During the ARTEMIS/ITEA Co-Summit, **PEN** met with ARTEMIS's **Alun Foster,** who outlined some of the Undertaking's successes, as well as how he hopes it will continue to evolve

Embedding excellence

Alun Foster is presently the programme manager for the ARTEMIS Joint Undertaking and, since 1 August 2013, took on the additional role of Acting Executive Director. Prior to that, he worked as an independent consultant for the ARTEMIS Industry Association, after serving the ARTEMIS initiative since its inception as senior manager for external technology co-ordination at STMicroelectronics, based in Zaventem, Belgium.

He has many years of industrial semiconductor experience in technical marketing, design and applications management for microprocessors, telecommunications devices and ASICs for the industrial and automotive sectors, and was responsible for co-ordinating strategic international co-operative research, for example under the IST and the EUREKA cluster programme MEDEA+.

He also actively participated in the ARTEMIS European Technology Platform (ETP) – an initiative of the European Commission contributing to the Framework Programme 7 and a precursor to the ARTEMIS Industry Association – specifically involved in drafting the Strategic Research Agenda (SRA).

PEN met with Alun Foster at the ARTEMIS/ITEA Co-Summit in Stockholm, Sweden, to discuss the event and the future of the Joint Undertaking as it continues to promote excellence in European embedded systems research and development.

Alun Foster

The 2013 Co-Summit has demonstrated how the software and embedded systems communities have grown and matured

How would you reflect on the discussions that have taken place at this year's Co-Summit? Do you feel that it has been a success?

The answer to that is a resounding yes, as it is already clear that this year's event has been successful on a number of fronts: in the first instance, the Co-Summit has demonstrated how the software and embedded systems communities have grown and matured. The summit has seen demonstrations from the ARTEMIS standpoint, showing the contribution of software innovations to the more general innovation capacity and competitiveness of many industrial players; the special focus area on smart cities has also proven to be incredibly interesting, and commonalities between projects have become clear. We have also been treated to some fascinating insights from the Swedish political world (where similarities across Europe are evident in terms of meeting the need of citizens).

Finally, we have heard discussions on how vitally important it will be to ensure that any technology used in smart cities is tested against reality, and, indeed, against the acceptance of the people for whom it is designed to work. Indeed, continuing on from this, it is clear that technology should not be seen as an end in itself – it must serve a purpose, and that purpose must be well defined. This can be achieved by working together and by including input from the political world.

Given the importance of the inclusion of policy makers in this area, are you able to actively link them to the work that you are doing in order to inform the decision making process?

We have to be realistic in our expectations on that front, in that the domain of a funding scheme such as ARTEMIS is research, and while we can discuss politicians' attitudes towards the research and development of new technologies with them, I fear that it may be beyond our reach

right now to make any major impact at the real decision making level.

However, within these models – which also applies to ECSEL, the new Joint Technology Initiative being prepared to replace ARTEMIS – we work with member states (who provide part of the funding), who provide us with contact points which we could possibly develop further (and this is only a distant possibility) to lead to better connections within the member states themselves.

Thus, while it might not be a direct ambition right now for ARTEMIS and, indeed, while it may not even be immediately achievable, we can at least try to lay the groundwork so that others, who become motivated by this story, can take up the baton and do that high level lobbying for us.

How have you seen your projects evolve?

The nature of our projects has shifted in many ways over the years, with some being more subtle than others. Perhaps one interesting example is in a new ARTEMIS project on e-health which included use of a psychologist to help define a test vehicle for the human interface element.

The inclusion of a psychologist may be just a small step, but it is a small step in the right direction. Indeed, it serves to highlight the importance of broadening our thinking about these projects, and thus to be a little less focused on our computers and realise that they are there to serve a purpose: Europe's citizens, whose behaviour with, and acceptance of, all these new technologies is crucial.

What does the future hold for ARTEMIS as ECSEL continues to develop?

ARTEMIS is a PPP, meaning that within the public sector there is the ARTEMIS Joint Undertaking, as well as the European Commission (who provide the EU funding), and the member states who all actively contribute to the programme. On the private side is the ARTEMIS Industry Association (who represent the R&D actors from large industries, SMEs as well as research institutes and universities).

For ECSEL, there is a strong motion to integrate the best features we can of ENIAC, ARTEMIS and the ETP 'EPoSS' to make a new programme which fully embraces all the technologies required to create competitive cyber physical systems.

The main goal of the SIMPLE project is to research and deliver an intelligent, self-organising embedded middleware platform, with particular emphasis on the integration of manufacturing and logistics. SIMPLE will address the issue of supporting the self-organisation and co-operation of wireless sensors and smart (RFID) tags for federated, open and trusted deployment environments in the manufacturing and logistics application domains.

In the meantime, many ENIAC and ARTEMIS projects are still running, and these will therefore continue to be supported. However, it is my hope that the first projects to come out of the ECSEL joint undertaking will call upon results from ENIAC, ARTEMIS, and other prior projects (for example from ITEA, present at the Co-Summit today) to ensure they can channel the excellent results we have already achieved from a technology point of view in Europe into financial gains for the companies and people involved, and, of course, ultimately to the benefit of the citizens of Europe.

How optimistic are you with regard to the future prospects for European industry in embedded systems?

While the field of embedded systems covers a huge set of domains, there are some where Europe stands to have a significant impact, one of which is systems which require an extremely high level of reliability – be it in the automotive, aerospace, or health sectors, this refers to anything which is connected to a human being and their physical safety. Indeed, there is a very strong indication that the work which is being done by ARTEMIS can really put Europe on the map as being the quality reference for this kind of system.

Europe may also come to play a role in other domains as well, perhaps with regard to indirect users and the way that embedded systems can be used to improve Europe's manufacturing efficiency. Indeed one project, SIMPLE (which I know very well through my function as a programme officer), which is designed to address scalability issues in wireless sensor networks, has shown how it is possible to use this to improve industrial competitiveness.

By providing European manufacturers with this type of competitive edge, it is clear that not only will this provide a boost to the economy but will also enhance the job security (and thus the morale and productivity) of the workforces involved.

Alun Foster
Programme Manager
ARTEMIS Joint Undertaking

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