



ECORoads Project

Carlo Polidori – Italian Association of Road Safety Professionals

44TH ASECAP STUDY & INFORMATION DAYS 2016

The Path Towards an Integrated And Sustainable Mobility in Europe

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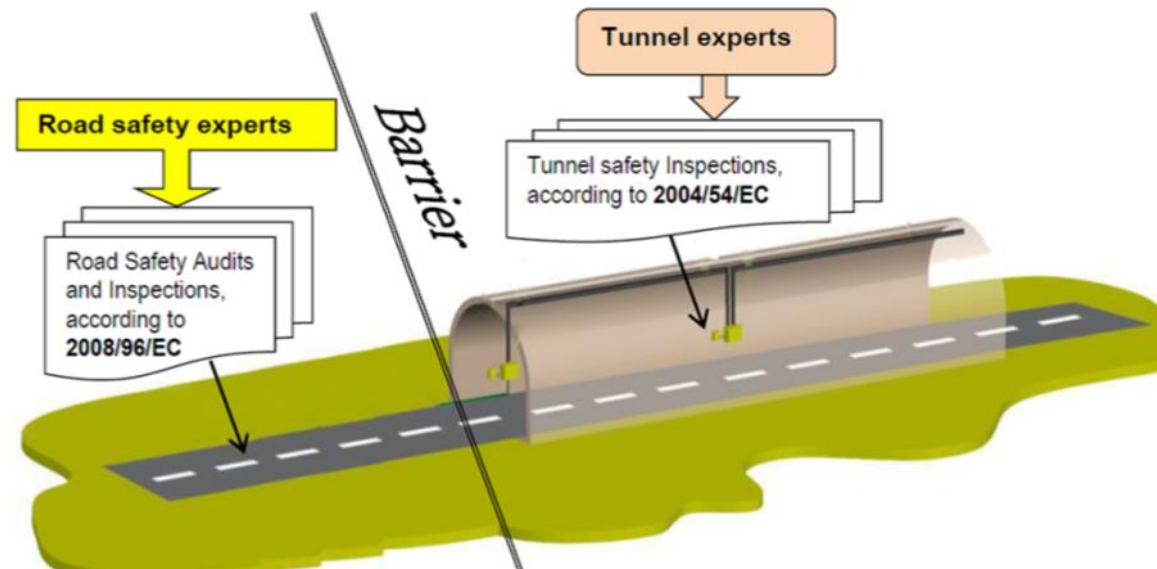
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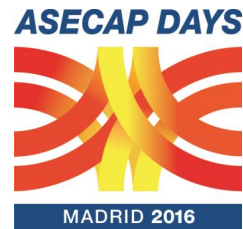
BACKGROUND



The ECORoads project is the follow-up of a debate that was initiated as a result of the coach crash in Switzerland (Sierre Tunnel - 2012) that caused more than 28 fatalities, including 22 children.



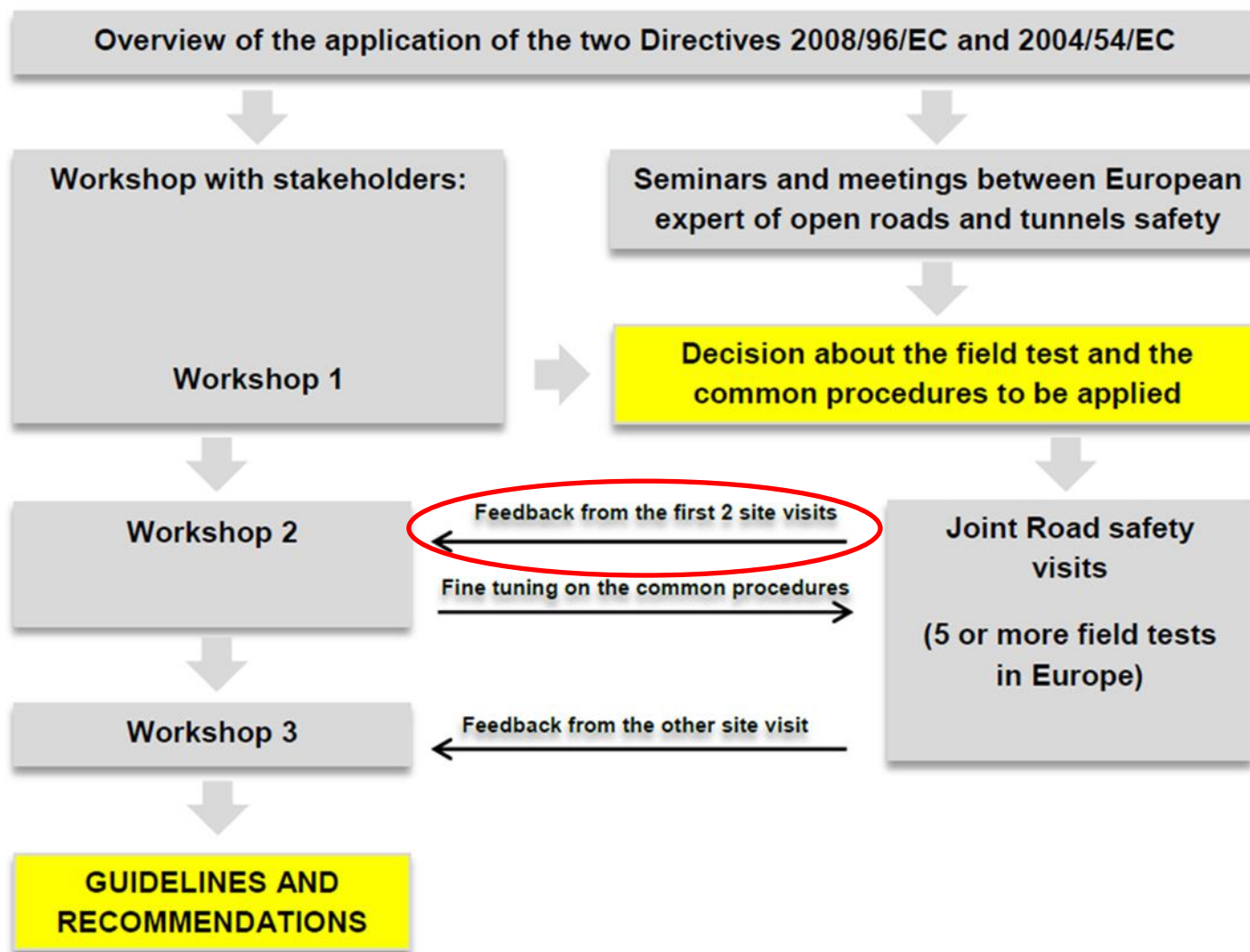
OBJECTIVE



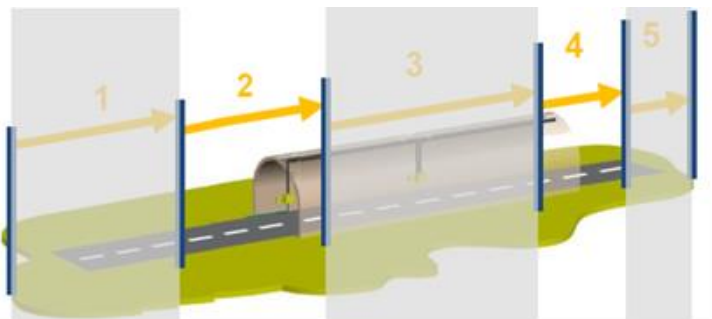
- *encouraging uniform safety measures to be planned and implemented both on open roads and in tunnels;*
- *exchanging of experiences and cross-fertilisation between the two disciplines of tunnel safety and road safety and better implementation of all safety operations on road infrastructures;*
- *common agreed approach for applying the concepts of the Directive 2008/96/CE on road infrastructure safety management in tunnels and in the transition areas between tunnels and open roads, without affecting the usual tunnel safety management operations.*



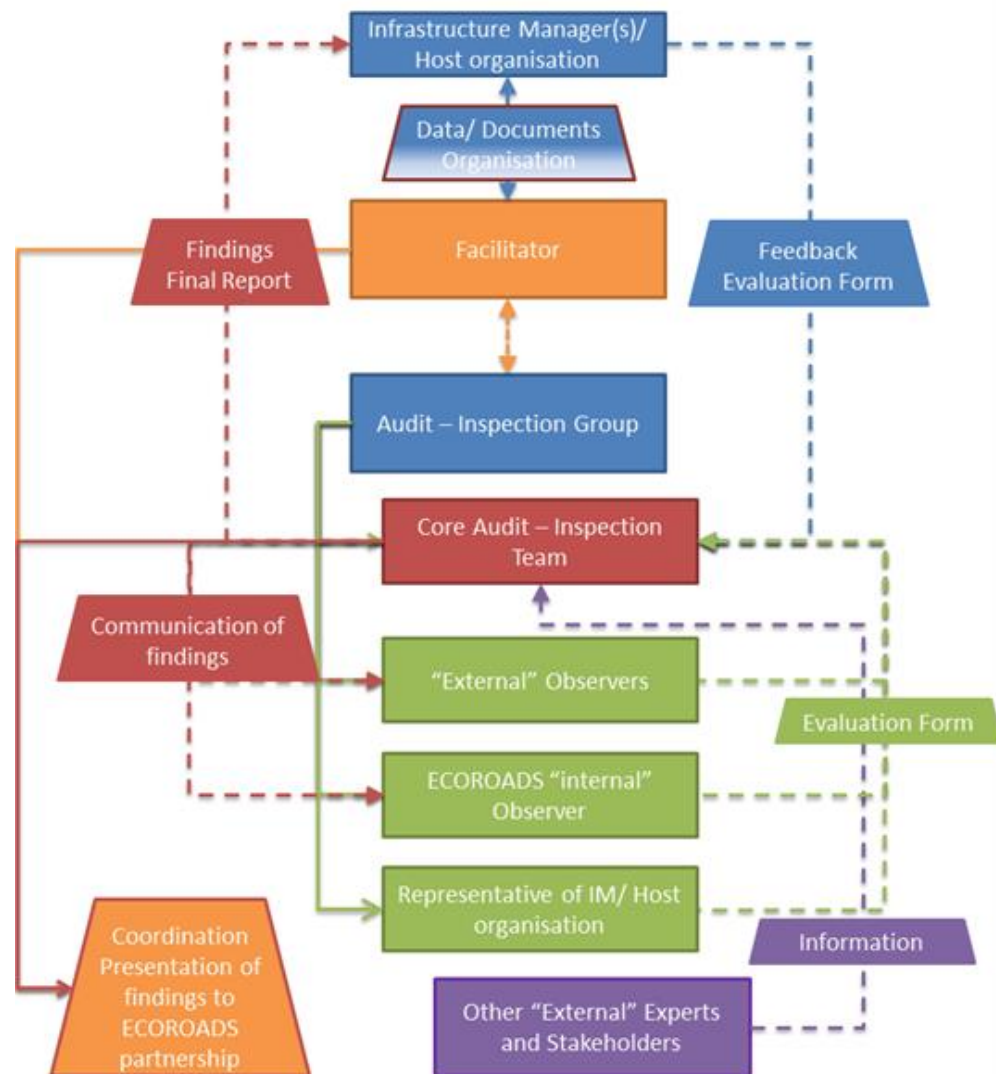
IMPLEMENTATION



IMPLEMENTATION 3 COMMON PROCEDURES



- **Definition of open road, transition area and tunnel section**
- **Definition of roles and responsibilities during the visits**
- **Structure of the reports**
- **Feedbacks**





IMPLEMENTATION – 4




Site visit in Kennedy Tunnel – Antwerpen, Belgium and in Krrabe Tunnel – Albania (also RSA on one tube still under construction)





FIRST OUTCOMES

Road side features and passive safety installations

Finding Number	1.3.1
Finding:	Inappropriate transition between different types of safety barriers.
Risk:	Risk of severe injuries/ fatalities in case a vehicle collides with the barrier transition section. Control method: Visual
Location	Lot3, Direction Tirana to Elbasan, at the end of the bridge located after the tunnel - right side of the roadway.
GPS Location:	n/a Chainage: 19+390
Pictures and Description:	<p>The transition between the bridge safety barrier (at the right of the photo) and the shoulder safety barrier that follows is not appropriate. The horizontal beam indicated with the red arrow could cause serious or fatal injuries to vehicle occupants in case of a collision.</p>  
Proposed short, medium and long-term measures	Apply a proper and certified (EN1317) transition between the two different safety barrier types.
Notes and Comments:	

Number	2.4.6
Description:	The sidewalk at the tunnel portals ends with a ramp that can cause the launch of an errant vehicle.
Risk:	Risk of vehicle launching and /or overturning in case the vehicle runs over the ramps, with possible severe injuries and/ or fatalities. Control method: Visual
Location:	Lot1, Direction Tirana to Elbasan, at both sides of the road. Lot3, Direction Tirana to Elbasan, at the left side of the road. Lot3, Direction Elbasan to Tirana, at both sides of the road.
GPS Location:	n/a Chainage: 15+610 & 18+225
Pictures and Description:	<p>There is a ramp at the end of the tunnel sidewalk at the tunnel portals (see pictures below). The ramp could cause the launch or overturn of an errant vehicle that runs over it, resulting in possible severe injuries and/ or fatalities. Taking into account that both tunnel tubes may operate under two-way travel during maintenance or emergency situations, the ramp is considered inappropriate not only when it is facing the direction of travel, but also on the opposite direction.</p>   

Finding Number	3.2.1
Finding:	High dismissive sidewalk
Risk:	Risk of increased accident severity caused by vehicles hitting the sidewalk. Control method: Visual - Measured in the field
Location:	Tunnel - both tubes
GPS Location:	n/a Chainage: n/a
Pictures and Description:	<p>The sidewalk inside the tunnel is approximately 13cm to 15cm high, and is therefore not forgiving in case it is struck by an out of control vehicle.</p>  

NEXT STEPS

- ***2nd Workshop and presentation of the feedbacks from the two first visits – 02 June 2016***
- ***Fine tuning of the procedures and further 3 visits –from July 2017***
- ***Preliminary version of the Guidelines and Recommendations***
- ***3rd Workshop end 2016 early 2017***
- ***Final version of guidelines and recommendations – May 2017 (end of the Project)***

FUTURE ACTIONS

ECORoads 2 (project submitted on January 2016 , first stage passed, deadline for the full proposal September 2016) addresses:

- ***Integrated safety assessment***
- ***Innovative design solutions***
- ***Urban tunnels and vulnerable road users***
- ***Embedded monitoring systems for predictive maintenance***
- ***Vehicle-infrastructure bi-directional communication: pilot site looking at the future automated vehicles***

Thank you for your attention!



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