Cooperative Monitoring for Intelligent Transportation Systems in CVIS

Axel Burkert, Wednesday December 16, 2009

traffic mobility logistics.

Agenda

- Introduction
- Goals
- Architecture
- Main Interfaces
- Data Distribution
- Computation of Local Traffic State

Introduction

COOPERATIVE VEHICLE-INFRASTRUCTURE SYSTEMS - CVIS

- Create a unified technical solution for V2X communication
- Create an open application framework

Cooperative Monitoring - COMO

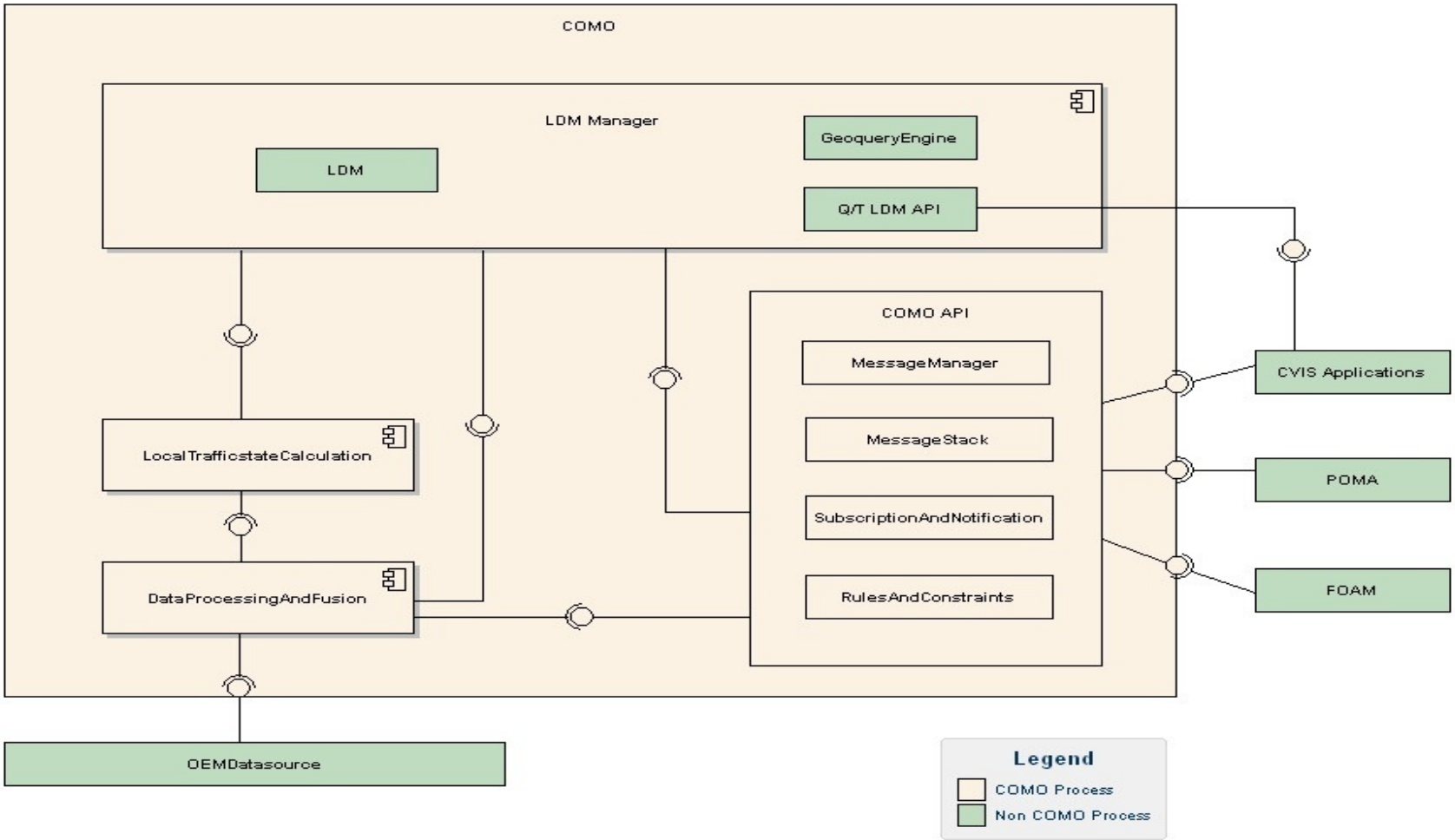
- Traffic and environmental monitoring as backbone of
  - enhanced traffic and incident management applications and
  - traffic related information services

- Development of specifications and prototypes for
  - Collection, integration and delivery of extended real-time information

COMO Goals

- Central basic service inside the CVIS framework
  - deployable for operation in a service centre, a road side unit (RSU) and/or the vehicle
- Development of services and technologies
  - enabling applications in cooperative systems
- Elaboration of
  - traffic data, traffic information and traffic messages
- Provisioning
  - in a standardised format to CVIS applications
- provided as OSGi service

COMO Architecture



COMO Interfaces

Legacy / OEM Gateway

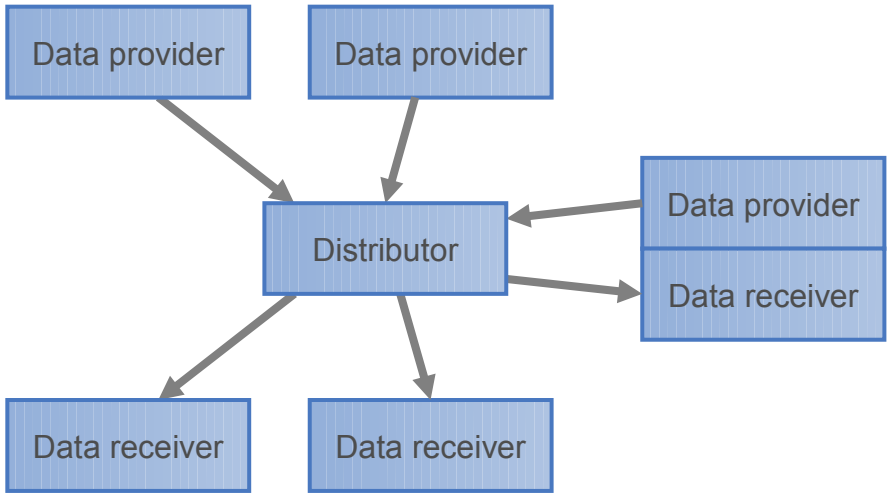
- Vehicle Platform → CAN Bus / OBD 2
- Infrastructure Platform → Proprietary
- Traffic Management Center → DATEX II

COMO API

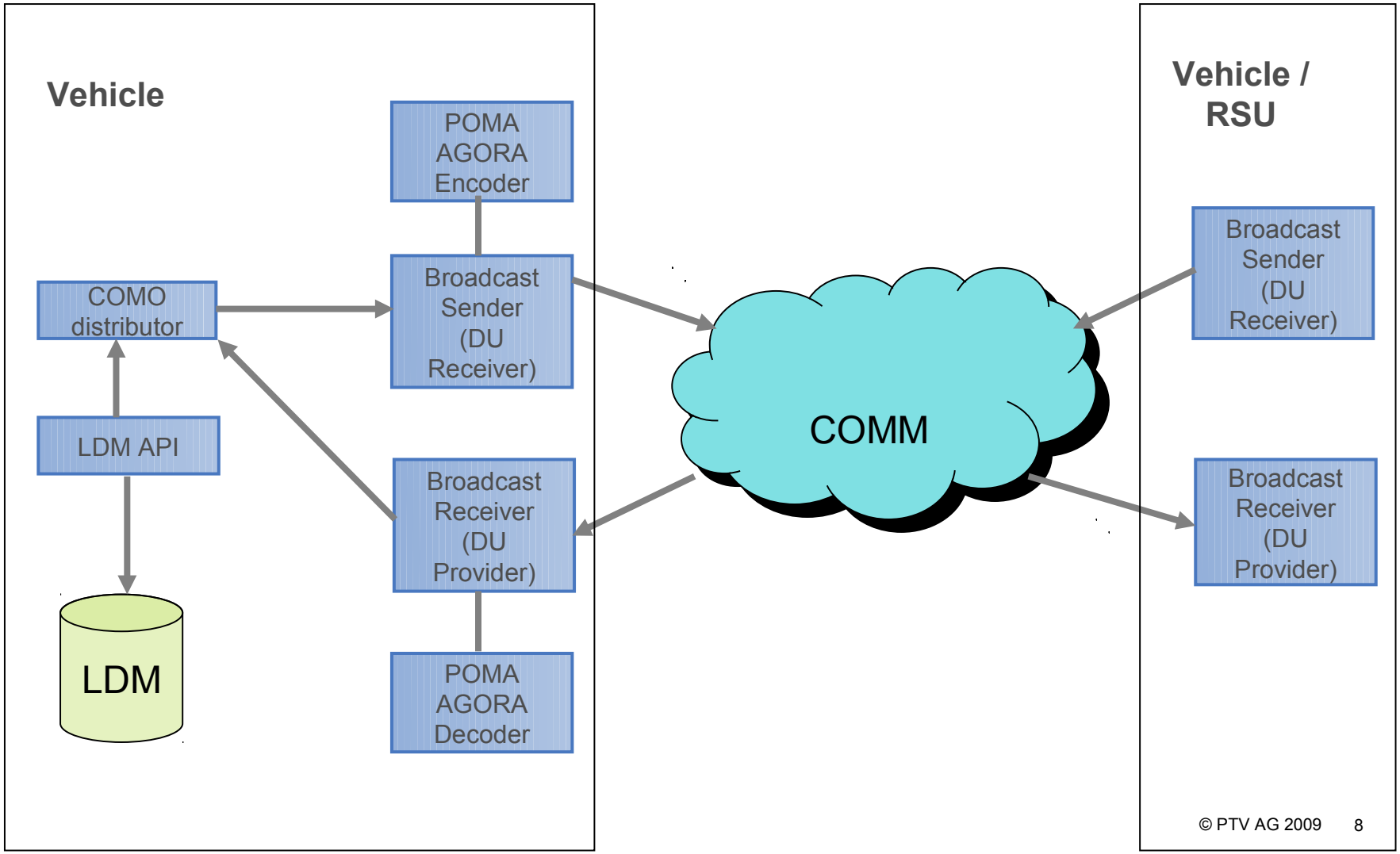
- Network transparent infrastructure for getting and distributing data
- Unified interface for traffic related data
- Fixed set of data to guarantee interoperability between
  - CVIS partner
  - CVIS and Safespot LDM

COMO Data Distribution

- Infrastructure for Data Exchange via Mediator
- Mediator (Distributor) is connected to data dources (Data Provider) and data sinks (Data Receiver)
- Data Provider --> provide (recent) information
- Data Receiver --> demand (filtered) information



COMO Data Distribution II



COMO Computation of Local Traffic State

Vehicle Platform

- e/xFCD generation and data fusion using
  - local sensor data
  - e/xFCD from other vehicles

Infrastrucure Platform

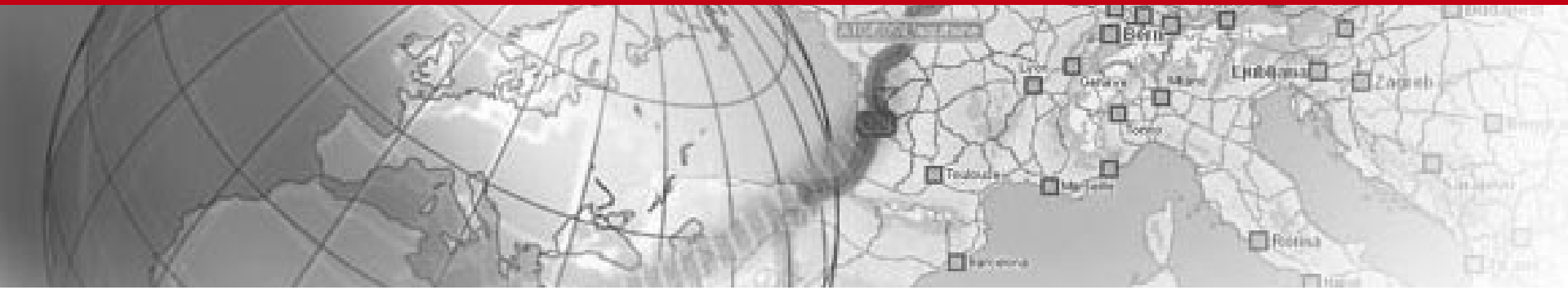
- Generation of local traffic state using
  - local sensor data
  - vehicle beaconing
  - e/xFCD

Centre Platform

- Generation of global traffic state using
  - local traffic state
  - e/xFCD
  - traffic messages

Erstklassig unterwegs. PTV.

Thank you for your attention



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