

## HYMNE project tackles need for high yield

The High Yield driven Manufacturing Excellence in sub-65nm CMOS project, known as HYMNE, aims to develop software and hardware methods to enable chipmakers to shorten production cycle times and improve device yields for sub-65nm devices. This will be achieved through increased automation and the use of new materials.

Increasing miniaturisation means that electronic devices are becoming ever more difficult to produce competitively at industrial levels, a problem which is especially acute in Europe where much semiconductor manufacture focuses on short run, application specific devices (ASICs) in a wide range of technologies.

The Medea+ HYMNE project is thus set to develop methods, software and hardware that will enable chip makers to shorten production times and improve device yields. This will result in significant gain in competitiveness in advanced technology manufacture, thus boosting global sales and improving European employment prospects.

HYMNE sets out to show cycles can be shortened for the latest generation of sub-65nm devices with yields of

over 78% within 13.5 months of the first silicon. It aims to reduce cycle times from two to one day per mask layer and from 0.75 to 0.35 of a day for fast prototyping in an operating 300mm plant. It also intends to attain an additional 5% cut in defects, as well as yield increases in the mature production stage.

The supply of new materials and contamination-free wafer handling is important to reduce the time for the integration of new process modules, materials and chemistry for sub-65nm CMOS production in high volume chip production. Facility development and tool cleaning procedures to reduce wafer contamination are required. New material precursors and slurries for chemical mechanical polishing will be developed, validated and delivered with appropriate quality for 65nm and 45nm technologies. Zero defect and advanced yield learning will involve the examination and elimination of systematic and random defects for sub-65nm technologies that could affect yields.

The project runs from February 2005 to December 2008 under the leadership of Joost van Herk, Philips, involving over 20 partners.

## CSR supports front end unification

Cambridge Silicon Radio (CSR), the largest supplier of Bluetooth chipsets, wants to simplify the functionalities of mobile phones, by combining several front ends into one.

"By 2012 some 300 million cell-phones will be enabled with Wi-Fi. Today, users switch the Wi-Fi functions off on their phones because they waste a lot of battery. Therefore, some of the functions in the phone will need to be combined to make it easier for users," said Simon Finch, head of the Wi-Fi business unit at CSR.

CSR's latest launch is the UniVox Mobile reference design which contains all the additional hardware and software to wirelessly enable mobile handsets for making Voice over Wi-Fi (VoWi-Fi) calls. The hardware element of UniVox Mobile is based on UniFi, CSR's single chip Wi-Fi solution, and also includes the Bluetooth functionality.

UniVox Mobile also allows Wi-Fi to be used as the bearer for other services, such as web browsing and multimedia streaming.

## TECHNOLOGY

Within a decade the Internet will be able to deliver smells as fast as it does data, says a report produced by the South Korean government. The technology experts panel behind the report said that, by 2015, the Internet will be used to deliver data about smells to a fragrance cartridge sitting next to a computer or other device accessing the Internet.

The report also predicted that by 2012 batteries in mobile phones will last up to two months between recharges and that by 2018 robots will be routinely carrying out surgery, some of which tiny enough to be injected into the human body to find and heal health problems they come across.

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Texas Instruments and Ideaworks3D will cooperate on extending the capabilities of the OMAPT Gaming Platform to support the OpenKODE 1.0 specification for high-end multimedia handsets. This platform is deemed one of the first in the industry to incorporate the OpenKODE Khronos Open Development Environment to further simplify the development and deployment of new games across multiple mobile phone segments, creating a larger market opportunity for game publishers.

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Visitors to fast food outlets in Japan will soon be able to pay for their burgers with their mobile phones. Japanese mobile phone operator NTT DoCoMo has teamed up with McDonalds to offer electronic payments and special promotions for mobile users as of July this year. The joint venture between the two firms is worth 300 million yen, where McDonalds Japan holds a 70% stake and DoCoMo the rest. Using mobile phones to pay for goods is an enormous growth area as operators look for new ways to make money. Japanese mobile owners are leading the way, paying for food and train tickets via their handsets already.

