1. Publishable summary

The previous EUROPRACTICE IC Service project EUROPRACTICE IC3, part of the 6th Framework and ending on 31 December 2008, is widely recognized as a world-class service offering state-of-the-art CAD tools and technologies to universities and industry. Continuation of this project is secured through this FP 7 project and as such universities will be able to renew their annual CAD licenses and will get continued support for their research and courses and will be further stimulated to keep up with new technologies.

There is an overlap of 1 year in project timing with EUROPRACTICE IC3, but during the first year of this EUROPRACTICE IC4 project, only the activities of a new workpackage (title: Interaction with other European Service Providers) and a little part of dissemination will be carried out, while the activities on CAD and IC, MEMS technologies for universities will only be carried out in 2009 and 2010 (the period up to 31 December 2008 is covered for these activities by the previous project EUROPRACTICE IC3).

Today technologies, products and services are changing at lightning speed and markets are becoming more global. We are therefore facing enormous challenges. New ICT products are increasingly becoming more complex and development cycles must be shortened to compete with other products in the global marketplace. Complete systems in one chip (SoC) or in one package (SiP) are heterogeneous and include sensors and actuators and must be developed by multidisciplinary teams in a highly efficient and timely manner. The complexity of microelectronics based methods, CAD tools and technologies are increasing even more rapidly than before. The new technologies, such as microelectronics system-on-Chip and opto-electronics, are very complex and very expensive. A huge investment is needed, both financial and in personnel, in order to be able to adopt those technologies in new product development. This continual need for investment in new technology and trained personnel will continue to be a major challenge for the foreseeable future as for example nanotechnology and biotechnology emerge in the design arena.
The use of system level integration in new product developments will be crucial to the success of European industry in future world markets. However European industry currently suffers from a lack of trained SoC engineers.
In order to increase European competitiveness, Europe needs to master both the supply and use of these new emerging technologies.
This project is to continue and evolve the current EUROPRACTICE IC Service that offers affordable access to IC/subsystems/microsystems design tools and affordable access to IC prototyping to about 600 universities and 50 research institutes from EU member states and “extended” Europe.

The aim of this project is not only to continue the current successful service but to extend the service to easy and affordable access to microelectronics SoC/SiP/MEMS design for universities. This will be done by setting up an "interface" to other 'services' set up under other FP7 activities. Other service partners will be invited to discuss adding services to universities when they have reached maturity.
By having access and being stimulated to use new CAD tools and technologies for IC and SoC/SiP/MEMS design, universities will be able to keep in the technology league and enhance their curricula to deliver well-trained engineers to the market. Recent trends in the academic sector strongly indicate that without an additional stimulation action many universities will be unable to continue to offer industrially relevant courses. This is also expressed as one the strategic objectives of the Call (Need for Stimulation Actions). As this project is not addressing the stimulation itself, the proposed project will seek strong cooperation with accepted Stimulation Actions. Well trained engineers help companies compete in highly competitive global markets. Industry and in particular SMEs that can have easily affordable access to well-trained engineers and to the newest IC/SoC/SiP/MEMS technologies will be able to innovate, which is the basis for more cost-effective development, and will be able to bring new products onto the market.
The objectives of the "EUROPRACTICE IC Service" project are :

a) Objective #1 – providing the existing European network of 600 universities and 50 research labs with low cost industry-standard and state-of-the-art CAD tools for IC, subsystem, microsystems and SoC/SiP design for education and research
b) Objective #2 – providing these universities and research labs with CAD tool compatible cell libraries, design kits and support for IC/SoC design, subsystem design and microsystems design
c) Objective #3 – offering access to standard and state-of-the-art deep submicron IC prototyping via MPW runs in 90 and 65nm technologies
d) Objective #4 – Extend the current MPW IC prototyping offering with access to SiP and MEMS technologies after discussions with other European Service providers
e) Objective #5 – stimulating universities to use advanced IC technologies by offering discounted prices
f) Objective #6 – Set-up interaction with other European Service Providers. Suitably qualified EC projects that offer Microelectronics/Microsystems based services to 3rd parties can work together to raise their service profile, inherit best business practice from their sister EC service orientated projects, and cooperate together to offer service components which fit together to provide an overall service which is greater than the sum of the constituent parts e.g. Integrated MEMs, bioMEMs, etc.

The current business model relies on major contributions from the universities and industrial customers covering all of the CAD Vendor and shipment costs (licenses, maintenance, delivery), IC prototyping and volume production costs plus an identifiable contribution through the annual university membership fees to the overall running costs of the Service. As the MPW service is open to industrial customers, it is not a healthy situation to ask higher prices and to make profit on MPW fabrication of European industry or SME designs in order to cover university costs.
No university scheme in the world is self-funded. Either these schemes are funded through direct funds or through government paid staff. The fact that the foundries themselves restrict MPW services to their major customers (just a service – no business) and do not give access to

universities due to the large overhead (support) indicate that MPW service is not a financially viable business.

Websites :

General : www.europractice.com
IC fabrication : www.europractice-ic.com
CAD service : www.te.rl.ac.uk/europractice