



GENERAL PROJECT OVERVIEW

In European regions with large coast areas, the deterioration of concrete and metallic infrastructure not only affects the productivity of the society, but can also have a great impact on resources, environment and human safety. The poor condition and uncontrolled deterioration of materials, together with the need for maintenance and repair of this infrastructure, consume a great amount of energy and natural resources and are creating a heavy environmental burden with the production of large quantities of waste. Much of the transport infrastructure in the Atlantic Area is over 50 years old and many structures are in a severely deteriorated condition due to the high aggressiveness of marine environments. The increasing quantity of repair and maintenance required for transport infrastructure impacts not only on technical performance and economy, but also on the environment and on the sustainability of the transport system generally.

The main goal of the DURATINET project is to create a **network of excellence to facilitate an efficient exchange and transfer of knowledge and to promote the durability, safety and sustainability of transport infrastructure in the Atlantic Area**. The achievement of this goal will contribute to the Lisbon strategy of increasing competitiveness and employment and will make these regions more attractive as places to live, work and carry out competitive business. Specific objectives, both **short-term** and **long-term**, can be defined in the trans-national context. The **short-term objectives**, to be accomplished within the three-year project duration, will focus on the **development of a work plan geared towards the application of optimised maintenance methodologies** for existing transport infrastructure in the Atlantic Area, using durable and more environmentally friendly repair materials and systems. The **long-term objectives** include the creation of an **Atlantic Area Cluster for the development of “Green and Smart Materials”** with applications to transport infrastructure, **the development of a DURATI web-platform** to promote more durable transport infrastructure, and on the **improvement of a database** for the benchmarking of service life models for structural materials. The database will initially be based on existing information provided by several DURATINET partners and project stakeholders, and from the MEDACHS project: the database will later be open to all interested end-users.

The project will benefit from the wide range of expertise and complementary skills of the various partners in the partnership and will include a comprehensive review of existing knowledge on the repair and rehabilitation of structures, and identification of the best practices supporting the management of ageing concrete and metallic transport infrastructure. The reduction of environmental impact by utilising “greener” materials or procedures according to the demands of the open market and the Construction Product Directives (CPD) will be analysed. Methodologies for optimising the life cycle of structural materials will be also considered. Particular consideration will be given to the harmonised European Standards recently developed in these areas and to the priority and strategic objectives of the European policy for 2007-2013 towards European cohesion, according to Lisbon and Gothenburg Agendas. Due account will also be taken of the need to meet EU commitments on greenhouse gas emissions as per the Kyoto Protocol. Within these constraints, guidelines for the optimisation of infrastructure maintenance and repair will be prepared.

Following this review, it will be possible to develop synergies to enable the identification of new research requirements in the field of transport infrastructure repair taking into consideration the specific needs of the Atlantic Area. This will help the National Authorities in the Atlantic Region to develop a more co-ordinated research strategy and encourage cooperation participation in different European R&D programmes.



The project objectives have been defined in the trans-national context, with a view to improving both the durability and the optimisation of maintenance methodologies applicable to the transport infrastructure in the Atlantic Area. These objectives will stimulate the cooperation between the different stakeholders, as well as encourage the development of new R&D fields leading to more sustainable construction and maintenance.

The five defined objectives are:

- To produce guidelines on the durability requirements of concrete and steel infrastructure, the inspection and diagnosis of damage, the repair of materials and on methodologies for optimising maintenance.
- To create new competences in infrastructure design, construction and management through the creation of knowledge dissemination actions and the organisation of courses and workshops for owners, managers, contractors and repair materials producers.
- To stimulate the application of harmonised European standards for repair and to identify the requirement for applied research, in particular research topics concerning the quality control of new repair products and the rehabilitation processes resulting from their application.
- To promote the development and use of “green and smart” structural materials and repair products incorporating recycled materials and by-products, with reduced energy needs during production and application and with increased long-life performance without being hazardous for application technicians or users. This will be facilitated through the creation of a new Atlantic Area Cluster.
- To create DURATINET web-tools (the DURATINET website and the DB-DURATI database) to facilitate the exchange of information within the project and with the wider technical and scientific community. The web-platform will help to generate and disseminate knowledge on the performance of materials, on the diagnosis of damage, on service life prediction and on the ageing of repair materials. A database (DB-DURATI) will be created to store information on the performance of materials from real structures. This information will be very useful for the benchmarking of service life models and for aiding decision-making relating to the selection of reliable structural maintenance and repair strategies in marine environments.

The activities of dissemination are a key feature of the DURATINET project and are carried out throughout the duration of the project. The communication strategy is based on two principles: disclosure to the entire Atlantic Area (the top priority for the DURATINET project) and wider dissemination to the international community (essential for the success of the DURATINET). The dissemination activities within DURATINET conform to the rules of cooperation defined in the consortium agreement and are considered in two strands as follows:

Strand A - This strand addresses the transmission of systematic knowledge in the project to potential users of the Atlantic Area (infrastructure managers, repair companies, material producers, consultants and researchers). The primary goal is to provide information on the ongoing activities of the project, collect contributions and ideas from the different stakeholders, supply systematic new knowledge and clarify and provide training on these issues.

Strand B - This strand establishes international exchange activities to encourage the debate of ideas and research results with the international scientific community in all the technical areas covered by the DURATINET project. The communication activities to be conducted in this strand will be developed to attract a critical mass to create the DURATI Atlantic Area Cluster on “Green and Smart Materials”. The aim of this cluster is to promote and further develop structural materials and intelligent repair systems which are



sustainable and environmentally friendly. This cluster is expected to provide the means to ensure the continuation of the DURATINET objectives after the project conclusion.

As part of Strand A, the following communication strategies will be developed:

1. Web tools: the focus will be on the DURATINET project website where the database on materials performance and the internal web-platform will be installed. The consortium places high enormous importance on the development of this website as a means of communicating project results and particular care will be taken to ensure that it is always fully up-to-date.
2. Periodical meetings (at minimum 2 times year): these meetings will encourage contact with the infrastructure owners, managers, contractors and repair materials producers in the different EU regions.
3. Newsletters: these six-monthly newsletters will contain information about the DURATINET project and will be prepared and distributed to the list of project stakeholders and all other parties interested in the project. The distribution list will be developed from data provided by different partners on parties in the Atlantic Area that have an interest in the management of transport infrastructure. The website will contain an online membership form for the admission of new stakeholders.

In Strand B the most relevant activities are:

1. Participation in meetings and conferences organised by other entities to present the project activities and results that are of technical interest for the entire scientific community.
2. Organisation of an international meeting DURATI.
3. To promote the dissemination of the DURATINET research through related professional associations.

Potential end-users that may be interested in this project include: road and rail administration authorities, managers of transport infrastructure, structural designers, engineers working in maintenance and repair, contractors, inspection bodies and companies, material suppliers and researchers in material durability.

All interested parties are encouraged to become stakeholders in DURATINET. All that is required is an interest in the project: no fees are required. Stakeholders will be placed on a preferential e-mail list and will be kept informed of the project activities through the six-monthly newsletter and information about relevant events. Stakeholders will also have access to all of the research results including the DB-DURATI database which will provide the opportunity improve their work practices in the area of infrastructure management and repair.