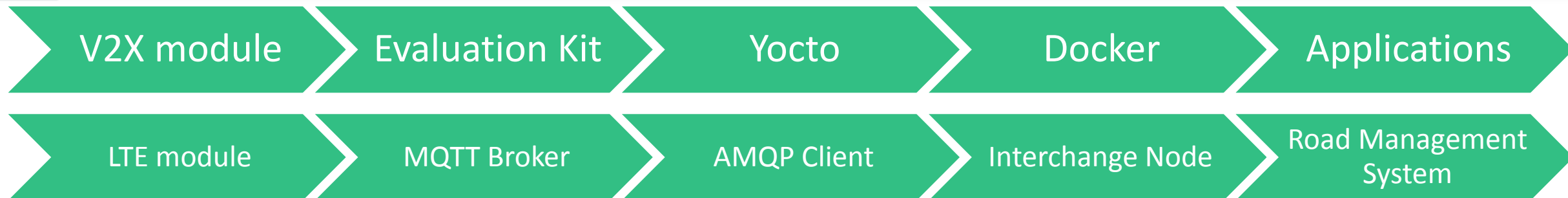
Resource intensive task = Challenge

Successful Field Test

Test Personnel

Time

Field Test Management

Data Logging

Vehicle Fleet Integration

Security Infrastructure

V2X-enabled Road-Side Infrastructure

Facing challenges with modular based approach

V2X module → **Evaluation Kit** → **Yocto** → **Docker** → **Applications**

LTE module → **MQTT Broker** → **AMQP Client** → **Interchange Node** → **Road Management System**

Vehicle integration

- V2X Evaluation Kit

  - V2X module

  - GNSS DR

  - Host CPU – V2X Stack

- V2X GNSS combo antenna

- Vehicle CAN sniffing

  - CAN message interpretation

- Inertial Measurement Unit
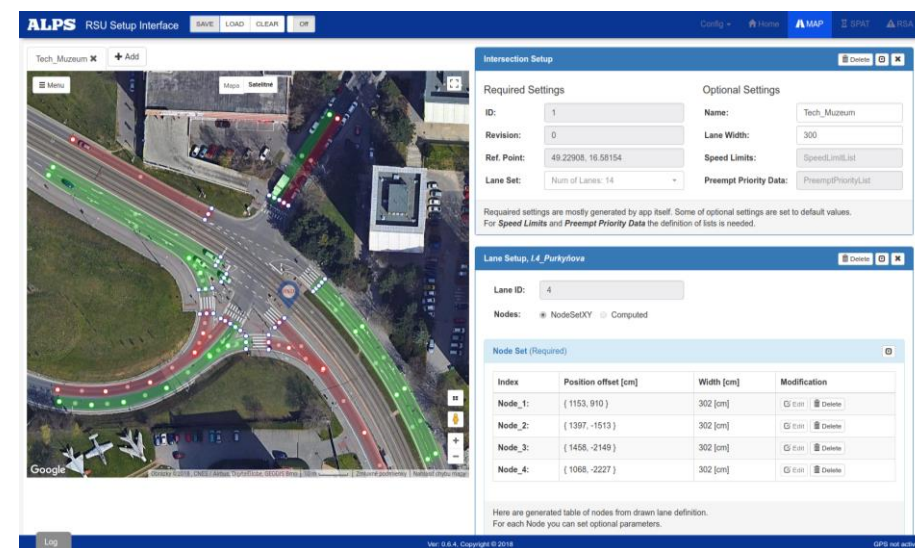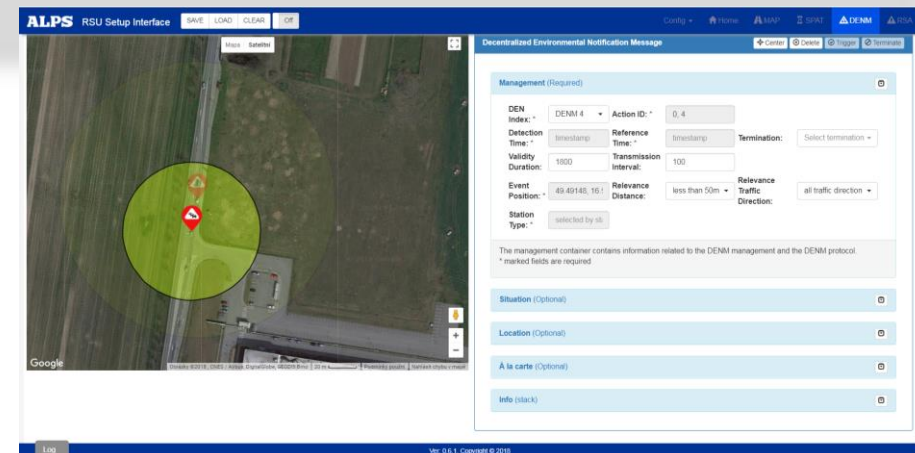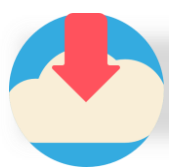
  - Vehicle dynamics

Setup & GO RSU

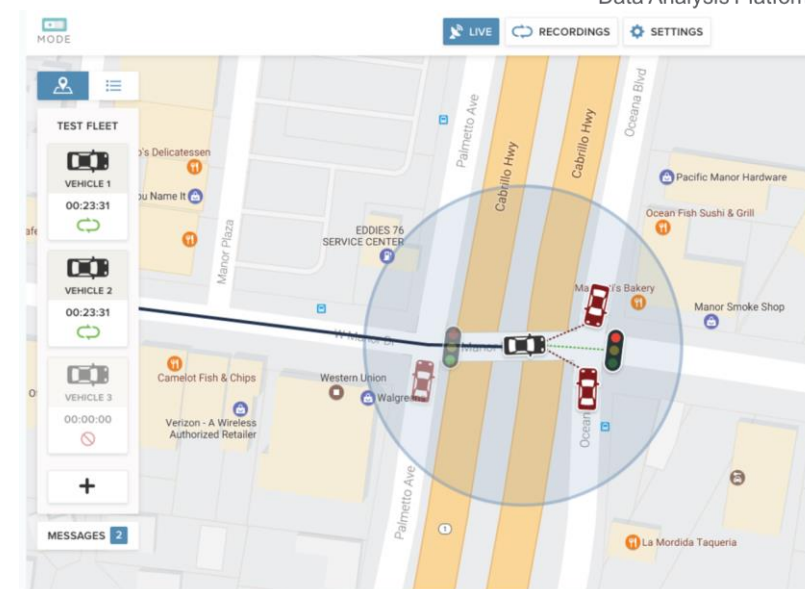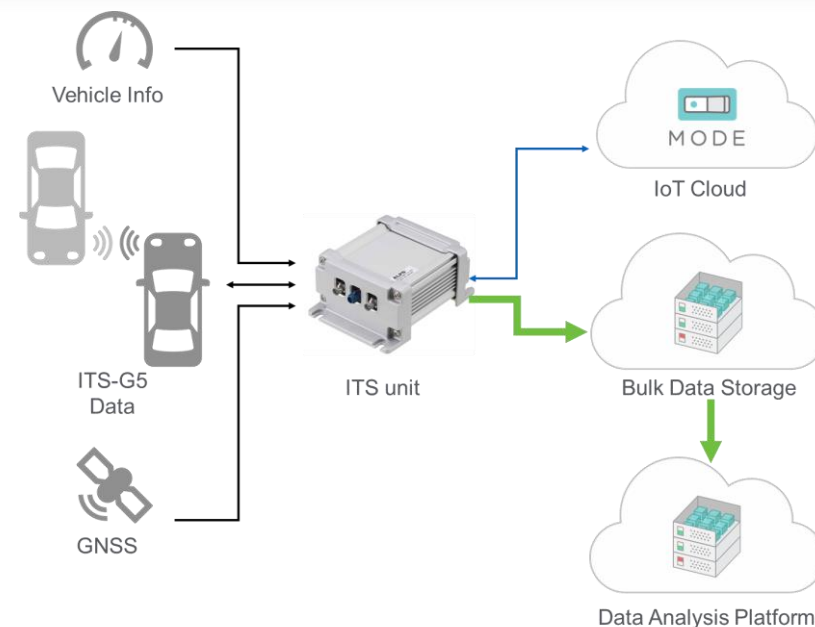**Short Time-To-Test** (EU/US)

- Simple lane and crossing segments drawing (MAP)

- Detail defining hazardous situation (DENM/RSA)

- Traffic light signal phase and timing
  definition + synchronization (SPAT)

- In Vehicle Information (IVI / IVS) definition
  and UI overview

Cloud base logging and presentation

- Data logging

  - Multi vehicle synchronised logging

  - V2X Events and Notifications

  - Custom data logging

  - Cloud disconnect data buffering

- Data presentation & processing

  - Real time situation overview

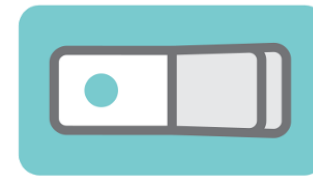 - Graphical log replay

- Selective data download

Successful stories

- **Antwerp** March 2019 (BE) – Hybrid + PKI; 12 teams; RWW, IVS, GLOSA
- **Kent & London** October 2018 (UK) –Hybrid; 17 teams; RWW, IVS, GLOSA
- **Reims** April 2018 (F) – ITS-G5 + PKI; 19 teams; RWW, IVS
- **Dordrecht** July 2017 (NL) –ITS-G5; 16 teams; RWW, IVS

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Successful stories

Utilizing the system on real scenario: