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Advanced In-Car Telemetry for Commodity Vehicles

- Road sector ⇒ one of the largest markets for ICT applications
- ITS based on new technologies can
  1. Reduce impact of road traffic
  2. Offer new services for transport actors (fleet operators, insurers, etc.)
- Implementation of charging policies for taxation and congestion/pollution reduction are quickly progressing

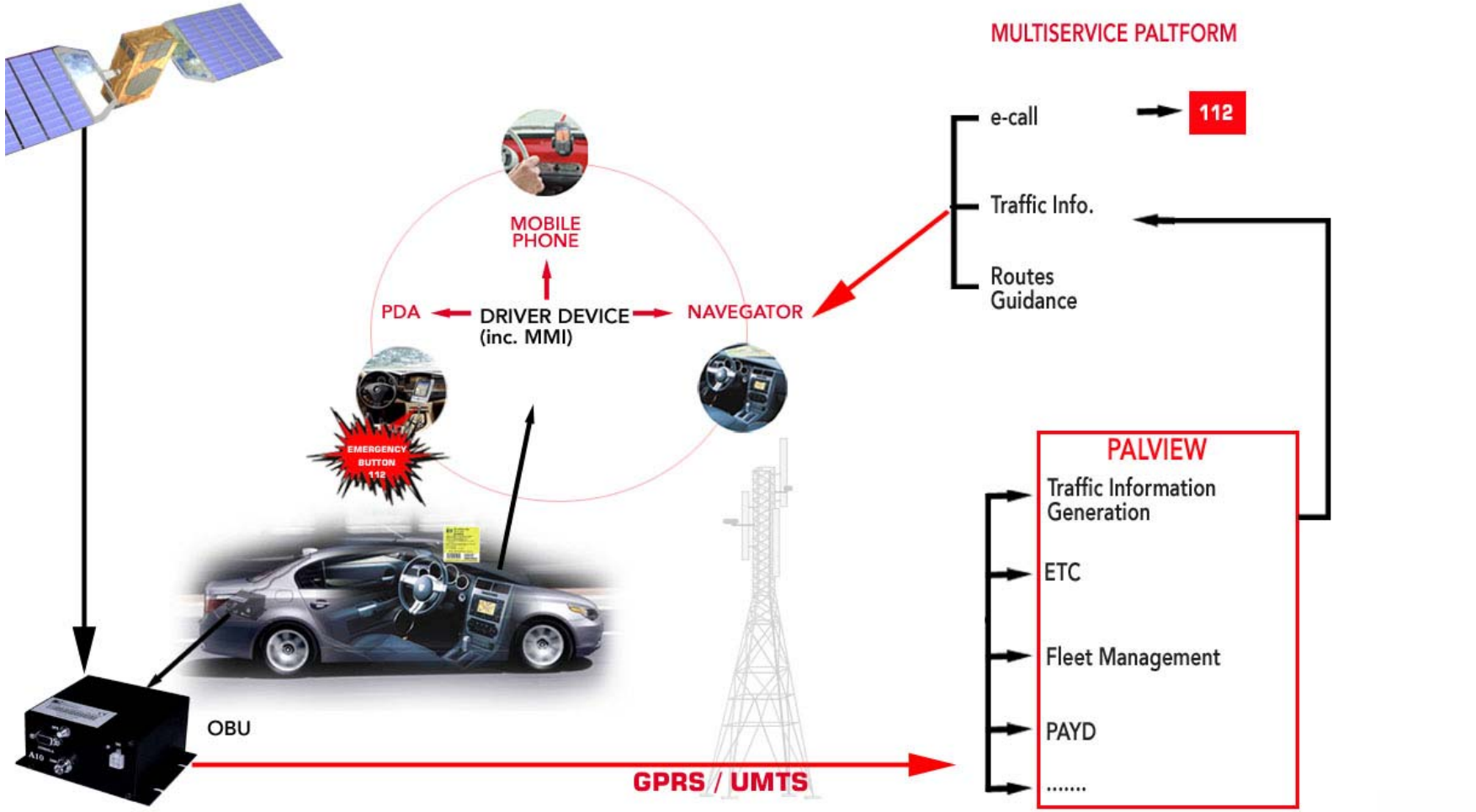
Advanced In-Car Telemetry for Commodity Vehicles

- ITS based on GNSS:
  1. Low operational cost
  2. Flexibility, scalability and Interoperability
- One OBU – multiple services: For use in: eCALL, Fleet Management, PAYD, Accident reconstruction, remote diagnosis, Real-time traffic info, stolen vehicle location & recovery, ETC, 'green-journey' determination...

Advanced In-Car Telemetry for Commodity Vehicles

- Concept of Green ITS ⇒ authorities are concerned about controlling and reducing CO_2 emissions
- Target ⇒ automatic control system of CO_2 emissions
- "eco/green-journey" ⇒ GNNS position + emissions' measurement. Analysis of gathered data in order to determine the most efficient path (and to affect the driver behaviour)

One OBU - Multiple Services approach



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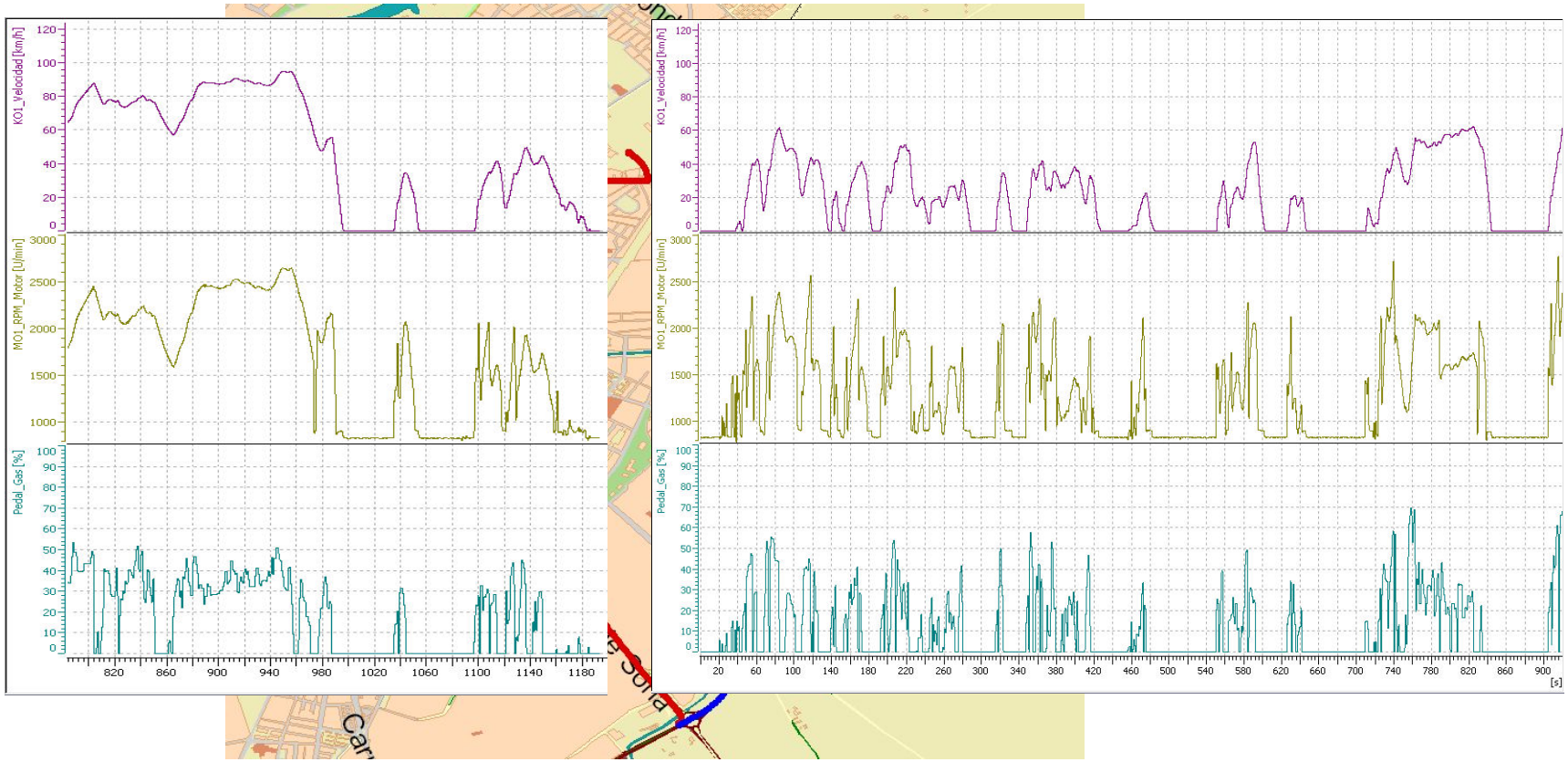
- PAYD, green-journey, remote diagnosis... GNSS + Comms are not enough ⇒ connection to the internal bus of vehicle is required.
- Advanced telemetry for commodity vehicles ⇒ mass market target, not only luxury cars
- Data in control center: consumption, emissions, etc. in simple reports, allowing the driver to maximize the energy efficiency of his car

1st example: City Centre vs. The Suburbs



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- City Centre
- Shorter, but traffic lights
- Some figures

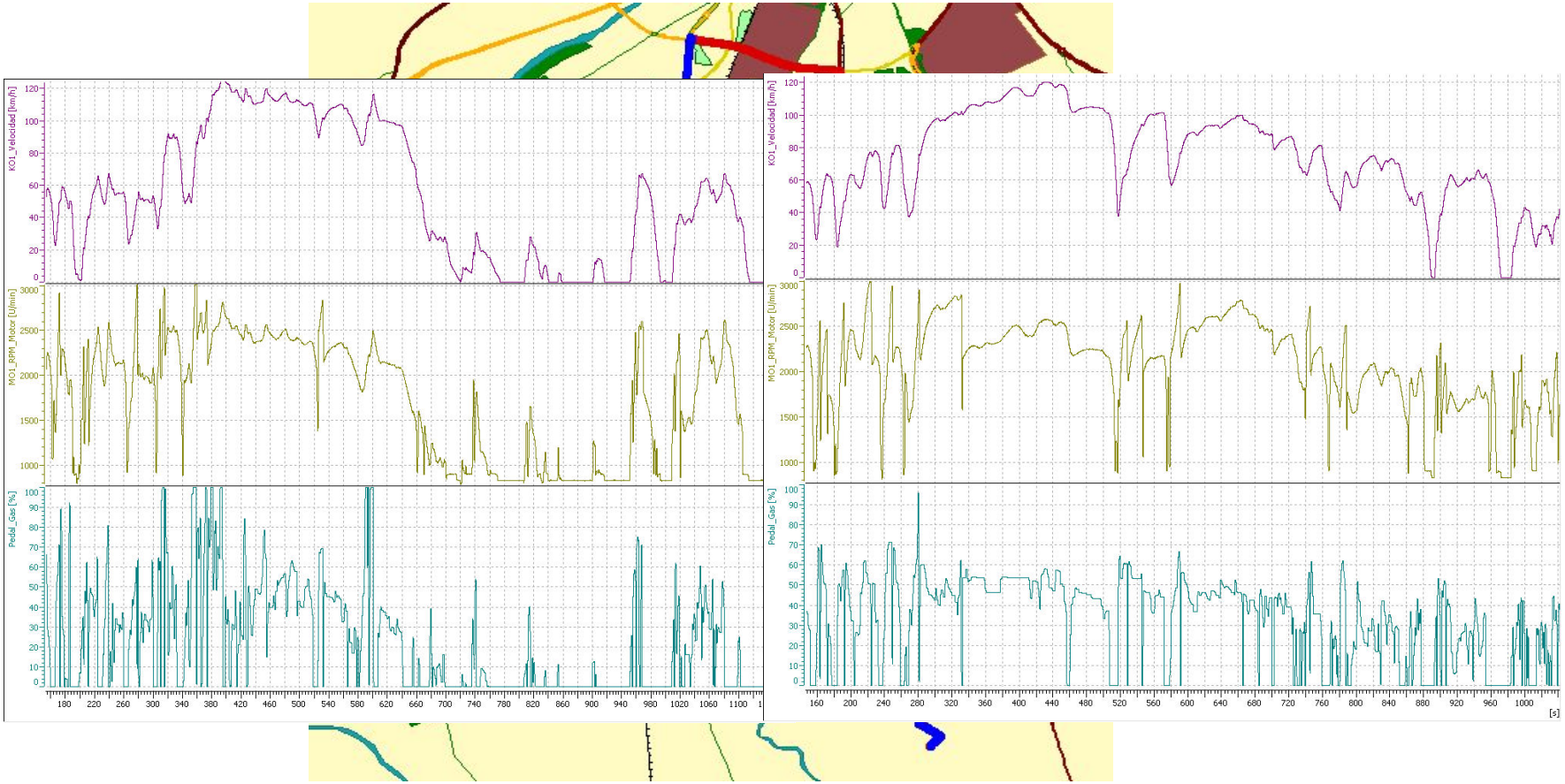
Duration	15m29s
Length	4,725 Km
Total Consumption	0,410 l
Average Consumption	8,68 l/100Km
Total CO_2 emissions	1086,92 g
Average CO_2 emissions	230,02 g/Km

- Suburbs
- Using circular roads
- Some figures

Duration	6m50s
Length	5,319 Km
Total Consumption	0,233 l
Average Consumption	4,37 l/100Km
Total CO_2 emissions	616,73 g
Average CO_2 emissions	115,95 g/Km

Test model: VW Golf 1.9 TDI 105CV

2nd example: two ways of arriving the city



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- First path
- Shorter, more stops
- Some figures

Duration	17m01s
Length	14,341 Km
Total Consumption	0,831 l
Average Consumption	5,79 l/100Km
Total CO_2 emissions	2202,79 g
Average CO_2 emissions	153,59 g/Km

- Second path
- Longer, but faster
- Some figures

Duration	14m55s
Length	18,310 Km
Total Consumption	1,120 l
Average Consumption	6,11 l/100Km
Total CO_2 emissions	2968,32 g
Average CO_2 emissions	162,11 g/Km

Test model: VW Golf 1.9 TDI 105CV

- Conclusions
  1. Green policies are being applied in Europe and elsewhere (target: all cars below 130 g/km at 2012)⇒ Idea: Charging policies for pollution reduction could be applied to transport companies (PAYP, “Pay As You Pollute”?).
  2. Specially useful for fleet management: by choosing eco-journeys companies save money (less consumption & less taxation if applied) and everybody gets a cleaner environment

- Conclusions (cont)
  3. Particular users also have accessible the information about the emissions of their vehicles. They can study which route is the most suitable for them (according to historical data)
  4. Additionally, the influence of the driver behavior on the emissions can be studied (and they can use feedback)
  5. Government authorities can know which zones are exposed to more emissions and whether their measures reduce them or not

Thank you!

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