

Romanian Technological Network for integration in the European Platform for NANOElectronics (ENIAC)

Abstract

RTN-NANOEL (Romanian Technological Network for integration in the European Platform for NOElectronics, ENIAC) is a proposal devoted to a technological network with 10 partners (universities and research institutes - some of them being involved in PC6). The network activities are: research, technological and scientific services, training, dissemination and technological transfer in the field of nanoelectronics. According to the Strategic Research Agenda of the **European Technological Platform (ETP)** of Nanoelectronics, ENIAC (November 2005), R&D activities of the Romanian network are focused on **RF components** (radio frequency) and **micro-fluidics**, mentioned in the "ENIAC agenda", domain where we already have experience in working with foreign companies (through European Projects) and we can also take in consideration technological transfer. Research activities are planned in the following domains: **new electronic nanodevices, new materials and technological processes, new architectures** of the electronic systems. The network will also provide experimental technological services (nanostructuring and nanolithography) as well as **computer-aided design and simulation**. Most of these services will be provided by the coordinator (IMT), and its main partner (UPB): they have experience and facilities provided by the collaboration with the European services in microelectronics and microsystems. The network partners will have access to a "clean room" with a number of new equipments (including nanolithography), and also to software packages for simulation and design, at the highest international level. The partners and other customers, as well, can access (with IMT assistance) the EUROPRACTICE services in micro-nanosystems and in microelectronics. The new services will be offered by the consortium through the new infrastructures for innovation and technologic transfer in micro- and nanotechnologies, which are managed by the IMT and UPB, and, also, by the Romanian-German Centre for micro and nanotechnologies (IMT, GTZ). Finally the network will assure dissemination of information, training and partnership, especially for FP7 and ETP ENIAC.

Partners

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Objectives

The main goal of the project is to design a technological network in order to promote scientifically and technological Romanian community integration into the Nanoelectronics European Platform. The nanoelectronics domain is part of new technologies, with revolutionary character mentioned in CEEX Program.

The network which make the object of this proposal will contribute to the integration in Nanoelectronics ETP (ENIAC) by: a) developing common research in certain thematic areas from ENIAC agenda with some support of external collaborations; b) creating an experimental facilities and software system which will be used in common by all network partners, and also to enlarge the offer area for participating to the European projects; c) creating and diversifying a technological services system and a technological offer of the network; d) human resources training and formation; e) developing of a critical mass of human and material resources by collaboration with other consortia financed by national and European funds, and direct support for participation to Nanoelectronics ETP.

a) **The first RTN-NANOEL objective is to finance a pilot projects with new, explorer character (small size projects -miniprojects)**, in domains in which the Romanian researchers have chances to participate to the European programs.

b) **The second objective of the network is the creation of a type of network facilities infrastructure** (from the existing model in USA), the weight centre of the network being the white room from INCD-Microtechnologies (CO/P1).

c) **The third objective is the creation of a technological services system for companies (SMEs) interested in the domain.** These services are depending on actual competences and endowments of the consortia, including those connected to computer aided design. These resources are available beginning with 2006.

d) Another **objective** of this network is to ensure a significant contribution to the **development of human resources** by multidisciplinary training which results from common activity of different laboratories and also by short or medium training activities addressed to the researchers and personnel from SMEs also.

e) The development of a "human and materials resources reservoir", a critical mass and an international visibility will be based by synergy with other project and development of an "extended" network. While in the selection of the financed thematic from RTN-NANOEL was avoided overlapping with other projects thematic, the "extended" network will include associated partners and a major number of research teams from universities and institutes which are able to bring theirs direct or indirect contribution to the nanoelectronics programme. Promoting and dissemination of information but also the training will take place in this larger frame.

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