



**SUMMER SCHOOL SIIV 2012**

**ROAD SAFETY MANAGEMENT**

**Theoretical principles and practical application in the  
framework of the European Directive 2008/96/CE**

**Thursday 27 Sept. 2012**

**Session D**

**Road Safety Audits and Safety Inspections**

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## **Contents**

### **Historical Normative background:**

**European Directive 288/96/CE**

**Italian Decree D.Lgs. 35/2011**

**Related national actuative decrees**

**The road safety analysis supporting tool:**

**Road Safety Audit (RSA)**

**Road Safety Inspections (RSI)**

**Site visits of high accident concentration sections**



MINISTERO DEI LAVORI PUBBLICI  
ISPETTORATO GENERALE PER LA CIRCOLAZIONE E LA  
SICUREZZA STRADALE



STUDIO PER LA REDAZIONE DI LINEE GUIDA PER LA  
REALIZZAZIONE DI UN SISTEMA DI CONTROLLO PREVENTIVO  
DELLA SICUREZZA STRADALE

ANNESSO 2  
LINEE GUIDA PER LE ANALISI DI  
SICUREZZA DELLE STRADE

UNIVERSITA' DI NAPOLI "FEDERICO II", FIRENZE, PALERMO  
ROMA, 25 GENNAIO 2001



Thursday 27 Sept. 2012 - Session D



**2001**

**In Italy, the first official document dealing with**

- Road Safety Audit (RSA)**
- Road Safety Review (RSR)**

**was issued by the Ministry of Infrastructures and Transport on 2001.**

**It asked for the voluntary application of both the procedures.**

**A good experience on RSR application grew during the last 10 years.**

**The same cannot be said for RSA, whose application has been made on a spot base.**

**prof. ing. Lorenzo Domenichini**

## 2008: publication of the European Directive 2008/96/CE

29.11.2008



Gazzetta ufficiale dell'Unione europea

L. 319/59

### DIRETTIVE

DIRETTIVA 2008/96/CE DEL PARLAMENTO EUROPEO E DEL CONSIGLIO

del 19 novembre 2008

sulla gestione della sicurezza delle infrastrutture stradali

**March 2011:**

**publication of the D.Lgs. 35/11 concerning the implementation in Italy of the European Directive 2008/96/CE**

**DECRETO LEGISLATIVO 15 marzo 2011, n. 35**

**attuazione della direttiva 2008/96/CE sulla gestione della sicurezza delle infrastrutture. (11G0076)**

**GU n. 81 del 8-4-2011**

**testo in vigore dal 23-4-2011**

**August 2011:**

**actions to be taken to implement the D.Lgs. 35/11 and definition of responsibilities within the Ministry of Infrastructure and Transport**



*Il Ministro  
delle Infrastrutture e dei Trasporti*

**DM 5.08.2011 n. 305**

**attribuzione alle strutture ministeriali competenti in materia di  
sicurezza stradale delle responsabilità delle funzioni previste dal  
D.Lgs. 35/2011**

**November 2011:**

**publication of the explanatory Circular of the D.Lgs. 35/11**



*Ministero delle Infrastrutture e dei Trasporti*

Dipartimento per le Infrastrutture, gli Affari Generali ed il Personale  
Direzione Generale per la Vigilanza e la Sicurezza nelle Infrastrutture  
Divisione 2



All' A.N.A.S. SpA.  
Via Monzambano 10  
00185 ROMA

A tutte le Società Concessionarie  
Loro Sedi

p.c. All' AISCAT  
Via Po 12  
00198 ROMA

**Oggetto: Circolare esplicativa del D.Lgs. 35/2011 di attuazione della Direttiva 2008/96/CE sulla gestione della sicurezza delle infrastrutture stradali.**

**December 2011:**

**publication of the minimum temporary safety measures to be taken at worksites .  
Reference is made to the national circular issued on July 10<sup>th</sup> 2002 on this subject**

## **MINISTERO DELLE INFRASTRUTTURE E DEI TRASPORTI**

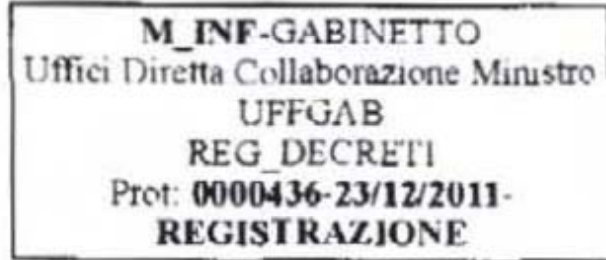
**DECRETO 12 dicembre 2011.**

**Misure di sicurezza temporanee da applicare a tratti interessati da lavori stradali ai sensi dell'articolo 6 del decreto legislativo n. 35/2011.**



December 2011:

publication of the minimum contents of training courses for auditors



*Al Ministro delle infrastrutture e dei trasporti*

**DM 23.12.2011 : Programma di formazione dei  
controllori della sicurezza e degli ispettori**

September 2012:

publication of the guidelines supporting the competent entities in the application of the D.Lgs. 35/11



*Ministero delle Infrastrutture e dei Trasporti*

**DM 2 may 2012 n. 182**



*Criteri e modalità per l'effettuazione dei controlli della sicurezza stradale sui progetti,  
delle ispezioni di sicurezza sulle infrastrutture esistenti e  
per l'attuazione del processo per la classificazione della sicurezza della rete stradale*

**September 2012:**

**publication of the guidelines for calculating the average social cost of severe accidents in Italy**



*Ministero delle Infrastrutture e dei Trasporti*

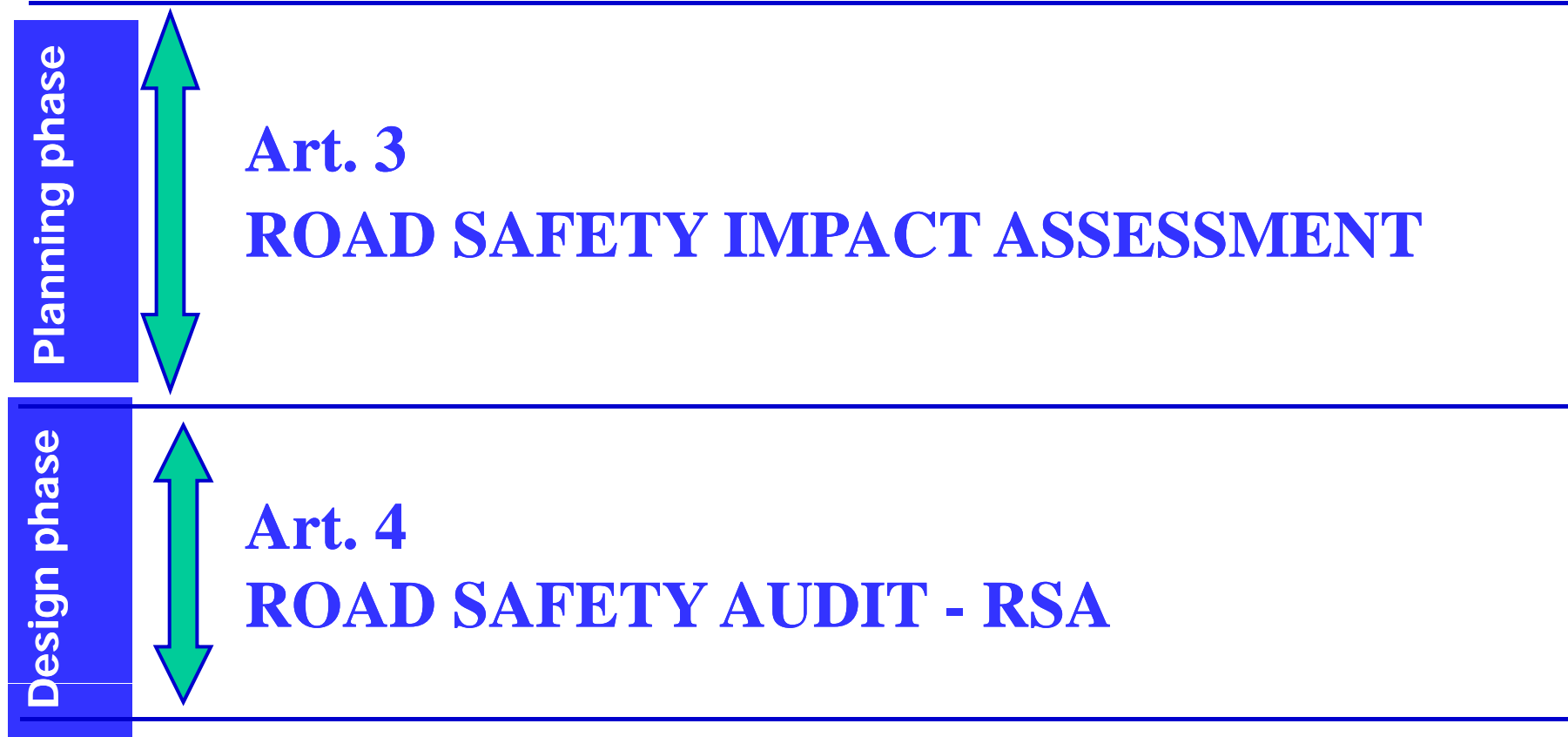
DIPARTIMENTO PER I TRASPORTI, LA NAVIGAZIONE ED I SISTEMI INFORMATIVI E  
STATISTICI

**Direzione Generale per la Sicurezza Stradale**

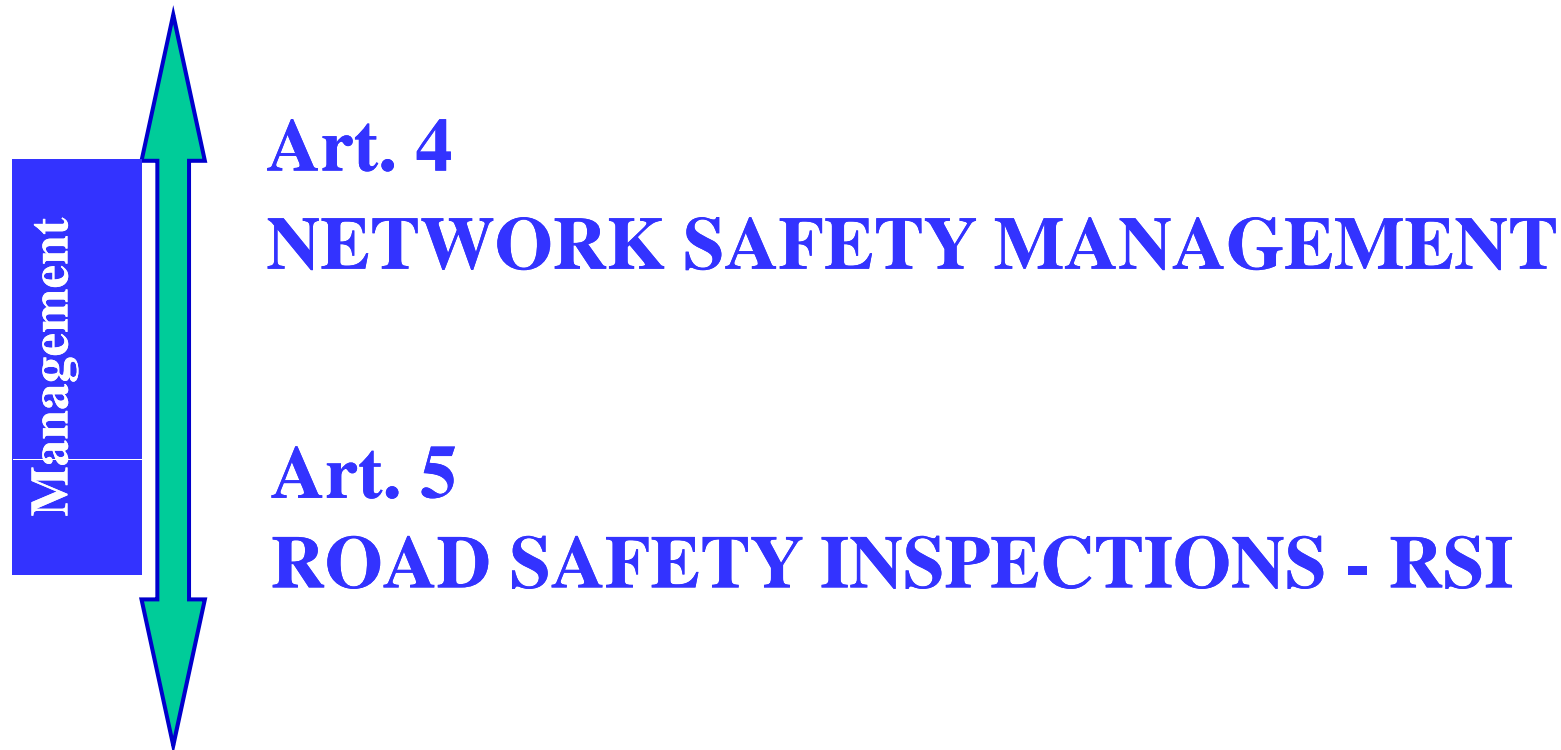
Decreto Dirigenziale

n. 000189 del 24 settembre 2012

**Supporting tools provided by D.Lgs. 35/11  
to improve road safety – actions has to be taken during all the  
planning, design and management phases of the infrastructure**



## Supporting tools provided for D.Lgs. 35/11 (cont.)



**Supporting tools provided by D.Lgs. 35/11  
to improve road safety – actions has to be taken during all the  
planning, design and management phases of the infrastructure**



# RSA

## Comparison between European Directive and Italian D.Lgs. 35/11

### Definition

#### D.Lgs. 35/11

1. Detailed, independent systematic and technical safety check of the design of a road infrastructure, covering all stages from planning to early operation
2. The safety check refers to the project of new infrastructures and to the upgrading of an existing infrastructure requiring the modification of its layout

#### Dir 2008/96/CE

It includes only the first sentence

**Note:** the safety checks are not compulsory only for limited interventions and ordinary maintenance activities

# **RSA**

## **When and who**

### **DM 2 may 2012 n. 182**

### **Guidelines on ROAD SAFETY AUDIT**

Road Safety Audit will be performed at all the design stages (preliminary, definitive and final) and will include inspection activities during the construction phase, before the road opening to service and during the first year of operation.

In principle, the RSA applies to both rural and urban roads

RSA will be conducted by one or a group of experts (auditors) appointed by the Ministry of Infrastructures and Transport (MIT) (Competent Entity). They shall be independent.

The auditors at the final design stage will be in charge also of the RSA during the construction and pre-opening stages.



# **RSA**

## **Road itineraries including tunnels**

### **Relationship between D.Lgs. 35/11 (road safety management) and D.Lgs. 264/06 (road tunnel safety)**

#### **Road itineraries subject to RSA including tunnels having a length of more than 500 m**

The auditors has to consider the tunnel in their safety controls.  
As a preliminary activity , the Competent Entity has to acquire the safety report of the concerned tunnel of the Italian Tunnel Permanent Commission or CIG.

#### **Road itineraries subject to RSA including tunnels having a length less than 500 m**

The auditors has to consider the tunnel in their safety controls

# **RSA**

## **Process activation**

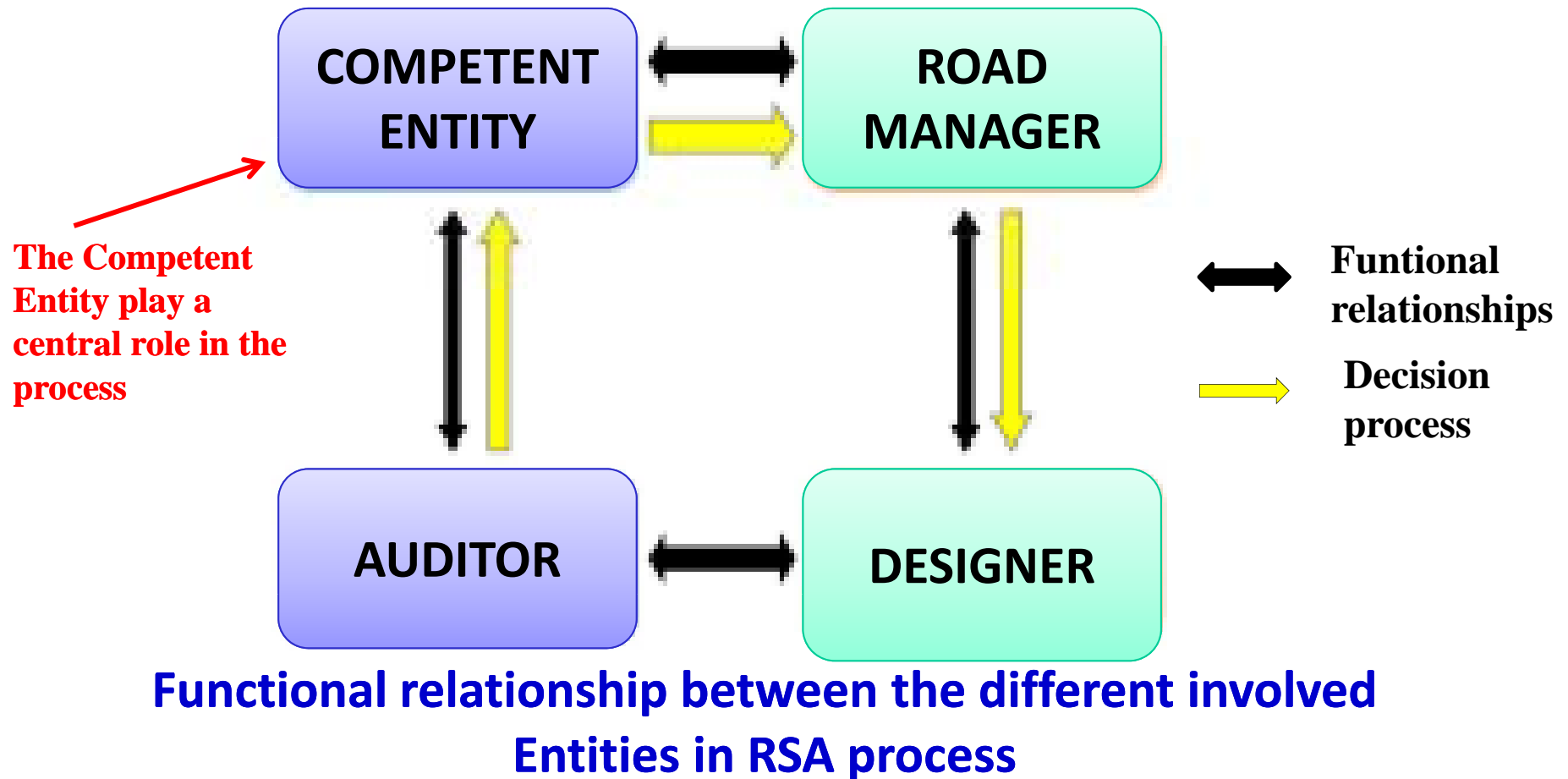
**The road manager informs the Competent Entity about the kickoff of the design process of a road intervention.**

**The competent Entity decides if the design activity is eligible for RSA, chooses and commits the auditors.**

**The competent Entity receives the audit report and forwards it to the road manager**

# RSA

## Process development



## **RSA**

### **Audit timing**

**To reduce the time impact due to the introduction of the RSA in the design approval existing procedure the Guidelines provide for performing the RSA in parallel to the design activity.**

**This provision has to be carefully considered!!!**

**The RSA can be performed according to the stage development of the design activity (30% - 60% - 100%)**

**The max time allowed to perform the RSA at a given design stage is 30 days.**

# RSA

## Check Lists

				NUOVE INFRASTRUTTURE				ADEGUAMENTO INFRASTRUTTURE ESISTENTI			
				AMBITO EXTRAURBANO		AMBITO URBANO		AMBITO EXTRAURBANO		AMBITO URBANO	
				DOPPIA CARREGGIATA	SINGOLA CARREGGIATA	DOPPIA CARREGGIATA	SINGOLA CARREGGIATA	DOPPIA CARREGGIATA	SINGOLA CARREGGIATA	DOPPIA CARREGGIATA	SINGOLA CARREGGIATA
PROGETTI ATTIVITA' DI CONTROLLO	CONTROLLI	PROGETTO PRELIMINARE	SCHEDE DI CONTROLLO	1.CON.PP NUEXDC	2.CON.PP NUEXSC	3.CON.PP NUURDC	4.CON.PP NUURSC	5.CON.PP ESEXDC	6.CON.PP ESEXSC	7.CON.PP ESURDC	8.CON.PP ESURSC
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		PRIMO ANNO DI FUNZIONAMENTO		29.ISP.PF NUEXDC	30.ISP.PF NUEXSC	31.ISP.PF NUURDC	32.ISP.PF NUURSC	33.ISP.PF ESEXDC	34.ISP.PF ESEXSC	35.ISP.PF ESURDC	36.ISP.PF ESURSC
INFRASTRUTTURE ATTIVITA' ISPETTIVA	ISPEZIONI A REGIME	PERIODICA	DIFFUSA	1.ISP.PD EXDC	2.ISP.PD EXSC	3.ISP.PD URDC	4.ISP.PD URSC	1.ISP.PD EXDC	2.ISP.PD EXSC	3.ISP.PD URDC	4.ISP.PD URSC
			PUNTUALE	5.ISP.PP EXDC	6.ISP.PP EXSC	7.ISP.PP URDC	8.ISP.PP URSC	5.ISP.PP EXDC	6.ISP.PP EXSC	7.ISP.PP URDC	8.ISP.PP URSC
		STRORDINARIA (cantieri)	PUNTUALE	9.ISP.SP EXDC	10.ISP.SP EXSC	11.ISP.SP URDC	12.ISP.SP URSC	9.ISP.SP EXDC	10.ISP.SP EXSC	11.ISP.SP URDC	12.ISP.SP URSC

# **RSA**

## **Check Lists (cont.)**

### **CHECK LIST CODES**

### **LEGEND**

#### **Ambito extraurbano progetto preliminare**

1\_CON\_PP\_NUEXDC  
2\_CON\_PP\_NUEXSC  
5\_CON\_PP\_ESEXDC  
6\_CON\_PP\_ESEXSC

#### **Ambito extraurbano progetto definitivo**

9\_CON\_PD\_NUEXDC  
10\_CON\_PD\_NUEXSC  
13\_CON\_PD\_ESEXDC  
14\_CON\_PD\_ESEXSC

#### **Ambito extraurbano progetto esecutivo**

17\_CON\_PE\_NUEXDC  
18\_CON\_PE\_NUEXSC  
21\_CON\_PE\_ESEXDC  
22\_CON\_PE\_ESEXSC

#### **Ambito extraurbano fase di "costruzione"**

13\_ISP\_C\_NUEXDC  
14\_ISP\_C\_NUEXSC  
17\_ISP\_C\_ESEXDC  
18\_ISP\_C\_ESEXSC

#### **Ambito extraurbano fase di "pre-apertura"**

21\_ISP\_PA\_NUEXDC  
22\_ISP\_PA\_NUEXSC  
25\_ISP\_PA\_ESEXDC  
26\_ISP\_PA\_ESEXSC

#### **Ambito extraurbano fase di "primo anno di funzionamento"**

29\_ISP\_PF\_NUEXDC  
30\_ISP\_PF\_NUEXSC  
33\_ISP\_PF\_ESEXDC  
34\_ISP\_PF\_ESEXSC

# **RSA**

## **Responsabilities**

### **Auditor's responsibilities**

**The definition of the Auditors' responsibilities with respect to MIT (Competent Entity) must be defined in the commitment contract.**

**The Auditors' responsibilities with respect to the designer are limited to the direct technical discussions which will take place during the audit report implementation.**

# RSA Audit Report

## Audit Report Contents

- Project data and design phase definition;
- Project description and scopes
- Detailed description of the design documentation delivered to the Auditor during the kickoff meeting and which the report is based on;
- List of meetings held with the Competent Entity and the Designer and description of the information delivered;
- (eventual) description of the site visits performed and participants);
- Analysis of the safety issues unsolved during the preceding design phase;
- Check list used;
- Risk factors identified and safety problems analyzed;
- Description of the recommendations given to reduce or eliminate the identified potential risk factors. The achievable benefits of adopting the proposed recommendations should be drafted to avoid too much subjectiveness (i.e. type of potentially reduced accidents; reduction of accident gravity; safety improvements due to conflicting traffic reduction etc):
- table containing the synthesis of the problems identified, the solutions proposed and the alternative solutions available:



# **RSA**

## **Audit results**

### **Adopting the Audit Results**

The audit report forms part of the design documentation; it is necessary for the design approval. The recommendations which can have a significant technical or economic impact on the project must be included in the design during the current design phase.

The Competent Entity can authorize to postpone the design revision to the successive phase if the recommendations impact on the project is minimal.

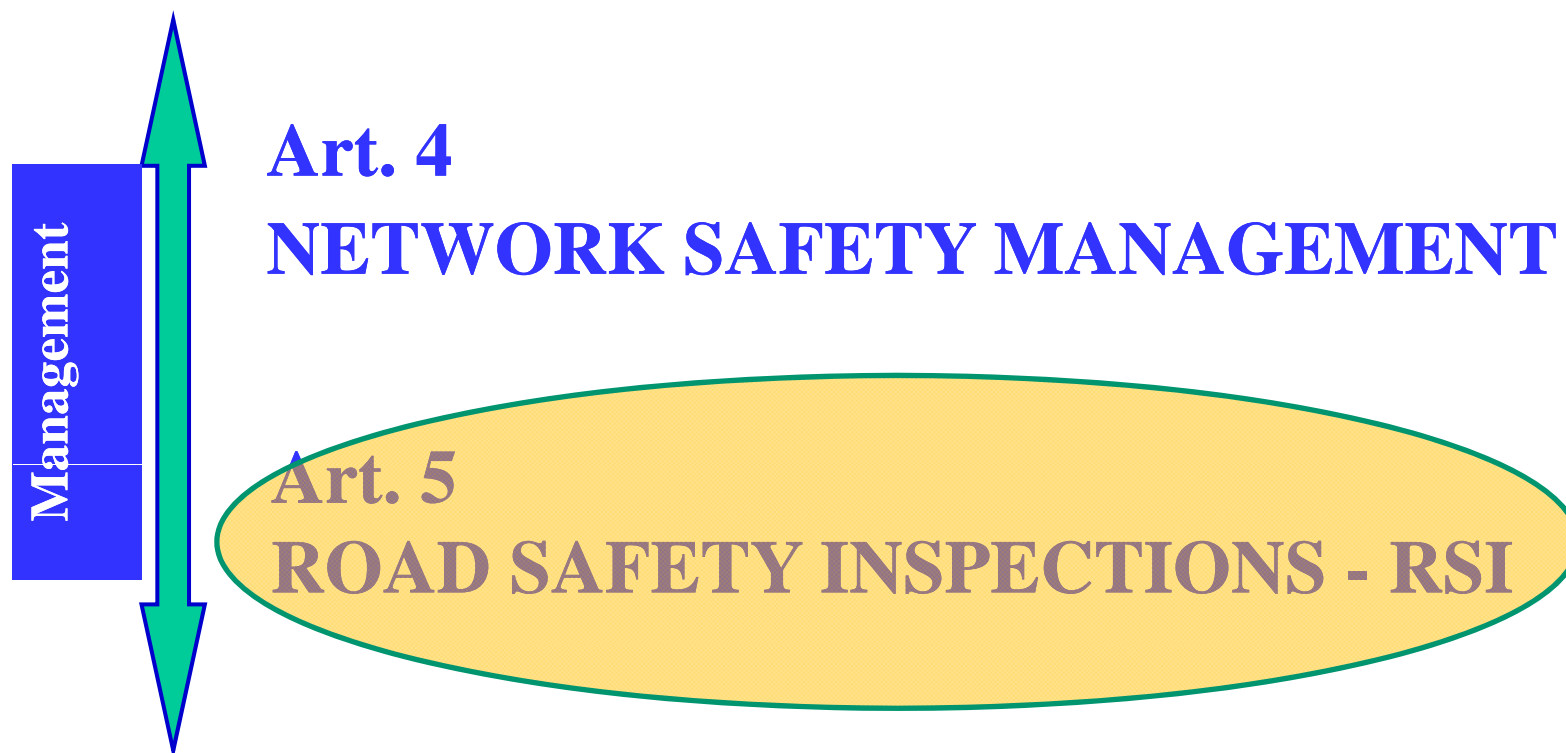
In the case the Managing Agency does not agree with the audit position, it must annex to the design documentation its comments and reasons for not adopting the audit recommendations.

The Competent Entity will decide to accept the comments of the Managing Agency or else can impose to revise the design according to the audit report results.

In case of during construction or pre-opening audit, the audit report will be forwarded to the Managing Agency and to the Work Director for action.

The Audit during the first year of operation will analyze the Accident reports and will contain all data required to allow the Competent Entity to evaluate the interventions effectiveness.

## Supporting tools provided for D.Lgs. 35/11 (cont.)



## RSI

### Comparison between European Directive and Italian D.Lgs. 35/11

## Definition

### D.Lgs. 35/11

Ordinary and periodical operational safety analysis of the existing road network to identify the safety problems requiring intervention, including the verification of the temporary safety measures at worksites.

### Dir 2008/96/CE

Ordinary periodical verification of the characteristics and defects that require maintenance work for reasons of safety

# RSI

## When and Who

**DM 2 may 2012 n. 182**

## **Guidelines on ROAD SAFETY INSPECTIONS**

The Competent Entity programs the inspection development every 2 years on the basis of the safety analysis of the road network subdivided in homogeneous sections.

Priority will be given to the high accident concentration sections.

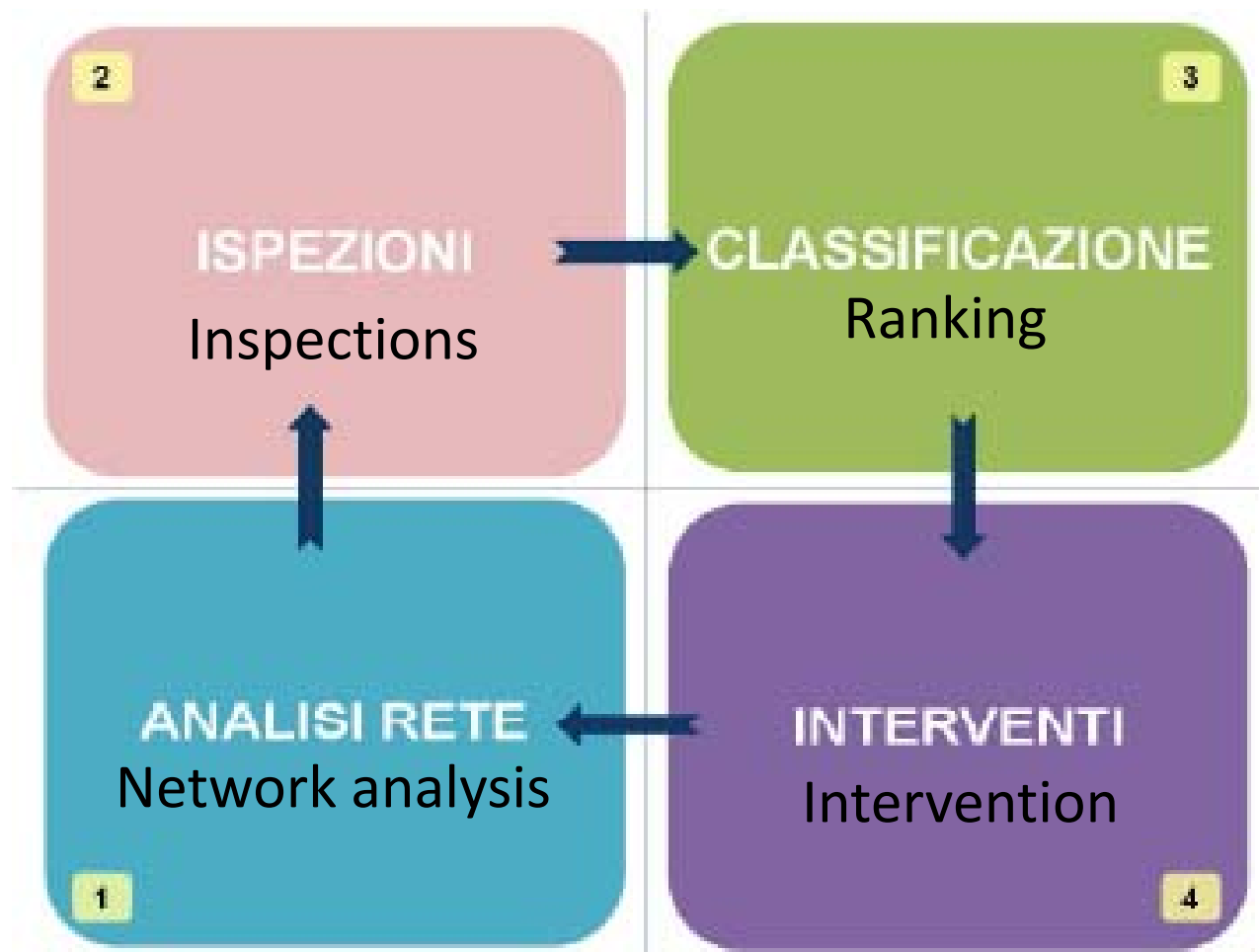
RSA will be conducted by one or a group of experts (inspectors) appointed by the Ministry of Infrastructures and Transport (MIT) (Competent Entity)

## RSI

### Network Safety Management Process

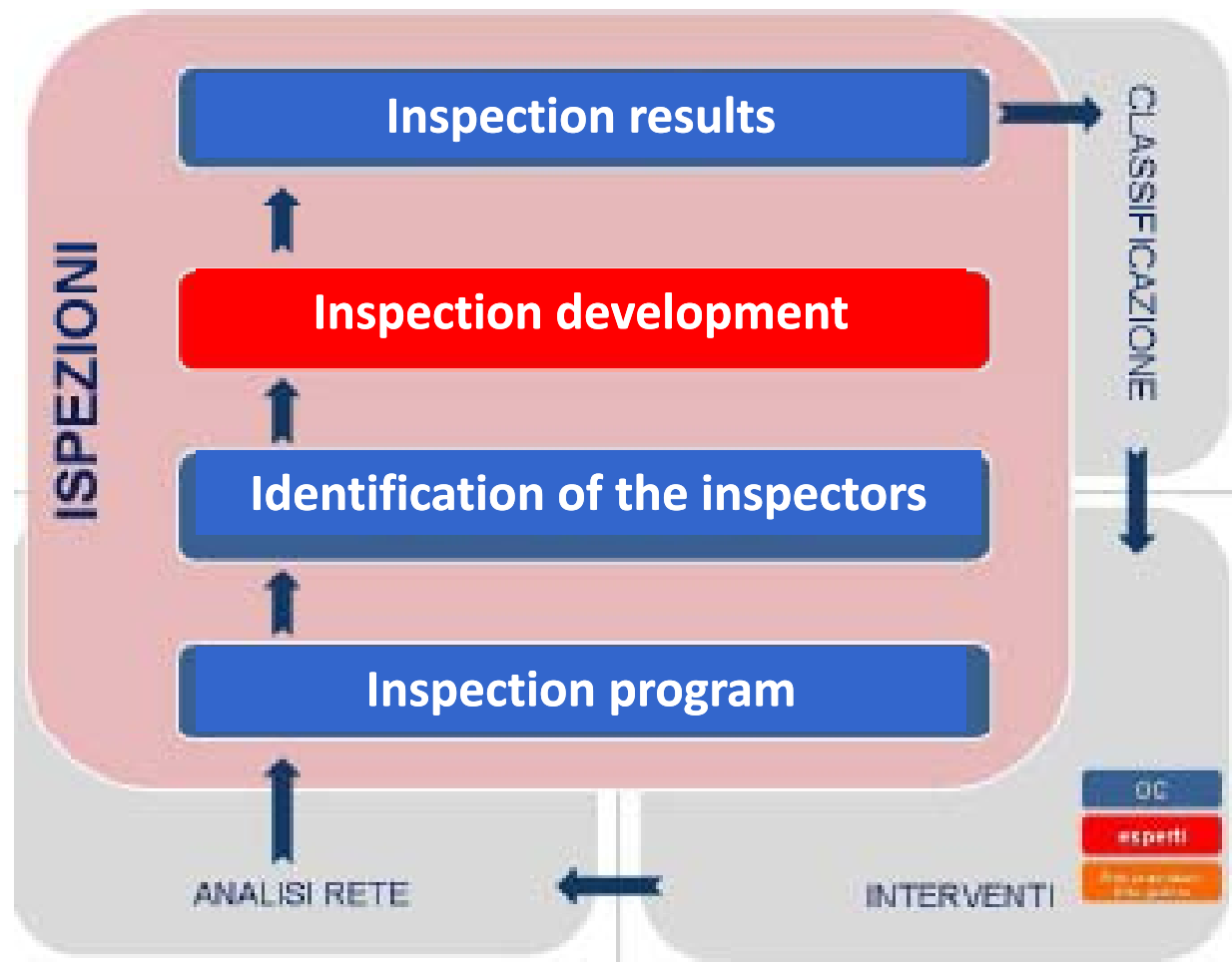
**DM 2 may  
2012 n. 182**

**Guidelines  
on ROAD  
SAFETY  
INSPECTIONS**



# RSI

## Network Safety Management Process (cont.)





# RSI

## It is not a new activity

### Safety inspections and routinary road control activities

- Each road management Entity efficiency of the road network
- The road management Entity basis (Road Code Art. 11)
- For the principal road network authority, issued on 1981 the maintenance service (DPR 11

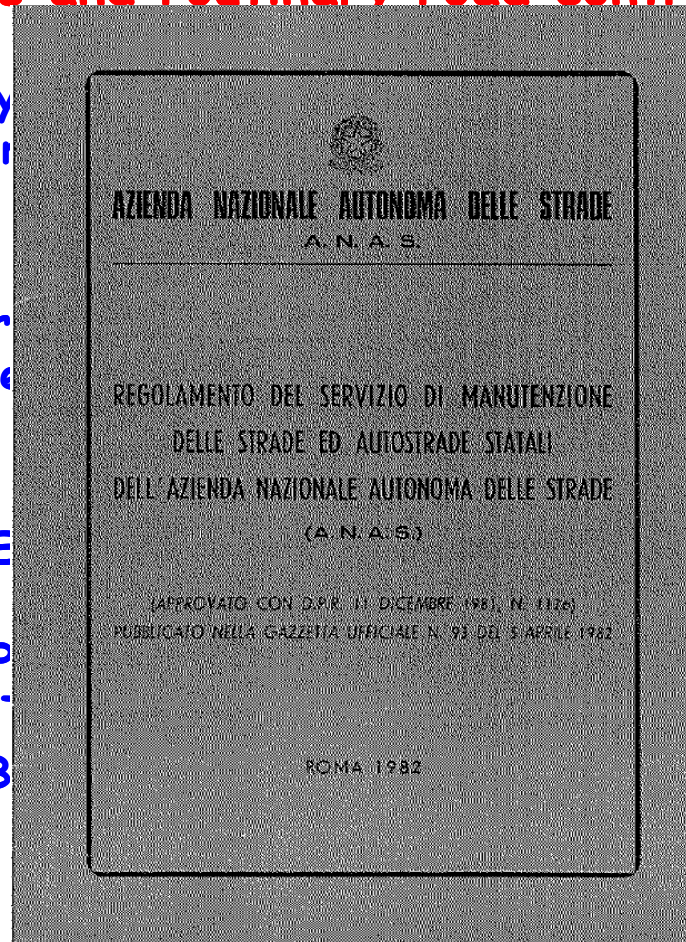
Code to control the  
Code Art. 14)  
inspections on a routine  
onal managing  
and motorway

ROAD INSPECTION IS A WE

WITHIN EACH ROAD

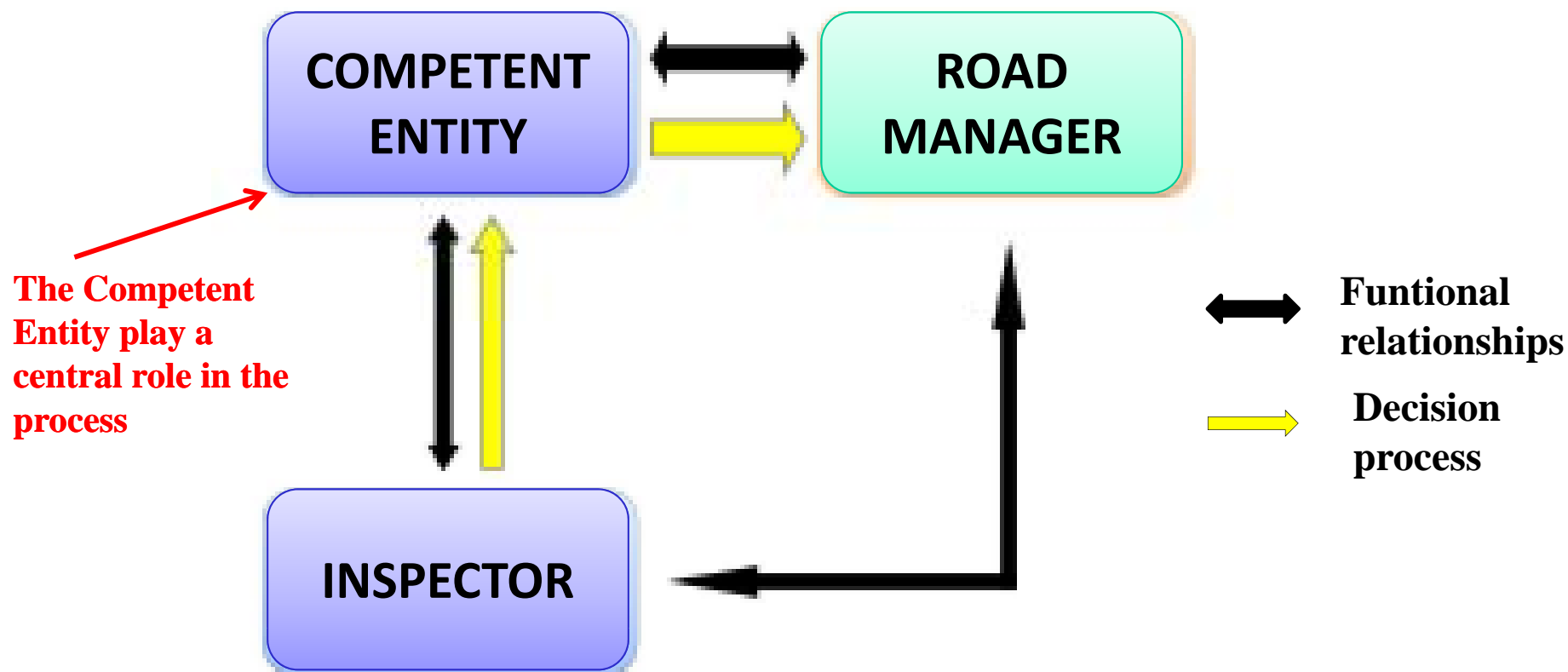
THE SAFETY INSPECTORS APP  
THEIR ACTIVITY WITH  
RESPONSIB

NTITY WILL OVERLAP  
GEMENT ENTITY.  
VED



# RSI

**It is not a new activity (cont.)**



**Functional relationship between the different involved Entities in RSI process**



# **RSI**

## **Inspection implementation**

The road safety inspections will be conducted subdividing the activity in 2 parts:

- Overall inspection : the entire homogenous section of the road network identified by the Competent Entity will be inspected driving a car at allowed speed and, after, at slow speed. According to the specific characteristics of the site, the inspection will be conducted also bicycling or on a PTW. The inspection will be performed both during the daytime and during the night;
- Localized inspections: specific points identified during the overall inspection and the high accident concentration sections included in the inspected road section will be inspected in detail both during the day and at night.

# RSI Check Lists

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# RSI

## Check Lists

### CHECK LIST CODES LEGEND

**Ambito extraurbano doppia carreggiata**

1\_ISP\_PD\_EXDC

5\_ISP\_PP\_EXDC

9\_ISP\_SP\_EXDC

**Ambito extraurbano singola carreggiata**

2\_ISP\_PD\_EXSC

6\_ISP\_PP\_EXSC

10\_ISP\_SP\_EXSC

**Ambito urbano singola carreggiata**

4\_ISP\_PD\_URSC

# RSI

## Inspection report and results management

### Inspection Report

The inspection will be organized with the format:

Problem identified – recommended possible solution (or alternative solutions)

### Results management

The inspection report will be forwarded to the Competent Entity

The Competent Entity will identify the actions to be implemented and will define the ranking of the priorities according to the budget available.

THANK YOU

