EUREKA News

The quarterly magazine of the EUREKA Initiative | SPRING 2007 | N°77

Cyber-crime

Is your identity safe?

How the public and private sector are working together to find a high-technology solution to maintaining the integrity of identities

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EUREKA is a European network for market-oriented R&D. Its aim is to strengthen European competitiveness by promoting market-driven collaborative research and technological development. The EUREKA Initiative enables industry, universities and research institutes from 37 member countries and the EU to collaborate in a 'bottom-up' approach to developing and exploiting innovative technologies.

EUREKA News is published four times a year in English, French, German, Italian and Spanish. An online version is available on **www.eureka.be**

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Designed by Busybee
Translations by Berlitz
Printed by Vanden Broele
 ISSN 1470-7489

Photography: with thanks to EUREKA project and Cluster participants for any assistance and material provided in the production of this issue.

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Good luck to EUREKA!

As my term of office at EUREKA draws to a close, so does the privilege of expressing my views in this column. What better place than a last editorial then, to take stock and cast an eye over the achievements during my time with the network, and assess what the future may hold for EUREKA.

During the last four years in my role as head of the EUREKA Secretariat in Brussels, four new countries have joined the EUREKA family, increasing the total number of members to 38. This is somewhat of a triumph in itself – a specific, focused outlook on filling the gaps in industrial research, and sharpening Europe's competitive edge on a global scale, against North American and Asian competitors.

The coordination of 38 members around a single table is not a easy task. The addition of four new members spurred EUREKA into refining its decision making process. This has changed from unanimous voting to a qualified majority voting system, resulting in a better ability to react and launch new activities. A harmonised method of evaluating projects has also been established to ensure excellence across member countries.

EUREKA's concerted effort to help SMEs procure venture capital investment has been paying off significantly. SMEs account for over 40% of the participants in EUREKA projects. Of all European SMEs successful in attracting private funding in 2005, more than 5% were EUREKA project participants. This represents a really high level of success, given that investment in EUREKA projects only accounts for 1% of total R&D investment in Europe.

Strategic Cluster initiatives launched by EUREKA have become key drivers of industry-led research in Europe over the last few years. These large groupings of projects are aimed at identifying market failure and filling the gaps in competitive areas of research – such as microelectronics and nanotechnologies, where Europe has already gained a foothold and needs to maintain, and increase its market share.

Recent Clusters each command a budget of 1 billion euro or more. An example is CELTIC, the telecommunications Cluster, launched in 2003 to address areas such as broadband, mobile and wireless networks and security. CELTIC's aim is to foster innovative results that can be directly transferred into marketable products, services and applications. Over 200 high-level international experts gathered in Berlin in February this year to discuss the latest CELTIC results presented by 17 projects within the Cluster. A total of 34 projects have been started since 2003, and a further 18 are expected to be launched this year. Currently there are 350 companies involved in CELTIC projects from 29 countries, including European leaders such as Alcatel, Ericsson, Nokia and Thomson as well as operators British Telecom, Deutsche Telekom, France Telecom and Italtel. Around a third of CELTIC participants are SMEs.

The work of longstanding Clusters has resulted in European front-runner companies establishing European standards. The ITEA 2 Cluster in embedded software has succeeded in developing a common interoperable open architecture for cars, allowing machines to inter-communicate.

> Editorial

The work has resulted in a publicly available description language in just three years. Car manufacturers have decided that the break-through will become a European standard for common vehicle software architecture by 2009, and perhaps even lead to a global standard. The cost of development will be significantly reduced with the whole of the European car industry using common software architecture. Yet car manufacturers have admitted that this initiative is something that they wouldn't have risked initiating without the 38 million euro of public funding that was granted to the project.

Alongside public authorities and organisations, the EUREKA Clusters are members of European Technology Platforms in ICT, the advice of which the European Commission has taken on board when developing its publicly-funded Seventh Framework Programme. The Commission, one of EUREKA's first members, has not participated in financing EUREKA projects for the last ten years or so, primarily due to its rules of operation.

However, the success of Clusters such as ITEA has caused the Commission to rethink its strategy. A new instrument, the Joint Technology Initiative (JTI), is in the pipeline, which will enable the Commission to fund specific areas of industry-led research stemming from the European Technology Platforms. This will be to the tune of several billion euro. Pending a decision by the EU Council of Ministers, the first JTIs will be launched in embedded software and innovative medicines at the end of this year. You can read more about JTIs in the special feature in this issue.

A new tailor-made opportunity for research-performing SMEs is also awaiting adoption. The joint EUREKA-EU Eurostars Programme will enable the Commission to contribute financially to the joint implementation of national research programmes. Geared towards SMEs with high-growth potential, 25 EUREKA members have already committed to the Programme.

The future of European research and innovation is becoming more coherent and integrated, as public and national stakeholders are coming together and raising their investments. If the level of investment by all the stakeholders in European technology continues to grow systematically, Europe will be the reckoning force in cornering global markets that we dream it to be. I wish everyone involved, especially at EUREKA, of course, the best of luck in making this vision a reality.

Michel Vieillefosse

Michel Vieillefosse
Head of the EUREKA Secretariat

> If the level of investment in European technology continues to grow, Europe will be the reckoning force in cornering global markets that we dream it to be.

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> Through its closer collaboration with the EU, EUREKA is on the verge of assuming an ambitious and more significant role in the European Research Area

Borg succeeds Vieillefosse as Head of Secretariat

Regular readers of EUREKA News magazine will already be familiar with the name of Luuk Borg, who has been managing the development, implementation and launch of the proposed Eurostars Programme. Eurostars is a joint funding initiative between EUREKA and the European Commission, targeting R&D-performing small and medium businesses (www.eurostars-eureka.eu). From July 2007 onwards, Borg will succeed Michel Vieillefosse as Head of the EUREKA Secretariat in Brussels.

Speaking to EUREKA News on his forthcoming role, Borg says: 'Through its closer collaboration with the EU, EUREKA is on the verge of assuming an ambitious and more significant role in the European Research Area. By combining EUREKA's greatest assets – our network of people in 40 countries, our 'bottom-up', flexible approach to innovation and the professionalism of my team at the Secretariat, we can address the challenges facing our target group, R&D-performing businesses, with great confidence.'

'I'm also really enthusiastic about working with the Slovenians, who assume the EUREKA Chairmanship on the same day as I formally take over the management of the Secretariat,' adds Borg. 'EUREKA welcomed CEEC countries far in advance of the EU, reinforcing the idea of European cohesion. These are new and fast-growing economies, with a strong belief in R&D as a key to enhancing Europe's potential on a global scale.'

Borg, seconded to the Secretariat from the Netherlands Ministry of Economic Affairs, oversaw the merger of EU Liaison with Senter in 1997 and was also responsible for establishing the Netherlands Office for European Science and Technology (NEST). He later became Marketing Director at the Netherlands Agency for International Business and Cooperation (EVD). Before moving to Brussels, Borg headed the Patent Information Division of the Netherlands Patent Office and developed a scheme for improved exploitation of IPR and patent information by companies and research institutions.

New partnerships

EUROGIA-Tenerrdis: A new energy partnership

EUROGIA, EUREKA's energy Cluster, recently announced the start of an exciting new partnership with French 'Pôle de Compétitivité' Tenerrdis, which focuses on new energies. 'EUROGIA has now widened its scope and opened itself to renewable energies and, for the first time, we have managed to build a programme that focuses on all sources of energy,' said EUROGIA Chairman Gabriel Marquette after attending the Tenerrdis board meeting in Grenoble last February.

The Cluster's main purpose is to initiate fundamental technological developments to ensure a better management of fossil fuels leading to a hydrogen economy. 'The added-value of this partnership is that it will improve partnership creation, respond to the current demand for energy diversity within the market and benefit from cross-fertilisation between industry sectors,' Marquette said. 'It will also improve energy resource management in Europe, helping to tackle increasing global demands and climate change,' he added.

'Two thirds of the French renewable energy sector is in the Rhône-Alpes region and 2006 was the year for Tenerrdis to reinforce its structure with over 100 projects in two years,' declared Claude Graff, president of Tenerrdis. 'All energies are good as long as they are well managed; they complement each other and can work together. It's necessary to have this diversity as it corresponds to an economic reality.'

www.tenerrdis.fr
www.eurogia.com

Past events

CELTIC Event 2007 in Berlin

'Facing the challenges of ubiquitous ICT – the next generation of communication' was the ambitious title of EUREKA Cluster CELTIC's annual event, this year held at the *Hauptstadtrepräsentanz* of Deutsche Telekom in Berlin on 22-23 February.

Over 200 participants from smaller and major communications companies, public authorities and research institutes gathered together to exchange ideas, tour the exhibition where CELTIC projects were demonstrated and explained, and listen to project and panel discussions, with contributions from eminent speakers including Fiona Williams of Ericsson, Jean-Michel Dupont of Thomson, Peter Möckel of Deutsche Telekom Laboratories and CELTIC Chairman himself, José Jimenez of Telefónica.

The panel discussion on the co-existence of nationally-funded EUREKA projects and the EU 7th Framework Programme concluded that these [and other] different research funding programmes complement each other well and that diversity is a good thing. 'However,' added Ericsson's Fiona Williams, 'Europe needs more ambition. We are certainly not short of opportunities.' The panel urged European researchers and funding bodies to take a positive view of opportunities in European research and to be more daring in order to exploit these opportunities to the full.

www.celtic-initiative.org

Past events

EUREKA talks business at the European Business Summit

EUREKA returned to the European Business Summit this year, on 15 and 16 March in Brussels. This time around the event focused on 'Reform to perform: Europe is our business' and coincided with the 50th anniversary of the Rome Treaty. EUREKA presented its own contribution to boosting European business performance, with Programme Manager Luuk Borg giving the latest developments on EUREKA's proposed Eurostars Programme, offering joint-funding for the niche market of research-performing SMEs. 'Many small or medium businesses invest a considerable amount of time and money in R&D activities,' said Borg. 'However, public support is often low, limiting potential market impact. The Eurostars Programme offers combined national research funding to make it easier for SMEs to lead international collaborative R&D projects,' he added.

Recently appointed MEDEA+ Chairman Jozef Cornu talked about the influence this EUREKA Cluster is having on the European Technology Platforms, and driving the proposed Joint Technology Initiatives, public-private partnerships, similar in structure to the EUREKA Clusters and managed by industry.

Organised by the Belgian Federation of Enterprises (VBO-FEB) and Business Europe (formerly UNICE) this edition included four high-level plenary sessions and 12 work-shops. European business leaders and senior figures from the public sector had the opportunity to network and debate on some of the main EU policies.

www.ebsummit.org

Past events

EUREKA showcases its success at the European Parliament

From 20 to 22 March 2007, EUREKA held an exhibition at the European Parliament, sponsored by Italian MEP Vittorio Prodi, illustrating a number of the organisation's success stories and looking at how the future is shaping up. The three-day event increased awareness amongst key players in the European institutions of the Initiative's achievements and its objectives, showcasing EUREKA's excellent results and demonstrating its important role in European market-oriented research.

'EUREKA is business-driven and, over the years, has been successful in promoting the advantages of its unique, so-called 'bottom-up' approach to the development of innovative products and services. And, EUREKA continues to give partners the flexibility to decide how to set up and manage their projects, as well as easing access to national R&D funding,' said Michel Vieillefosse, Head of the EUREKA Secretariat in Brussels. 'The EUREKA network is evolving with a number of new partnerships and programmes under development, especially in its closer relationship with the EU [the proposed ICT JTIs and Eurostars].'

Representatives from a number of EUREKA projects were present, demonstrating their results and giving visitors the chance to get a first-hand impression of products of European research in diverse technological areas. Visitors witnessed how these products affect the everyday lives of European citizens. Guided tours for groups from the various European institutions and national delegations took place for the duration of the event.

'As well as reinforcing the awareness of EUREKA's contribution to increasing Europe's competitiveness and productivity, the event helped strengthen EUREKA ties with the European Institutions,' added Vieillefosse.

Past events

EUREKA at CeBIT 2007

Visitors to this year's CeBIT information technology fair in Hanover, Germany (15 – 21 March 2007), took advantage of the presence of the eConTec Umbrella on the stand of Flanders multimedia valley, to learn a little more about the work and aims of EUREKA, specifically in the field of information communications technology. EUREKA was also the co-sponsor of the Multimedia Seals of Excellence awards that were presented at the fair.

www.e-multimedia.org/eureka/
www.fmv.org
www.cebit.de

Past events

Czech EUREKA participation at the Hannover Messe

From 16-20 April this year, the Czech Association for Innovative Entrepreneurship (AIE) was present at this showcase for industrial technology, highlighting the achievements of EUREKA, and specifically the Network's Czech participation in industrial innovation.

The organisers of the Hannover Messe claim that 'to survive and prosper in the face of global competition, companies need to constantly maintain and improve their performance potential,' adding that 'leading-edge technology plays a pivotal role in corporate competitiveness.' This sentiment is echoed by Pavel Švejda of the AIE, who adds: 'The AIE has taken part in the Hannover Messe for some years now with the aim of promoting Czech entrepreneurship, but innovation is not limited by national borders! The stand we are sharing here with EUREKA sends a clear message about the important impact of innovation on a European scale – and the achievements of EUREKA over the past 21 years.'

www.hannovermesse.de

Goodbye and welcome

Cornu replaces van der Poel as MEDEA+ Chairman

Arthur van der Poel

March 2007 saw the departure of Arthur van der Poel as chairman of the EUREKA microelectronics Cluster MEDEA+. Van der Poel quoted the strong global position of MEDEA+ companies, putting high-technological innovation back on the political agenda, increased openness to cross-border cooperation and maintaining high European R&D investment as some of the positive achievements of the Cluster during his three-and-a-half year tenure. But, he added, areas of concern also remain. Despite ambitious initiatives such as the Lisbon and Barcelona agenda and the proposed Joint Technology Initiatives, there is still 'more talk than action', and that the speed of decision-making, particularly on funding, is not synchronised with the needs of industry.

'Against this background, it is encouraging that the public authorities have regularly expressed their support for a successor programme of MEDEA+, to be launched later this year. I think it is proper that this launch is led by the man arriving, rather than the man leaving. And my successor Jozef Cornu will certainly lead that process very professionally. He brings not only his managerial top-level experience, but also was recently involved in the IST Advisory Group of the Commission and co-author of the Aho report. I am convinced that Jo will have a flying start and all of you will be very content with him as the new Chairman', van der Poel added.

www.medeaplus.org

New publication

A joint brochure on SME-financing

The EUREKA Secretariat has recently jointly published a compendium on private financing, the result of its long-term strategic partnership with the European Business Angel Network (EBAN). The objective of this partnership is to help small and medium enterprises (SMEs) access private funding, by bridging the gap between finance seekers and providers.

By publishing this compendium, EUREKA hopes that those key players will gain a clear understanding of private financing potential in Europe, as well as exploit this comprehensive and easy-to-use tool to meet SME project financing demands. 'There wasn't anything like this available before. This tool aims to help SMEs find a source of funding that completes public funding available with the help of EUREKA,' says Pierre Collowald, Valorisation Manager at the EUREKA Secretariat. This reference tool includes a list of national business angel funds, investment programmes, financial support initiatives and a list of non-financial instruments.

Anthony R Clarke, President of the European Business Angels Network, states the importance of this tool for both parties: 'We hope that through this publication EUREKA participants will have a greater understanding of business angels' role in supporting the growth of innovative companies. In addition, we encourage EBAN members to consider financing EUREKA R&D projects.'

www.eureka.be/venturecapital/

New website

The new Eurostars SME Programme goes online

EUREKA News readers interested in finding out more about the proposed Eurostars Programme, a new joint initiative of EUREKA and the EU, supporting the niche sector of research-performing small businesses, will be pleased to know that a website has recently been launched.

eurostars

Regularly-updated information on the evolution of Eurostars can be found at **www.eurostars-eureka.eu**

> Project **showcase**

Σ! 2675 HEALTHY WEANING Phytohaemagglutinins and other bioactive components to improve animal health and the agricultural environment

A healthier start to a pig's life

A new plant-based product stimulates maturation of the digestive tract in pigs and improves weaning success. The product is expected to bring major cost savings for pig producers.

Weaning is a problematic time for pigs, especially in intensive production. Piglets commonly become susceptible to bacterial infections, including weaning diarrhea, which restrict their growth and often lead to piglet losses of 10% or more. These types of infections can significantly increase production costs. Antibiotics traditionally given as feed additives are no longer used because they have been shown to contribute to microbial resistance and have negative effects on digestive tract and immune system development.

Plant-based product for successful weaning

A new plant-based product, given at a specific stage before weaning, stimulates digestive tract development and significantly increases chances of successful weaning. The product is made using a lectin obtained from the red kidney bean plant *(Phaseolus vulgaris)*. Lectins are proteins that bind cells – typically red blood cells – together and are known as phytohaemagglutinins.

'Giving this new product, which we call Suilektin©, for a short, specific period before weaning, stimulates the digestive tract to reach maturity faster,' explains project coordinator, Professor Stefan Pierzynowski of Lund University, Sweden. 'This helps piglets change from the digestive and absorptive needs of milk to those of an adult diet.'

In the early weeks of life, the greatest changes in the digestive tract of young mammals occur in the pancreas, stomach and upper intestine. But the changes needed for the animal to cope with a non-milk diet are not completed by the time weaning is carried out in production animals. Suddenly introducing a weaned diet frequently causes gastrointestinal disorders, which cause reduced weight gain and poor food utilisation.

The EUREKA study showed that giving the lectin to piglets at 11 to 12 days old greatly enhanced successful weaning at 28 days. This result was achieved by accelerating the production of mature intestinal cells, leaving the piglet able to cope effectively with the weaning diet. During the project, field trials determined the optimal timing and dose, together with the best consistency and method of administration. The animals' performance and the economic impact of the technique were also analysed.

Welcome innovation for industry

Other expensive, sophisticated weaning foods are already available on the market, but are not always an economic proposition for the farmer, as the profit margin on pig production is not high. Current pig production methods could benefit significantly from this new Suilektin© product. Hopefully the studies will also prove useful for calves, which show particularly rapid changes at the time the stomach adapts to the needs of a vegetable diet.

'We are very interested in finding a producer for Suilektin©, and it could reach the market very soon. It will be both cheap and very effective,' says Pierzynowski. Since the project was completed in October 2005, the project partners have filed two patents on their process and have received considerable interest from potential producers. A new consortium is actively working on behalf of the former EUREKA project partners to set up arrangements for production.

Cyber-crime
New technologies

Everyday, unsuspecting people around the world are falling prey to cyber-criminals acting individually or in organised crime circles. These fraudsters specialise in deception, whether it be credit card fraud, identity theft, or 'phishing'.

The Internet has revolutionised how people do business, interact with government, learn and entertain themselves. But it is also a place where unscrupulous cyber-criminals armed with e-fraud tools and sophisticated 'crimeware' can steal your identity, either online or through mobile telecommunications networks. The potential for cyber-crime is almost as limitless as the boundaries of cyberspace. However, so is the potential for new technologies to foil such deception and protect consumers through identity management.

protect consumers

Credit card fraud used to mean someone stealing and using your card or number. Today, it could involve 'skimming', a high-tech device that collects your credit card information and makes it easy to produce a replica of your card. Identity theft used to mean someone rifling through your household bin to find bank statements, benefits information, calling card and personal identification numbers and using the information to pretend to be you. This still holds true, but today's sophisticated thief is likely to be armed with an arsenal of e-fraud tools that can steal your identity in cyberspace.

'Phishing' scams involve using email to link consumers to phoney websites that ask users to confirm their account information by entering personal data into an official-looking online form. It is on the rise in the USA, which means Europe cannot be far behind. Data confirms that in 2005, about 109 million US users received phishing e-mail attacks, a 100% increase from the previous year.

These are just a few examples of cyber-crime. While the definition of identity fraud is not black and white, it is like all frauds in that it involves an element of deception. This can involve:

- Deception as to an individual's identity.
- Deception as to that individual's entitlement or authority to receive funds.
- Deception as to that individual's intention to provide goods or services.

In addition to the serious financial losses suffered by victims, insurance companies, banks and other institutions, there is the unquantifiable cost of consumers losing faith in the Internet and mobile telecommunications networks to deliver goods and services. The threat is invisible until it happens, which means concerns about privacy issues may often undermine support for better personal data protection measures.

Effectively fighting cyber-crime involves a multi-pronged approach. The right legislative framework is critical to fighting cyber-crime and enforcement measures must be in place. Equally critical is sophisticated technology to mitigate security risks and increased public awareness.

Building trust is key

Building trust in a world increasingly characterised by multi-layer vulnerability is a huge challenge. In the middle of this complex landscape is the consumer looking for the ultimate: unlimited online and mobile connectivity that is secure, seamless and simple.

A question often asked by government and industry is: How can the public and private sector work together to maintain the integrity of identities and payments and retain the confidence of consumers?

'Users do not want to bother about security issues. They want mobility and access to services, but are reluctant to give personal data that may be misused, particularly when services such as banking and others are being threatened,' says Heinz Brüggemann, director of EUREKA's CELTIC Cluster, an industry-led initiative dedicated to R&D in end-to-end telecommunications solutions.

'We must resolve this tension between user comfort and security requirements. We need to create an easy-to-use, invisible, secure environment that is trusted by the user and cannot be threatened,' he adds. 'We also need a standardised approach to provide a framework agreed upon by industry, public authorities and consumers.'

Identity management: a key enabler for tomorrow's Internet

Standardisation issues are being addressed in several forums, including the global Liberty Alliance, which brings together technology, business and policy experts to address security in areas such as healthcare, e-government, payments and identity theft. EUREKA's CELTIC project, FIDELITY (CP2-013 Federated Identity Management based on Liberty) tested the technical, economical and legal viability of Liberty's approach to identity management in a pan-European context through seven close-to-market scenarios.

FIDELITY implemented Liberty ID-FF1.1 and ID-WSF1.2. ID-FF is based on SAML1.1 (Security Assertion Markup Language) which is an XML (extensible mark-up language) standard for exchanging authentication and authorisation data between security domains, that is, between an identity provider and a service provider. ID-FF addresses this critical issue, known as the web single sign-on problem, and ID-WSF is about sharing the user's attributes.

The project, which ended in December 2006, focused on Federated Identity Management (FIM), a system that allows individuals to use the same user name, password or other personal identification to sign onto the networks of more than one enterprise – or service provider – to conduct transactions.

→

Partners in a FIM system depend on each other to authenticate their respective users and vouch for their access to services. In this way, authentication becomes interoperable and secure among various providers. For users, it is both simple and seamless.

FIDELITY used the project results to create a business model for identity management in which a telecommunications network operator acts as an identity provider. Project coordinator Guillaume Garnier de Falletans, from France Télécom R&D, says the results reinforced consortium partners' conviction that identity management is a key enabler for tomorrow's Internet. 'Telecommunications providers, thanks to the trust relationship they already have with their customers, can play a very important role,' he says.

FIDELITY developed a mergence of 'circles of trust' interconnecting identity providers. 'By interconnecting them, the advantage to the user is seamless and simple as they change from one circle of trust to another without having to authenticate each time,' Garnier de Falletans explains. France Télécom is taking project results further to develop *My Civil Service*, a platform allowing citizens to access government services using the Internet.

An ongoing CELTIC Cluster project, SEIMONET (CP2-023, Secure Interworking of Mobile & Wireless Networks), is developing a new architecture for secure billing and authentication across heterogeneous networks. It is focusing on providing a mechanism to enable seamless mobility of the user between WLAN and GSM environments.

Smart cards deliver security

The potential for smart cards in this field is limitless. Early EUREKA projects focused on developing common standards for EU citizenship cards based on an IAS (Internet Authentication Service) common platform. Projects under EUREKA's MEDEA+ Cluster, which supports advanced R&D in the micro-electronics sector, are delivering results.

Small microprocessor chips embedded in smart cards that can hold and process data, enable them to address identity security issues. Before the breakthroughs achieved by the Esp@ss-is (Project A302) consortium, a smart card chip could hold and transmit just 424 KB of data per second through contactless technology. In a contactless smart card, the chip communicates with the card reader through RFID (radio frequency identity) technology. The project developed a chip able to hold and transmit 1.7 Mb of data, which is ample to perform transactions requiring high security, such as paying bills, when connected to the Internet through a wireless interface.

'The core architecture we developed within the project is based on contactless technology with large storage capabilities,' explains project partner Andreas Raschmeier STMicroelectronics smartcard division. 'The core architecture can also be used for mobile connectivity to secure transactions over the Internet.'

Laurent Sourgen also of STMicroelectronics smartcard division, describes a situation where a foreign traveller can use a bank card in a system that recognises the card does not have the right access application. The system authenticates the identity of the user, gets authorisation to unload from the user's bank, uploads to the local electronic purse and delivers cash. Another application is downloading music to mobile phones while respecting digital intellectual property rights.

Most users are unaware that behind a smart card lies a labyrinthine network of systems, servers and software that manages identity and authentication. In this territory, the issue of interoperability is critical in providing security.

'This issue was addressed by working in a consortium under the EUREKA MEDEA+ Cluster. STMicroelectronics developed the integrated circuit and each partner contributed technology that built the system, including readers, software, background systems and computers,'

Sourgen says. 'When designing a chip, we need a clear understanding of the whole system before we can develop the right product. High-end products cost millions to develop. By working this way, we share the risk and avoid failure.'

The project ended in 2004, but laid the foundation for quantum leaps in the field. For example, an ongoing MEDEA+ project, Onom@Topic+ (2A302), is focusing on developing complete hardware and embedded software platforms to support a new generation of universal subscriber identity module (USIM) cards for pay services.

End-to-end security is paramount

The end-to-end security of electronic telecommunications networks is paramount as mobile, Internet and multimedia technologies converge. At the same time, governments and public authorities are facing huge challenges in the area of protecting the identity and privacy of consumers who use such technologies. Data protection is a key – and controversial – policy area for both national and EU authorities, as is protection of telecommunications networks.

The European Commission has recognised that identity theft and online fraud are major issues. It is taking a global approach and developing a general policy for the fight against cyber-crime, which should be released sometime in 2007. The Commission is looking to reinforce EU-wide coordination and cooperation, as well as to formulate a policy on international and public-private cooperation.

The European Network and Information Security Agency (ENISA), was created by the EU in 2005 to advise and assist EU member states and the business community on how to ensure a high and effective level of network and information security. Among other activities, ENISA has launched a pan-European discussion on a common authentication language to enable more effective identity management. The SAML standard, among others, is part of this important dialogue.

Spokesman Ulf Bergstrom says the future of Europe's economy depends on the establishment, maintenance and increase in security of transactions, which is in the interest of both consumers and business.

'Everyday, millions of consumers in Europe buy books, tickets, DVDs and perform e-transactions, including digital banking,' he says. 'For them, the secure transfer of data is paramount for the confidence, trust and development of e-commerce. European citizens must feel confidence in the protection of their privacy, just as they want to have full trust that their purchases and transactions are done in a secure way.'

The numbers tell the story

EU-wide statistics on payment frauds are unavailable, however, estimates on card fraud alone run into well above 1 billion euro per year. An upcoming Eurobarometer survey reports six out of 10 European citizens think identity fraud is widespread in their countries. About half of Europeans polled regard national measures against identity fraud to be insufficient and consider that tackling this issue at EU level rather than national level would be more effective.

Alarming statistics estimate the total cost of identity fraud to the UK economy in 2006 at £1.72 billion, or 2.55 billion euros. APACS, the UK payments association, reports losses of £504.8 million (749.2 million euros) resulting from plastic cards being used by criminals pretending to be the rightful owner or by criminals using a fictitious identity.

In 2006, the Better Business Bureau reported the number of U.S. adult victims of identity fraud was 8.9 million in 2006. It estimates that losses due to fraud rose from US$ 53.2 billion in 2003 and US$ 54.4 billion (41.1 billion euros) in 2005 to US$ 56.6 billion (42.7 billion euros) in 2006.

Joint Technology

Using EUREKA best practices to empower industry

The Commission's Seventh Framework Programme (FP7) programme offers a new research tool to support industry-led, large-scale strategic research. The move is planned to address the current fragmentation and duplication in key areas for European competitiveness, to help them corner global markets and retain market share. EUREKA News charts its development, and investigates what it offers in the current landscape of research tools available.

By the end of this year, there should be a new research instrument on the scene. The European Commission, together with industry and public authorities is in the process of creating JTIs, 'Joint Technology Initiatives', using the little known Article 171 of the EU Treaty. The article allows for the creation of a separate legal entity to pool EU, national and private funding sources, including structural funds and the EIB, where appropriate, to jointly pursue an area of industry-driven research which is otherwise too large in scale and scope to fit comfortably into FP7, or any other existing schemes, come to that. Until now, Commission experience of using Article 171 is limited.

Evolution

As with EUREKA, JTI research will be industry-led. Bottom-up research agendas for each JTI will emanate from existing industry-driven European Technology Platforms (ETPs). These are not funded projects from the EU public pot, but the Commission has been promoting them since 2003. The ETPs work by encouraging companies and other stakeholders to build alliances around a particular area of technology where technology development is of key importance in retaining Europe's market share and staving off competition from new emerging economies such as China, India and Brazil. Not only does the approach of an ETP focus on close-to-market innovation, but its strength lies in the fact that it also shows where the will to co-operate is strongest. There are 30 such ETPs currently in existence, in areas ranging from nanotechnology and embedded software, to innovative medicines and hydrogen fuel cells. Although led by industry, public sector research organisations and public authorities are also involved in the platforms.

The approach is similar to that of EUREKA Clusters, says Michel Vieillefosse, the Head of the EUREKA Secretariat. However, the scope of EUREKA Clusters differs from that of European Technology Platforms. EUREKA Clusters participate where they find an overlap with their own focus area. For instance, EUREKA Clusters such as ITEA 2 in software intensive systems, and MEDEA+ in microelectronics, are participants in three of the ETPs.

The Strategic Research Agendas identified by the European Technology Platforms were taken into consideration when drawing up priorities for FP7. Over 20 are directly addressed by themes in the new Framework Programme. However, the nature of existing Community instruments can prove inadequate for addressing market failures arising from the high costs and risks associated with long-term, pre-competitive research. The JTIs will specifically address these cases and help the ETPs implement their medium- to long-term objectives for commercialisation. Set up as separate legal entities, the research proposals, their evaluation and selection will be handled by the JTIs themselves.

Funding

Split into six parts, funding for the proposed JTIs from the ETPs ARTEMIS and ENIAC is expected to follow a 3:2:1 funding ratio. Three parts (half) of the total budget for each JTI is expected from the private sector, at least one third from EU member and associated states and one sixth from the Community. A senior official in the cabinet of Janez Potočnik, the EU research commissioner, says 'Each JTI would command several hundred million euro from Community funding over the 2007-2013 period of FP7, otherwise, it's not worth doing.' The total budget of each of these JTI

Initiatives

over this period is estimated to be in the region of 3 billion euros.

Joint Technology Initiatives will also be automatically eligible to draw on the two billion euro risk-sharing finance facility that FP7 is establishing with the European Investment Bank. Framework funding here is being used to increase the EIB capacity to manage risk, allowing loans to projects previously considered too risky to support. It will also allow the bank to offer greater loans to technology projects with moderate risks.

Unlike EUREKA, research partners will not be expected to secure their own national funding. There will be a single entry point for partners and budgets will be pre-defined on a yearly basis by national authorities taking part. Proposals falling out of the scope of the JTI will be appraised for consideration by EUREKA. According to Kees van Mourik, office director of the EUREKA ITEA2 Cluster: 'The single funding and decision process will create a super time reduction in starting the collaborative research.'

Embedded software poised to be first

Pending adoption by the European Council of Ministers, one of the first JTI expected to be launched at the end of this year will stem from the European Technology Platform on embedded software. For the Commission, the JTI will fall under the responsibility of Viviane Reding, the EU commissioner for information society and media. Reding expects that it will command an overall budget in the region of 2.5-3 billion euro, with around 400 million euro of this coming from FP7. Of the 27 EU member states, 14 are pledging their financial support for this JTI at the time of going to press. The Finnish government has already pledged a total of 70 million euro over the initial seven-year period.

The embedded software ETP comprises around 20 European companies including Philips, Nokia, Thales, Daimler Chrysler and BT as well as the EUREKA Clusters ITEA2 and MEDEA+. The industry group working on the JTI management and funding structures would like the evaluation of research proposals to be based on pre-defined criteria and conducted by independent experts, half appointed by industry and half by the participating public authorities, including the Commission.

The industry group, chaired by the vice president of research at Philips, Jan van den Biesen, goes on to propose an open call for proposals for the collaborative research projects, to be based on, and handled by the EUREKA ITEA 2 Cluster, and the inclusion of ITEA 2 and MEDEA+ in the eventual steering board. This has been welcomed by the director of the ITEA2 office, since the office has already the requisite infrastructure and experience.

Although areas of ITEA 2 overlap with the ETP, van Mourik points out that ITEA 2 has a broader remit of software intensive systems and services than the focus of the ETP on embedded software. Van Mourik is not afraid of a cut in funding for areas of ITEA 2 which do not overlap, "I don't think public authorities who currently fund ITEA 2 will focus on just the one," he says.

The next two JTIs being prepared for launch are in the areas of nanotechnologies and aeronautics.

SEVENTH FRAMEWORK PROGRAMME

> Project **showcase**

Σ! 3079 KISS Klippan IsoFix Safety System project

Safer car seats for children

This universal car safety system is user-friendly, cheaper, lighter, and easier to fit into cars.

All parents have grappled with unnecessarily complicated, cumbersome child safety car seats. Despite most parents' best efforts, research shows 60% of today's child safety seats are not used as intended. Conventional seats are complicated to install, often requiring a number of separate parts. There are different car seats for different age-groups that do not always fit correctly in all vehicles. As a result, many youngsters are being injured in road accidents (and parents prosecuted) because of poorly-installed car seats.

This will soon change, thanks to the EUREKA Σ! 3079 KISS project. KISS developed a universal car safety system for children under the age of three. The Klippan Isofix Safety System (KISS) is an innovative, rear-facing seat that is likely to be the most user-friendly safety seat ever designed. It is cheaper, lighter, easier to handle and, more importantly, easily adapts to any car.

> An innovative, rear-facing seat that is likely to be the most user-friendly safety seat ever designed.

'You simply cannot compromise when it comes to child safety,' says KISS coordinator Bror Martin of Finland's OY Klippan AB company. 'Our seat is competitively priced, simple to use, suitable for a range of ages and has no separate parts. This means a significantly reduced risk of incorrect installation and, in the end, fewer unnecessary injuries to children.'

Taking advantage of the Isofix standard

KISS seats are designed to take advantage of the new Isofix standard for car seat installation, a system for connecting child restraint systems to vehicles that creates a rigid link between the child seat and car. This provides extra solidity and removes the risk of slack installation, one of the key areas of misuse for products installed with an adult seat belt.

The system makes installation of the seat quicker than when using a seat belt. The KISS seat can also be installed using a regular lap and diagonal seat belts.

Reaping the rewards of cooperation

Klippan needed to find suppliers and subcontractors who could produce parts at the right price while maintaining a high level of quality, explains Martin. EUREKA was instrumental in making this happen, helping Klippan find project partners in Finland, Sweden and Estonia. 'The EUREKA concept really suited our needs perfectly. The project allowed the manufacturer, designer and parts suppliers to work together to solve problems as a team,' he said.

There could be up to 50 million cars with Isofix attachments on the European market in the next few years. Martin sees 'a great potential' for this product when it hits the market. Once tested against official car safety regulations, the new system will be marketed in Europe as Duologic seats by the Graco company.

'What we've managed to create is a completely new product for an important international market,' he says. 'Our initial market will be the Nordic countries, where we can see ourselves eventually cornering 25% of the market, representing sales of up to 100,000 seats per year. We see an additional market in southern Europe, including car manufacturers, of approximately another 100,000 seats per year, giving us a total potential market of around 200,000 units per year.'

Europe's competitive edge in the microelectronics industry, today and in the future

MEDEA+ is an industry-initiated pan-European programme for advanced cooperative research and development in microelectronics, set up as a EUREKA Cluster in 2001. With 77 projects focusing on system innovation on silicon for the e-economy, MEDEA+ partners include major microelectronics manufacturers, systems houses, SMEs, universities and institutes. Outgoing Chairman of the Board Arthur van der Poel, former CEO of Philips Semiconductors talks about Europe's competitive edge in the microelectronics industry. Incoming Chairman of the Board Jozef Cornu, former COO of Alcatel, offers his views on the sector today and in the future.

What are the challenges facing the industry today and tomorrow?

Arthur van der Poel: Industry and public authorities must avoid self-fulfilling prophesies, such as everything is moving east and that it is just a matter of time before Europe will no longer be competitive in advanced R&D. If we are passive and pessimistic, that is exactly what will happen. I do not believe this. Competition in our industry is not based on the lowest cost or wages. In today's high-tech world, competition is based on competences and technical skills. In Europe, we have learned to tap into resources from various organisations and use cross border skills. This 'open innovation' is what MEDEA+ is all about.

Jozef Cornu: IT is key to developing our society. The challenge is to make good use of IT to meet our societal needs. Consider the health sector, with Europe's aging population. We must deal with the issues of increasing productivity, because of Europe's demographics, and the cost of providing healthcare. There are equally big challenges in transportation and energy. IT is essential to meet these challenges, yet the EU spends about 95% of its budget on regional development, investing in 20th century technologies such as roads and other infrastructure. It spends just 5% on IT. This must be changed. When the economy grows by 2%, microelectronics markets grow 8% to 10%.

How is R&D under MEDEA+ helping to meet these challenges?

Arthur van der Poel: Work done in MEDEA+ and the EUREKA initiative is a living example of 'open innovation'. Some people believe such collaboration is a naïve way to give your knowledge away, but others believe in cooperation. It is simple: the IP (intellectual property) I develop in the project is mine, yours is yours and what we develop together is ours. These public-private partnerships will continue to be key as we move from hollow words to action to be more competitive. Innovation in our industry has climbed high on the political agenda because of the results of these partnerships.

Jozef Cornu: MEDEA+ and its successor will be at the core of technology development for our evolving information society. In the world of microelectronics and nanotechnology, there is new technology generation every 18 months. Just look at the history of EUREKA and why it was created. One of the founding principles, besides fostering cross-border research and development cooperation, is the speed of decision-making for projects. EUREKA and MEDEA+ projects are more capable of keeping pace with today's technology.

What makes MEDEA+ different from other European research programmes?

Arthur van der Poel: Different programmes have different roles. Projects led by the European Commission generally tend to be for advanced research and development. National projects can even focus on production. MEDEA+ and EUREKA projects are R&D projects, but

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>
> Jozef Cornu

generally more development oriented than research oriented. They are transnational and involve a mixed set of partners. For example, there is ample room for MEDEA+ and ENIAC to survive healthily side by side. [ENIAC is the European Commission's Technology Platform on Nanoelectronics.]

Jozef Cornu: Both EUREKA and MEDEA+ are unique in that they recognise if certain players with the right competencies are well positioned to work together to innovate, they can do so without having to bring 27 countries together to agree. The structure is more flexible and there are far fewer procedures. Most European programmes take a lot of time to be launched. Today's technologies cannot wait for complicated procedures. History has proved this. I am convinced that without MEDEA+ and its predecessor JESSI, we probably would not have a European semi-conductor industry at all. [JESSI was EUREKA's Joint European Submicron Silicon Initiative.]

What is the value added for companies to cooperate under the MEDEA+ Cluster?

Arthur van der Poel: The industry is undergoing an important evolution I call 'de-verticalisation', which means that in the past, every company would do everything themselves. With the maturing of the industry, the tasks in the entire semiconductor chain have become highly specialised. This means a stronger role for MEDEA+ in the future as specialised companies can benefit from cooperating to create value in the sector.

Jozef Cornu: Nanotechnologies are really at the core of the Information Society. Practically all of the progress to date has been fuelled by progress in nanotechnologies or microelectronics. This trend is continuing. Over time, the added value of applications is increasing, products are becoming more complex and the software component is rising. Companies participating in MEDEA+ can benefit from being in an environment where they can cooperate in this evolution.

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