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.



April 2011 NO.9 ~ Good potential for continuation



THE NEXT GENERATION



What drives Irene Lopez de Vallejo to become Presidium member of ARTEMIS Industry Association?



What is the future of embedded systems according futurologist Paul Ostendorf?

FOREWORD

Eindhoven ~ Secretary General, ARTEMIS Industry Association

Contents

PAGE 2	JAN LOHSTROH
PAGE 3	ERIC SCHUTZ
PAGE 4	AN EMBEDDED WORLD, A CONNECTED WORLD
PAGE 8	WILL THERE BE A SUCCESSOR TO THE ARTEMIS JOINT UNDERTAKING?
PAGE 10	A SUCCESS STORY WITH GOOD POTENTIAL FOR CONTINUATION
PAGE 12	INDIVIDUAL RESPONSIBILITY AND PUBLIC ACCOUNTABILITY – KEY SUCCESS DRIVERS
PAGE 14	ARTEMIS WAS NOT BORN OUT OF THIN AIR
PAGE 16	A FICKLE BALANCE AT A CRITICAL MOMENT IN HISTORY
PAGE 18	FIRST ARTEMIS WG METRICS REPORT REVEALS EARLY SUCCESSES
PAGE 23	SUSTAINABLE INNOVATION TO ADDRESS EUROPEAN SOCIETAL CHALLENGES
PAGE 25	ARTEMIS SRA 2011 LAUNCH
PAGE 26	ARTEMIS SPRINT EVENT 2011
PAGE 28	ARCADIA IMPLEMENTING THE ARTEMIS VISION
PAGE 30	COLUMN ARTEMIS - BATON BLUE(S)
PAGE 32	CALL 2011 IS ON!
PAGE 35	SYSTEM LEVEL MODELLING ENVIRONMENT FOR SMES
PAGE 36	SCALO PES – THE END OF THE ROAD BUT PLENT AROUND THE CORNER
PAGE 38	CALENDAR
PAGE 38	GREEN PAPER CONSULTATION ON THE FUTURE OF EU RESEARCH AND INNOVATION FUNDING



FOREWORD

This edition of the ARTEMIS Magazine is in the light of the green paper discussion of the Commission for a Common Strategic Framework (CSF) and the possibility to create a Joint Undertaking 2 (JU2) under the umbrella of CSF as a successor of the current JU that exists under the umbrella of FP7. In the meantime the ARTEMIS Industry Association has endorsed its ARTEMIS SRA 2011 as an update of the ARTEMIS SRA 2006. The ARTEMIS SRA will be officially launched on 18 May in Brussels at a special symposium on Embedded Systems.

How important embedded systems are for society is described by futurology expert Paul Ostendorf in his article titled 'An embedded world, a connected world'.

As an introduction to the discussion on a possible JU2, Eric Schutz and I have written an extra editorial to underline that this magazine is an open forum for opinions in the ARTEMIS community. Klaus Grimm sets the scene with his question whether there will be a JU2 to organise its first call in 2014; he is confident that the ARTEMIS Industry Association will reach an agreement with the Commission and Member States. The next opinion is from our previous ARTEMIS-IA president Yjrö Neuvo. Then Aldo Covello, chair of the Public Authorities Board of the current JU answers a few questions on the future. Finally, Thierry van de Pyl gives some insight into the present thinking of the Commission on this topic.

Patrick Pype, chair of the ARTEMIS Working Group on metrics and success criteria describes the output of a very first inquiry done among some project participants of the first projects selected by the ARTEMIS JU that have been running since 2009. Ad ten Berg gives some highlights of the SRA 2010 in his article entitled 'Sustainable innovation to address European societal challenges'.

In this magazine we introduce a new format column, called 'ARTEMIS Baton Blue(s)', which is started by our new Presidium Member Irene Lopez de Vallejo in which she invites Laila Gide to take over for the next magazine.

I am sure that the articles are informative about the possible scenarios for the future. If you have ideas for topics you would like to see included in subsequent issues of this Magazine, please contact Else Embregts.

Jan Lohstroh

Harrow

The ARTEMIS Joint Undertaking office exists to serve the ARTEMIS community of stakeholders, which means there will be constant communication between the Office and all the partners, including the Commission, the ARTEMIS Member States and ARTEMIS Industry Association.





FOREWORD

Dear friends,

Sometimes we don't realise how fast things are moving! The first Call, in 2008, seems to have started only yesterday yet the first completed ARTEMIS project, SCALOPES, ended on 31 March, 2011. The projects from the second Call are running well, and a few from the 2010 Call are just starting. The mid-point of the ARTEMIS program, from a project launch point of view, is already behind us. Time, now, to focus on the future.

In this edition of the ARTEMIS Magazine, you'll get the confirmation that all ARTEMIS stakeholders enthusiastically believe in the future. The Commission is a strong believer in our model involving the three main actors: the Industry, the Member States and the Commission. The Member States find an opportunity to increase the efficiency of their support to their national embedded systems industry, through the additional funding from the Commission and through the enrichment from a larger European dimension of the research consortia. And finally, the Industry believes that embedded systems are key enablers for the future European electronic industry.

So, the motivation and drive to move forward are the same as when ARTEMIS was started, and the Joint Undertaking model has shown itself to be a successful one for stimulating R&D in our European Industry: R&D with more 'impact', enabling more innovation, more new products and improved competitiveness. But of course, we should learn from the creation and the running of ARTEMIS: many possible improvements have been identified. I do believe that all stakeholders will, in the coming months, draw the plans of such a new type of Joint Undertaking. The various articles in this Magazine bring you the visions of some key people on the way forward. I hope you enjoy it!

til

Eric Schutz

An embedded world, a connected world

By Chris Horgan

What do leading futurologist Paul Ostendorf and the world of Embedded Systems have in common? The future. And if you were to suggest that a futurologist is someone with his head in the clouds, well in this case, you'd be right. Only the cloud in which Paul Ostendorf has his head, is cloud computing. In this interview we are given a fascinating insight into what we might expect in tomorrow's world, one in which embedded systems will be everywhere.



Paul Ostendorf Futurologist

Paul Ostendorf has more than 30 years of experience in top level

positions in information technology at large companies. He is one of the leading philosophers in the Netherlands in the field of informationand communication technology. He keeps track of scientific, technological, economic and social trends. And has set up several companies with regard to software, research and financial systems and he initiated the foundation Electronic highway Platform Nederland (EPN). Currently he runs his own company called Neoversum wich specialises in future oriented presentations. In addition to this he lectures at the Academy of Leadership in cooperation with Leuven University.

Due to his activities and vast experience he has a good eye for a wide range of future developments and the future always plays a key role in his presentations. Due to his knowledge and background he is in great demand as a trendwatcher and futurologist. Large companies from home and abroad consult him on a regular basis.



No crystal ball then? ~ No. Some people might have the idea that a futurologist predicts the future. That's not the case. What I do is to track scientific and technological developments and draw up visions of what these could imply for the future. This is often expressed through reading and lectures that I do in Europe and North America as well as in brainstorm sessions with companies to look at the implications of their innovative developments, or scenarios. And, of course, whether a product or service actually gets onto the market is largely dependent on whether society needs or wants it."

Paul draws an interesting analogy to illustrate the power that society has gained in recent years in respect of determining its own path and shaping its own future. The fear created by George Orwell in his post-war anti-utopian novel *1984* with his maxim *Big Brother is Watching You* has been transformed by social media. Privacy has become public through choice. And where political power could once be secured through the surveillance of individuals, now every politician's word or twitch is subject to scrutiny, and many have found their downfall because of a reported misdemeanour, no matter how trivial. This level of detail does not escape Paul Ostendorf.

a conversation with not a single crystal ball in sight but embedded systems everywhere!

Say that you wanted to audio-record a person's entire life from birth to death – with a life expectancy of around eighty years – every second of every minute of every hour. It can be done. How much do you think that would cost? ~ No idea. At present maybe 1300 euros' worth of hard disks while a life recording in video would set you back about 21,000 euros at current levels. A well placed chip and you have you whole life in glorious technicolour! We won't even have to carry around rucksacks full of power and storage equipment because everything will be facilitated by cloud computing.

How far along the line are we with cloud computing? ~ Just take the sim-card in your mobile phone. The sim-card is only there to identify you and to bind you to a provider for the period of your contract. But this can be integrated within the phone itself and your information, biometric too, can be connected to the cloud, so that when you make a call, your phone recognises the user and then bills appropriately. A few providers are already preparing for such a change by patenting this development. Make no mistake, cloud computing will happen at a much faster rate than people currently imagine. Why do you think Apple is

building a data centre of around 100,000 square metres full of servers, data storage and the like? Google and others are also building similar datacentres.

As the IT balloon begins to shrink and empty – with tablets and smartphones replacing computers and laptops – with our entire environment being provided with all the data and information we need, Embedded Systems has given us a range of possibilities that we could not previously have dreamed of. Devices that are sensitive – can *sense* – and are intelligent. Devices that are autonomous.

Paul picks up a tablet and explains that it contains a map of the skies. Not particularly special. However, what is special is that it *looks* at the night sky with you. Tilt it to the stars and it adjusts its angle of view, too. It can pick out the object you are looking at and present you with relevant information about it. From plug and play to point and show, a simple example with outstanding accuracy.

Nice device! ~ Indeed. And industry to date has been about making the nicest, cheapest, best, whatever. But that has led to fragmentation. Where Embedded Systems have to go is entire eco-systems, and that is something that the market still has to realise.

The Holy Grail? ~ Quite. But an achievable one. And a necessary one, especially if we consider Embedded Systems as the central nervous system of our future society. One of the issues that has to be confronted and overcome is industry's preoccupation with product protection - patents. When patents were first introduced a couple of hundred years ago, they were intended to protect the knowledge contained in a particular invention - to ensure that this would not be lost. Intellectual property rights of recent times, often extending some 20 or 30 years, seem to have been geared to freezing that knowledge, keeping it off limits to others. But we are entering a world today in which knowledge is becoming better and more effectively distributed through initiatives like open innovation and open source that give us the possibility to shape our future for the greater good.

But won't companies fear a loss of competitiveness through this? ~ Such a fear is unfounded. Quite the contrary, in fact. It is already evident that no one player can afford to be isolated. Design, development, manufacture, distribution, sales – these are all components of a value chain that incorporates a range of knowledge and expertise that must be integrated to generate the desired results. And so we come back to the Holy Grail notion. In order to achieve this result, we need to have a common platform, or standardisation if you like. We cannot push on without it."

I'd like to go back to something you said earlier - the growing autonomy of smart devices. Is there not the danger that humans will become increasingly passive, and incapable? Don't we still need to be able to do mental arithmetic? ~ Let me put it this way. We need air to breathe but how likely is it that tomorrow we will have no air? How likely is it that you can't access a calculator? If one fails, there's another in your smartphone or other device. Of course, if Internet fails, then you have a problem. But what is the likelihood? The smarter the environment becomes the less such a likelihood. Embedded Systems and cloud computing developments significantly reduce that possibility, or make the impact of such events negligible. One of the subjects on which I lecture is synthetic evolution. In other words, how we, as humans, steer evolution. Human evolution has always been punctuated by randomness but we have transcended that stage - we can shape our environment to cater for our needs. And with Embedded Systems as the central nervous system of this synthetic evolution, the possibilities are almost endless."

Such as? ~ *T*ake, for example, what I consider to be a fantastic development: vertical farming in so-called plant labs. Plants are grown using led lamps in a conditioned environment. No contamination, perfect products. And just 10%

of the space needed for traditional farming and a fraction of the CO₂ emission. In one building both plant and animal products can be grown, the bi-products being recycled for following generations. A closed cycle. Such a high-rise could be located in the city centre with a supermarket on the ground floor selling what has been produced above it on the fifth floor. This is real eco-system, holistic thinking. That's the direction we need to be heading in, and we still have some way to go before we get there. And in this philosophy embedded systems plays a key role. The entire vertical farm is, in fact, one large embedded system. In the same way a smart pen or an whole city is an embedded system. Or even society. I see embedded systems as more than just a single device. If you look at the bigger picture, what you see is a world full of embedded systems. And when that's the case, the omnipresence means that you are not so much dependent on this world but facilitated by it. In much the same way that I depend on air - it's all around and it facilitates my existence.

And who decides how we get to where you say we should be heading? ~ Whether we go in a particular direction and how we propose to get there is a decision that we all have to take together. But the prospects are fantastic. Can you think of anything in which no embedded systems can be contained?

That cup of coffee? ~ No, because I can integrate a chip that can tell me whether it's decaf or not, or an OLED film on the cup that tells me the temperature of the coffee. Whether that's useful to know is another thing but technically it can be done. There is no object that you can think of that is not capable of integrating embedded systems. But if we remain fixed on standalone objects, we are heading in the wrong direction. I want to head towards an embedded society, an embedded world, a connected world. Dear Readers,

This magazine started as an initiative of the ARTEMIS Industry Association. Since October 2009 it has been co-issued by the ARTEMIS Industry Association and the ARTEMIS Joint Undertaking. This means that all stakeholders of the ARTEMIS Joint Undertaking, being the ARTEMIS Industry Association, the ARTEMIS Member States and the Commission are entitled to place articles to inform the other stakeholders and all other readers of the Magazine about their view(s) and opinion(s) on specific topics.

At this moment in time the stakeholders of the current Joint Undertaking are developing their ideas about a follow up of the current Joint Undertaking that will launch its last call in 2013. Many meetings during this year will be necessary to determine whether, and under what conditions, such a follow up will be feasible, because the viewpoints and perceived perceptions of the stakeholders may be different. This issue of the Magazine features articles by Klaus Grimm, Yrjö Neuvo, Aldo Covello and Thierry van der Pyl on this topic, whose views may not necessarily be shared by the other stakeholders.

As editors we would like to state that we encourage open discussions on the various topics, and we invite our readers to come with their reactions and suggestions so that this Magazine can be a real open Embedded Systems forum on how to improve Europe's position in the field of Embedded Systems.

Jan Lohstroh

Eric Schutz

THE NEXT GENERATION



THE NEXT GENERATION

By Klaus Grimm

With the first projects of the ARTEMIS Joint Undertaking (JU) being completed this year, we are already thinking about a possible ARTEMIS JU 2 because the last call of the current JU will be in 2013. There is so much work to do on the embedded systems that are increasingly becoming the neural system of society, that we cannot imagine a subsequent JU in one shape or form organising not its first call in 2014.

The current JU has proven to be a useful initiative with a strategic top-down approach with commitment from the European Commission, Member States and our ARTEMIS Industry Association. We see projects with a large footprint, rich content and addressing societal needs, in the areas of safety & reliability, electric vehicles, low-power multi-cores, energy efficiency, e-health, manufacturing and 'the Internet of things'. Furthermore, we have agreed with ITEA2 to work on 'one goal, using different instruments', where the ARTEMIS JU takes the more strategic top-down approach with projects that have a real pan-European interest/impact and ITEA2 the more bottom-up approach with transnational projects.

And yes, not all the expectations we had in the beginning of the current JU have been realised. The funding by the Member States has been lower than envisioned, leading to the situation that many relevant and important projects could not be executed. Next to that, long signing procedures in some countries hindered quick starts to some projects. Furthermore, the JU office Dr. Klaus Grimm is President of ARTEMIS Industry Association and, as such, Chairman of the Governing Board of the ARTEMIS Joint Undertaking. Klaus Grimm says: "ARTEMIS is in an initial phase, where we are running through all the processes for the first time. This is a very interesting phase because it gives us the opportunity to discuss the processes and perhaps improve them."

being a Community Body with all its complex governance rules, is not a favoured construction for an industry that is used to working with highly efficient organisations.

Nevertheless, we think that it is good for Europe that we start negotiations with the Commission and Member States about a JU2, which can organise its first call in 2014. This will be good for Europe, because embedded systems are crucial key enablers for the future in which electronics are everywhere in all our daily lives and continuously change the world and our way of living. Needless to say, Embedded Systems will contribute strongly to addressing the grand challenges.

We hope that most of the hindrances mentioned above, can be overcome. Also we would like to see more balanced funding by Member States that takes into account the volume of Embedded Systems activities in their country, with preferably equal funding rates per country and we would like to see methods implemented that make possible the funding of innovation activities that, while not pure in terms of R&D character, are crucial for building sustainable eco-systems, for instance, and creating significant additional benefit from a JU.

As a JU2 will be funded by the Commission under the umbrella of Common Strategic Framework (CSF), we will generate a response by the ARTEMIS Industry Association on the Commission's green paper on CSF, the successor of FP7. Many discussions and negotiations will take place with the Commission, European parliament, Member States and Council before an agreement for a Council Regulation for a JU2 will be reached. We are confident that such an agreement will be reached and result in an improvement on the current JU. A Success Story with Good Potential for Continuation

THE NEXT GENERATION

By Yrjö Neuvo former President of ARTEMIS Industry Association

The first President of the ARTEMIS Industry Association, established at the beginning of 2007, was Yrjö Neuvo, Professor and former Chief Technology Officer of NOKIA Corporation, Finland. Yrjö is one of the pioneers who started the European Technology Platform for Embedded Systems back in 2004. Given this Magazine's theme, 'The next generation', ARTEMIS Magazine invited Yrjö to write his 'reminiscence' of ARTEMIS. After all he was one of the metaphorical hands that rocked the cradle of the current ARTEMIS programme.

EARLY HISTORY ~ Brussels was the venue for a high-level consultation meeting on 12 January 2004 at the invitation of Commissioner Liikanen. The aim of this meeting was to analyse the industrial interest and support for a Technology Platform for the broad area of Embedded Systems, and to establish initial reactions. The industry representatives confirmed their support for such an initiative.

In July the objectives of ARTEMIS ETP were set up in the 'Building ARTEMIS' document signed by the CEOs of a number of major European companies. The general objectives of ARTEMIS were:

- > To define a common industrial vision and a Strategic Agenda to implement this vision to benefit the industrial sectors that rely on Embedded Systems technologies and the European economy and society at large;
- > To establish a coordination and integration framework where industry, research

organisations, public authorities, financial institutions and other stakeholders across the EU join forces and coordinate their actions to implement the Strategic Agenda.

It is interesting to note that the early highlevel objectives are still extremely pertinent today.

ARTEMIS JOINT TECHNOLOGY INITIATIVE ~

Setting up the first generation Joint Technology Initiative (JTI) was a complex and time-consuming exercise. Creating a system that would simultaneously commit the companies and public authorities to reach the ambitious joint top-level objectives is not so easy. We now know that the intended JTI dynamics did not hit all the target levels. One obvious improvement to the current ARTEMIS modus operandi is a desire to get the member states to commit funding for a number of years in advance. If ARTEMIS 2 is implemented, it will be wise to have a fresh and broad look at the fundamental regulatory settings and the operating framework of the JTI.

ARTEMIS is a top-down approach which identifies and addresses issues that are highly relevant to the Embedded Systems community. The Strategic Research Agenda is the heart of ARTEMIS and it has been created and updated with great energy and good foresight. This includes the eight Artemis subprograms. At this moment it is too early to assess the value of the results coming from the projects. I can just state that they quite nicely prove the importance of having the top-down approach with very ambitious targets.

By a nice coincidence I had the opportunity to participate in the March ARTEMIS Steering Board meeting as a welcomed observer. I want to congratulate the ARTEMIS Industry Association for the very tangible progress that has been made in the tools, education and standardisation areas of Embedded Systems as well as in establishing the ARTEMIS Centres of Innovation Excellence. Putting even more emphasis on the ARTEMIS Centres of Innovation Excellence would be one way to initiate major demonstrations as well as to make improvements in the regulatory regime and set up new standards.

FUTURE OUTLOOK ~ Over these years the importance of Embedded Systems has been increasing and there is no doubt that this trend will continue. Embedded Systems will play a central role in addressing the global challenges like energy and climate change as well as provide energy efficiency and reduced emissions at machine or unit level. Recent developments in wireless networks and the Internet allow the performance of complex and large embedded systems networks to be optimised. Good examples of this are smart grids and smart cities. There are plenty of other, less visible industrial systems where increased connectivity of subsystems opens up new innovative opportunities in the form of increased efficiency, new service concepts, increased safety and security and remote maintenance.

We are now entering the Internet of Things era where computations and communications are the key elements of future large-scale systems. Connected embedded systems will form the critical infrastructures of future society.

These things in mind, it is easy to support the creation of ARTEMIS JU 2. The transition to a new program should be made with open mind. It is certainly worth looking at the operations of the JU from the perspective of simplicity and efficiency. However, it is even more important to have a fresh look at the overall goal setting of this new undertaking as well as its positioning in the European R&D context.

I feel the emphasis in this JU should be on systems level even more than what ARTEMIS is today.

An interesting opportunity might arise from some form of cooperation with the Future Internet ETP where ARTEMIS 2 would suitably cover the Internet of Things side. Strengthening cooperation between the bottom-up ITEA 2 programme and the top-down ARTEMIS programme is a very viable alternative and definitely should serve the interests of many participating companies.

BACK FROM THE FUTURE ~ Now I am looking from a distance, without any practicality constraints and on my own, I personally see a merger between ITEA 2 and ARTEMIS as the ideal solution. I am confident that many CEO's of the participating companies would be willing to sign a letter of support for a merged ARTEMIS-ITEA programme.



Individual responsibility and public accountability – key success drivers

THE NEXT GENERATION

By Chris Horgan

Thierry van der Pyl, Director of Components and Systems at the European Commission, stresses in this interview the importance of commitment to a common strategy and the centrality of a tripartite approach to the effectiveness of the industrial initiative on key enabling technologies.

Given the current economic climate, how reasonable is it to expect a resurgence of investment levels and in what respect is it reasonable to expect the Commission to reassess these levels and the consequences? ~ Of course. the financial crisis has had a major impact. For this very reason, it is crucial that the industry, Member States and the Commission push forward a common vision of a competitive Europe. If this can be achieved, then I am guite confident that the financing of the Joint Technology Initiatives (JTIs) will follow. Funding for research gives companies the opportunity to collaborate EU-wide with other companies, universities and research institutes and create networks with an underlying common purpose. This will really enable them to benefit from their involvement in JTIs.

So is commitment to a common cause the main driver of (and obstacle to) achievement rather than funding issues? Is it a chicken and egg situation – which comes first, commitment or funding? ~ We firmly believe that the right model is to involve the 3 main actors; the industry, Member States and the Commission. This is how ARTEMIS and ENIAC function and other EU-funded activities in research and innovation. The priorities at national level are central to the priorities at European level, and industry also steers the driving wheel in terms of setting collective targets and needs for Europe. We cannot simply have a programme based on a set of separate projects - what we are speaking about here is roadmap-based research. You need objectives, priorities, a roadmap and some indicators to follow. What we are trying to build together is a structure of shared governance with a common ambition for Europe. This is not an easy task but it is a necessity.

How important is a successful re-engagement to a revised strategic focus? And in what way would refocusing the strategy help to cement a 'truly joint effort'? ~ I think this is essential because we cannot afford to let our guard down and allow complacency to creep in. When the research agendas were set up, there was a real engagement with industry but after

things became established and money made available, commitment from industry seemed to wane. Projects are selected and funded and you enter a kind of routine in which industry involvement is not so visible. This can limit the role of ARTEMIS-IA as a representative of industry at large to monitor the achievements and drive the process. What we are concerned about, is that we end up with a collection of separate projects rather than a set of joined up and coordinated projects aimed at realising the original objectives. This is why the high level of industry commitment when the research agendas were set up, must be maintained at the same high level. This becomes even more essential given the tripartite approach I referred to earlier, also in terms of building confidence and trust. Where do we want to be as Europe, what do we want to achieve, what are our ambitions and priorities? These are all issues in which industry plays a leading role and through the Joint Undertakings we want industry to be and remain a key partner of the Member States and the Commission.

"What we are trying to build together is a structure of shared governance with a common ambition for Europe. This is not an easy task but it is a necessity."

How willing is industry to take on this role? ~

Actually, industry is really active in a Commission exercise to identify how Europe can better deploy Key Enabling Technologies¹. Here we see a strong drive from industry towards expressing their ideas about where they want to go, what is missing in Europe, and how to do things better. When the right guestions are asked to industry, we are able collectively to define a common view. In fact, one conclusion of the KET exercise is that we stop too early at the research end while the urgency is felt towards bridging research to innovation. So the JTIs really have to reflect on the need for reorientation. I am very impressed by the commitment of industry in this Commission exercise – I would like to see this same level of commitment within the JTIs.

How can the constraints of the present financial regulations and other administrative

requirements (such as staff regulations) be overcome such that they enable rather than inhibit the realisation of the strategic aims for JTIs? ~ Of course, when people think about administration, and particularly in Brussels, the word complex springs immediately to mind. Well, there is no magic way around it – the regulations and procedures are complex matters. But we have reached the point where the Joint Undertakings are now up and running, and it works. The issue now really concerns building trust between all the parties. What we need here is for the Joint Undertakings boards to be much more strategic players and become the real governors for achieving the ambitions we set out. As for cutting red tape, we will take into account the comments of the SHERPA report² to rebuild our house so that it is less burdensome. Still, there is a limit because we are talking about public money. We are accountable to the public for the spending of taxpayers' money. The complexity of the issue is increased by the fact that we have to account for national and European funding. And so long as national regulations for distributing funds to national participants vary, the layer of administrative complexity will remain heavy. A common agreement among the Member States would certainly help to reduce this complexity, in terms of both funds and the mechanics of management.

With Common Strategic Framework decisions imminent, what kinds of factors are involved in the decision-making process in determining whether a programme such as Artemis is included in Common Strategic Framework? ~ In the future Common Strategic Framework, including both research and innovation, three blocks are identified: innovation for societal challenges, innovation for competitiveness and science for innovation. ARTEMIS and ENIAC have a major role to play in the second block; innovation for competitiveness. There is also a strong commitment from Vice-President Neelie Kroes to make ARTEMIS and ENIAC more efficient and more strategic, and to move forward. What is important



Thierry Van der Pyl Director Components European Commission (EC), Belgium

Thierry Van der Pyl graduated from Ecole Normale Supérieure de Cachan and is docteur d'état in Informatics from University Pierre et Marie Curie, Paris VI. He was researcher at CNRS and joined the European Commission in 1984 where he has held various management positions. He is currently the Director of the Components and Systems Directorate within the Information Society & Media Directorate-General.

> "We firmly believe that the right model is to involve the 3 main actors; the industry, Member States and the Commission."

is the commitment of all parties to their responsibilities and for industry to assume their role in the governance of the Joint Undertakings so that the overall objectives can be met. We are very positive about the continuation of ARTEMIS and ENIAC with a

focus on achieving the ambitions.

How central is the role of SMEs in innovation ecosystems and can industry associations be regarded as a sort of 'mother ship' by fledgling SMEs – to brood and nourish? ~ What is important here is that the scope of the Joint Undertakings and Joint Technology Initiatives has to be enlarged to boost the innovation process. We are all aware that there are clusters of excellence and innovation in which core companies that drive the processes include SMEs in their ecosystem. If we can define clearly the

ecosystem. If we can define clearly the strategies within the Joint Undertakings, I think we could attract more SMEs and find the appropriate measures to support them. Innovation projects for instance could be more targeted to SMEs, who could better integrate and appropriate the technologies that are being developed. Another topic of discussion is the financing of the SMEs whereby financial tools such as subsidies and loans to SMEs are being reconsidered in the context of the Common Strategic Framework.

The Commission considers that the industrial associations have the potential to generate extra revenue through a broader service offering to their members. What does this offering entail? And how can this generate additional income for the Industry Assocations? ~ What we ideally want to see is industry associations being so attractive to their members that they could be selfsufficient. If we are calling for industry to steer the process, there should be an incentive

"Where do we want to be as Europe, what do we want to achieve, what are our ambitions and priorities? These are all issues in which industry plays a leading role." for the industry to be involved in the Industry Associations. Instead of being just an interface between industry and the Commission, the IA should become a facilitator, instrumental in steering the whole process. Members could enjoy tangible benefits through the representation of their interests and become the voice of the industry in their respective fields. In Brussels there are many such bodies that give their members a very beneficial service for an appropriate fee that is in line with the significant benefits offered. I believe Industry Associations have to become much more dynamic towards their community of stakeholders. Not only can

Industry Associations become self-sufficient but when opportunity is afforded for real, active participation and exchange, they can bring about the shared governance I mentioned as one of the keys to achieving the ambitions.





Aldo Covello, Chairperson of the Public Authority Board of the ARTEMIS Joint Undertaking. The Public Authorities Board represents public partners in the ARTEMIS Joint Undertaking Public Private Partnership whose participating Member States have nominated their board representative. "The most important challenge for research in Europe is the creation of the European Research Area and ARTEMIS, one of the very few places where all the European stakeholders can coordinate together their research programmes, is the best candidate for the effective implementation of ERA. However, to fully achieve this goal, ARTEMIS should evolve, after year 2013, in accordance to the principle: 'One programme, different tools."



http://ec.europa.eu/enterprise/sectors/ict/key_ technologies/kets_high_level_group_en.htm
ftp://ftp.cordis.europa.eu/pub/fp7/docs/jti/jtisherpas-report-2010_en.pdf



ARTEMIS was not born out of thin air ...

By Else Embregts

The comments by the European Commission on the First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives by an independent panel of experts is entitled: Report from the commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the regions. In this report the EC gives valuable recommendations which of course come under criticism from the parties involved, such as the 22 ARTEMIS Member States in the ARTEMIS Public Authority Board. ARTEMIS Magazine asked Aldo Covello, the first elected Chairperson of the Public Authority Board of the ARTEMIS Joint Undertaking, to throw a little light on the matter. In a article that he wrote for a previous ARTEMIS Magazine (number 7, August 2010), he stated: "ARTEMIS was not born out of thin air but emerged from the long experience gained running two important EUREKA cluster projects: ITEA and its successor ITEA 2." The questions in this interview originate directly from EC comments on the interim evaluation in 'Recommendation for Member States'.

Notwithstanding the currently modest collective financial commitment by the Member States to the existing JUs, which directly affects the European funding, and the apparent complexity, the Commission agrees that the tripartite model can bring important benefits if all parties work towards a strong common set of strategic objectives.

The Commission still considers the tripartite model as a unique option to coordinate the national policies towards common European challenges. What is the general observation of you as Chair of the PAB? ~ I fully share the opinion of the Commission. The tripartite model, which involves all the stakeholders, is, in my opinion, one of the best candidates for the implementation of the European Research Area. It gives Europe a good chance to coordinate all the research and development efforts in this important and strategic area in the best possible way. Unfortunately, this ideal model is endangered by the continuously growing nationalisms or even regionalisms which oppose any kind of coordination at European level. In my opinion, to solve the problems of the existing ARTEMIS and ENIAC programmes, we must find a legislative solution that includes a formal a priori commitment by all stakeholders not only at political level but also at financial and procedural level. But probably this vision is only utopian. At present there is not an official, commonly shared PAB position.

The Commission will propose that the Member States agree on a multi-annual budgetary contribution for the remaining lifetime of the JUs with the aim of achieving the original goals of the JTIs. This is one element of the strategic recommitment the Commission expects from its partners. What may we expect of the strategic recommitment of the Member States? Is this recommitment just wishful thinking related to the fact that some member states downsized the budget based mainly on political reasons? ~ Presently, considering also the worldwide financial crisis, a sharp increase of the budget dedicated to any initiative is highly improbable, especially without a preliminary political commitment. Nevertheless, I think we should start discussing this issue primarily in view of the next programme (or programmes) after 2013.

'Member States have so far paid little attention to the required synchronisation of their operations...' The Commission will propose the creation of a Working Group within the Public Authorities Board to deal with the benchmarking of national practices to improve the harmonisation of administrative processes and national funding rate. Has this proposal been discussed in the PAB? What do you think of it? ~ This question is closely linked to the first question. In my opinion a bottom up, non-coordinated process of synchronisation or harmonisation of national procedures is highly improbable. A Public Authorities Working Group aiming at defining, bottom up, a commonly shared set of procedures could be useful but only if, afterwards, these procedures are enforced, top down, by a Council regulation so that they can be easily applied at national level.



THE NEXT GENERATION

By F. J. Radermacher

We are living in most challenging times. We see humankind developing into an intelligent superorganism, into a human-machine network structure where devices and their intelligence contribute constantly to the well-being of people. Embedded systems play a crucial role in linking sensoric information and technical actors. We now often have short-cuts between sensors and actors, without human interference.

Is this appealing? Yes, I think these developments are very appealing for young people who have the education and intellect to understand what is going on. It is a revolution with enormous impact. However, it is not clear where all this is leading us to. The challenges for humankind are dramatic. It is not clear whether we will be able to create a balanced world for 10 billion people living in peace with each other and with nature, and with the potential to safeguard the

wellbeing of future generations. We may well end up destroying the world that we know in some kind of *ecological collapse* or that the whole world will end up in a two-tier, *neo-feudal* society.

INNOVATION AND GOVERNANCE ~ This means that to ensure a good future and to bring about *sustainability*, we have to work at different ends at the same time. We have to find the *technical innovations* to make it possible, given limited resources, to enable 10 billion people to have a good life and develop

"I am furthermore optimistic for a number of reasons that we have every chance in Europe to keep young researchers here because in many respects Europe is a good place to live in this very complicated world".

> to their full potential. On the other hand, we need the political systems that can orientate such a development process into a reasonable and sustainable future. The issue of balance needs the right kind of *global governance*. This governance cannot consist primarily in the logic of a free market structure. Instead ecological and socially regulated markets are required. This is what we call in short an *ecosocial market economy*.

As I have suggested, there are two big challenges ahead of us: technical innovations

and innovations in governance. For instance, we have today only one billion people who have a bank account, but four billion people with mobile phones – the issue of banking via mobile phones thus becomes a major issue.

NEED FOR SYMBIOSIS ~

Embedded Systems plays a crucial role here and in other fields. The academic world in part is realistic about what it

means to do industry-driven, collaborative research in such a challenging field. But if universities are not realistic about this issue, companies will still find their way and will find students that are able to get the jobs done that have to be done. Industry will hopefully be intelligent enough to interfere with the academic world to the point that in the Embedded Systems curricula, the state of the art is always adequately incorporated and the methods and tools used in practice are made available.



EUROPEAN PARLIAMENT PAR

Franz Josef Radermacher is a German mathematician and economist, Professor of Informatics at Ulm University. He is one of the co-founders of the Global Marshall Plan Initiative that suggests a socio-ecological plan to eradicate poverty, increasing global wealth while protecting natural resources. ARTEMIS Magazine spotted Professor Radermacher 'on the floor' of the embedded world event 2011 that took place in Nuremberg together with the ARTEMIS Spring Event. More than 1000 German and Austrian students witnessed his key note during the embedded world Student Day.

I am furthermore optimistic for a number of reasons that we have every chance in Europe to keep young researchers here because in many respects Europe is a good place to live in this very complicated world. It is the world's most successful supranational governance structure today and follows an eco-social philosophy. Therefore, I have no doubt that we, as humankind, will be able to deliver on the technical innovative side to allow for a better future. My concern is the much bigger problem of getting innovations on the political side. Take the big failure in the financial system, the climate and energy issue, volatility in food markets, poverty and people who starve and die of hunger. It is a scandal that, up till now, we have been unable to address these issues successfully and with the needed urgency.

I hope, taking into account what is going on now in North Africa and Japan, that we will develop the right kind of global empathy in time and simultaneously a better understanding of system-theoretical aspects of the world of today. This includes time-lacks, feedback-loops, etc. Because only if we understand the system sufficiently do we have a chance to do the right thing at this critical moment in history.

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THE NEXT GENERATION

"Industry will hopefully be intelligent enough to interfere with the academic world to the point that in the Embedded Systems curricula, the state of the art is always adequately incorporated and the methods and tools used in practice are made available."

First ARTEMIS WG Metrics Report reveals early successes

By Patrick Pype

The working group (WG) 'Metrics for ARTEMIS Success Criteria' was created to define and monitor the achievements of the ARTEMIS JU Programme with the aim of generating a bottom-up report suitable to complement and support certain higher-level evaluation like the first interim evaluation of the Joint Technology Initiatives by the European Commission. Last summer, a questionnaire was sent out to several ARTEMIS partners in projects.

SCOPE ~ The WG comprises industrial and academic people with an excellent mix of technical, economic and social science backgrounds along with multi-disciplinary expertise in embedded systems technology. In addition, the task was supported by the invaluable contributions of two experts, one from the ARTEMIS JU and the other from the ARTEMIS-IA Office. They followed up on progress and supported the process to ensure alignment of criteria with key documents and an effective data collection process from a selection of project partners.

The goal of the initiative is twofold:

- 1. to define a set of metrics and criteria to measure the success of the ARTEMIS JU Programme by this first inquiry
- 2. to provide input to the ARTEMIS Industry Association on 'Priority Setting' and possibly 'Refocusing the ARTEMIS JU Programme'.

Two key differences in these initiatives are, on one hand, the *methodological* approach 'bottom-up', which brings data on perceived success directly from the organisations involved in the projects selected, and, on the other hand, the strategic approach, gathering the information to generate a programme-level report on its success from an industrial point of view.

METHODOLOGY ~ A blend of *quantitative and qualitative* methods was used to identify and measure success criteria with a *multiple-choice questionnaire also containing open-ended questions* sent out to a selected subset of ARTEMIS Call 2008 project consortia. Only Call 2008 projects were selected because they can already demonstrate intermediate results and have a clearer view of their likely tangible end-of-project results.

The consortia were clearly informed of the questionnaire's intention to be used purely for the assessment of the overall ARTEMIS *programme*: "We need your input to improve the instrument". The questionnaire was undertaken between June and October 2010. Replies were processed only by the WG 'Success Criteria and Metrics', securing the necessary confidentiality and anonymity of all reports.

It is important to note that the current study is the first of its kind to be designed and conducted, and as such, there is room for further improvement. Therefore, the next survey will build on the lessons learned from this first exercise. It will be fully automated via a web tool and the analysis of the results will be easier and faster to process, providing the necessary feedback for the different stakeholder organisations (ARTEMIS-IA Office, ARTEMIS JU, EC and others) in a shorter period of time. Furthermore, it will also be combined with statistical data based on projects' output. The sample of participants involved will include previously surveyed consortia, for the purpose of correlation as well as new projects in subsequent calls.

Subsequent questionnaires will aim to differentiate between answers from 'industrial partners' and from 'research organisations' to better understand the performance of each type of entity within the ARTEMIS programme. Both are essential to the future success of the instrument.

RESULTS ~ The report is based on the input received by the participants of six projects funded under the 1st ARTEMIS call. Specifically, the questionnaire was filled



Patrick Pype is Coordinator of the Working Group Success Criteria and Metrics of ARTEMIS Industry Association. He holds degrees in Electronics Engineering and Master of Business Administration from the K.U.Leuven (Catholic University Leuven). Currently he is Director European Affairs at NXP Semiconductors. Prior to this he managed the strategic IP-development partnership between Philips, ST and Freescale, after co-founding the start-up EDA-company CoWare at the international research institute IMEC. Since 2004, he is Chairman of the Alumni Engineering Society of the K.U.Leuven, and is also a reviewer for the European Commission for several ICT-projects. Outside of work, he is a great fan of Richard Wagner and of rock concerts. He also collects model trains and enjoys travelling.

One spin-off company has already been established and there are plans to establish two more soon. in by 25 industrial partners, 9 university partners and 1 consortium as a whole. The report is divided into three sections, covering the following themes (as contained in the SRA):

- 1. Focusing on common R&D agendas more effectively
- 2. Providing significant economic & social benefits
- 3. Successful results in the market.

Theme 1: FOCUSING ON COMMON R&D AGENDAS MORE

EFFECTIVELY ~ Regarding the partnerships formed within those projects, 75% of the partners had partnerships before setting up a project consortium and 65% claimed that they also formed new partnerships while 33% of the new partnerships involve at least one SME and 40% of the partners are keen on further cooperation with the SMEs participating in the project.



In terms of new initiatives, it is very important to note that even though all the projects are still in an early stage, one spin-off company has already been established and there are plans to establish two more soon.

An 'ARTEMIS Centre of Innovation Excellence' could be an excellent instrument to pave the way towards 'Innovation Eco-Systems', but at this point in time almost none of the participating partners is aware yet of exactly what an 'ARTEMIS CoIE' is. This can be explained by the fact that this is quite a new concept in the ARTEMIS community. The main reason for partners selecting ARTEMIS rather than other funding programmes was that ARTEMIS follows an industry driven cross-domain approach in which the partner alliance is of adequate type and size.

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Alternative Funding Schemes Looked Into

The main issue with the ARTEMIS programme was unanimously stated as the administrative burden associated with realising an initial payment after project approval.

Theme 2: PROVIDING SIGNIFICANT ECONOMIC & SOCIAL BENEFITS ~

Moving to the economic and societal benefits of the projects, the key market impact is expected to be through applications that will be commercially introduced within a period of 2-5 years after project

completion. Key effects on the applications are reduced development costs and less power consumption of future products.



In terms of contributions to the ARTEMIS AWP targets, the vast majority of the partners believe that their project contributes to almost all of them, whereas in terms of the quantification of the project results most of the partners could not answer because either the application and demonstration activities of the projects they are involved have not yet been started or the integration work had not yet been finalised. The future ARTEMIS programme definition on how the developed technologies specifically contribute to the quantitative data will require further attention. Moreover, as the projects have only been running for two years, no radical innovations have yet been obtained, although the term 'radical innovation' needs to be defined in more detail, before reasonable conclusions can be drawn.

For almost all participants in-house innovation & development remains key, and a large majority (90%) indicates that the amount of in-house innovation has increased by participating in the ARTEMIS programme.

In general, 'Embedded Systems' is perceived by the respondents as a truly enabling technology across a variety of applications/markets. The current respondents are focusing mainly on 'Energy Efficiency' and 'Mobility of people and objects' in terms of societal challenges.



Contribution to Societal Challenges

PAG 20 | ARTEMIS Magazine ~ APRIL 2011, NO. 9

Theme 3: SUCCESSFUL RESULTS IN THE MARKET ~ Finally, regarding the successful results introduced in the market, we have to emphasise that, since all the projects are in early stages, the answers were diverse and not complete. However, demonstrators – varying widely in scope, size and complexity – are considered by a majority as a key driver for future Embedded System developments.

Number of Prototypes Built



67% of the respondents indicate that they actively participate in standardisation activities.



The development of *new methodologies and tools* is also considered an important asset in the ARTEMIS programme. Twelve tools have already been developed and 31 are planned in the near future. My personal opinion is that in order to exploit the full potential of

these tools in a broader industrial context, it is recommended to further investigate the strategy (e.g. with respect to interoperability) on tool developments and exploitation within the ARTEMIS programme.



Number of Prototype Tools

is perceived by the respondents as a truly enabling technology across a variety of applications/ markets. The current respondents are focusing mainly on 'Energy Efficiency' and 'Mobility of people and objects' in terms of societal challenges.

With respect to 'Open Source Communities', responses are polarised: on one hand there is evidence that there is a contribution, but on the other hand some partners explicitly mention not contributing to it.

CONCLUSION ~ The WG has generated a report which is worth delving into. Not only does it confirm some of the conclusions already drawn in the first interim evaluation report of the JTIs by the European Commission but it also reveals some complementary data and information. Although it is still too early for an in-depth evaluation, the report reveals that success has already been or is close to being achieved. This type of survey forms a good basis for the ongoing improvement of the ARTEMIS programme to make the technological developments in Embedded Systems the real beating heart for European industry and economy!

Written by Patrick Pype with gratitude to the Working Group members and respondents from ARTEMIS Call 2008 projects. All stakeholders cooperated in this survey on an honorary basis.



60

The recalibration of the ARTEMIS SRA 2006 into the ARTEMIS SRA 2011, was endorsed by the General Assembly of the ARTEMIS Industry Association on 2 March. The work was guided by the co-chairs of the Working Group SRA: Laila Gide of Thales and Tatu Koljonen of VTT. They received the ARTEMIS Statue as token and recognition for their valuable contribution.

Sustainable innovation to address European societal challenges

By Ad ten Berg Office Director and Programme Coordinator of ARTEMIS Industry Association

The ARTEMIS Strategic Research Agenda 2011, the recalibration of the SRA 2006, is a key document for the ARTEMIS community and it contains two main elements that look ahead to new ways of research in embedded systems, especially in terms of boosting competitiveness. The first element concerns the widely acknowledged societal challenges within the European Union. The second element is a set of innovation activities in embedded systems that goes beyond the classic scientific approach in driving research activities.

SOCIETAL CHALLENGES TO DRIVE

RESEARCH ~ The societal challenges, introduced as major drivers for research, will strengthen the role of the Strategic Research Agenda (SRA) with other initiatives where these intersect with the domain of embedded systems. As the report of the Working Group Metrics shows (figure 1), societal challenges have been addressed in ARTEMIS projects right from the beginning. The WG metrics interviewed participants in seven of the very first ARTEMIS Call projects, Call 2008, about the potential contributions of their projects to addressing societal challenges.

The results in figure 1 show clearly that societal challenges are in the DNA of ARTEMIS R&D projects.

This SRA now makes the link between research and societal challenges explicit, explaining how research challenges for the ARTEMIS application contexts can be derived from societal challenges in a well-defined series of steps, as outlined in ARTEMIS MAGAZINE no 7 by Rolf Ernst.

Analysis of the role of Embedded Systems in addressing the societal challenges shows that responses to those challenges require systems able to interoperate across many application domains. The original ARTEMIS aim to achieve multi-domain compatibility, interoperability and even commonality was already moving in this direction. Now this Strategic Research Agenda goes further: the societal challenges are used to structure the inherent technological issues into a concrete research and innovation strategy spanning multiple application contexts, with results that will benefit both society and the economy.

Closer investigation of the societal challenges has brought forward the importance of specific technological issues, highlighted in this new SRA, such as the interoperability question, system autonomy, networking - including use of the Internet - and consideration of mixed criticality. Societal challenges are also addressed in the section



Contribution to Societal Challenges

'Tackling societal challenges' of the 'Green Paper on Research and Innovation funding' issued recently by the European Commission. Many of the answers to the societal challenges that Europe faces require the innovative embedded systems that are becoming the 'nervous system' of society.

INNOVATION STRATEGY TO DRIVE

COMPETITIVENESS ~ The second element of the new SRA is the innovation strategy of ARTEMIS aimed at creating sustainable innovation environments. Innovation is more than invention alone. New technology is only truly innovative if it results in products or services that are actually used or change the processes of production or service delivery. The ARTEMIS strategy set out in this SRA concerns a wide range of topics that are not themselves part of research or technology development but that sustain R&D and enable its utilisation to benefit the economy and society.

Seeded in the first SRA 2006, the innovation strategy subsequently matured in a series of annual updates of the ARTEMIS JU Multi-Annual Strategic Plans (MASP) from 2008 onwards to the latest version in 2011. The new SRA now takes this innovation strategy a step further by defining new instruments of innovation that will help to accelerate this vital part of the ARTEMIS strategy.

Key elements of this innovation strategy are:

- > Creating new innovation eco-systems
- > Aligning Research Agendas for Embedded Systems in Europe
- > ARTEMIS repository
- > Centres of Innovation Excellence
- > Standards for Embedded Systems
- > Tool platforms
- Regulations, safety, security and digital trust certifications
- > Intellectual Property Management
- > Open Innovation and Open Source policy
- > Research Infrastructure
- > Education and Training
- > SME support

Only by finding synergies and combining

forces to implement all these key elements will innovation be enhanced and drive European competitiveness to the level required to be the recognised world-leader in the domain of embedded systems.

TANGIBLE STEPPING STONES ~ Alignment and synergies with other programmes like FP7, the ENIAC Joint Undertaking, Eureka cluster programmes like ITEA2 and CATRENE, and national and regional programmes also active in the area of embedded systems are essential to realise the innovation strategy. ARTEMIS aims to ensure that there is a clear and obvious value chain, from the first steps of research right through to designing products and services available to all European players in the

> Societal challenges are in the DNA of ARTEMIS R&D projects

area of Embedded Systems. The players in such a value chain - research institutes, high-tech SMEs, large industrial companies - constitute an eco-system, i.e., a set of interconnected companies, specialised suppliers, service providers, research institutions, educational institutions, manufacturing, distribution and logistics capability in a particular field.

In order to meet the medium to long-term research needs of European industry, ARTEMIS will facilitate the establishment of a new infrastructure of **Centres of Innovation Excellence (CoIEs)**, focusing on a small number of systems-oriented, multi-disciplinary CoIEs (e.g. computer scientists, electronic and mechanical engineers, application specialists) well complemented with respected academic groups and in-house R&D groups of industrial companies, specialised in specific sub-domains.

ARTEMIS also proposes to establish *tool platforms*. These will embody a common set of interfaces and protocols that will allow tool vendors to integrate their products into tool chains adapted to the specific needs of sections of the embedded intelligence applications market. Furthermore, by seeking to promote *standardisation*, ARTEMIS will help to rapidly establish new markets and so accelerate uptake of technology.

In most application areas, the design, implementation and operation of embedded systems are quite properly constrained by European or international regulations concerning safety, security, digital trust and the environment. However, since these regulations have a significant impact on the cost of the design and engineering processes, it is essential for several European industries to be able to produce certified embedded systems affordably and thus stay competitive. By means of tool platforms and standardisation ARTEMIS will also address on aligning engineering processes to such regulations.

In the ARTEMIS eco-system model, hightech SMEs are expected to play a key role in the capitalisation and dissemination of the technologies resulting from the execution of the Strategic Research Agenda.

IN CONCLUSION ~ It should be noted that in his feedback on the draft SRA in 2010, Thierry van der Pyl of the European Commission acknowledged how essential the input had been to EC discussions regarding the new common strategic framework.

The recent '2010 EU Industrial R&D Investment Scoreboard' presents a list of the most R&D intensive companies in Europe, and nine of the top twenty are members of ARTEMIS Industry Association. The involvement of so many top R&D intensive companies provides a recognition platform that will sustain Europe as the world-leader in innovation in the embedded systems domain.

ARTEMIS Industry Association will launch the

ARTEMIS SRA 2011

with a high level Symposium on the future of Embedded Systems in Europe.

When:	18 May, 10:30 - 17:00 hrs
Where:	in the home of the
	ARTEMIS Joint Undertaking
Address:	White Atrium building,
	Avenue de la Toison d'Or 56-60,
	Brussels, Belgium

For more information and registration go to: www.artemis-ia.eu/symposium

ARTEMIS SPRING EVENT 2011

By Else Embregts

The ARTEMIS Spring Event 2011 took place on 1 & 2 March in Nuremberg, Germany. The Steering Board of ARTEMIS Industry Association decided again to co-locate it with the embedded world 2011 event in the Nürnberg Messe following the fine cooperation with and enthusiasm of the embedded world organisation. ARTEMIS Joint Undertaking held its international ARTEMIS proposers day for Call 2011 as part of the Spring Event to announce the start of Call 2011. About 150 visitors participated and nine starting consortia coming out of the ARTEMIS Brokerage Event (December 2010) organised their preparation meeting and buzzed around the floor, gearing up for the Call 2011.

The ARTEMIS Grand dinner in the scenic Old Town Hall, with the former ARTEMIS-IA President Yrjo Neuvö as special guest, was well visited and highly appreciated.

On 2 March the day began with Break-out sessions to discuss several key topics for the future of ARTEMIS. Directly after these sessions the ARTEMIS-IA General Assembly took place, followed by a keynote speech by Professor Sturm, Chair of the embedded world conference, in which he explained the set-up and philosophy of the embedded world event and pointed out the synergies between embedded world and ARTEMIS. All attendants were invited for closing drinks at the end of the day at the ARTEMIS stand, were many showed up and took a look at three ARTEMIS projects demonstrated there. We can look back on a successful event in the centre of the European embedded community.

ARTEMIS COIE LABEL ~ In Nuremberg the Steering Board of the ARTEMIS Industry Association approved the Centre of Innovation Excellence label to ProcessIT.EU. As EICOSE has been a role model for ARTEMIS since 2007, the Steering Board decided to also certify EICOSE with the now formalised 'ARTEMIS Centre of Innovation Excellence Label' as of 1 March 2011.

Newcomer ProcessIT.EU stated: "This is a seal of approval for our work. We can now step forward and with this support we will take the European helm. Europe commands a leading position in process IT, and we will maintain and develop that leadership. In Europe, we have both the process industries and suppliers of automation technology to these industries," says Prof. Jerker Delsing of Luleå University of Technology.

The greatest competitive advantages for European process-industry companies on the world market are efficiency, availability and high quality. Fundamental to each of these is process automation. Joint Swedish-Finnish strategic responsibility for European collaboration within automation for the process industries in Europe will present further possibilities for strengthening these competitive advantages.

With fifteen per cent of the world market for process automation technologies, Sweden and Finland have a unique position. It is therefore natural that these two countries should assume a leadership role in collaboration and development within process automation in Europe. This will be realised together with companies and universities in Austria and Poland, and in the future, also with organisations in Germany, the UK and Norway in industries such as pulp and paper, metals, mining and minerals, oil and gas, chemicals, <u>energy, foodstuffs</u>, infrastructure and medicine.

ARTEMIS TOOL PLATFORM LABEL Why Tool Platforms



'Europe has a large number of excellent developers and suppliers of tools for specific purposes. At present, large scale development environments come exclusively from a small number of non-European sources. This created

a strong dependence on external suppliers of tool platforms and on the other side a highly fragmented supply chain within Europe. Therefore the ARTEMIS Industry Association established the Working Group for Processes and Tools. The goal: Identify a common set of interfaces and practices that allow tool vendors to integrate their products into tool



Professor Sturm

chains. This Working Group, led by Francois Bichet of Dassault Systems, has the charter to basically make the idea of Tool Platforms work.

Importance of the ARTEMIS label for Tool platforms

ARTEMIS is an industry driven R&D and innovation programme with the ambition to deliver sustainable results. As also explained in the Annual Work Programme 2011, Tool Platforms are an element in the ARTEMIS approach to achieve such sustainable results. The Working Group Tool Platforms has defined criteria for obtaining the 'ARTEMIS Tool Platform' label. This label indicates that a Tool Platform has sufficient support to be used by others and to become sustainable. The Steering Board of ARTEMIS Industry Association has decided to approve these criteria for the Tool Platform Label in their meeting of March 1st, 2011.

The providers of Tool Platforms can apply for the label by sending an application to the Office of the ARTEMIS Industry Association. A committee will assess the application documents and formulate an advice to the whole Steering Board of ARTEMIS Industry Association.

For more information about the ARTEMIS labels go to the website: www.artemis-ia.eu or contact ARTEMIS Magazine: else.embregts@artemis-ia.eu

Arcadia implementing the ARTEMIS vision

By Else Embregts

The ARCADIA project wants to optimise the resources and to contribute to the advance of ERA for embedded systems, thereby enhancing Europe's future growth, competitiveness and sustainable development. ARCADIA was introduced in ARTEMIS Magazine 7, August 2010. It was a pleasure to see ARCADIA again back at the ARTEMIS Spring Event 2011 in Nuremberg with a workshop where one could enjoy a 'cosmopolitan ARTEMIS drink'. To share this pleasure with you we asked the organisers of the ARCADIA workshop some questions.



Why did you organise the ARCADIA workshop and what was the set-up? ~ The workshop was organised right after ARTEMIS-IA General Assembly, where the updated ARTEMIS SRA was approved. The workshop dealt with 'Implementing the ARTEMIS vision', since we wanted to start working on deploying the vision without delay.

We wanted to maximise interaction and give everybody the opportunity to contribute. For this reason we structured the meeting as a 'world café', an effective and participative format without "formal" presentations. In a relaxed atmosphere, this process allowed the group to have conversations at small tables about open questions like: *It is 3 March 2015, so what have been the major achievements of ARTEMIS?*

The gist of these conversations was then shared with the rest of the participants during a plenary session and common patterns identified and visualised. The session required significant preparation and was moderated by expert facilitators from Tecnalia, the research organisation coordinating the ARCADIA project.

Did the workshop meet your expectations? ~

The workshop was successful both in terms of process and outcome. The participants did indeed openly share their understanding of the ARTEMIS vision and, from there, the group was smoothly guided to the definition of projects that would add to the fulfilment of the vision by 2015. Another good indicator of the success is that the feedback from the participants was very positive, which encourages to use a similar format in subsequent meetings.

Was it well attended? What type of organisations participated? ~ The workshop was aimed mainly at industry and research organisations. There was a wide representation of European countries, with participants from Belgium, Germany, Norway, Spain, Italy, France, Finland, etc. and from various application sectors, such as transport, health and defence.











A couple of follow-up workshops are planned for later this year. One will specifically address public authorities and programme managers and the other will focus on the participation of SMEs.

What is the outcome? ~ The workshop outcome is a first approximation to a topdown deployment of the ARTEMIS vision: vision, achievements, projects&initiatives, mechanism&resources. The first step is to get a common shared understanding of the vision. Then, the high-level operational vision will be detailed into a series of achievements required to implement it. These achievements, in turn, will give rise to the identification of ongoing and future projects and initiatives that are necessary to achieve the objectives. Finally, specific mechanisms and resources (research programmes) will support the initiatives and projects. These research programmes correspond to those identified in the survey of Embedded Systems research programmes already performed by ARCADIA. In this way, we obtain an explicit alignment of research programmes across Europe, all of them contributing to the shared ARTEMIS vision.

What are you going to do with the outcome? ~

The workshop outcome has been condensed into a report. This is extremely valuable information for the orientation and design of research programmes and research agendas to be aligned with the shared vision. This material is naturally input for the upcoming workshop with the Public Authorities and policymakers.

The explicit strategy for the vision deployment is also an effective way to structure the projects that implement the vision and to identify the missing parts to complete the picture and achieve the vision.

Is the report available and, if so, how? ~

Of course, yes! The report is public and it is available through this link: www.arcadia-project.eu/newsandevents.php

Thank you, Sergio Bandinelli, Joseba Laka and Inaki Eguia

COLUMN

BATON BLUE(S)

This column is the first 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. We kick off with **Irene Lopez de Vallejo**.

Birds flying high you know how I feel Sun in the sky you know how I feel Breeze driftin' on by you know how I feel

It's a new dawn It's a new day It's a new life For me And I'm feeling good

Fish in the sea you know how I feel River running free you know how I feel Blossom on the tree you know how I feel

Dragonfly out in the sun you know what I mean, don't you know Butterflies all havin' fun you know what I mean Sleep in peace when day is done That's what I mean

And this old world is a new world And a bold world For me

Stars when you shine you know how I feel Scent of the pine you know how I feel Oh freedom is mine And I know how I feel

(lyrics by Anthony Newley and Leslie Bricusse)

ARTEMIS, Advanced Research and Technology for EMbedded Intelligence and Systems. The Greek Goddess Artemis is the goddess of the hunt. She is also known as the Goddess of light and protector of the vulnerable. Who are you and what do you do? ~ Good morning Milady (ARTEMIS)! My name is Irene Lopez de Vallejo and I'm currently ICT Partnerships Director at Tekniker IK4 www.tekniker.es, a private non-profit technology research centre located in the Basque Country, north of Spain, and member of the regional Research Alliance IK4 www.ik4.es

Why did you want to become a Steering Board member? ~ Good question, ARTEMIS!! Beg your pardon, Milady. Well, being an active member in Chamber B, I thought it was a splendid opportunity to bring to one of your decision-making mechanisms a perspective in Embedded Systems complementary to that of the industry. Personally, I like to get involved to

the full in anything I do; I am a very curious person and always up for a worthy challenge. All reasons combined brought me to submit my candidacy to your Steering Board.

Why did you accept the invitation of the Presidium to become a Presidium member

for Chamber B? ~ After a year in the Steering Board I thought the opportunity to get more involved in your affairs was too good to let go to be honest!! Now, it is an honour and also a huge professional challenge which I truly hope I succeed in making the best of. I want to bring in not only the point of view of Chamber B, also my own opinions and my own skills to support the great work the Presidium is already doing for you... I'd like to see the Industry Association more active in social media, in taking advantage of our exceptional membership basis – the best and the biggest are in it, but we are not the loudest! This has to change. I would also like to see the voluntary

change. I would also like to see the voluntary work and expertise put in by the members in the different Working Groups made more visible and more accessible to the general public. I talk from experience. The quality of the work is exceptional and members of all chambers deserve public recognition for their efforts. The more open to informal interchange of ideas, the more vocal about them, the more we use the knowledge and the passion of the ARTEMIS collective, the sooner we will come to generate the conditions to create new long term sustainable inpovention models in this field.

What drives you to do what you do? ~ My drive? Milady ARTEMIS, may I ask you a tricky question? Has your Ladyship read The Sociological Imagination? It's a book by American sociologist C. Wright Mills, first published in 1959. Mills wrote an Appendix in this wonderful book, "On Intellectual Craftsmanship", where he set up his way of doing things. What stuck in my mind and has driven my professional life since is his assertion that you must learn to use your life experience in your intellectual work, that you cannot split work from life and his claim that experience is so



important as a source of original intellectual work, "To be able to trust yet to be skeptical of your own experience [...] is one mark of the mature work[wo]man. This ambiguous confidence is indispensable to originality in any intellectual pursuit". Being a social scientist is a state of mind, it's an attitude to life. It's doubt and hope, experimentation and wonder in every step you take. Did I mention part of my background enters the dark shadows of Social Science? Put it this way, I see reality and technology through the catalyst of my sociological imagination.

What do you believe is the biggest challenge in the R&D of embedded systems? ~ Undoubtedly the biggest challenge of Embedded Systems R&D

is to deliver the promise to successfully address the societal challenges/priorities established decades ago – "the societal challenges" outlined in the next Common Strategic Framework, CSF. There are other people miles more qualified than I am to go into detail into the technical challenges – like the person to whom I want to pass on your baton. These are challenges that absolutely must have a systems perspective on how technology, society and the physical environment interact and come together, crystallise in holistic solutions that involve user –and-collectives-friendly products, new - as in innovative but also as in provocative - business models that force society to take charge, face those challenges and repel current mainstream attitudes towards health, climate change, energy consumption. A force to upset reliance on public bodies to provide and to solve and to make the case for a European collective sustainable culture.

To whom do you want to give the ARTEMIS

column baton? Why? Do you have a question for him or her? ~ I would be honoured if Laila Gide would take the baton for the next column. She has been since your birth and is still today one of the guardians of your scientific integrity, a champion for technical research excellence and a fierce defender of innovation through Embedded Systems. I'd love to hear her answering to the question "What's been the hardest (because it was difficult, embarrassing or funny) moment you've had to endure in all the time you've been part of ARTEMIS?" Oops!!!

What music goes together with reading of your column? ~ If the reader has got to this point, he or she should be humming "Feeling Good" by Nina Simone. I'm a rock and roll Lady but this tune is perfect for this column!!!

Irene Lopez de Vallejo, ARTEMIS Industry Association, Presidium member for Chamber B. Currently working as ICT Partnerships Director at Tekniker IK4

Call 2011 is 0NI

By Eric Schutz Executive Director ARTEMIS Joint Undertaking

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Calendar for the Call 2011

14 & 15 December 2010: Brokerage Event organised by ARTEMIS Industry Association

January-Mid February 2011: Information and Networking events around Europe

1 March Call opens 2011: Call opens

1 March 2011: ARTEMIS Project Proposers' Information Day, Nürnberg

31 March 2011: Deadline for Project Outline (17h00:00 Brussels time) (Feedback on PO – May).

1 September 2011: Deadline for Full Project Proposals (17h00:00 Brussels time) Projects can typically start as early as January 2012.

FOR CALL 2011 INFORMATION GO TO THE CALL 2011 WEB PAGE on the ARTEMIS website: www.artemis-ju.eu

With Call 2010 hardly behind us, Call 2011 is already open from the beginning of March. The ARTEMIS Brokerage Event organised by the ARTEMIS Industry Association in December 2010 was the very first signal to gear up for the new ARTEMIS Call, followed by a series of ARTEMIS networking meetings around Europe with the national ARTEMIS platforms organising information and brokerage events in Sweden, Austria, France, the United Kingdom, the Czech Republic and Spain. On top of this, the international ARTEMIS PO Info day took place on 1 March in Nuremberg, Germany, as part of the ARTEMIS Spring Event. As a result of the first Call 2011 Brokerage Event in Barcelona, nine starting consortia seized this opportunity to come together as well. Again we witnessed a dynamic process of matchmaking and consortia building. The art to crystallise quality consortia.

ARTEMIS PROGRAMME ~ One of the main goals of ARTEMIS is to spread European expertise in hardware, software and systems design for Embedded Systems throughout many application sectors, which is why ARTEMIS research has a strong 'downstream', or close-to-market, character. At the core is industry driven and co-funded collaborative research based on the ARTEMIS Strategic Research Agenda and implemented through open calls for proposals. The three research domains are:

- > Reference Designs and Architectures
- > Seamless Connectivity and Middleware
- > (System) Design Methods and Tools

However, there is a danger that these domains are so generic that if they do not target specific areas of innovation, the research results may become simply fragmented collections of single-application-specific technology. So to fight this tendency, the ARTEMIS Industry Association has identified a set of eight ARTEMIS Sub-Programmes (ASP) in the ARTEMIS Annual Work Programme, namely:

- ASP1: Methods and processes for safetyrelevant embedded systems
- ASP2: Embedded Systems for Healthcare systems
- ASP3: Embedded systems in Smart environments
- ASP4: Manufacturing and production automation
- ASP5: Computing platforms for embedded systems
- ASP6: ES for Security and Critical Infrastructures Protection
- ASP7: Embedded technology for sustainable urban life
- ASP8: Human-centred design of embedded systems

ARTEMIS CALL 2011: TWO STEP APPROACH ~

Call 2011 is a carbon copy of Call 2010 but with a few subtle changes. As in 2010, the Call, which opened on 1 March, entails two phases, 'PO' and 'FPP'. The work programme for this Call proposed by the members of ARTEMIS Industry Association has been accepted by the Public Authorities Board. The technical content still covers the eight ARTEMIS Sub-Programmes listed in the Annual Work Plan 2011. The deadline for all Project Outlines was 5 pm (Brussels time) on 31 March.

THE ARTEMIS PROPOSAL SUBMISSION

SYSTEM ~ ARTEMIS makes use of the FP7 'Electronic Proposal Submission System' (EPSS), adapted to the ARTEMIS programme. This allows ARTEMIS-JU Office staff to integrate the project information into the rest of the FP7 project management tool chain used, which will help later on in project support.

Step 1: PROJECT OUTLINES ~ The Project Outlines will be assessed by external experts and feedback will be given about the proposal. This is not an acceptance gate! Even though the PO phase is mandatory, the feedback is designed to let proposers improve the quality of their proposal, tailor it to the ARTEMIS programme and take account of any local specific eligibility criteria there may be.

Step 2: FULL PROJECT PROPOSALS ~

The project will finally be evaluated on the basis of its Full Project Proposal (FPP). This extended and detailed version of the PO should take account of feedback from the experts and it is the quality of this document that will determine selection for funding. The submission deadline for the FPP is very strict – 1 September 2011 at 5 pm Brussels time – so

take care not to wait until the last minute. We need to keep this deadline if we are to get all the proposals evaluated and the successful ones negotiated, in time to let the projects start early in 2012. The EPSS will be used for this phase, too, which will minimise the need for repeated entry of data. It makes sense to plan to submit at least a week before the closing date, in case there are any last-minute hitches. Again, these FPPs will be evaluated by a team of experts.

ARTEMIS FUNDING MODEL ~ The model for funding ARTEMIS-JU projects is unique. Much of the funding is provided to the partners by their own government or regional agency through a Grant Agreement (type of contract). The ARTEMIS Joint Undertaking also provides funding directly to the partners: 16.7% of their "eligible costs". Which type of cost is eligible for funding is determined by the local regulations, so it is important that the partners in a particular country are fully aware of their local reguirements and rules.

I wish you every success and plenty of inspiration in finalising your FPP in the intervening months till the deadline on 1 September.

ARTEMIS Joint Undertaking Annual Call schedule



System Level Modelling Environment for SMEs

The ARTEMIS project 'SYSMODEL' announces access to Open Source system level modeling tools developed within the framework of ARTEMIS JU Call 2008. The tools have already been applied to six commercial cases with significant productivity increases.

Industry is facing a crisis in the design of complex hardware/software systems. Due to the increasing complexity, the gap between the generation of a product idea and the realisation of a working system is expanding rapidly. To manage complexity and to shorten design cycles, industry is forced to look at system level languages towards specification and design. In order to support the competitiveness of small and medium-sized enterprises (SMEs) six SMEs from the Nordic countries have teamed up with three recognised R&D providers in the ARTEMIS SYSMODEL project to develop system level modelling tools that can increase their design productivity.

The SYSMODEL project provides the SMEs with 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's complexity by allowing cost-efficient mapping of applications and product variants onto an embedded platform; while respecting constraints in terms of resources (time, energy, memory, etc.), safety, security and quality of service.

The general availability of the modelling methodologies is facilitated by the Open Source approach, where all tools are made available free of charge. In order to disseminate the modelling methodologies and tools to a wider group of SMEs the project has established a wiki based entry to tools, models, libraries and tutorials guiding new users through modelling exercises.

The modelling is carried out by describing a system level design in the System Functionality Framework (SFF) and then refining it using the Platform Architecture Framework (PAF). The project specifies the main concepts of the SFF modelling framework together with the supported models of computation and design languages. Also the basic concepts of the PAF, which is mainly a library of components, are presented. The approach is based on the concept of refinement by replacement, which allows a stepwise refinement of an abstract SFF system model by replacing individual SFF models by executable platform models.

SYSMODEL now encourages other European SMEs to try out the modelling libraries. The R&D staff will be happy to support such experiments. You can get started at www. sysmodel.eu where links are provided to the wiki containing tools, libraries and tutorials.

Project partners:

Technoconsult ApS AuditData A/S Technical University of Denmark Kungl. Tekniska Högskolan Catena Wireless Electronics AB Nito Telecom AB Novelda AS Tampere University of Technology DA-Design Oy Finnelpro Oy

Together with ARTEMIS and the national funding authorities in the Nordic countries (Tekes-FI, Vinnova-SE, The Research Council of Norway-NO and the Danish Agency for Science Technology and Innovation-DK) the partners are investing nearly € 5.4 million in developing the modelling tools.

Contact person: Ivan Ring Nielsen, Technoconsult ApS, Agern Alle 3, DK-2970 Hoersholm mail: irn@technoconsult.dk www.technoconsult.dk



SCALOPES – the end of the road but plenty around the corner

By Chris Horgan

SCALOPES, one of the first ARTEMIS Call projects ended in March 2011. 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. Quite a task. So to what extent were the goals achieved and what came out of the project in terms of tangible results? Frans Theeuwen looks back.



Can you give an example of what has been achieved in terms of tools for power analysis, reduction and resource management? ~ In the first phase of the project we focused on the development of tools and methodology. In the second year of the project our attention was geared to the application of these tools in various application domains. During the final three months the focus was on making the demonstrators – the proof of the pudding. For instance, the redesign of a multidisplay to enable satellite transmissions to be monitored covering more than thirty channels simultaneously on a single screen. For this we demonstrated an entirely new architecture. What we are



Frans Theeuwen of NXP was project coordinator in the final few months. He is an electrical engineering graduate and PhD. Between 1980 and May 1998 he was assistant professor at Eindhoven University of Technology in the CAD group. After working at Philips Research Laboratories in Eindhoven as senior consultant and department manager, he joined NXP Semiconductors at its foundation. He is in the Corporate Research & Development department, working on System Design Methodology.



increasingly seeing is that multi-core embedded chips are replacing PCs more and more. What this means in tangible terms is a substantial reduction in power: a single multi-core chip along with the performance boost this brings with it.

More for less? ~ Yes, you could put it that way – more performance for less power. Another example is in the field of surveillance. Cameras don't need to be transmitting signals all the time if nothing is happening. An in-built multi-core processor analyses the images the camera captures and only when something out of the ordinary occurs, transmits the pictures. This same multi-core processor can also be used in underwater cameras, where a different kind of image processing is needed, and for car licence plate recognition. All on a small multiprocessor IC.

How far away are the demonstrators from the market? ~ A year or even six months is realistic. For instance, take Internet. It's a technology we are all familiar with and all use. Routers are used to get data from one place to another. A system has been developed that analyses and steers the routing. This has been put on multi-core processors. It's just now a matter of waiting for the documentation and the product will be market-ready. A Hungarian partner will be doing that.

What do the reviewers think about these achievements? ~ In the main, they were very enthusiastic. They felt that given the breadth of the project and its short duration, the results achieved had been impressive, with 63 deliverables. In short, they pointed specifically to the quantitative, comprehensive use of the



dependency matrix (showing how the tools and methodology developed are used in the final demonstrators) and clear relation to the power optimisation and resource management when relating final results to initial goals. As for the improvements demonstrated during the last three months of the project, they cited interconnection between work packages, exploitation, format and information, and commonalities as key deliverables.

Were all project partners on board from beginning to end? ~ "A couple fell by the wayside but that was mainly due to financial constraints. But for the main part the early

"For this we demonstrated an entirely new architecture. What we are increasingly seeing is that multicore embedded chips are replacing PCs more and more. What this means in tangible terms is a substantial reduction in power: a single multi-core chip along with the performance boost this brings with it."

commitment remained strong. As the saying goes, many hands make light work, and it was because we were able to cluster all the knowledge and insight from both the research and industry partners that we came up with so many tangible and practicable results.

What are the prospects for a follow-up? ~ In the same kind of form, none. However, the individual and related companies will be able to take the knowledge gained and use this to generate commercial products and services. Such as the Internet routing system or underwater camera I mentioned earlier. That is the real pay-off.

And your experience with ARTEMIS through it all? ~ There were pros and cons, as you might expect in such a large and complex project, involving so many participants. Of course, you want to be guaranteed that at the start of



the project all the funding has been cleared for all participating countries. This was not the case for SCALOPES and it resulted in a few partners letting the side down, as it were. So from the administrative point of view, there is room for improvement. On the other hand, what we are very positive about is the management and supervision from ARTEMIS. The office certainly had its finger on those pulses and came up with good advice and tips. They were critical and clear about the general requirements, and they helped us to bring transparency where that was lacking. As a catalyst for cooperation, ARTEMIS certainly fulfilled that role very well.

Calendar

18 MAY BRUSSELS, BELGIUM SRA SYMPOSIUM 2011

To celebrate the recalibrated SRA, ARTEMIS organises the SRA Symposium in Brussels. The SRA printed document will be presented and interesting speakers will provide their view on the future of embedded systems in Europe. The event will be concluded with the official launch of the SRA 2011 and a press conference.

More information:

www.artemis-ia.eu/upcoming_events

19 - 20 MAY BUDAPEST, HUNGARY ICT PROPOSERS'DAY 2011

ICT Proposers'Day 2011 is organised every two years by the Information Society and Media Directorate-General of the European Commission promoting Information and Communication Technologies (ICT). The event is dedicated to networking and partnership building for ICT Calls 8 and 9 of the Seventh Framework Programme of the European Commission (FP7), offering more than one billion Euros of EU fundina Thematic sessions on the Work Programme 2011-12 on ICT research with presentations of proposal ideas, meeting points animated by Commission officials and information stands will help you form project consortia and gather information.

More information:

http://ec.europa.eu/information_society/ events/ictproposersday/2011

24 MAY BRUSSELS, BELGIUM 5TH SEMI BRUSSELS FORUM

The SEMI Brussels Forum is the annual EU public event to discuss about the competitiveness of the European semiconductor and photovoltaic industry value-chain. The event is composed of several meetings of the industry with the European Commission on the first day and a plenary session on the second day. Panelists representing industry and public authorities are invited to discuss on critical issues.

More information:

www.semi.org/BrusselsForum

14 - 15 JUNE BRUSSELS, BELGIUM ARTEMIS SUMMER CAMP

The annual Summer Camp event is usually focues on the SRA. As the newly updated SRA has been approved by the ARTEMIS-IA General Assembly, the Summer Camp will have a different focus. The first day is intended for interested Members and Steering Board members to discuss the MASP/RA and AWP 2012 and options for Future JU. The second day of the Summer Camp is intended for Steering Board members

More information: www.artemis-ia.eu/

upcoming_events

1 JUNE

THE INTERNATIONAL AUDITORIUM, BRUSSELS, BELGIUM FRAMEWORK AND THE INNOVATION

UNION Research Europe will host a one-day

conference to address how the existing components of the Framework programme are shifting; whether the European Research Council, which was founded under Framework 7, will expand its share of the budget; and what the future holds next for Joint Technology Initiatives, European Innovation Partnerships and other mechanisms for enhancing industrial involvement in the next phase of the programme.

More information:

www.researchresearch.com

16 - 17 JUNE BUDAPEST, HUNGARY FP7 MID-TERM EVALUATION CONFERENCE AND NETWORKING EVENT

The improvement of FP7 and preparation for FP8 continues during the Hungarian presidency. The European Commission is preparing a communication and working document, in which it will react to each individual recommendation on how to tackle them. The paper also will outline corrective measures when and if those are planned for the future. The FP7 Mid-term Evaluation Conference and Networking Event presents the findings and engages parties to discuss the implications. **More information:**

www.eutrainingsite.com/fp7midterm

25 - 26 OCTOBER HELSINKI, FINLAND ARTEMIS & ITEA CO-SUMMIT 2011

The fourth edition of this annual event will take place in Helsinki. The project exhibition, showcasing active projects of ARTEMIS and ITEA, will highlight this event. Interesting key notes, ARTEMIS and ITEA sessions will complete this annual get-together of European embedded systems community. **More information**:

www.artemis-ia.eu/upcoming_events

Green Paper consultation on the future of EU research and innovation funding



From Challenges to Opportunities: Towards a Common Strategic Framework for EU research and innovation funding.

The European Commission proposes a Common Strategic Framework for EU research and innovation funding. The aim, as set out in the Green Paper, is to make participation easier, increase scientific and economic impact and improve value for money. Stakeholders have until 20 May 2011 to express their opinions.

On 1 March, the Commission organised a Stakeholder meeting in Brussels to present and discuss the strategy. The meeting has been streamed live on the web in order to get the widest audience possible. The webcast is still available.

A conference in Brussels on 10 June 2011 will wrap up the consultation. The input will be used for the development of the formal proposal for the Common Strategic Framework to be adopted by the Commission by the end of 2011.

For background information contact: Research and Innovation DG, European Commission Marnix.Surgeon@ec.europa.eu New address for the OFFICE of ARTEMIS Joint Undertaking

The ARTEMIS Joint Undertaking Office has moved to a new home in the southern part (Midi) of Brussels.

Visiting address White Atrium Avenue de la Toison d'Or 56-60 B-1060 Brussels Belgium

Postal Address ARTEMIS Joint Undertaking, TO 56 5/23 B-1049 Brussels, Belgium



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 in2006.

ARTEMIS 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 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

Advanced Research and Technology for EMbedded Intelligence and Systems

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Submissions:

Do you want to contribute with ARTEMIS news or events linked to the ARTEMIS programme, its projects or in general to ARTEMIS related subjects? For ARTEMIS Magazine 10, submit your information before 23 May to: communications@artemisia-association.eu

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