

1.- Introduction

The University of Cantabria (UC) is a young, modern state institution, whose principal aim is to offer society the very best service possible. This concern has led to the UC being firmly committed to quality in its work, a commitment put into practice via a process of constant review and improvement of all its teaching, research and administrative activities. This constant demand for quality means that the UC is now considered one of the ten best universities in Spain with regards to quality and scientific productivity.

Within the 31 departments of the University of Cantabria there are more than 100 research groups, whose research activities cover the most varied aspects of the sciences and arts, and in the fields of both fundamental and applied research. Society is thus able to find on the campus a broad scientific and technological offer supported by the high standard and international recognition of its researchers.

UC collaborates closely and on a permanent basis with enterprises, government and institutions in order to develop projects and studies of many different kinds, all of which require a high degree of specialisation and competence.

UC has also been involved in European Programmes from the beginning of these actions. With an overall of 1,098 researchers, 28 % of them women, UC has leading research groups in areas as:

- Information Society Technologies:
 - Microelectronics Engineering,
 - Group in Telematics Engineering,
 - Group in Microwaves,
 - Group in Computers and Real time,
 - Group in Photon Engineering,
 - Group in Algebra and Computational Geometry.
- Life sciences, genomics and biotechnology for health
 - Group in Psychiatry,
 - Group in Microbiology and Genetics.
- Sustainable development, global change and ecosystems
 - Group in Ocean Engineering and Coasts
 - Group in Engineering of Materials Laboratory.
 - Group in Environmental Artificial Intelligence.
- Nanotechnologies and nanosciences, knowledge-based multifunctional materials, and new production processes and devices.
 - Group in Advanced Separation Processes.
 - Group in Development of Chemical Processes and Pollutants Control.

- Applied Physics:
 - Group in Thermodynamics and Statistical Physics.

University of Cantabria has participated in 27 European Projects in the Fifth European Framework Programme 1998-2002 (FP5), coordinating one of this projects. Also, UC has been involved in 20 FP6 projects in different thematic areas. We are also coordinating both of these actions: a Marie Curie Excellence Chair and a Specific research Project in the Information Society Technologies thematic area.

The University of Cantabria also are participating in other European Programmes as PHEA, RFCS, e-contentplus, etc.

2.- Main projects

The research group led by Professor Miguel Angel Pesquera within the Department of Transport, Technology and Processes University of Cantabria, has been working for years in application of information technology and communications environment and knowledge management in recent times in network applications of knowledge for the development of systems efficient transport.

The experience of many projects in the field of ICT applied to the management of knowledge, experience also provide practice, a strategic vision of how to achieve the project objectives.

The different members of the research group led by Miguel Angel Pesquera are currently developing several projects features close to the proposal, but in other areas, among which are:

- *TRANSMODALBOTS Project*. This is an ERDF-funded project, where Miguel Angel Rodriguez Pesquera served as Principal Investigator. This project involved the creation of system software agents or bots, to automate the task of tracking and surveillance technology in transport and logistics. As a spin-off of this project was created signature TransmodalBots SL that continues to operate at the moment with the technology developed in that project. The research group collaborates with the

signing UC Transmodlabots SL as an advisory group to the launch of new products and services.

- *“RFID system for the management of people, luggage and package”* project, approved by the 1st Industrial Cooperation in Cantabria Official Announcement, under the framework of the Regional R&D Plan, in collaboration with de Companies ALSA and PINDIATEC (2008-2012).
- *“EcoModalUmlandPort”* project, published by the Spanish Official State Bulletin (BOE) the 5th of January of 2009, under the official announcement of Sustainable Mobility and Modal Change in Transport National Subprogram (2008-2011).
- *“CoModalWeb 2.0”* project, published by the Spanish Official State Bulletin (BOE) the 5th of January of 2009, under the official announcement of National Program for the Public/Private Cooperation, which belongs to the Transport and Infrastructure projects (2008-2011).
- *“Marnis”* project, which is a project under the European Commission VI Framework Programme (2004-2008), acting CONCEPTUAL as a subcontractor of one the partners, the Company PORTEL, which provides telematics services to the Spanish ports.
- *“Skema”* project, (Sustainable Knowledge Platform for the European Maritime and Logistics Industry, 2008-2009), which is a project under the VII Framework Programme funded by the DGTREN, acting CONCEPTUAL as a subcontractor of one the partners, the Company PORTEL.
- *“Comillas Community”* project, for the development of a knowledge social networks as a web 2.0, ordered by Fundación Comillas (2008-2009).
- *“UIMP 2.0”* project, for the development of a knowledge social network of the International University Menendez Pelayo (2008-2009).
- *“SILE”* project, (Efficient Logistic System In and Out of Ports), approved by the 2nd Industrial Cooperation in Cantabria Official Announcement, under the framework of the Regional R&D Plan, in collaboration with de Company GLOBAL STEEL WIRE (2009-2010).

3.- Second Use Area Workshop Position

Department of Logistics and Transport is focused on Innovative Internet functionality and technologies, as context awareness techniques, semantics, network management optimization, sensor networks and advanced real time processing capabilities handling huge volume of data, and application in two usage areas:

Smart Energy Grid

The power grid of the future will be characterized by decentralized energy generation and storage. The Smart Energy Grid will thrive on an integration of the physical architecture of energy generation, provisioning and consumption with a concurrent open and shared ICT architecture. Conceptual KLT contribution is included in high-level software infrastructures activities, in terms of stability, efficiency, modularity and openness. In fact, Conceptual KLT is interested in the European e-Energy Market, in the residential end-users (prosumers) and all chosen energy sources (especially renewable ones) and storages.

Transport, Mobility and Logistics

Among the numerous challenges to be highlighted in the future of smart cities, the transportation area is probably the major one. In this area, Conceptual KLT can contribute in services as systems to make decision about future transportation infrastructures, easy-to-use multimodality transportation networks, on demand public transportation services, and efficient multimodal transport solution.

University of Cantabria with Conceptual KLT proposal can contribute to develop a Pan-European Global Mobility guidance system (multimodal aggregated databases with single access point for Public Transportation Schedules with real-time traffic updates). We are interested as well in Intermodal Traffic Management and Intermodality for Goods Transportation (open and interoperable infrastructure for seamless pan-European "track & trace" services contributing to the Intelligent Cargo vision related to transport ecosystem)