PROJECT CONTEXT

The development of a Common Transport Policy is crucial for the continued economic growth of the European economy. However, it is also recognised that transport has a significant negative environmental impact. Approximately 30% of EU energy consumption is attributed to transport and 99% of this energy is derived from fossil fuel which is the biggest contribution to carbon dioxide in the atmosphere. In 2001, the European Union, in its white paper entitled “European transport policy for 2010”, devised a strategy to promote the development of mixed transportation networks, so as to reduce the environmental impact and to improve energy efficiency in this field, thus complying with the Kyoto protocol.

Even though the environmental impact of transport is more directly related to the energy consumed by vehicles, it is also associated with other factors depending on the physical and economic sustainability of the construction and maintenance of the infrastructure. This is very dependent on the choices made during construction and in the repair of existing infrastructure. The sustainability of infrastructure must be carefully considered, even during design and construction, so that service life is maximised and maintenance requirements are minimised.

It is inevitable that the implementation of a Common Transport Policy will lead to the construction of new transportation infrastructure for railways, motorways and ports as well as the modernisation of existing infrastructure as it adapts to become part of an integrated transport system. The implementation of this policy has particular relevance to the Atlantic Area due to its strategic position as regards the east-west maritime connections. Various priority projects of the trans-European Transport (TEN-T) network will be implemented in this area. The development of maritime transportation and the creation of sea motorways will require major investment in both infrastructure and in the logistics related with maritime transport. The investment associated with the development of maritime motorways will be utilised mainly in the repair and rehabilitation of existing infrastructure and in the expansion of the existing harbour infrastructure so as to adapt them to new road and railway systems required to improve the connections between road, rail and ports.

The development of new infrastructure projects is associated with significant investment, but, very often, decisions are based solely on the minimisation of initial construction costs with little regard taken of the ongoing management and repair costs. The false economy of this approach is well illustrated by the often-quoted De Sitter’s “law of fives” which states (paraphrased from Concrete: Building pathology, by S Macdonald, Wiley-Blackwell, 2002):

> *Every €1 spent designing and constructing a building effectively is as effective as €5 spent in subsequent preventative maintenance before corrosion starts, €25 spent in repair and maintenance after local corrosion has started, and €125 spent when the corrosion has become widespread and major repairs are necessary.*

This economic and relevant issue is the focus of the DURATINET project. Promoting the transfer of knowledge within the framework of the durability of transport infrastructure is a pioneering trans-national initiative that will encourage the adoption of joint strategies of preventing deterioration and optimising maintenance and repair/rehabilitation activities.

The project involves the creation of a knowledge network that will mobilise creative thinking and co-operation between the R&D centres, infrastructure owners and managers, repair contractors and companies developing repair products and systems. The network will focus attention on the specific problems derived from the emergent needs of the quality control of products and repair systems for the transport infrastructure.

By contributing to the improvement of the efficiency and the serviceability of repair systems and to the reduction in maintenance costs, the project will help to reduce the disadvantage of the Atlantic Area and improve the competitiveness of these regions, thus representing also a valued contribution to the cohesive development of the European Union.

Establishing links between the R&D centres, infrastructure owners and managers, repair contractors and product-development companies will encourage the development of SME skills. Consequently, it will also be a factor in the creation of new repair systems and for promoting employment. Indeed, the project, by promoting the transfer of knowledge and encouraging new repair techniques, will contribute to the development of SMEs in the Atlantic Area and will assist

in the creation of employment, which is one aspect that also meets the strategic vision of the renewed Lisbon agenda.
As regards the integration of the DURATINET objectives into national policies aimed at implementing the strategic guidelines of the EU national technological plan, the project will build on the experience gained from recently completed MEDACHS project of the Interrreg III B programme, and from other EU-funded projects such as ARCHES and MAREO. It will also benefit from the experience gained from completed EU projects such as CONREP, NORECOM, CONLIFE and DURACRETE and also from Portuguese projects SCORBA and EXREACT. Many of the DURATINET partners were heavily involved in these projects.
The project will provide a major contribution to the EU strategy for sustainable development in its approach to the use of preventive measures for the deterioration of structures and to the optimisation of repair, not only with a view to reducing maintenance costs but also to promoting the application of rehabilitation methodologies, which are usually less commonly used, but being, in many cases, more efficient than those implying unnecessary demolition (total or partial). It also takes into account the need for restricting the use of repair products that have negative impacts on the environment. For example, potential air and water pollution can be reduced by promoting the use of water-based surface coatings on metallic and concrete structures as an alternative to organic-based materials which often lead to significant environmental damage. In this way, the project represents a significant contribution to environmental sustainability, in line with EU environmental policy.

In summary, the project will contribute to the increased serviceability and efficiency of transport infrastructure by promoting the application of measures intended to minimising deterioration in the first instance and optimising repair and rehabilitation when required. It will thus make a valuable contribution to the environment and to sustainable development, in accordance with the Gothenburg Agenda and Kyoto protocol.