Innovative architecture for innovative applications

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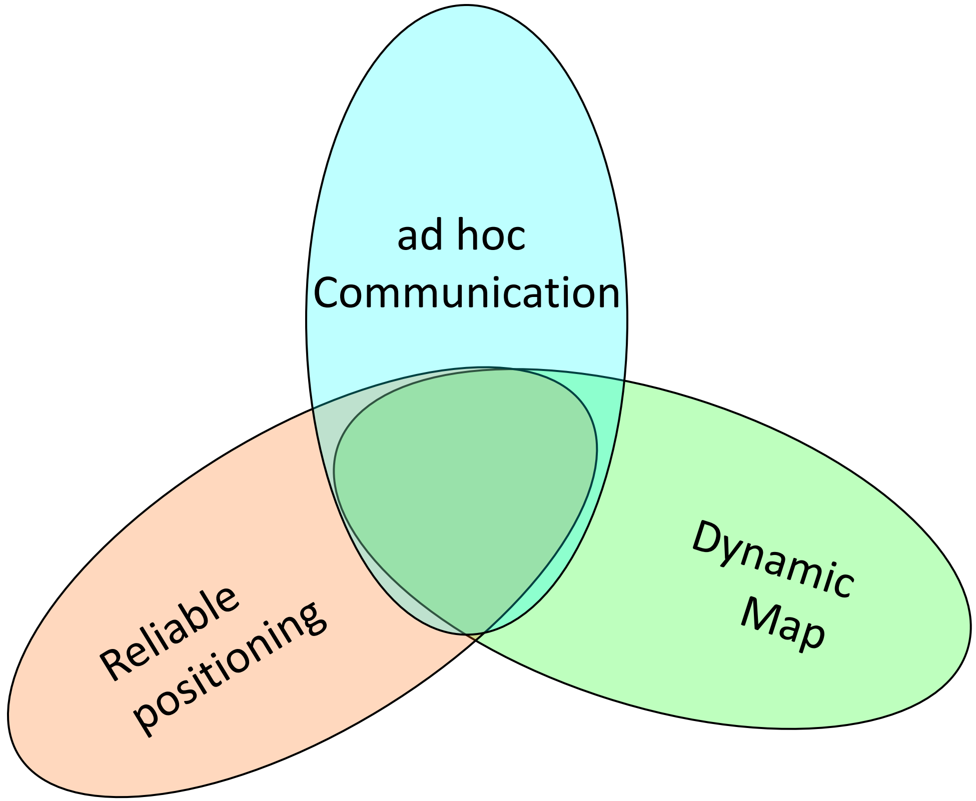
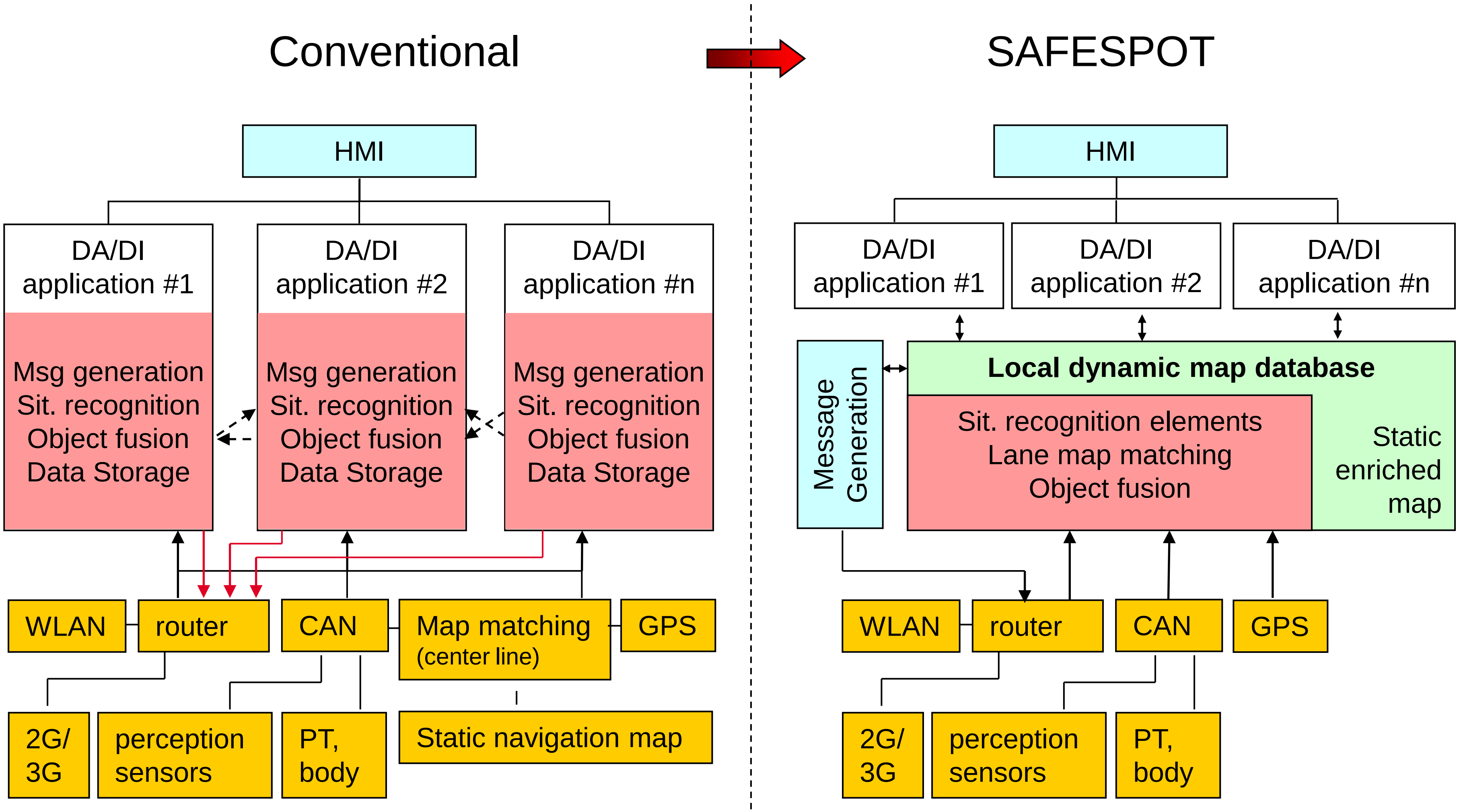
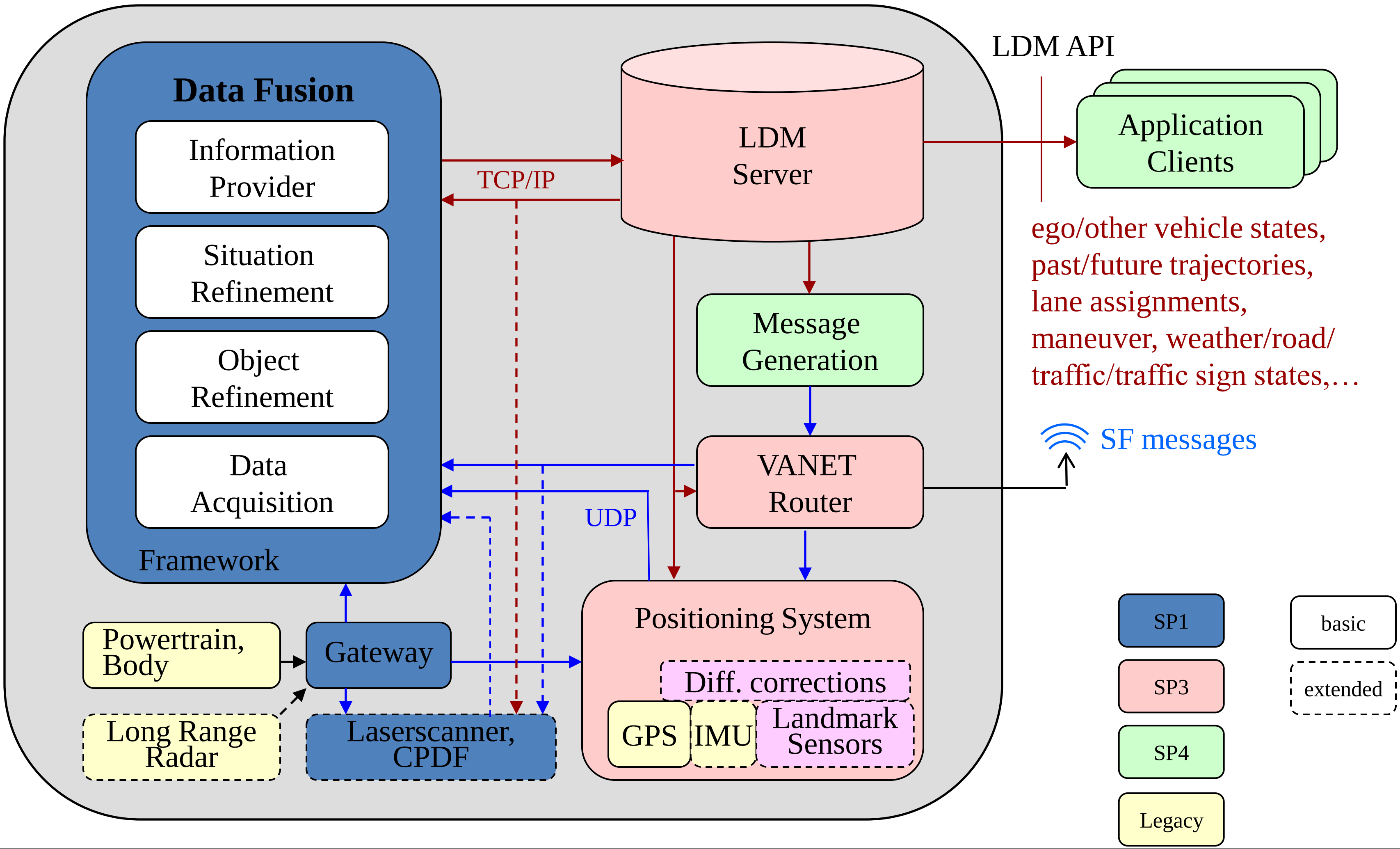
COOPERATIVE SYSTEMS



ARCHITECTURE INNOVATION



ARCHITECTURE IMPLEMENTATION



SAFESPOT ARCHITECTURAL ACHIEVEMENTS

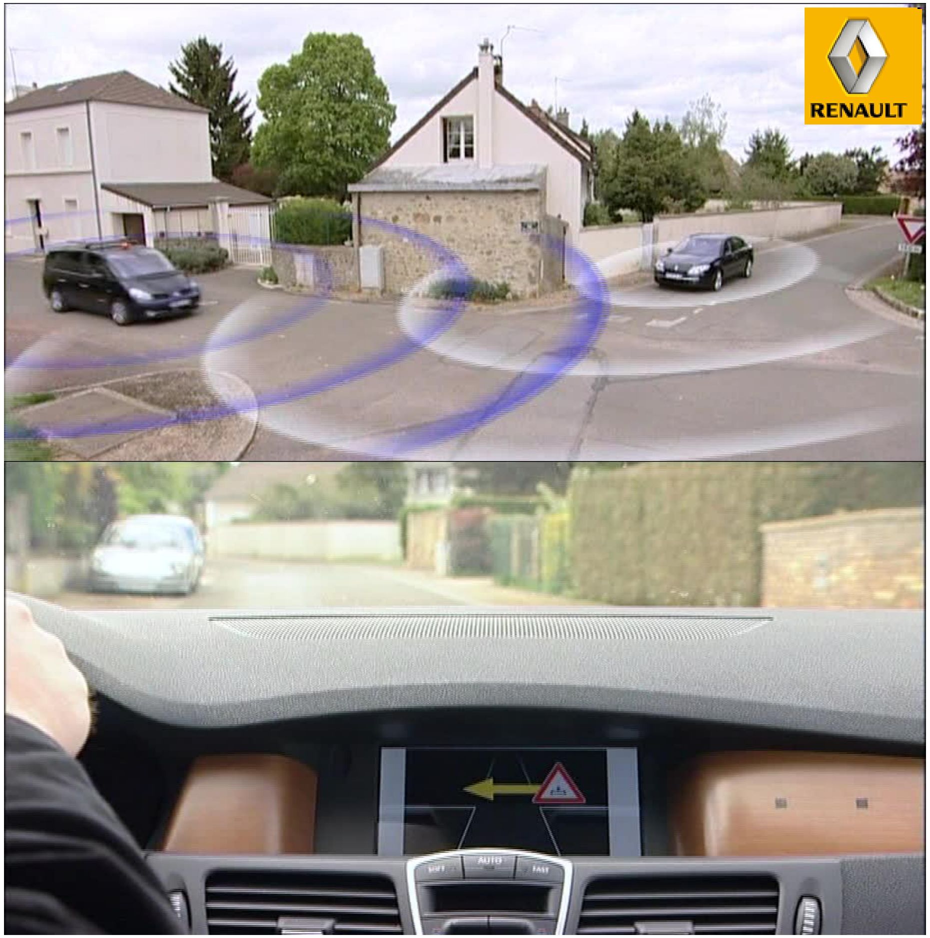
- **Cooperative Awareness**
  - established by IEEE 802.11p based VANET using “Beaconing”
- **Local Dynamic Map**
  - Central data storage
  - Common object model
  - Spatial Queries
  - Network capability
- **Platforms (In-Vehicle and Infrastructure)**
  - Sensor data fusion
  - Object Refinement
  - Situation Refinement
  - Situation Recognition
- **Efficient Channel Use**
  - Communication Paradigms (Push Principle, No queries of raw sensor data)
  - Low Latency for Emengency Messages (due to priority handling, congestion control)
- **Robustness and Reliability**
  - No feedback loops (all data has to pass data fusion)
  - Reliability management (handle reliability, precision, trust)
  - Message Manager (split applications in HMI and Cooperative Part

EXAMPLE OF ROAD INTERSECTION SAFETY APPLICATION

Approaching Emergency Vehicle

- An emergency vehicle approaches an intersection.

- It communicates its presence and direction of motion to neighboring vehicles.



EXAMPLE OF ROAD INTERSECTION SAFETY APPLICATION

Accident at Intersection

- An accident has occurred at a road intersection
- Information is broadcasted to the vehicles approaching it.
- They drivers are warned about the event.

EUROPEAN ACHIEVEMENTS AND PERSPECTIVES

TOP DOWN APPROACH

- Application and use cases
- Stakeholders aspirations
- User needs and requirements
- ITS Communication architecture framework

PROJECTS INTEROPERABLE DEMOS

COM Safety

Reference document

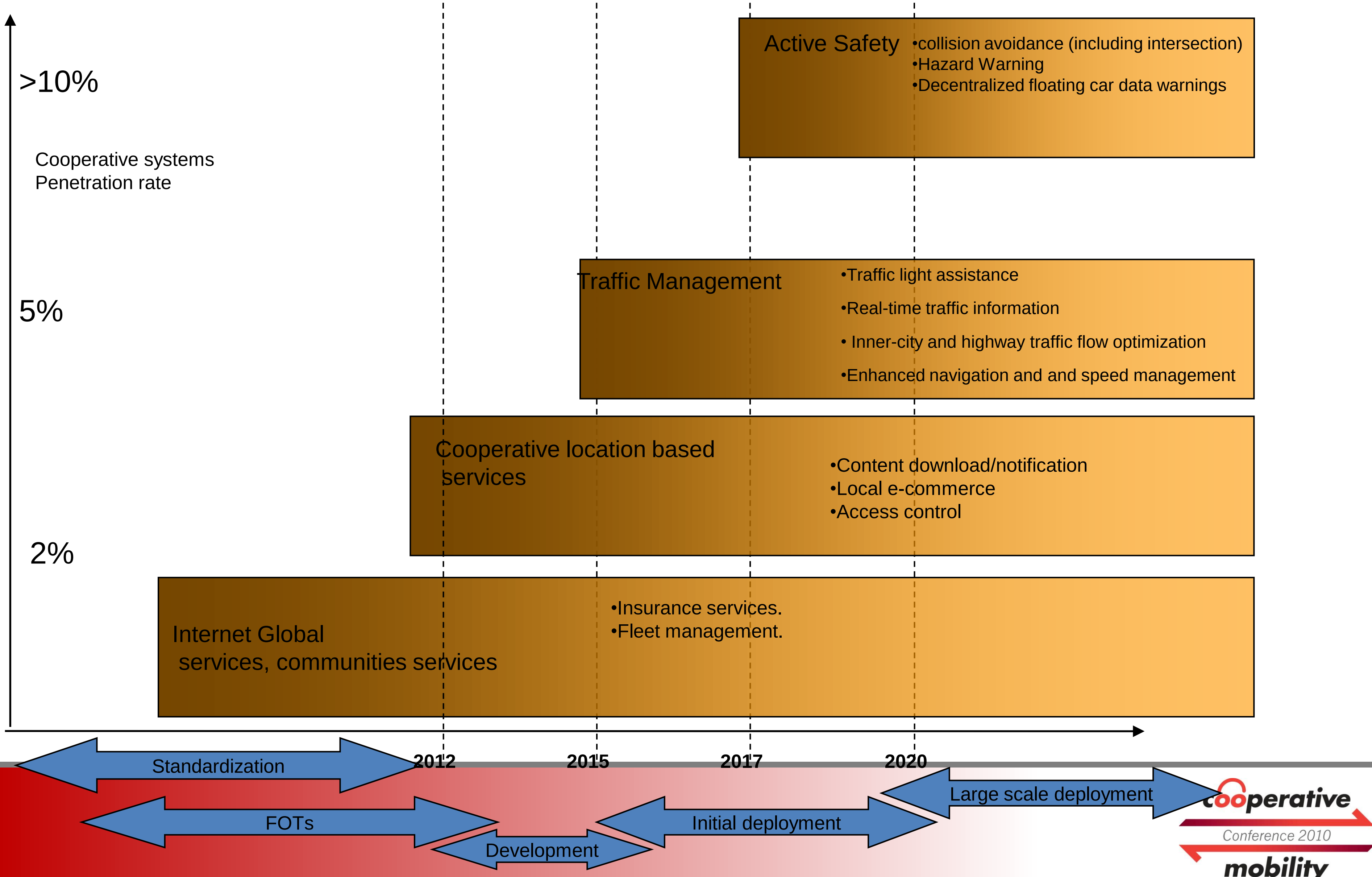
ETSI

STANDARDISATION

BOTOM UP APPROACH

- Message Formats
- Communication protocols
- Spectrum allocation in Europe
- Security

EUROPEAN ACHIEVEMENTS AND PERSPECTIVES



cooperative mobility Conference 2010

cooperative

Conference 2010

mobility