

ANEK

ACCESSIBILITY & TRANSPORTS

Project nr 2008-1/049

duratiNet

Durable Transport Infrastructures in the Atlantic Area Network

Manuela Salta
Project Leader

European Union
European Regional Development Fund
Investing in our common future

ATLANTIC AREA
Transnational Programme

duratiNet

3rd Trans-national Workshop
Bordeaux, 21th January 2010

ANEK

Project CONTEXT

EU strategic and priority action guidelines

- ▶ European Cohesion policy and Lisbon agenda
- ▶ European transport policy (EU Decision 884/2004/CE, 29 April 2004)

Trans-European Transport Networks(TEN-T)

Interoperability of european transport Networks

- ▶ Gothenburg (Kyoto protocol) agenda
- ▶ Environmental policy (6th EAP-EU 2002-2012)

- ▶ Strategic position of Atlantic Area to east-west connections and relevance
- ▶ Relevance of AA on maritime highways
- ▶ Intermodal transportation
- ▶ Reduction of environmental impact and to improve the energetic efficiency
- ▶ Infrastructures repair /rehabilitation needs

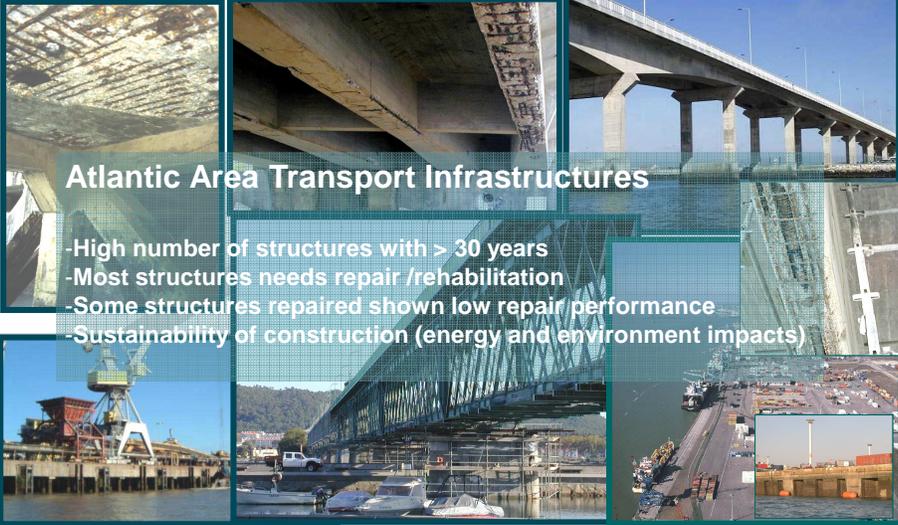
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Project CONTEXT

Atlantic Area Transport Infrastructures

- High number of structures with > 30 years
- Most structures needs repair /rehabilitation
- Some structures repaired shown low repair performance
- Sustainability of construction (energy and environment impacts)



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DURATINET PROJECT

The main goal of the project is to create the network of excellence DURATINET

- to facilitate an efficient exchange and transfer of knowledge on maintenance of concrete and steel structures and new improvements on inspection and repairing
- > to promote the durability, safety and sustainability of transport infrastructures in the **Atlantic Area**,

turning these regions more attractive to live in, to work and for competitive business

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PRIORITY 3. Improve the accessibility and internal links

OBJECTIVE 1. promote the interoperability between different transportation

ACCESSIBILITY & TRANSPORTS

Project data:

5 Countries PT,SP,FR,IR,UK
17 Partners

TOTAL PROJECT COST- 2. 570 M€
TOTAL ELLIGIBLE COST-2. 480 M€
ERDF FUND (65%) -1. 612 M€

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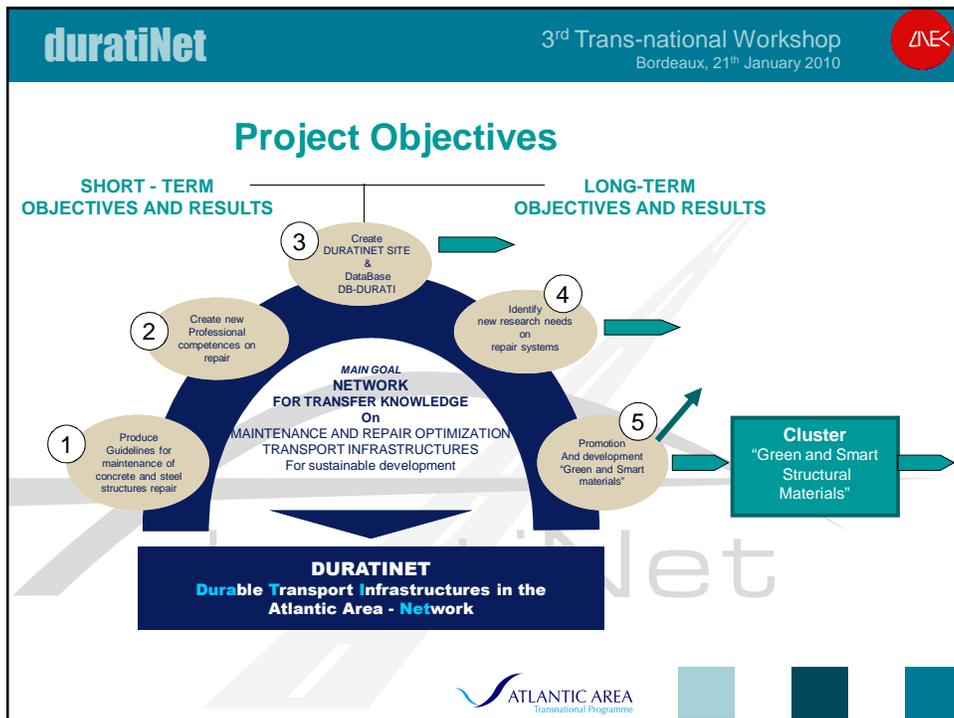
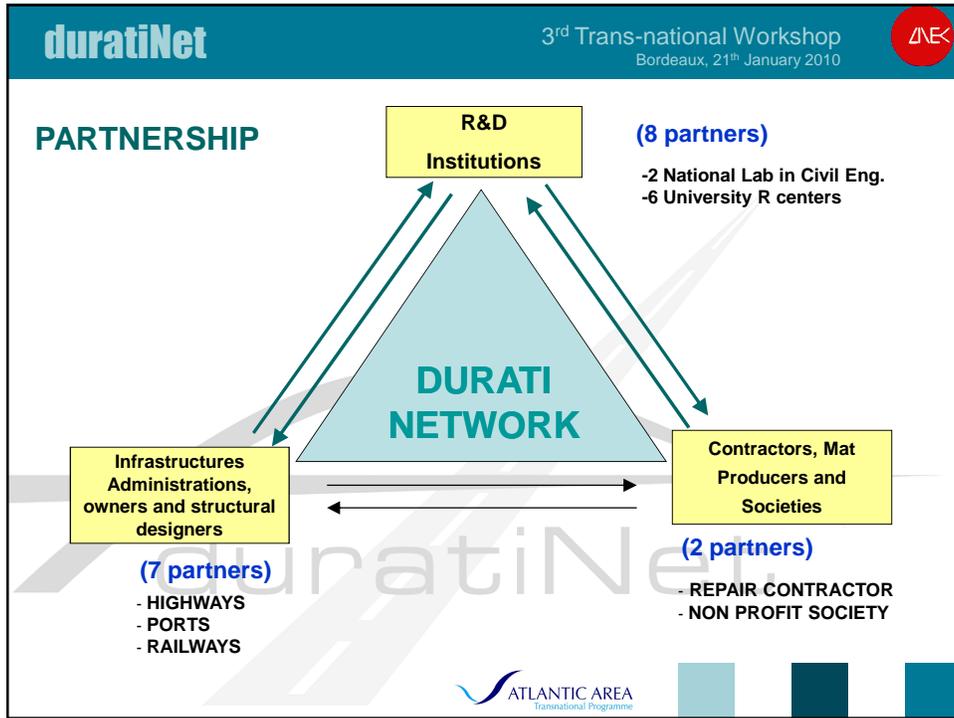
PARTNERSHIP

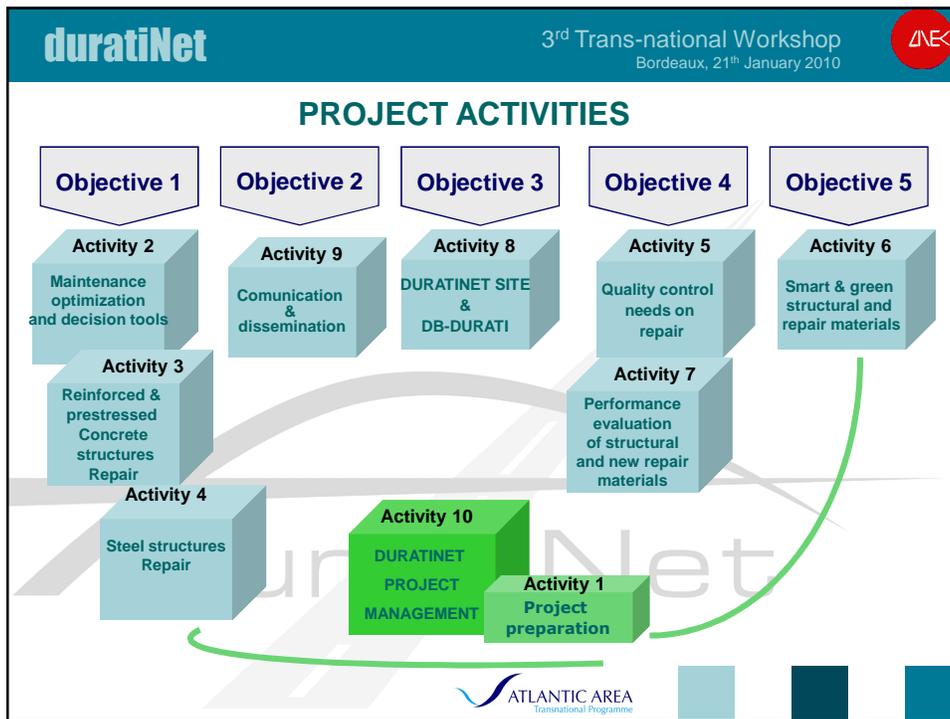
17 Partners

Portugal (6)
Spain (3)
France (5)
Ireland (2)
United Kingdom (1)

TCD
NRA
 QUB
 LCPC
NANTES U
La Rochele U
CG17
Bordeaux U
 VIGO Univ.
Xunta Galiza
PV
 LNEC
EP
REFER
BEL
APL
FUNDICIC

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ACTIVITY 2

Maintenance optimization and decision tools

- Requirements for maintenance and repairs optimization
- Methodologies to support repair decisions

End-product

- ✓ Web version
- ✓ Printed version

Guidelines
Structures
Maintenance
Optimization

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Activity 3

Reinforced and prestressed concrete structures maintenance/repair

- Durability requirements
- Types and degradation mechanisms
- Inspection and diagnosis
- Prevention and service life modelling
- Repair techniques and
- Performance/cost/environmental impact

End-product

- ✓ Web version
- ✓ Printed version



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ACTIVITY 4

Steel structures maintenance

- Durability requirements
- Damage mechanisms of steel
- Inspection and diagnosis, NDT
- Protection/ repairing

End-product

- ✓ Web version
- ✓ Printed version

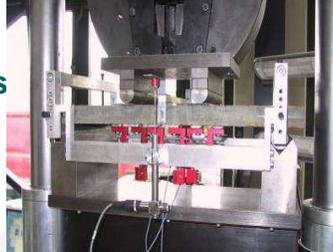
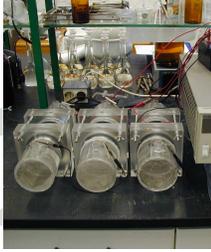


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ACTIVITY 5

Quality control needs on repair systems

- Implications of harmonized standards on quality control at level of the contractors
- Implications of harmonized standards on quality control at level of materials producers



End-product:
Technical report

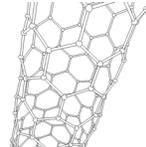
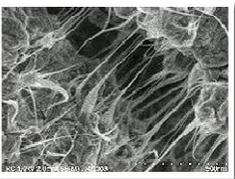


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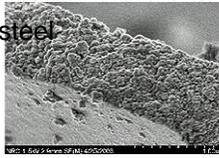
ACTIVITY 6

Smart & green structural and repair materials

- Concrete with mineral by-products and recycled aggregates
- Water solvents based coatings for steel protection
- Cement with nano particles and nanofibers (Carbon nanotubes)
- Nanomaterials coatings with specific performance properties, easy to clean/Self cleaning and nanoproducts for protection of porous materials
- FRP in new structures and in repairing

CARBON NANOTUBES FILLING THE CRACKS IN A CEMENTING COMPOSITE



CEMENTING NANOPARTICLES OBTAINED BY THE TECHNIQUES OF "SOFT CHEMISTRY"



NANOLAYERS OF CALCIUM ALUMINATE



End-product:
State -of -the- art Reports



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ACTIVITY 6

➤ On-line Monitoring wireless systems

SMART STRUCTURES



End-product:

- ❑ State-of-the-art reports on sensors development

Wireless sensor network
Wireless data transmission

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ACTIVITY 7

Performance evaluation of structural and new repair materials

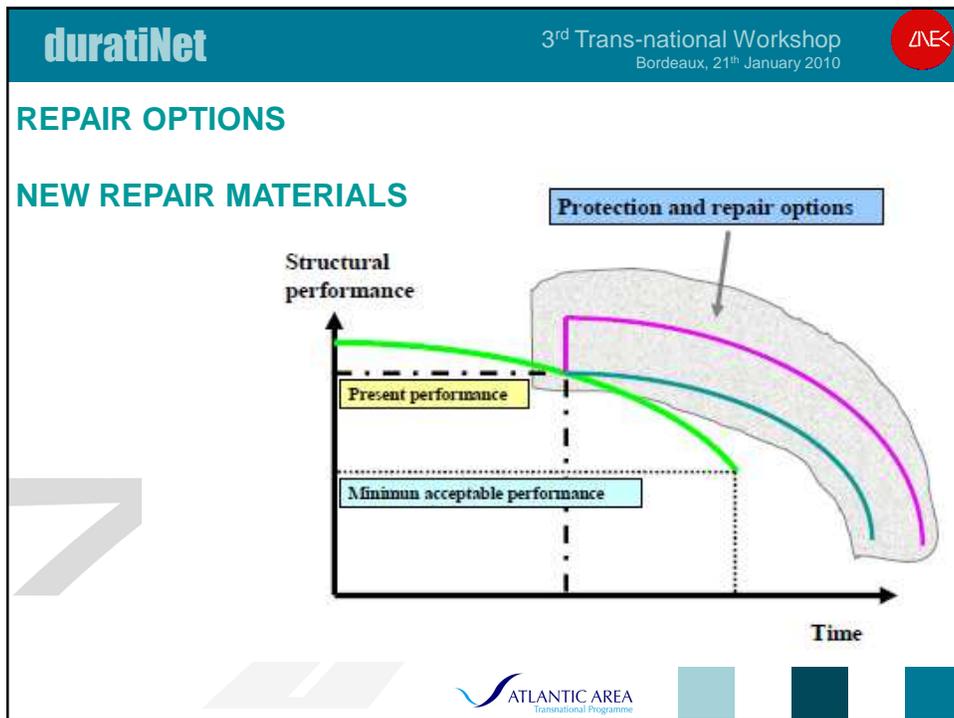
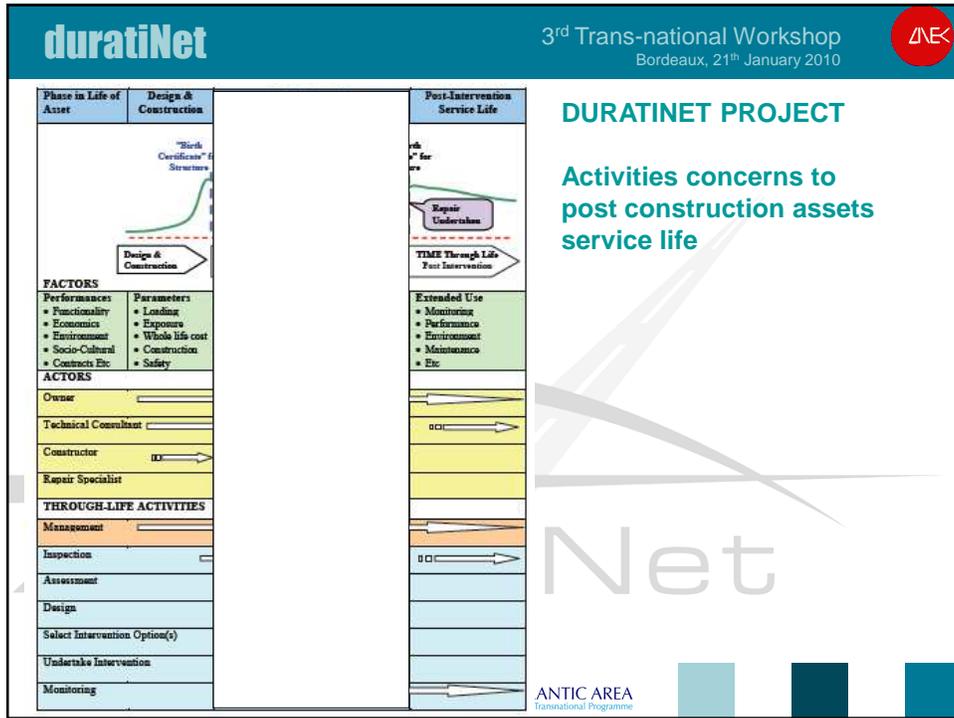
- ❖ In situ application of new repair products and systems
- ❖ Collecting materials data from natural exposure to fill dB-DURATI

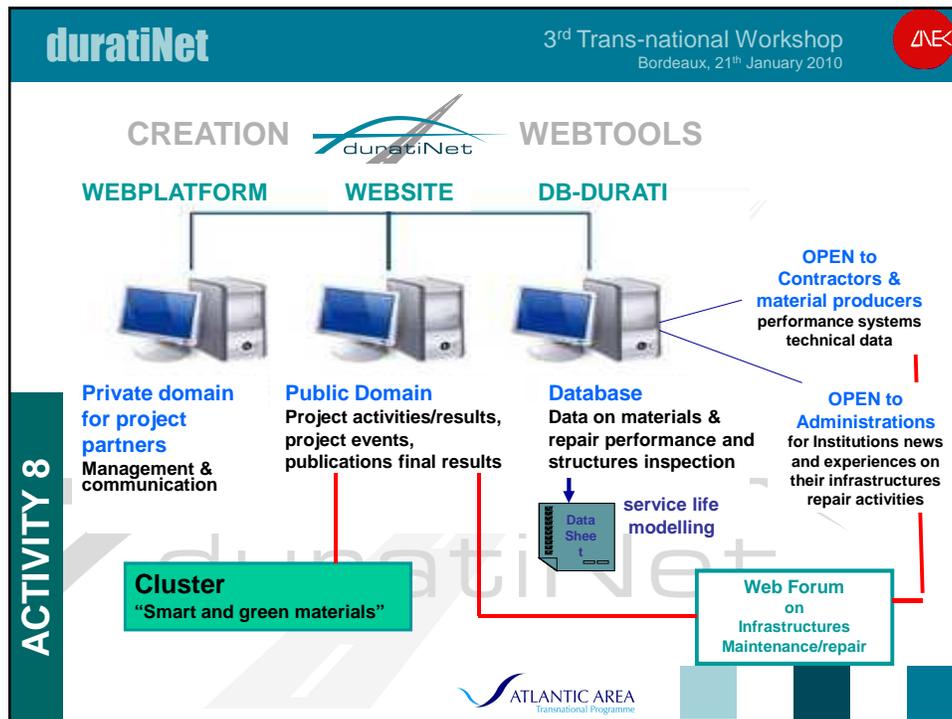


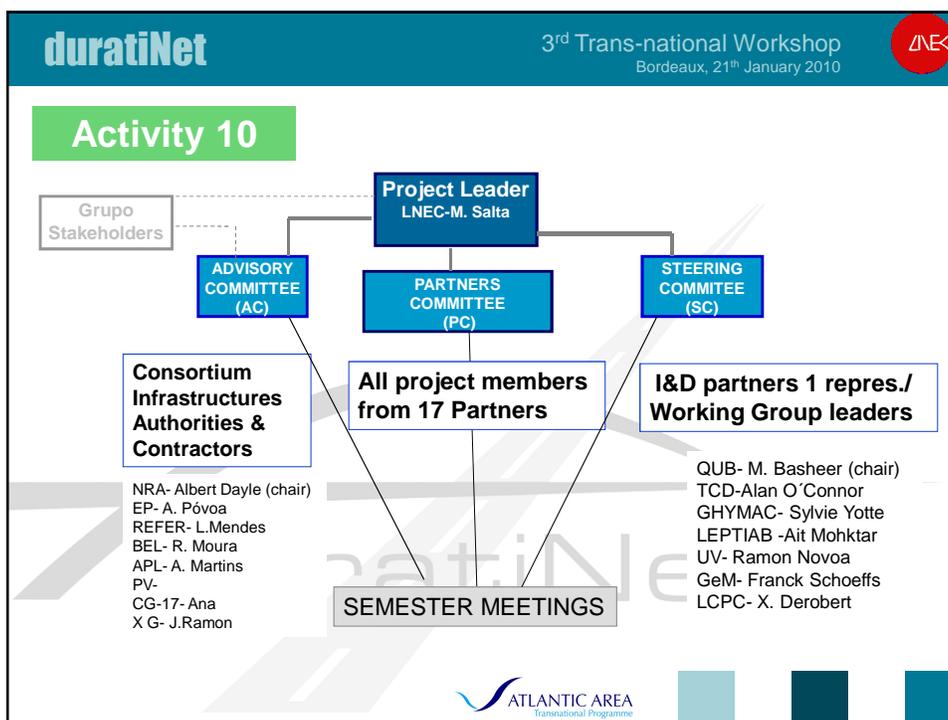
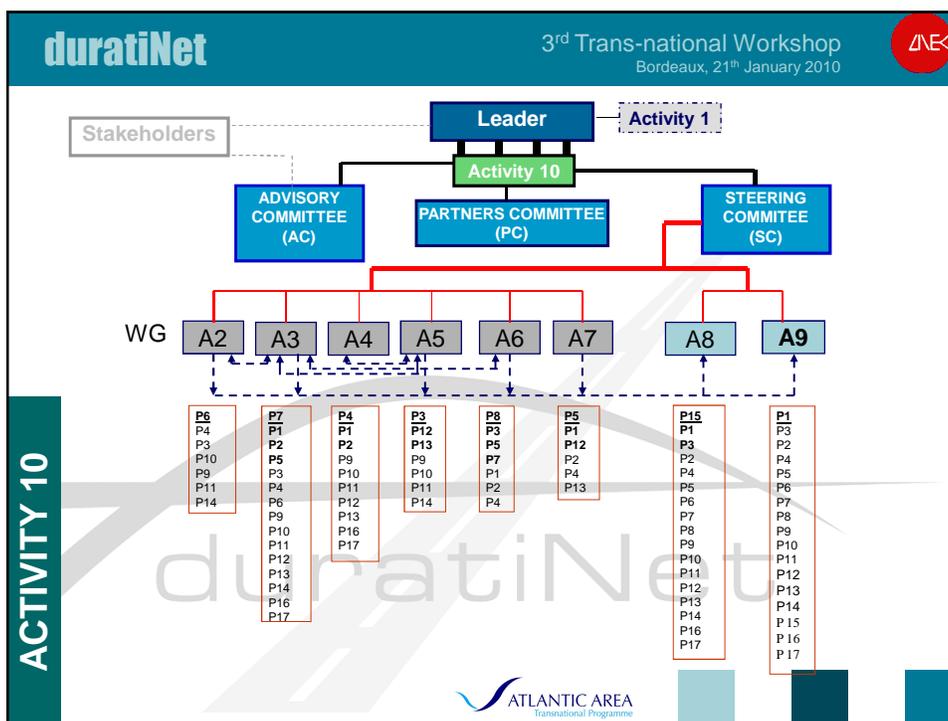
Portugal- Port of Peniche

Portugal: Cabo Raso France - La Rochelle

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PROJECT RESULTS
> DIFFERENT KIND OF PUBLICATIONS

SMART & GREEN
STRUCTURAL REPAIR
MATERIALS
STATE-OF-THE-ART

Transport
Infrastructures
Maintenance & Repair
CONCRETE & STEEL
Guidelines Manual

Web version
CONCRETE & STEEL
Guidelines Manual

Technical
REPORTS

Newsletters
01
02
03
.....

Flyers
Posters

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PROGRESS MADE ON PROJECT : YEAR 1 (2009)

1- WG ACTIVITIES

I) CREATION OF THE WEBSITE FOR EXTERNAL DISSEMINATION OF PROJECT

II) CREATION OF A WEBPLATFORM FOR INTERNAL COLLABORATION AND EXCHANGE OF INFORMATION

III) THE FIRST DRAFT OF GUIDELINES ON REPAIR OF STEEL AND CONCRETE STRUCTURES
 → WILL BE READY 1ST SEMESTER 2010

2- DISSEMINATION ACTIONS

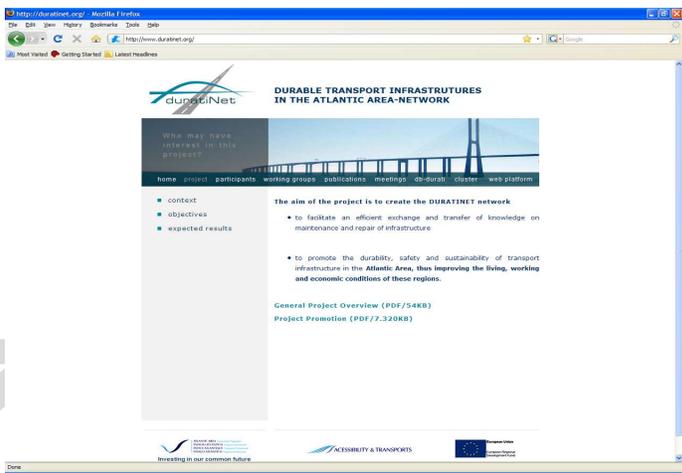
I) 2 TRANS-NATIONAL WORKSHOPS: LISBON AND BELFAST

II) 3 NPROJECT NEWSLETTERS

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DURATINET WEBSITE



The screenshot shows a web browser window displaying the duratiNet website. The page title is "DURABLE TRANSPORT INFRASTRUCTURES IN THE ATLANTIC AREA-NETWORK". The website features a navigation menu with links for home, project, participants, working groups, publications, meetings, de-durati, cluster, and web platform. The main content area lists objectives and provides links for a "General Project Overview (PDF/54KB)" and "Project Promotion (PDF/7.320KB)". Logos for the Atlantic Area Transnational Programme and the European Union are visible at the bottom of the browser window.

IN ENGLISH, PORTUGUESE, FRENCH, SPANISH

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Guidelines manuals on repair will have a Web VERSION



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