

ARTEMIS is a magazine published by the Artemisia Office, which provides information on the developments within the ARTEMIS Technology Platform ~ www.artemisia-association.eu

ARTEMIS

MARCH 2008 No. 3 ~ A step further For European R&D Initiatives



Second take off!

ARTEMIS Joint Undertaking starts its R&D activities ~ "Self-sustaining Eco-systems" What's it all about? ~ How to submit an ARTEMIS Project Proposal ~ Brokerage Event shows the way ~ ARTEMIS Spring Event 2009 in conjunction with DATE 2009

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Calendar

MARCH 19 - 20 2009

ICT FOR ENERGY EFFICIENCY

BRUSSELS, BELGIUM

This event aims to accord visibility to the potential of ICT in enabling energy efficiency across the economy and in particular it will show how ICT-based innovations may provide one of the potentially most cost-effective means to achieve the 2020 energy and climate targets.

More information:

<http://ec.europa.eu/ict4ee>

MARCH 25 2009

WORKSHOP ON WIRELESS SENSOR NETWORKS AND COOPERATING OBJECTS

DARMSTADT, GERMANY

ARTEMIS project ProSE invites you to come and to support the workshop with lively discussions and networking and promoting the ProSE ideas.

More information & registration:

<http://www.igd.fhg.de/igd-a1/workshopwsn/>

APRIL 23 - 24 2009

ARTEMIS SPRING EVENT

NICE, FRANCE

This year's ARTEMIS Spring Event 2009 will take place on 23 and 24 April, in Acropolis Nice. ARTEMISIA joined forces with DATE by co-locating the Spring Event in the same venue. This way, it will be a very efficient opportunity for industry to join both events.

The ARTEMIS Orchestra Contest will be the highlight of the first day of this 2-day event. On April 24, the 2nd day of the ARTEMIS Spring Event, there will be focus sessions in the morning and the bi-annual ARTEMIS General Assembly will take place in the afternoon.

More information:

www.artemis-association.eu

APRIL 20-24 APRIL 2009

DATE09, CONFERENCE & EXHIBITION

NICE, FRANCE

More information:

www.date-conference.com

JUNE 5-6 2009

EXPECTED

ARTEMIS SUMMER CAMP

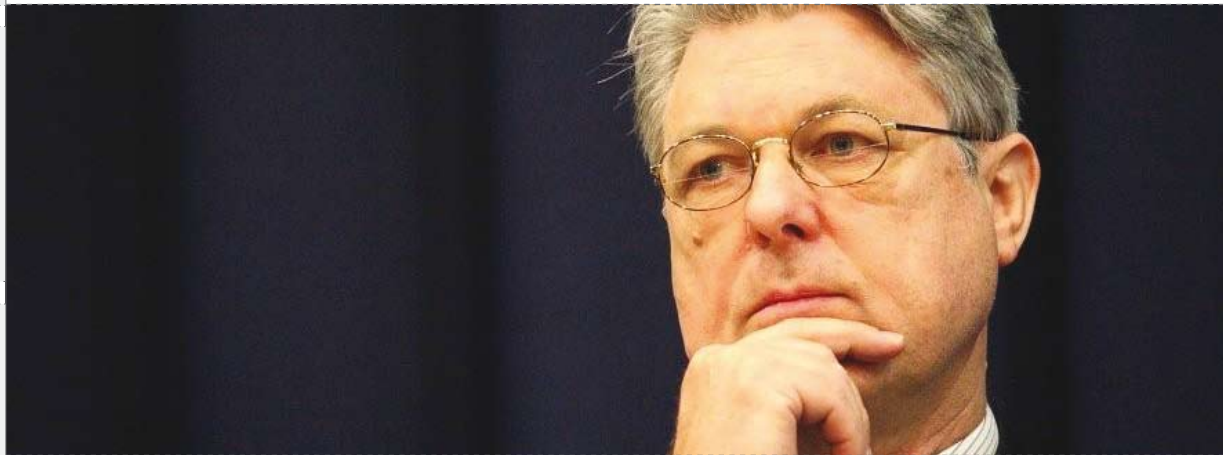
OCTOBER 2009

EXPECTED

ARTEMIS ANNUAL EVENT 2009

MADRID, SPAIN

Second take off!



At the time that this third edition of the ARTEMIS Magazine is issued, the second call (Call 2009) of the ARTEMIS JU should have been launched. Due to the difficult financial times and the fact that some ARTEMIS Member States are still in a somewhat wait-and-see mode, the funding of this call is hardly larger than the first one. In the first call, some 98 M€ was made available for funding; for the second call it will be around 105 M€.

What is new in the second call is that it will have a Project Outline (PO) phase, before full project proposals can be submitted. This means that, halfway through the process, an outline picture of all project proposals will be available. This picture can hopefully stimulate some countries to increase their funding budget on the fly, to make it possible for more good project proposals, if evaluated positively by the independent experts, to be supported.

In the mean time, Konstantinos (Kostas) Glinos moved to another position in the EC and had to

hand over his responsibility as Interim Executive Director of the ARTEMIS JU to his successor, José Cotta. Kostas has been one of the architects of the ARTEMIS JU at the Commission from the very beginning and has been instrumental in setting it up as up as it is functioning today. We thank Kostas for his energy and dedication in doing this job alongside his already full time job in FP7 at the Commission.

José Cotta, also ad interim, will bridge the period before the selected independent Executive Director will be in place.

In this issue of the Magazine you will find more information about the second call, and what we learned from the first one, as well as other articles we hope you will find relevant and useful as well as enjoyable.

Jan Lohstroh
Secretary General ARTEMISIA Association

Promoting cross-sector *standardisation across the embedded systems industry*

Purposeful and efficient standards are key to market creation and development in the embedded systems area. While there are already many standards covering parts in this area, they are of varying significance and tend to be sector specific and in many cases more generic than distributed embedded systems specific. Furthermore, as embedded systems become more complex, sophisticated and useful, there is a need for ever more standards. The ProSE project set out to establish a methodology for prioritisation and build links with standardisation bodies to foster the emergence of standards that take into account specific issues such as reusability, dependability, verification and certification in line with the high-level cross-sectoral objectives of ARTEMIS.

Many standardisation bodies are interested and involved in the results of embedded systems research. However, fragmentation between application domains and the lack of systematic and selective promotion of standardisation candidates in the field of embedded systems means that the emergence and evolution of desired standards does not keep pace with the increasingly rapid technology development.

Moreover, despite the success of many EU Framework Programme projects involving embedded systems, their results have had a minimal effect on standardisation. Yet standardisation is of crucial strategic importance in the creation of global markets. ARTEMIS therefore proposed a Seventh Framework Programme (FP7) support action to promote the emergence in standards in embedded systems – the result was ProSE.

Key actions of the ProSE project involve:

- Structuring and disseminating knowledge about existing standards within the various domains;
- Providing criteria for identifying and prioritising good candidates for standardisation; and
- Proposing a practicable methodology to enable their eventual acceptance by facilitating cross-domain compatibility and a higher degree of reusability.

The prime objective of ProSE therefore is to elaborate, maintain and monitor a strategic agenda in the area of the standards, throughout the 24-months of the project, **by supporting the specific ARTEMIS Working Group on Standards adopted by ARTEMISIA.** This strategic agenda will provide input to future EU and national work programmes as well as complementing the ARTEMIS strategic agenda.

SYSTEMATIC AND ECONOMICAL APPROACH

~ Project partners included co-ordinator Thales from France with Austrian Research Centers and AVL List in Austria, CEA in France, Fraunhofer-IGD in Germany, Acciona Infraestructuras and ESI-Tecnalia in Spain, and Ericsson AB in Sweden. This group offers a good mix of research institutes and industry, covering diverse fields of dependable embedded systems research, applications and standardisation.

“We wanted to develop a systematic and economical approach,” explains Laila Gide, of Thales, and ProSE coordinator. “We need to encourage the setting up of minimum number of useful standards and not leave the landscape as it is today, full of lots of clutter and nothing emerging as the principal one to give some form of competitive advantage.”

Currently each sector – from automotive



systems, aerospace and transport to mobile phones and other communications systems, not to forget the Ambient Intelligence and Environment area and Ambient Assisted Living – is trying to solve the problem on its own, going to the standardisation body with which they are used to working and trying to push their ideas. “However, there are no commonalities, no common work – well perhaps some – but we want to overcome this fragmentation.”

REACHING MID TERM ~ The project is currently at mid term and about finalise its first phase, which involved mapping the landscape of existing standards and identifying good candidates for cross-sector standardisation. “We are now elaborating a methodology for selecting such candidates and preparing a kind of Wiki tool to enable people to express their opinion about the level of importance, necessity, etc.,” explains Gide.

ProSE is building links to European national and international standardisation bodies and pre-standardisation organisations to classify their different standardisation needs collaboratively through activities such as workshops,

and to elaborate common issues across research areas and projects. This will be complemented by an open forum on standardisation issues in embedded systems.

The project is also contributing to the ICT action plan defined by the European Commission in March 2006 by providing a concrete solution for improvement in the adoption of standards in the rapidly growing embedded systems domains, and by improving the inclusion of different stakeholders in the standardisation process.

“There have been really high expectations from the Commission that we expect to meet but it is always a challenge,” adds Gide. “I believe it is a global problem and the Commission is showing willingness to help us to improve in this area.”

ENCOURAGING EMERGENCE OF HIGH VALUE STANDARDS ~ More specifically, ProSE aims at enabling the emergence of high value standards. It intends to achieve this by starting with the dissemination of knowledge about relevant deployed and

emerging standards in the field of embedded systems within the related R&D communities in Europe. It will continue by identifying and prioritising new areas for standardisation activities and coming up with a practised methodology for supporting their development and acceptance.

“Our ambition is to map what exists, and then try to find a way of identifying the important issues. Many standardisation organisations are working on embedded systems standards but, in fact it is always work in isolation and on segments only. More work is required with a new approach to see what will be the most useful ones for applications.”

In conclusion, we expect that ProSE results will help the Embedded Systems community to better meet the increasing need for innovation activities in the Embedded Systems domains by **shortening the process of selection of candidate standards**, and facilitating the emergence of high quality standards and of **new services, cross-domain products and solutions**, thus seizing new market opportunities. ■

ARTEMIS

Joint Undertaking

starts its R&D activities

ARTEMIS had a busy and successful year 2008. The set up of the Joint Undertaking (JU) is well advanced and ARTEMIS already completed its first Call for Research & Development project proposals that was launched in May 2008. Negotiations with the twelve selected proposals, worth more than €200 million, were finalised end of last year and most of the projects have started their work.

As a result of the 2008 Call, ARTEMIS decided to allocate €93 million of public funding to twelve industrial R&D projects. This amount will be matched by more than €100 million of own resources by industry and research actors, thus producing a R&D volume exceeding €200 million.

This funding decision is a breakthrough: it is the first time that a Community organisation decided the co-financing of European R&D projects by both national and Community funds in order to support a European strategic agenda. This should increase the leverage effect of public funding and enable focusing a critical mass of resources on key competitiveness goals.

The success of ARTEMIS is the result of a close and unique collaboration between industry and public authorities. By pooling resources from Member States and the European Commission and by engaging industry in the process, this new initiative sets new standards for industrial research programmes in Europe.

The funding decision completes the evaluation and selection process for 2008. The short "time to contract", i.e. the time from submission of a proposal (call deadline was 3 September 2008) to the start of the project (first projects started in January 2009), will be a major advantage for the research community compared to other research programmes like FP7 and EUREKA. The twelve projects will address the development of embedded electronic and software systems in areas of major industrial, economic and societal impact, such as energy efficiency, smart homes and buildings, sustainable cities, automotive and avionic safety, health systems and security. ■

Tom Bo Clausen

Project Officer in the unit "Embedded Systems & Control"

*Information Society and Media
Directorate-General*



| | | | |
|----------|-----|---|---|
| CESAR | SP1 | Start: 1 March 2009 Total cost: 58.5 M€ Duration: 3 Years | CESAR targets significant reduction of overall development time and effort, between 30% and 50%, using a Reference Technology Platform (RTP). The aim is, within 5 years, to double the number of European technology providers and SMEs joining the CESAR ecosystem and reduce by 50% the cost of integration, configuration, deployment, and maintenance of tool-chains. |
| CHESS | SP1 | Start: 1 February 2009, Total cost: 11.9 M€ Duration: 3 Years | CHESS aims to build modelling languages for extra-functional properties, and develop tools for evaluation of these properties of component contracts. It will adapt component infrastructures for the integration of real-time and dependable patterns, and validate the approach through multi-domain case studies. |
| CHARTER | SP1 | Start: 1 April 2009, Total cost: 5.2 M€ Duration: 3 Years | CHARTER will develop concepts, methods, and tools for embedded system design and deployment that master complexity and substantially improve the development, verification and certification of critical systems. |
| SOFIA | SP3 | Start: 1 January 2009 Total cost: 36.5 M€ Duration: 3 Years | SOFIA will create an Open Innovation Platform (OIP) providing the interoperability that allows interaction between multi-vendor devices. For this, it will create interaction models and embedded devices that support a variety of "smart spaces" and a variety of users, and develop methods, techno-economic structures and toolkits for the deployment of smart environments and for the development of services and applications based on them. It will also define scenarios to demonstrate the capabilities of the OIP in personal spaces, indoor spaces and cities. |
| EMMON | SP3 | Start: 1 March 2009 Total cost: 2.6 M€ Duration: 3 Years | EMMON will research, develop and test a functional prototype for large scale Wireless Sensor Networks. It aims to advance the number of devices by one order of magnitude compared to what is possible today, and develop simulation tools for networks two orders of magnitude larger than at present. The goal is to create technologies that allow effective monitoring with 10,000 to 100,000 devices, in an area of 50 square km in a real world scenario. |
| SMART | SP3 | Start: 1 March 2009, Total cost: 4.5 M€ Duration: 3 Years | SMART will create an innovative WSN infrastructure based on both off-the shelf reconfigurable devices (FPGAs) and specially designed Reconfigurable Application Specific Instruction Set Processors (RASIPs). This infrastructure will support video and data compression as well as high-levels of security with lower power consumption than existing solutions. |
| SCALOPES | SP5 | Start: 1 January 2009 Total cost: 36 M€ Duration: 2 Years | SCALOPES' objective is to enable an industrially sustainable path for the evolution of low-power, multi-core computing platforms, for application domains with strategic value for European competitiveness. |
| INDEXYS | SP5 | Start: 1 April 2009 Total cost: 7.3 M€ Duration: 2.5 Years | INDEXYS will develop a cross-domain instantiation of the GENESYS embedded system architecture, for Industrial-grade exploitation on real-world platforms in Railway, Aerospace, Automotive and Industrial Control domains. |
| SYSMODEL | SP5 | Start: 1 January 2009 Total cost: 5.4 M€ Duration: 3 Years | SYSMODEL will develop supportive modelling tools for the design and implementation of time and power critical heterogeneous systems. The focus is on reuse of existing models and their integration in a heterogeneous system. The vision is to allow SMEs to build cost-efficient ambient intelligence systems with optimal performance, high confidence, reduced time to market and faster deployment. |
| iLAND | SP5 | Start: 1 March-2009 Total cost: 3.9 M€ Duration: 3 Years | iLAND will develop enabling technologies for modular, component-based middleware for networked systems that demand deterministic, dynamic functional composition and reconfiguration. Its results embrace a lightweight middleware architecture offering deterministic services and QoS-based resource management, and an approach for modelling deterministic, dynamic reconfiguration and composition of applications, with validation through three application demonstrators. |
| eDIANA | SP7 | Start: 1 January 2009 Total cost: 17.3 M€ Duration: 3 Years | To enable sustainable urban life, eDIANA targets rationalization of the use of resources while increasing comfort by means of embedded systems technologies in residential and commercial buildings. To achieve greater efficiency in use of resources, it aims at prioritizing energy use, more flexibility in the provision of resources and better situation awareness for the citizen and for service and infrastructure owners. |
| CAMMI | SP8 | Start: 15 December 2008 Total cost: 7.3 M€ Duration: 3 Years | The objective of CAMMI is to demonstrate a joint-cognitive approach to controlling devices, where a workload exceeding the operator's capability ideally results in offloading non-critical, time-consuming tasks to autonomous agents (software, artificial-intelligence agents) and to let the operator focus his attention on critical tasks only. |

Cost-Efficient methods *and processes for SAfety Relevant embedded systems*

ARTEMIS Magazine interviewed Josef AFFENZELLER of AVL, who is project coordinator for CESAR. With 55 partners from 11 countries, a total cost of 58.5MEuro of which 28.1 will be covered by public funding, CESAR is one of the larger projects to successfully come out of the ARTEMIS-JU Call of 2008. AVL is an Austrian company specializing in automotive control and test systems.

Can you tell me briefly what CESAR is about?

Like most project names, CESAR is in fact an acronym, standing for "Cost-Efficient methods and processes for SAfety Relevant embedded systems". We know that embedded systems are used in all sorts of equipment that is critical for the safety of the users. The obvious examples are aeronautics and automotive systems, but also in rail transport and in industrial machinery. Designing such high dependability systems can get very expensive and time-consuming. CESAR is aiming to set up a Reference Platform which will help designers to make new systems; the goal is to reduce the design effort needed without compromising the very high safety standards needed in the four domains we address. These are Automotive, Aeronautics, Rail and Industrial robotics. We divided the project into 6 sub projects: the first three cover Reference Technologies, Requirements Engineering and Component Based Development. Next to this we have three sub projects that look at concrete use-cases in automotive, aerospace, and industry and rail transport respectively.

Furthermore, CESAR has also established also task forces on Safety Diagnosability and Product Line.

What do you feel will be the biggest impact that CESAR will bring about?

CESAR has the ambition to achieve up to a 40% reduction in development time and effort for safety related systems compared to what is typical today. To do this, we want to establish a CESAR "reference platform", which designers can build around in confidence that the safety issues are properly taken care of. We really want the CESAR reference platform to become a reference standard in the future, so that more and more people can use it. This not only benefits design engineers; its main societal benefit is that it will put Europe at the forefront of embedded systems development to high reliability standards, which is a big contributor to the competitiveness of the industries involved. This is a strong driver in holding both engineering and production capability in Europe, both of which are needed to feed the "knowledge society" we are moving towards.

CESAR is a very large project. Where do all the partners come from, and what do they contribute?

There are 55 partners coming from 11 countries, so it's too much to list here. However, when building the consortium we looked for a lot of synergy among quite a broad range of experts, to be sure that there is no more reinventing of wheels. For example, we are looking to consider existing tools, or tools from previous funded R&D projects to be used in our platform, not to invent something new. The only intervention on that front will be if there is a reliability issue to tackle. Among the partners, we have software vendors and tool providers, including several SMEs who are very important to us as they can be very agile. We also have partners who are expert in developing real-time electronics systems, who are important in testing and demonstrating our results. And of course we have the end-users or OEMs, who will run the use-cases for us. In this way, we actually have most of the supply-chain covered in the industry sectors we are addressing.

“We really do want the reference platform to become a recognised standard for other developments”.



Josef Affenzeller

The proposal already shows that the ideas behind CESAR are already quite mature.

How did this come about?

The base idea for CESAR was born in EICOSE, which is a “virtual institute” for safety critical systems [editor’s note: see www.eicose.eu] which brings together leading experts from the “Aerospace Valley” and “System@tic” clusters in France, and the “Safetrans” initiative in Germany. EICOSE is in fact the first ARTEMIS “Centre of Excellence”, and EICOSE experts contributed a lot to the building of relevant chapters in the ARTEMIS Research Agenda. As a result, the partners in EICOSE were also the baseline in forming the CESAR consortium. It’s a nice example of the significant impact that can be achieved with such trans-national clusters.

People are sometimes averse to such large projects, as they are difficult or risky to manage. How will you be handling this?

Do you foresee any special measures?

It’s not easy to handle, indeed. We feel that communication is very important, so we

will make extensive use of the Web for this. For practical things, we will make use of standardized templates, to make sure that all partners deliver their inputs and reports in a consistent format. The project holds its Kick-off meeting on the 17th to the 19th of March, but all players in the meeting have a “pre-meeting”, where all the work-load and contributions mentioned in the proposal will be discussed again openly and fixed, so as to avoid any misunderstandings about what is expected of whom. In a project of this size, it’s key to keep discipline! To help with this, a Project Scientific & Technical Committee next to a steering and dissemination/exploitation board has been set up to guide the day to day management, and I have 2 persons with me full-time to run the project administration. It’s a huge investment, but well worth it.

Does CESAR foresee any public or other events where its intermediate results will be discussed with players outside the project?

We already plan to give presentations at ARTEMISIA events, as well as the usual EU

and National conferences, to disseminate general information about the project. In addition we plan to hold “Information Days” in the 2nd and 3rd year, where we will disseminate to a larger group. Of course, no technical details of the intellectual property of the partners will be exposed, but this way we hope to gain the support of an even larger community of interested parties.

Are there already any ideas to augment the work of CESAR in parallel projects, or ideas for a continuation after it finishes?

We really do want the reference platform to become a recognised standard for other developments. That way, we can really look forward to our project having the significant impact that ARTEMIS expects of us. We are also thinking about creating an Association or something similar to help with this. Such an entity will offer design services using the CESAR standard platform, for example via the EICOSE platform. ■

SCAlable LOw Power Embedded Platforms

ARTEMIS Magazine interviewed Patrick Pype of NXP, who is project coordinator for SCALOPES. A two year project with 39 partners from 12 countries. SCALOPES is one of the larger projects to successfully come out of the ARTEMIS-JU Call of 2008.

Patrick, can you tell me about yourself and your role in ARTEMIS ?

I am responsible for European Affairs within NXP Semiconductors. This involves work on the European Technology Platforms (ARTEMIS & ENIAC) and other government-funded programs, follow-up on EU recommendations for RFID and privacy, and looking towards new telematics opportunities. Within ARTEMIS I am proxy of Gerard Beenker in the ARTEMIS Steering Board and I am responsible for cooperation between NXP Semiconductors and other partners in new ARTEMIS project initiatives.

Can you tell me briefly what SCALOPES is about?

SCALOPES stands for SCAlable LOw Power Embedded Platforms, and focuses on the next generation design tools and reference multi-core architectures for applications in the telecommunication infrastructure field, surveillance systems, smart mobile terminals and stationary video systems. Key focus is on drastically reduced power consumption through intelligent design techniques and new architectural developments. The project

will enhance the common generic aspects of future embedded system architectures and will also build in optimized application-specific extensions.

What do you feel will be the biggest impact that SCALOPES will bring about?

The impact can be measured at 3 levels: technological, economical & societal.

The technological impact is that the power consumption is reduced by 30 % while the performance is increased by 20 % for multi-core systems in all application domains of SCALOPES.

For video processing, performance should be increased by a factor 1.3 – 1.5 when moving from single to dual core embedded processors. One example is that we aim for more than 75 % reduction in energy consumption for television sets and displays, much lower than European directives in this field.

The economical impact is that prices for products based on embedded systems will not increase, while the quality of the products will increase tremendously. SCALOPES will allow the use of multi-core embedded systems in

new applications, which are as yet unexplored or are too expensive in terms of cost and power consumption.

The societal impact is related to the continuous evolution in energy saving and a 'greener' environment, thanks to reduced power consumption for all types of electronic equipment.

SCALOPES is a very large project. Where do all the partners come from, and what do they contribute?

Partners come from Belgium, Czech Republic, Finland, France, Greece, Hungary, Italy, Netherlands, Portugal, Spain, Turkey and the UK. Around 20 % of the partners are SME's and around 25 % are research institutes or universities. The consortium is headed by NXP Semiconductors in The Netherlands. We are proud to have all key companies, research institutes and universities from these countries involved. To my knowledge, it is the first time that all these partners come together to take a crucial step into a European approach on multi-processor architectures and reference designs. Up to now, cooperation was

mainly on a limited scale with 2-4 countries involved. It is only a pity that the German partners who were originally involved had to drop out because of lack of funding from their Public Authority. Although ARTEMIS is a leap forward towards a TRUE European cooperation, we still have to face the fact that, due to unbalanced funding by the local governments, good European projects may sometimes fail to engage the best possible partners.

How will SCALOPES be able to seed an eco-system of partners, to assure optimum long-term use of its results?

The project is organized in two dimensions. On one hand we are country/regional-focused, on the other we are competence-focused. The application domains are centred on key institutes in specific countries. The technology domains are centred on key competences in European top research centres. Furthermore, the project is built around people who know each other for a long time and who are able to work together as one team in such a large project. People are crucial for detecting and continuing cooperation with each other. Key people, who play a role both at country-level and at technological level, have to maintain this key European cooperation. SCALOPES will be considered successful if it creates a number of spin-off projects after two years which will build further upon the results obtained, either from an application or a technology perspective. The involved SMEs should grow and new companies should take a head start towards success. In addition, the common denominator for everything which comes out of SCALOPES needs to be the value for the European citizen.

Does SCALOPES foresee any public or other events where its intermediate results will be

discussed with players outside the project?

It is only by active involvement in the top world conferences in (ISSCC, DAC, DATE) that one builds credibility. Furthermore, workshops will be organized to share results with other consortia and players in the field. There are two attention items. One is to ensure that the expected results will not only lead to "invention recognition", but also to "turning-innovation-into-business" recognition. European industry – large players and SME's – needs to be able to turn the innovative results into real business benefits. It is exactly in that final step that Europeans are still lacking compared to the US. The second is that we should be able to show that the results of SCALOPES do mean something to European citizens. Technology still needs to find its way into a positive acceptance by consumers, who use it every day but do not know it impacts their life that much.

Are there already any ideas to augment the work of SCALOPES in parallel projects, or ideas for a continuation after it finishes?

The goal of SCALOPES is to go for a common reference architecture for multiple application domains, to start using it and augmenting it with new features in future projects. Therefore, we want to touch base continuously with external partners to get feedback on the road we are taking, but after the project ensure that it goes into real products.

People are sometimes averse to such large projects, as they are difficult or risky to manage. How will you be handling this? Do you foresee any special measures?

Let's be honest. People do know each other and do work together both in large and small projects. A large project has the advantage that you can share ideas and knowledge between all partners, whereas real success comes when smaller sub-teams (regional or



Patrick Pype

technology-wise) get together to generate a successful milestone. If you have a smaller project, you have only the smaller sub-team result. In a large project, you are able to get it one dimension further. It requires a project manager who knows, sees and feels how to balance between the "big size knowledge sharing" versus the "small team true results". You do this by getting the right people together and having an experienced project manager who believes in it. NXP has a lot of experience in this so we have appointed a senior manager who is used to working in large international projects. Risk management is important, so we have an experienced person from STMicroelectronics to manage this actively - but the main success for the project can only be reached through a "top-team" which is "going for it"... And that's what I see happening in SCALOPES right now! ■

“Self-sustaining Eco-systems”

What’s it all about?

The ARTEMIS Multi-Annual Strategic Plan (MASP) is a document that describes how the ARTEMIS-JU will implement its part of the overall ARTEMIS vision described in the Strategic Research Agenda (SRA). The first version of the MASP, produced late in 2007, was simply a cut-down in scope and timescale with little added explanation. During 2008, the ARTEMISIA Steering Board, together with the “SRA Working Group”, thought heavily about the “how”, needed to let the ARTEMIS JU successfully reach the very ambitious goals set out in the SRA.

GENERATING TRUE INNOVATIONS ~ This would be no mean task: the first conclusion drawn was that Embedded Systems, if they are to be truly useful and therefore ‘ripe’ for generating true Innovations (that is, technical excellence coupled with viable applications and markets), must on the one hand address issues of genuine concern to society, and on the other be able to be developed and deployed in the market in realistic timescales and with equally realistic effort. The former was not so difficult, being a matter of choosing the most relevant and urgent parts of the Application Contexts from the SRA. The latter is however much more problematic: the complexities of the demands put on Embedded Systems, given the 100% availability 24/7 they must guarantee, are so great that they cannot be addressed by one company alone, or even by one country alone. They can only be met by building further on the collaborative model that has historically been part of the European ICT R&D field.

The ARTEMIS-JU itself provides for a unique means of further stimulating collaborative R&D projects across Europe, complementing the other schemes already in place. The task ahead is to execute these projects efficiently yet avoid the fragmentation of effort that so easily creeps in. Encouraging a vision whereby the projects themselves are seen as parts of a much larger whole, which itself has a sufficiently large critical-mass to be able to have genuine impact, is a good way forward. This larger entity must have, as its prime target, the ability to move the R&D results into the market efficiently, which in turn implies collaborations across the whole of the supply chain embracing innovative business models, not only on punctual technical developments. And so the concept of pan-European “eco-systems” is born.

“SELF-SUSTAINING” ECO-SYSTEMS? ~ As in nature, successful eco-systems are built of diverse, collaborating or even symbiotic entities, each performing a role. The system

needs to be large enough to overcome the occasional “accident de parcours”, and needs to be looked at in its entirety. In our case, this includes the role of government and institutional bodies as well as the industrial players and research organisations. The eco-system model has already proven to be successful in local initiatives: ARTEMIS aims to take this to the next level and extend them across Europe. Only in this way can enough critical-mass be generated to successfully beat the complexity problem. Most important is the collection of the constituents of the eco-system, not so much its geographic location.

ARTEMIS SEED ~ For ARTEMIS, the ‘seed’ around which eco-systems can be grown is the R&D it does. The ARTEMIS Research Agenda groups R&D into eight, more or less application-oriented “ARTEMIS Sub-Programmes” (ASPs). The collective result of R&D projects in each ASP forms the seed of an eco-system, from which it can further grow through a process of collaborative



Encouraging a vision whereby the projects themselves are seen as parts of a much larger whole

innovation. They must be important enough to attract the other constituents needed to build the system: successful SMEs, compelling standards, stronger interaction between Industry and Education, new business models that can feed collaborative Innovation, and so on. (A special type of ARTEMIS eco-system is the "Tool Platform". Europe has no

indigenous large player in this market, but has a number of very strong SMEs offering excellent solutions. The Tool Platform concept offers a way for them to "symbiotically" collaborate, to offer complete and viable solutions to the industries that use them).

The ARTEMIS-JU offers public funding for

the R&D activities but not to support the peripheral activities needed to efficiently grow these eco-systems, though other financing schemes do exist. During 2009, a number of specialised working-groups will be set up by ARTEMISIA to further refine these parts of the strategy and identify how use can be made of such alternative schemes. ■

How to submit *an ARTEMIS Project Proposal*

The first ARTEMIS Call is now behind us, and we can reflect on what was to all intents and purposes a very successful call.

Twelve projects have now completed their final negotiations, and are or soon will be up and running. Perfection not being of this world, there are always things that can be learned from to make the process even more smooth and painless. The first step is of course to establish a project idea and a consortium to actually execute it.

ARTEMIS PROPOSAL SERVICE ~ The application process centres on the ARTEMIS Proposal Service tool (APS). This web-based tool is designed to help the project proposer and all partners to get all necessary information into the system. The project evaluation process is highly automated, that has allowed it to run in record time. It's therefore important that all data about partners and the technical proposal itself are entered in a standard format, and the APS ensures that this happens.

PARTNERS REGISTER THEMSELVES ~ The first step in using the APS is to ensure that all the partners have registered themselves on the system. It is important that all the required information is completed; otherwise the proposal cannot be submitted later. It saves a lot of effort and heartache if all partners do this as soon as possible.



Next, the project needs to be created. Anyone registered on the system can create a project, but the first to do so automatically becomes the Project Coordinator, who is then responsible for the project. The coordinator can then invite the other partners to join. Invited partners will receive an automatically generated e-mail, asking their confirmation (and asking them to register on the APS if not already

done). Once they confirm, they will receive a user-name and password to allow them to access project information on APS.

As mentioned before, it is important that all partners are properly registered. If not, the project cannot be submitted: APS automatically generates the "Part A" forms, and checks for any missing information. It is advisable to ensure that this is done as early as possible, therefore. Note that APS is not a kind of on-line partner search – the partners who the coordinator invites must have basically agreed to participate in advance. If not, they are unlikely to respond, which will block the later submission of the project. Randomly inviting partners by a "cold call" using APS is a definite no-no!

TWO-STEP PROPOSAL SCHEME ~ While this is going on, the technical description of the project ("Part B") can be started. Templates for this are available on the Call site and must be used. For Call 2009 onwards, ARTEMIS will be using a two-step proposal scheme: first, an outline of the project ("PO") is submitted, on which evaluators will give feedback and suggestions on how to improve the proposal (it is not a "gate" – projects cannot be disqualified at this stage),

then a Full Proposal ("FP") is submitted for final evaluation. The templates for these are essentially identical – only the amount of detail required differs. The documents must be uploaded in PDF format. At the JU, these documents are printed out for the evaluators to read, so make sure that your PDF software does not apply any security locks that can prevent it being printed!

On security: though the APS tool is provided by ARTEMISIA (the Association representing R&D actors in the ARTEMIS Joint Undertaking), the data entered into it is only accessible by the ARTEMIS JU staff, not by ARTEMISIA. Also, all partners have a unique login/password, which ensures that the project data is only available to the actual participants.

SUBMIT ~ The submittal process essentially amounts to: fill in partner data, upload the technical description of work (and eventually some additional information called "Part C" for partners in certain countries – see the "Guide for Applicants" document) then press "Submit". The last step validates all the information for Part A, and flags any that is missing. It must run with no error flags at least once before the Call closing deadline, which is very strict, be it for the Project Outline of the Full Proposal. However, a proposal can be uploaded and submitted any number of times – only the most recent one in the system at the time of closure is retained. It pays to upload documents and "submit" frequently, as newer versions of your proposal become available. Never wait until the last minute to submit a proposal!

Lastly, the ARTEMIS document "Guide to Proposers", which is available on the Call pages of the web-site, gives many more useful tips and concrete information. It is highly recommended reading for project coordinators and partners alike. ■

Main Features Call 2009

The second ARTEMIS Call for Proposals, for 2009, is open from the beginning of March. Though the technical content of the call still covers the eight ARTEMIS Sub Programmes listed in the Annual Work Plan (AWP) document, there are a few differences from the first call.

The most obvious change is the two-step process that ARTEMIS will use from now on. The first Call was set up very quickly and to save time, proposals were entered immediately in their final, complete form. This year, proposers must first submit a brief outline of their proposal. This Project Outline is mandatory, but has many advantages. For project consortia, the feedback from the reviewers gives useful input to allow them to improve their proposal and increase their chances of getting it accepted. For ARTEMIS, it provides valuable insight into the coverage of the programme, and for the participating Member States, coverage of the budget they have available. The PO review is not a "pass or fail" gate, simply a means of helping consortia to make the best possible proposal. In the worst case of a proposal being unlikely to succeed for any reason, the feedback will show this and the consortium is free (but not obliged) to withdraw, having invested only nominal effort to make the PO.

The first Call, as was expected, was well subscribed in Sub Programmes 1, 3 and 5: this time, the call wishes to emphasise ASPs 2, 4 and 6. There is no firm criterion on this: the Call is open for proposals in all 8

sub-programmes. ARTEMIS relies on the strong community spirit of the participating organizations to encourage a balanced progress of the complete programme by respecting this request as much as possible.

Another change is that the evaluation criteria have been adapted to fit the overall goals of the ARTEMIS strategy described in the Multi-Annual Strategic Plan (MASP). Most importantly, Criterion 4 (Market Innovation and Market Impact) now has a weighting of 2 – all other criteria have a weight of one. This emphasises ARTEMIS as an Innovation-driving programme, and the criterion looks for more than novel ideas: proposals must show a definite added value in terms of their impact. The AWP also looks for the seeding of "Tool Platforms" in certain sub-programmes, which is linked to this. It also calls for a focus on SME involvement in all sub-programmes, which is linked to Criterion 5.

With this, and based on the tremendous positive energy shown by the participants at the ARTEMISIA brokerage event and at subsequent networking meetings around Europe, we can look forward to an exciting and fruitful second Call. ■

Brokerage Event

shows the way



Attendance at the joint ARTEMISIA/ITEA event in Rotterdam in November 2008 helped focus the interest of Innovalia in collaborating in ARTEMIS activities. Participation in the January 2009 Artemis Brokerage Event in Brussels reinforced this interest. As a direct result, the research laboratory is in discussion with two consortia about taking part in ARTEMIS projects on manufacturing technology and embedded software. Innovalia is positive about both proposals and is doing its best to contribute to them taking off successfully.

Innovalia is a private Spanish research laboratory based in Bilbao in north-west Spain. An alliance of seven Spanish high technology small and medium-sized enterprises (SMEs) established the organisation in 2000 to serve as a common research resource. The laboratory is active in a number of areas, including embedded software, mobile communications and security, as well as manufacturing and more specifically metrology.

"Our mission is to help our SMEs develop new technologies and market them in the form of products and services," explains Innovalia managing director Dr Oscar Lázaro.

The alliance is commercially based as the companies involved are developing technology and wanted to avoid duplication of efforts in medium- and long-term research. Resources and researchers are pooled in collaborative work both for members of the alliance and for external companies large and small.

EXTENSIVE INTERNATIONAL INVOLVEMENT ~ The Spanish laboratory has extensive experience of collaborating in all types international research projects. Initial involvement in such projects was through the EUREKA framework. Innovalia used the umbrella to set up international consortia with support of national funding.

"We found this approach extremely useful and positive, not only for the laboratory but also for the SMEs involved in these initiatives – because the organisation is in effect an extension of these companies for innovation and research activities," says Lázaro.

Innovalia has now worked on many EU Framework Programme projects. Typical is the nanoCMM project on intelligent manufacturing led by one of the companies that started Innovalia. And Innovalia has been active in the areas of software and communications in both FP6 and FP7. "The companies involved

in Innovalia were some of the few SMEs in Europe to lead integrated projects in the Sixth Framework Programme (FP6)," he says.

Innovalia became interested early on in the European Technology Platform that initiated ARTEMIS and followed the development of the Strategic Research Agenda (SRA) closely. "We compared the ARTEMIS SRA with our own internal roadmap and identified several key themes in common and related to the activities of the SMEs with which we normally collaborate," he explains.

The joint ARTEMISIA/ITEA event in Rotterdam last November reinforced Innovalia's interest. "We heard about the outcome of the first Artemis call for projects and gained an understanding of the new programme in terms of deadlines and ideas of interest. Before the joint event with ITEA, we were not clear from our own point of view about the best way to approach the ARTEMIS

ARTEMIS Brokerage Event

Introduction

The ARTEMIS Brokerage event, organized by ARTEMISIA on January 13th and 14th this year in preparation of the second Call (Call 2009), was on all accounts a success. The brokerage (and its series of local networking meetings that followed) is designed to bring together a diverse mix of partners to exchange ideas for projects and to look for suitable partners. Some come with project ideas in need of partners, some come looking for a project in which they can contribute specific know-how. In an atmosphere of "creative chaos", these two poles often find each other, as exemplified by the following two articles. On the one hand, a world-leading large enterprise with a potential project idea needing development, and on the other, a private research organization representing SMEs with technology ideas looking to find a strong industrial home. Both were successful in finding partners for their potential projects, as we'll see.

work programme. But it was much clearer after the presentations."

All this led Innovalia to attend the ARTEMIS Brokerage Event in Brussels in January 2009 and to get involved in the programme. The laboratory is already in discussions with several organisations about setting up projects.

IDENTIFYING KEY PROJECTS ~ Lázaro was very clear ideas about the type of consortium with which he wanted to work. "It needed to be strong from an industrial perspective with support of knowledge and expertise from research organisations. So, we were seeking consortia with a large industrial presence and collaboration with research organisations and universities for specific expertise where needed."

Innovalia went to Brussels in a learning mode to identify one or two key strategic projects in which it could get involved.

"We identified two initiatives that were aligned with activities that interested our companies," he says. "We are now in discussions with the two consortia and, as these have progressed, we have become even more committed. So we are more than pleased with outcome of the event."

The first of the two potential projects is RIDGE, led by Philips. The strategy and scope of the project is of particular interest to the Innovalia Association's manufacturing companies as there are common interests and requirements despite the application fields proposed being a bit different. "It was very exciting to find a common approach to such requirements but in different areas," adds Lázaro.

The second project is more directly related to embedded software. "The SCALE project is being led by the VTT Technical Research Centre of Finland and this contact comes

from a previous collaboration we had. The advantage here is that we know both the person concerned and the sort of activities involved in the project." ■

Oscar Lázaro

Oscar Lázaro was originally a telecommunications engineer, obtaining a degree in Valencia, before moving to the UK where he obtained his PhD at the University of Strathclyde. There he was involved in the large mobile virtual centre of excellence (MVCE) project and worked on various issues in next-generation mobile telecommunications systems. After five or six years, he returned to Spain where he joined the Information & Communication Technologies (ICT) unit of Innovalia. He is now responsible for the whole laboratory.

Building a consortium *for model-based testing*

Some 200 participants from all over Europe attended the recent ARTEMIS Brokerage Event in Brussels. Daimler made the most of the occasion to recruit new partners for a project on model-based testing and analysis of embedded systems in the transportation sector. The approach proposed is intended to reduce the high costs of testing in embedded systems development which are still between 30 and 50% of total development costs. It will involve proving the viability of leading-edge model-based technologies in real industrial situations.

Jens Herrmann of Daimler Group Research & Advanced Engineering came to the Brussels event in January 2009 with a very clear idea for a project on model-based testing and analysis of embedded systems. "I came to check if the idea was good or not and to find wider acceptance," he explains. "I already had a lot interested partners on board before I came to Brussels but I was looking for additional partners. We know the scene well in Germany, but the Brokerage Event was very helpful in finding partners elsewhere."

The key objective of the model-based analysis and testing project proposal is to improve the competitiveness of the European software industry by providing leading edge technology for testing and analysis.

"We know a model-based approach is a key technique for improved testing," says


Herrmann. "It provides a powerful means to support the quality of embedded systems. Our project should demonstrate that this approach can reduce testing costs and, at the same time, ensure a higher coverage of the embedded system under test for greater quality. Regression and re-testing will be easier as the model-based approach cuts time and costs by re-using test models."

TARGETING TRANSPORTATION ~ Target domains are principally in the transportation sector – automotive, aviation, aerospace, rail and perhaps others, depending on the consortium members. Partners are being sought among vehicle builders but could perhaps also include telematics and infrastructure manufacturers. Suppliers are also being targeted and seen as very important partners – the small and medium-sized enterprises (SMEs) providing the tools and methods for model-based testing of software-intensive electronic systems within vehicles.

The project will be case-study driven as the focus is on transferring methods and tools from the research domain into industrial practice. The biggest impact will be in really effective and efficient testing to support quality in embedded systems.

Partners will include large companies, SMEs and researchers. The large companies will provide the testing challenges and the possibility to carry out case studies. Technology providers (SMEs and researchers) will supply the means to solve these problems, applying the new modelling techniques in real industrial conditions.

"Both sides will benefit," points out Herrmann. "The large companies will reach a better state in testing that will have a major impact on their costs, while at the same time the SMEs and researchers will have improved technologies to offer to other customers – improving the overall situation

A close-up portrait of a man with dark hair and green eyes, wearing a dark suit, light blue shirt, and dark tie. He is looking directly at the camera with a slight smile. The background is a neutral, dark grey.

*“... the Brokerage
Event was very
helpful in
finding partners
elsewhere.”*

Jens Herrmann

“We now have quite a good number of partners interested

in Europe concerning the development of embedded systems.”

HIGH INTEREST RAISED ~ “We now have quite a good number of partners interested – perhaps even too many – from nine different countries,” he adds. Lot of contacts have been made since the event via email and phone calls. The next step will be a project outline preparation meeting at Daimler to prepare the proposal – including allocating responsibilities. This will in turn require a second meeting before final submission of the proposal.

Herrmann believes strongly in the benefits of ARTEMIS Brokerage Events and would strongly advise others to go. “It is a good market place to sell ideas and find new partners,” he says.

However, he does see one drawback. “I had already partners on board for the project before I came to Brussels to propose the idea. This caused a problem during the event as the potential partners I met there expected to develop the project proposal on the spot. However, it was essential to arrange a new meeting to involve both the existing and new partners as half the people were missing in Brussels.

I had already experienced this problem in another Brokerage Event and don’t really have an easy solution. All I could do was to make clear during my presentation of the project idea in Brussels that a separate project proposal meeting is needed so that the partners that I had already on board could also take part in this proposal meeting. Of course this is only a problem if you already have partners beforehand.” ■

Model-based testing

Model-based testing means testing where tests and test cases are derived from models.. Models are simplified but semi-formal representations or abstractions of the system being developed. Usually, design and functional models are used as basis for testing. From a testing’s point of view, the usage of a test model is a more advanced way of testing. A test model describes the system under test from the tester’s point of view and can be used to automatically generate test cases. The development, integration and evaluation of test models will be one of the key issues in this project.

Jens Herrmann

Jens Herrmann has been working in Daimler research for 18 years in software engineering, with a focus on software testing. Applications domains have included not only automotive but also aviation, aerospace and commercial systems – all parts of Daimler in the past. Since 2000, Herrmann has mainly been involved in public authority funded projects – principally five projects in the EUREKA ITEA Cluster programme, where he is still involved in one project. He acted as a work-package leader in the main and was responsible for transferring the resulting technologies into practice. He is also active as an ITEA steering group member and worked on the ITEA road map no. 3. In addition, he contributed to the Artemis strategic research agenda (SRA), particularly the design, methods and tools parts.

SIRRIS

the Belgian Connection

At the Brussels Brokerage in January, a fairly large representation from the Belgian organisation "Sirris" was present. We were intrigued to find out more about who they are and how they approach collaborative R&D, particularly in Flanders. We asked Jeroen Deleu, director of Sirris's office in Brussels, to tell us more.



"We are very well prepared in getting feedback from events such as the ARTEMIS Brokerage Event to the SME constituency..."

Jeroen Deleu

Sirris originally grew out of "Agoria", the federation for the technology industry in Belgium, with a specific charter to help companies in the implementation of technological innovations and to strengthen their competitive position over the long-term. Since then, Sirris has grown to become a fully independent not-for-profit organization, and has adopted a different and strongly industry-driven approach. Like Agoria, Sirris addresses the whole of Belgium, covering its three constituent regions, and also covers all sectors within the technology industry. Sirris is present in local offices in all of the regions focusing on the most prominent sectors in each area. The centre here in Brussels specializes in ICT and software, so is most relevant for ARTEMIS.

Sirris has developed a method of working that is significantly different to what is traditionally done to get research results into industry. Our main approach is to first collect and analyse the industry needs. Starting from these needs we look for industrial and/or academic partners that can help to address the challenges. We can even instigate specific research projects to cover any white-spaces we discover. In this context, Sirris already has solid experience in pan-European research in Eureka, where we take part in several projects, one of which is the ITEA2 project "FLEXI", the largest research project in the world in the domain of agile development: from idea to product in 6 months.

This brief description in fact hides a lot of complex work. We are not there to provide one-off answers to the punctual problems of one company, though our networks and expertise do allow us to do this when needed: for maximum benefit, we need to be sure that common and difficult issues of long-term strategic importance are really

addressed, i.e. tackle the collective technology challenges. To do this, the extensive networks we have built up provide us valuable input. These data are put into fairly detailed and inter-related maps which we must carefully analyse to identify the real technology challenges, then go out to find answers. We operate across many sectors, and sometimes can find answers for a sector that have already been developed in another – something that ARTEMIS also encourages. In this way, industry can get solutions for their technological needs, and at the same time universities get clear insight into what those needs are, enabling them to better direct their own research (though this is side-benefit, and not really our charter). This approach seems to be quite unique, in fact: several aspects of this collective approach were used to develop new program modalities within the European Commission.

Sirris is financed for 50% by the public sector, though funding for the projects we do, and the other 50% from industry, as membership fees, consulting contracts, and participation in risk-sharing projects, and we have about 120 technical experts in house to support all this. Overall, 80% of our members are SMEs, and Sirris can be of great value for them in finding the constituents they need to get their innovative ideas to market. For example, we can also invest in shared, high-tech facilities which can provide essential manufacturing capacity of key technological components that would otherwise be outside their reach individually.

Our ICT and software group here is fairly young, being about 5 years in existence. It grew out of a pure software engineering group, and now covers several aspects of ICT and software in innovation. The flexibility of software technology and ICT means

that there are thousands of companies out there with as many innovative ideas and even more problems and needs. We have a special account management scheme in place to help us manage the mapping of all this. In fact, we are today at a second-generation approach to software-driven innovation management, having gone from developing the "art of software engineering" to driving software innovation by evaluating how it can add value to products and services. Our position in this network, as well as our specific *modus operandi*, means we are very well prepared in getting feedback from events such as the ARTEMIS brokerage event, for example, to the SME constituency who are unable, unwilling or who cannot afford to participate in such initiatives.

Our ICT group here works together with "Pictor" (www.pictor-office.org), the local ICT platform modelled on the European Technology Platforms like ARTEMIS. Pictor was set up in collaboration with the Flemish funding authority IWT, but is fully industry driven. It groups interested and relevant partners around specific themes or even project ideas, and uses a pragmatic "Think and Act" approach to stimulate participation in pan-European research programmes like ARTEMIS, ITEA2 and FP7. For us, this is particularly useful as it provides focus in an otherwise numerous and therefore rather chaotic array of partners. Sirris can then follow up on this by identifying the common local technology needs, matching them when possible to projects ideas that live on the pan-European field. This also places us very well to provide well calibrated input to the European R&D agendas. ■

For more information, visit www.sirris.be or contact Jeroen Deleu [Jeroen.Deleu@sirris.be] or Wim Codenie [Wim.Codenie@sirris.be].

ARTEMIS *Orchestra Contest* 2009



MUSIC IS A UNIVERSAL LANGUAGE BY WHICH ARTEMIS WANTS TO INSPIRE STUDENTS AND YOUNG PROFESSIONALS TO TAKE UP A CAREER IN EMBEDDED SYSTEMS TECHNOLOGIES AND SCIENCES. THE ARTEMIS ORCHESTRA CONTEST CHALLENGES CONTESTANTS TO BUILD DEMONSTRATION MUSIC-PLAYING ROBOTS BASED ON UNMODIFIED MUSICAL INSTRUMENTS AND EMBEDDED SYSTEMS, TO DEMONSTRATE THEIR CAPABILITIES IN AN ATTRACTIVE VISUAL AND AUDIBLE WAY. NEED MORE INFORMATION? MAIL TO ELSE.EMBREGTS@ARTEMISIA-ASSOCIATION.EU. ALSO CHECK OUT THE WEB-SITE FOR RULES AND REGISTRATION: WWW.ARTEMISIA-ASSOCIATION.EU



Take the challenge:

ARTEMIS Orchestra Contest 2009

is open!



The ARTEMIS Orchestra Contest is aimed at higher education and university students, research teams and technology Institutions. It provides a concrete platform for training students and young professionals on embedded systems, with music as an attractive vehicle.

Each year, teams that have built a demonstrator of a music-playing robot can compete for one of the attractive prizes. The goal is that, after a couple of years, a complete ARTEMIS Orchestra can be formed, consisting of several robots play-

ing different instruments and performing multi-instrument pieces of music.

The contest is open for groups and individuals and has two classes: Junior and Senior. The ARTEMIS Orchestra Contest has four levels of difficulty, so it allows players to build experience gradually. More information about these levels can be found on the ARTEMISIA website.

EXTENDED DEADLINE! ~ The rules were officially released in December 2008 and subscriptions are still open. The deadline is extended by two weeks, to April 1st 2009.

The final of the contest will be held during the ARTEMIS Annual Spring Event, on 23rd to 24th of April in Nice. ARTEMISIA has budgeted three prizes for the Contest jury to award to the best participants, according to the published rules. ■

For more information and technical advice or to register, please visit: www.artemis-association.eu, or contact the ARTEMIS Orchestra Contest contact person, Else Embregts, Communications Manager of ARTEMISIA:
Mail: else.embregts@artemis-association.eu
Telephone: 00 31 (0)88 0036 188

ARTEMISIA ASSOCIATION

The association for R&D actors in the field of ARTEMIS



ARTEMIS
Orchestra Contest



ARTEMIS *Spring* *Event*

23/24 April 2009

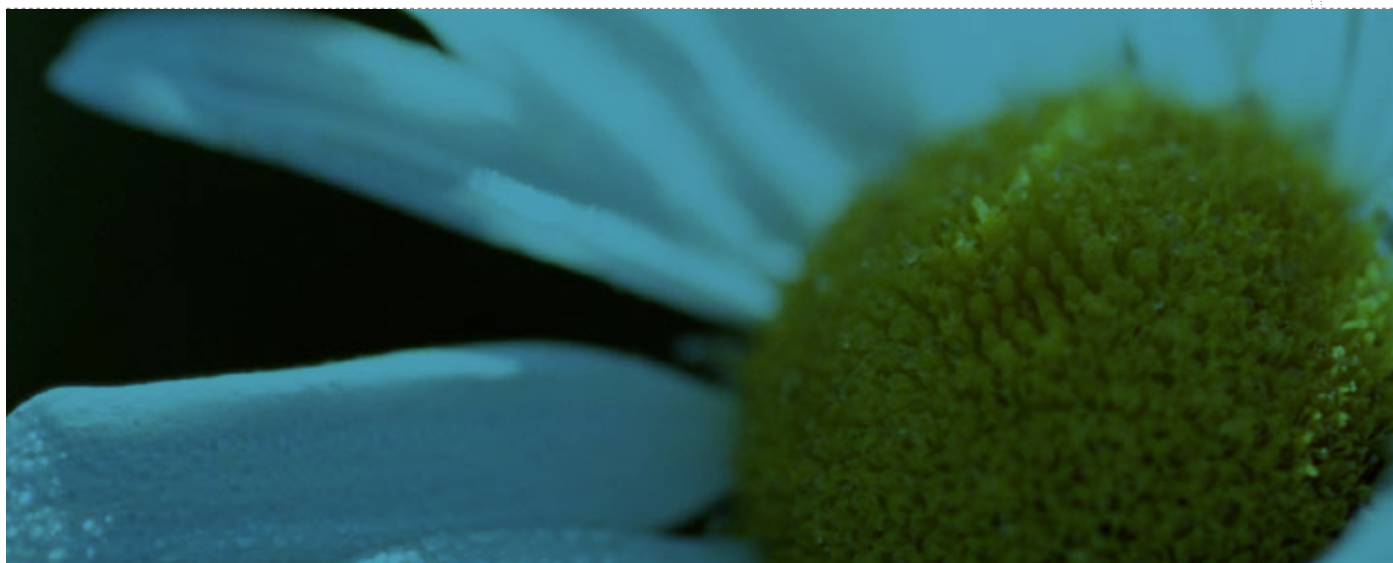
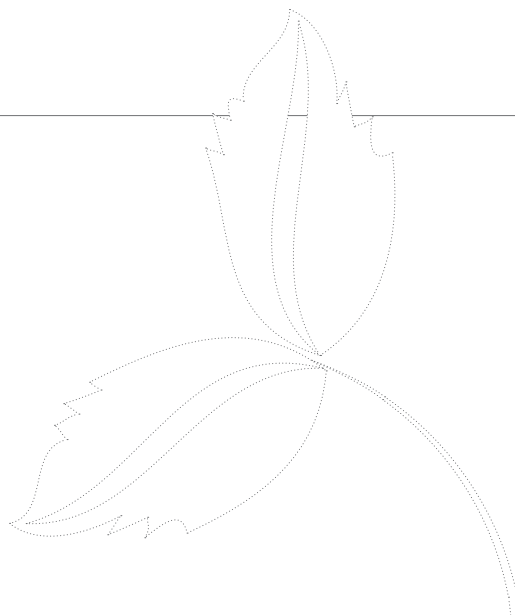
Acropolis Palais de Congrès
1, Esplanade Kennedy
06300 Nice - France

MORE INFORMATION & ONLINE REGISTRATION

www.artemisia-association.eu/Spring_Event_2009

ARTEMIS

Spring Event 2009



ARTEMIS will hold its annual Spring Event, organised by the ARTEMISIA Association, in conjunction with DATE09 on April 23rd and 24th. This way, it will be a very efficient opportunity for industry, R&D and knowledge centres to shake hands during both international events.

DATE (Design, Automation and Test in Europe) is a leading global event covering the latest developments in system design methods, embedded software and state-of-the-art industrial applications. DATE09 is the place-to-be for innovation and excellence and will offer an outlook beyond the current market conditions, providing a vibrant meeting place where start-ups, innovative Electronic Design Automation companies, large system houses and researchers can ex-

change ideas and promote innovation and growth. The comprehensive conference technical programme includes keynote speeches by industry and academia leaders including Mike Muller, Chief Technology Officer of ARM, and Turing Award winner Joseph Sifakis, of the Verimag Laboratory in Grenoble.

With the involvement of ARTEMIS this year, DATE09 already has a record number of registrations. Klaus Grimm, President of ARTEMISIA stated: 'We anticipate this combined event to be of special importance to all those involved in embedded system design and deployment, as well as for policy makers. We hope that this combined event will inspire and further stimulate collaboration between companies, research institutes,

and SMEs, together with the EU and national public funding authorities.'

The ARTEMIS Spring Event is co-located with DATE09 at the "Acropolis" in Nice, France. ARTEMISIA members can enjoy a discount of 30% on the DATE09 Conference entrance fee. For more information and to register for the ARTEMIS Spring Event visit <http://www.artemis-association.eu> For further information about the DATE09 programme, please visit: <http://www.date-conference.com/>

One of the organisers of this combined event is Prof. Luca Benini, General Chair of DATE09 and Steering Board member of ARTEMISIA. Time to take a closer look! We hope you will enjoy this interview with him. ■

ARTEMISIA joins forces *with DATE*

The ARTEMISIA Association is joining forces with the Design Automation and Test in Europe (DATE) conference and exhibition to stage a joint event on design automation for embedded system at the Acropolis in Nice, France from 20 to 24 April 2009. Co-location of DATE09 and the ARTEMISIA Association annual event will bring benefits for all stakeholders and is expected to increase attendance to over 5,000 researchers, engineers, executives and policy makers from industry, academia and public authorities.

"DATE started ten years ago as the fusion of three European conferences in the area of electronic design automation," explains Professor Luca Benini, general chair for DATE09. "It has now become the only major event on design automation in Europe."

The European Design Automation Association (EDAA), formed by the executive committees of the previous conferences, is the main sponsor for the annual event. Other partners include: the Electronic Design Automation Consortium (EDAC), the association of electronic design automation (EDA) companies; the Association of Computing Machinery (ACM); the IEEE; and several other organisations, such as the Russian Academy of Science.

FOCUS ON EMBEDDED SYSTEMS DESIGN

~ Over the past decade, DATE has evolved and grown, moving from pure design to embedded-systems design – one of the four main tracks of the event. The others are: design automation methods and tools;

test; and applications – experiences in systems-level design, particularly innovative systems-level design in domains such as automotive, aeronautics, multimedia, mobile communications and consumer electronics.

In addition to the technical programme, the conference has always been complemented by an exhibition or trade show. This involves companies participating in the EDA market. DATE offers an opportunity for such companies to showcase new tools and methods to semiconductor manufacturers and chip-design companies.

As the conference has evolved, so has the trade show in terms of participants. This has involved more systems-level design support, including software, as well as a lot more emphasis on design projects that have some target in design and want to showcase in conference.

For several years, the trade show tended to overshadow the conference but this

has now reduced as the EDA industry has moved increasingly to web marketing. And the current economic situation means the 2009 trade show will be much smaller with a greater use of standard booths and a more informal, networking environment. "I think this is better as before the trade show was directing a lot of the choices for the conference because of its size," says Benini. "Now it is a more reasonable size with a better balance."

BUILDING ON EXISTING LINKS ~

Links have existed between ARTEMISIA and DATE for some time. Both Professor Benini and past DATE chair Rudy Lauwereins from the IMEC nanoelectronics research centre in Belgium are members of the ARTEMISIA Steering Board

"We both saw that the scope of the conference as it has become almost completely overlaps with Artemis," explains Benini. "Originally it was a chip design automation conference but, in the last five years, DATE has become an embedded systems



design event. So it was obvious there was a common scope and it offered a good opportunity to do something together." The ARTEMISIA Presidium agreed.

"This is the first time the Artemis annual event has been co-located with a large

technical conference but I believe it is a perfect match," adds Benini. "I think it is good strategy to have such a co-location with a major technical event rather than with a large trade show. DATE is the right size and it should work out well with mutual benefit." ■

Luca Benini

Luca Benini received his PhD in electrical engineering from Stanford University in 1997, before joining Hewlett Packard and then Synopsys. He came back to Europe to take up a professorship at the University of Bologna, his home town. He also holds visiting professorships at the Ecole Polytechnique Federale de Lausanne (EPFL) in Switzerland and at the IMEC research centre in Belgium. He has been programme chair and vice-chair and is now the general chair of the DATE Conference. He was a member of the 2003 MEDEA+ electronic design automation roadmap committee and was involved in the first ARTEMISIA Association meeting in Rome. He has been a member of the ARTEMISIA Steering Board since the beginning. He is also deeply involved in the EU Framework Programme, with ten projects running, and consults as an expert to the European Commission Information Society and Media DG embedded systems unit.

Highlights of DATE09

The comprehensive conference technical programme for DATE09 includes keynote presentations by industrial and academic leaders. These include Mike Muller, Chief Technology Officer and one of the founders of ARM, and 2007 Turing Award winner Joseph Sifakis of the Verimag Laboratory, Grenoble. Companies will be able to get a complete snapshot of the state of the art in embedded-systems design in a series of parallel sessions. Subjects will include methods and tools for hardware design, software design and hardware-software co-design. In addition, two full special days of presentations and panel discussions will highlight 'System-on-chip (SoC) development strategies' and 'Multi-core applications' – these sessions are aimed a general audience so will not be too technical.

New interim executive director

Dr José Cotta, the recently-appointed head of unit for embedded systems and control in the European Commission Information Society and Media Directorate-General, is the new Interim Executive Director of the ARTEMIS Joint Undertaking, as successor of Konstantinos Glinos who acted as the first interim Executive Director. In the next couple of months, he has to manage the JU office and later to hand over his duties to a permanent Executive Director when selected by the ARTEMIS-JU Governing Board. All at arms length from the European Commission – a tough challenge when also doing his ‘day’ job.



“My first priority as interim director is to keep the ARTEMIS-JU house in order”

José Cotta studied mathematics in his home country of Portugal before leaving for the University of Edinburgh in Scotland, where he started his PhD thesis in formal logics. This led him into computer science through work on artificial intelligence. He moved back to Portugal, where he obtained his PhD, to work in research and then, in 1986, just after Portuguese accession, he joined the European Commission in Brussels.

He worked initially in DG XIII, responsible for industry matters. Here he became involved in the European Strategic Programme on Research in Information Technology (ESPRIT), where he was involved in software technology and advanced information processing, ESPRIT was the forerunner of the Information Society Technology (IST) programme in the Sixth Framework Programme (FP6) and the Information & Communication Technologies (ICT) priority in FP7.

After four years in ESPRIT and a period as assistant to the director of ESPRIT, Dr Cotta became head of unit for structural funds investments in telecommunications. “This was a very interesting job as I worked closely with the Objective 1 and Objective 6 countries and there was a lot of money available in the early 1990s for infrastructure,” he says. “However, the programme was so successful that it quickly evolved.”

Subsequently, Dr Cotta became head of unit for international aspects, innovation and SMEs. International aspects covered relationships with non-EU countries such as China, Japan, South Korea, the United States, but also the then Accessing Countries to the EU, while SMEs and innovation involved promoting SME participation and dissemination activities. Prior to his latest appointment, he had been head of unit for planning and co-ordination, where he was more involved in internal Commission activities.

INSTRUMENT OF THE FUTURE ~ “My new job in embedded systems and control offers a challenging and motivating task as well as a return to my origins – I had been missing research,” says Dr Cotta. He sees ARTEMIS as an instrument of the future as a public-private partnership dedicated to ensuring a leading role for Europe. “It is totally different from the framework programmes,” he points out.

“The role of industry in the joint undertaking and the preceding European technology platform is similar as it is at the steering wheel with the strategic research agenda (SRA),” insists Dr Cotta. However the role of the joint undertaking is different because it has much higher leverage with an envisioned €2.4 billion budget from industry, the EU and Member States. This is much more than the funding instruments such as, for example, in-

tegrated projects and networks of excellence in the framework programme.

Industry has a strong role in the ARTEMIS-JU as it is responsible for identifying the research areas in the Multi Annual Strategic Plan and the JU Research Agenda to be financed and that will therefore be found in the work programme.

SETTING ORGANISATIONAL PRIORITIES ~

“My first priority as interim director is to keep the ARTEMIS-JU house in order,” says Dr Cotta.

This involves making sure everything that should happen really does – from preparing the autonomy of the JU to organizing the Call 2009 and the evaluation of the project proposals

More complicated is handling the autonomy of the new organisation. As it is outside of the European Commission, he cannot easily call on help from the Commission services – this means he has had to get involved in the details directly, from running the selection process for the staff of the JU down to ordering the furniture and negotiating service-level agreements for, for example, IT services in the new offices.

In the transition period when the Commission has overall responsibility, he has to run the JU activities, and prepare for its autonomy while running his own unit, so there is a certain amount of juggling required.

ESTABLISHING FUTURE RELATIONSHIPS

~ Relations between the ARTEMIS-JU and the European Commission will be more distant once the joint undertaking is up and running under responsibility of the permanent Executive Director, points out Dr Cotta. "However, co-ordination of research in embedded systems is essential to avoid overlap and ensure coherency – and this will require a good relationship," he says.

There also needs to be a link between the FP7 Workprogramme and the Joint Undertaking. Cotta is already facing coordination problems as the evaluation of FP7 Call 4 and the evaluation of Artemis project outlines proposals will take place at the same time. "There are not so many 'experts' available, at the same time and the human resources of my unit are not elastic!" he points out.

"The Commission is also keen to encourage a convergence of interest between ARTEMIS and the EUREKA ITEA Cluster. "They both cover for a significant part similar areas and depend on partly similar Member State sponsorship," he points out ■

Editorial information

ARTEMIS, Advanced Research & Technology for EMbedded Intelligence & Systems, is a Joint Technology Initiative, with a legal structure of a Joint Undertaking, which coordinates the public funding of research and development in Embedded Systems in Europe and brings together the European Commission, Member States and Industry represented by the ARTEMISIA Association; the association of R&D actors in the field of ARTEMIS.



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ARTEMISIA Association, or shortly ARTEMISIA, is the association for R&D actors in the field of ARTEMIS: Advanced Research & Technology for EMbedded Intelligence and Systems.

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