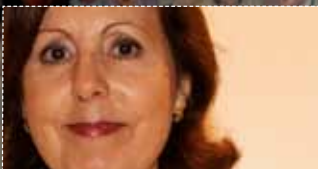
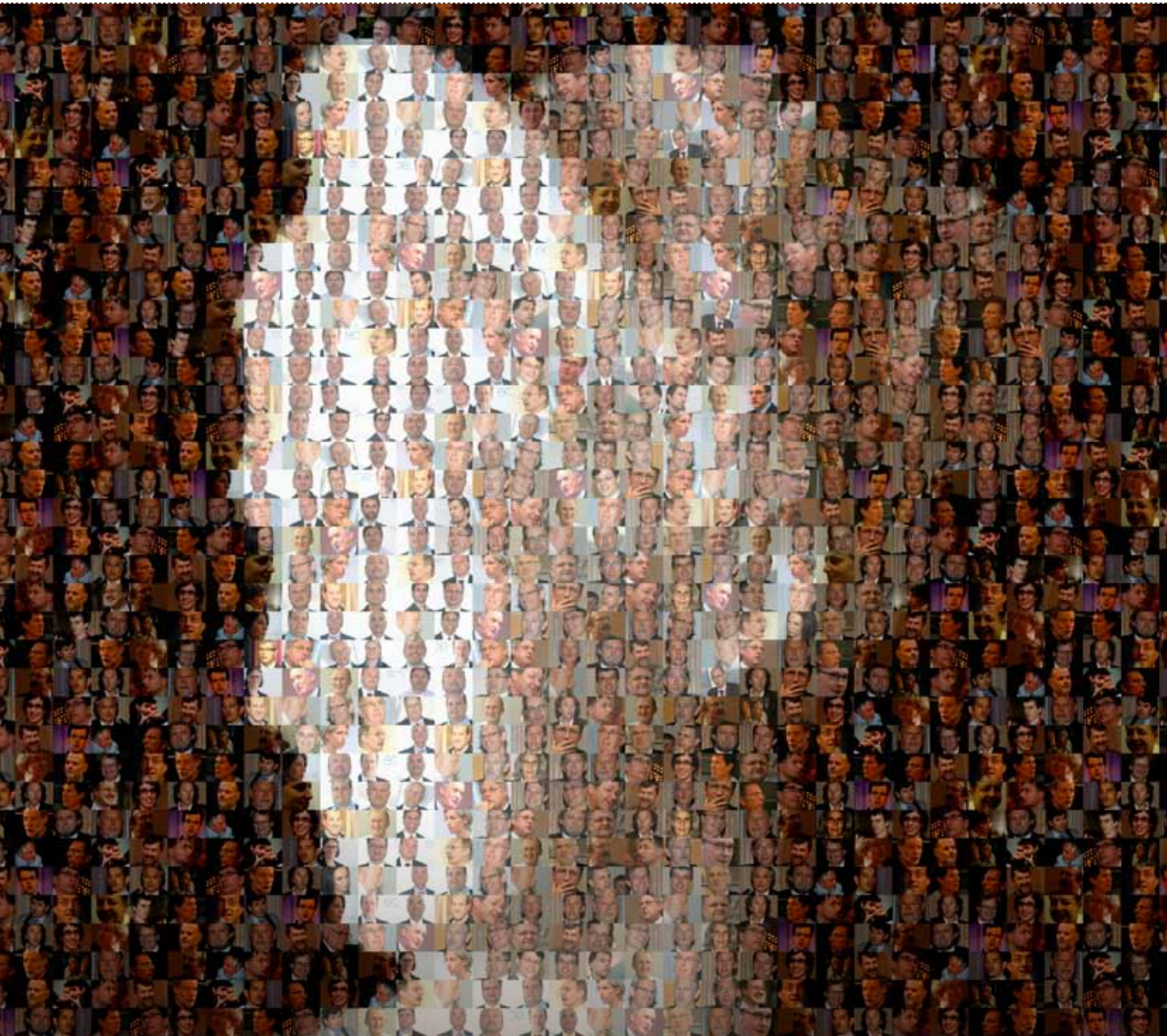


The ARTEMIS Magazine is published by ARTEMIS Industry Association and ARTEMIS Joint Undertaking. The magazine provides information on the developments within the ARTEMIS European Technology Platform and the ARTEMIS community.

ARTEMIS

December 2011 NO.11 ~ ARTEMIS Community



Why, argues MEP Maria da Graça Carvalho, research is essential for the future of Europe and why it is that we need simple and well funded programmes with the right priorities.



According to MEP Lambert van Nistelrooij, JTI's are essential for the European industry and invaluable for the future of research and innovation.

C o n t e n t s

| | |
|---------|--|
| PAGE 2 | ERIC SCHUTZ |
| PAGE 3 | JAN LOHSTROH |
| PAGE 4 | HIGH-LEVEL UMBRELLA |
| PAGE 6 | WHY DO PA'S VALUE COOPERATION WITH ITEA SO MUCH? |
| PAGE 8 | SUNSHINE AND UMBRELLAS IN HELSINKI |
| PAGE 13 | ES4IB CENTRE OF INNOVATION EXCELLENCE |
| PAGE 14 | SMEs IN ARTEMIS |
| PAGE 16 | TTTECH COMPUTERTECHNIK AG |
| PAGE 18 | SECOND ARTEMIS TECHNOLOGY CONFERENCE ORGANISED BY THE SOFIA PROJECT |
| PAGE 20 | SMART SPACES DRIVE INNOVATION IN ARTEMIS |
| PAGE 23 | AUTO.E-MOTION CONFERENCE DAY |
| PAGE 24 | ARTEMIS BROKERAGE EVENT IN PRAGUE |
| PAGE 27 | POLISH LANDSCAPE |
| PAGE 28 | ARTEMIS SPRING EVENT 2012 |
| PAGE 30 | INNOVATION IN ACTION EVENT |
| PAGE 32 | CHAMPIONING THE CAUSE OF RESEARCH, INNOVATION AND JTIS |
| PAGE 34 | CLUSTERS, REGIONS AND CITIES |
| PAGE 36 | ARTEMIS BATON BLUE(S): HEINRICH DAEMBKES |
| PAGE 38 | EDITORIAL INFORMATION |
| PAGE 39 | CALENDAR |



FOREWORD

Dear ARTEMIS friends,

While at the ARTEMIS-ITEA2 Co-Summit in Helsinki, I was once again reminded about the power and importance of the community of researchers and related experts. To see the community in action at such events really showed the difference the four pillars we set for the ARTEMIS programme is making: Think big, act socio-economic, act pan-European and think different. This was apparent in the manner in which the projects presented themselves; by really emphasising their impact, their benefits, their combined strengths as well as their original approach to tough topics, they really are showing the way towards new innovation horizons. And that projects of both ARTEMIS and ITEA colour were cross-referencing their projects shows that the community as a whole really is lining up on the common vision.

But the importance of the community – of the network of research experts in our field – goes beyond the creation of research projects that are important to our industries now or in the near future. By stimulating the community towards an “open innovation” frame of mind, future research will be able to much better build on what has gone before. We witness this effect at the “ARTEMIS Technology Conferences”, where existing projects exchange ideas that can seed future projects and so maximize their long-term impact. The community is also the fertile ground from which the ARTEMIS “Self-sustaining innovation eco-systems” will grow, seeded by the activities around the projects and nurtured by the business vision of participating companies, especially of SMEs.

This ARTEMIS magazine focuses on the community and what it has achieved so far. I wish you enjoyable reading!

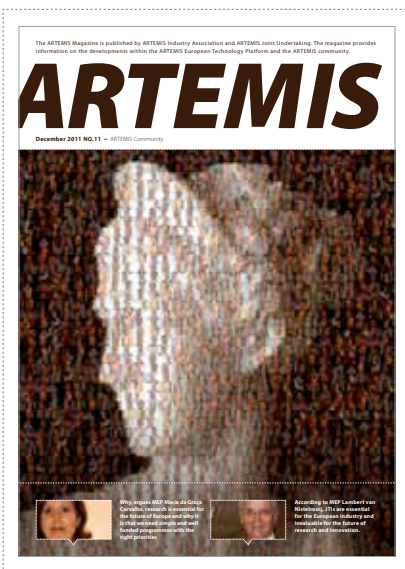
Eric Schutz

'The ARTEMIS vision nurtures the ambition to strengthen the European position in Embedded Intelligence and Systems, to ensure its achievement of world-class leadership.'

(SRA2011, page 51)



FOREWORD



Dear ARTEMIS friends,

On 30 November the European Commission published its final proposal for the successor of FP7: Horizon 2020. In the coming year the Council and European Parliament will discuss the content in a co-decision process, and may amend the text. The funded programme should run from 2014 to 2020. So far the proposed programme funding of 80 billion euros sends out quite a strong signal during a turbulent phase of the European economy. The focus of Horizon 2020 is not only R&D but also innovation. And innovation is what Europe needs to become a strong competitor in the world's economy.

The commission has assured us that the various possible models we are discussing for the continuation of the programme of the current ARTEMIS Joint Undertaking can fit under the umbrella of the proposed Horizon 2020. The year 2012 will be a decisive year for the blueprint for the successor of the current ARTEMIS JU. Some ideas have already been developed and published in previous issues of this magazine.

Our cooperation with ITEA2, now preparing for ITEA3, is gradually being intensified. Most recently an idea was introduced to construct an informal coordination umbrella by starting a strategic advisory council that can signal to both ARTEMIS and ITEA where unnecessary overlaps and/or holes in the approach adopted earlier occur: 'one goal two instruments'. Klaus Grimm is interviewed about this issue. One of the members of the ARTEMIS Public Authorities Board, Michael Wiesmüller from Austria, sheds his light on this topic.

This magazine also contains a report of our successful Co-summit in Helsinki, and a report on ES4IB, since October this year the third Centre of Innovation Excellence with the official ARTEMIS-IA label. Other articles include a report of a recent discussion of SYSMODEL with ARCADIA, how to involve SMEs in challenging innovation projects, and the story of TTTech, an SME success story. With the second ARTEMIS Technology Conference approaching there is a wake-up call for our next ARTEMIS Brokerage Event in January 2012 in Prague with input from Jiri Kadlec (Czech PA) and a report on growing ICT activities in Poland, which may soon become an ARTEMIS Member State.

In October this year the five Joint Undertakings, ARTEMIS, ENIAC, IMI, CLEANSKY and FCH, organised a joint event 'Innovation in Action' in the European Parliament. This magazine reports on this event that was hosted by two distinctive Members of the European Parliament: Ms Maria Da Graça Carvalho and Mr Lambert van Nistelrooij. In November this year they were recipients of the 'Best MEP 2011' award for the categories Research & Innovation (Maria Da Graça Carvalho) and Regional Policy (Lambert van Nistelrooij). We are pleased to be able to count on them in our case for the next phase of ARTEMIS!

I wish you a lot of pleasure reading this issue of our magazine.

Jan Lohstroh

High-level umbrella



When the ARTEMIS programme started life with its first call in 2008, to some extent a sense prevailed that another competitor to ITEA was coming onto the scene, with both ARTEMIS and ITEA vying for (partly) national funding and resources.

BUILDING BRIDGES ~ ARTEMIS is based on the principle of pre-competitive collaboration and cooperation and tries to build bridges to other European Technology Platforms and of course to ITEA. A few years and a number of meetings later, it is clear that while ARTEMIS and ITEA do things in a different way there are commonalities, e. g. with respect to the mission and some research topics. The idea to have some kind of alignment with ITEA, at least on a strategic level, has always been part of our thinking. After all, it makes sense to base all activities on common strategic foundations and directions.

SHERPA DOCUMENT ~ Nevertheless in our striving for collaboration with ITEA, there was a potential dilemma: two programmes, so which programme should get which project and funding? To find a solution out of this potential dilemma ARTEMIS and ITEA sought each other's company to deliberate a way out through so called 'Sherpa meetings'. A result of these Sherpa meetings is written down in a 20-page document. In this 'Sherpa-report' we came to the conclusion that we have one goal using different instruments: using the potential of embedded systems to solve societal challenges, boost wellbeing in Europe and improve the competitiveness of our European industry. In the slipstream of the Sherpa meetings, Rudolf Haggemüller (ITEA chairman) came up with the 'informal umbrella' idea by means of a strategy advisory council, supported by some common working groups. A notion that had been in my own mind for quite some time: a wish for a much closer alignment and cooperation in terms of the strategy and the projects, something that also the European Commission and Member States are very interested in. Having met in

Frankfurt in September 2011 to discuss these matters, and reaffirming the commitment of both ARTEMIS and ITEA at the Co-Summit in Helsinki, a first working group involving people from the two communities will get together mid-December to take the next step.

HIGH-LEVEL UMBRELLA ~ In the High-Level Umbrella cooperation, we will be looking at two things: a coherent mission and strategy in which the ARTEMIS and ITEA programmes have their position on the one hand, and current projects, on the other. We strive to identify the overlaps and gaps as well as to better align the future calls. We realise that this will not necessarily be an easy process when we get down to the nuts and bolts and common priorities. It's definitely a challenge but everyone involved, from both programmes, the public authorities and the European Commission all think this is worth the effort.

Some readers of the ARTEMIS Magazine will question whether this closer alignment under such an informal high-level umbrella will dilute the ARTEMIS or ITEA image. Look at the Co-Summit and the fantastic level of cooperation and community that it is evident that we serve the same community with our own brands in a complementary way. It is a relationship in which the two programmes complement and supplement each other, as an informal coordination-ship in which both strive to achieve the same goals, sometimes separately and sometimes together. We are going to set two conditions for this umbrella soon.

As informal advisory council, it must not be a legal entity – there are enough legal entities in the world, we don't need another.



Klaus Grimm

President of ARTEMIS Industry Association

Klaus Grimm started his career with electrical/electronic company AEG, working on reliability calculations for technical equipment. In the mid 1980s, he shifted into software engineering. In 1989, AEG Research became part of Daimler Benz. Daimler concentrated the whole of its research into one department, giving Dr. Grimm the opportunity not only to work for AEG but also on defence electronics, space/aerospace and transport. "This was a really fascinating period where I got to know different application areas of embedded systems – not only AEG equipment but also trains, planes, satellites and cars."

Later Klaus Grimm became head of the Daimler Software Technology Laboratory in Germany.

This facilitates flexibility. There should be no mutual vetoes, so there should always be scope for ARTEMIS or ITEA to also do their own thing. The umbrella will provide more mass, more visibility and more impact – like the Co-Summit. ■

Why do PA's value cooperation with ITEA so much?

Michael Wiesmüller interviewed by Else Embregts



The Public Authorities Board represents the public partners in the ARTEMIS Joint Undertaking, which is a tri-partite Public Private Partnership between the European Commission, Member States and the ARTEMIS Industry Association. The 22 member states participating in ARTEMIS, have nominated their board representatives in the Public Authority Board. In this article we want to show a tip of the iceberg of the question what public authorities think about the High level Umbrella cooperation between ARTEMIS and ITEA.

Aldo Covello, the re-elected Chairperson of the Public Authority Board of the ARTEMIS Joint Undertaking contributed some valuable statements on the cooperation between ARTEMIS and ITEA in ARTEMIS Magazine 9. He underlined the importance of ARTEMIS as the only tool able to gather together all the European actors operating in the embedded systems field. According to Aldo Covello, the ARTEMIS modus operandi seemed to be one of the best candidates for the effective implementation of ERA. He stated: "ARTEMIS was not born of thin air but emerged from the long experience gained running two important EUREKA cluster projects: ITEA and its successor ITEA 2." He concluded his article by saying that we perhaps must work even harder to find a way to cooperate. His wish was to face one unique programme overseeing the coordination and definition of a global vision and a Strategic Research Agenda with two, or even more, instruments to implement this using procedures and methodologies that are more suited to the different needs of the various European actors. Evidently, the high level umbrella cooperation between ITEA and ARTEMIS will be a step in the right direction.

Michael Wiesmüller, the Austrian Public Authority, was willing to share his thoughts already on the High Level Umbrella cooperation with ITEA. Michael Wiesmüller is Head of the Department for ICT-research at the Austrian Ministry of Innovation and Technology and represents the Austrian public authority with respect to both ARTEMIS and ITEA 2. Here he reflects on

and considers what the future might hold in store, especially in the light of high-level umbrellas and the landscape after 2013.

According to Michael Wiesmüller, from an Austrian perspective, "there is a strong conviction that the ARTEMIS JTI has delivered a proof of concept, being a complete new tripartite European instrument for downstream, large-scale industrially driven research. With respect to the situation post-2013, he thinks there are three main options.

"First, a prolongation of the Joint Technology Initiative (JTI) as it is, without any major modifications to its basic design from 2008. Yet, this option will deprive us of implementing improvements stemming from what we have learned from the first operational years."

"Thus the second option would be optimisation of weak spots. Following the results of the first interim evaluation of ARTEMIS and several discussions in the JTI bodies, the main topics are well known and related to questions such as the legal framework of the JU, the financing of the office, the interplay between budget commitments from member states and its implementation along a ranking list, the robustness and focus of the industrial strategy and its relation to national priorities. This optimisation is still work in progress."

"The third option is to create something different, taking into account important

externalities such as the relationship with ITEA 2, the emerging new European framework programme Horizon 2020, the future of the European PPP's as such or a potential administrative merger with ENIAC. Although this option will have to deal with some moving targets, it seems to be the most advanced, since it is evident that 'ARTEMIS 2' has to cope with its environment and should adequately match (instead of compete with) a new European RTDI landscape."

"With respect to the relationship with ITEA 2, I think we are well on the way. The recent proposal of a high-level umbrella between ARTEMIS and ITEA 2 has introduced the right cornerstones. Strengthening European competitiveness in Embedded Systems and Software with tangible real impact on a global scale calls for further European consolidation and an efficient organisation of our funding and research policy instruments. Therefore, the efforts in uniting our forces and hence leveraging synergies both on an operational and a project portfolio level can serve as the command of the day. The recent fruitful Co-Summits in Helsinki and Gent have already proved the added value of a common approach. These first steps nourish the hope that in the near



future the umbrella will mature to a common solid and visible roof." ■

Thank you very much Michael Wiesmüller.

Sunshine and umbrellas in Helsinki

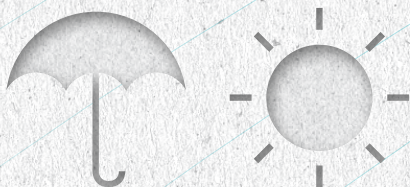
ARTEMIS and ITEA Co-Summit 2011 in Helsinki, Finland, on 25 and 26 October

Helsinki embraced the ARTEMIS-ITEA Co-Summit as Embedded Systems came to the 'home' of Nokia, a company that played a key role in the birth of ARTEMIS between 2005 and 2007. In his opening address, Klaus Grimm, President of the ARTEMIS Industry Association and Chair of the Industry Research Committee of the ARTEMIS Joint Undertaking, welcomed the ITEA and ARTEMIS communities. The Finnish state secretary for Economic Affairs, Mr Jouni Hakala, remarked how encouraged he was to see the focus on results, the spirit of real cooperation and R&D and the voice that SMEs were gaining in the projects. He even expressed the city's gratitude by arranging for the sun to shine during the Co-Summit. Nevertheless, there was plenty of talk about umbrellas.

Keynote speaker at the opening of this year's Co-Summit was Japan's Ken Sakamura, whose look at the role of ubiquitous computing in the wake of the earthquake and tsunami extended the pan-European dimension championed by Eric Schutz, Executive Director of the ARTEMIS Joint Undertaking, to global proportions. Professor Sakamura also extolled the virtues of the Toyota Prius in the wake of the disaster – as a very capable plug-in emergency generator for the home.

COOPERATION AND COLLABORATION

~ 'Cross-border cooperation for clean technologies' was the appropriate title of the Co-Summit as the Helsinki sun shone on a splendid repertoire of projects and presentations demonstrating the real impact of the innovation and creativity of the projects on display in meeting societal challenges. Many projects revealed the significant progress that had already



been made in boosting performance and reducing energy, with targets not only being met but often exceeded. One of the keys to this success can be attributed to the extensive cross-border cooperation apparent in all of the projects, some of which involve 10 or more countries and as many as 50 or more partners. An equally important element in the projects is the participation of more and more SMEs, the job-creators, and open collaboration. The result: acceleration of development to market and a real impact on people's lives. With cooperation between ARTEMIS and ITEA continuing to be reinforced and

enhanced, there was general agreement among the executives of the two programmes that the creation of a kind of high-level umbrella would enhance the impact and growing sense of mutuality.

BETTER FUTURE ~ The exhibition floor was a dynamic 'market place' in which stand holders mixed and matched as many projects saw the possibilities of cooperating and exchanging knowledge with other projects. Visitors, including the press, public authorities and technology students, listened keenly to various stand presentations and took the opportunity to wander around and talk at length to the project leaders.

The press had the opportunity to acquaint themselves with innovations expressing the range of this year's themes from the clean technology of the POLLUX platform (for next-generation electronic vehicles)



After such an enervating day, and the conference centre still buzzing with very positive vibrations, there was little time for the Co-Summit participants to rest as the sun set and a couple of hundred pairs of legs made the short ten-minute walk to Helsinki City Hall where a sumptuous networking buffet had been laid on by the city council of Helsinki.

The Finnish State Secretary for Economic Affairs, Mr Jouni Hakala

Professor Ken Sakamura

Klaus Grimm, President of the ARTEMIS Industry Association during his Opening key note

through to personalised healthcare innovations of projects like Chiron (patient-centric integrated health management systems) and High Profile (integrated 3D brain imaging).

PARALLEL SESSIONS ~ The parallel sessions that followed the guided tours looked at three specific areas: automotive, healthcare and security. In healthcare, for example, the need for novel, affordable solutions is evident throughout the healthcare cycle, and Caspar Garos of Philips Healthcare introduced a series of projects that reveal how the projects in ITEA and ARTEMIS programmes have taken up this challenge. These range from person-centric health measurement devices, devices to improve the lives of the elderly and disabled and approaches to manage preventative and post-illness fitness interventions, through to service infrastructures for technical facilities in hospitals. For the most part, there was a strong emphasis on the personalisation of healthcare and making sometimes complex technology a lot more user-friendly for the patient. Cost efficiency was a second theme, and a lively debate ensued on topics such as the central role of marketability and key financial players involved in the care cycle. Equally, the automotive session led by Fiat's Marco Ottella zoomed in on several fascinating opinions, innovations and developments that underlined both the concerted efforts being made to make mobility safer, cleaner and more affordable as well as instances in which SMEs were increasingly becoming involved in major

projects and consortia with the result that both knowledge and business are gaining a significant boost all round. The security session facilitated by Janne Järvinen presented similar developments and findings in that specific field.

So the exhibition, along with the various speeches and parallel sessions, not only demonstrated the huge added value (read: impact) that ARTEMIS was having on the European embedded systems industry and on the lives of EU citizens but also revealed the criticality of the ARTEMIS programme to the future competitiveness of industry and well-being of society. In such uncertain economic times as those in which we find ourselves today, events like this Co-Summit give us hope for a better future.

COMMUNITY SESSION ~ Wednesday morning was devoted to the ARTEMIS Community session introduced by Eric Schutz who reiterated the four pillars of the ARTEMIS strategic research agenda: think big, act socio-economic, act pan-European and think different. In a prelude to the four presentations, Eric recalled the crucial role of cooperation in R&D to generating both product and market innovation with the knock-on effect this has had on creating new markets and subsequent jobs, and in improving the quality of life in those areas targeted as key societal challenges. Furthermore, he underlined how the projects are helping to build self-sustaining innovation eco-systems and Centres of Innovation Excellence. Finally, he praised the SME sector for its contributions to making the many projects successful, emphasising the key role that SMEs play and will continue to play in shaping the innovation landscape.

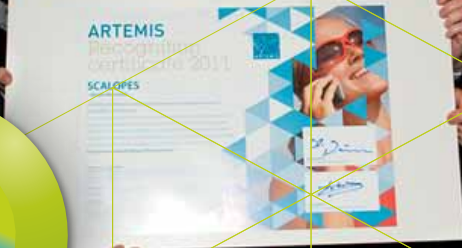


Panel session on 'Cross-border cooperation for clean technologies'





2011



OBB



Markku Raitio, ICT Director of the City of Helsinki, welcomes the Co-summit 2011 in the City Hall.

The series of four presentations kicked off with eDIANA (Embedded Systems for Energy Efficient Buildings), a first call project reaching its climax. Project leader Rafael Socorro told us that the Co-Summit 2011 was an excellent opportunity to share the successes of this project, which kicked off in February 2009 on a three-year trajectory. The eDIANA project has played its part in providing practical solutions by developing a system for using embedded systems to manage energy use through focusing on creating a multi-faceted, multi-purpose framework for the building sector to assess, handle and optimise energy consumption in Cells (living/working units) and MacroCells (residential and non-residential buildings). The development of a real-time power consumption sensor and embedded energy controller for urban and domestic environments not only reduces energy demand but also allows utility companies to more effectively manage energy load and allow consumers to adjust consumption and to make real data-based decisions. With the project nearing its end, this does not mean that work will stop. Rafael: "I am so pleased that we have been able to show the final results of the project at Co-Summit 2011 and the news that the ARTEMIS Steering Board has granted the eDIANA project status as a Centre of Innovation Excellence means that the approach will go on even if the project comes to an end."

The next presenter, Professor Koen Bertels, very capably filled in at the last minute for Dagfin Brodtkorb, the project leader of

the iFEST project. The project is geared to specifying and developing an integration framework for establishing and maintaining tool chains for the engineering of complex industrial embedded systems. With the complexity of embedded systems increasing and being driven by market demand for more intelligence and an evolution towards more complex electronics, the upshot is that

"the diversity and commonality of the ARTEMIS programme"

engineering tools are not well integrated and engineering costs and quality problems are escalating. What iFEST sets out to demonstrate is a potential reduction by 20% of both time-to-market and engineering lifecycle costs, including the cost of poor quality. It will enable engineers to explore the architectural design space at a high level of abstraction, select a cost-effective design, and from the abstract models produce, semi-automatically, the hardware and software implementations in a cost-effective balance.

A major innovation in this respect is the targeted integration of tools from the world of model-driven engineering with traditional HW/SW co-design tools. Several iFEST industrial case studies will validate the integration framework and two tool chains, for control and streaming applications. The

integration framework will permit tools to be readily replaced within the tool chain, thereby dealing with issues such as tool obsolescence and tool lock-in. It will effect a shift in the industry from a low efficiency of tool usage to innovative products and services that can be designed much more efficiently due to well-functioning tool chains. Having a greatly improved

design capacity will create new markets and redefine existing ones for industrial embedded systems.

While some projects are nearing the end of their trajectories and others midway through, the Internet of Energy project is just beginning. Despite its 'infancy' as an ARTEMIS project, the Internet of Energy is already beginning to make an impact – as it showed at Co-Summit 2011. The project leader's Ovidiu Vermesan explained what this exciting new project was all about in the third presentation. With power generation now starting to include solar, wind and wave energy the need is becoming increasingly urgent to have an intelligent power grid, a network with the flexibility to accommodate to a mix of centralised generation, localised sourcing and local use. But to have an intelligent grid, you need to be able to transfer energy



Ovidiu Vermesan

in much the same way as you can transfer data on the internet. And that's the way to cut energy consumption. Take the car, for example. The traditional combustion engine is locked into an inefficient well-to-wheel pipeline, involving oil production, refining and transport. If the electric car is to become a truly universal mode of transport, it has to be made energy efficient – able to switch power source, able to switch power usage and to communicate effectively with owner, driver, and a range of vehicle-related suppliers. The interface is one of the essential elements to make the electric vehicle a success. The Internet of Energy aims to provide the architecture to connect the Internet with energy grids to create an electric mobility infrastructure. The project kicked off in June 2011 and the defining architecture is now in the finalisation phase. Specific applications will range from in-car switching networks that switch from battery to solar panel sources and from lighting to charging uses, bidirectional charging to augment the current unidirectional grid-to-car charging, wireless communications to provide data including location and battery status, fast charging solutions, and smart metering. This project also draws on components developed by POLLUX and E3Car but is avoiding overlap through active engagement in a range of meetings such as the European Conference on Nanoelectronics and Embedded Systems for Electric Mobility. The Internet of Things, Ovidiu pointed out, is not just a matter of solving technological problems but also about helping the EU to maintain its competitiveness.



Rudolf Hagemüller, Cecile Dubarry and Klaus Grimm

The final presentation nicely rounded of the series as Frans Theeuwen, of NXP, closed proceedings with a brief presentation of SCALOPES, the first ARTEMIS project to have been completed, in March this year. This short, two-year project encompassed eleven countries and 36 partners. Its aim was to reduce energy consumption significantly while boosting performance at the same time this year. Frans looked back on what SCALOPES had achieved in terms of fulfilling its goals of reducing power consumption by 30% and increasing performance by 20% for multi-core embedded systems in all the application domains related to SCALOPES. The charts and graphs revealed that not only had the targets been reached but in many cases exceeded. The design tools generated will allow the design time to be reduced by 20% or more for the typical embedded system architecture designs for SCALOPES application areas while resource utilisation can be boosted by 50% or so and the form factor reduced by 50%. While SCALOPES may have ended, the impact of the project on industry will ensure that the results achieved will live on. In recognition of the fact that this is the first ARTEMIS call to have been completed, Frans was presented with a commemorative plaque.

Lunch beckoned but the appetites of those present had been whetted by four projects that were representative of both the diversity and commonality of the ARTEMIS programme.

WORTHY WINNER ~ With attendance high and interest keen, with new acquaintances



made and existing ties strengthened, everyone left Helsinki a winner. However, special mention must be made of one particular winner – the Co-Summit award for the project voted by peers as the best project presentation. This year the deserving winner was eSONIA, a consortium comprising 15 partners from 4 different countries (Finland, Czech Republic, Italy and Spain). The project aims to enable today's factories to recover from undesired situations. In other words, to realise the asset-aware and self-recovery plant by the novel integration of emerging technologies such as semantic web services at device level, IPv6-based communication networks in large, distributed and heterogeneous applications, Web Services in wireless sensor nodes, etc. By bringing forward new solutions in processing, aggregation and composition of data, eSONIA will help boost work time efficiency and personnel motivation in the manufacturing sector as well as reduce the large number of industrial accidents caused by human error due to complex operations.

Appropriately, the Co-Summit was closed by Cécile Dubarry, Director of the Service for Communication and Information Technologies at the French Ministry of Economy, Industry and Employment. Paris is the venue for next year's Co-Summit, an event that both host and participants alike hope will emulate the Helsinki experience. In Olympic year, the slogan could read: citius, altius, fortius (faster, higher, stronger). In any case, ARTEMIS and ITEA will continue to strive together for gold. ■

ES4IB Centre of Innovation Excellence

By Jokin Garatea

For ARTEMIS, a Centre of Innovation Excellence (CoIE) is a group of multi-country, multi-organisation, interconnected R&D actors and businesses that by efficient planning, acting and cooperation, achieve a significant advantage in innovation success in a specific market. CoIE's exist mainly to create new, self-sustaining businesses, which in turn drive employment, social responsiveness, etc. At the Co-Summit 2011 in Helsinki, eDIANA was granted the status of Centre of Innovation Excellence. It will be known as ES4IB, the acronym for Embedded Systems for Intelligent Buildings.

Jokin Garatea, Director of International Projects at GAIA, the telecommunication cluster of the Basque Country, leads the ES4IB. A graduate in both Law and European Economy, he promotes projects related to technology and is a regular conference speaker on technology transfer, European integration, multimedia and the legal aspects of e-commerce. "I consider this ES4IB CoIE as the final stage in structuring excellent partners working together in different International projects related to the innovation chain in ICT for intelligent buildings. Since buildings is the heaviest consumer of energy in Europe (40%) and are also responsible for about a third of Europe's greenhouse gas emissions, this is a vital focal area. The centre will contribute to Europe's leadership in ICT-enabled energy efficiency through intelligent solutions and support Europe's objective to reduce energy consumption by 20% by 2020 and facilitate broad use of ICT systems to enable future buildings to become at least energy neutral."

WHY SPAIN? ~ "High performance in efficient buildings (using ES) has been an important research and business focus for the partners in general and specifically in Spain and the eDIANA project was led by the Spanish company ACCIONA under the ARTEMISIA JTI first call. The ES4IB is working with other centres and will increase collaboration between centres, universities and companies in Spain in the area of intelligent buildings. We will use a European living lab

strategy and some partners are already in the process of applying for membership of ENOLL, the European network of living labs. The a real-life test and experimentation environment of a living lab enables users and producers to co-create innovations through exploration, experimentation and evaluation."

WHAT BENEFITS DO YOU PERCEIVE? ~

"In brief, we envisage benefits in terms of standardisation, with cross-area standardisation analysis within and beyond the embedded system, ecological principles whereby we recognise real concerns about safety, energy usage and sustainability, and environmental impact with a significant reduction in emissions. Furthermore, a SMEs and institute spin-offs stand to benefit if they can bring the technology to market. Finally, ES4IB continuously supports education, promoting research and making use of the research potential of the universities involved, supplemented by the work of the technology centres and industry needs."

WHO SHOULD CONTACT THE ES4IB? ~ "Medium and small companies from industrial sectors working with similar technologies may be interested in supporting a research group,

focusing on new R&D action about emerging technologies, where risks are high but at the same time considerable economic and technological profits may be achieved. Cooperation with universities and/or technological centres will increase the value and size of the new projects and create a win-win situation. Finally, contact will be sought to secure the public and private funding needed for research projects." ■



The point of contact for the CoIE will be at GAIA www.gaia.es (garatea@gaia.es) in Bilbao at the BIZKAIA TECHNOLOGY PARK, in a dynamic environment designed to convert knowledge into innovation, 15km from the city centre, 10km from Bilbao International airport and 15km from the University of Deusto and the Basque Country University.

SMEs in ARTEMIS

By Ivan Ring Nielsen & Iñaki Eguia

As part of the recent ARTEMIS and ITEA Co-summit in Helsinki the SYSMODEL project teamed up with the FP7 ARCADIA project to define measures for good practice in involving SMEs in European R&D. A round table session was organised with representatives from both projects. While ARCADIA addresses the Community level of large research actions oriented to a coordinated alignment with the ARTEMIS vision, SYSMODEL represents a successful implementation at a regional level in specifically addressing productivity among SMEs.

SME CLUSTER ACTIVITIES ~ The round table discussion focused on two aspects of SMEs in community research programmes, i.e. how to get SMEs involved and how to maximise their output from the actual projects. ARCADIA has developed a roadmap-based strategy plan that includes market trends and drivers, mapped technologies, application needs and application capabilities, research challenges, required skills and future research targets within major industrial sectors. In addition, ARCADIA has identified regional/national organisations in support of SME cluster activities. ARCADIA aims to converge and align these clusters and SMEs requirements with one shared European vision. These clusters could foster transnational inter-clustering. Community programmes should address the changing role of clusters to facilitate the emergence of new competitive industries in Europe, and ensure stronger engagement of SMEs in Community programmes.

ARTEMIS and similar EU programmes should recognise excellent clusters and their specific mission to link research and innovation, which is a new strategic issue for clusters and their companies. The cluster organisations may facilitate the dissemination of information about the



The development kit includes a Radar RF-module with a Novelda Radar IC, Antennas, an IO module for communication with a PC.

ARTEMIS programme and the setting up of project partnerships, enabling more SMEs to come on board. With their proximity to firms, cluster organisations can play a role involving SMEs that have difficulties developing international cooperation and to help them identify relevant partners to initiate trust-building processes geared to having market impact.

THE OPEN INNOVATION COMMUNITY ~ An Open Innovation community will enable SMEs to exploit external ideas as well as internal ideas, and internal and external paths to market, as the companies look to advance their technology. The central idea behind open innovation is that in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but need instead to buy or license processes or inventions (i.e. patents) from technology providers. In addition, internal inventions not being used in a company's business might be transferred outside the company (e.g., through licensing, joint ventures or spin-offs for a financial return).

The SYSMODEL project provides SMEs with open-source based system level modelling tools for the design and implementation of time and power critical, heterogeneous systems. The tools allow the SMEs to build cost-efficient ambient intelligence systems with optimal performance, high confidence, reduced time to market and faster deployment. The focus is on the development of modelling concepts, methods and tools that master system complexity by allowing cost-efficient mapping of applications and product variants onto an embedded platform while respecting constraints in terms of resources



Just a small improvement in the methodology SMEs use for embedded systems design can result in considerably more competitive strength and effectiveness. This is the vision behind SYSMODEL whose aim is to give SMEs the confidence to build cost-efficient ambient intelligence systems with optimum performance, accelerated time-to-market and faster deployment. The SYSMODEL deliverables offered to SMEs include a modelling methodology described in a "How to do system level performance modelling" manual, open-source point tool prototypes for use in performance modelling and analysis, a number of SME verification case studies that illustrate this methodology and a comprehensive training programme taking the SMEs from awareness level through in-depth training to online tutorials. The potential impact of this project is huge.

Start date: January 2009
 Project duration: 36 months
 Total investment: €5.4 m
www.sysmodel.eu

(time, energy, memory, etc.), safety, security and quality of service.

SMES IN SYSMODEL ~ Thanks to a common cultural background, a broad-based education, higher levels of R&D investment, a strong home base of thousands of innovative SMEs and an open business environment, Nordic businesses and their workforces are demonstrating high levels of creativity. Nevertheless, challenges still lie ahead in turning all these potentials into real and sustainable business success. Without doubt, innovative technology concepts such as embedded systems will play a crucial role in this respect. The

development of new technologies is often driven by academic activities. However, academic activities are often not aligned with market needs and also publicly funded research projects appear to be loosely coupled to industrial needs. In order to get a more market driven approach a better understanding of the requirements of innovative SMEs is needed.

In SYSMODEL the consortium is made up of seven SMEs and three R&D providers. Novelda is an innovative Norwegian SME company specialising in nanoscale wireless low-power technology for ultra-high resolution impulse radars. The Novelda Impulse Radar is a complete CMOS radar transceiver integrated on a single chip. Recently Frost & Sullivan awarded Novelda



Novelda's Radar ICs are single die CMOS chips that deliver high performance, low-power and small-size solutions for Impulse RADAR applications.

the prestigious "2011 European Sensors New Product Innovation Award". In the round table discussion Novelda's CEO, Dag T. Wisland, explained how they had applied the SYSMODEL tools to model the next generation UWB radio system. "The modelling enables us to evaluate potential



The main objective of the ARCADIA project is to have better and more effective coordination of the efforts to optimise the resources and to contribute to the advance of an ERA for the Embedded Systems field, thereby enhancing Europe's future growth, competitiveness and sustainable development.

Start date: January 2010
 Project duration: 24 months
 Total cost: €750.000
 EC contribution: €750.000
www.arcadia-project.eu

system architectures and tweak important parameters while the design is still at a conceptual level. This development step would have taken much longer time using existing design methods and, even more important, the modelling reduces the risk of costly re-spins." According to Wisland, it is safe to say that the methodologies provided by SYSMODEL have significantly improved Novelda's productivity.

PROJECT RECOMMENDATIONS ~ As part of the round table discussion the SME lessons learned from the SYSMODEL project can be summarised as:

- > Define objectives for each SME early in the project
- > Define SME success criteria (measurable and visible productivity measures)
- > Provide training (basic as well as hands-on) to the SMEs throughout the project duration
- > Provide guidance and tutorials to tools and methods
- > Understand the SME applications
- > Assign individual RTD partner to support each SME ■



TTTech Computertechnik AG

the story of an SME success

By Stefan Poledna

Founded in 1998, TTTech Computertechnik AG has become the world's leading supplier of dependable networking solutions based on time-triggered technology and modular safety platforms. TTTech has won several prizes and awards for its highly innovative products and has been ranked among Europe's 500 most dynamic companies. Dr. Stefan Poledna, co-founder of TTTech Computertechnik AG and member of the executive board since the company's incorporation, joined the industry in 1982 in the area of software development for telecommunication and automotive projects. He has more than 25 years' experience in the area of automotive electronics. He holds a PhD (1994) in computer science from Vienna University of Technology, where he has continued to lecture on Dependable Computer Systems since 1997, he has authored several publications, patents and actively participated in a number of European Union-funded research projects in the field of Time-Triggered Technology.

The Chair of the ARTEMIS SME-Chamber, Pauli Kuosmanen, says that SMEs are an important link in the value chain for high tech systems and solutions. In the ARTEMIS eco-system model, high-tech SMEs are expected to play a key role in the capitalisation and dissemination of the technologies. What is your opinion? ~ I believe that SMEs have a very important role to play in the landscape of innovation, research and development. They are more agile and productive in terms of generating innovation than much larger companies, and, in high-tech sectors, tend to have more specialised knowhow in specific areas. SMEs that lead in their field often have very good links with the academic research community, with professors and research assistants. In this way SMEs can act as a kind of transmission agent of universities and even corporate research to the market, something that can be of benefit to larger companies too.

SME participation is very important in most of the innovation programmes but how can they have the same kind of influence as large enterprises? How can SMEs become more visible for potential ARTEMIS consortia? ~ Of course, it's much more difficult for an SME to have the same impact as a large enterprise simply in terms of resources. But certainly for us as an SME we find that we get a good response in the research programmes because we have a very specific know-how in the area of dependable networking and safe controls, so we are often invited by large corporate to take part in programmes because they value our expertise and want to have us on board. For us it was even possible to become a project leader with large corporate and research organisations on board. So I think it is possible for SMEs to have impact in those programmes. But if you don't engage, then nobody knows about you and if you don't have the expertise, nobody cares.

SMEs can be influential but limited resources make this more challenging. For a very small SME it's almost impossible. You need a few people who can devote their time to cooperation and liaison with ARTEMIS and other European funding programmes. On the other hand, if you take a strategic approach and have really good people, you can have a similar impact like we have. In our case, we feel respected as a first-class citizen in the research community. We don't feel discriminated because of our size. We have very good links with the Technical University of Vienna, with Professor Kopetz, a very well respected figure in the design of research programme. So I don't feel we lack anything in this respect compared to large enterprises.

As for becoming more visible, strategic commitment is essential. You then need to allocate your resources, knowledgeable people with expertise. And you have to be open to the prospects. ARTEMIS provides excellent support – all the meetings, brokerage events, information about upcoming programmes – so if you are prepared

to spend some time and knock on the door, as it were, you will be welcomed with open arms. There's plenty of information – it's not hard to get. A lot of things are in place. You need to take the next step, for example, attend the brokerage event. Become involved and if you produce good work, you gain credibility and become invited to join the programmes.

After three ARTEMIS Calls a vital statistic shows nearly 30% SME participation and nearly 20% SME funding. ~ I believe this is a fair reflection of what is happening and, in fact, I think these are very respectable figures. A very good development, given the much smaller resources that SMEs have at their disposal. It shows just how central SMEs have become in the Call participation picture.

How would you describe the secret of your success? ~ It is about technology leadership in a very focused area. TTTech has a clear mission and vision. We are providing electronic robustness for a more electric world. We want to be leading in the very specific segment, that for embedded networks and modular safety controls in markets that benefit from reliability and robustness. And with this clear focus we aim to have a very strong technology position, so we have strategic investments in R&D and technology. A key way to do this is through European funded programmes like ARTEMIS, which for us as an embedded systems company plays a vital role. And the success that we have achieved so far is to a large extent driven by European funded research programmes. By being part of such programmes we are able to maintain our leading-edge position.

What would your advice be to other SMEs seeking similar success? ~ Of course, there's no free lunch in life and that's very true for research as well. So if you want to participate in a research programme, you have to set up your organisation in such a way to be able to do that. You need to have people who take time to collaborate with ARTEMIS and other programmes, people who have know-how and are experts in their field. In other words, you need to plan your resources to cooperate with these programmes and with other large companies. It's a three-pronged approach. You need to further R&D, you need to look for cooperation partners – this is vital if you want to identify the technological needs and where your technology can fit in this respect – and get some funding that helps you to keep on top of the R&D and technology roadmap. In our case, the fact that NASA has decided to use our backbone communications for their next generation space programmes, that we are on board the Audi A8 and Boeing 787 and Airbus A 380 is down to our position of technology leadership. Indeed, our Airbus A380 involvement was down to our participation in a European funded programme. We know that NASA would not have selected our technology if we had not been part of a research programme and had the respective funding. ■

The image shows a conference room from a high-angle perspective. In the foreground, several people are gathered around a table with multiple laptops. Some are looking at the screens, while others are in conversation. The room has a rustic feel with a wall covered in faded, historical text and logos. A large circular logo with the word 'Sofia' is prominent at the top. Other logos include 'SmarcoS' and 'CHIRON'. The text on the wall is in Italian, mentioning 'BOLLETTINO DI...' and 'COMANDO...'. The overall atmosphere is professional and collaborative.

Second ARTEMIS Technology Conference organised by the SOFIA project

By Elisa Gayol Cuervo, INDRA Sistemas S.A. in collaboration with Petri Liuha, Nokia Research

The venue for the second ARTEMIS Technology Conference was Bologna (Italy) from 12 to 13 September 2011. This public and open event, organised by the ARTEMIS-JU Call 2008 SOFIA project, was hosted and co-organised by the University of Bologna and Indra Sistemas S.A. The successful aim of the event was to provide public visibility on technical aspects raised and solved by ARTEMIS partners and to increase the effectiveness of R&D results.

The conference gave three running 2008 & 2009 call projects - SOFIA, SMARCOS & CHIRON - the valuable chance of presenting their results to an international audience of colleagues working in the same field, to get critical feedback on the ideas presented and to network with people who share similar interests. The three projects focused on cross-domain technology and tool development. These developments address various application domains relating to ARTEMIS industrial priorities such as smart environments, healthcare systems and human-centred design of embedded systems.

During the two-day event, SOFIA (Smart Objects for Intelligent Applications) organised the conference and gave a total of 11 presentations on its main results: SOFIA architecture, platform, tools and applications. In addition, the project presented 10 demos on the successful application of SOFIA technologies in Smart Home, Smart City and Smart Indoor Spaces that were of great interest to event participants.

It is relevant to mention that the Smart Space vision and middleware provided by SOFIA is shared and already applied by the 50 partners within the 3 participant projects. In the next article you can read what this Smart Space Vision 'is all about'.

SMARCOS (Smart Composite Human-Computer Interfaces) was very active too, with presentations on Obtaining and Using Context Information in Personal Attentive Systems, Challenges in Designing Inter-usable Systems and demos on Exploring the Usage of Context-based Awareness Cues in Informal Information Sharing and Integrating Distributed Context Information. It is important to highlight that

The event was attended by 65 people from 6 European countries. The two-day conference included 21 presentations and one keynote speech on embedded systems. In addition, audience interaction was fostered by a total of 15 demos, illustrated with 13 posters and 4 videos, and a very proactive Expert Panel session, on ARTEMIS JU specificity in European research and impact of current projects

SMARCOS received the event's demo award for its attentive coaching system targeting the adoption of a healthier lifestyle.

CHIRON (Cyclic and person-centric Health Management) took part and actively contributed by giving five presentations and two demos on Using a Smart Space-based Infrastructure for Remote Monitoring of Health Parameters and Exploiting FPGAs for Fast DSE of ASIP-based MPSoCs.

In conclusion, the second ARTEMIS Technology 2011 was a fruitful event with attendees from Austria, Belgium, Finland, Italy, Spain and the Netherlands, ensuring further discussion outside the conference and new and further multi-project collaboration.

The organising and programme committees would like to thank all the participants and hope they enjoyed the conference. ■

An overview of the posters and presentations is available at: www.artemis-association.org/atc_presentations

SMARCOS

SMARCOS helps users of interconnected embedded systems by enabling devices and services to communicate in UI level terms and symbols, exchange context information, user actions, and semantic data. It allows applications to follow the user's actions, predict needs and react appropriately to unexpected actions. With many products today connecting with web services (media players, refrigerators, e-books, even cars), distributed computing is becoming the norm in embedded systems. However, connection problems, firmware incompatibilities, incomprehensible dialogue boxes and just plain bugs plague much of the present crop of commercially available solutions. New challenges are also emerging for user interaction. Existing efforts towards interoperability (e.g. ARTEMIS project SOFIA) have largely focused on architectures. SMARCOS extends these efforts at user level.

www.smarcos-project.eu

CHIRON

Chiron intends to combine state-of-the-art technologies and innovative solutions into an integrated framework for effective and person-centric health management throughout the complete (health)care cycle thus responding to the present-day demographic and socio-economic challenges facing healthcare: from an ever ageing population suffering from chronic and cardiovascular diseases and various handicaps to the need for affordable 'global' healthcare provided by fewer and fewer professionals and medical infrastructures for critical, often mobile, patients.

www.chironproject.eu

Smart spaces drive innovation in ARTEMIS

By Elisa Gayol Cuervo, INDRA Sistemas S.A. in collaboration with Petri Liuha, Nokia Research

The SOFIA Smart Space vision consists of real-life environments where information on people, devices and physical objects and on the available services is easily provided to users and customers. The physical environment is enriched with digital content and smart services. In Smart Space, the physical world is connected with the information world to facilitate and enrich normal everyday living and working practices.

A common target of Smart Spaces is to enable and maintain cross-industry interoperability between devices and systems from different domains. Secondly, the target is to foster innovation while ensuring the value of existing legacy device and systems, which are installed in the field. And thirdly, the target is create new user interaction and interface concepts to enable users to benefit from smart environments.

The SOFIA project has been building the key enablers to make this possible. The use cases are built using both legacy technology for connectivity and the new SOFIA technologies for the information exchange. These include the key concepts of Semantic Information Broker, Smart Space Access Protocol and Knowledge Processors. Finally, *Smart Spaces open new channels for innovation and business opportunities, when it is easy to get and provide data. This is the next big step for ICT inspired innovations.*

Both SMARCOS and CHIRON projects are already applying SOFIA middleware architecture and SSAP protocol to different use cases:

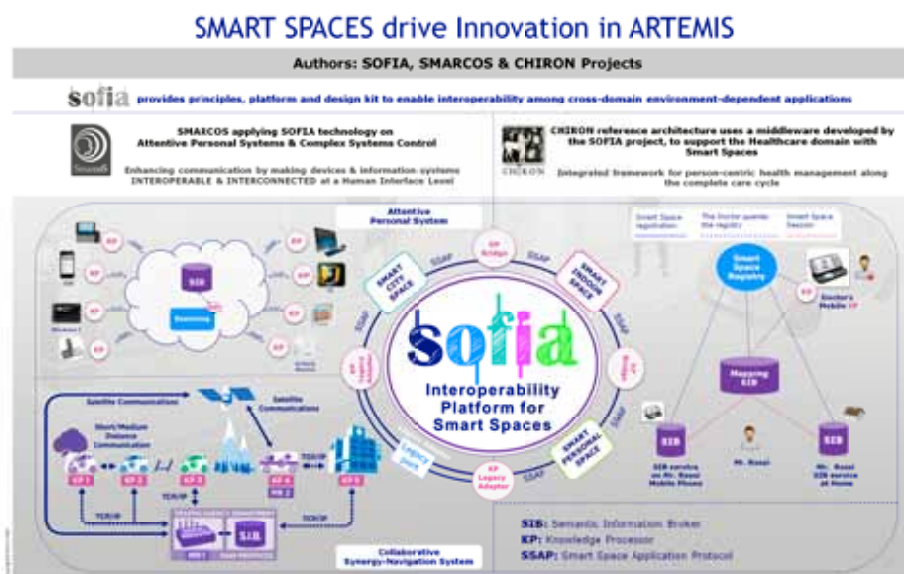
Within SMARCOS, the SOFIA platform is being used to create a knowledge model that is shared by all of the devices applied

in the daily lives of office workers and diabetes patients (from laptops and mobile phones to pill dispensers, activity monitors or televisions). The use of Knowledge Processors (KPs) makes it possible to share this knowledge, even though the data format of every device may be different.

SMARCOS is also developing a Collaborative Navigation-Synergy System to help emergency control centres and emergency vehicles to find exact locations of emergencies. Civilian drivers of road

vehicles and some vehicles themselves will be equipped with a lightweight software application that can be installed in smart phones. In this case, SOFIA is vital for the transmission of information using the Semantic Information Broker (SIB) in the emergency control center and KPs in the road vehicles allowing multiplatform system notification.

CHIRON reference architecture uses a middleware developed by the SOFIA project, to support the healthcare domain





with smart spaces, providing an integrated framework for person-centric health management along the complete care cycle.

SOFIA added value resides in:

- > Introducing a channel for providing digital services in physical locations through different devices
- > Extending the functionality of existing systems and products
- > Extending the services provided by existing and new products
- > In long term, evolving an information-based service development, aggregating information

In conclusion, SOFIA provides principles, platform and a design kit to enable interoperability among cross-domain environment-dependent applications.

ARTEMIS INNOVATION GROUND ~ The image left illustrates the idea of ARTEMIS as the key innovation ground for planting and fertilising European R&D projects, design environments, standardisation, results repositories as well as Centres of Innovation Excellence & Tool Platforms ... around embedded systems. SOFIA results and multi-project collaboration activities, coming from the first call of the JU, show how the ARTEMIS framework provides a primal collaboration environment from the beginning of its trajectory that has been crucial, not only internally within the SOFIA Consortium but also with other funded projects from later calls.

BEYOND SOFIA ~ The SOFIA project is nearing its end, having achieved major objectives and receiving the ARTEMIS exhibition Awards at the ARTEMIS & ITEA Co-Summit 2009 & 2010. During recent months a great part of the SOFIA results has been exhibited through large-scale trials around Europe (Italy, the Netherlands and Finland) and used to demonstrate the feasibility and benefits of the application of SOFIA in the domains of Smart City, Smart Indoor Spaces and Personal Spaces.

The partners involved in the project have variously use many scenarios for the SOFIA solutions in many application fields, which can open up new development for embedded systems in general. Already during the project lifetime, other ARTEMIS projects have already benefited by utilising the results SOFIA has made available. In this sense, projects such as SMARCOS & CHIRON will also continue this Smart Space Vision.

SOFIA

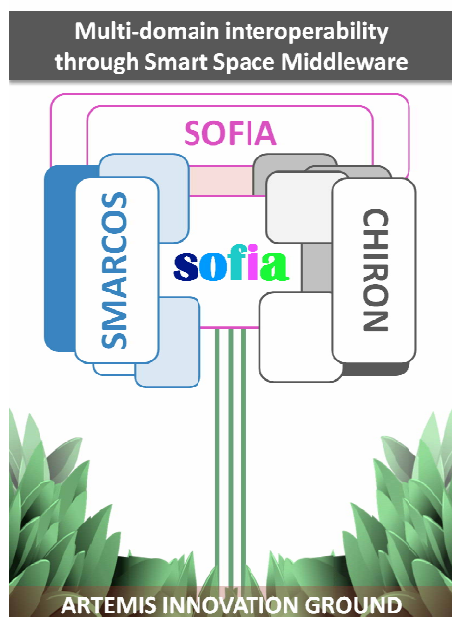


The SOFIA project makes "information" in

the physical world available for smart services in embedded and ubiquitous systems. The SOFIA Open Innovation Platform (OIP) architecture and Application Development Kit (ADK) make it easy to develop devices and services that can interact across vendor and industry domain boundaries. This complements and enhances the inherent functionality and value of the stand-alone device, service or system, while letting the individual vendors and owners determine the degree of openness and sharing according to their business needs.

www.sofia-project.eu

www.sofia-community.org



SOFIA is seeking a Community to continue after the project is finished, willing to build on the project findings and, therefore, to expand the Smart Space Vision and related industrialised developments. In addition, the SOFIA Consortium seeks to promote innovation around Smart Spaces, beyond the project's length, through a strong and active online community: The SOFIA Community.

The SOFIA Community that is currently being built by SOFIA partners with open source software, will be open to the public from January 2011, giving the opportunity to participate in its Developers Community. It aims to mobilise developers from various domains beyond the project. It is planned for the common application development framework to be used by all application domains in the project, and has proven to be scalable and flexible for any domain.

The following characteristics are vital for the future of this Community:



Open Source: We do not want to wall up the technology. All the results coming from this community are open source. Collaborate, and help us improve our results.



Multi-Domain: The aim of the project is to be useful for any domain, so if your domain is not already included, propose new ones. The more, the merrier.



Multi-Platform: Are you programming for Windows, Linux, Android, iOS, TinyOS? Probably your platform is already targeted in the project. If not, please collaborate to include yours.

Multi-Language: We are developing in several programming languages: C, C++, C#, J2SE, J2ME for several platforms. We would like to have SOFIA implemented for each one.



Communication Agnostic: Whether your device communicates by Bluetooth, ZigBee, tcp/ip, etc, it is not an issue. The project is flexible to include new ones as plug-ins.



Smart Engineering/Tooling: One of our goals is to develop better and faster. We are developing a SDK with several tools which help you reduce the time-to-market dramatically.



Each new SOFIA Community created project will be categorised in four technical groups:

1. **Ontology:** Everything related with the definition of domains and the ontologies used will be covered by this group.
2. **ADK:** The focus of this group is on generating the necessary tools.
3. **Core:** The core group is the basic implementation of any Smart Space based on Sofia. There are several implementations for different operating systems, programming languages and transport protocols.
4. **Architecture:** This group is responsible for the design of the Sofia architecture, protocols and standards.

COMMUNICATE, GENERATE, EVOLVE ~ The SOFIA platform is interoperable among different applications through common

semantic concepts, developed by top-level companies, research centres and EU universities. The Community offers SOFIA outcomes and smart open source applications for developers as well as for end-users. It has already been promoted within both the Eclipse Foundation (open source community) and PROMETEO Community (Spanish Technological Platform for Embedded Systems) and is also in contact with manufactures and distributors of devices (e.g. sensors) operating within smart environments in order to incorporate SOFIA technology within their products as standard. SOFIA looks forward to a lively community of players in the embedded systems area who will try out the technology and hopefully adopt it as a novel way to enrich their solutions. ■

Auto.E-Motion Conference Day

By Cornelia Perus



Austriamicrosystems, a global leader in the design and manufacture of high-performance analog integrated circuits and member of the ARTEMIS Industry

Association, was the host of the Auto.E-Motion Conference Day 2011, last September. This event was organised in collaboration with fellow committee members AVL and Infineon, both members of the ARTEMIS Industry Association, too.

The event included the participation of well-known experts from different stages of the value chain, in addition to automotive experts in the area of market research. Furthermore, the ARTEMIS projects E3Car, Pollux, Internet of Energy and the ENIAC project Motorbrain were introduced.

Electric vehicle technologies are currently facing several challenges including limited driving range, high cost and generally limited efficiency. For the most part, solutions to these issues may be found on the subsystem level for energy storage/battery technology, power conversion, electric power train, energy management and connection to the power grid. Industry, the European Commission and market research representatives all estimate that there will be approximately five million EVs in Europe by 2020. The speakers also agreed that the future development of electric mobility will be strongly connected to new uses of semiconductors.

“The situation is best for semiconductor manufacturers because the new batteries are more insecure and need control. This is only possible with semiconductors,” was the forecast of Alastair Hayfield, Research Director Automotive and Transport at IMS research. Hans Adlkofer, Vice President System Group at Infineon, pointed out that semiconductors, and no longer the engine, will be the heart of tomorrow’s cars. The essential drivers of the automotive market are environmental protection and sustainability, safety, comfort and entertainment,” was the view of Bernd Gessner, General Manager Automotive at austriamicrosystems.



Speakers of the Conference



Postersession

“Micro- and nanoelectronics for the design and production of integrated circuits is one of the key enabling technologies (KETs) for the modern economy. This is also true for electric mobility. European F&E cooperation in the framework of projects like E3CAR or Pollux, where austriamicrosystems is involved, are vital to strengthen the competitiveness of partners in this dynamic field even more,” acknowledged Martin Schrems, Head of F&E at austriamicrosystems. ■

More information:

www.austriamicrosystems.com/autoemotion

GET READY FOR
THE FIFTH
TAKE OFF!

ARTEMIS
BROKERAGE
EVENT
CALL 2012

17 & 18 January
Corinthia Hotel, Prague, Czech Republic

FOR MORE INFORMATION, VISIT:
www.artemis-ia.eu



ARTEMIS Brokerage Event in Prague

By Jiri Kadlec

The ARTEMIS Industry Association is organising a Brokerage Event in Prague on 17 & 18 January 2012. This two-day event aims to support the community in Embedded Systems to gear up for submitting project proposals for the Call 2012. The ARTEMIS Brokerage Event is the smashing start of a range of consortium building activities that will help you find the right partners. In just two days in Prague you will be in the right place at the right time to find the right research partners for your consortium for the next ARTEMIS-JU Call. It is the first time that the Industry Association touches base in the Czech Republic: the home country of Jiri Kadlec, the Czech Public Authority for ARTEMIS.

An important part of this two-day event is the chance to meet consortium partners and draft project proposals with the starting consortia. It is literally a meeting of potential partners, matching of project ideas and a mix of cultures. After three ARTEMIS Calls, it has proven to be a success factor. As Eric Schutz, Executive Director of the ARTEMIS Joint Undertaking, outlined in ARTEMIS Magazine 6, March 2010: "Of all the initial project outlines, about 1/3 come from the ARTEMIS Brokerage Event and 83% of these go on to become full project proposals. This is higher than the average for all project outlines (79%). This is evidence that those projects that passed through the brokerage event clearly have higher quality and increased chances of becoming funded." This means that the quality of the proposals that come out of the international ARTEMIS Brokerage event is evidently higher and therefore may be considered a success factor in submitting proposals.

The event is also an important indication for public authorities to sense the field of interest in advance. It is also a chance to get a closer look on the Draft Annual Working Programme 2012 for the Call. You will also be updated on the schedule and procedure for the 2012 Call for proposals of the ARTEMIS Joint Undertaking

WHO SHOULD ATTEND? ~ Everyone who is interested in responding to the ARTEMIS Call 2012 with high-potential project proposals. The international Brokerage Event in Prague is the right place to bring well targeted ideas and clearly defined cooperation needs together from the research and business sector. You can come along with project ideas in need of partners or you look for a project in which you can contribute specific know-how. These two poles meet in a collaborative atmosphere.



Ing. Jiri KADLEC CSc.

Jiří is heading the Department of signal processing in UTIA AV ČR, v.v.i, the Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic. His research interests are mainly in the domain of reconfigurable computing architectures and application specific digital design.

He acts as delegate in the FP7 ICT Programme Committee and in the ARTEMIS JU and ENIAC JU Public Authority and Governing Boards. He has been involved in several EU FP support projects (IDEALIST, COSINE). These projects support Czech IT organisations to participate in the FP ICT Programme.

His team in UTIA (as a Branch Contact Organisation OKO-ICT supported by the MEYS EUPRO programme) provides assistance related to the ICT FP7, ARTEMIS JU and ENIAC JU programmes.



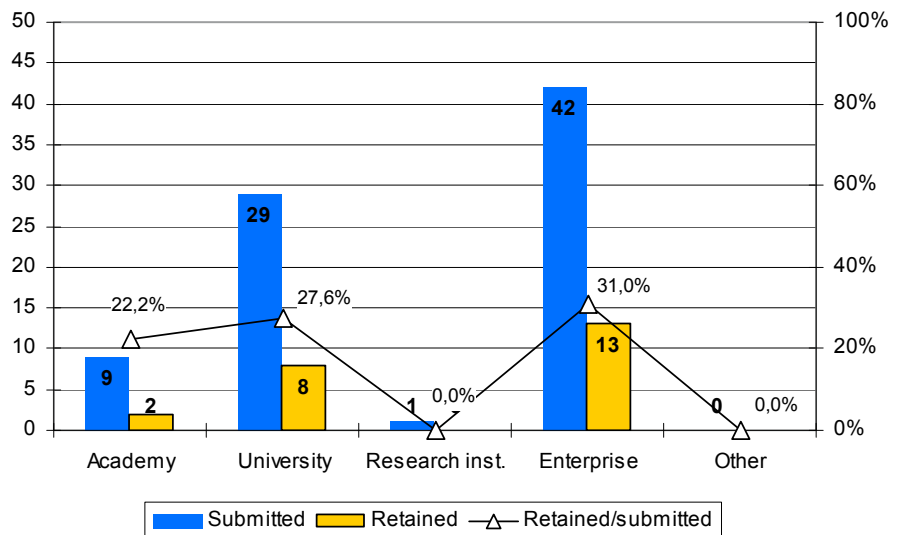
In the flow of the international ARTEMIS Brokerage event, local ARTEMIS platforms will organise their information and brokerage events around Europe. As a result of the international ARTEMIS Brokerage Event, starting ARTEMIS consortia might use these local information and brokerage events to find missing links. So, if you do not succeed at your local brokerage events, there is a last chance to tango at the international ARTEMIS Project Proposers and Information Day, organised by the ARTEMIS Joint Undertaking.

Expectedly the Calendar for Call 2012 is:

- > 17 & 18 January 2012: International Brokerage Event organised by the ARTEMIS Industry Association, Corinthia Hotel, Prague, Czech Republic
- > January – February 2012: Information and local Brokerage Events around Europe
- > 28 February: ARTEMIS Call 2012 Information & Networking Day as part of the ARTEMIS Spring Event, organised by the ARTEMIS Joint Undertaking, Nuremberger Messe, Germany
- > Begin March 2012: ARTEMIS Call 2012 opens
- > End of March 2012: Deadline for the Project Outlines
- > Begin September 2012: Deadline Full Project Proposals

Registration and information about the international and local brokerage events: www.artemis-ia.eu

**ARTEMIS Call 2008 - 2010:
CZ Organizations in submitted and retained projects**



HOW TO MAKE THE BEST OUT OF THE ARTEMIS BROKERAGE EVENT ~ You can submit your idea and company profile in the ARTEMIS-IA webtool on the website. Or you can present yourself during the event. Meanwhile, you can check the webpages of the previous Calls on the ARTEMIS-JU website as a first orientation on preceding AWP's.

ARTEMIS IN PRAGUE ~ It is the first time that ARTEMIS Industry Association has organised an event in the capital of the Czech Republic. And as PAB/GB delegate and ARTEMIS contact, I am very proud that the consortium building will start in my home country. The following overview shows how successful Czech partners are in ARTEMIS projects:

ABOUT THE LOCATION ~ The Corinthia Towers Hotel enjoys a unique location

on one of Prague's hills, and is one of the dominant features of the capital of the Czech Republic. From here you can view the wonderful panorama of Prague over the river Vltava and the surrounding widespread parks, reflecting the silhouette of Prague Castle and its many steeples and towers of churches, cathedrals, palaces, and the ancient buildings of the nearby historic centre. It is easily accessible by both public and private transport.

We look forward to seeing you in Prague. ■

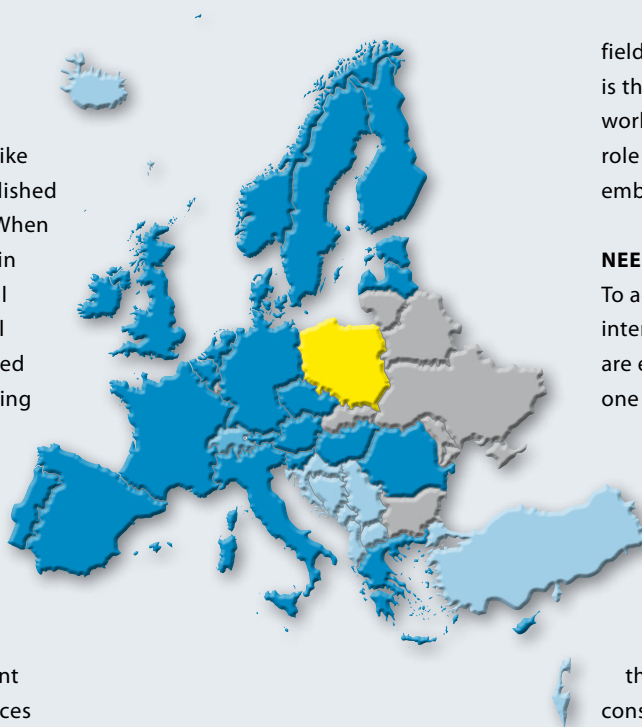
Polish landscape

Lukas Kulasz interviewed by Else Embregts

Poland has applied to be an ARTEMIS Member State. The process is ongoing. Meanwhile the ARTEMIS Brokerage Event is going to be held in Prague in the neighbouring Czech Republic on 17 and 18 January. Jiri Kadlec, the Czech PAB/GB delegate and ARTEMIS contact is excited by the prospect of potential Polish partners being at the event, making contacts and networking there. He is also keen to see Polish companies at the event. A recipe for success.

AN INDUSTRY IN BUD ~ Poland has good competence in the field of IT solutions. This has not gone unnoticed, with electronics giants like Siemens and Samsung firmly established in the Polish corporate landscape. When Intel closed down one of its plants in Ireland – due in part to the financial crisis – the company decided to call on Polish expertise for the embedded systems for Intel platforms, employing 400 people and expressing the intention to employ a further 2000. This issue of capital was not just financial but, more importantly, also human. The market in Poland is still in bud, though. It is a market waiting to blossom. There are many excellent companies with products and services that providing perfect niche solutions. The problem is that although companies know that they have excellent Embedded Systems products, they are often not aware of how powerful these can be because they do not really consider what they are doing as a special area of expertise.

LEADING ICT CLUSTER IN POLAND ~ Lukas Kulasz considers himself fortunate to be in the centre of what the government considers to be the leading ICT cluster in Poland. With over a hundred IT companies here and more than 17,000 employees, he and his team at the university can call on the abundant expertise around them. Such



an environment enhances the development of, for instance, an intelligent street lighting system able to self-organise and adapt to the ambient conditions. What's more, having such a burgeoning IT cluster, this is also influential in trying to convince the Polish government to join ARTEMIS. 'It may not be France or Germany,' Lukas says, 'but compared with other countries at similar stages of development, it is quite impressive. The hardware and software are in place, both literally and figuratively, and the next step is to realise the potential in the embedded systems domain. It is more a question of polishing the rough edges and gaining awareness. The Embedded Systems

field is so large and complex that my hope is that we can use our capacity for hard work, creativity and innovation to find the role that we can play in the development of embedded systems.'

NEED FOR AN INTERNATIONAL VISION ~ To accelerate the 'polishing' process, international collaboration and cooperation are essential. The ARTEMIS platform is one such vehicle that can help open the eyes of the companies in the Polish cluster. 'If our companies just go to the Brokerage Event, meet people, make contact and see for themselves what the possibilities are, what mutual benefits can be gained from the kind of partnerships that are generated in the various consortia and projects,' Lukas says.

The Polish IT landscape can be characterised by many SMEs, niche players that have very unique areas of expertise. The way of thinking in the IT cluster in Poland is to focus on adding value to companies that can service the global market. Polish companies tend to gear their products and services to the considerable internal market; there is not a tradition of going beyond the borders for business. In contrast to Scandinavian countries, for instance, whose small internal markets compel companies to go outside. 'ARTEMIS,' Lukas suggests, 'would be a very good way of enabling our companies to go international.' ■

ARTEMIS SPRING EVENT 2012

28, 29 FEBRUARY
& 1 MARCH

NürnbergMesse
Nuremberg
Germany



*Joint located with
embedded
world 2012
Exhibition&Conference*

MORE INFORMATION & ONLINE REGISTRATION
www.artemis-ia.eu

ARTEMIS Spring Event 2012

By Ad ten Berg

For the third time the ARTEMIS Spring Event 2012 will take place in Nuremberg, back to back with the embedded world Exhibition & Conference. This year the ARTEMIS programme will be spread over three days: 28 February, 29 February and 1 March.

The embedded world Conference will be celebrating its tenth year in parallel with embedded world Exhibition. The undoubted significant synergy between ARTEMIS and embedded world means that once again ARTEMIS Industry Association has decided to shake hands in Nuremberg.

ARTEMIS HIGHLIGHTS ~ On 28 February the ARTEMIS Joint Undertaking is organising the international **ARTEMIS Information and Networking day for Call 2012** when there will be the chance to learn about the ARTEMIS Call 2012, have the opportunity to participate in 15-minute 1-to-1 sessions with ARTEMIS JU Programme Officers, and to meet and match with the other participants. At the end of the day the General Assembly of the ARTEMIS Industry Association (for members only) takes place followed by the ARTEMIS Grand Dinner.

On the second day, 29 February, a special **ARTEMIS Conference track** has been organised as part of the embedded world Conference 2012. Entry to the ARTEMIS track is free for the registered participants of the ARTEMIS Spring Event. The theme of the track is ARTEMIS Visions, Projects and Results with selected contributions from the ARTEMIS projects: CESAR, SMECY, iFEST, ACROSS, SIMPLE, EMMON, Me3gas, ASAM, SYSMODEL and eSONIA.

On the third day of the ARTEMIS Spring Event 2012, the **3rd ARTEMIS Technology Conference** on Interoperability will take place, its aim is to converge the **different system engineering approaches towards interoperability for critical embedded systems** and derive a common vision for an interoperability standard for this field of application whose realisation may outlive the duration of any specific project.

It is envisaged that an **ecosystem of projects** and initiatives will follow the path towards an interoperability standard and, in the end, contribute to a joint ARTEMIS Reference Technology Platform (RTP).

The ARTEMIS Technology Conference is going to take place on the 1 March 2012, also in parallel with Embedded World 2012. The event is being hosted by CESAR and co-hosted by the projects MBAT, iFEST and pSafeCer.

In order to create an ecosystem of projects, European and national research initiatives whose goals are based around interoperability are invited to participate via the call for contribution. This will be distributed in line with the event. ■



Venue ARTEMIS Spring Event:

NürnbergMesse, Messezentrum
NürnbergConvention Center (NCC Ost),
Entrance Ost, 90471 Nuremberg
GERMANY

FOR MORE INFORMATION:

- > On the ARTEMIS Information & Networking Day, Alun Foster, Programme Coordinator ARTEMIS Joint Undertaking: Alun.Foster@artemis-ju.europa.eu.
- > On the ARTEMIS Conference Track, Ad ten Berg, Office Director ARTEMIS Industry Association: ad.ten.berg@artemis-ia.eu.
- > On the ARTEMIS Technology Conference, Ingrid Kundner, AVL, Ingrid.kundner@avl.com.

INNOVATION IN ACTION

Early achievements of the Joint Technology Initiatives' €10 billion R&D programme highlighted at the European Parliament

By Else Embregts



“ .. bureaucracy is one of the barriers to innovation.”



In the first week of October ARTEMIS Joint Undertaking and colleague Joint Technology Initiatives co-organised an exhibition and thematic sessions in the building of the European Parliament in Brussels. The five JTIs – **ARTEMIS** (embedded computing systems), **Clean Sky** (aeronautics and air transport), **ENIAC JU** (nano-electronics), **FCH JU** (fuel cells and hydrogen) and **IMI** (innovative medicines) – presented their impressive achievements at this dedicated event. ‘The Joint Technology Initiatives are reshaping the environment for R&D in Europe, in the spirit of the Europe 2020 strategy’ was the statement released jointly by the Executive Directors of the five

nor by collaborative projects involving just a handful of partners.

The Joint Technology Initiatives highlighted at this event at the European Parliament the first achievements of their €10 billion research and innovation programmes. The initial results emerging from JTI-funded projects highlight the success of this novel and unique model of public-private partnership and its ability to boost innovation in key sectors for European competitiveness, job creation and quality of life. The Joint Technology Initiatives have a total budget of €10 billion, around a third of which comes from the European

industry and other groups. As such, they cover the full innovation chain.

The projects highlighted this week during the exhibition and thematic sessions are already generating tangible results that will improve the quality of life for Europeans through cleaner and quieter air and ground transport, improved energy security and efficiency, better and safer medical treatment – all enabled by improved cross-cutting computing technology and advanced nano-electronics.

The exhibition was hosted by Ms Maria Da Graça Carvalho, Member of the European Parliament, and the thematic session of



organisations (Eric Schutz – ARTEMIS, Eric Dautriat – Clean Sky, Andreas Wild – ENIAC JU, Bert De Colvenaer – FCH JU, and Michel Goldman – IMI). The results and forecast gains presented here could never have been achieved by any one organisation on its own

Commission, with the rest leveraged from industry, research and the EU Member States. The JTIs invest these funds in ambitious research and training projects that bring together experts from academia, small and medium-sized enterprises,

ARTEMIS Joint Undertaking was hosted by Mr Lambert van Nistelrooij, Member of the European Parliament. In this magazine both members have been invited to shine their light on the importance of innovation in action for Europe. ■

Championing the cause of research, innovation and JTIs

Maria Da Graça Carvalho interviewed by Chris Horgan

Maria Da Graça Carvalho is a Portuguese Member of European Parliament and former Principal Advisor to BEPA, a Department of the EC reporting directly to the EU President. On 29 November she was chosen by her peers as 'Best MEP 2011'. Maria da Graça Carvalho argued that research 'is essential for the future of Europe and that is why we need simple and well funded programmes with the right priorities.' Long before it was clear that she was one of the nominees for the award, she hosted the joint exhibition of the JTIs ARTEMIS, ENIAC, IMI, FCH and Clean Sky. So, now is an appropriate time to ask her about the JTI event and whether it met her expectations. We hope that you appreciate this interview with Maria Da Graça Carvalho as much as we do!



Ms Carvalho receives the ARTEMIS Strategic Research Agenda 2011 from Jan Lohstroh, Secretary General of ARTEMIS Industry Association

So what is it that makes industrial innovation and how did the recent JTI event 'Innovation in Action' offer insight into the role and importance of JTIs? ~ For me and my political pulse, industrial innovation is very important in generating business in Europe and in regaining competitiveness in respect of international markets. And JTIs are a key vehicle in achieving these goals. They are a very good example of covering the whole innovation chain, from early research and development, the involvement of technology, pilots

and demonstrations right through to getting products onto the market. The informative sessions we recently had with JTIs were very useful for me and my MEP colleagues to find out how the JTIs have been performing. At this stage, with discussions ongoing for the next European programme, Horizon 2020, we are analysing the successes and shortcomings so that we can arrive at the optimum JTI design for the next framework programme. Of course, another objective was to carry out an evaluation. After all, there is a considerable budget being allocated to JTIs so we want to know what kind of impact these funds are having. In other words, we want to determine the results of the European investments. So having a full week devoted to this, with not only introductions but also the workshops of the various JTIs and time for familiarisation, I and my colleagues had a real opportunity to discover more about the big picture as well as the nuts and bolts. It also provided the chance to network and inform the various stakeholders, including industry, about the JTIs and their programmes and projects so that in the future stakeholder involvement can be boosted.

So, this was a good opportunity to profile the work of the JTIs. How well is the word spreading? ~ First of all, going on the statistics of attendance, which was very high, I would say that this objective certainly succeeded. Apart from the many MEPs who came, there were representatives from SMEs, research, larger organisations and associations. It was also good from another point of view since one of the points of criticism raised about JTIs is that many do not really know how to participate, so it is evident that we need to spread

the word and make sure that people know what the procedure is for application, who they should contact and where they can get information. And events like this can really help in this respect.

Are there any plans to follow up on this event? ~ We are planning a lunchtime debate 'Towards the deployment of Fuel Cells and Hydrogen technologies' here in the European Parliament. We are getting MEPs and JTI members together so that we can not only monitor the achievements but also learn from their experience, which can serve as valuable input for the next framework programme. We plan to continue with the close cooperation between the MEPs and the JTIs.

What's the situation regarding the wish being expressed for greater regulatory simplicity? ~ Well, I was the rapporteur for the very widely accepted Simplification Report that came up with some seventy or so recommendations. A few of the measures have already been put in place by the Commission and we are hopeful that the rest will be implemented in the new Horizon 2020 programme. Many of these recommendations relate to the need for changes in the financial regulations – I am optimistic about the outcome and that Horizon 2020 will benefit from simplification here. Also, simplification needs to permeate the rules of participation for the Horizon 2020 programme. I am hopeful that in the negotiations with the Commission and Council that we will end up with a report containing simple procedures.

Do you think that simplification will encourage more participation in JTI projects? ~ It's crucial that we have simplification – bureaucracy is one of the barriers to innovation. And with such a diversity and complexity of rules and regulations, some SME and researchers are dissuaded from participating, especially when an error made in the procedure may be interpreted as fraud or an attempt to mislead. For many it is not worth the risk. This is why in reviewing the financial regulations we paid great attention to ensuring clear, unambiguous definitions. This is an essential part of creating trust between the institutions and stakeholders.

And in what way are JTIs likely to feature in Horizon 2020? ~ At the moment, there are several processes going on in Parliament, from establishing the overall EU budget to defining budget distribution. Reports will be produced and Horizon 2020 will be presented at the end of November. This will be followed by a report by parliament along with a series of other auxiliary reports, with the rules of participation the final one. There is still much to be negotiated, both in the Commission and the Council over the next year. I am convinced that there will be an increase in the budget for research and innovation, with the figure being somewhere between 80 and 100 billion euros. Even countries that oppose an increase in their commitment to the overall budget still want to see increase in the research budget. There is a general consensus on need to cover whole chain of innovation along the same lines as in the JTIs. Given the close alignment in thinking and policy with the JTIs, I would be



Maria Da Graça Carvalho

Maria Da Graça Carvalho is a former Portuguese Minister of Science and Higher Education and former Minister of Science, Innovation and Higher Education. A graduate in Mechanical Engineering at IST, Technical University of Lisbon, she gained her PhD at Imperial College London with a focus on energy

intensive industries. She was a full professor at the Technical University of Lisbon for energy and climate change. Furthermore, Ms Carvalho is a Member of the National Council of Education and of the National Council of Environment and Sustainable Development. During her work in the European Parliament, Maria da Graça Carvalho has been dedicated to the areas of research and innovation. In particular:

- > **Simplification:** She was rapporteur for the simplification of programmes for science and Innovation. In the document, which deserved the support of all political groups, 71 recommendations were presented with the aim of making the participation in the current seventh EU research framework programme more attractive and more accessible for the best researchers and for the most innovative companies, particularly for small and medium-sized enterprises (SMEs).
- > **Financing of science and Innovation:** as a member of the SURE Committee, Maria da Graça Carvalho was part of the group of members that recommended the doubling of the budget for the next framework programme for science and innovation. She was also responsible for the creation of an internal document on the synergies between the framework programme for research and structural funds.
- > **HORIZON 2020:** as a member of the ITRE Committee and the Committee on Budgets, Maria da Graça Carvalho has been involved in the creation of the future framework programme for science and innovation. The aim of the next framework programme is based on three fundamental pillars: a science-oriented pillar, a second pillar focused on the major societal challenges and a third industry oriented pillar.

very surprised if the JTIs not only continued, albeit in a modified form depending on the outcome of evaluation, but also go on the play an important role in the next framework programme. ■

Clusters, Regions and Cities

By Lambert van Nistelrooij

You hosted the parallel sessions for ARTEMIS & ENIAC during the JTI event in the European Parliament in Brussels on 4 October, with a clear reference to the ARTEMIS community about your support for this JTI event. Why do you think JTIs are essential for innovation in Europe? ~ In my opinion, JTIs are essential for the European industry and invaluable for the future of research and innovation. Firstly, I very much support cross-border initiatives since I believe much more cooperation is needed between different European Member States. It is important to remember that Europe aims to create strong connections between different Member States to achieve the best possible position in the world economy. Secondly, I think what defines JTIs and where their strength lies is public and private parties coming together. Especially nowadays it is important to have investment and input from both the public sector as well as the industries. We need to know what the market needs are and how research can be turned into money, not just money into research. If we focus on how research projects can practically add value to the economy, the market and people, the point of view from industries is essential.

As rapporteur for the European Parliament you negotiate along with the member states on the definitive statutes for the Structure fund in which 336 billion euros are apportioned between 2014 and 2020. How, in your opinion, should the regional and pan-European funds be employed in the most effective way? What synergy could there be? ~ My rapporteurship covers the general regulation on common principles, rules and standards for the three cohesion instruments: the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund. The regulation is based on the principle of shared management between the EU and its Member States and regions. This regulation is the main budget item in the European Financial framework and sets out the rules and procedures with regard to €336 billion reserved for the European regions.

The debate will concentrate on the output in the regions. There will be more focus on issues such as energy, research and innovation than in the current period, with 80% related to innovation and 20%

to the energy transition. Besides that, we will develop new financial instruments: from grants to guarantees. With these new instruments the responsibility and commitment of the universities, SMEs and public bodies will increase. In this way I expect the EU 2020 strategy to generate tangible results in the regions and in Europe.

SME involvement is a key topic for EU innovation policy in Horizon 2020. The regional funds also reserve 20% to provide a bottom-up boost for SME involvement. In the ARTEMIS JTI programme SME involvement is a priority. How might the synergy with the ARTEMIS JTI appear in respect of making the most effective use possible of European funding? ~ Both in the regional funds and the new research programme Horizon 2020 we pay more attention to and create better access for SMEs. I am happy to see that the European Commission has picked up on the wish of the European Parliament and has come with more specific proposals towards funding for SMEs. This can be a positive sign for the ARTEMIS JTI since now the awareness and importance of involving SMEs has been raised.

In the ARTEMIS strategy the objective of forming ecosystems is very important. The ARTEMIS Industry Association underlines this by issuing special labels for ecosystems that comply with the criteria of an ARTEMIS Centre of Innovation Excellence. Pan-European cooperation is one of the pre-requisites. Are there any parallels with the approach taken by the regional structure funds to establish regional cooperation clusters and to encourage European cooperation between them? ~ Studies by the Organisation for Economic Cooperation and Development (OECD) show that regional level is essential to boosting innovation. It is the triple helix (public partners, industries/SMEs and knowledge institutes) that create the best positions for smart specialisations, growth and jobs. Regions with a strong international network will perform better. Additionally, there is room for European cooperation and clear European added value in the coming years.

The Commission and the Member States need to act together to pool scientific, business and financial resources better. It is desirable

to politically and financially support a better integration between different clusters into "mega-clusters" and encourage increased European-wide cooperation between clusters and regional networks. Stronger clusters may provide more possibilities for small and medium-sized firms to get financial backing from bigger established firms, or to link up scientific expertise around research projects.

An example of integration is the Council of European BioRegions, launched in 2006 with the support of the European Commission, to enable better networking between bio-clusters and regional networks in Europe.

The general statutes for the Structure fund state : "The European Commission has adopted a draft legislative package which will frame cohesion policy for 2014-2020. The new proposals are designed to reinforce the strategic dimension of the policy and to ensure that EU investment is targeted on Europe's long-term goals for growth and jobs ("Europe 2020"). Through Partnership Contracts agreed with the Commission, Member States will commit to focusing on fewer investment priorities in line with these objectives. The package also harmonises the rules related to different funds, including rural development and maritime and fisheries, to increase the coherence of EU action." How does this harmonisation relate to pan-European innovation programmes like ARTEMIS? ~ The new Horizon 2020 proposal by the European Commission clearly states the intention to keep Joint Technology Initiatives under the Horizon funding. There is a clear inclination in the proposals to keep on supporting contractual arrangements between public and private actors. Horizon 2020 states that 'Existing public-public and public-private partnerships may receive support from Horizon 2020, provided they address Horizon 2020 objectives, they meet the criteria laid down in Horizon 2020 and they have shown to make significant progress under the Seventh Framework Programme for Research, Technological Development and Demonstration (FP7).'

I am happy to see this clear result. The JTIs are recognised and we will support the JTIs in the upcoming co-legislation with the Council.

As rapporteur for the Structure fund what advice would you give to the ARTEMIS community? ~ There are many different possibilities for regional actors to voice their opinions. For example, they can contact the MEP responsible for the specific topic. Local and regional governments from several Member States have set up independent offices in Brussels and sub-national governments have set up formal and informal networks within regions that are directly in contact with officials from the Commission, such as the Cohesion Funding. They can also contact the Committee of the Regions. It might look complex, but I am convinced that the territorial



Lambert van Nistelrooij

Lambert van Nistelrooij has been Member of the European Parliament since 2004 and he has been focusing on regional policy, research and innovation, energy, and the digital agenda. Currently, he is the rapporteur for the General Regulation on the EU Regional Policy 2014-2020. Besides that, he has been actively involved with the proposal for the new European research and innovation policy, Horizon 2020. A clear example of how involved he is when it comes to research and innovation was shown via an amendment that he put through adding the word 'innovation' to the EIT, making it the European Institute for Innovation and Technology.

dimensions for Research and Development are important. This is now fostered in the Lisbon Treaty. Research is not just for 'free floating intelligence': it has to 'land' in clusters, regions and cities. You know how to 'land' and contribute to our competitiveness both now and in the years ahead. ■



Can you tell us a little about your current professional situation? ~ Yes. I'm Heinrich Daembkes. I work in the EADS Group as Head of Systems and Software Engineering in the Cassidian division, which focuses on global security. The name Cassidian derives from the Latin cassida (helmet) and meridian ('pointing north and south'). In all domains that are relevant for our company the relevance of embedded systems is significantly increasing. Therefore we are deeply involved in this domain.

What encouraged you to become a Steering Board member? ~ Well, before ARTEMIS was established I was working more in the hardware realm and was part of the board of ENIAC. It was also at that time that I realised the growing importance of embedded systems as the focus of my work began to change. I was keen to get involved in a European institution that was driving technology in that domain. Since I was able to bring in content to ARTEMIS and wanted to give the industry a voice, I volunteered to represent the EADS Group on the Steering Board, sharing this task with my colleagues from Airbus. My main driver to being on the Steering Board is to contribute to shaping the content of ARTEMIS and ARTEMIS-IA, to enable the industry to have a say in such a complex body so that its interests are fostered.

You chair the working group on Centres of Innovation Excellence – what is your main role? ~ My main role is to act as a facilitator and kind of coordinator of the activities and to spread word of the notion. At the core of the 7th Framework programme and ARTEMIS is this notion of boosting innovation to generate new employment, improved welfare for society and growing industrial competitiveness of Europe in the world. As an industrial developer with strong links with the academic and research communities, my drive is to bring inventions that result from the basic, fundamental research to industrial application and marketable products. One of the early intentions of ARTEMIS was to create domain-specific ecosystems for embedded systems applications in the kind of way that you see in the iPhone or iPad. It's an easy-to-use tool but this tool is creating a whole community of users and institutions that are generating additional opportunities and applications around this technology. In many ways, this is what the CoIEs are aiming to foster. Like the Process-IT CoIE that is investigating the impact of embedded systems on industrial processes, how it is driving development and stimulating competitiveness. From the mining of raw materials right up to



This column is the third in a series in which various members of the ARTEMIS community pick up the baton and have a say on developments from a personal perspective and in their own way before passing the baton on. In this edition Heinrich Daembkes.

production process control, even through to the safety-critical domain. Just think of the production of chemicals where a calamity could be a serious one to human and environmental health. My role also involves helping to profile these CoIEs through media, at scientific conferences and advertising to get people involved.

What is the big motivating factor in your professional life? ~ As an engineer with a background in physics and communication science I have a fascination with what it is that really makes the world work and it is fascinating to realise that we can have an impact on the development of our world. We have to consider the threats and opportunities especially in the light of the future welfare of society. I want to help make our industry in Europe competitive and sustainable in a rapidly changing world.

What do you believe is the biggest challenge in the R&D of Embedded Systems? ~ Well, first I think we have to make people more aware of what embedded systems are. The name says it all – they are systems that are not really visible. On the other hand, we have been able to raise awareness of the relevance of embedded systems to all aspects of daily life. Now we need a set of methods, processes, and tools that will enable the intended results to be achieved with

a very short time and products that fit the present customers needs and can be adapted and upgraded in line with future requirements. Another key challenge at present is to learn how to use multi-core processors in safety-critical applications, make them certifiable and standardised so that they can become commercially available.

To whom do you wish to hand on the ARTEMIS column-baton? Why? Do you have a question for him or her? ~ I would like to hand over to Professor Werner Damm, who chairs the EICOSE Centre of Innovation Excellence. He is currently working on preparing a pilot project case for the next ARTEMIS Call looking at the infrastructure and tools for Critical Systems Engineering. My question to him is: What do we need to do to guarantee sustainable availability of the results we are going to achieve on the Reference Technology Platform (RTP) for embedded systems?

What music goes together with reading of your column? ~ This is the question that I had to really think about. But if I look at the content of this interview and the hidden nature of embedded systems, some classical music comes to mind, calm but very strong. It's Smetana's Die Moldau (Vltava). I have a beautiful and rare recording of this by the New York Philharmonic Orchestra. ■

Editorial information

ARTEMIS Magazine is published 3 times a year by ARTEMIS Industry Association and ARTEMIS Joint Undertaking.

ARTEMIS aims to tackle the research and structural challenges faced by European industry by defining and implementing a coherent research agenda for embedded computing systems. Its ambition is to help European industry consolidate and reinforce its world leadership in embedded computing technologies.

ARTEMIS Industry Association is the association for R&D actors in embedded systems with 200+ members around Europa. The Industry Association continues the work of the European Technology Platform and is therefore responsible for the ARTEMIS-ETP Strategic Research Agenda set up by the European Technology Platform in 2006. The Industry Association creates the meeting place where the stakeholders identify topics for major R&D projects that they want to pursue together, form consortia and initiate project proposals for joint collaboration, and building of ecosystems for embedded intelligence.

The ARTEMIS Joint Undertaking is a Brussels based organisation legally established in February 2008 and gaining autonomy in October 2009. It is a Public Private Partnership with the EC and 22 participating Member States. The ARTEMIS Joint Undertaking adopts a commonly agreed research agenda closely following the recommendations of the Strategic Research Agenda developed by the members of ARTEMIS Industry Association. The ARTEMIS JU will manage and co-ordinate research activities through open calls for project proposals through a 10-year, €2.5 billion research programme on embedded systems.

ARTEMIS Magazine provides information on the developments within the ARTEMIS community. Its aim is to keep the ARTEMIS community and beyond updated about the Association, Joint Undertaking, programme status & progress, achievements and events in embedded systems. An online version of ARTEMIS Magazine is available on www.artemis-ia.eu and www.artemis-ju.eu

Contributions and Copywriting for ARTEMIS Magazine 11:

Eric Schutz, Jan Lohstroh, Klaus Grimm, Michael Wiesmüller, Jokin Garatea, Ivan Ring Nielsen, Iñaki Eguia, Stefan Poledna, Chris Horgan, Elisa Gayol Cuervo, Petri Liuha, Cornelia Perus, Jiri Kadlec, Lukasz Kulas, Ingrid Kundner, Maria da Graça Carvalho, Lambert van Nistelrooij, Heinrich Daembkes, Alun Foster, Lara Jonkers, Ad ten Berg, Irene Lopéz de Vallejo, Else Embregts.

Editorial address:

ARTEMIS Magazine
High Tech Campus 69
5656 AG Eindhoven
the Netherlands

Telephone +31 88 0036 188
Fax +31 88 0036 180
Email: communications@artemis-association.eu

Design and Creative lay-out:

Studio Kraft – Veldhoven, the Netherlands

Text & copy:

CPLS – Goirle, the Netherlands

Printed by:

Verhagen Grafische Media - Veldhoven, the Netherlands

Photography:

With thanks to ARTEMIS involved persons for any assistance and material provided in the production of this issue. Special thanks to Simon Pugh.

Safety exchange meeting



CG2E (an informal club of French specialists in safety critical systems in various industrial application domains) is organising a half-day exchange meeting between several collaborative projects. These projects are involved in design and validation processes, methods and tools for safety-critical systems in several application domains. Projects identified so far are CESAR (ARTEMIS), pSafeCer (ARTEMIS) and OPENCOS (FP7).

The goal of the meeting is the mutual exchange of the objectives and results of each project and to identify how best to coordinate and exchange a means for synergy and efficiency.

The date and location of the meeting has been chosen to coincide with the expected presence of several interested potential participants due to the start of the ERTS-2012 Conference the day after in the same town (ERTS-2012, 1–3 February 2012, Toulouse, France, <http://www.erts2012.org>).

When: 31 January 2012

Where: Toulouse, France

CONTACT:

For OPENCOS and pSafeCer please contact Cyrille Comar: comar@adacore.com

For CESAR or any other project which would like to participate, please contact Jean-Paul Blanquart: jean-paul.blanquart@astrium.eads.net

ACROSS Workshop:

'A cross-domain approach for mixed-criticality integration based on heterogeneous MPSoCs'

ACROSS is an ARTEMIS project that aims to develop and implement an MPSoC-based ARTEMIS cross-domain reference architecture for embedded systems. The ACROSS MPSoC will be a universal platform for automotive, aerospace and industrial control systems in order to realize the benefits of the economies of scale of the semiconductor technology. Additionally, it provides significant potential for being adopted by other industries with safety-critical data communication requirements such as applications in the medical, power generation, space domains, to mention just a few. ACROSS will result in the design of a generic MPSoC and a first implementation in an FPGA. The hardware implementation of the MPSoC will be accompanied by an operating system, middleware and a complete tool chain.

SCOPE OF THE WORKSHOP:

- > Challenges and solutions for mixed-criticality integration in heterogeneous MPSoCs
- > Heterogeneous MPSoCs and guaranteed real-time performance
- > Cross-domain development methodologies
- > Industrial applications of the introduced technologies

In the near future most processors will be based on multi-core technology, which poses fundamentally new challenges on many embedded application domains. In this workshop you will learn how to employ multi-core technology in embedded applications that are safety-critical and have stringent requirements on real-time properties and certification aspects.

When: January 24, 2012

Where: the EuroSites George V in Paris, France, in conjunction with HiPEAC 2012.

Register via: www.hipeac.net/hipeac2012

Contact: Sibylle KUSTER, TU Vienna
phone: +43-1-58801-18222
email: kuster@vmars.tuwien.ac.at

The logo for the ACROSS project, featuring the word "ACROSS" in a bold, black, sans-serif font. A red arrow starts under the 'A' and points upwards and to the right, ending under the 'S'. A red underline is positioned below the entire word.

Calendar

31ST JANUARY 2012

TOULOUSE, FRANCE

SAFETY EXCHANGE MEETING

CG2E organising a half-day exchange meeting between several collaborative projects. Projects identified so far are CESAR (ARTEMIS), pSafeCer (ARTEMIS), and OPENCOSS (FP7).

More information: For OPENCOSS and pSafeCer please contact Cyrille Comar (comar@adacore.com). For CESAR or any other project which would like to participate, please contact Jean-Paul Blanquart (jean-paul.blanquart@astrium.eads.net)

17 & 18 JANUARY 2012

PRAGUE, CZECH REPUBLIC

ARTEMIS BROKERAGE EVENT FOR CALL 2012

In March 2012 ARTEMIS JU is expected to launch its Call 2012 for project proposals. To help with the preparation of drafting proposals and search for the right consortium partners. ARTEMIS Industry Association organises the ARTEMIS Brokerage Event in Prague at Corinthia Hotel. This international 2-day international event will take place on 17 and 18 January 2012. More information: www.artemis-ia.eu/be2012

24 JANUARY 2012

PARIS, FRANCE

ACROSS WORKSHOP

The ARTEMIS project ACROSS is organizing a workshop on "A cross-domain approach for mixed-criticality integration based on heterogeneous MPSoCs". This workshop will take place in Paris on January 24, 2012 in the course of the HiPEAC conference. The EuroSites George V in Paris, France, in conjunction with HiPEAC 2012.

More information: www.hipeac.net/hipeac2012
Contact: Sibylle KUSTER, TU Vienna
email: kuster@vmars.tuwien.ac.at
More information: www.across-project.eu/workshop2012.htm

1-3 FEBRUARY 2012

TOULOUSE, FRANCE

ERTS2 2012

The ERTS² congress is a European cross sector event on Embedded Software and Systems, a platform for top-level scientists with representatives from universities, research centers and industries. The Call for papers already started in June 2011. More information: www.erts2012.org

1 & 2 FEBRUARY 2012

MADRID, SPAIN

ITEA 2 PROJECT OUTLINE PREPARATIONS DAYS 2012

ITEA 2 opens its seventh Call for projects on 01 February 2012 & 2 February with an ITEA 2 Project Outline Preparation event.

More information: www.itea2.org/upcoming_events

1-4 FEBRUARY 2012

VILAMOURA, PORTUGAL

HEALTHINF 2012

International Conference on Health Informatics. The event brings together researchers and practitioners interested in the application of ICT to healthcare and medicine in general and to the specialised support to persons with special needs in particular.

22-23 FEBRUARY 2012

STOCKHOLM, SWEDEN

CELTIC-PLUS EVENT 2012

The focus will be on the new challenges for the telecommunications world and the competitiveness of Europe's telecommunications industry towards a Smart Connected World. More information: www.celtic-initiative.org

28 & 29 FEBRUARY AND 1 MARCH

NUREMBERG, GERMANY

ARTEMIS SPRING EVENT 2012 & EMBEDDED WORLD EXHIBITION & CONFERENCE

For the third time the ARTEMIS Spring Event 2012 will take place in Nuremberg, back to back with the embedded world Exhibition & Conference that takes place on 28 & 29 February and 1 March. This year the ARTEMIS programme will be spread over three days: 28 February: ARTEMIS Information & Networking Event for ARTEMIS Call 2012, General Assembly of the ARTEMIS Industry Association, ARTEMIS Grand Dinner. 29 February: ARTEMIS Conference Track as part of the EW Conference. 1 March: the 3rd ARTEMIS Technology Conference

6-10 MARCH 2012

HANNOVER, GERMANY

CEBIT 2012

More information: www.cebit.de

ARTEMIS Joint Undertaking

Visiting Address:

White Atrium

Avenue de la Toison d'Or / 56-60 Guldenvlieslaan

B-1060 Bruxelles-Brussel

Belgium

Postal Address:

TO 56 05/23

B-1049 Brussels

Belgium

www.artemis.eu

ARTEMIS Industry Association

High Tech Campus 69

5656 AG Eindhoven

The Netherlands

Tel: +31 88 0036 188

Fax: +31 88 0036 180

communications@artemis-ia.eu

www.artemis.eu

