

RFID is Key Element to Germany's High-Tech Strategy

The government sees RFID as an emerging technology in which the country can play a leading global role, and is investing millions of euros in research that includes RFID.

By Rhea Wessel

Feb. 8, 2007—The German government says it has identified RFID as an emerging technology in which the country can play a leading global role, and the country's politicians are putting their money where their mouths are. Germany has invested €200 million (\$260 million) in the research of microelectronics since 2006, and many projects that fall into this category are cross-disciplinary ones involving RFID.

Gerhard Finking, head of the microsystems technology division at the Bundesministerium für Bildung und Forschung (BMBF—Germany's Federal Ministry of Education and Research), says RFID is a big part of the country's overall high-tech strategy—particularly its plan to grow in the areas of health-care and communications technology. The nation's chancellor, Angela Merkel, has even promoted RFID at various international trade fairs.

"We see the development of radio-based systems as critical for the future development of many different areas, including health care, logistics and facility management," explains Finking, adding, "It is our job to help companies overcome their technical hurdles when the private sector can't do this."

Germany is the world's largest exporter, and a crossroads to the new European Union (EU) countries to the east. Since many companies in western Europe are now moving production sites eastward to save on labor, property and tax costs, Germany's role as a transit country is becoming even more pivotal. As a result, the already well-developed logistics sector is keen to improve its services and margins by implementing RFID and other new technologies.

Germany presently serves as the president of the European Union and will use this opportunity to raise the profile of RFID at the European level. Together with the European Commission (EC), the government is planning an international conference on RFID, to be held in Berlin on June 25 and 26. Attendees will include such major German RFID adopters and proponents as Deutsche Post and Metro, as well as representatives from research organizations, the media and the government.

Finking could not state exactly how much of the overall investment in microelectronics research will be applied toward RFID because of the cross-disciplinary nature of many RFID applications, but money is flowing in a variety of fashions. Some projects are directly funded by the BMBF, which is making €140 million (\$182 million) available for microelectronics research, while others are funded by the Bundesministerium für Wirtschaft und Technologie (BMWi—the country's Federal Ministry of Economics and Technology), which is providing €60 million (\$78 million) for such projects.

In addition, a slew of projects receive funding through the Fraunhofer Society's normal operational budget.

The Fraunhofer Society, Europe's largest applied research organization, is funded with state, federal and private monies. Most RFID projects are spearheaded by the Institute for Material Flow and Logistics, in Dortmund.

Although it's difficult to nail down the exact amount of funding provide by the entire German government, Finking says nine consortia have been awarded funding after his ministry reviewed 50 project proposals submitted under a call for papers entitled "Microsystems Technology for Smart Label Applications in Logistics." A tenth project is still under review. The nine groups receive a total of €15.1 million (\$19.6 million).

The first project is called PRISMA, short for PRinted SMARt RFID labels. In PRISMA, a group of companies and organizations, including Bundesdrueckerei and PolyIC, are working to develop polymer-based RFID transponders that could drastically reduce the cost of tags. The project is being administered by VDI/VDE Innovation + Technik.

The second is dubbed the UHF Label project. Project members, including Metro and the Technical University of Dresden, are creating the first UHF smart label with integrated temperature-monitoring capabilities. The label is slated to include a chip with a sensor, an antenna and a film battery. Metro will perform field tests of the prototypes on temperature-sensitive goods.

As part of the Low-Cost Smart Labels for Logistical Processes (LoCostix) project, partners aim to develop transponders that cost significantly less than 10 cents apiece and can identify and monitor goods. Partners include SAP) and NXP Semiconductors (formerly Philips Semiconductors).

A fourth project is known as ASIL, or Active Smart ID Label for Transport Monitoring. The project's participants, such as Schenker Deutschland and the Chemnitz University of Technology, are working to come up with a smart label able to use sensors to monitor acceleration and various other factors.

Pariflex project members are working to develop RFID tags with bistable display screens (see Environmental Concerns Lead Deutsche Post to RFID). Partners include Deutsche Post and Vossloh Information Technologies.

Another project is called PESEL, short for Pan Mobile Data Acquisition with Optimized Smart Labels for the Increase in Efficiency of Logistics Processes. Consortia members, who are developing conductive inks and working to integrate RFID readers in mobile phones, include the Fraunhofer Institute for Silicon Technology and Hasenkamp Logistik.

The seventh project is called EISTH LOAW, an acronym of Entwicklung und Implementierung spezieller Transponder und Herstellungsverfahren für die textile Logistikkette zur Optimierung der Abläufe und Wirtschaftlichkeit (Development and Implementation of Special Transponders and Production Methods for the Textile Logistics Chain to Optimize Processes and Economic Benefits). Partners are developing transponders and interrogators that are particularly well suited for the garment industry, such as long-range readers and electronic clothes hangars with flexible displays able to show prices. Consortia members include RAKO Security-Label Produktsicherungs and the University of Applied Sciences in Osnabrueck.

RELATED_ARTICLES The TRACK project focuses on traceability through autonomous microsystems for the continuous monitoring of consumer goods. EADS Deutschlan, SCEMTEC Transponder Technology and other partners are designing sensors to measure temperature, acceleration, light exposure and humidity. Some of these sensors will be used in active labels that will record variables only when they register outside the set parameters. Such sensors could be used in, and powered by, passive RFID tags.

The ninth and final project, entitled TexTraLOG, is developing RFID transponders to be integrated in textiles. Among them will be tags that can be used in large textile transport bags, or in the seats of subway cars. Deister Electronic and SABIC Polyolefine are among the project's partners.

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