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Infineon leads RELY to improve IC reliability

David Manners
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Fraunhofer, Infineon, EADS, X-Fab the University of Bremen and the Technical University of Munich are to collaborate on a CATRENE-funded project to increase the reliability of ICs, especially those used in electric cars, medical electronics and automation.

Called **RELY**, the programme seeks to 'develop novel chip architectures that will allow a chip to automatically determine its operating status, react to it and even enter into interaction with the electronic system. In future, such a self-test function of the chip could permit a timely alert of possible signs of wear in electronic systems. This is important particularly in applications that have to operate reliably for many years, such as production plants, trains or cars, or medical implants such as insulin pumps.'

He project is funded by the German Federal Ministry of Education and Research (BMBF) with Euro7.4m under the Information and Communications Technology 2020 programme.

RELY assumes that the value of IC content in electric vehicles will be €900 per compared to today's \$300 for petrol engine cars.

'We will see electronic systems for enhanced safety and comfort making greater inroads into the automotive sector, and some of them call for enormous computing capacity: they will enable recognition of speed limits and persons in the dark, and allow automatic parking systems, radar-based driver assistance systems and emergency call systems. To fulfil all these tasks, the respective semiconductors have to provide an ever-growing number of functions, while meeting stringent quality and safety standards approximating those in the aerospace industry,' says RELY.

RELY establishes reliability as a new target parameter throughout the chip development process.

Initially, the project partners will work on extending the modelling of manufacturing technologies, formulating new chip design specifications, defining new characteristics also in higher design levels, and in enabling system simulation and chip verification with respect to reliability.

