

EREA NEWSLETTER

Association of
European
Research
Establishments in
Aeronautics

December 2011



In December 2011 and after two years of EREA chairmanship, Michel Peters, CEO of NLR, reaches the end of his mandate. Now he looks back at what has been achieved and gives us his view on EREA, its activities and its future.

How do you look back at these two years as EREA chairman?

"It has been an interesting and inspiring time in which many things happened and in which EREA achieved a lot."

What did EREA achieve during your chairmanship?

"I had the honour to present the EREA vision for the future of the Air Transport System (ATS) at the ACARE plenary session. This ATS1-study is about our ideas for the future generation of the Air Transport System. Subsequently, EREA members have initiated together the ATS2 study. This study is a continuation of the ATS1 in which EREA outlines four future scenarios for aviation in Europe. The European Commission (EC) has already indicated their intent to use the results of these studies for shaping the new European Framework Programme (FP) for research and innovation: Horizon 2020."

Could you give another example of EREA activities during this period?

"Another issue which is worth mentioning is the cooperation of EREA with the European Defence Agency (EDA) and the EC concerning Unmanned Aerial Systems (UAS). According to EDA and EC, UAS give rise to new opportunities for Europe.

TWO YEARS OF MICHEL PETERS @ EREA

After my meeting as EREA chairman with EDA representatives, EREA was asked to prepare an exploratory research and development programme concerning UAS to identify in which UAS technologies EDA is to invest. This is the first formal contract EREA signed with EDA as an association. In this 'E4U-study', EREA provides EDA with an independent advice about where the UAS technology research priorities should lie for the next years. I hope that this will continue with a follow-up study."

What has been the EREA approach in its relationship with the European Commission?

"Several discussions have been held with representatives from the EC. EREA has met with representatives of DG MOVE and DG RESEARCH. One of these conversations led to a workshop about the financial support of the EC for specific research facilities, a very interesting topic for EREA-members. During the workshop, organized by the EC on October the 20th, EC was very enthusiastic about EREA's input."

What about EREA Young Researchers?

"They meet annually. Each research establishment is represented at EREA Young Researchers Event where young and promising researchers meet and discuss the future of aerospace. It is important to give them the possibility to learn from one another. These contacts help to build up cooperation between our institutes in current and future European research projects.

After the EREA Young Researchers Event 2011, participants will attend the EREA Annual Event that will take place in Brussels on December 20th. They will share this get-together with the whole EREA community .

What did Young EREA already achieve?

"Young EREA contributed to the EDA-study - as mentioned above - about UAS integration in Europe's non segregated airspace. This 'White paper' was presented to EREA and industry partners on the final workshop for the Integration of Unmanned Aircraft Systems (UAS) into civil airspace

programme under the European Framework Cooperation (EFC)."

Two years ago, you intended to put 'mobility of experts within EREA' on EREA's agenda. How did it go?

"A mobility programme was launched within EREA, and up till now, three exchanges between personnel have taken place between DLR and Onera. We are discussing further exchanges involving ONERA, NLR, INCAS and VZLU researchers. I still think mobility of experts is important because it does contribute considerably to more cooperation and it will eventually lead to the building of shared knowledge. Besides, it is a valuable and lasting experience for the researcher after his return."

What do you expect from EREA cooperation in the future?

"Recently, EREA is working on a 'Joint Research Initiative'. This is about joint programming of aeronautical research on a European level. Different EU-countries should tune (parts of) their national research programmes to prevent doubling research topics. EU has promised to provide extra research money when this initiative starts. I hope my successor will continue this idea with a lot of enthusiasm. By coordinating our national programmes more effectively, we can contribute to achieving EU objectives, such as defined in Flight Path 2050."



THE EREA VISION ON THE AIR TRANSPORTATION SYSTEM OF THE FUTURE

The European Commission is preparing the next Framework Programme "Horizon 2020" which is the main instrument for funding research in Europe. The part dedicated to the transport domain and, more specifically, the aeronautics, is under preparation based on three items: the Strategic Transport Technology Plan, the report of the High Level Group on Aviation Research, Flightpath 2050, and the Strategic Research and Innovation Agenda. In this open context of building the future of aviation, the research centres play a key role in providing their vision independently of any economic interest. Therefore, the association of the European Research Establishments in Aeronautics (EREA) has decided to provide to the European Commission and to the aeronautical community in general its vision of the 2050 Air Transport System (ATS) and consequently its recommendations on high priority research axes to be funded in order to pave the way towards 2050.

Following a first study providing a high level vision on the ATS 2050, EREA has conducted a second phase in order to go more deeply in the roadmap of promising break-through technologies. Therefore, the study has investigated five interdependent technological domains identified as priorities in the first phase and those being common to any scenario: the revolutionary aircraft configurations, the revolutionary on-board sub-systems, the revolutionary propulsion systems, the revolutionary airport and the automation issue of the ATS.

In accordance with challenges identified in Flightpath 2050, the EREA study investigates revolutionary ideas within the five major technological domains of the ATS with regard to the following list of objectives:

- Environmental impact: noise, chemical emissions, recycling.
- Passenger aspects: mobility choice, affordability, comfort.
- Safety: accident rate reduction.
- Industrial competitiveness (design and production methodologies).
- Performance: Increase of transportation capacity / performance.

The EREA study provides here its vision of the ATS 2050 and, consequently, its recommendations on high priority research axes to be funded in order to pave the way towards 2050. These recommendations are given through a list of promising technologies



and concepts to be investigated in the major technical domains of the ATS; to include the vehicle configurations, the propulsion systems, the airport, the automation issue and the on-board sub-systems. These promising technologies are associated with a roadmap for each of the technical challenges to face until 2050.

Several workshops have been organized on the 5 domains, involving more than 30 experts from the EREA REs. The kick-off and final meetings were open to European Commission representatives.

The results of this study will be officially presented to the EREA Board Members on 21 December. A workshop will be organized at the beginning of 2012 to further disseminate the results to the ACARE stakeholders.

This study is co-funded by EREA and participating REs involved: CIRA, DLR, ILOT, INCAS, INTA, NLR, and ONERA.



CAREER DEVELOPMENT AND MOBILITY OF RESEARCHERS

The career development and mobility of Researchers has been identified as one of the pillars of the European Research Area established in 2000 to structure the European Research Policy. As a consequence, a great number of policies and programmes fostering free mobility of researchers and knowledge within Europe have been launched over the last 10 years.

As a result of the European Commission strategy in this respect, measures and initiatives on mobility have been put in place. It is worth mentioning some examples of this active role played by the EC, such as FP7 People Programme (Marie Curie actions), publication of the European Charter for Researchers, adoption of a directive on Scientific Visa, establishment of degree standards (Bologna process) or information services such as ERA-MORE or EROAXESS.

In line with this strategy, EREA has also had an active role contributing to the achievement of free mobility of researchers and knowledge within Europe.

The EREA Board has been highly concerned about the exchange of personnel among its members and has promoted several actions in this direction.

On September 2008 the European Charter for Researchers was signed by all EREA members in the presence of Commissioner Potocnik. The cover letter stated as follows:

“We strongly believe that our researchers are by far our most valuable asset and that our ability to offer them attractive careers and job conditions within our aeronautical research organisations and to foster mobility between them is key to the success of ERA and EREA, i.e. to the development of a knowledge based society, and to the enhancement of European aeronautical industry competitiveness.”

Within EREA, mobility was defined as a strategy to:

- Strengthen links among EREA members, improving the reciprocal knowledge through exchange of personnel.
- Facilitate the definition of common projects (joint programming)



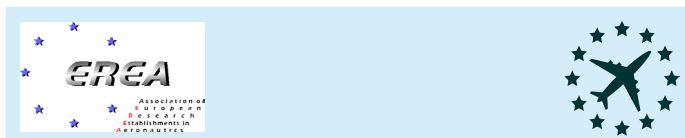
and transfer of technology and knowledge.

- Increase the competitiveness improving both the integrated EREA Research Establishments' capabilities and researchers' competences.

The existence of common activities and the will to cooperate and collaborate is an absolute need for this process. It has been shown that within common activities every partner gets direct benefit through its participation and that any constraint is overcome.

To reinforce measures focused on mobility of researchers, at the EREA Board meeting of 9th December 2008, a proposal was made and agreed to set up an EREA grant for supporting mobility between our REs. The agreed proposal was to award the sending RE with a bonus of 1,000 € per month per researcher for a maximum period of 3 months. It was envisaged for 2009 that there would be around two sets of 5 exchanges of 3 months, resulting in a maximum EREA grant of 30,000 €.

Since then, several of our organisations have profited from this grant and researchers from DLR, ONERA, VZLU and FOI have had the opportunity to work together and share experience in common technologies, projects and programmes.



EREA IN NEW ACARE

At the Aerodays 2011 in Madrid the High Level Group on Aviation Research published, under the leadership of Commissioners Kallas and Geoghegan-Quinn, the new Vision for Aviation research and innovation: Flightpath 2050. The Kick-Off of the new Advisory Council for Aviation Research and Innovation in Europe (ACARE) took place at Le Bourget, following the recommendations from Flightpath 2050. The ACARE general assembly, in which EREA is represented by DLR, NLR and ONERA Board members, approved the Terms of Reference and

the working structure in order to prepare the Strategic Research and Innovation Agenda for Aviation.

Apart from three standing Groups (Monitoring, Communication and Member States) 5 SRIA working groups were setup, according to the challenges outlined in Flightpath 2050. About 32 EREA experts are contributing to the work of all ACARE working groups. Furthermore, the Working Group 5 on Prioritising Research, test capabilities and education is co-lead by EREA and Universities, in order to provide substantial contributions to the future organisation of European aviation research, research and testing facilities and education of appropriate work force as well.

This clearly shows the commitment of EREA and its members to continue their work and support for the elaboration and implementation of European Aviation Research and Innovation Strategies.

EREA RESULTS IN FP7 2011 CALLS

Aeronautics and Air Transport continue to be an important theme of the whole FP7 programme and as in previous Framework Programmes EREA still plays a relevant role in Research projects funded under FP7.

Currently, Transport (including Aeronautics) and Security thematic areas are the ones with a higher participation of EREA Research Establishments.

Aeronautics

Regarding Aeronautics, and as a result of the 4th call - Call FP7-AAT-2011-RTD1, EREA research establishments (RE) were involved in the following:

- 8 Level-1 funded projects, with three of these led by an EREA RE;
- 4 Level-2 funded projects;
- 6 CSA-SA funded projects, with one of these led by an EREA RE.

In the 4th call 30 Level-1 proposals were submitted and only 9 proposals were retained for funding. EREA RE have succeeded in 8 retained proposals. The largest participation belongs to DLR. Seven Level-1 proposals were in the reserve list, including 5 with EREA partners.

Excluding the reserve list, the general success rate for Level-1 proposals in 4th Call is about 30%; for EREA REs the overall success rate for Level-1 is about 45%.

EREA supported six Level-2 proposals submitted by European industry. Finally four of them have been funded. The massive

EREA RE participation has guaranteed their big representation in the winning proposals – LEMCOTEC, ESPOSA, SARISTU, ACTUATION 2015. All these winning proposals have four or more EREA REs in the consortium. The total amount of EC requested contribution is almost 20 M€ for EREA RE from a total EC contribution of 123 M€ to the Level 2 projects.

Regarding Coordination and Support Actions there were 9 successful proposals in the area of Support action, 6 of them with EREA RE participation.

EREA REs are also actively involved in the Clean Sky JTI, as Associate Members. There were three calls during year 2011 with successful proposals for VZLU, NLR and FOI.

Security

EREA also had high presence in the 4th Security call getting a total funding of 14,983,414 euros. This participation has been reinforced by the EREA Security Research Group (SRG), which activity has strengthened the collaboration between EREA members in Security related matters.

EREA had 18 winning proposals in the 4th call, out of 53 presented. That means a success ratio of 36% against the 20% average success rate of the total call.

In the Security call, the successful participation of FOI, involved in 10 of the 18 projects funded with EREA participation is worth mentioning. Also ONERA (FR), INTA (SP), VTT (FIN) and DLR (GE) have obtained funds from the 4th call of the Security Theme.

EREA IN IFAR

IFAR, the International Forum for Aviation Research, is a new international body for research organizations from all over the world. The primary purpose of IFAR is to connect these organizations, to enable information exchange on aviation research, to facilitate networking and partnerships amongst the members, and to coordinate views and recommendations for the members. Its activity will be focused on non-competitive research and global challenges such as emission, noise, safety, security and efficient aircraft operation.

A first summit meeting amongst primarily European actors in 2008 was followed by a similar event in 2010 where IFAR was formally founded. This year, a major international meeting, with participants from 21 aviation research organizations representing all the 12 EREA partners plus Australia, Canada, China, India, Japan, Russia, South Korea, Turkey, and the USA, was held in Paris, immediately prior to the air show in Le Bourget.

During this meeting in Château de Méry hosted by ONERA, Prof. Joachim Szodrich, as initiator of IFAR, was unanimously elected as IFAR chairman for a period of two years. In order to highlight the international character of IFAR, Dr. Jaiwon Shin, associate administrator for aeronautics of NASA, was elected as vice chair.



The vice chair serves as chair-elect and will therefore assume chairmanship at the 2013 summit.

The next IFAR summit will be held in 2012 with the aim to further integrate the IFAR members, to define additional research topics for common activities, and to propose further ways to increase scientific and technical debate within IFAR. EREA with its 12 member nations all being represented in IFAR will have a unique possibility to inform the rest of the aviation world of our current activities in Europe, e.g. specifying the technical objectives in the Strategic Research Agendas. Conversely, EREA will be well positioned to learn of technical, scientific, and societal aspects of aviation activities taking place in the world outside of Europe.

For more details on IFAR, please see the IFAR home page on: www.ifar.com

EREA Full Members

CIRA	Italy	INTA	Spain
DLR	Germany	NLR	Netherlands
FOI	Sweden	ONERA	France
ILOT	Poland	VZLU	Czech Republic
INCAS	Romania		

EREA Associated Members

VKI	Belgium
VTT	Finland

EREA Affiliate Members

AFIT	Poland
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