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EU project targets 0.5-THz SiGe bipolar transistor

Anne-Francoise Pele

EE Times Europe

03/17/2008 11:07 AM

PARIS — A European consortium from industry and academia has been formed to develop advanced silicon-based bipolar transistors with a maximum operating frequency of 0.5 Terahertz targeting millimeter wave and terahertz communication, radar, imaging and sensing applications.

Dubbed Dotfive, the 36-month project has a total budget of €14.75 million (\$21.8 million) with a contribution of €9.7 million (\$14.3 million) from the European Commission, making it the largest 'More than Moore' nanoelectronics project under the EC's Seventh Framework Program.

The project's aim is to establish a firm position in Europe for silicon-germanium heterojunction bipolar transistors (SiGe HBTs) for millimeter wave applications "We are trying to bring microwave applications into silicon in contrast to other types of semiconductor that have been used, that are more expensive and do not allow large device integration," said Michael Schröter, chair for electron devices and integrated circuits at the Technical University of Dresden (Germany).

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Gilles Thomas, ST's research and development co-operative projects manager, who has been nominated Dotfive project coordinator said, "In the first year, we will try to get 300-GHz frequency which means it translates into a delay time of typically 3.5 picoseconds. In the second year, we intend to achieve 400 GHz and 3 picoseconds and, in the third year, we target 500 GHz and 2.5 picoseconds."

Ultimately, project partners would start encroaching into the terahertz region, which ranges from frequencies of about 300

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Bonus? Hah! More like rounding error.

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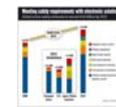
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France finds its feet in brave startup

Entrepreneur is a French word. So might see a paradox in this because France, with a centrally-planned, pro-European post-war period behi has not yet fully embraced the individualism of self-made business person.



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The ability of microcontroller- and microprocessor-based systems to s automobile customers' needs for cc safety, information and entertainment in the car driving an explosion of applications and of cooperation between automakers and chipmak



French startup brings DFT to a high level

French EDA startup DeFacTo Technologies SA is aiming to bring design-for-testability (DFT) to a high level of abstraction with a software tool that en: designers to plan, analyze and implement IC te logic before synthesis.



Tendances du marché des puces en selon NXP

Les attentes du secteur pour 2007 étaient grandes l'année dernière, à même époque. Toutefois, les résult ont été moins bons que prévu. Vers le milieu d

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Readers may have noticed that EE Times now has a [Market Intelligence Unit](#). Please indicate which of the following topics is of the greatest interest as a subject for in-depth research:

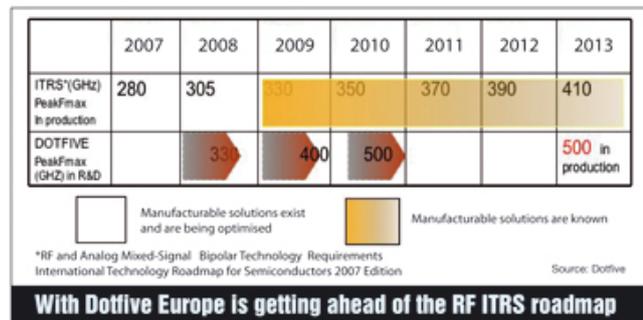
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GHz to 10 THz. This would open a lot of applications that are now taken by other technologies like imaging systems with applications in the security, medical and scientific areas.

Initially, the project aims to devise a proof of concept and demonstrate the potential of the silicon-based technology. "We are preparing the next technology node, and this technology takes us beyond 2012. We could then go to a project closer to the industrialization phase like Catrene," said Thomas. Catrene is the follow-up program to Medea and Medea+.

Led by STMicroelectronics NV, the Dotfive project brings together academic partners, the Johannes Kepler University of Linz (Austria), the Bordeaux National School of Electronics, IT and Radiocommunications, the Paris-Sud University (France), the Technical University of Dresden, the Bundeswehr University in Munich, the University of Siegen (Germany) and the University of Naples (Italy); research institutes IMEC (Leuven, Belgium) and IHP (Germany); and industrial partners XMOD Technologies (Talence, France), GWT-TUD GmbH (Dresden, Germany) and Infineon Technologies (Munich, Germany).



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l'année, la SIA a revu à la baisse ses taux de croissance, de 10 à 2%, et prévoit une croissance de 3% pour 2007. Bien que le chiffre d'affaires ait augmenté, l'érosion des prix a conduit à une performance médiocre. Un coup d'œil à la faiblesse du carnet de commandes montre que les clients ont repoussé jusqu'au dernier moment leurs engagements d'achats. Le taux d'utilisation de l'outil de fabrication laisse apparaître néanmoins une amélioration. Il y a donc des signes d'un probable redressement du secteur en 2008.



[Perspectives du marché des puces en 2008, selon le PDG de Linear](#)

Les perspectives de marché sont souvent précaires parce qu'elles ont tendance à refléter les éléments les plus récents des bonnes et des mauvaises nouvelles non ce qu'on pourrait prévoir si elles étaient désintéressées et objectives.



[EDA startup offers 'elastic clocks' as a solution for variability](#)

EDA startup Elastix Corp. (Santa Clara, Calif.) is aiming to address digital logic variability issues by helping designers generate asynchronous implementations of synchronous designs automatically. Early versions of Elastix software have been put out for evaluation with selected customers. The final EDA product name remains undisclosed — is due to be introduced more broadly in 2008.



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