THE CENIT- CDTEAM PROJECT

Manuel Desco.

Hospital General Universitario Gregorio Marañón

The main goal of the Project is to create a cooperation platform between industrial companies and research groups in order to facilitate the technology transfer from clinical or basic research to the industry involved in health technologies, particularly in medical imaging. Fifteen industrial companies and seventeen research centers located all over Spain are involved, under the coordination of SUINSA Medical Systems, one of the Spanish leaders in medical imaging equipment manufacturing.

The consortium is organized into two main strategic lines: the first one is devoted to the development of support technologies for molecular medicine, namely the design and development of molecular imaging equipment, the development of tracers and the identification of biological targets. The second line deals with personalized diagnosis and therapeutic planning based on the exploitation of modern multimodality imaging techniques.

One specific aim of the first line is the development and industrialization of cutting-edge technologies for small-animal imaging (PET, SPECT, CT and their multimodal combinations), which are showing increasing interest in molecular biology research and drug development. Other goals in this line are the development, refinement and testing of molecular probes and the validation on animal models of the usefulness of all the technology developed. Finally, the project will explore the possibility of designing systems for human use. These systems will not address the area of whole body scanners, a market segment well covered by the big multinationals; instead it will focus on dedicated equipment (brain, breast, etc.).

The second line is oriented to better exploit all the potential of the modern imaging systems (MRI, spiral CT, PET, etc.) in two specific medical applications, selected because of the existence of minimally invasive therapies which are excellent candidates to benefit from a personalized therapy planning: cardiac resynchronization and treatment of brain aneurisms by embolization. In both cases, the rationale is to combine the complementary information provided by different imaging techniques together with suitable mathematical models that will enable the simulation of the therapy results in a personalized environment, thus tuning the therapeutic approach to each particular case.