

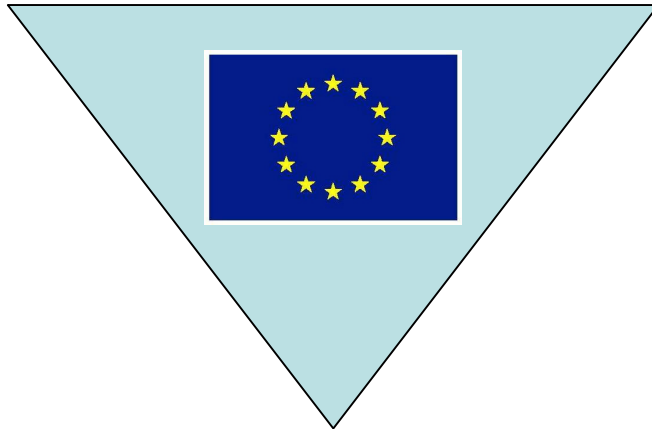
[Speed profiles

Author

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Context of use case

- eSafety forum / eSecurity WG
- CVIS - PRECIOSA partnership concerning privacy
- European R&D Programmes
- Use case inspired by a CVIS application

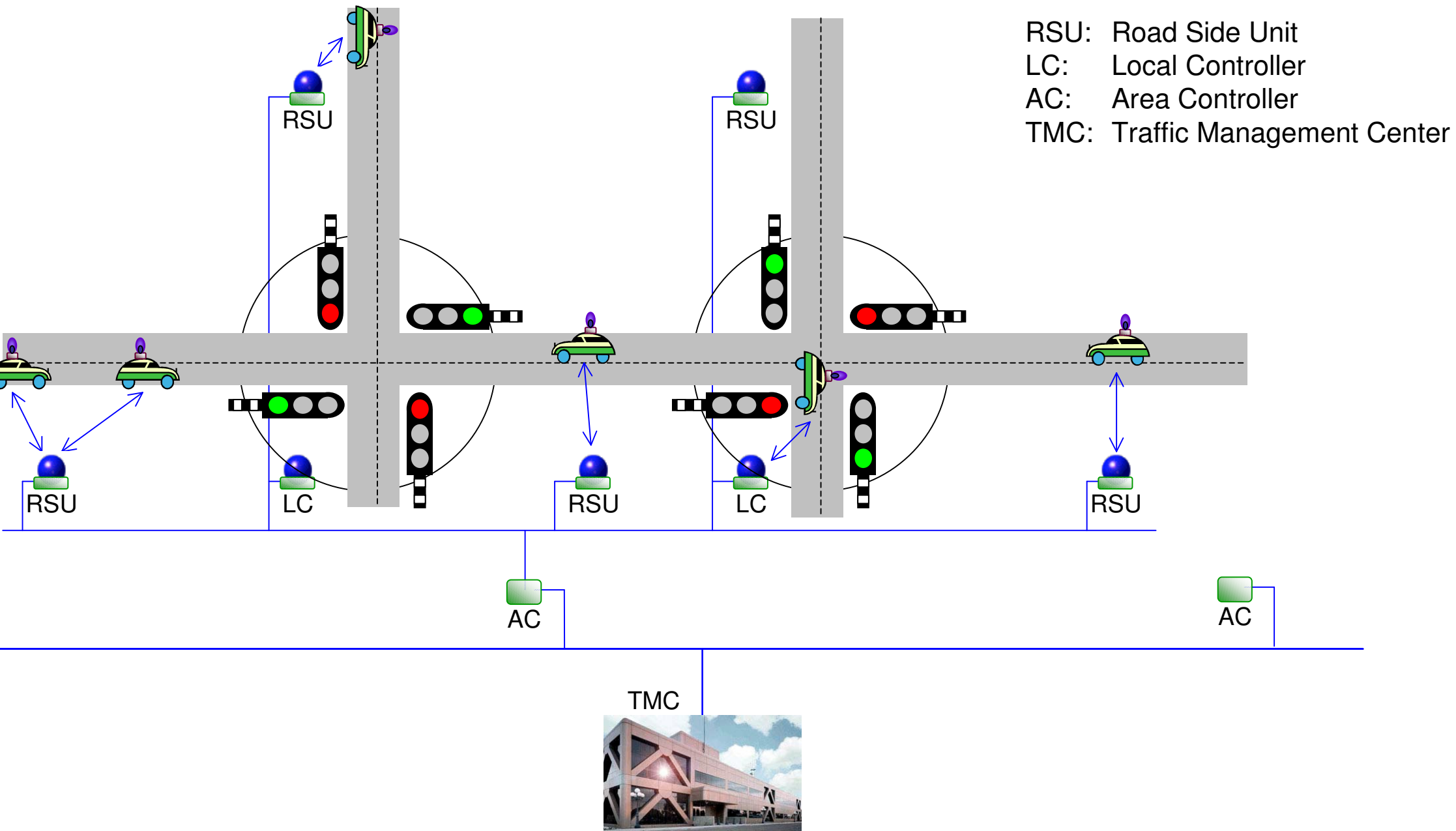


Summary



- The **Speed Profiles** application is used to harmonize traffic flow at an intersection. This is done by:
 - collecting data from vehicles
 - calculating optimal traffic light switching plan
 - providing speed profiles (recommendations) back to approaching vehicles
- This approach will improve efficiency, comfort and safety on the level of urban intersections.

Overview



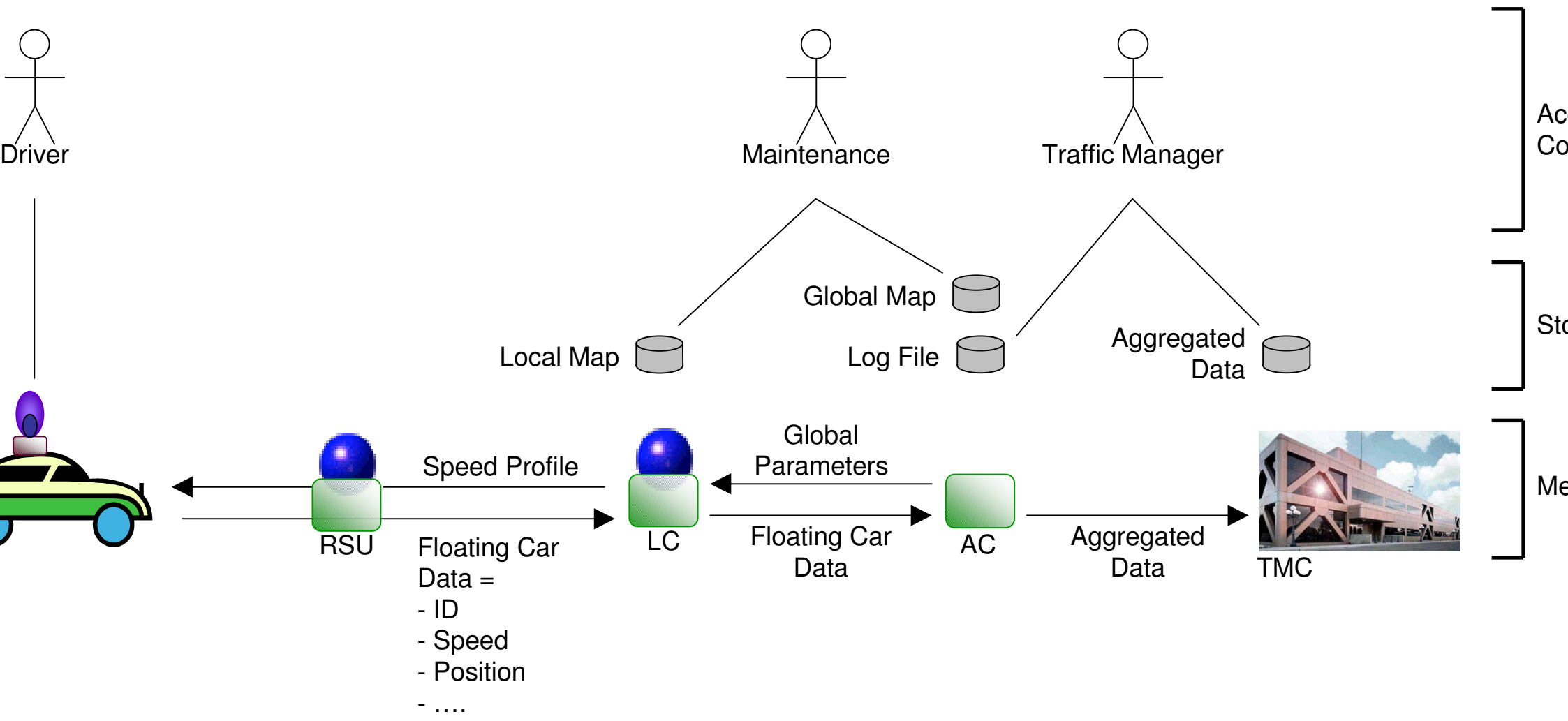
Description

- The **Local Controller** receives **Floating Car Data** (like vehicle-ID, type of vehicle, actual speed, location, ...) from all nearby equipped **vehicles**
- **Local Controller** stores the **Floating Car Data** in a **dynamic map** that represents the local situation
- **Local Controller** calculates optimum switching plan for the traffic lights based on that **dynamic map**
- **Local Controller** calculates **Speed Profiles** based on the switching plan and sends it to the appropriate **vehicles**
- Equipped **vehicles** receive the **Speed Profiles** message and notify the drivers in a suitable way (e.g. scaling an up or down arrow)
- **Floating Car Data** is forwarded to the **Area Controller** and stores the data in a **Global Map** and in a **Log File** for analysis purposes
- The **Area Controller** performs global optimizations and sends **Global Parameters** back to the **Local Controller**
- The **Traffic Management Center** receives **Aggregated Data** from the **Area Controller**

Messages, Storage and Access

RSU: Road Side Unit
LC: Local Controller

AC: Area Controller
TMC: Traffic Management Center



Data Controller and Policies

System	Storage Policies, Identification	Data Controller
RoadSideUnit	- No storage	Maintenance
LocalController	- Stores FCD data in Local Map as long as vehicle is “visible” (~5 min)	Maintenance
AreaController	- Stores FCD data in Global Map for global optimizations (~1h)	Maintenance
	- Stores FCD data in Log File (~1 wk)	Traffic Manager
TrafficManagement Center	- Stores Agregated Data (anonymous) infinitely as historical data (~10 yr)	Traffic Manager
Vehicle	- No storage - Identifies itself through FCD data	Driver

Application benefits

Benefits	Driver	Community
Improved throughput	V	V
Improved comfort	V	
Improved safety	V	V
Environment (fuel consumption)	V	V

[Thanks