The Development of ITS Technology, Current Challenges and Future Prospects

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Secretary General

VI International Conference on European Traffic Policies
Session: "Research and Technology Applied to Road Safety"
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The Motorcycle Industry in Europe

- Established in 1994, representing L-category vehicle industry
- 14 manufacturers producing 30 brands
- 18 national associations, also representing smaller manufacturers & suppliers (SMEs)

37 million users in EU28

Diversity of vehicles, owners and purposes

Commuting, Leisure, Sport

More and more EU citizens using Powered Two-Wheelers (PTWs) for commuting

L-category* vehicles – More than motorcycles

2-Ws**
Mopeds & motorcycles

L1

L3

3-Ws**
Tricycles

L2

L4

L5

4-Ws*
Quadricycles

L6 / L7

** Two- or three-wheel vehicles and quadricycles*

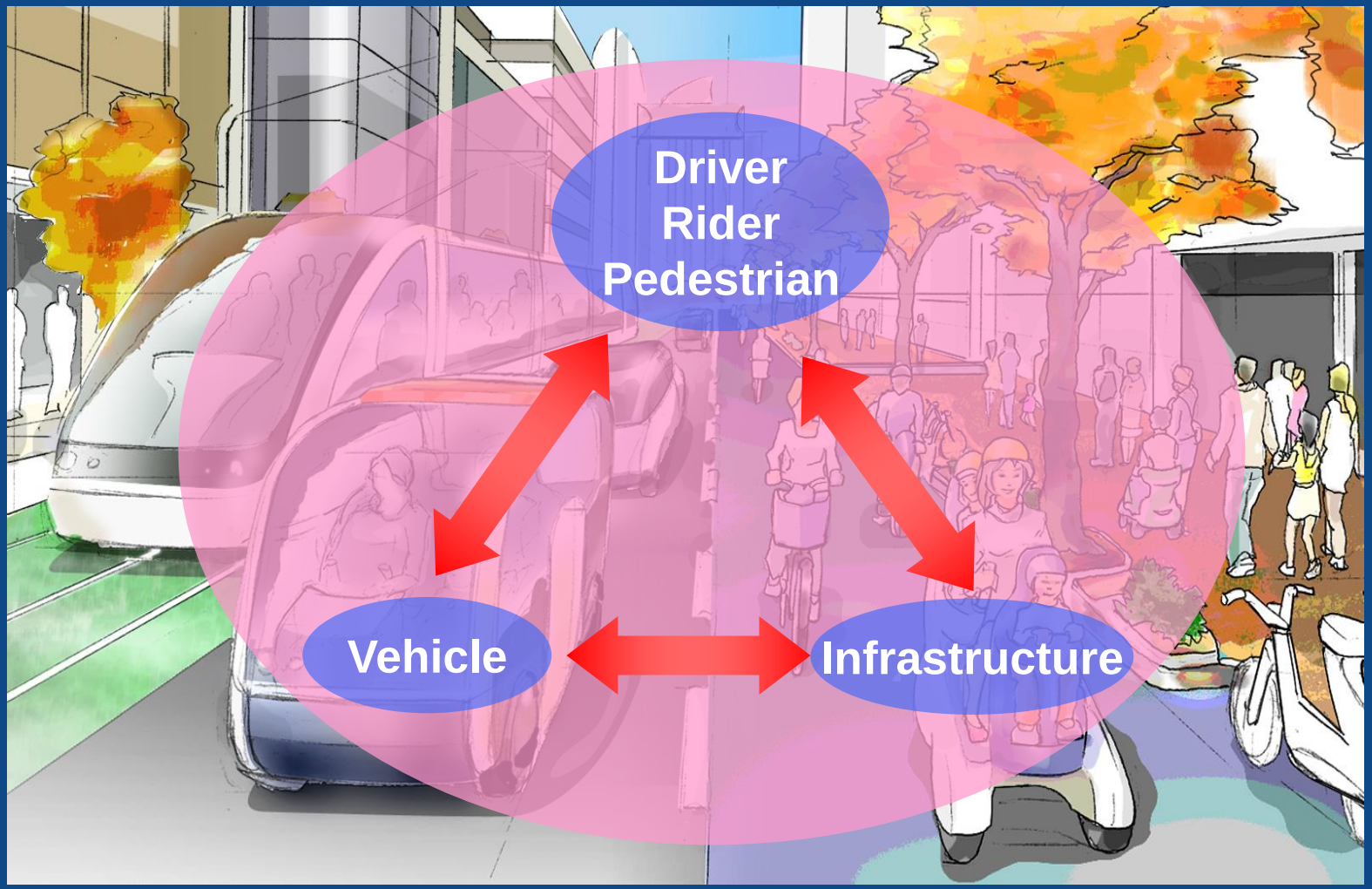
*** 2/3/4-Wheelers*

ITS – Definition

Extract from 2010/40/EU (EU ITS Directive):

‘Intelligent Transport Systems’ or ‘ITS’ means systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport

ITS – ICT* application and interaction



** Information and Communication Technologies*

ITS – “The Bigger Picture”

ITS – General Industry View and Action

- ACEM is ready to embrace ITS as an integral part of future mobility aimed at:
  - improved safety (SAFE)
  - more efficient and comfortable transportation (SMART)
  - reduced energy consumption (CLEAN)
- A growing number of individual ACEM members is actively involved in research and demonstration projects around the world dedicated to cooperative ITS as most promising area for the following reasons:
  - highest benefit potential (notably PTW conspicuity)
  - well-established standardisation community
  - proactive authority support and (co-)funding
  - reasonable component/system cost

Cooperative ITS – The Way Ahead

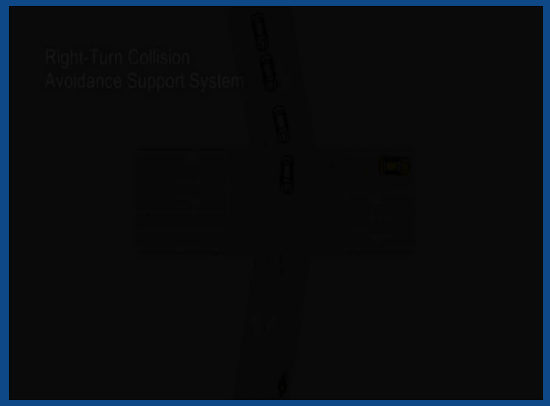
- V2X* can address the most common PTW accident configurations and enhance conspicuity
  - 54% of PTW accident occur at an intersection (MAIDS)
- V2X will progressively appear in cars in the mid term
- PTW safety will benefit from being included in this connected world

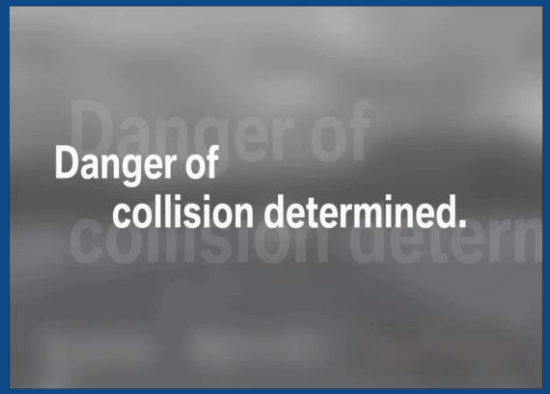
** Vehicle to Vehicle (V2V)*
Vehicle to Infrastructure (V2I)

Cooperative ITS – PTW Industry involvement

- Advanced Safety Vehicles (ASV) promotion project (Japan; 1996 –)
- Car2Car Communication Consortium (V2X standardization)
- ITS World Congress 2012 (presentation of Motorcycle Approach Warning System)
- V2X field operational test project SIM^{TD} in Frankfurt am Main (120 vehicles; 5 motorcycles)
- ITS World Congress 2013 (presentation of Motorcycle Approach Warning System (with autonomous driving car))
- DRIVE C2X project
- …

Cooperative ITS – R&D, FOTs* and beyond





** Field Operational Tests*

ACEM supports

- Further development of ITS applications which can improve safety for PTWs
- ITS solutions designed with consideration of the specific requirements of PTWs and their riders
- Integration of PTWs in transport management planning, infrastructure projects and consideration by car OEMs to realise the full potential of ITS in improving the visibility of PTW riders as vulnerable road users

ITS = the mobility of the future & the future of mobility

- The PTW Industry is ready to assume its responsibility and play its role in the connected society

- PTW manufacturers already work actively on ITS individually and in collaboration and will continue to investigate ITS technological and market potential

Telematics

Responsibility

Awareness

Forward looking

Functionality

Intelligence

Cooperation

ACEM New Road Safety Strategy

COMING SOON!

New initiatives and commitments of the industry in the ITS domain

Official launch – International Motorcycle Conference, Cologne, 29-30 September 2014

For further information…

Thank you for your attention!

eCall for Powered Two Wheelers Opportunities and Challenges

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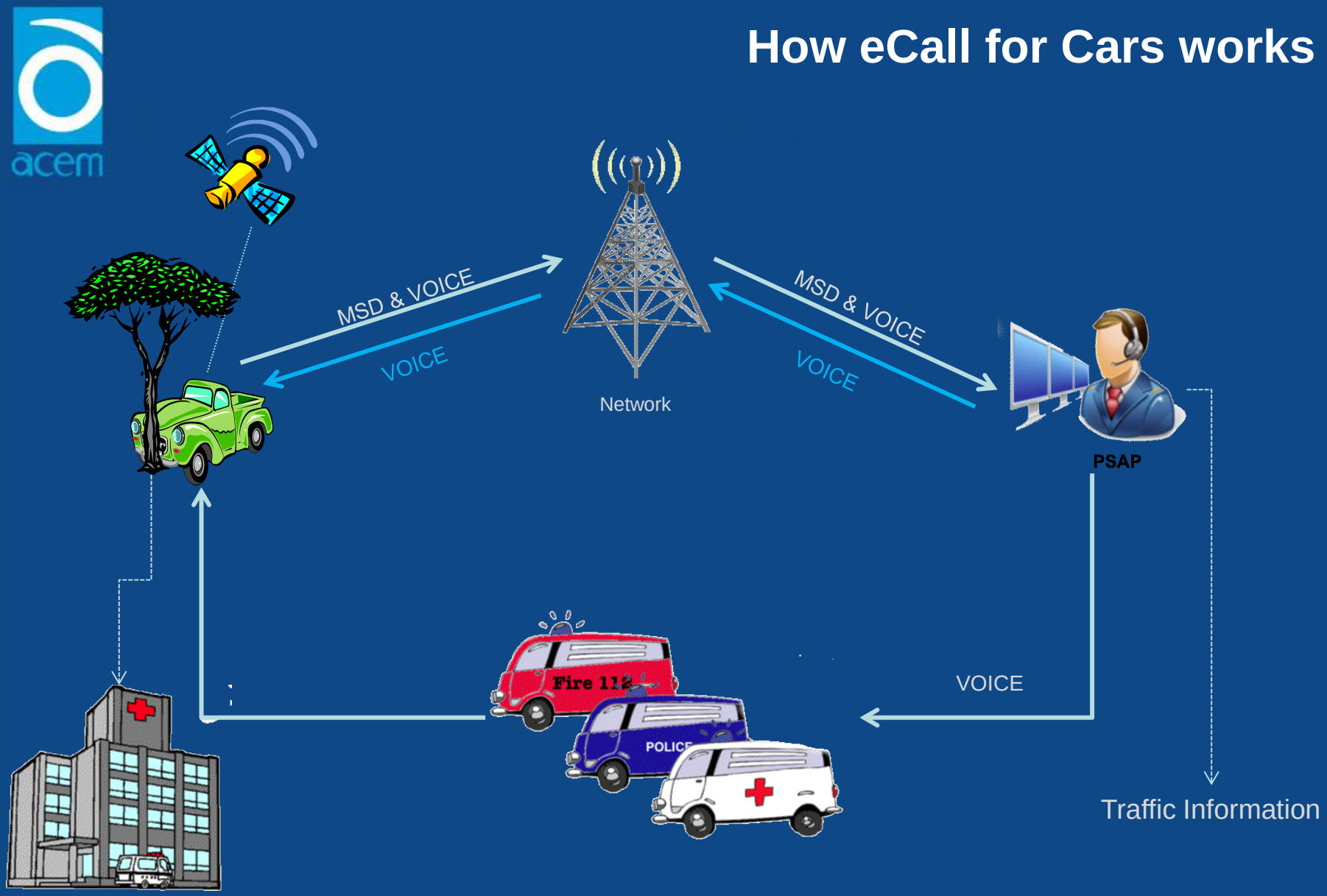
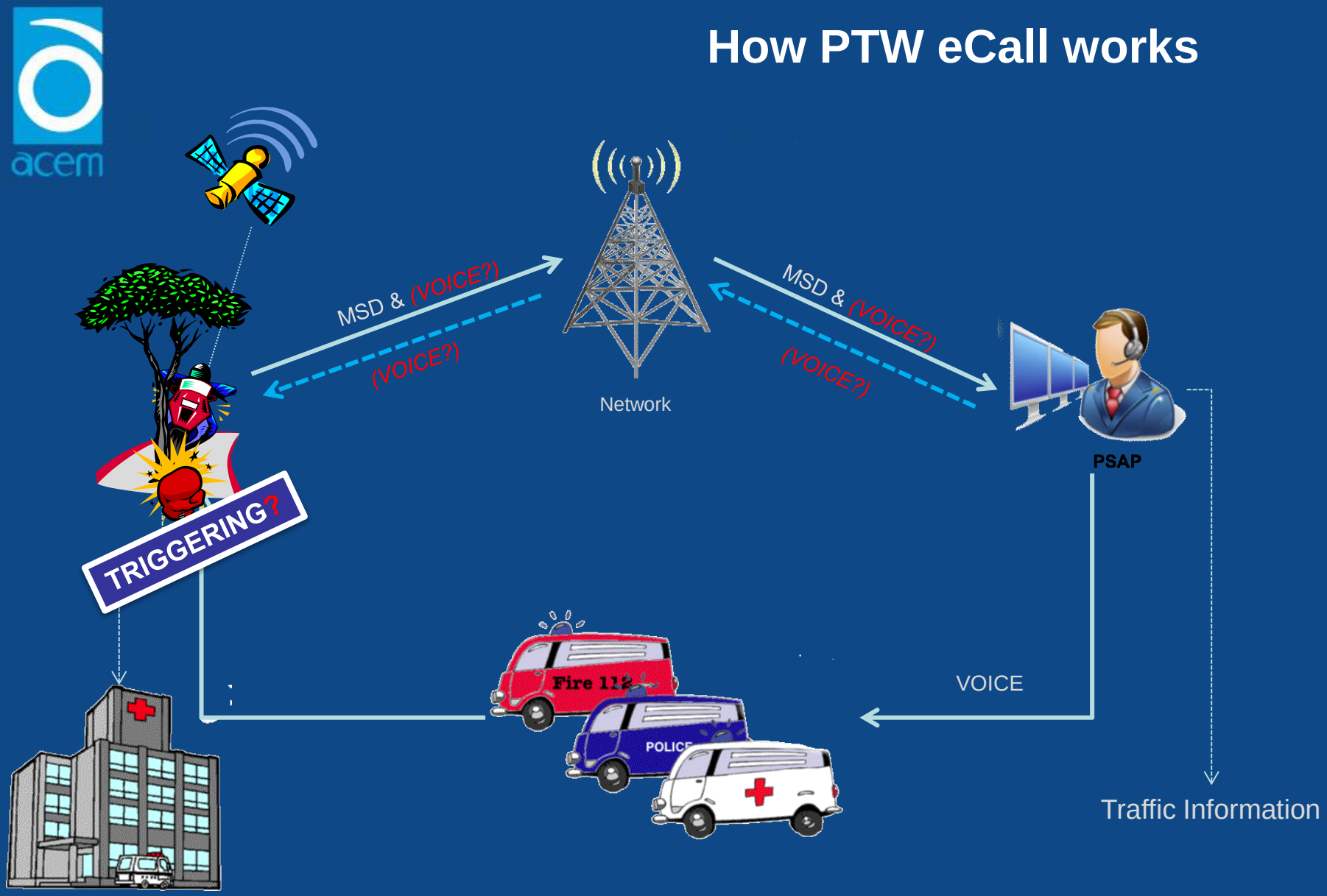
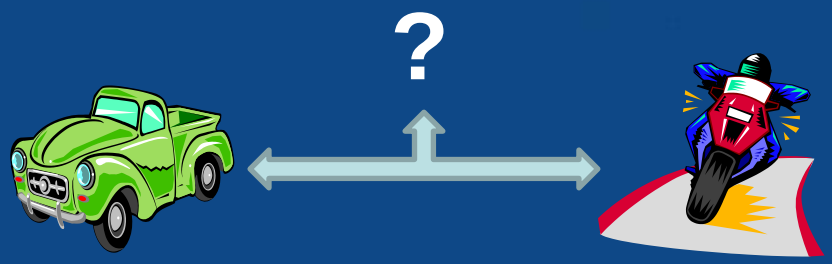
How eCall for Cars works



How PTW eCall works



Motorcycle eCall a new & different challenge



Common

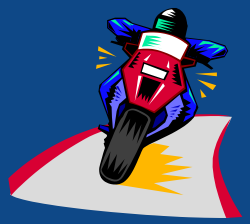
- Rescue chain
- Communication Standards
- Requirement power supply
- Infrastructure / business case

Difference

- Motorcycle and rider separate
  - Forces vary to vehicle & rider post crash
  - Location vehicle & rider vary post crash
- Accident recognition is complex
  - Stability criteria
  - Sensor types
  - Omni directional sensing
- Voice connection likely unreliable
  - Ambient noise
  - Distance rider-vehicle

Triggering- main challenge

- eCall triggering usually with airbag/acceleration sensors
- Decades of experience with triggering
- Well defined accident scenarios with corresponding parameters



- eCall triggering not defined (no best practise)
- Accident scenarios are not well defined and quite complex
- Rider and motorcycle will be separated after crash

Substantial Unsolved Issues

FOCUS: define minimum requirements

PTW eCall is most complex

OEM / maker is liable for its product:

- OEM produces (PTW) vehicles
- eCall system needs to be in the vehicle (liability & quality& supply chain)
- Systems not linked to vehicle are out of OEM control and responsibility

Research: Limitations and Minimum requirements

PTW Industry Strategy

- Definition of a PTW eCall system and its requirements
- ACEM project proposal to EC to define Standards for PTW eCall
- Participation of OEM's in Horizion 2020 project call for PTW safety

Minimum requirement – General

To make sure that:

- **Users understand what system can do and what not**
- **Manufacturers are to supply a simple but robust functionality** *(PTW eCall standards)*
- **Base for test and conformity requirements are necessary**
- **The OEM - responsible only for the components and functionality of his own system on the vehicle, not for the overall function**
- **The borderlines for false calls - to be discussed with relevant stakeholders**

Minimum requirement - System components

- **Automatic & manual triggering system**
- **eCall box or components with the necessary software (depending on the structure of the specific system/concept) and wiring**
- **eCall button for termination**

- **Indicators for the actual status and the current process step of an activated eCall**
- **Geo location system (GPS)**
- **Network Access Device**
- **The MSD + eCall flag (standard for MSD for the transmission via 112)**

Indicative Motorcycle eCall Roadmap

DONE	1. Define minimum requirements 2. Define open issues 3. Evaluate potential solutions
ONGOING	4. Discussion with stakeholders
NEXT STEP	5. RESEARCH
FOLLOWING	6. Standardisation 7. Technical concept development 8. Market information 9. Series development 10. Market introduction

Robust & Reliable PTW eCall

Thank you for your attention!

Still a stretch of road ahead of us