

Project showcase

RUNNER-UP: 2010 EUREKA INNOVATION AWARD PROJECT SHOWCASE > MEDEA+ FOREMOST European cooperation ensures global leadership in microelectronics

Cooperation between semiconductor manufacturers, materials and equipment suppliers and researchers has ensured that the European microelectronics industry can continue to maintain its global position in consumer electronics product design and manufacture.



Mass production of globally-competitive electronics equipment relies heavily on the performance and availability of the latest microelectronics devices. The EUREKA MEDEA+ microelectronics Cluster FOREMOST project ensured that the advanced process modules and chip architectures required for full 45nm node CMOS logic and 50nm DRAM memory technologies are now being applied in European wafer-fabrication plants. This project enabled key European players in semiconductor manufacturing to develop these advanced technologies in line with market demands, thus safeguarding and boosting the position of Europe's chip-makers as well as their equipment and materials suppliers on the world stage. The 45nm technology developed in the first phase has already become the core process worldwide for mobile phone applications. Project results are also paving the way for future 32/28nm nodes.

Strong support from national public authorities

FOREMOST was setup within EUREKA with strong support from the national public

authorities in France, Germany and the Netherlands, among others. 'We aimed at developing advanced process modules and transistors architectures, and integrating them in a complete process flow to demonstrate a full CMOS 45nm process technology in European manufacturing industrial facilities,' explains Jean-Louis Carbonero of project coordinator STMicroelectronics.

Rapid transfer to industrial production

FOREMOST was highly successful with rapid transfer of the architectures and process modules developed into full-scale industrial production at the chipmakers involved. As a result, STMicroelectronics was one of the first chipmakers worldwide able to offer 45 nm low-power technology and the even more highly integrated CMOS 40nm low-power process.

'This activity should lead to about 500 direct jobs in Crolles after production

ramp-up of our CMOS 45nm/40nm technologies from 2010 on,' says Carbonero. 'This will allow the major European mobile phone manufacturers to serve the market with advanced products at the same time as their worldwide competitors.' All major multimedia and mobile phone companies are expected to use these processes. There is also interest for consumer electronics applications such as printers and set-top boxes, thanks to the lower cost and early availability.

Maintaining and expanding world leadership

Overall, the strong international cooperation established in this EUREKA project has provided European electronics companies with early access to innovative world-class technology. It has also ensured that European materials and equipment manufacturers can expand their worldwide markets.



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