Really smart card project scoops
EUREKA 2010 Innovation Award

A French-led EUREKA smartcard project has scooped this year's Innovation Award, announced in a ceremony in the German capital yesterday evening. Federal Secretary of State for Research Georg Schütte handed over the prize – a trophy and a media package worth 15,000 euro - to a delighted Jean-Pierre Tual, Industrial Relations Director at project leader Gemalto, who led the project under the EUREKA MEDEA+ Cluster 2A302 ONOM@TOPIC+.

Soon we will use our mobile phone to buy bus and train tickets and access health and other public services in other European states by just presenting an electronic card or passport, thanks to technology developed by this European partnership.

Most of us hate standing in queues or filling out forms, however patiently we suffer them. Electronic documents and signatures could save hours of our time running to offices and waiting for our identities and details to be checked, but attempts by governments and companies to use them have tended to be patchy. That is quickly changing, however, thanks to the results of an ambitious project, which has developed revolutionary global solutions.

Five years ago, developers at digital security solutions specialist Gemalto realised governments were increasingly introducing electronic passports or electronic identity documents and more and more telecoms operators were piloting new services where consumers could buy goods using technologies such as SMS. However, they believed for e-identity documents or mobile transaction systems to be useful they needed to be recognised by more than one government or mobile operator and use a few common security and transaction standards in a similar way to credit cards.

Gemalto teamed up with 15 other companies from six European countries to develop a set of international standards related to e-identity and mobile transactions and to demonstrate concrete implementation of these standards. At the heart of the project were advanced prototypes for new generation of e-ID cards or SIM devices. They called the project ONOM@TOPIC.

At a European level, they saw one clear tangible benefit for citizens: the possibility to access e-government services in other countries on the same basis as their own. 'We wanted European citizens to be able to access the same services in other member countries as at home,' said Jean-Pierre Tual. For that purpose, the project partners defined all the background specifications for a new standard for European electronic identity documents using a smartcard system, called IAS-ECC -Identification Authentication Signature - European Citizen Card.

On the mobile telecommunications side, the project found innovative solutions using the increasingly popular Near Field Technology, allowing the wireless exchange of data between two electronic devices. This technology breakthrough enabled the partners to make successful proposals to the international standardisation bodies.

Technically, the project was extremely ambitious and led to complex software developments. On the hardware side, special microchips for smart-cards were developed-very secure microprocessors incorporating advanced cryptographic material on which an individual's data could be stored, such as name, a photo and even other biometric data like fingerprints. The proper handling of security issues was a major point, because for governments or other bodies like operators to be convinced enough to adopt the

technologies from the project, they would have to be sure they would protect the e-id cards or SIM devices from being forged.

Smartcard and chip makers, mobile operators, handset manufacturers, software editors, electronics designers and biometric specialists were just some of the experts on board. The team divided into groups working on transversal domains such as security or contact-less and also into two vertical groups to tackle governmental requirements and commercial needs.

Over the three years of the project, which started in 2005, the partners held sub-project meetings monthly and the whole consortium met every three months to closely monitor progress. Special care was also taken to test all new concepts introduced: 'The testing was very complicated,' recalled Tual. All components of the new technology had to be tested separately in all types of situations and the complete impossibility to clone the microchips had to be demonstrated.

'We were addressing a very broad technical subject and aiming at a very large market so we had to ensure we had a representative sample of European countries to be capable of doing it'.

In 2007 at the final review of the project the team demonstrated how microchip-based devices using their standards worked in practice. 'In the mobile communication area, we showed new ways to manage electronic diaries, to allow for users to search and put information on the blog of a person using a mobile phone, or to order video-on-demand from your phone and play it at home on your own TV. In the e-government area, we showed how to exchange administrative data across borders controlled by interoperable e-id cards, demonstrated digital signature from on-card biometric checks or the incorporation of new very high-speed contact-less protocols in e-identity devices,' says Tual.

The exploitation of project results has become a reality. In the e-government area, the IAS-ECC standard has become the reference standard for all new major e-ID programmes running in Europe.

The partners think the potential is even greater since there is a global trend towards electronic passports and the sharing of information between governmental agencies, ever since 11 September 2001, when some of the suicide bombers were found to be flying on fake passports. Since the end of 2006, the USA for instance, requires visitors to have electronic passports, a new generation of which is currently being developed. New markets also opened for the project partners in the Gulf and South America. ONOM@TOPIC+ has given birth to a new MEDEA+ project (BIOP@SS) where these aspects are currently being explored.

Telecoms companies are also deploying new services using the standards developed in the project. The partners have contracts to develop customer payment or loyalty schemes using smartcards as well as ticket buying through mobiles. 'The technology is used today by almost all telecoms operators developing this kind of services,' says Tual. 'We developed some extremely clever solutions implemented in many pilots world-wide. We are confident that mass deployments will come soon.'