

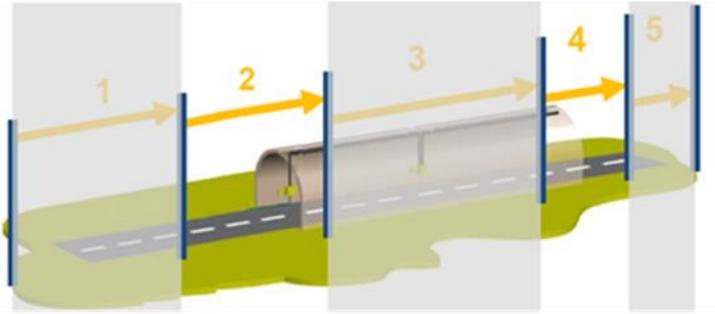
Effective and COordinated ROAD infrastructure Safety operations



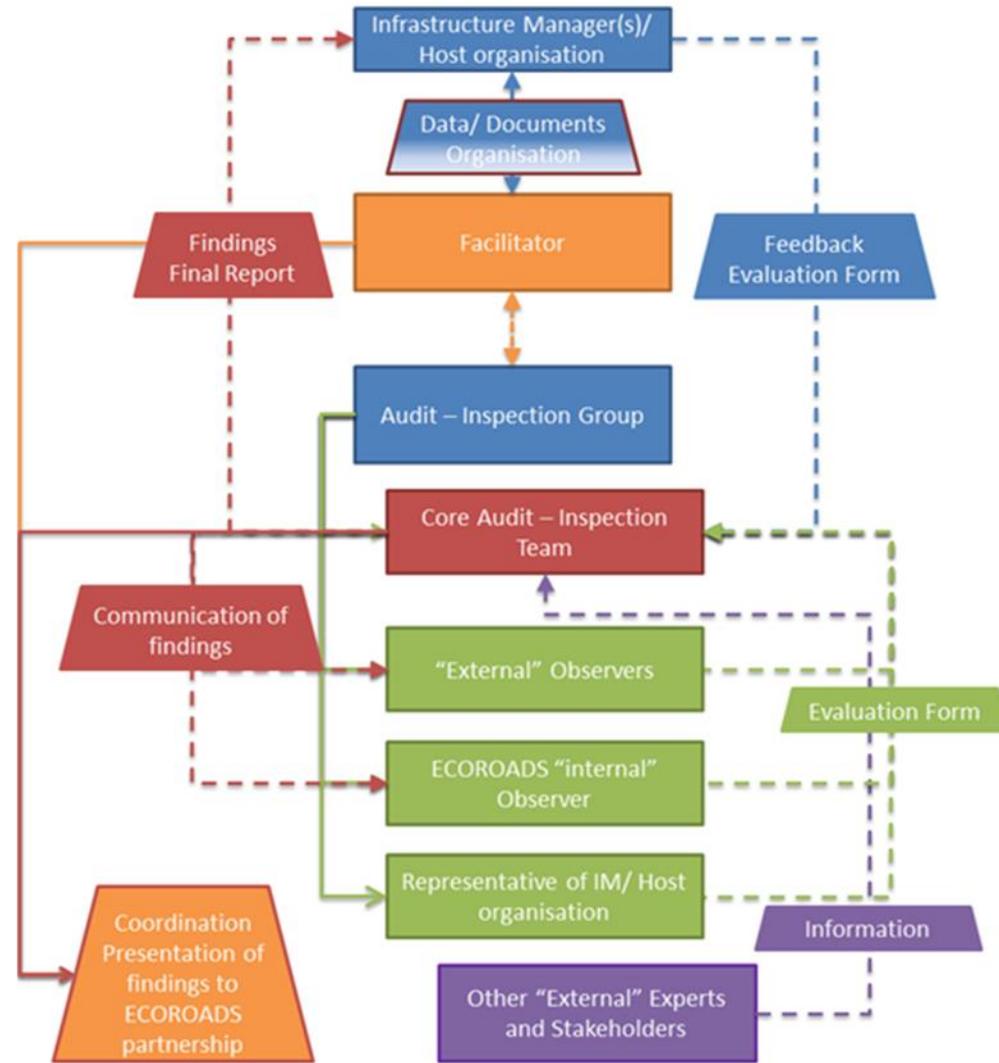
Conclusions and Recommendations

Carlo Polidori (AIPSS - Italian Association of Road Safety Professionals)

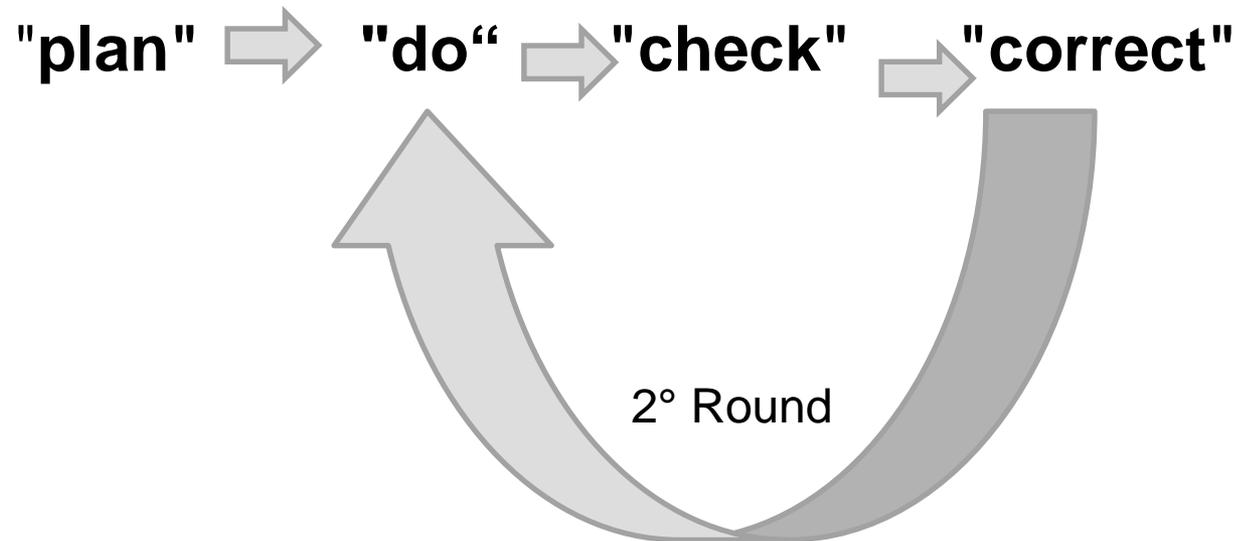
Final conference
Brussels, May 10, 2017



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

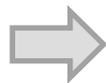


ECORoads has been implemented through two rounds of:



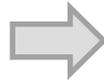
"plan"

- Analysis of the two Directives
- Workshop 1 with Stakeholders
- Exchange of best practices



"do"

Two joint safety operations



"check"

- Internal Analysis
- Workshop 2 with Stakeholders
- Further external comments



"correct"

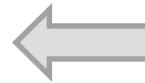
Integration and fine tuning of the common procedures

"check 2"

- Internal Analysis
- Preliminary confidential Recommendations
- Workshop 3 with Stakeholders
- Further external comments

"do 2"

Further three joint safety operations



"correct 2"

Final ECORoads deliverable, by taking into account all the comments



CHECK 2 received comments from:

- Consortium Partners : 6 main partners (All Associations) plus 10 third parties

- Stakeholders associate to the main partners (Particularly ASECAP)

- 50 European Stakeholders attending the third workshop

- Further comments received in the next three weeks:
 - Austrian Ministry for Transport, Innovation and Technology (A)
 - Rijkswaterstaat Grote Projecten en Onderhoud (NL)
 - Agentschap Wegen & Verkeer (Be)
 - French national study centre for tunnels (F)
 - Landesamt Für Bau und Verkehr in Thüringen (De)

CHECK 2 comments

- A) In general, the work done by ECORADS is appreciated
- B) Clear need to be more precise with some terms and wording, in order to not generate confusion
- C) Comments related to the recommendations sometime conflicting

“*Intense*” internal discussion to resume and harmonize the final document with the recommendations, including a specific Steering Committee.

A) Five messages from ECORoads:

- **Significant**
- **Possible**
- **Useful**
- **Cheap**
- **International**

1 - Significant amount of work

ECORoads Consortium is composed by 6 associations of European stakeholders and 10 more third parties belonging to 10 different Countries).

2 international workshops and one exchange of best practices, first to define, then to fine-tune the joint procedures

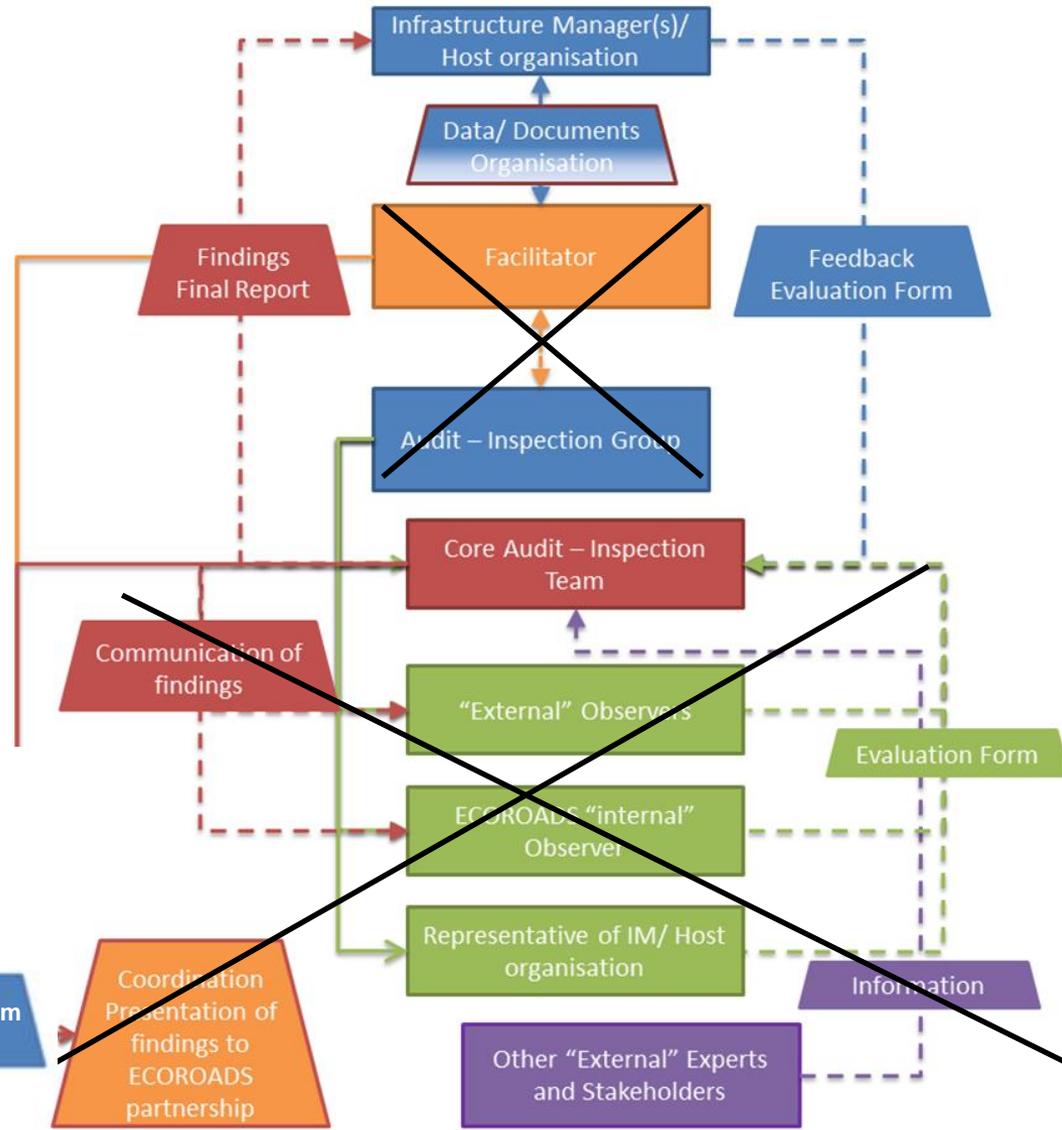
5 joint inspections as for the following table,

Test site	Date	# Experts (core team)	# Observers	Other experts, Facilitator and Tunnel manager	Tunnel type and length	Open road inspected
KENNEDY TUNNEL - E34/R1 motorway - ANTWERP, BELGIUM	07-08 March 2016	3	3	6	2 tubes , 690 m each	1200 m
KRRABE TUNNEL Tirana - Elbasan Motorway KRRABE, ALBANIA	05-06 April 2016	4	4	5	2 tubes, one tube 2230 m and the other tube 2500m	1500 m
TUNNEL RENNSTEIG Motorway A71 Zella-Mehlis/ Oberhof, GERMANY	17-18 August 2016	3	3	4	2 tubes, 7916 m each	400 m
TUNNEL STRAZEVICA Motorway A1 Belgrade, SERBIA	27-28 September 2016	3	1	12	Single tube 745 m	650 m
TUNNEL DEMIR KAPIJA 1, Road section Demir Kapija – Udovofyrom	18-19 October 2016	4	0	9	Single tube 554 m + 319,4 m	400 m
		17	11	36		

Plus 2 study visits:

one urban tunnel in Rome (Galleria Flaminia) and a series of tunnels in Norway

2) Joint safety operations are possible



3) Joint safety operations are useful

- No need to add something to the previous presentations
- There was an unanimous consent about the joint operations' added value
- Detailed report to the tunnel manager

Finding:	Fixed obstacles on emergency/service area		
Risk:	Fixed obstacles represented by lighting poles constitute a potential for increased severity of accidents and by being obstacle to emergency response teams	Control method:	Visual
Location	Transition area section on the east bound direction of the western portal.		
GPS Location:	44.719648, 20.447068 44.719506, 20.446749	Chainage:	588+155.00 588+130.00
Pictures and Description:	<p>There are two lighting poles on the emergency/service area which represent fixed obstacles for drivers. This solution might contribute to higher consequences of road accidents in case vehicle hits the lighting pole. These lighting poles are not protected by safety barrier. At the same time these poles creates obstacles for potential emergency operations (fire brigade).</p> 		
Proposed short, medium and long-term measures	Install safety barrier to ensure appropriate protection of vehicles running off their lane while preserving sufficient emergency/service area. Try to check if there would be possible to use overlapped safety barrier.		

4) Cost of joint safety operations

If the joint safety operations are organized in parallel with the “current” RSA/RSI (thus having the road safety experts available on site), the cost of having an additional expert is low.

- *Easy in case of the same Infrastructure Manager.*
- *Need of coordination in case of different Ims*

In both cases, there is a relevant cost-effectiveness in terms of enhanced safety.

5) Having a foreign expert in the team does not necessarily imply more difficulties and adds value!

He/She brings different approach and different point of view to the team

Of course, team leader and foreign expert must speak a common language.

B) Clear explanation of specific terms:

1. - **Expert:** road safety expert or a tunnel safety expert with a significant experience in the specific field(s).

- 2. - *Joint safety operations:* joint visits made by the above defined “experts” with the aim to simulate RSA and RSI procedures inside tunnels and transition areas (as defined by the ECORoads procedures).**

- 3. *Inspection report:* report on the “joint safety operations”, as above defined, written by both tunnel and road safety experts and submitted to the infrastructure manager.**

C) Recommendations (1)

- According to the project results, certain concepts of Directive 2008/96/EC (on road infrastructure safety management) can be applied in the scope of Directive 2004/54/EC (on tunnels) in close cooperation of the managing departments in the two areas.
- Road sections including tunnel sections should be inspected/audited from both tunnel experts and road safety experts.
- Transition areas between tunnels and open roads, as defined by the ECORoads project, are of particular interest in terms of their impact on road safety.

Recommendations (2)

- An innovative update of the new safety standards following the technical developments is welcomed. A harmonized approach regarding fire detection, fire-fighting and communication coverage in tunnels should be addressed.
- Member States, as supervision authorities, should ensure the mutual recognition of Road Safety Auditors and Road Safety Inspectors certified by other Member States.

Recommendations (3)

- A coordinated approach to the road safety management of both tunnels and the transition areas is recommended.
- Since the majority of road fatalities in the EU occur outside the TEN-T, an extension of scope beyond the TEN-T to other roads should be considered.
- Exchange of experts and best practices should be enhanced and facilitated

Final considerations

There are common elements regarding the safety management in the two areas (open roads and tunnels) which could be tackled in an harmonized way through a coordinated communication by the concerned open road and tunnel experts.

Final considerations (1)

Coordinated actions can be foreseen by adding/inserting harmonized legal texts in the bodies of the two Directives;

Any eventual insertion in one Directive should take into adequate consideration the consequences in the other Directive and vice-versa.

Final considerations (2)

The above mentioned coordinated communication between road and tunnel managers (*that will in any case maintain their specific roles and responsibilities*) should not be demanded to their individual willingness, but somehow made compulsory and periodic, in order to ensure the concrete possibility of conducting joint safety operations.

THANK YOU FOR YOUR ATTENTION!

Ing. Carlo Polidori
Associazione Italiana
Professionisti Sicurezza Stradale
Presidente
c.polidori@aipss.it
www.aipss.it