



EasyWay



# DATEXII Experience in Portugal

InIR, IP

ARTS Steering Committee  
29 March 2012 – Porto

- **Requirements**
- **OpenRoads Platform**
- **DATEX II Infrastructure Extensions**



InIR's main task is to supervise and oversee the management and operation of the road network, monitoring compliance with laws and regulations and concession agreements, to ensure the completion of the National Road Plan and ensure the efficiency, equity, quality and safety of infrastructure as well as users' rights.

# Today's Portuguese map of Road Operators



- Brisa
- Douro Litoral
- Grande Lisboa
- Litoral Centro
- Lusoponte
- Norte
- Oeste
- Scut do Algarve
- Scut da Beira Interior
- Scut das Beiras Litoral e Alta
- Scut da Costa de Prata
- Scut do Interior Norte
- Scut do Norte Litoral
- Scut do Grande Porto
- EP



**To achieve InIR's mission, we have to:**

- 1. Gather and analyse huge amounts of information**
- 2. Supervise and manage concessions**
- 3. Act promptly!**



To achieve InIR's mission, we have to:

## 1. Gather and analyse huge amounts of information

### TRAFFIC DATA

*(Traffic flow, Traffic status, Traffic concentration, others)*

### INCIDENTS

*(Accidents, Obstructions, Roadwork's, others)*

### QUALITY OF INFRASTRUCTURE

*(Pavements, Signals, Road Marks, others)*

*(Pavements, signals, Road Marks, others)*

QUALITY OF INFRASTRUCTURE



To achieve InIR's mission, we have to:

## 2. Supervise and manage concessions

**AVAILABILITY OF ROADS**

*(Safety, Accessibility, Circulation)*

**OPERATING INDICATORS**

*(Incidents, Accidents Rate, Roads Works, others)*

**QUALITY OF INFRASTRUCTURE**

*(Pavements, Signals, Road Marks, others)*

*(Pavements, Signals, Road Marks, others)*

**QUALITY OF INFRASTRUCTURE**



To achieve InIR's mission, we have to:

### 3. Act promptly!

#### DATEX II

*Allows collecting information, with assurance and reliability.*

#### **InIR INFORMS THE OPERATORS**

*The availability of the road and any necessary improvement to the road network*

road network



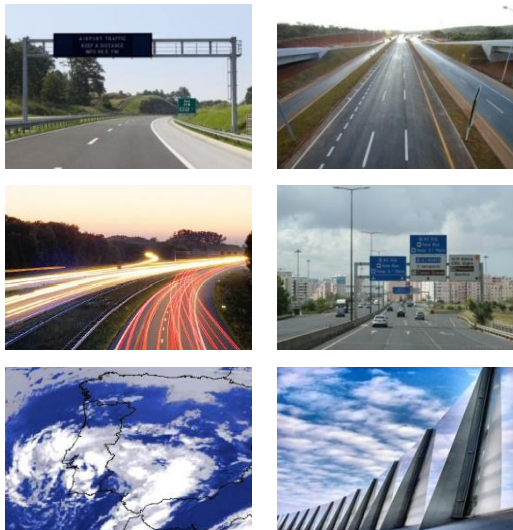


## How did we pull it off?

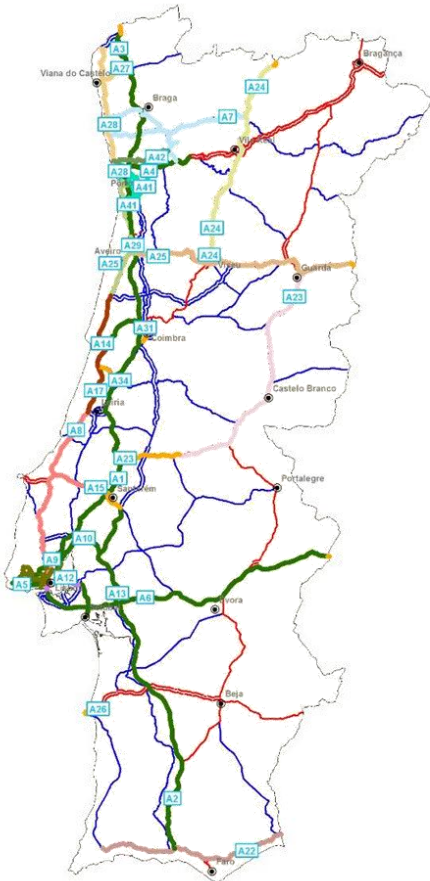
We systemized the way information is gathered **according to the type of road and contract information.**

As regulator InIR produced a **Glossary** describing the methodology, concepts and the information to be collected:

- Situations (DATEX II Profile)
- Measures (DATEX II Profile)
- Infrastructure Quality Measures (DATEX II Extension)



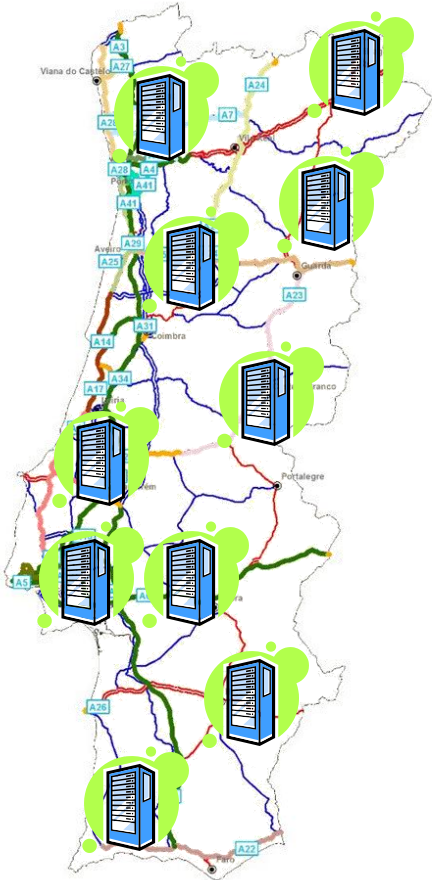
## STAGE 1



Gather information (Using DATEX II)

**MEASURES**  
*(Traffic flow, Traffic status, Traffic concentration, other)*  
**SITUATIONS**  
*(Accidents, Obstructions, Roadwork's, other)*  
**QUALITY INFRASTRUTURE MEASURES**  
*(Pavements, Signals, Road Marks, other)*

## STAGE 2



-   
Estradas de Portugal, S.A.
- 
- 
- 
- 
-   
Auto-estradas do Litoral
- 
- 
- 
- 
- 

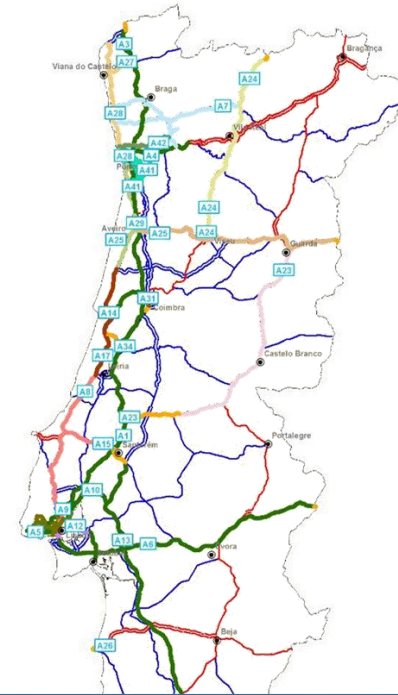


Process and produce multiple analysis and indicators... Build a national DW



## STAGE 3

Report



**InIR INFORM THE OPERATORS ABOUT:**

- The availability of the road and the impact on the financial contract
- Any necessary improvements to the road network



# What have we done?



# Control and monitor the information received using DATEX II

OpenRoads Data Control Center ▶ Home Page

DW - Open Roads ▾ Data Control Center ▾ Search... Update Data

**Data Control Center**

Parametrization Data Management **Monitoring**

2012 ▾ JAN FEB **MAR** APR MAY JUN JUL AUG SEP OCT NOV DEC

		Ascendi					Euroscut	AE's Marão
		Costa de Prata ascendi 16-02-2012	Beiras Litoral e Alta ascendi 16-02-2012	Grande Porto ascendi 16-02-2012	Grande Lisboa ascendi 17-02-2012	Concessão Norte ascendi 16-02-2012	Norte Litoral 01-03-2012	Túnel do Marão 28-02-2012
<b>Operation</b>								
Situations		✘ ⚠	✘ ⚠	✘ ⚠	✘ ⚠	✘ ⚠	✘ ⚠	✘ ⚠
<b>Infrastructure Quality</b>								
Pavements	Wheel Path Route Depth	✔	✔	✔	✔	✔	✘	✔
	Longitudinal Superficial Irregularity	✔	✔	✔	✔	✔	✔	✔
	Friction Coefficient	✔	✔	✔	✔	✔	✔	✔
	Superficial Fisuration	✘	✘	✘	✘	✘	✔	✔
	Superficial Texturr	✔	✔	✔	✔	✔	✔	✔
Safety Guards	Conformity	✔	✔	✔	✔	✔	✘	✘
Illumination	Availability Percentage	✘	✘	✘	✔	✘	✔	✔
Road Markings	Retroflection Coefficient							
	Daily Illuminattion	✘	✘	✘	✘	✘	✘	✘
	Skid Resistance							
	Cleaning							

# Analyse and explore the information by extracting Indicators and Reports

OpenRoads Quality Control > Home Page

DW - Open Roads Data Control Center Search... Update Data

**Quality Control**

Situations Pavements Safety guard Illumination Road Markings Vertical Signs Telecommunications Telematic

2011 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV **DEC**

Beiras Litoral e Alta

- A25
- Concessão Norte
  - A11
  - A42
  - A7
- Costa de Prata
  - A17
  - A25
  - A29
  - A44
- Grande Lisboa
  - A16
- Grande Porto
  - A4
  - A41
  - A42
  - VR1
- Norte Litoral
  - A27
  - A28

**Situations**

	Dec 2010	Dec 2011	Var.	%
Accidents	37	18	-19	-51,35
Force Majeure	2	2	0	0
General obstruction	-	-	-	-
Animal presence obstruction	-	-	-	-
Environmental Obstruction	-	-	-	-
Equipment damage obstruction	5	-	-	-
Vehicle obstruction	43	47	+4	+9,3
Construction works	-	-	-	-
Maintenance works	23	118	+95	+413,04
<b>Situations</b>	<b>110</b>	<b>185</b>	<b>+75</b>	<b>+68,18</b>

Situation Evolution

Friction Coefficient

Friction Coefficient by Lane Type

	Central Lane	Left	Slow	Friction Coefficient
2012-03-01	0,53	-	-	-
2011-03-01	0,55	-	-	-

Search... Update Data

Vertical Signs Telecommunications Telematic

AUG SEP OCT NOV **DEC**

-- Direction -- -- Lane --

Friction Coefficient

Standard

Road Sections

# Analyse the impact of availability on the financial contract

OpenRoads Availability Home Page

DW - Open Roads Data Control Center Search... Update Data

### Availability Evaluation

2011 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV **DEC**

Availability Report	Ascendi						Euroscut		AE's Marão	
	Costa de Prata 16-02-2012	Beiras Litoral e Alta 22-02-2012	Grande Porto 16-02-2012	Grande Lisboa 17-02-2012	Concessão Norte 22-02-2012	Norte Litoral 01-03-2012	Túnel do Marão 01-03-2012			
<b>Deductions</b>										
Acessibility	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00
Safety	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00
Circulation	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00
<b>Total</b>	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00	€ 999.999,00
<b>Penalties</b>										
Plafond	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00
Balance	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00	99.000,00
<b>Total</b>	-	-	-	-	-	-	-	€ 0,00	€ 0,00	-
<b>Total</b>										
Annual Payment	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00
Amount Receivable	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00
Annual Forecast	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00	€ 99.999.999,00



# Explore the information

The screenshot shows the OpenRoads interactive map interface. At the top, there is a navigation bar with the OpenRoads logo, the text 'Mapa Interativo ▶ Home Page', and utility icons for 'Gosto' and 'Etiquetas e Notas'. Below this is a search bar with the placeholder 'Procurar neste site...' and an 'Atualizar Dados' button. The main map area is titled 'Mapa Interativo' and includes 'Filtros' and 'Matriz de Indicadores' options. The map displays a road network in the Lisbon region, with several road markers highlighted in red. A popup window is open over one of these markers, displaying the following information:

- Marcas Rodoviárias**
- IP7: Entrecampos - Radial de Benfica (km 8,6) (Sentido Decrescente, Eixo)
- Data Medição: 24-09-2010
- Coefficiente Retroreflexão**
- Valor: 146,00
- Valor Padrão: CoeficienteRetroreflexao > 150

The map also features a vertical scale on the left and a 'POWERED BY Google' logo at the bottom left. The bottom right corner of the map area contains the text 'Dados do mapa ©2012 Google, Tele Atlas' and the INIR logo.

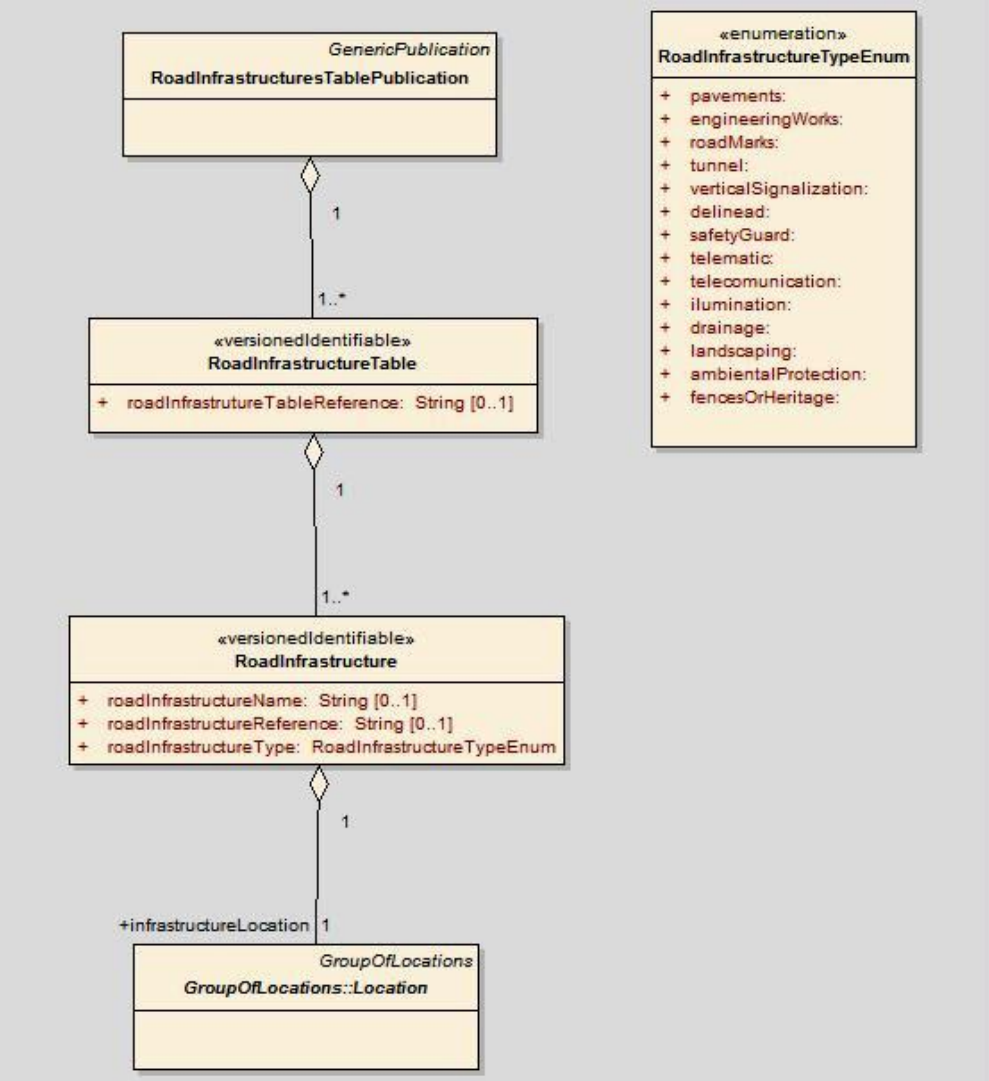
## How OpenRoads was set:

1. By defining a methodology and a Glossary of the concepts and processes
2. By adopting the DATEX II protocol for collecting information
  1. Defined a profile over Situation and Measure Publication
  2. Created new extension for infrastructure Publication
3. The road operators were linked using DATEX II
4. InIR supports its activity of supervising the concessions using the OpenRoads system

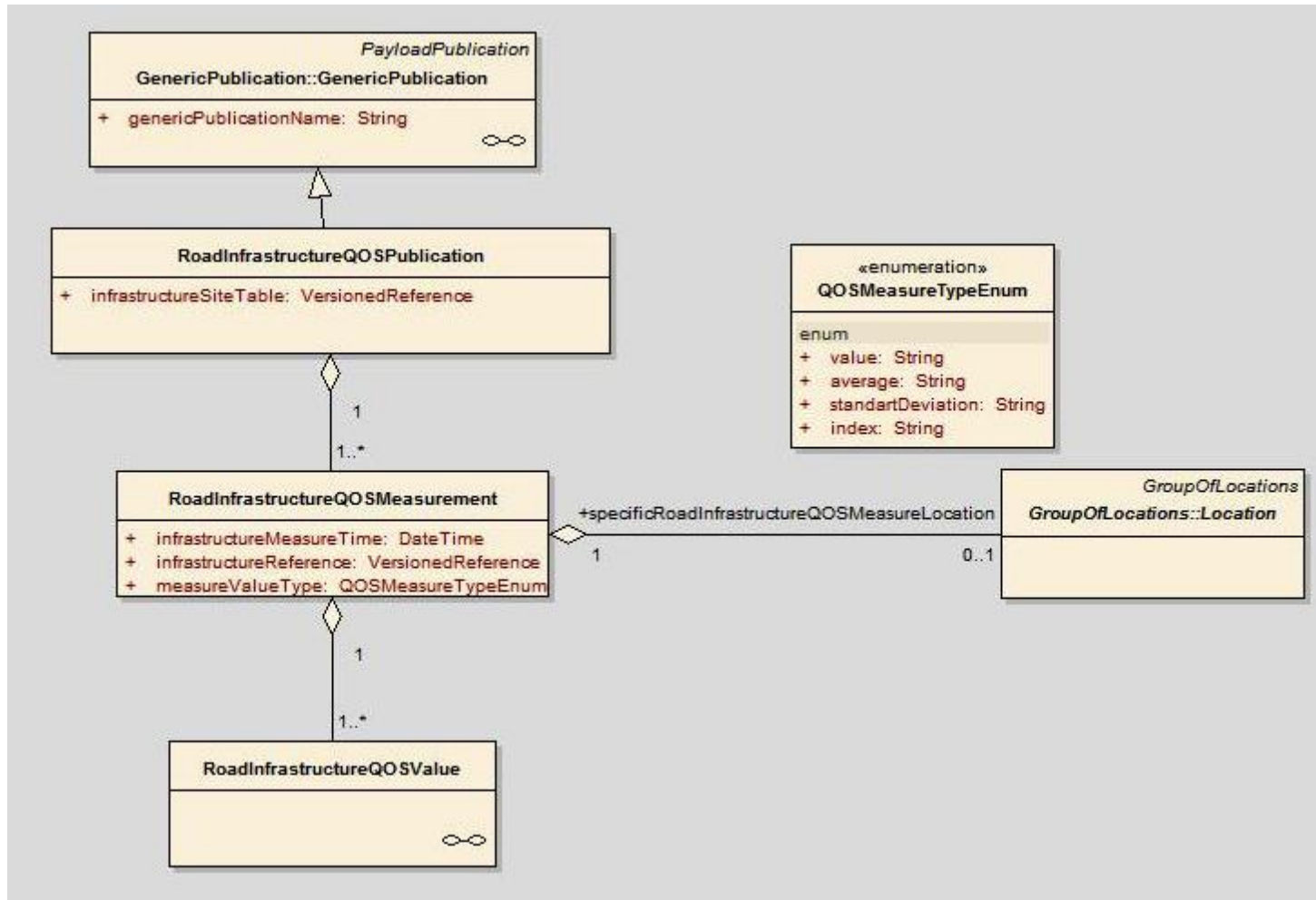
## DATEX II Infrastructure extensions *(Available on the DATEX2 Website)*

- Road Infrastructure Table Publication – Catalogue of road infrastructures
- Road Infrastructure Quality of Service Publication – Measures of QoS for the infrastructure catalogue

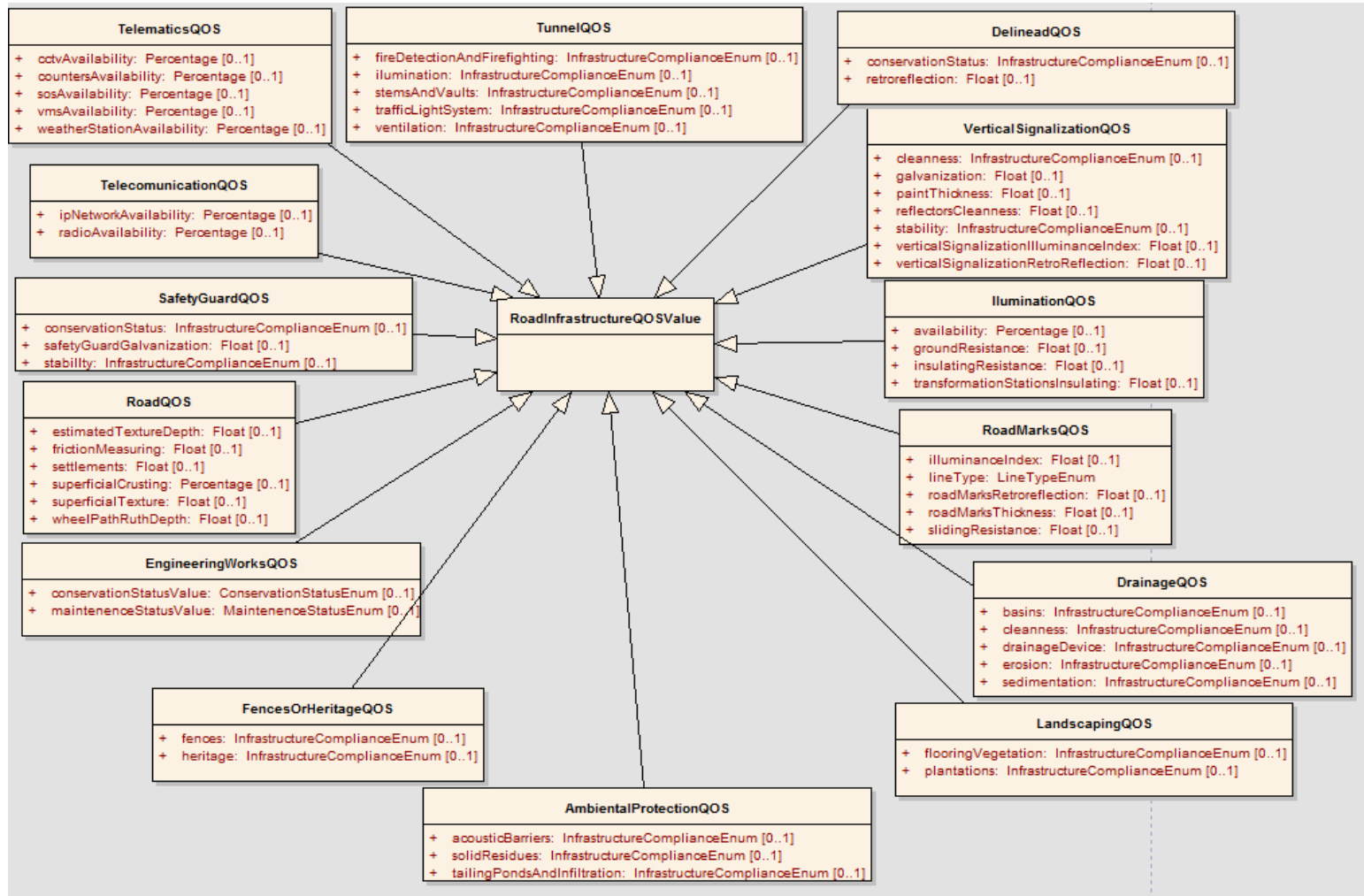
# Road Infrastructure Table Publication



# Road Infrastructure QoS Measure Data



# Road Infrastructure QoS Measure Data



Please, visit us at [www.inir.pt](http://www.inir.pt)



quinta-feira, 15 de Março de 2012



Thanks



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