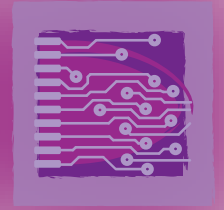




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MNT Europe: Staircase Towards European MNT Infrastructure Integration

The technologies used to make microchips are complex and often extremely expensive to set up. To ensure that European research in micro- and nanotechnology (MNT) is done as cost-effectively as possible, the MNT Europe project has brought together five top European research institutions in France, Germany, Switzerland, Belgium and Ireland. The aim was to create an alliance that allows the partners to share a common vision and technology portfolio, and to carry out new research on adding wireless communications and other technologies to chips.

● ASSURING THE FUTURE OF MICRO- AND NANOTECHNOLOGY

Micro- and nanotechnology (MNT) are hugely important to future prosperity, in an area in which European scientists and engineers have a strong position in global research. To maintain this competitiveness, the Staircase Towards European MNT Infrastructure Integration project (MNT Europe) created a distributed platform for MNT research and technology in Europe.

Much needs to be done to ensure that this is achieved. The project has set up a strategic alliance between five of the top European microelectronics and MNT research centres: the Commissariat à l'Energie Atomique in France, the Centre Suisse

d'Electronique et de Microtechnique, the Fraunhofer Institute for Reliability and Microintegration in Germany, the Inter-University Micro-Electronics Centre in Belgium and the Irish National Microelectronics Research Centre.

This strong alliance has created organisational and strategic agreements and a common technology portfolio. It also helped create a valuable exchange of people and knowledge in this complex field of science. The result was a series of research roadmaps common to all the partners. This was achieved through the project's three networking activities.

● BUILDING BETTER CHIPS

The first networking activity was geared around creating a suitable environment and legal framework to promote integration. The aim was to significantly lower the barriers to collaboration between the participants, especially by tackling legal issues and the question of how to promote collaboration in the absence of an existing personal relationship, which has traditionally underpinned such scientific tie-ups.

The second networking activity, 'Preparing Integration', aimed to build a common view of future developments. The third activity, 'Scheduling Exploitation', organised the operational phase of the alliance, dealing with issues such as global management, external collaboration and dissemination of the alliance concept.

MNT Europe also included three joint research activities that helped to create a common technology portfolio for the new alliance. These developed new functionalities for integrated circuits, as well as helping European semiconductor manufacturers make best use of new research in MNT.

The first research activity concentrated on radio communications – a very important area in today's world of wireless networking. The second focused on incorporating sensors into integrated circuits, a topic of almost limitless opportunities. The third developed new general-purpose integration blocks which make it easier to add new functions to existing integrated circuits.

● STAIRCASE TOWARDS EUROPEAN MNT INFRASTRUCTURE INTEGRATION IN SUMMARY

Project acronym: MNT Europe

Funding scheme: Integrated Infrastructures Initiative (I3)

EU financial contribution (FP6): €6 158 717

EU project officer: Jean-Emmanuel Faure

Duration: 36 months

Start date: 1 January 2005

Completion date: 31 December 2007, a one-year extension project, "MNTEE", was completed on 31 December 2008

Project webpage: <http://www.mnteurope.org/>

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Partners: CEA-LETI, France; Swiss Center for Electronics and Microtechnology (CSEM), Switzerland; Fraunhofer-Gesellschaft, Germany; IMEC, Belgium; Tyndall National Institute, Ireland