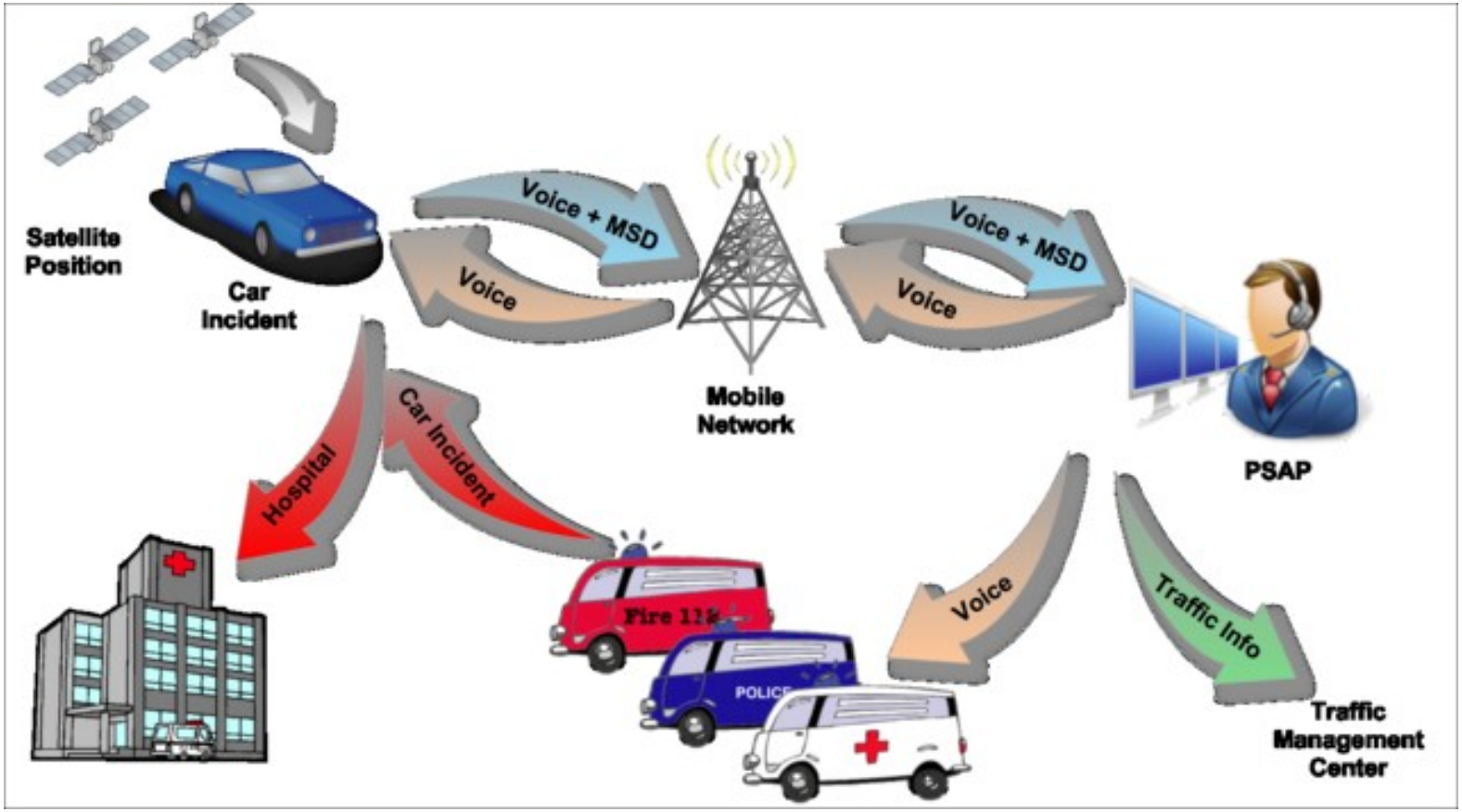
Introduction to eCall

Alan Stevens

October 2012

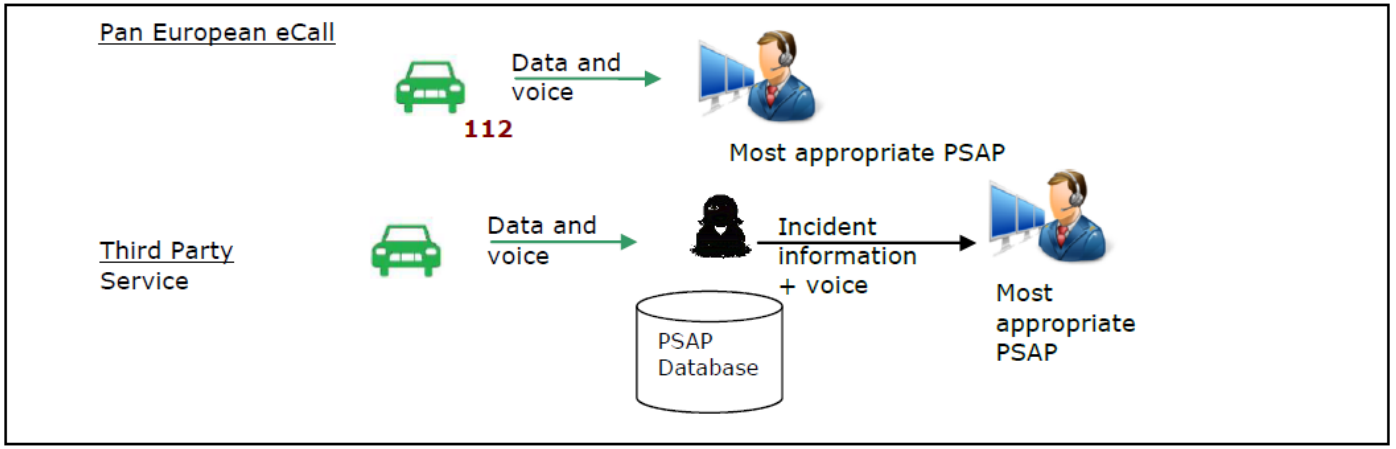
Pan-European eCall



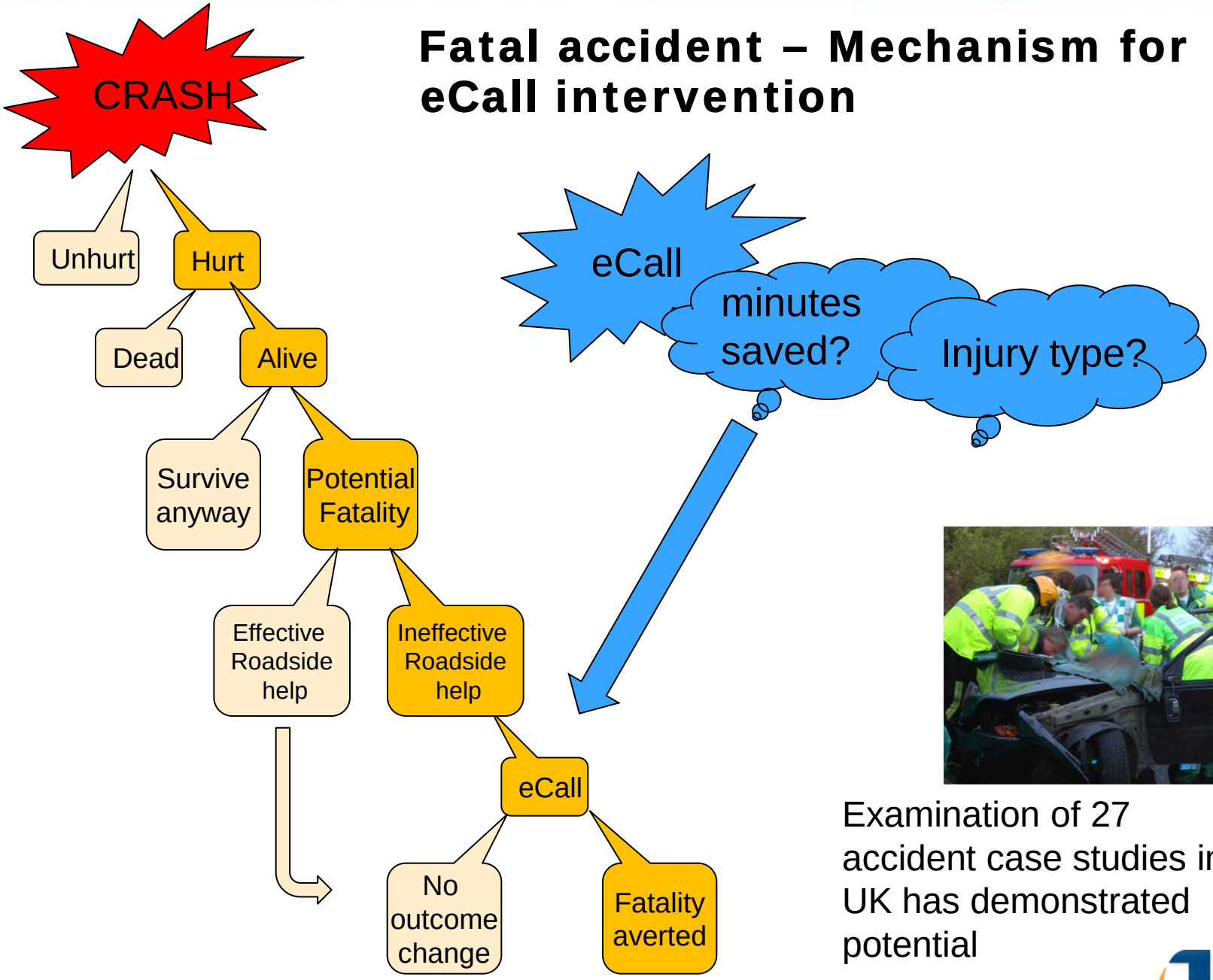
MSD = Minimum set of Data e.g. vehicle & location
PSAP = Public Safety Answering Point

Private eCall

- Private eCall services are operational today
- Term: "Third Party Services" (TPS)
  - Volvo OnCall, BMW Assist, PSA Apell d´Urgance, Toyota G-book, Alfa….
- Private call centers forward information to Public Safety Answering Points (PSAP)
- Other (commercial) services are offered on top of eCall
- Private eCall may include other eCall-Data
- TPS eCall uses mainly (conventional) SMS i.e. voice and data paths are separate

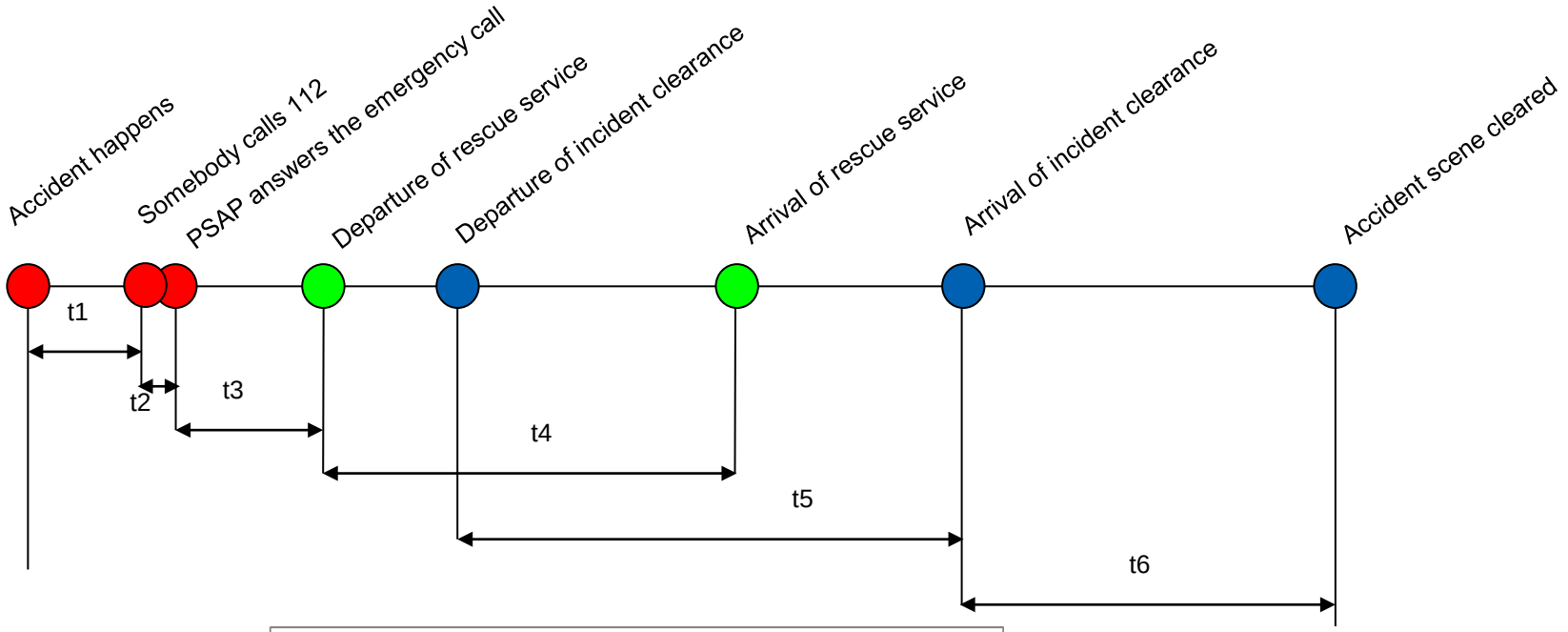


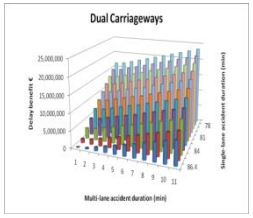
Fatal accident – Mechanism for eCall intervention

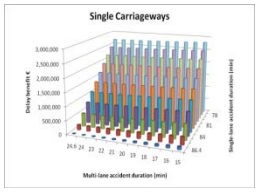


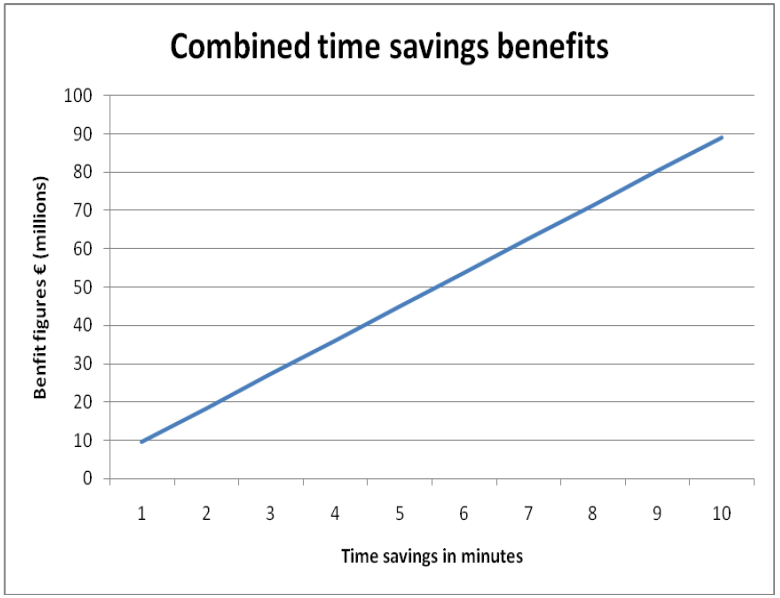
Examination of 27 accident case studies in UK has demonstrated potential

Potential for Congestion Benefit





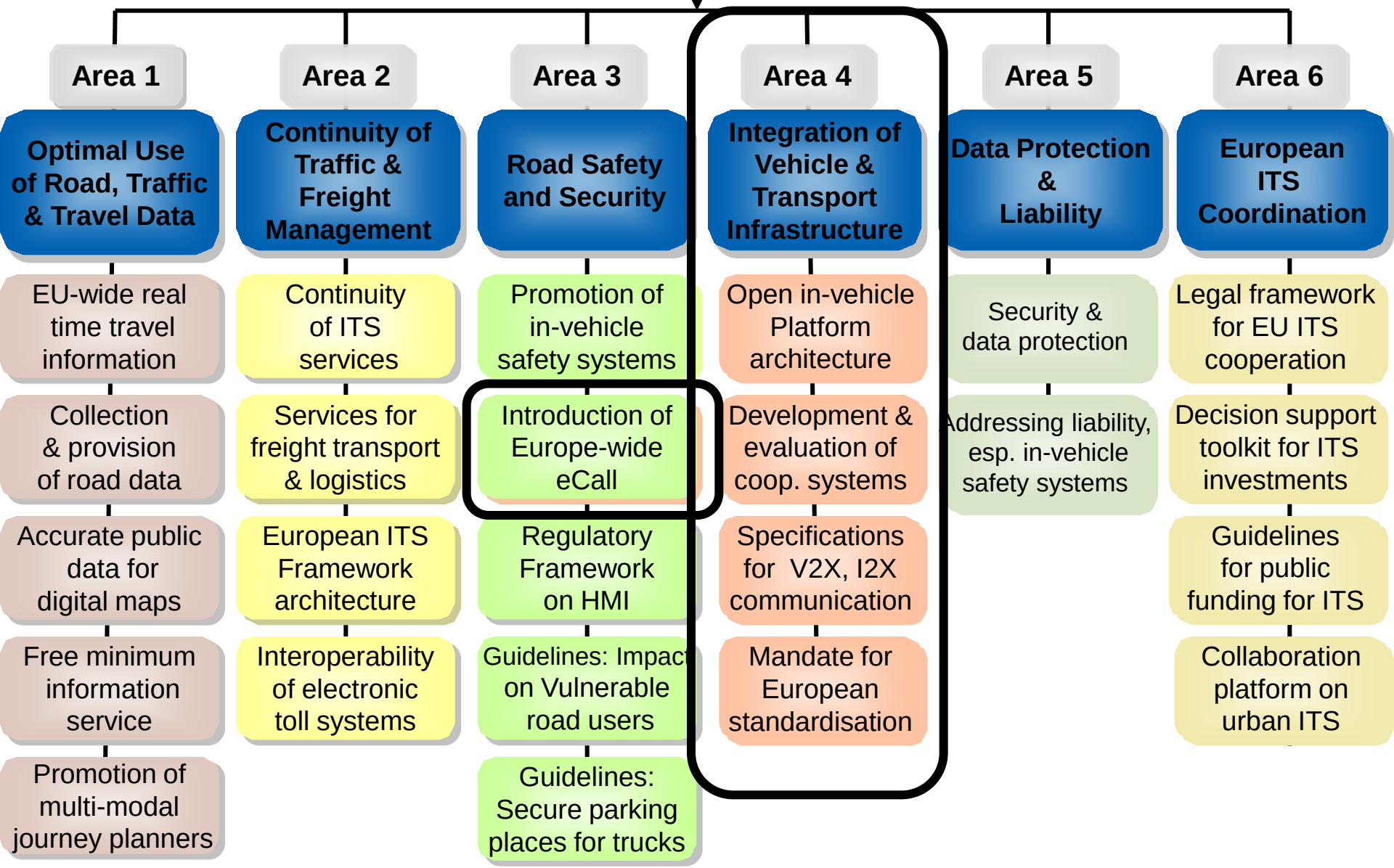




t1 – time between accident and the reporting of the accident
t2 – emergency call answering time
t3 – alert time of rescue brigade
t4 – travel time of rescue brigade
t5 – travel time of incident clearance
t6 – time to clear the accident scene

UK Modelling has demonstrated considerable benefit

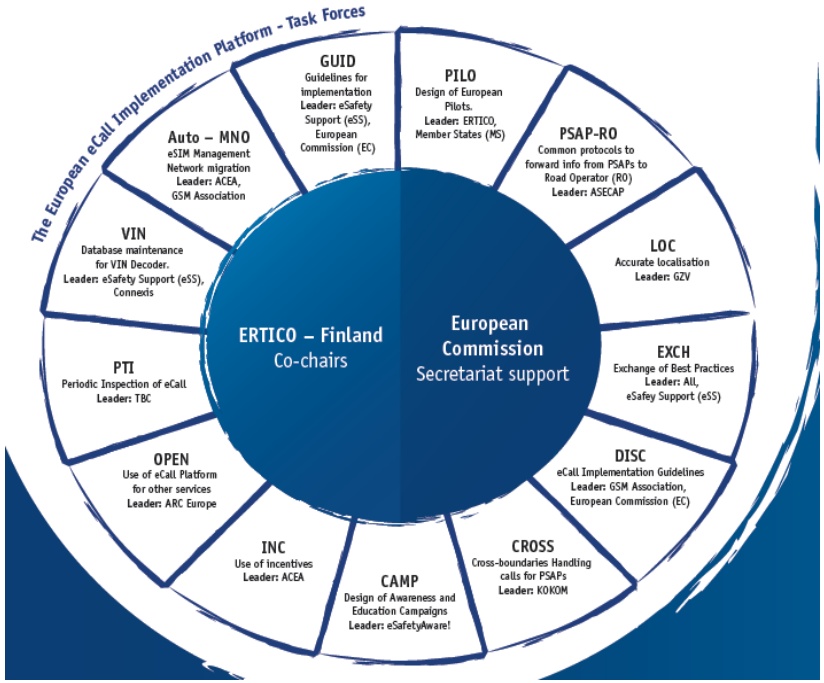
ITS ACTION PLAN



European Route to Implementation - 1

- European-level quantitative Social Cost Benefit case
- EC also give weight to qualitative factors: moral case for casualty reduction, social equity, benefits to foreign travellers

- eCall Implementation Platform and Task Forces
- Memorandum of Understanding
- Support for standards
- Co-financed pilot trials



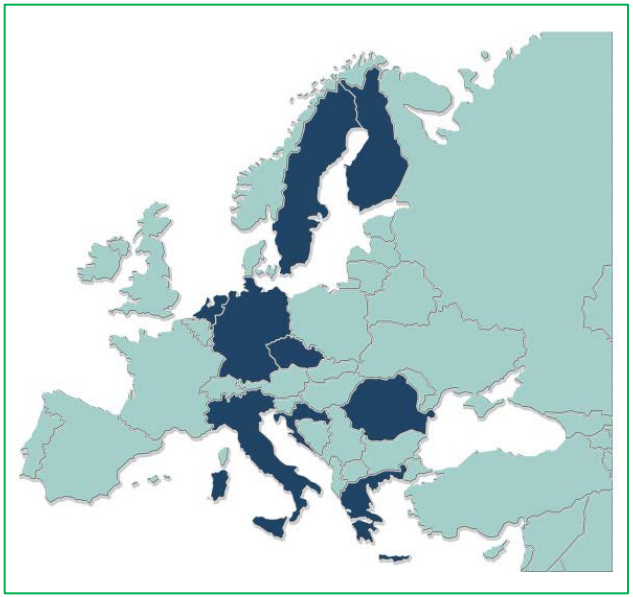
eCall standards - CEN TC278 WG15 eSafety

- “Mandate 453” from EC
- EC supported “Project Teams” to accelerate standards development
- Published standards:
  - EN/15722 eCall minimum set of data
  - EN/16072 eCall Pan European operating requirements
  - EN/16062 eCall High Level Application protocol
  - EN/16102 eCall Third Party Support protocol
  - EN/ISO 24978 ITS Safety and emergency messages using any available wireless media — Data registry
- Under development:
  - WI 00278316 Intelligent transport systems - eCall –End to End Conformance procedures. Developed by PT1502 and submitted as TS
  - Draft Technical report (FprCEN/TR 16405) Additional optional data set for heavy goods vehicles - to be further developed as a TS/EN
  - eCall for Powered Two Wheelers

HeERO 112

Harmonised eCall European Pilot

- January 2011 - Dec 2013; Budget €10m 50% EC contribution
- 8 EU Member States (Czech Republic, Finland, Germany, Greece, Italy, the Netherlands, Romania and Sweden) and Croatia
- In cooperation with Croatia, Finland and Romania, the Russian Federation will demonstrate interoperability with ERA-GLONASS emergency call
- HeERO2 under evaluation



www.heero-pilot.eu

European Route to Implementation - 2

- Impact Assessment, 2011
- The evidence suggests that voluntary encouragement will not lead to rapid and widespread eCall deployment but to private services in a relatively small number of (high end) vehicles initially, and then a slow diffusion down the vehicle fleet

- “Tripartite legislative process”:
  - EC Recommendation (8 Sept 2011): Asks Member States to call on the mobile network operators to set up their networks in a way that they correctly transmit automatic emergency calls generated by cars
  - European Parliament Resolution (June 2012) for all new cars to be fitted with eCall devices by 2015
  - Technical specifications for emergency call centres to follow

eCall impact assessments for HA, EC and DfT

eCall – The Case for Deployment in the UK
Final report
2006

Impact assessment on the introduction of the eCall service in all new type-approved vehicles in Europe, including liability / legal issues
FINAL REPORT
2009

2010 UPDATE

SMART 2008/55

Key Points – UK Costs and Benefits

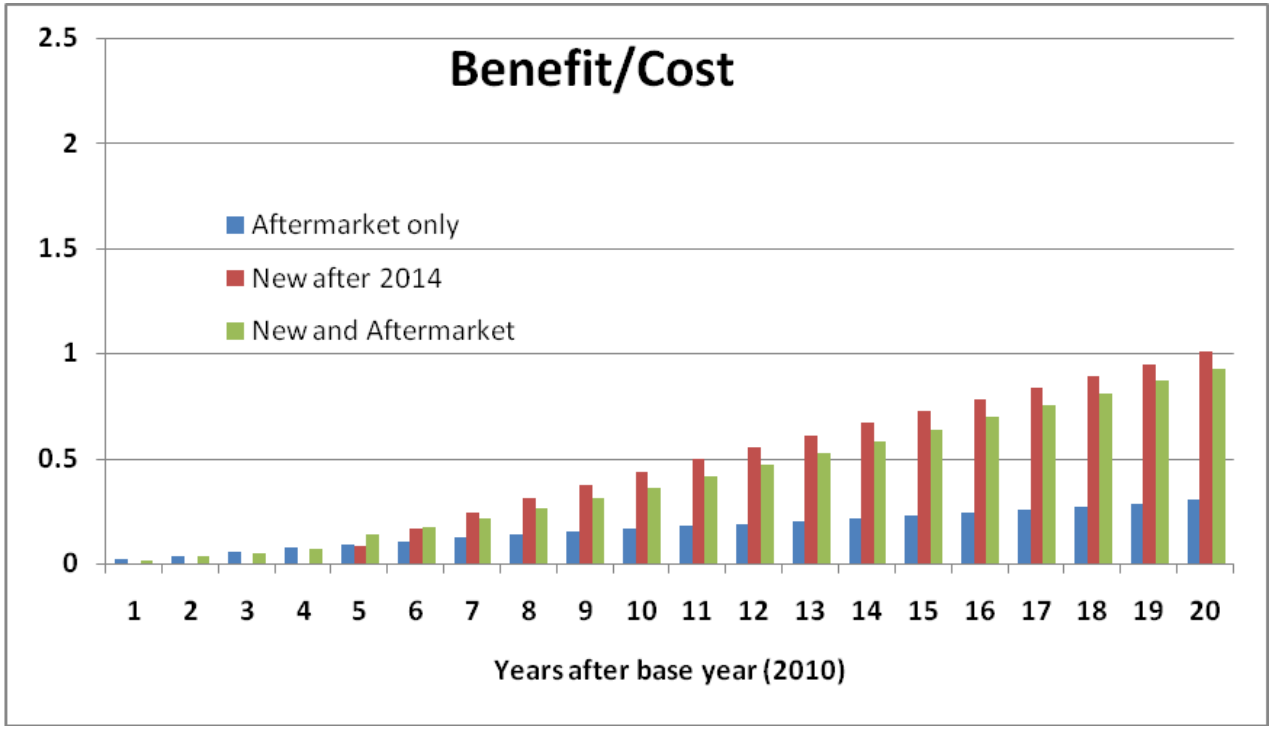
- PSAP additional costs are small; Cellular costs are probably modest
- In-vehicle unit costs are smaller than previously assumed – €150 OEM/€200 aftermarket and reducing with time
- Evidence for time saving benefit is scarce:
  - Crash notification: average of a few minutes at most?
  - Location finding assistance: 1-2 minutes at most?
- Therefore, casualty saving less than previously assumed (best estimate is 1% fatality reduction, 0.5% serious reduction); however, congestion saving is significant (11% of benefit)
- eCall on HGV and powered two-wheelers would also be beneficial

- CONCLUSION:
  - eCall is beneficial but the cost-benefit case for UK is weaker than many (most) European countries

Principal factor cost benefit for UK

FATALITIES	
Fatalities prevented (% of fatalities/yr)	**1.0**
Serious injuries prevented (% of serious inj./yr)	**0.5**

	COSTS
Reduction in IVU / yr (%)	**5**
Initial IVU (€) (OEM, Aftermarket)	**150, 200**
Operational cost (€ mn)	**0.11**
Initial Infrastructure Cost (€ mn)	**0.22**
AFTER MARKET TAKE-UP RATE	**3.00%**



- Note: New and Aftermarket produces lower B/C than New only despite higher eCall fleet numbers. This is because Aftermarket cost is higher

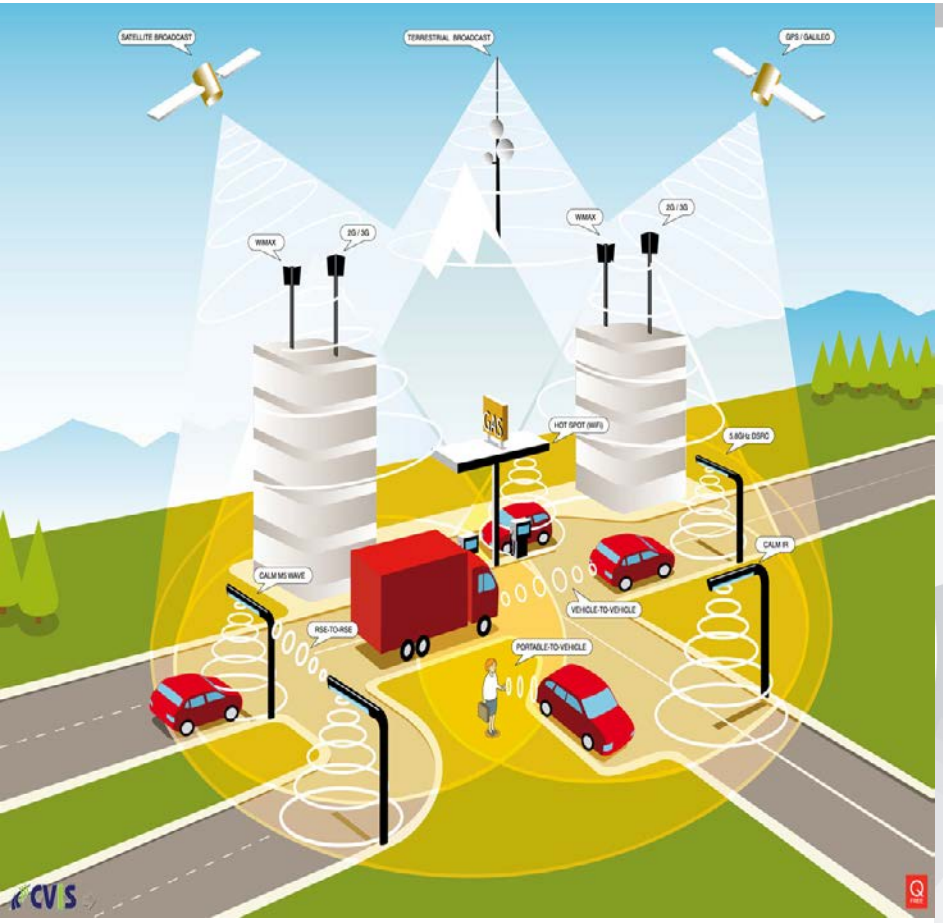
Key Points – UK Implementation Issues

- Article 29 working party has concluded **privacy** is not a barrier – Agreed by Stakeholders that this can be managed
- No major **liability** issues are foreseen and will be addressed in service development
- There have been some outstanding **technology** issues until very recently, but it is believed that a way forward is available – e.g. eCall flag, dormant SIMS, 2G legacy, silent eCalls …
- All mobile operators have implemented updates to "Teleservice 12" such that emergency calls will be routed over **any available of network** if there is no coverage from the contracted mobile network operator
- **Standards**, are essentially fully developed
- **Effectiveness** of technology is being established through pilot trials
- Strong demand for "**bundling**" of eCall with other services
- Strong call for support of eCall **legacy systems**
- Individual Stakeholders getting prepared but **"edges"** need to be clarified
- CONCLUSION:
  - UK is essentially "eCall-ready" and PSAP implementation costs are modest
  - Private sector are (cautiously) ready to implement eCall

Thank You

Alan Stevens

Transport Research Laboratory, UK



Do you have any points for clarification?