

Intelligent and Efficient Car Management Application for Advanced Green Routing

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Outline

- Introduction – Current trends
- Proposed Approach
- System Architecture
- Conclusion



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Introduction – Current Trends

- Tremendous growth in the transportation systems.
- The general environmental impact of cars is considered significant.
- Governments are using fiscal policies to promote cars with low CO₂.
- The transportation sector is the most significant cause of the air pollution in metropolitan areas (14% of the global Greenhouse gas emissions – expected to be 28% by 2030).



Introduction – Current Trends

- Trend towards ecological driving methods (eco-driving).
- Eco-driving systems provide feedback to the driver in order to optimize his behavior and reduce the fuel consumption.
- Such approaches lack the capability of allowing the combination of data sources in order to provide the driver with accurate measurements and predictions of trip parameters.



Outline

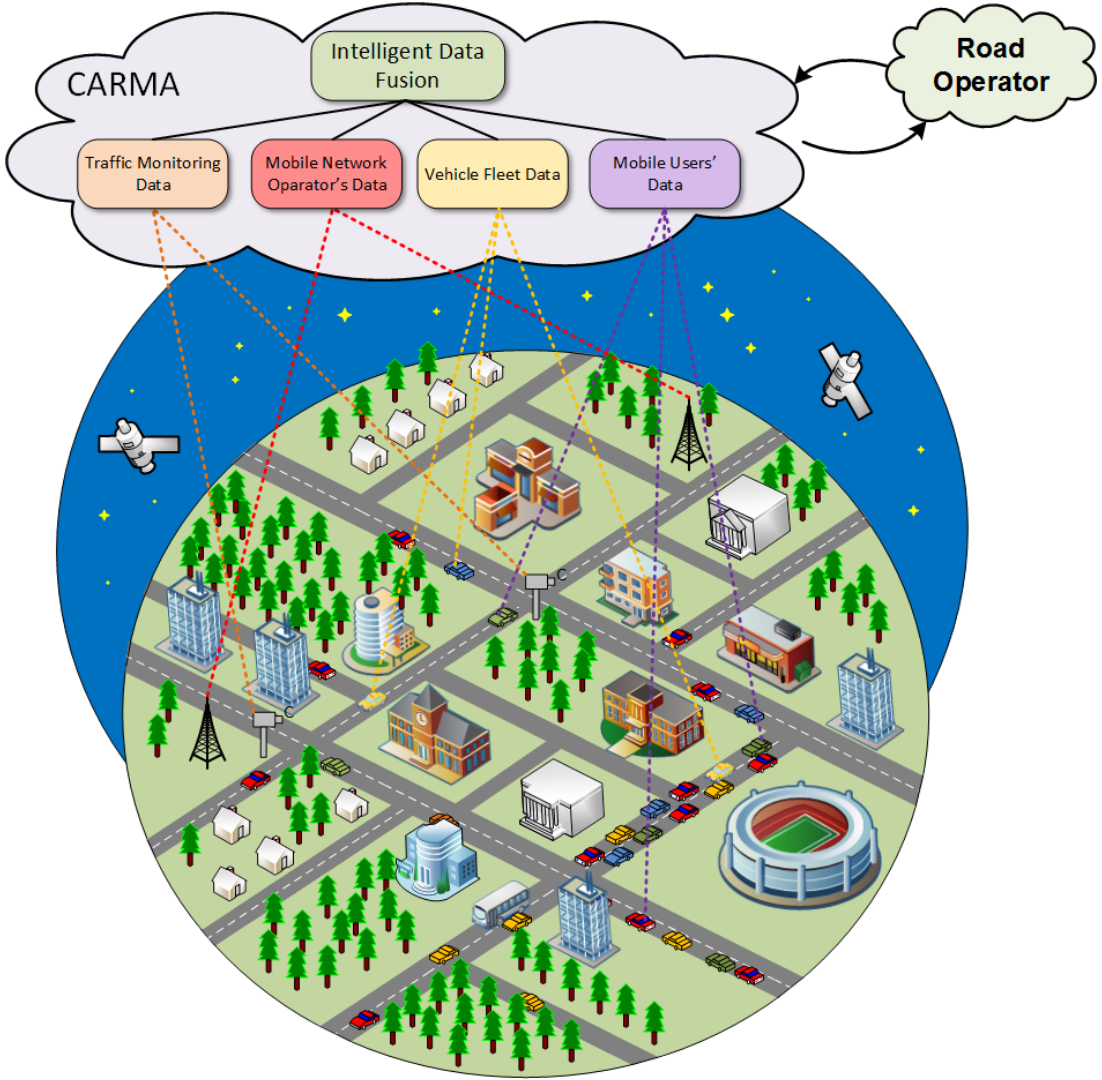
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CARMA Approach

- The scope is to support green daily commuting habits.
- Help the driver save on fuel expenses and time.
- Combination of several traffic data sources.
- Employs a green decision support system which helps the user to make the best road choices both pre-trip and on-trip.

CARMA Approach





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System Architecture

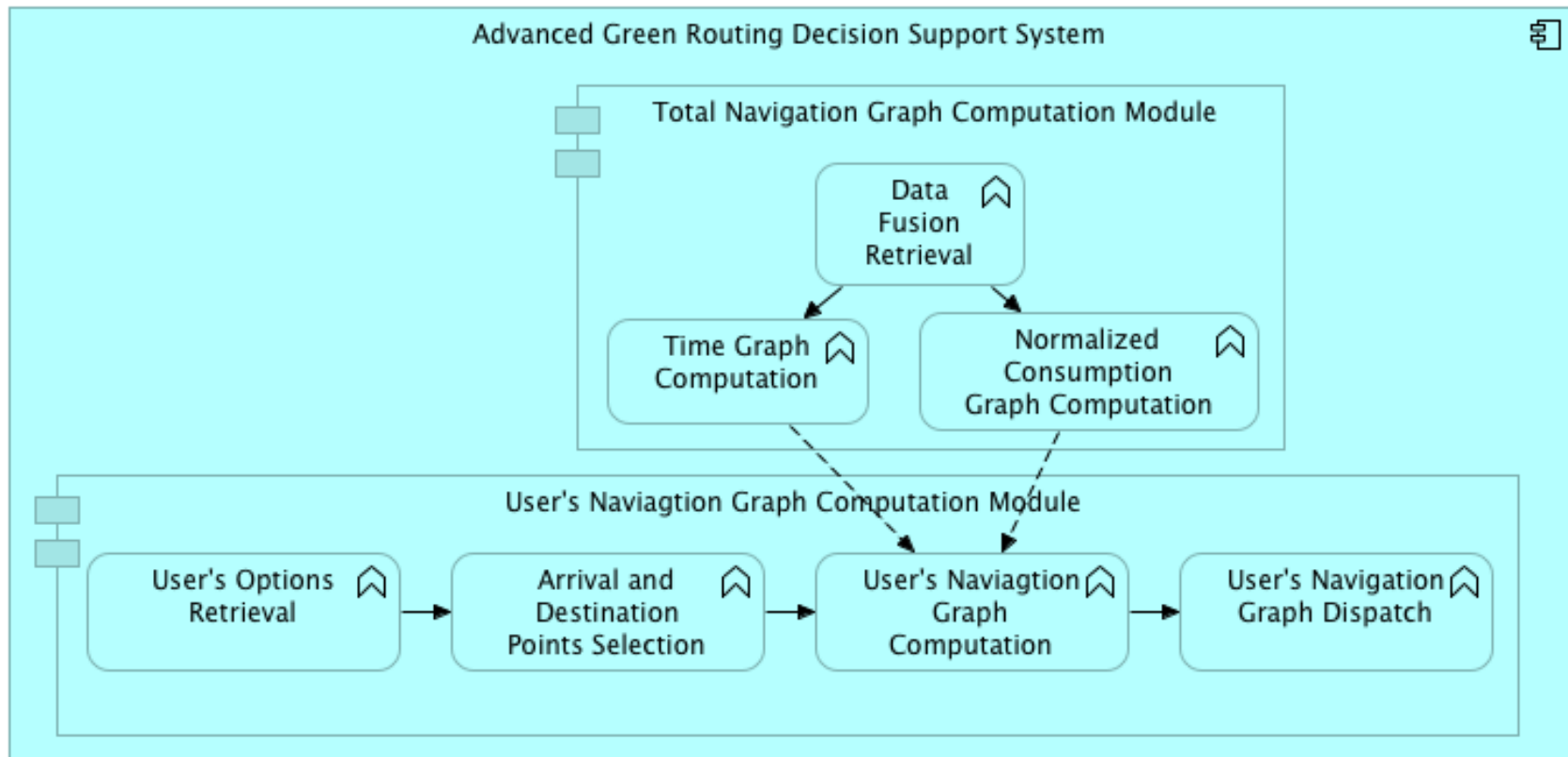
- CARMA consists of two components:
 - Central platform
 - Advanced driver assistant systems (ADAS)



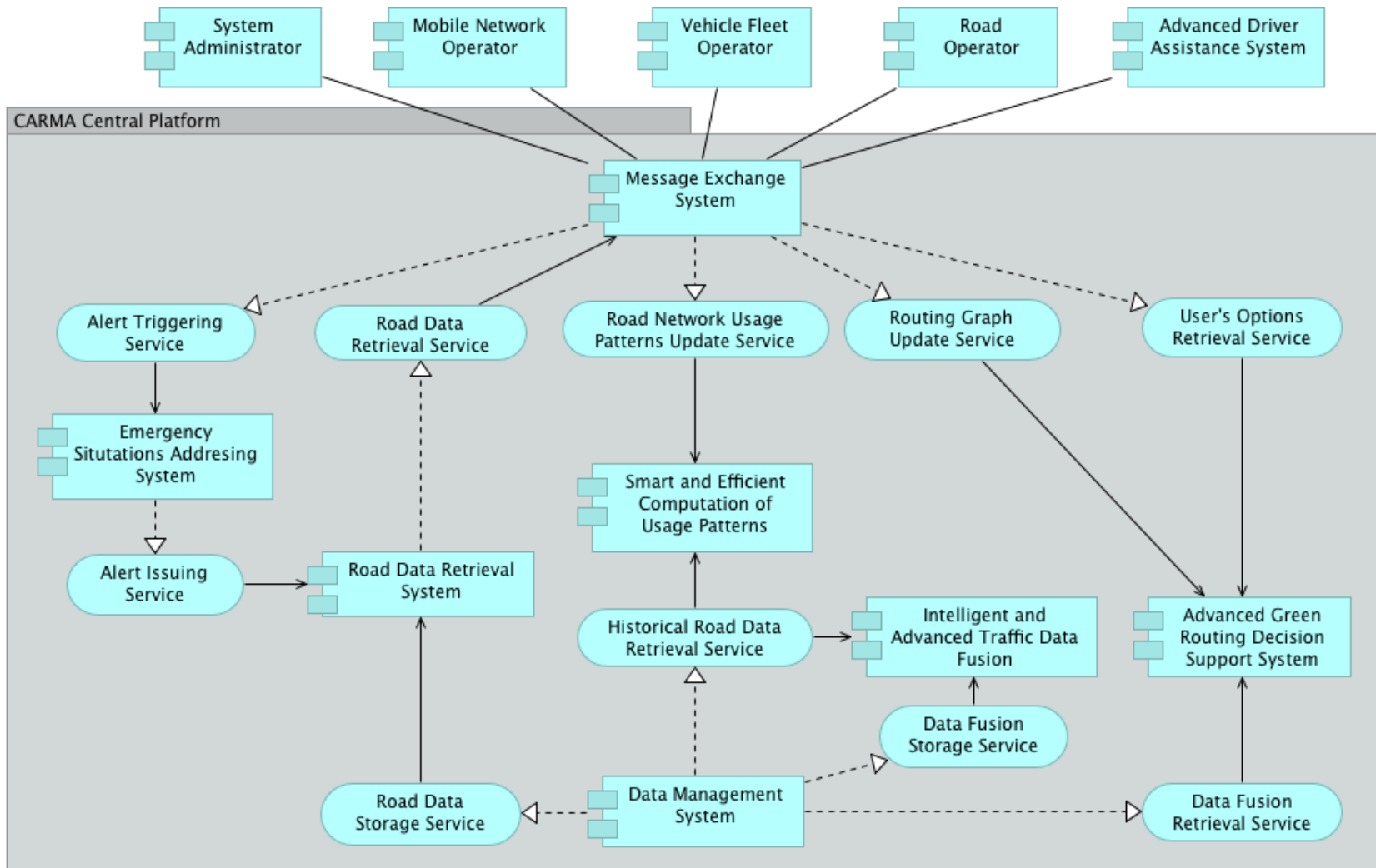
Central Platform

- Collection and storage the traffic data from the heterogeneous sources (road operator, mobile operator, fleet operator, user applications).
- Efficient computation of road usage patterns.
- Intelligent fusion of the collected data.
- Intelligent calculation of the routing graph.
 - Trip time graph.
 - Normalized consumption graph.

Advanced Green Routing System



Central platform

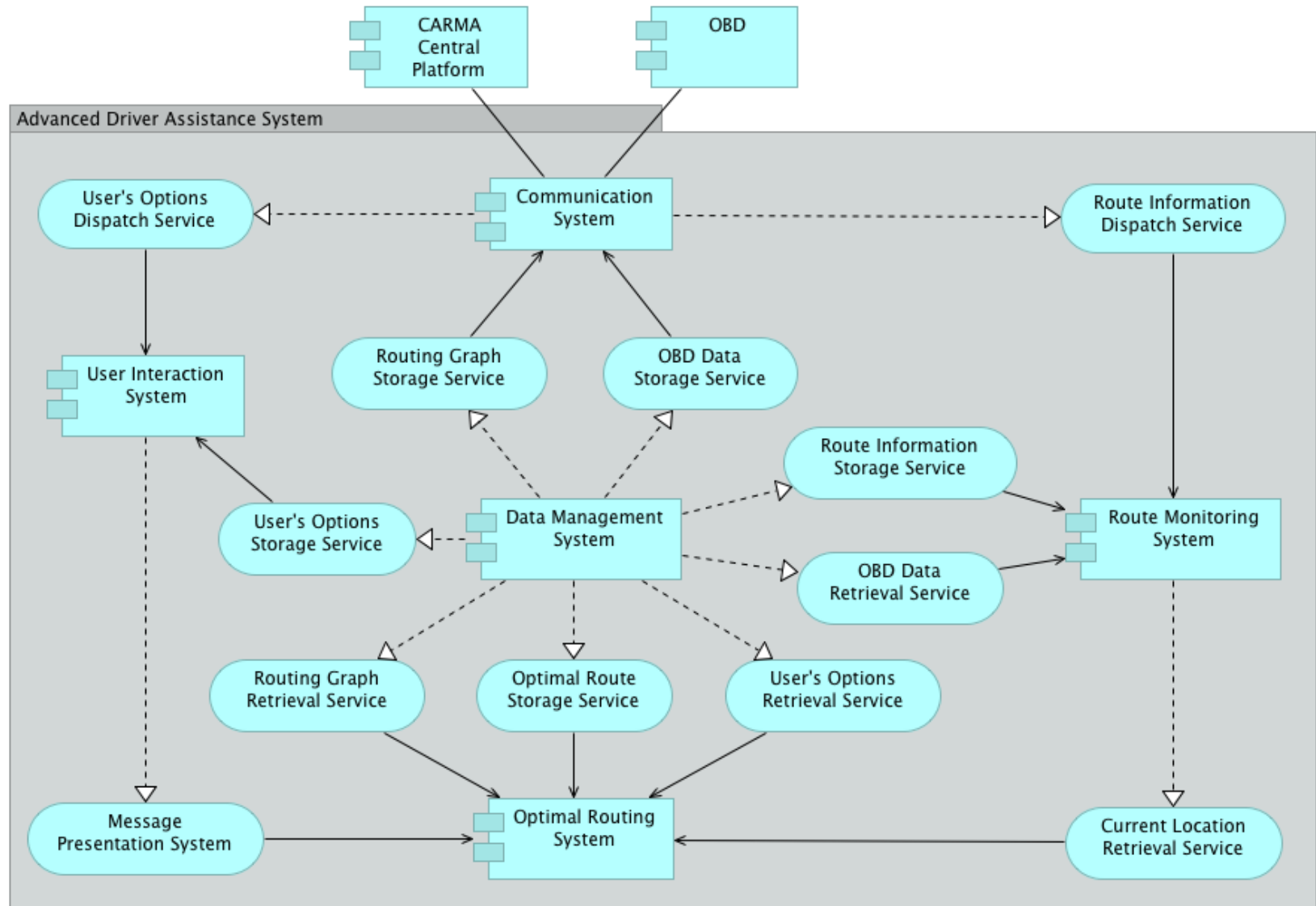




Advanced Driver Assistant System

- Collection of the driver's information and choices.
- Communication with the Central Platform.
- Route monitoring.
- Calculation of the optimal route.

ADAS





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Conclusion

- The problem of green and efficient routing was investigated.
- Functional architecture.
- Exploitation of heterogeneous data in order to compose traffic information that help the driver save on fuel expenses and time.

Thank you for your attention!



Project Website:

www.carma-project.gr



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