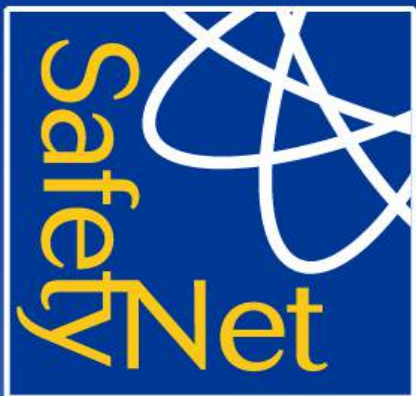


Statistics on the volume of road traffic

(SafetyNet IP contribution)

**UNECE Workshop
Copenhagen, 1-2 December 2005**

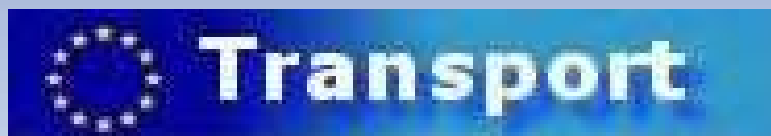
P.Lejeune, G.Yannis, E.Papadimitriou, S.Houwing



SafetyNet

Developing the European Road Safety Observatory

Project co-financed by the European Commission, Directorate-General Transport & Energy



<http://safetynet.swov.nl/>

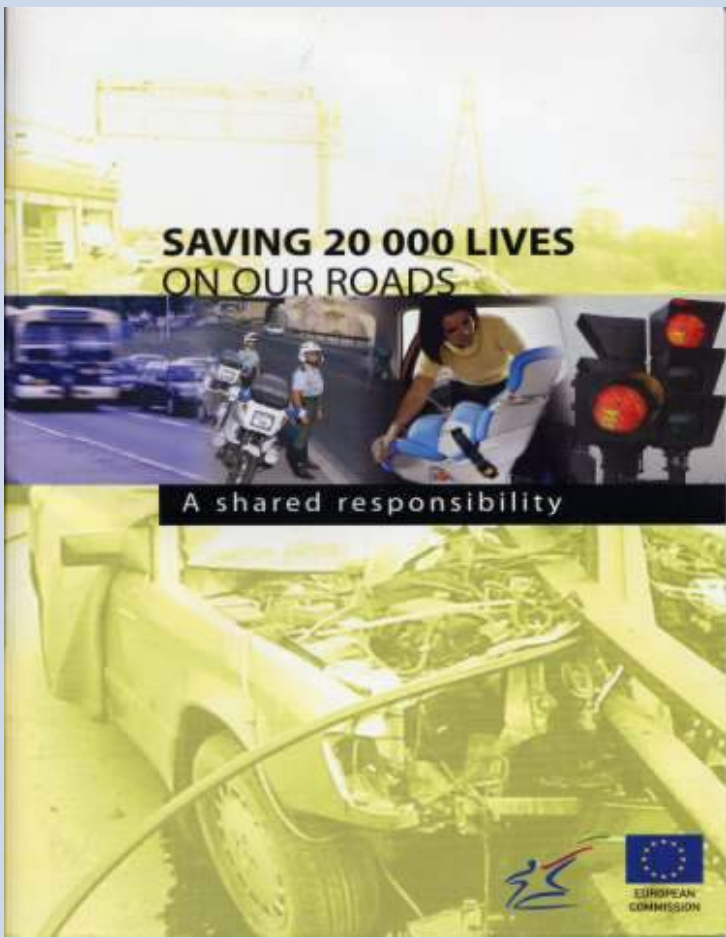
EC White Paper 2001



WHITE PAPER

**European transport policy for 2010:
time to decide**

EC Road Safety Action Plan 2003



European Road Safety Observatory

Will coordinate all Community activities in the fields of road accident and injury data collection and analysis”.

What is SafetyNet?

- Integrated Project to build the data framework of the Observatory
- Primarily directed to EU and national level road safety policymaking
- Infrastructure safety
- Support to eSafety initiative

Road Safety Observatory

Accident
Data

Accident
Information



Project Steering Committee

Partnership

- 22 Partners
- 18 Countries

- **VSRC** Vehicle Safety Research Centre, Loughborough University, UK
- **NTUA** National Technical University of Athens, Greece
- **CETE SO** Centre d'Etudes Technique de l'Equipement du Sud Ouest, France
- **SWOV** Institute for Road Safety Research, Netherlands
- **INRETS** Institut National de Recherche sur Les Transports et leur Sécurité, France
- **IBSR** Institut Belge pour la Sécurité Routière, Belgium

External Links

- **Policymakers**

- EU
- Member States
- National representative working groups on CARE and SPIs

- **Industry**

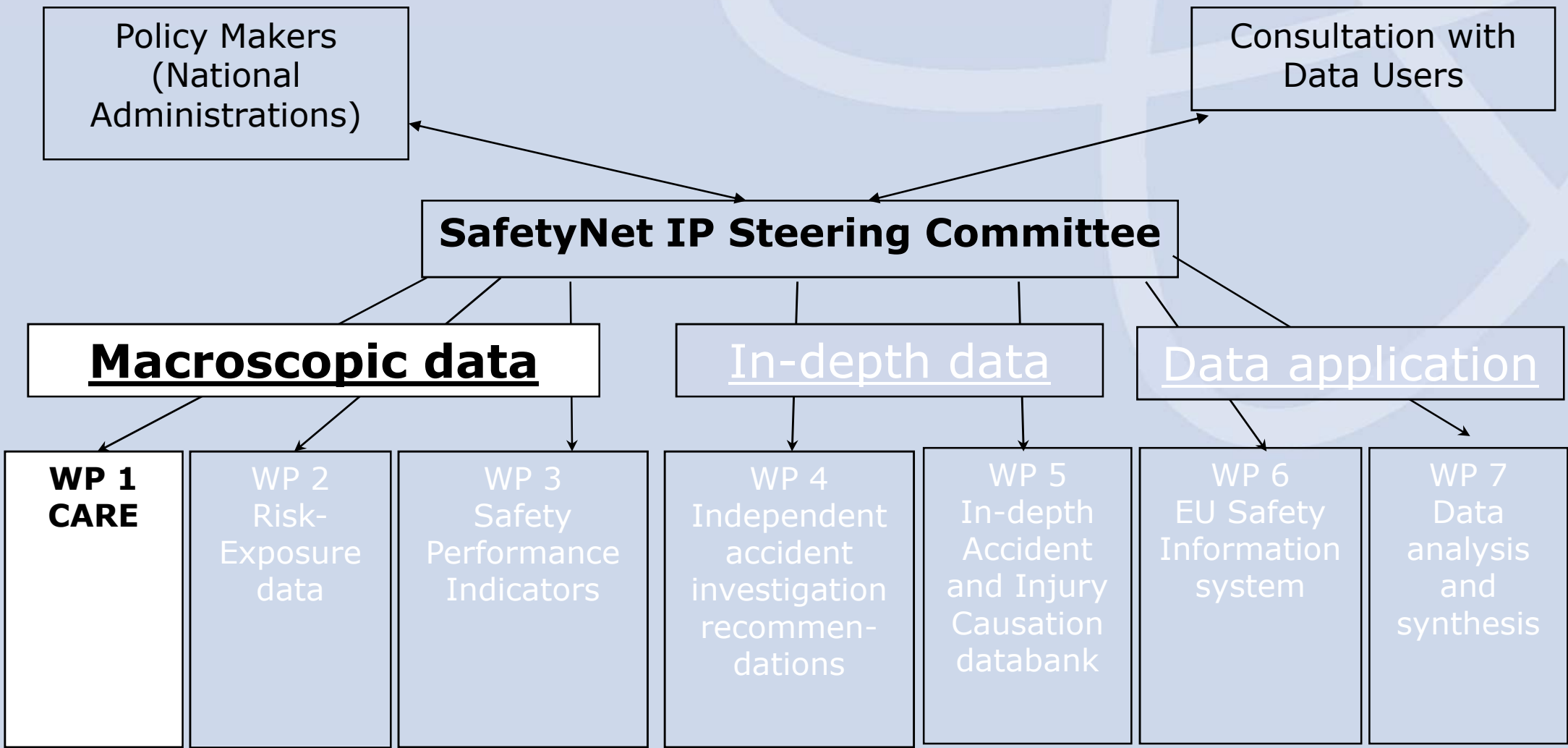
- Car manufacturers
- Tyre Manufacturers
- Road construction and operators

- **Special Groups**

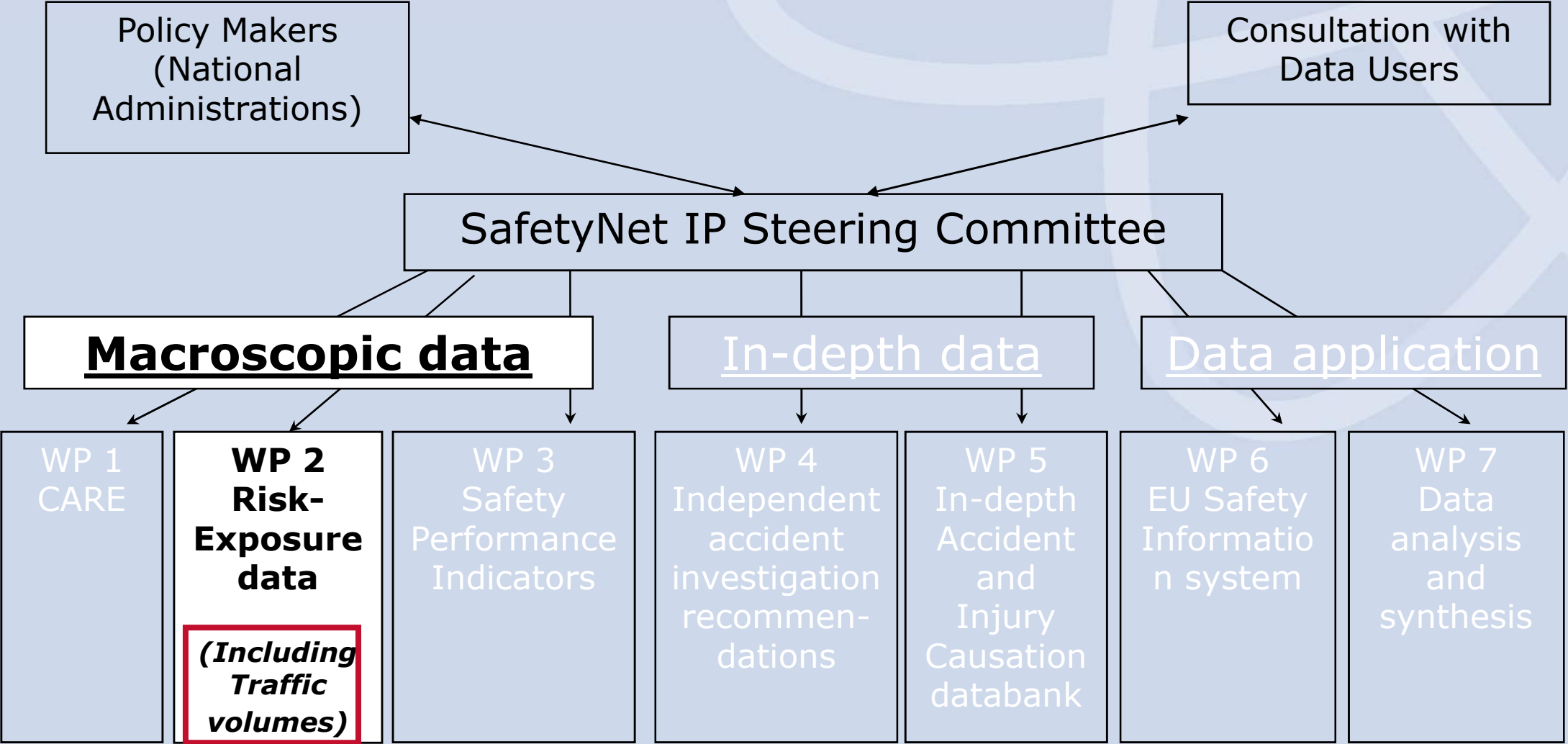
- International organisations EUROSTAT, UNECE, ECMT, IRTAD, IRF, IRU,....
- EC 6FP projects in passive safety, infrastructure and eSafety

**What does SafetyNet
consist of ?**

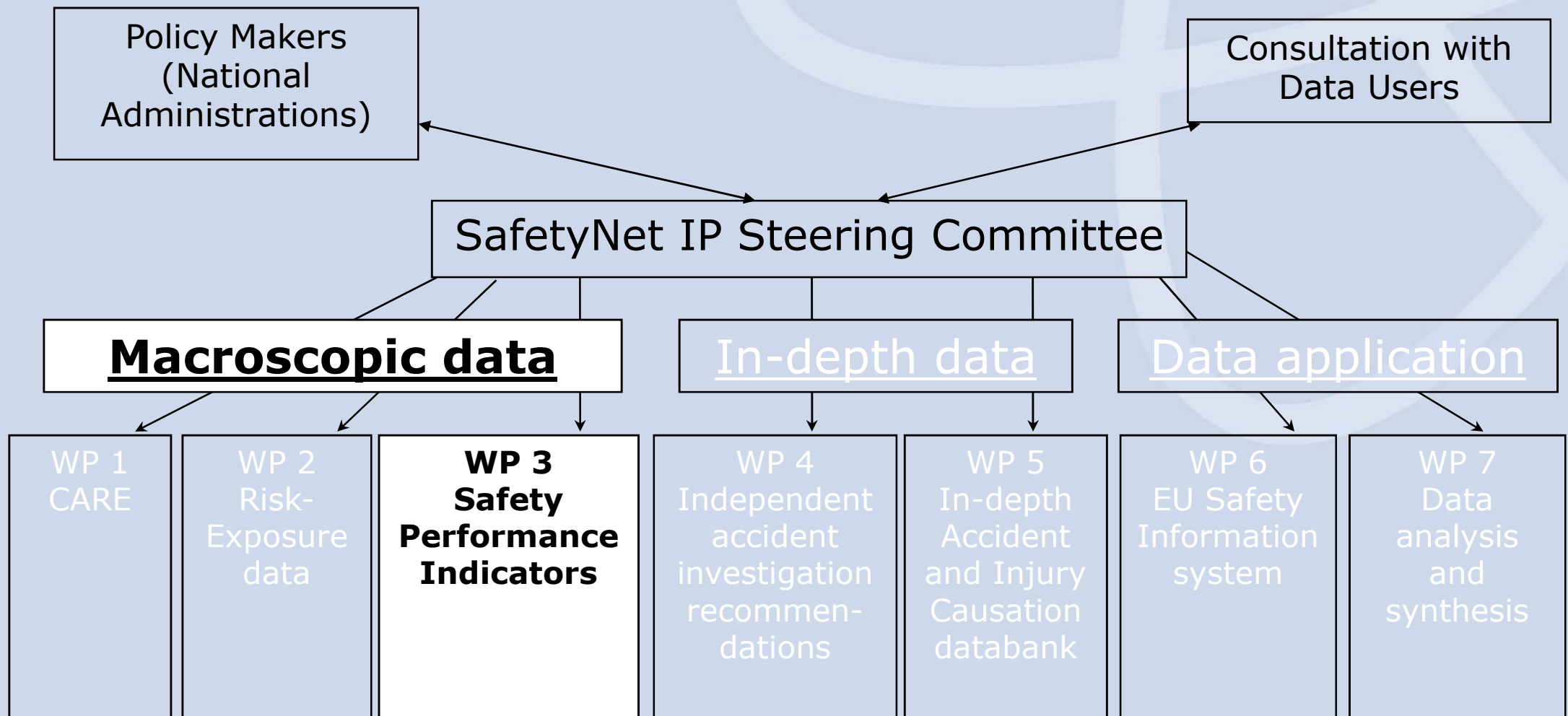
Work Package overview



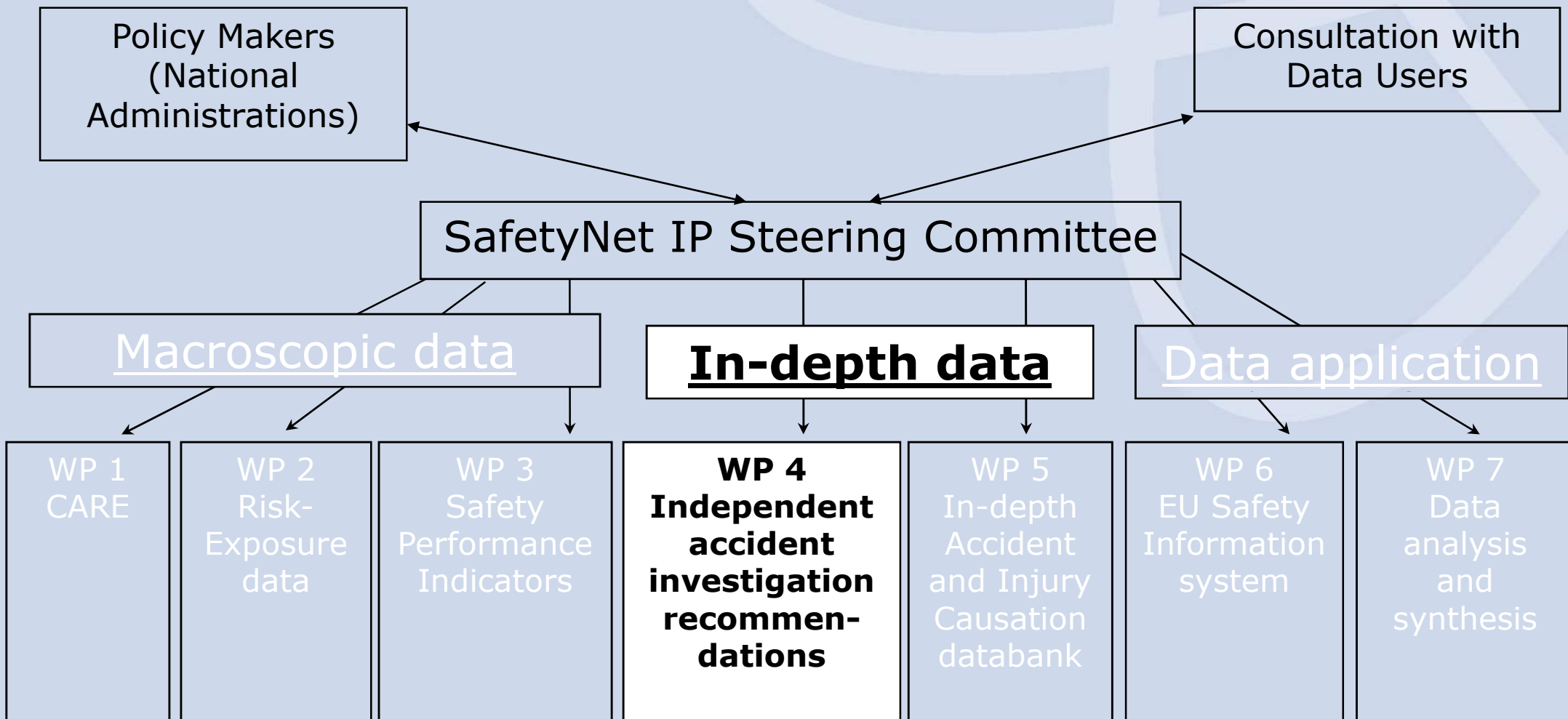
Work Package overview



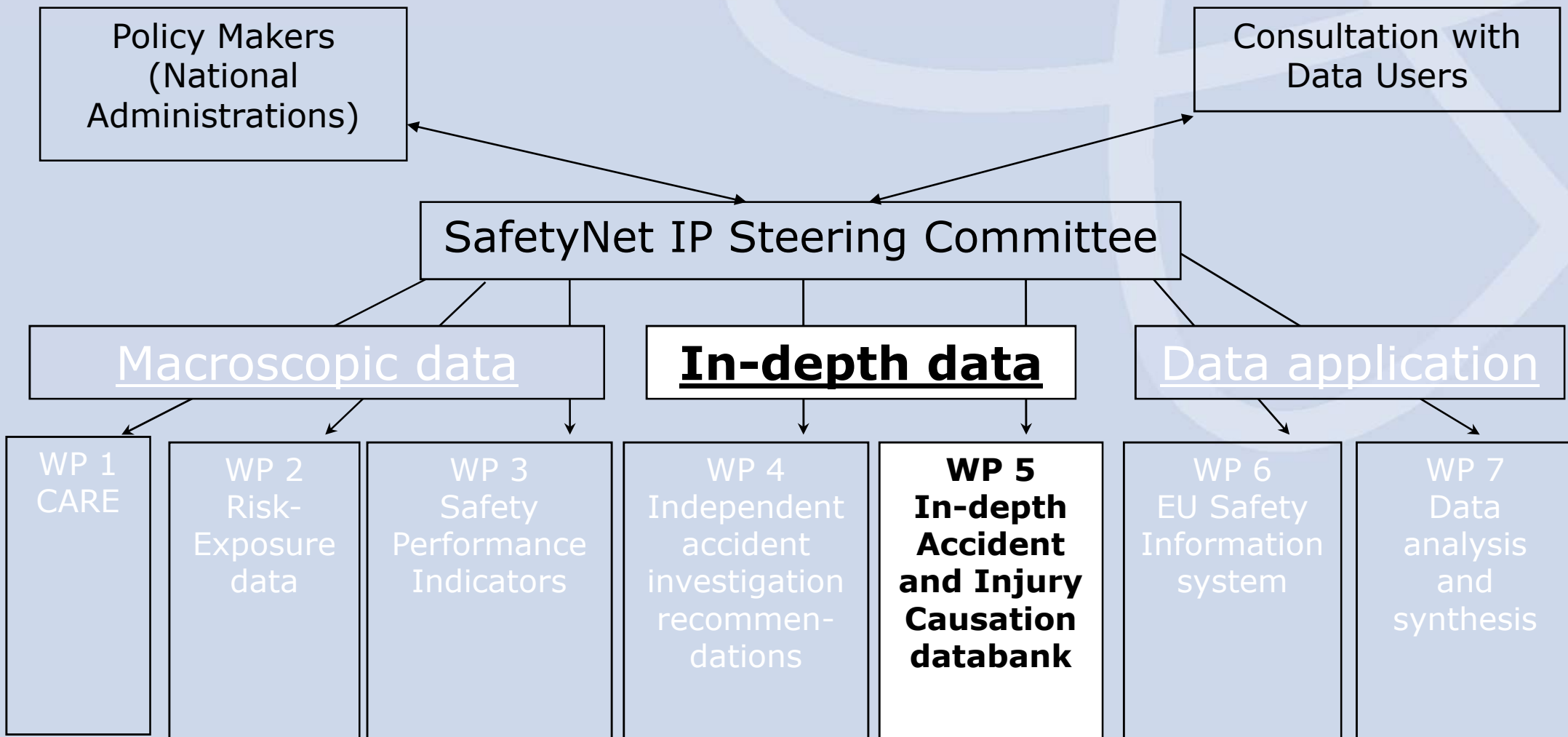
Work Package overview



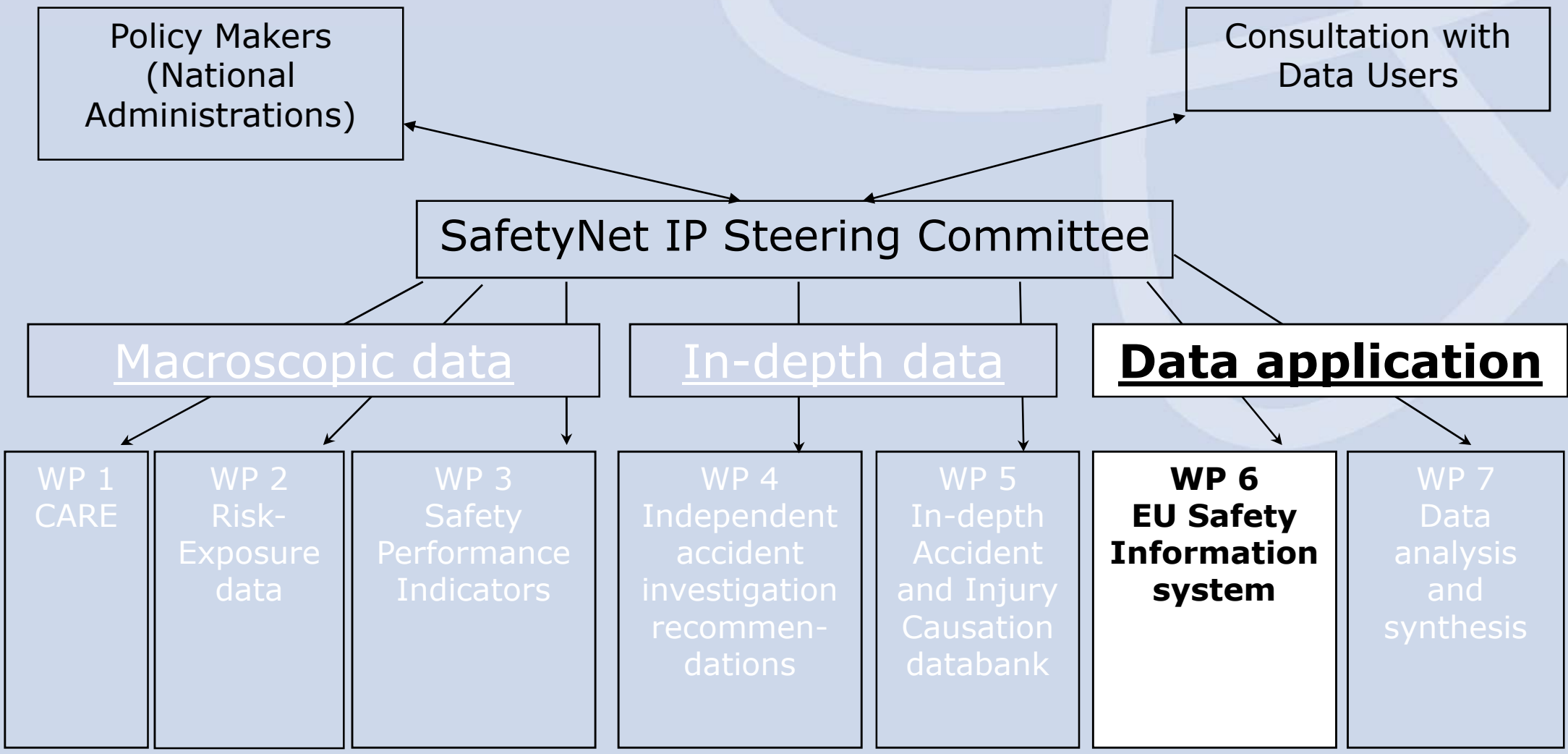
Work Package overview



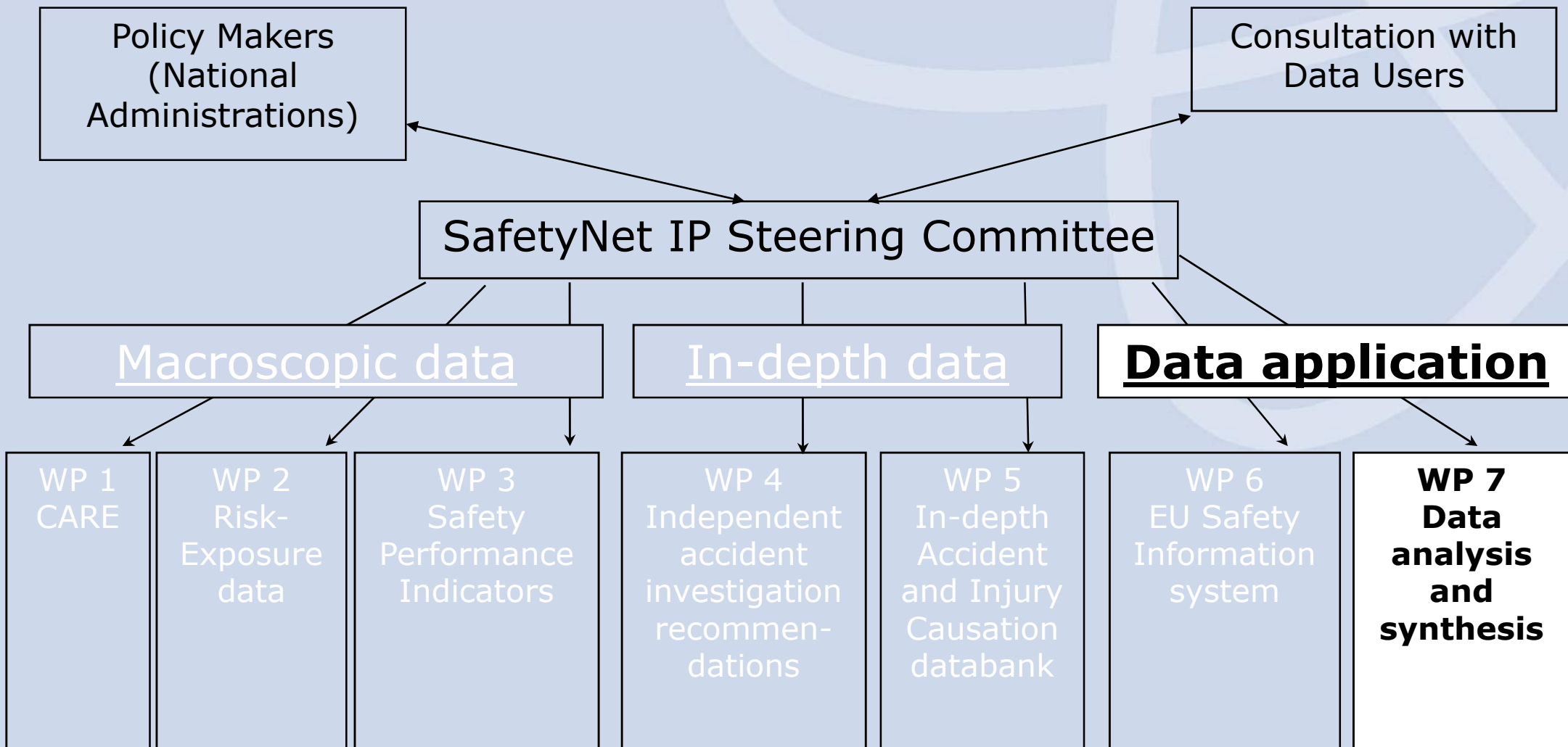
Work Package overview



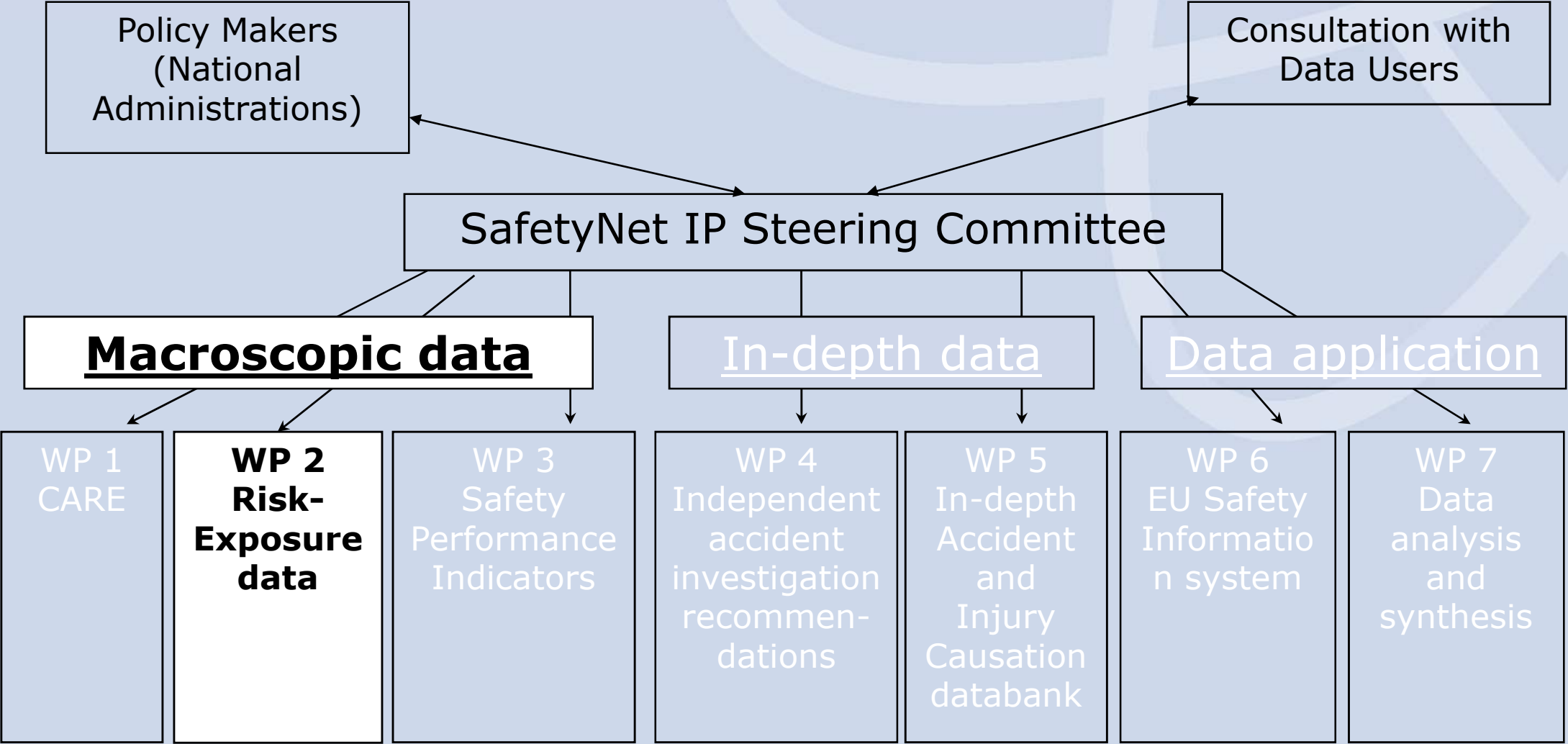
Work Package overview



Work Package overview



Work Package overview



WP 2 Risk/Exposure Data

Leader – CETE SO (Centre d'Etudes Technique de l'Equipement du Sud Ouest), France

Objectives

- Systematic measurement of Risk Exposure in EU Member States and setting up of transformation rules if necessary.
- Assessment and comparison of risk levels across EU
- Recommendations and guidelines for data collection and proceeding.

WP 2 Risk/Exposure Data Methodology

- Develop a common E.U. framework and format for RED in accordance with the existing definitions **UNECE/ECMT** and **EUROSTAT**
- Link RED to **CARE** and apply at EU level
- Support, if necessary, the Member States to improve RED collection and use

WP2 - Risk Exposure Data

Target variables

- Road length
- Vehicle x kilometres
- Person x kilometres
- Fuel consumption
- Population
- Drivers population
- Vehicle fleet
- Number of trips
- Time in traffic

International
issues

- Usefulness ?
- Availability ?
- Compatibility ?

WP2 - Risk Exposure Data

Usefulness

Relevant and comparable risk levels over EU countries

CARE

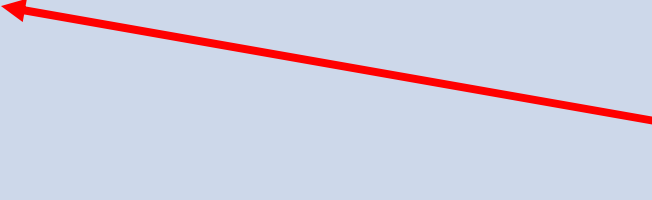
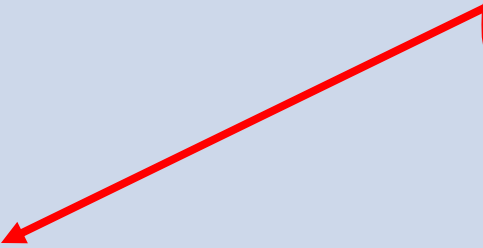
Nb of drivers killed in an accident involving at least one car (year 2001)	Driver's age				
	18 to 24	25 to 36	37 to 45	46 to 65	66 and older
DK	32	44	18	38	31
ES	377	591	330	463	149
FR	917	922	505	767	535
GB	274	277	151	219	183
GR	78	150	94	114	54
IE	32	49	15	24	14
NI	17	24	7	6	3
NL	84	97	50	68	48

Accident Data

Risk Level = -----

Vehicle x kilometres

SafetyNet
RED



WP2 - Risk Exposure Data Availability

The **availability** of the data is divided in 4 categories:

1. Data is fully available
2. Data is partly available
3. Data is not available
4. Data available is unknown

WP2 - Risk Exposure Data

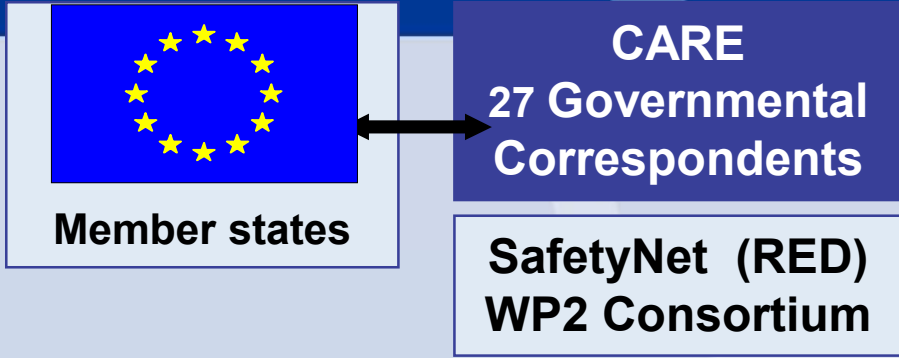
Compatibility

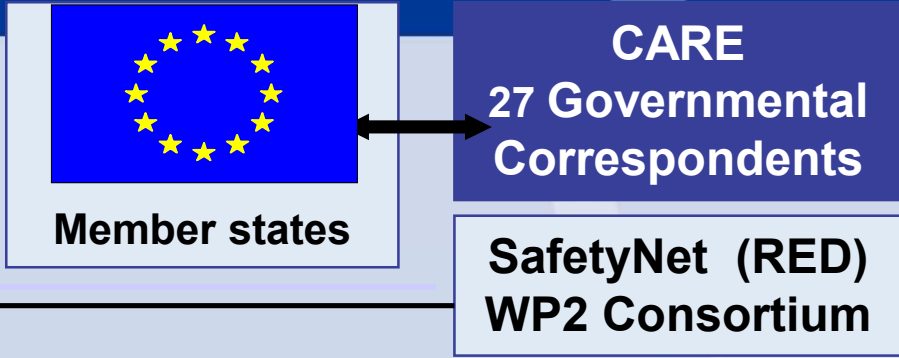
The concept of RED **compatibility** is analysed in the European context:

1. Compatibility with UNEC/ECMT and EUROSTAT definitions
2. Compatibility with CARE variables
3. Compatibility between EU countries



**How SafetyNet
intends to achieve such a goal ?**



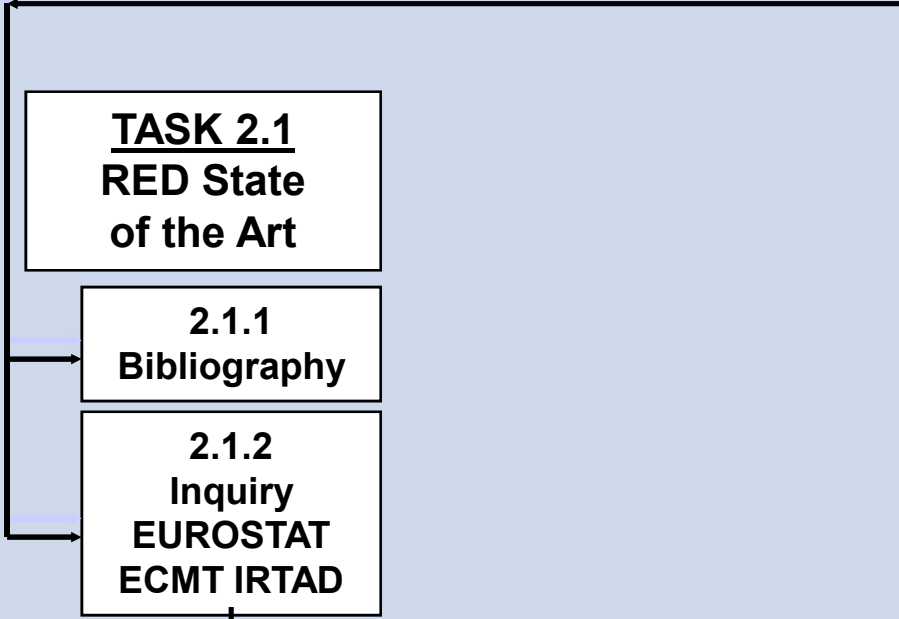


TASK 2.1
RED State of the Art

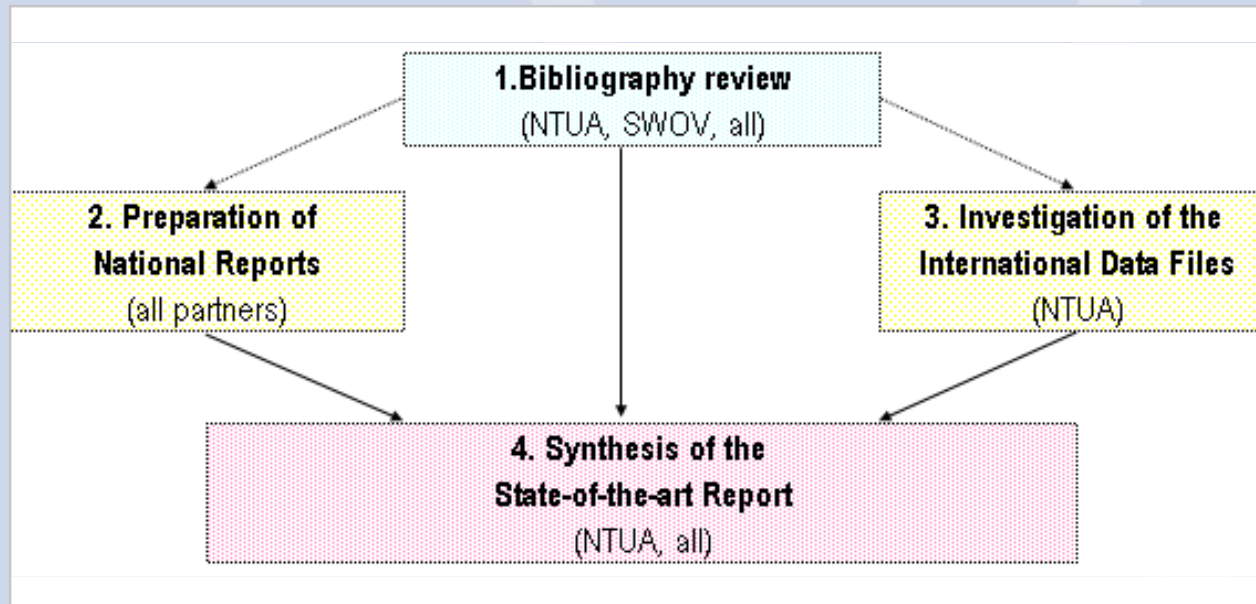
2.1.1
Bibliography

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Deliverable 2.1.1
"State-of-the-Art"
Report



State of the Art on Risk Exposure Data



Contents

1. Definition of RED
2. Review of methods for collecting RED in the EU
3. Investigation of RED in the International Data Files
4. Use of RED in road safety analysis

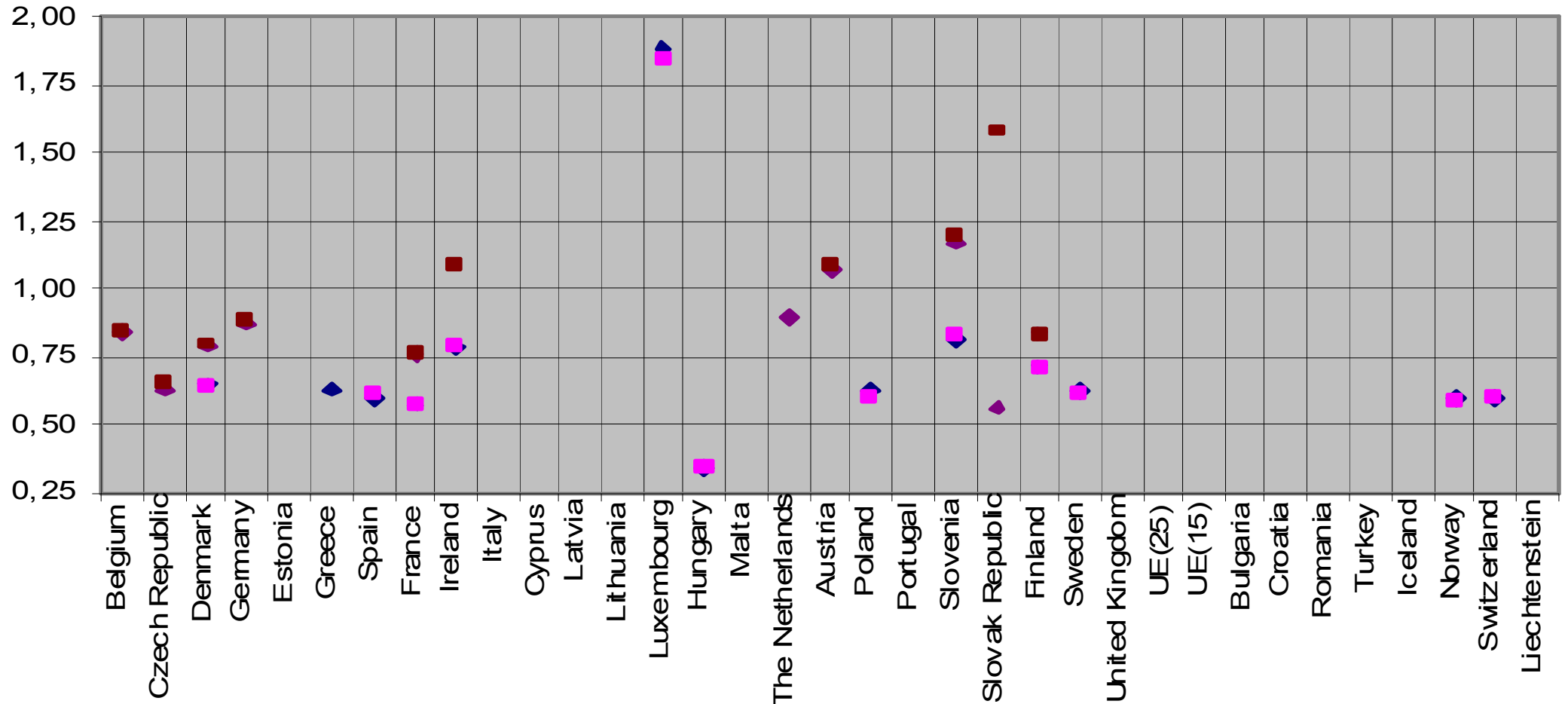
Vehicle x kilometres collection methods in European countries

	Norway	Greece**	Portugal	Netherlands	France	Hungary	Denmark
National Travel Surveys							
Distance travelled	•			•	•		
Time spent in travel			•	•	•		
-by gender	•			•	•		•
- by age	•			•	•		•
- by experience					•		
- by mode*	•		•••	•••••	•••••		•••••
- by road type			•	•	•		
Traffic counts systems							
AADT	•	•	•	•	•	•	
Traffic volume	•	•	•		•	•	•
O/D		•					
- hourly variation	•	•	•		•	•	•
- seasonal variation		•	•		•	•	•
- vehicle classification*	•	•	•••			•••	•

* more bullets indicate a more detailed classification

** up to 1993

Comparison of IDF published data (Traffic Volume - cars)



◆ IRF/EUROSTAT-2000

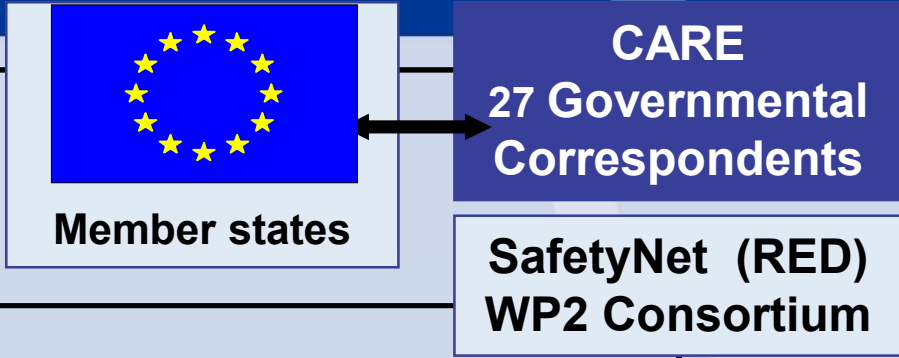
■ IRF/EUROSTAT-2001

◆ ECMT/EUROSTAT-2000

■ ECMT/EUROSTAT-2001

◆ IRTAD/EUROSTAT-2000

■ IRTAD/EUROSTAT-2001



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RED Availability and comparability

2.2.1
Establishment/dispatch
of RED questionnaire

2.2.2
Analysis and report of
RED questionnaire

2.2.3
Establishment of a
common RED framework

Deliverable 2.2.1
RED Questionnaire
to 27 countries

Deliverable 2.2.2
RED
Common framework
and format

WP2 Task 2

Availability/Usability/Comparability

Deliverable 2.2.1: RED Questionnaire concerning the RED availability over EU Member States able to provide usable and comparable RED.

For each RED the questionnaire is split up into 3 parts:

- 1. Introduction to the RED with comments and the existing international definitions (UNECE/ECMT/EUROSTAT) if any*
- 2. Questions concerning the national RED*
- 3. Questions concerning the expert part of the RED dealing with methodologies, areas, inaccuracy, documentation....*

4. Vehicle kilometres

4.1. Introduction to vehicle kilometres

A useful indicator of risk exposure is *vehicle kilometres*, the total number of kilometres travelled by road vehicles in a country and even better if it can be divided into subgroups of vehicle type and/or road type.

Definition vehicle kilometres:

'Vehicle kilometres' of a country is defined as the *total number of kilometres travelled within the borders of the country by road vehicles*, where 'road vehicle' is a "vehicle running on wheels and intended for use on roads

Common types of road vehicles are:

Cycle: A road vehicle which has two or more wheels and is propelled solely by the muscular energy of the persons on that vehicle, in particular by means of a pedal system, lever or handle (e.g. bicycles, tricycles, quadricycles and invalid carriages).

Moped: Two- or three-wheeled road vehicle which is fitted with an engine having a cylinder capacity of less than 50cc (3.05 cu. in) and a maximum authorized design speed in accordance with national regulations.

Motorcycle: Two-wheeled road motor vehicle with or without side-car, including motor scooter, or three-wheeled road motor vehicle not exceeding 400 kg (900 lb) unladen weight. All such vehicles with a cylinder capacity of 50 cc or over are included, as are those under 50 cc which do not meet the definition of moped.

Passenger car: Road motor vehicle, other than an motorcycle, intended for the carriage of passengers and designed to seat no more than nine persons (including the driver). *The term "passenger car" therefore covers microcars (need no permit to be driven), taxis and hired passenger cars, provided that they have fewer than ten seats. This category may also include pick-ups.*

Motor-coach or bus: Passenger road motor vehicle designed to seat more than nine persons (including the driver). *Statistics also include mini-buses designed to seat more than 9 persons (including the driver).*

Tram: Passenger road motor vehicle designed to seat more than nine persons (including the driver), which is connected to electric conductors or powered by diesel engine and which is rail-borne.

Lorry: Rigid road motor vehicle designed, exclusively or primarily, to carry goods.

UNECE/ECMT/EUROSTAT (2003)

4.2. National data on vehicle kilometres

Q0. Contact information

? Please fill in your contact information:

Name:

Institute:

Country:

E-mail:

Tel.:

Fax:

Q1. Do you have any national data on vehicle kilometres?

? Please fill in X in Yes or No.

Yes

No

? If No, you will not have to fill in the rest of the questionnaire. Please indicate below if you have any data at all, or you are planning to gather the information in the future.

Q2. Definition and EUROSTAT data

Q2.a Definition

Definition vehicle kilometres:

'Vehicle kilometres' of a country is defined as the *total number of kilometres travelled within the borders of the country by road vehicles*, where 'road vehicle' is a "vehicle running on wheels and intended for use on roads

UNECE/ECMT/EUROSTAT (2003)

? Is the definition of vehicle kilometres given above valid for the national vehicle kilometres data of your country? If not, please explain what definition is used in your country.

Example:

Yes

No, in the total national number of vehicle kilometres we do not include bicycle and mopeds. We have some estimations on bicycle and moped kilometres.

Q2.b. Data

Information available at EUROSTAT:

Some information on the national number of vehicle kilometres is already available at EUROSTAT. You can find this information in Appendix G that is sent to you separately from this document or you could look it up at the CIRCA-site.

? Please check this data. Are the data correct? If any data are wrong or based on incorrect definitions, or if you have any data that is more up-to-date, please inform the contact person of EUROSTAT Hans Strelow by e-mail: Hans.Strelow@cec.eu.int

Example:

Yes

2003 figures are available, we will contact EUROSTAT for an update

Some definitions seems to be different from ours. We will contact EUROSTAT in order to find out how data are obtained

Q2.c. Data sources

Information:

It is possible that you obtain these numbers from different sources, for instance local authorities, companies, or organizations that gathers the information. For each of those sources, we would like to know the procedure by which the data is obtained for each of those sources (the Q3 part of this questionnaire). If you have many organizations that provide you with data, or organizations that provide you with data using practically the same (official) procedure, it is only necessary to fill in the information once.

? Please indicate the data source/sources used to obtain the national number. If the total number is different from the sum, please specify how these data sources then add up to the national number.

Example:

We obtain the numbers from regional authorities. They add up to the national number

We have a national sample survey. The figures of the survey is multiplied with factors in order to add up to the number of the total population

4.3. Expert part of vehicle kilometres

Q3. Methodologies for obtaining vehicle kilometres data

Please answer the following questions (Q3.a-h) separately for **each** methodology used in your organization to obtain vehicle kilometres information for the part of the road vehicle kilometres you are responsible for. Methodology is not obtaining the information from a database. It is preferably a step deeper. How is the data in the database obtained? It could be by measuring on the road or on maps. If different methods are used for different parts of the road networks it is necessary to fill in the questions for each method. When to distinguish different methodologies is described in appendix B. In Appendix C several example methodologies are given.

Q3.a. Contact information

? Please fill in your contact information (if the same as in Q0., then write same in the name box and skip the rest of Q3.a.):

Name:

Institute:

Country:

E-mail:

Tel.:

Fax:

Q3.b. Name of the methodology

? Please, supply the (unique) name of the methodology if it exists. Preferably, this is the name commonly referred to in literature.

Example:

National Road Survey 2003

National Travel Survey 2001 - 2003

Q3.c. Period of availability

? In which years (1991-today) is this methodology for obtaining vehicle kilometres information applied?

Example:

We have information from 1991 – 2003. The same methodology has been used throughout the period

Q3.d. Application area

? For which geographical region of your country is this methodology for obtaining Vehicle Kilometre information applicable?

Example:

Province X

Department Y of province X

The whole country

? For which subsection of the road network (for example motorways, rural roads) is this methodology for obtaining Vehicle Kilometre information applicable?

Example:

Motorways

Rural roads

All roads

State roads

Q3.e. Transformation to national data

Information:

Sometimes a transformation is applied to the data before they are called final.

Usually no transformation will be applied, but in cases where you don't cover the total population a factor might be applied in order to get the total number. It could be in case of a survey only covering part of the population.

? What transformation, if any, do you apply to your final data from this methodology before it is published or otherwise made available to your national correspondent?

Q3.f. Estimation error (systematic, random)

Information:

All (physical) measurements are subject to some inaccuracy or error. In order to use road length data, it is necessary to make an assessment of this error. If anything is known about the error of this methodology, it can be very important for researchers to know, in particular when relatively close numbers need to be judged different or not.

Example: Generally, error comes in two flavours: systematic and non-systematic error. The latter is usually assumed to be random error. Obviously, both types of error are unknown; otherwise the data could be corrected for it. Errors are often caused by compromises needed in the methodology.

? Please specify any calculation you may have of the magnitude of the systematic or random error of your Vehicle Kilometre data.

Example:

We have a calculation of the survey sampling error in our main documentation, see next question

We have no knowledge of errors

Q3 g. Documentation

? What formal documentation (for example technical reports) on this source of vehicle kilometres information is available to the SafetyNet consortium and how it is accessible?

Example:

Our annual report can be found at this internet location: www.statinfo.xx/anreport. A technical document is also available at that location: www.statinfo.xx/technot. It describes the technical issues about the used methodology

Q3 h. Comments

? If you have comments regarding the questions about the methodology, or if you want to comment your answers, please use the space below.



Outline of the answers to date

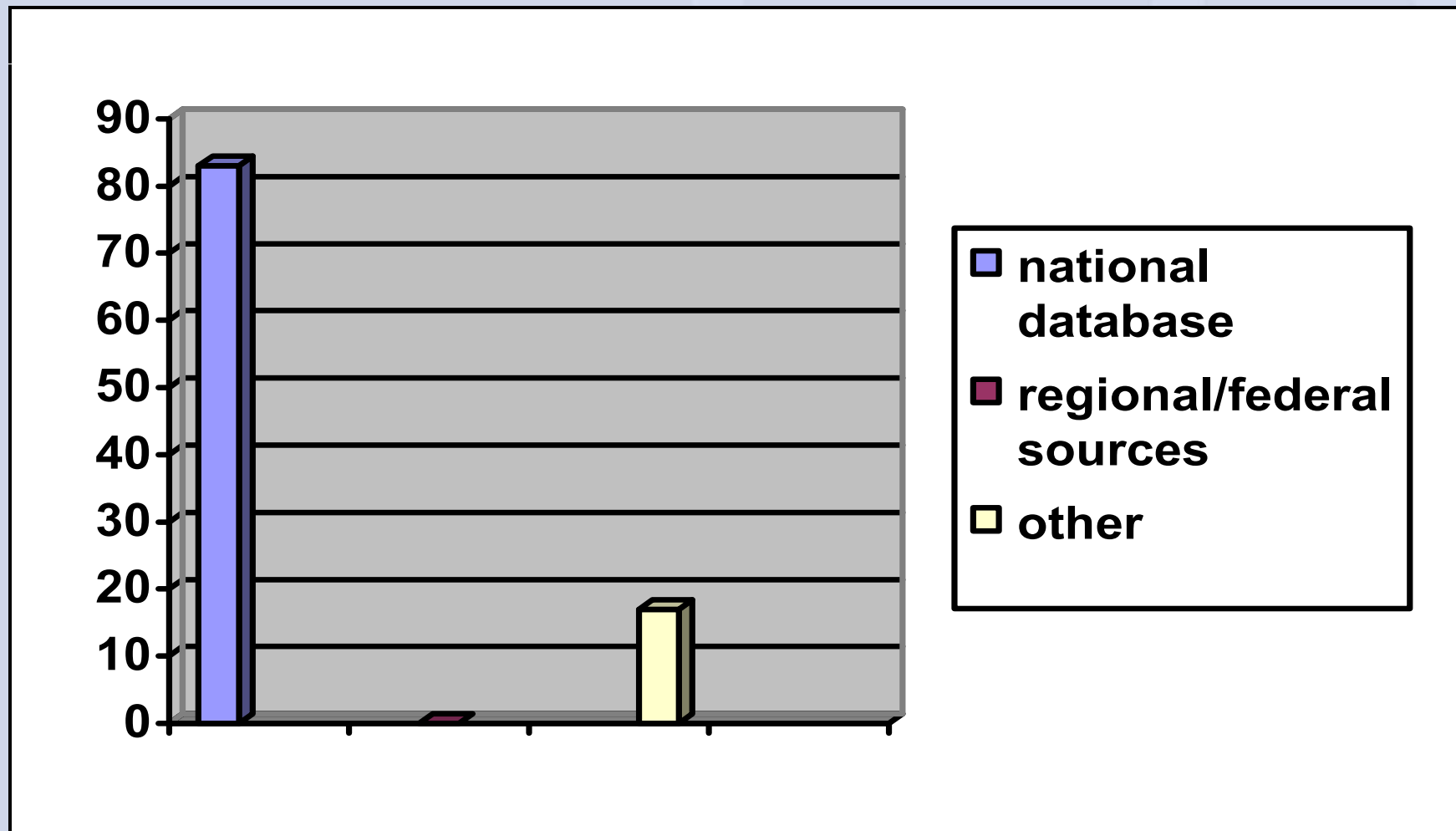
Data (vehicle x kilometres) availability



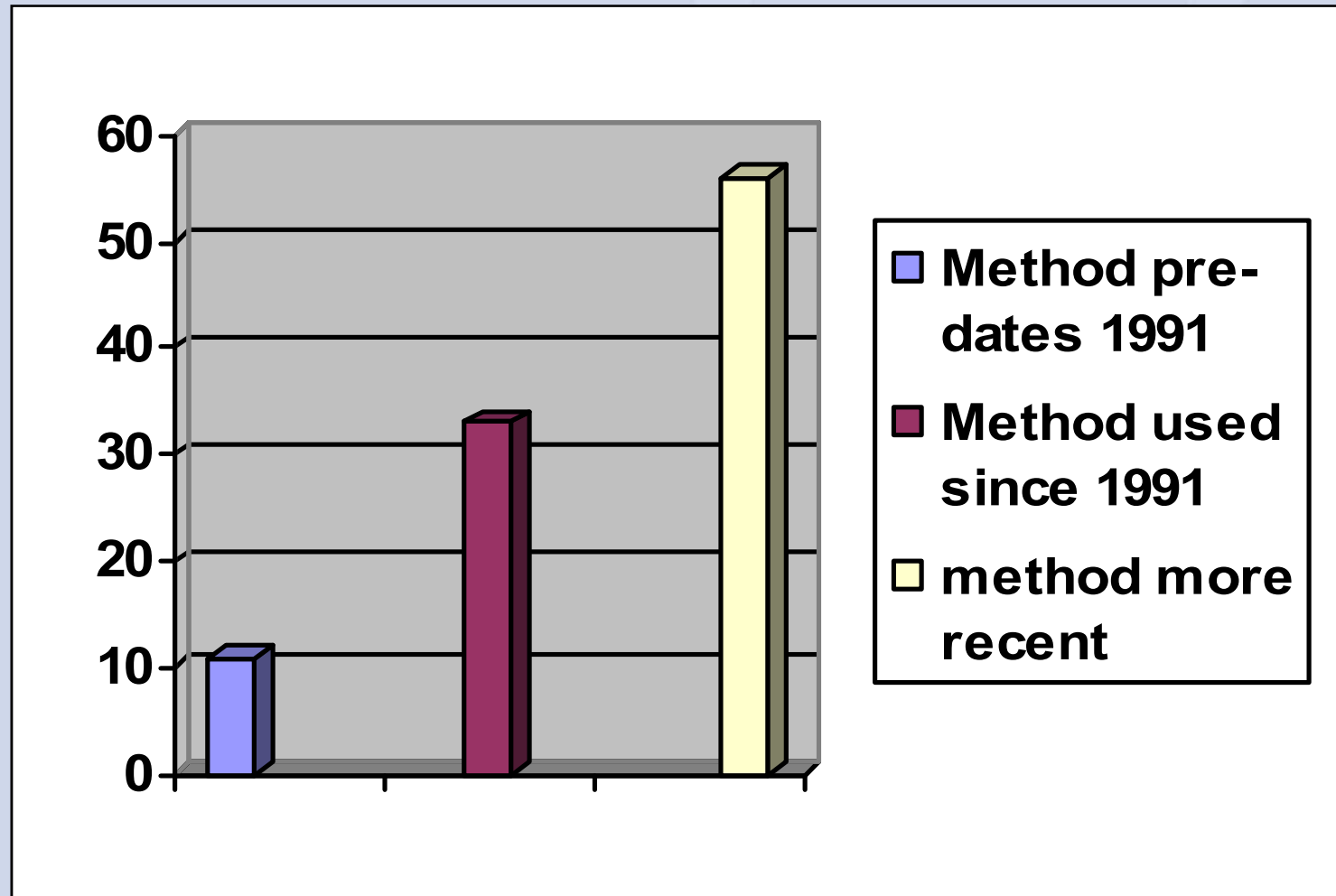
19 Countries have filled the questionnaire to date

	Conform definition	Not conform definition	Not known
Available	DK, UK, NO	BE, DE, EE, HU, AT, FI, AT, PT, SK, FI, CZ	
Not available		MT, LU, LT, CY, EL,	
Not known			ES, FR, IT, LV, NL, PL, SL, SE

Q2c : Sources to obtain the national numbers



Q3c : Period of availability



Q3b : Methodologies

Variety of approaches sometimes combined and/or coordinated with fuel consumptions

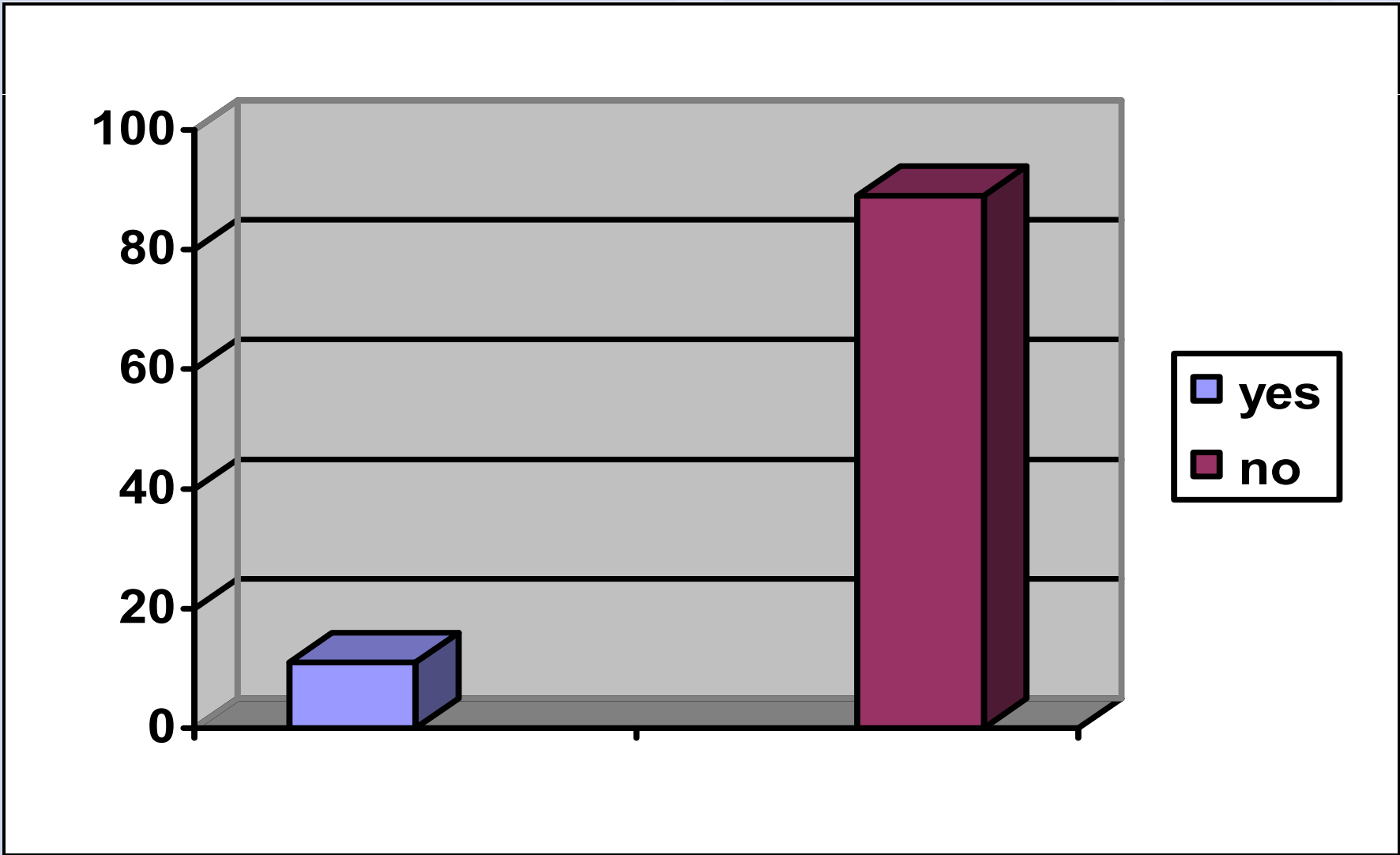
Q3d : Application areas

16 countries : data available for the whole country

Q3f : Estimation errors

Only 4 countries acknowledged sources of errors

Q3e : transformation



to be continued.....

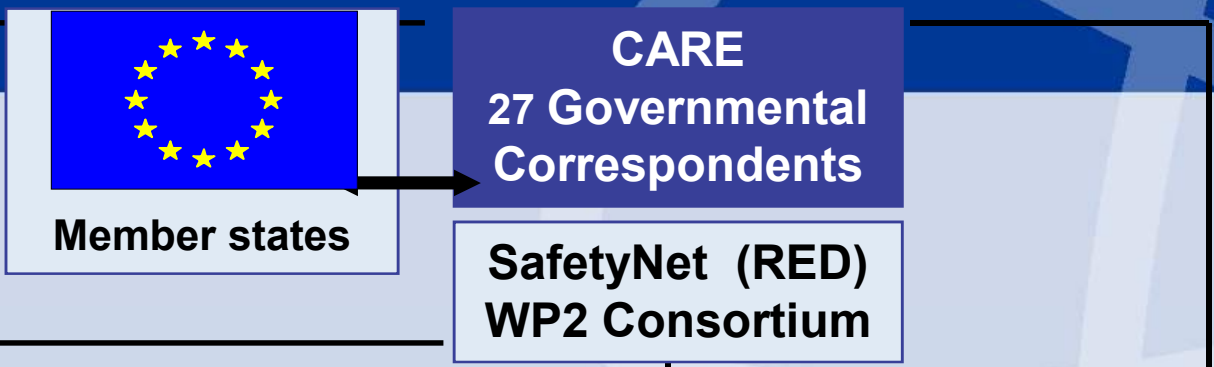
the following steps are

WP2 Task 2

Availability/Usability/Comparability

Deliverable 2.2.2: RED *Common Framework*

1. Definition of the RED *common framework* including the common format in which the data should be recorded and sent to the Commission.
2. Transformation rules and comparability of RED in accordance with CARE over EU (Member States able to provide usable and comparable RED).



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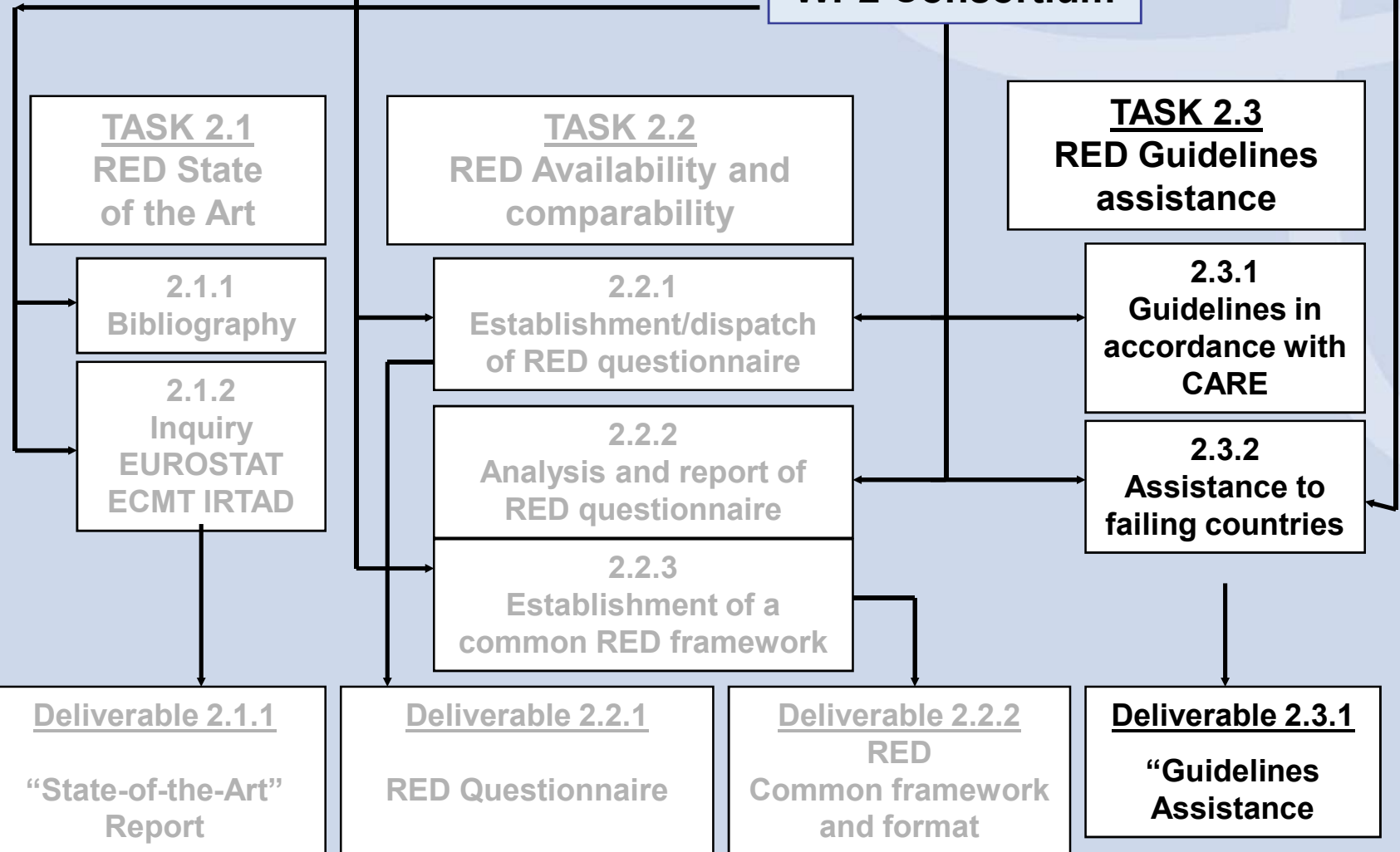
Deliverable 2.2.2
RED
Common framework
and format

TASK 2.3
RED Guidelines
assistance

2.3.1
Guidelines in
accordance with
CARE

2.3.2
Assistance to
failing countries

Deliverable 2.3.1
“Guidelines
Assistance





CARE
27 Governmental
Correspondents

**SafetyNet (RED)
WP2 Consortium**

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TASK 3
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failing countries

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TASK 2.4
RED Tests
with CARE

2.4.1
Checking RED
provided in common
framework

2.4.2
RED + CARE data
processing

2.4.3
Analysis of results

Deliverable 2.4.1
Report of subtasks
2.4.2 and 2.4.3

