The Quarterly Bulletin of the
COUNCIL OF EUROPEAN AEROSPACE SOCIETIES
3AF– AIAE– AIDAA– DGLR– FSAE– FTF– HAES– NVvL– RAeS– SVFW
• GENERAL • AERONAUTICS • SPACE •
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Editorial

CEAS IS COURAGEOUSLY CONTINUING ITS CLIMB

In my observer's position, I bear witness to the continuous and significant progress accomplished within the space of two years only by the CEAS since the conversion of its statutes from Confederation into Council on 1st January 2007. As a matter of fact, it is more broadly known within Europe , it is admitted now by the main European institutions - EC, EASA, ASD, EDA, ESA - as an Association with which it is important to keep up close co-operation links, and it has clearly defined its objectives in the form of a "Deliverables' List" which constitutes a sort of Charter. This is the result of the continuous work of its Management Board, firmly led successively by Sir Colin Terry, President 2007 then Georges Bridel, President 2008. These two Past-Presidents deserve our warmest appreciation.

However, the CEAS is still far from having reached its cruise altitude! Will we be able to continue, or even accelerate, our climb? I believe the answer is "YES". Much remains to be done but the CEAS disposes of abundant talent in its diverse membership. As reported later, our President 2009, Prof. Dr Joachim Szodruch, being determined to maintain and accelerate the advance of CEAS, has set us challenging objectives for the coming months. We must meet the challenge!

Looking at the immediate future, we have to insist again on the absolute necessity to make of the Manchester Conference, 26 – 29 October 2009, an unquestionable success. I take advantage of this editorial to tell our readers that although the deadline for abstracts has now passed, the Organising Committee is still continuing to accept abstracts submitted on line www.ceas2009.org in the coming days.

Giving effect to a suggestion from Mr Jean-Paul Béchat whom I interviewed a few days after he received the CEAS Award (see pp. 6-8), I allow myself to encourage the Chairpersons of the Member Societies to express in the next Quarterly Bulletins their own wishes and views regarding the development of our Council. The time has come to start a real participative and interactive communication process.

Jean-Pierre Sanfourche

Jean-Pierre Sanfourche
Editor-in-Chief,
CEAS Quarterly Bulletin

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THE LIFE OF THE CEAS

General Assembly Meeting

Aéro-Club de France, Paris, 5 December 2008.

At 8 :30, the CEAS President, Dr Georges Bridel, opened the meeting and welcomed all participants. He presented the CEAS Annual Report 2008: see here below.

The 8th Meeting of the Board of Trustees

At 10:30, **Georges Bridel** welcomed all representatives. Then the different items of the agenda were reviewed in detail:

- The CEAS Account 2008 and Budget 2009, presented by **Dr Antonio Martin-Carrillo**, VP Finance. After having taken into consideration some small additional requests, the budget 2009 was approved.
- The New CEAS Member Societies recruitment process: **Dr Ulf Olsson**, VP Awards and Membership, reported on his action: no new Member for the time being, but hopes concerning Poland; besides, contacts with Russia are being taken, as well as with the Czech Republic.
- The preparation of the CEAS Air & Space Conference 2009 to be held in Manchester on 26-29 October was discussed for a long time and the need for a strong support from the Member Societies was again pointed out.
- The potential financial support from the European E-CAERO Frame Programme was reviewed. It was decided to enter again in contact with the European Commission in order to improve if possible the proposal presented to the CEAS.
- The Aeronautics Branch Status Report was presented by **Jean-Marc Garot**.
- Concerning the Space Branch, Dr **Wilhelm Kordulla** announced the imminent starting of the CEAS Space Journal creation process.

ELECTION OF THE OFFICERS:

- **President:** **Georges Bridel** stepped down as President. He has been replaced by Prof. Dr **Joachim Szodruch** whose appointment was approved unanimously by the Board.
- **Vice-Presidents:** Dr **Ulf Olsson** has left as trustee for FTF. Nominated for this Society are: Mr **Kaj Lundahl** and Mr **Petter Krus**.

All VPs will be nominated on the occasion of the next Board Meeting, Madrid, 24 April.

- **Director General:** Prof. Dr **Leandro B. Fernández Sáinz** will continue.
- **Branch Chairmen:** **Alain Garcia** stepped down from Branch Chief Aeronautics on his own wish; the Board thanked him very much for his very engaged work in the Branch supporting CEAS goals.

Constantinos Stavrinidis remains as Chairman of the Space Branch.

François Gayet, Secretary General of the ASD, will henceforth participate in the Board Meetings as 3AF Representative.

Conclusion

Georges Bridel again thanked the Board for its support over the year 2008 and wished every success to the new President, **Joachim Szodruch**. In turn **Joachim Szodruch** thanked and congratulated Georges Bridel for his excellent work and assured the Board that he would continue with determination the progress of the CEAS.

CEAS Annual Report 2008

Georges Bridel

«We had a good continuation of most of the CEAS projects within the new Council structures installed two years ago. Achieving the final result of several projects needs sometimes more time and effort than anticipated, but eventually noticeable progress has been made.

On 29 November 2007 in London, Dr **Georges Bridel** from the SVFW, the Swiss association, was elected to continue the programme established by the former Board under the leadership of Sir Colin Terry. A new management was elected from the Spanish association AIAE with **Leandro Fernández-Sáinz** as General Director and Antonio Martin-Carrillo for the finances.

The former VP for external relations, **Jean-Michel Contant** resigned. From the RAeS **Andrew Little** has left for another employment. Both were warmly thanked for the tremendous effort they both delivered during so many years for CEAS and gifts were handed over during the Council dinner offered by the RAeS at Hamilton place.

Board meetings have taken place in London, Athens(18 April), Cologne(5 September) and on 5 December in Paris. At all places the CEAS Board has been well received and

greatly supported by the local hosts. Athens was the inaugural meeting for our Greek friends and we were hosted in an exemplary way. In Cologne we were given the opportunity to visit at DLR the European Astronaut Centre of ESA and the cryogenic European Transonic Windtunnel (ETW).
During the Athens meeting the CEAS terms of reference were developed and refined, then confirmed some weeks later. The pending MOU between DLR, ESA and ONERA for scientific Space and Aeronautics Journals heading the logo of CEAS has been finalised during the year and signed just prior to the Council Meeting in Paris.
In parallel, the Aeronautics Branch under the leadership of Alain Garcia proposes a technical Aeronautical Journal where the RAeS gratefully offers its support for its edition.

Dates and location of the next CEAS Conference 2009 to be held in Manchester were communicated by our colleagues from the RAeS. The final decision is September and a preparatory meeting between **Michael Steeden**, President Elect of the RAeS, and **Leandro Fernández** was held in Berlin at the ILA exhibition. Some uncertainties concerning participation and financing are appearing not, unexpected, with emergence of the economic crisis. The congress has to be carefully tailored in order to avoid major risks. The potential financial support from the European E-CAERO Frame Programme will not decisively contribute to the congress due to the magnitude of its cost.
The finances at the end of 2008 present some reserves in the order of some 14,000 Euro but cannot cover major expenditures such as a permanent secretariat. CEAS still must live on the Member Societies contributions and own income will only be generated through Congress benefits, for instance. Some hope is given to a future EU contribution (not E-CAERO).
The Branches have been reporting on their activities, in particular the population of the Technical Committees and their respective organisation. This still requires particular efforts by the Member Societies.
The bid for EU financial support through FP7 E-CAERO was brought forward, however not organised in a transparent way by the organising committee in Barcelona. There is a natural competition CEAS is facing. But we have to go along in a co-operative way bearing in mind that CEAS is the only representative pan-European aerospace association to support the goal of knowledge dissemination.
International relations concentrated on the adherence of other European countries and their respective associations and the contacts and discussions are continuing with Poland, Czech Republic, Russia and others. The President has met the director of TsAGI in August in Moscow and there is a discussion how to involve Russia both in Space and Aeronautics.
2008 finally was an eventful year and continuous progress has been made.»

Dr Georges Bridel
President of CEAS in 2008
5 December 2008

Personality Interview
Joachim SZODRUCH

CQB – Generally speaking, how do you appreciate the current trends of the CEAS since its conversion in January 2007 from a Confederation status into a Council status?

It is now something like 10 years that I am working in the CEAS Board and it certainly is a great pleasure to see the rapid advancements we made recently. As an engineer I would like to compare our situation with the take-off process of an aircraft. Even with full throttle it takes a while to accelerate the heavy masses but as you pick up speed you soon lift off and then simply enjoy the flight. We have seen lift off two years ago, however, we are currently only in the initial climb phase. That means we are safely in the air but we still need quite a powerful engagement of everybody before we can enjoy the cruise flight. What does that mean exactly? We formulated goals for us in the Board and we promised certain

Prof. Dr Joachim Szodruch has been elected to the presidency of the CEAS for the year 2009.

deliverables for all our CEAS members. We have achieved many of them but of course not everything is in operation yet. Overall I strongly believe that the past two years have been a tremendous success story. After all we are the only real Aeronautics and Space Society in Europe, we are strongly supported by our members, we are recognised globally, and we are respected at home with all the stakeholders.
This achievement of course is due to the support of all our members, our staff in the home offices, the Branches and the Board. But there is one person I would like to mention specifically. Dr. Georges Bridel has been our President in the last year and he certainly has generated some extra lift for our CEAS "aircraft" propelling us further into the air. His strong engagement, his many extra working hours for the cause of CEAS, his leadership and the motivation he gave to all of us during the past year is a major part of the success we enjoyed in 2008. Thank you very much Georges for your outstanding Presidency!

CQB – Every two years, The CEAS holds a co-called "CEAS Air & Space Conference"essentially dealing with technical matters. I personally feel it would be highly desirable to organise in the interval, every two years also, a CEAS Conference, Public Policy & Strategy oriented , maybe in association with the ASD. What is your opinion on this subject?

From the very beginning we in CEAS had the vision to engage ourselves not only in purely technical matters but in today's environment you have to communicate what you are doing and you have to discuss how you would like to shape the future specifically also to policy makers and in general to all of your stakeholders. Thus a conference on Policy and Strategy matters is a must and has been already laid down in our deliverables we all agreed on. As a matter of fact we already once organised an event exactly like that in Brussels also together with other organisations like ASD.
So the answer to your question is a clear "yes". We should start in the second half of this year to organise such a conference preferably in Brussels in 2010 and of course it would be very wise and desirable if an organisation like ASD would support our ambitious goals.

CQB – Member Societies of CEAS hold regularly thematic conferences with the official support from the CEAS. Would it not be possible to systematically apply this philosophy to all important technical events organised by the different Member Societies?

It is very well known in the engineering and scientific community that one important goal of CEAS is to promote and support know-how transfer and information exchange as well as stimulating personal networks. One way of doing that is by organising conferences, symposia, workshops or other forms of bringing people together. Now, this can be done on a national basis, e.g. one member society is organising that themselves asking for CEAS endorsement and possibly further support. Of course we also have numerous examples of CEAS symposia for example which are initiated and organised on a European basis. However, one decides to organise "his conference" and in what way he communicates it within CEAS we can offer an easy access for everybody to make his meeting public and to invite a wider European participation. That is part of the CEAS goals and we are practising it for a long time, however, let us encourage everybody to go more European! The CEAS Bulletin of course plays a major role in communicating our activities and looks at the latest issue how many interesting meetings CEAS can offer. It is a challenge and an opportunity to all of us to utilize our CEAS cooperation and the CEAS Bulletin even to a larger extent in the future.

CQB – Could you present the new CEAS Scientific Journals which will replace "Aerospace Science and Technology" (AST)

Nobody I believe argues against the fact that we need high quality Scientific Journals which are "made in Europe". Our enormous expertise in aerospace, our wide engineering and scientific competence and the need to transfer know-how as well as create added value by publishing refereed papers is for CEAS the motivation to engage ourselves in this area. In the past we had as an example AST (Aerospace Science and Technolgy)) as a typical Scientific Journal. Now with the support of DLR (German Aerospace Centre), ESA (European Space Agency) and ONERA (French Aerospace Research Agency) we will create two entirely new Journals, one devoted to Space and the other to publications in the field of Aeronautics. The three organisations arranged for a MoU with CEAS guaranteeing not only the full support of CEAS but also offering all the benefits for CEAS members.
Together we will arrange for Editors-in-Chief, for an Editorial Board and of course we will try to recruit as many as possible referees also from our CEAS community or the Technical Committees we have established. The exact set up of how we will make sure that we have a common Editors-in-Chief / Editing Managers view for both Journals is just under discussion.
Presently we are discussing the details among the main actors on our side as well as with the future publisher. This concerns the content, the format, the lay-out, the electronic versions, the distribution of work, the costs, the benefits to CEAS members and among many other items of course also the timing. We are convinced that in spring we will be ready to report further details and that we all will see next year two all new CEAS publications. This will be a major step for CEAS and for the aerospace community in Europe and abroad.

CQB – Do you consider any other Technical Publications?
From the very beginning of our discussions in the Board we had the vision, especially driven forward by the Aeronautical Branch, to create a publication, more like a magazine, to communicate news, technical achievements, engineering articles, etc. which are of interest to the general aeronautical community and possibly beyond. This is of course on a different level as our future refereed journals. We are still discussing details either having special issues of CEAS Member Societies own magazines or, with adequate financial support create our own Technical Magazine. As an example we are considering the possiblity to publish a special edition of the RAeS publication "The Aeronautical Journal" which would be devoted to specific CEAS technical articles; the title of this special issue would be "Aviation Technology Europe".

CQB – What are the perspectives regarding the cooperation and partnership with European and international Aerospace Societies?
As pointed out earlier CEAS is already Europe's number one Society. However, with the enlargement of the European Union and the increasing industrial and research interest in aeronautics and space over the past years there are a number of Societies in various countries which seem to be very interesting partners for CEAS in the future. We are proud to mention that today with the latest admission of Greece and Finland we have already 10 strong Member Societies. Yet, it is of course one of the major goals to include further important Societies and enlarge our partnership, our network and possibly our competences. The importance of this topic can be easily seen from the fact that we appointed from the very beginning a Vice President for Awards and Memberships which presently is our colleague from Sweden Ulf Olsson. In each of the Council meetings we receive a report on recent developments and we are actually in contact with the Czech, the Polish and the Russian Societies. Others have been approached and we will report in due time about these latest development in making CEAS a truly pan-European Society. But let me also emphasise our intent to cooperate in specific cases also on a global basis. Again this topic is of great importance for us and also here from the very beginning we appointed a Vice President for Publication and International Affairs. Furthermore in order to clarify exactly our intent and goals in the international cooperation we agreed during the last Council meeting in December on some basic rules.
What is well known and has been reported about in this Bulletin are our MoU's with ICAS and with the AIAA. In the end of 2007 we also signed an agreement with our colleagues from China, the CSAS. Furthermore the Council already agreed in the last year to cooperate more with the Korean Society KSASS and to sign a MoU which presently is in the process of discussion with our Korean colleagues.
We will observe carefully the European and international developments concerning further partnerships and cooperation and we strongly believe that we can offer new services and create exciting opportunities to all our members.

CQB – What are the main objectives you wish to reach during your Presidency and the main messages you want to address?
CEAS has formulated very ambitious goals and deliverables to our members which cannot be achieved over a period of one year only. Considering also that we all work on a voluntary basis I rather would like to set goals for this year which are achievable and bring the most value for all of us. Without consideration of any priorities I would like to realise in 2009 the following issues:
1) The CEAS 2009 Air and Space Conference in Manchester is the major event in our community and must be as successful as our first one. We all will work towards that goal and I kindly ask everybody for his full support.

2) As pointed out above the introduction of our two new Aeronautical and Space Journals is something we will have to achieve this year as well.

3) Reach agreement in the Board on an increased support for students and young professionals with regard to our conference, symposia, etc. A vision of mine is still to arrange a student exchange within Europe through a CEAS process / mechanism.

4) Finalising our organisation specifically also concerning the various Technical Committees

5) Enlarging our perimeter by adding two new European Aerospace Societies to our CEAS Membership

6) Preparing for our second Policy & Strategy Conference in 2010 in Brussels

Of course there are numerous other important issues in organisation, administration or external relations. Our next Board meeting will address the work plan in detail. However, there is one general message I would like to finish with:
CEAS has been supported by all of you over the past years and I want to thank you personally for your engagement. For making us stronger and more member oriented with increased visibility within the aeronautics and space community including the European Commission we need your help specifically also in this critical year. I know it might be difficult for many of you but let us not slow down our efforts and let us gradually continue to build "our Europe of Aerospace Societies", you are needed!!. CEAS is our, is your number one Aeronautics and Space Society.

THE LIFE OF THE CEAS

The CEAS Award Ceremony

Aéro-Club de France,Paris,4 december 2008 evening

The CEAS Award has been created in order to recognize persons who have made outstanding contributions to aerospace in Europe.
The Award for this year was presented to Mr Jean-Paul Béchat, former Chairman and CEO of SAFRAN, by Georges Bridel, President of the CEAS, on 4 December 2008 evening in the reception hall of the Aéro-Club de France, Paris.

Mr Jean-Paul Béchat warmly thanked the CEAS for having distinguished him.

4 December 2008: Georges Bridel, President of the CEAS, is handing over the CEAS medal to Mr Jean-Paul Béchat.

In his speech, **Georges Bridel** described the remarkable professional career of Mr Béchat, pointing out that his major achievement was the successful transformation of SNECMA, an engine-only company, into an international high-technology group, SAFRAN, resulting from its merging with SAGEM. This new industrial pole, which achieves competence and size of scale necessary to be competitive on the world market, comprises four core businesses: aerospace propulsion, aircraft equipment, defence and security, communications.

PERSONALITY INTERVIEW: Jean-Pierre SANFOURCHE, Editor-in- Chief of the CEAS Quarterly Bulletin, has interviewed Jean-Paul BÉCHAT.

Could you first in a few words express the feelings of the CEAS Award Ceremony of 4 December 2008 in Paris inspired in you?

Having devoted my whole career to the Aerospace sector- 44 years in total- I must say that I considered the attribution of the Council of European Aerospace Societies (CEAS) Award as a great honour and I that I experienced a strong feeling of satisfaction at the time when I received from the hands of Georges Bridel , chairman of the CEAS, this wonderful medal which had been manufactured in Florence. I appreciate this mark of gratitude all the better because it comes from a European Aerospace Association.

What is your present perception of the CEAS?

The CEAS was a Confederation at its creation about twenty years ago and just recently became a Council, on 1st January 2007. This evolution from a Club' statute to a Council's one obviously will contribute to give it more power, more efficacy, allowing it to progressively reach its ambitious objectives, viz. "*to add value at a European level to the wide range of services provided by the constituent Member Societies, allowing for greater dialogue between the latter and the European Institutions, industry, governments and academia*". I know and I fully approve the "Deliverables List" which was defined in April 2008 in Athens: Knowledge Transfer, High-Level European Conferences, Young People's Focus, Publications, Relationships at a European Level, Professional Recognition Worldwide, Honours and Awards. But for the time being, it seems to me that the CEAS such as it is defined now is not perceived by European industry and institutions yet.
However January 2007 is quite a recent date and I am sure

that significant improvements and tangible achievements can be observed in a near future.

It is quite obvious that this new organisation has to conduct many initiatives with a view to rapidly making its influence effective in the European Aerospace World: how would you advise us to establish a priority ranking?

How to perform a real scale's change? This a difficult question and I know it is much easier to give advices than to conduct realisations, but basing my thoughts upon industry experience, I allow myself to provide the CEAS Management Board with some suggestions:

- to ask all Member Societies chairpersons to clearly and officially express their wishes and to propose a realistic Action Plan aimed at achieving them;
- at CEAS management level, to derive from these Action Plans an Integrated Business Plan defining a planning of actions together with the corresponding necessary financial resources;
- to define the financial resources gathering process - resources coming from each Member Society, from European Institutions, from CEAS Conferences, from advertisements, etc. -.

In fact what I am suggesting consists in conducting a participative approach in order to increase the probability of getting the strongest possible support from all parties concerned. A business plan resulting from a decentralized and democratic work, officially ratified by all parties concerned, will have better chance of succeeding than a business plan imposed by the top management.

Do you think that the CEAS should mainly concentrate its activities on technology, or deal not only with technology but also with public policy and strategy considerations?

The ASD - Aerospace and Defence Industries Association of Europe – has been created in particular o to define the position of European industry as regards the main political issues in the present. So, I recommend that the CEAS focuses on Science & Technology, through precisely its "Technical Committees". The CEAS has an important role to play for extending and possibly backing up the conclusions of specialized working groups such as ACARE, SESAR ...
If it is the intention of the CEAS management to also deal with Public Policy subjects, I strongly advise to do that together with the ASD.

Concerning the Technical Committees, how would you conceive them?

Excellent question! Two ways are possible:(i) you create working groups putting together different high-level experts chosen within Europe, independently of the committees already existing in the Member Societies;(ii) you set up for each discipline – aerodynamics, propulsion, avionics ...– a CEAS working group by putting together the chairpersons of the corresponding national Technical Committees. The solution (i) corresponds to an "integrated approach" whilst the solution (ii) corresponds to a confederation approach, respecting the national associations. Clearly I give my preference to the way (ii). Why? Because instead of generating conflicts, the CEAS Technical Committees would contribute to promote convergences of points of view and positions between the different associations and thus to create a European spirit.

At the CEAS 2009 Conference- Manchester, 26-29 0ctober -, a European Young Aerospace Professional Forum will be launched. What the wishes you would like to formulate as regards this initiative?

At a time when the brilliant students prefer to orientate themselves towards management, finance and communication rather than towards the engineer's profession, this initiative arrives opportunely and I express my strongest wishes for its full success. May I just bear the attention of the organisers on the fact that this very large subject should be covered by taking care of the necessity to establish distinctions between the different aerospace domains and to concentrate the efforts on certain well specific areas.

How do you see the education & training of European aerospace engineers at a 2020 time horizon? A pure continuation of the present national cursus, or a cursus begun in the latter but mandatorily complemented by a one-year (or two-year) course followed in a European Aerospace Higher School?

At mid-term horizon, I do not see a European Aerospace Higher School yet. Of course the engineer students will have to complete their education acquired in their nation by a rather long course followed outside. But the time has not come yet when our best students will prefer to choose systematically another European School rather than one of the prestigious Institutes of the United States (MIT, Caltech, Stanford...). I am myself graduated from Stanford. Your vision of a mixed cursus of education, national and international, is of great interest, but for the international part, USA, Russia, and why not tomorrow China or India can be very profitable choices.

At a time when the aerospace managers in Europe have to face the consequences of the World financial crisis, how do you see the near-term and mid-term futures?

Of course very difficult, but finally our sector will resist. It is clear that the coming falling off of the World economy will involve significant delays in the orders of civil aircraft by the Air Companies but it is my profound conviction that the increase of air transport will continue and that as a consequence, the deliveries of the aeronautical industry will rapidly

recover their before-crisis level: 2010, 2011... I don't know precisely of course, but rather soon.
In the military sector, the market is dictated by the Governments and the possible negative trends are due to more severe budgetary constraints.
Concerning space, the last ESA Council held at Ministerial level at the end of November 2008 has clearly confirmed the high priority attributed to the space activities and particularly to the use of space tools for the Earth monitoring: in Europe, the financial crisis has so far no impact on the Space budgets. In fact, space will have to play a higher and higher role in the understanding of climate change and in all environmental related aspects.

Military space is also going to know important developments.
In brief, I am confident in the future of the European aerospace activity sector in spite of the financial crisis.

As a conclusion of our discussion, I would like to convey to the CEAS Management Board and particularly to its President, my best wishes of success because all initiative aiming at leading to MORE EUROPE are worth being strongly encouraged.

THE CAREER OF JEAN-PAUL BECHAT, IN BRIEF

- Born in 1942
- Ecole Polytechnique, Year 1962
- 1965 – 1969: SNECMA, Production Engineer(in particular, the Concorde exhaust system)
- 1969 – 1971: Stanford University (USA), Master of Engineering
- 1971 – 1974: SNECMA, Production Engineer
- 1974 – 1978: Hispano – Suiza, Production Manager
- 1978 – 1982: SNECMA, Deputy Technical Manager, then Human Relations Manager
- 1982 – 1985: Hispano – Suiza, Industrial Director, then Deputy CEO
- 1985 – 1994: Messier – Bugatti, Deputy CEO, then Chairman and CEO
- 1994 – 1996: SNPE, Chairman and CEO
- 1996 – 2007: SNECMA then SAFRAN, Chairman and CEO

Jean-Paul Béchat is:
- *Honorary Fellow of the Royal Aeronautical Society*
- *Fellow of the Association Aéronautique et Astronautique de France*
- *Member of the International Academy of Astronautics*

He is Officer of the 'Légion d'Honneur' and Officer of the National Order of Merit.

NURTERING SCIENTIFIC AND ENGINEERING EXCELLENCE – THE EADS EXPERTS POLICY

FOR SEVERAL YEARS NOW, INNOVATION HAS BEEN AT THE HEART OF EADS' STRATEGIC POLICY. AND NO REFERENCE TO INNOVATION WOULD BE COMPLETE WITHOUT MENTIONING THE SCIENTISTS WHO PROVIDE THEIR EXPERTISE DAY IN, DAY OUT, ALLOWING THE TERM 'INNOVATION' TO BECOME A REALITY WITHIN THE GROUP. HOW CAN WE AVOID LOSING THESE EXPERTS WHEN PREVIOUSLY THEY HAVE OFTEN PREFERRED MORE ATTRACTIVE CAREERS IN MANAGEMENT? THIS ARTICLE, EXTRACTED FROM THE EADS IN-HOUSE "FORUM" TAKES A CLOSER LOOK AT EADS' EXPERTS POLICY WHICH, IN JUST THREE YEARS, HAS MANAGED TO PROMOTE THE TRUE VALUE OF A SCIENTIFIC CAREER

Lots of people have good ideas, but it is not easy to really carry ideas through to a final product. In this context, it is our task as Experts to have these new ideas and to push them forward for the benefit of our company. In addition to being visible to people inside and outside EADS, I see it as a major task to inspire young people to work in the space industry, says Philipp Behruzi who is an Expert in hydraulics at EADS Astrium Space Transportation. In 2005, he became one of the Experts named by the Experts Policy, which EADS launched with the aim of promoting scientists and thereby trying to reverse the recent trend of them choosing careers in management. To this end, as EADS CEO Louis Gallois explains, "We want to recognise these Experts in the same way as we do the Manager career path because technology, among other things, constitutes the essence of our company." Different levels in the career path were therefore introduced: Expert, Senior Expert and Executive Expert. Today, the network has 1,100 Experts throughout the Group. Every year, they meet at Experts Days within their Division and Group-wide in order to develop their network and share best practices in a given field.

A portal for Experts

Since the Experts Policy was introduced, initiatives to push scientists to the forefront have multiplied. For example, on 1 October, EADS' Experts got their hands on the first brochure devoted to them. In particular, it contains a leaflet cal-

Chief Technical Officer Jean Botti at the EADS experts Day in October 2008, where topics under discussion were international collaboration and transfer of knowledge.

led 'Tips for managers', which reminds managers of the role the Experts play and of the need to include them in their plans of action. The brochure also contains the 'Toolbox for Experts' which, like a handbook, includes useful information about communication and negotiating, innovation, intellectual property and knowledge management. On the same day, EADS' first official community site also went on line: the Experts portal, to which only Experts, Chief Technical Officers and some top managers have access. The site contains the list of all the Experts per domain of expertise, of which there are 20 at EADS. It features a forum in which the latest news about Experts can be posted and the latest documents put on line. Each expert can notify others of new online articles which are all stocked in the 'Cyber library'.
Today, the aim is to continue uniting the Experts network, to encourage communications between them so that they form a dynamic and active community, but also to step up the role played by management in identifying and developing future Experts. There is no doubt that this policy is an attractive factor for young graduate engineers. But it's down to EADS to draw in the best ones and to develop them in one particular field of expertise. This is a real challenge as it is increasingly difficult to convince young graduates to spend ten years in a given discipline. In future, the portfolio of expertise will have to be managed according to the Group's needs for key competencies. The introduction of key competence management planning in keeping with the Research & Technology strategy should make things easier. Lastly, as Alain Hensgen, Vice President Learning & Competency and in charge of the Experts Policy, explains: "It is our job to strengthen the role played by our Experts at an early stage so that instead of 'fire-fighting', they are involved in an organised decision-making process early on in our development programmes." That way, we will soon be able to confirm the words addressed by Louis Gallois to the Experts: "The Group-wide Experts campaign, as a competitive advantage, is our mission for the future and we are on our way to making it a reality."

THREE EXECUTIVE EXPERTS NOMINATED IN 2008

- **Alexander Engleder**, German, Eurocopter, Vice President Design and Stress Air Frame and Equipment
- **Enrique Martín Martínez**, Spanish, Military Transport Aircraft, Executive Expert in Integration and Control Systems
- **Colin Hamilton**, British, EADS Defence & Security/ Defence Electronics, Executive Expert in Electronic Warfare Systems

ALAIN HENSGEN, VICE PRESIDENT LEARNING & COMPETENCY,WHO HAS BEEN IN CHARGE OF THE EXPERTS POLICY SINCE 2005,
TELLS US MORE ABOUT...

...WHY THE GROUP INTRODUCED AN EXPERTS POLICY:

- **Alain Hensgen:** Several discussions held in 2005 between Human Resources and the Engineering departments (Chief Technical Officer – CTO) brought to light the fact that expertise was becoming increasingly scarce within the company. There were several reasons for that, which include more attractive careers in management, the unfavourable population pyramid and, above all, needs that were not covered in major development programmes. Furthermore, faster product development cycles and employee job changes made it more difficult for people to devote themselves to a given discipline on a long-term basis (i.e. approximately ten years).

...HOW THE EXPERTS POLICY HAS BENEFITTED EADS:

AH: Since 2005, the Experts Policy has offered employees a true career path in the scientific and technical fields of our industry. Remember that it is possible to work up to Executive Expert level, which corresponds to Senior Executive level. But this recognition is only one aspect of the policy. It also involves duties, such as contributing to innovation, improving, sharing and protecting our knowledge, and aiding management in the decision-making process. What's

more, expertise-sharing between Divisions has grown and we have seen an increase in the number of patents.

...THE CONTINUATION OF THE POLICY:

AH: Since 2007, I have run a body called the Experts Committee, where we have a CTO representative and a HR representative from each Division. The Committee meets every quarter and works to secure the community of Experts, both in terms of quality and quantity. It also makes sure that the policy is applied in the same way within the different Divisions, and we seek to share best practices concerning the way the community is managed.

LEARN FROM THE EXPERTS' BEST PRACTICES!

HOW DO THE EXPERTS DEVELOP THEIR NETWORK?

At EADS:
The EADS Experts' days bring together once a year all Senior and Executive Experts that have taken part in the training programme. This two-day seminar is based on one specific topic (knowledge management, partnerships, etc.), and internal as well as external experts come to share their knowledge. The Experts use the 'message in a bottle' concept, which consists of organising market places in order to connect people with problems/issues and colleagues with solutions. This is a simple, quick and cost-effective way to share best practices. Of course, they can also have a look at the Experts portal and directly contact experts in their field.

HOW DO THE EXPERTS TURN AN INNOVATION INTO A SUCCESS?

At EADS Astrium:
The 'innovation pipeline' creates opportunities to design and sell new products based on positioning on new markets and utilisation of disruptive technologies. Ideas are collected through workshops, calls for suggestions and brainstorming and then selected by an innovation board committee. In 2007, this generated 149 new ideas, and 35 projects have been granted financial support.

HOW CAN EXPERTS CONTRIBUTE TO KNOWLEDGE MANAGEMENT?

At Eurocopter:
Three-hour 'instructive conferences' are organised regularly, where internal and external Experts are invited to share their knowledge on a specific technical and common interest topic, for example advanced composite materials or helicopter system testing. In exchange, the Experts who give these conferences are offered the chance to participate in an external conference.

At EADS Defence & Security:
At Military Air Systems, Experts who are leaving share their expertise and experience with their successors by creating comprehensive knowledge handbooks. Furthermore, Experts from different departments are working together in 'Communities of Practice', where they are offered free resources to learn, they can extend and foster contacts, and develop new know-how that will be transformed into products, projects or processes.

HOW IS KNOWLEDGE TRANSFERRED WHEN AN EXPERT RETIRES?

At Airbus:
EXpertise TRAnsfer (EXTRA) proposes an effective support through the building – for each specific case – of a dedicated pragmatic action plan. The approach includes the knowledge 'inheritors' in the process. The action plans do not aim at 'setting in stone' the result of an entire career, but aim at ensuring that the right knowledge is transferred to the right person using the relevant methods before the departure or team transfer.

You can find more information at
www.eads.com/progress

CONTACTS:
- **Sabina Gerhardinger**, Junior Programme Manager (PROGRESS)
- **Lidija Vodusek**, head of Training and Development Programmes.

This article, extracted from forum n° 58, December 2008, is published here with the kind authorization of EADS.

UNWRAPPING THE DEFENCE PACKAGE

Bill Giles, Chairman
ASD External Affairs Commission

Step back five years, to the time when EU Defence Ministers approved the creation of the European Defence Agency, under Member State control. Few would have imagined then that, by mid 2006, EDA would have put in place a voluntary intergovernmental regime for competition in defence procurement. But fewer still would have foreseen that within five years we would be passing into law two defence-specific directives. The original texts proposed by the European Commission in December 2007 have been reviewed and amended by the Member States in the European Council and by the European Parliament. Compromise texts have now been finally approved in a first reading by the Parliament and will be transposed into national law by 2011/12. For governments and an industry accustomed to believe that the final authority in all defence equipment matters lies in national capitals, these directives represent something of a revolution. In this rapidly changing environment, ASD is pleased to have been regularly consulted by the European Commission during the drafting of the directives, and by the European Parliament where the Association's President spoke to a hearing in June 2008. The following paragraphs aim to summarise some of the main lines of the directives and ASD's conclusions on the final texts.

The Defence and Security Procurement Directive

This directive concerns, first, defence procurements not falling within the 'essential security interests' exemption under Treaty Article 296. In a separate document(1), the Commission has set out its interpretation of the meaning of this exemption, stressing that its use must be justified on a case by case basis with reference to the essential security interest concerned and the relevance of the method of procurement to that interest.

The directive also concerns non-military security-related procurements, many of which have hitherto been exempted from the general EU public procurement rules. The value threshold above which the directive applies in both defence and security is € 412K.

To facilitate the use of EU competitive public procurement law and a more restricted application of the Article 296 exemption, the directive seeks to adapt the standard procurement rules to the specificities of defence and security markets. It provides for use of the negotiated procedure as the normal method of doing business, and includes arrangements for appeal and judicial legal redress under the ultimate authority of the European Court of Justice. It recognises the need to ensure security of information as well as the need for security of supply, where Member States are free to determine their requirements (providing these are not unjustifiably discriminatory within the EU). The directive also allows Member States, where they so wish, to require that up to 30% by value of a contract be awarded through sub-contract competition conducted on a non-discriminatory basis.

The directive contains a number of exclusions. It is not applicable to urgent operational requirements or to intelligence-related procurements. Nor does it apply to programmes managed by international organisations (eg OCCAR, NATO), or to co-operative programmes with non-EU nations. Co-operative programmes between EU Member States are excluded providing they have R&D content.

R&D contracts themselves are also excluded, on the same terms as those in the civil procurement directive; and certain contracts may also be exempted by virtue of exclusive intellectual property rights or for narrowly defined 'technical reasons'. However, ASD remains concerned that these rules overlook the fundamental fact of defence procurement that new products are designed at national taxpayers' expense for that nation's Armed Forces. To apply the logic of EU internal market rules which rigidly divide R&D and production phases, so requiring either international competition for R&D work or international competition for production work resulting from national R&D investment, is to reduce the incentives for defence capability investment by both the public and private sectors. Under these rules, will governments invest in R&D if the resultant production for their Armed Forces may be conducted anywhere? Will companies invest in R&D if they cannot be confident of winning the resultant production? Such a philosophy has never been applied in defence markets. Furthermore, it does not provide a satisfactory business model for industry.

(1). Interpretative Communication COM(2006)779

The directive appears therefore to be a mixed blessing, not meeting all its intended objectives, which include the strengthening of Europe's defence technological and industrial base. While it will encourage cross-border competition and trade and improve transparency in public defence and security markets, discouragement of investment in technologies for the future will not strengthen industry's capacity to meet tomorrow's requirements, nor maximise industry's contribution to Europe's security and defence capabilities.

The Intra-Community Transfers Directive

This directive has an unambiguously better result. It seeks to establish the basis for simplified national processes for the licensing of transfers within the EU of defence goods, services and information. These involve the creation of three categories of licence – 'general', 'global' and 'individual' – and arrangements for the certification by Member State authorities of companies that may receive transferred items for incorporation into final goods. Certifications may be of up to five years' duration.

By enabling the award of 'general' or 'global' licences, the Directive will greatly streamline the supply chain across and within EU borders. It also provides that, except where the transfer of components is considered sensitive, Member States should refrain from imposing limitations on further export. Importantly, however, it does not dilute the principle of Member State control over their national licensing decisions.

ASD has stressed throughout the process the utmost importance of ensuring that strict controls are maintained on all exports of sensitive equipment and technologies. We have also argued that a new system should not create unnecessary new bureaucratic mountains. By leaving final authority on all export licensing with national governments while providing a simplification of national processes for the award of licenses for intra-community defence trade, we believe that the right balances have been struck in designing a secure and practicable system.

Conclusion

No one should doubt that the two directives, which will be transposed into national law within two and three years respectively, each herald in their different ways a revolution in Europe's defence and security markets. The rapid transformational effect of EU legislation in other sectors is well known. It is now industry's task to work closely with public authorities to help ensure that these directives are successfully implemented in the Member States and that the benefits they offer are realised.

Bill Giles
Chairman
ASD External Affairs Commission

- ASD represents the aeronautics, space, defence and security industries of Europe in all matters of common interest with the objective of promoting and supporting the competitive development of these sectors.
- ASD pursues joint industry actions which have to be dealt with on a European level or which concern issues of an agreed transnational nature, through generating common industry positions.
- ASD has 30 Member Associations in 20 countries across Europe and represents over 2,000 companies with a further 80,000 suppliers, many of them are SMEs. The industry sectors employ approximately 634,000 people with a turnover of over € 132.2 bn.

OFFICERS
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GENERAL ASSEMBLY
Joint Meeting of the Council and Board
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Presidents of Major Companies
Board
Officers and Presidents of National Associations
& Representatives

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- Air Transport, R&T and Operations: **Patrick de Prévaux**
- Security and Defence: **Gert Runde**
- Space: **Jean-Jacques Tortora**
- International Programmes: **Arian Leonard**

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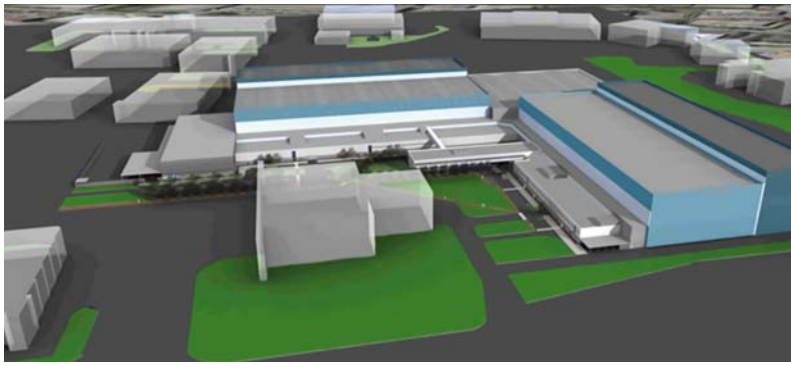
Airbus builds Eco-Efficient A350 XWB Final Assembly Line in Toulouse



On 14 January 2009, Airbus started construction work on the final assembly line for the A350 XWB.

The 74,000 m² factory will house the first stages of final assembly for this aircraft: the joining up of the fuselage and wings. Aircraft testing and cabin equipping will then be completed in the nearby A330/340 Facility.

This 140 M€ Airbus Facility at Toulouse will provide work for more than 1,000 people when fully operational, and will be the ***most eco-efficient Airbus final assembly hall***.
During the construction work, the concrete and foundations of the old buildings will be recycled and reused in the new facility. An energy management system will optimize energy use meaning that the photovoltaic roofing will provide much of the buildings electricity requirements. The new streamlined aircraft assembly process will allow teams to work in parallel, reducing the time from start of final assembly to aircraft delivery by 30 %.
Tom Enders, Airbus President and CEO said: « *The detailed definition freeze at the end of 2008 and the start of construction work on our new final assembly line confirm that the A350 XWB is making steady progress. Set for first delivery in 2013, the A350 XWB will shape efficiency for the aviation industry. The global airbus community, including our employees, suppliers and customers, are working closely together for the success of this programme.*»

From the EADS Press Release dated 14 January 2009

EADS Fully Commited to Succeed in A400M Programme

On 10 February, EADS reaffirmed its full commitment to deliver on the European A400M Military Transport Aircraft programme and welcomed the public support given by the French Senators towards making this exceptional aircraft a success – aircraft that represents a *cornerstone of sovereignty* for the European Defence, as the Senators outlined.

- Concerning overcosts, EADS confirmed that no indication can be given beyond the provision of €1.7bn already taken, as long as a binding industrial plan, which includes the availability of systems, is not established and not before the OCCAR's position on EADS is known. This is in line with what the audit commission of the French Senate on the A400M has expressed.
- EADS made a proposal to OCCAR at the end of 2008 to enter discussions to redefine certain technical and contractual specifications of the programme. According to the announcement of 9 January, EADS confirmed that the delay between the first flight and the first delivery of the A400M will be three years. The group is working with the engine consortium to define the date for this first flight. It is simultaneously studying possibilities to facilitate the production ramp-up. ***EADS is more than ever determined to deliver on this programme***. The state-of-the-art technologies will make the A400M an aircraft of the future, designed to be operational for many decades.
- At the same time, EADS is reorganising the structure of the programme: following Louis Gallois' proposal, the EADS Board of Directors has decided in December 2008 to integrate the A400M programme under the sole lead of Airbus thus simplifying and clarifying its lines of responsibility.

From the EADS Press Release dated 11 February 2009

GKN : How this company is Facing up to today's Aerospace challenges

The present paper is an extended abstract of the article published in Aerospace International of January 2009 titled 'SAFEGUARDING AVIATION EXPERTISE', signed by Richard Gardner. This abstract mainly focuses on the European strategy of GKN Company.

GKN: A UK AEROSPACE ENTERPRISE DETERMINED TO EXPAND ITS GLOBAL POSITION

GKN, this long-established British engineering company is a major supplier of aerostructures and advanced composite components. It has broadened the scope of its activities over the last decades and has significant manufacturing facilities in the USA as well as the UK. Until recently, it was essentially concentrated on helicopter design and manufacturing, but coming to the conclusion that this sector could not permit to maintain design skills and production continuity under the present circumstances, it decided to look elsewhere for new opportunities, shedding the helicopter business but retaining in the former Westland aerostrustures activities.

Subsequently, additional aerostructures acquisitions and new investment on the Isle of Wight and the mainland have given GKN a much enhanced capacity for supplying high quality aerospace components and, as a result, it has achieved a critical mass that enables it to look at a new strategy for the long-term.

THE AIRBUS WING STRUCTURES

In September 2008, GKN acquired from EADS for £136m, the Airbus UK wing structures manufacturing facilities at Filton, formerly part of the massive BAe factory complex. Airbus UK and BAE Systems retain other areas at Filton but GKN's strategic vision for the site involves the integration of the former EADS facilities into GKN to create a wing and aerostructures partner for Airbus and GKN's global customer base.

The Airbus A350

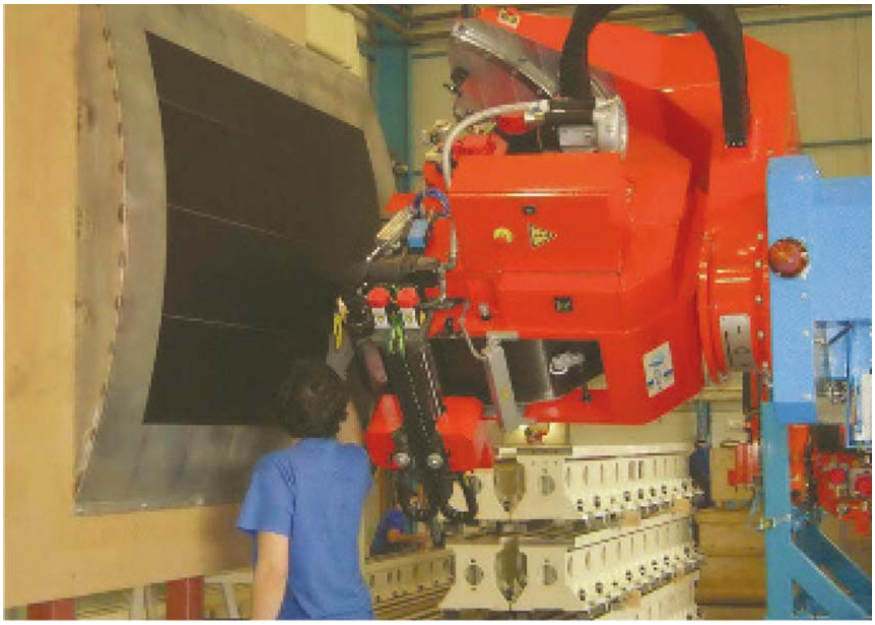
New manufacturing facilities, known as *Project Zephyr*, and centred on the A350, will incorporate the best GKN engineering expertise to grow the site's capability and reputation as a centre of excellence with new global opportunities stretching out over the 30-40 years. The work on the A350 will provide a substantial stepping stone towards achieving this aim and the company is currently investing much effort and money ensure that it will be well placed to win new work on the next generation single aisle programme beyond the A320 family.

GKN Filton would become the lead participant within the company and would help safeguard the UK's role as a major Airbus partner well into the 21st century.

How to reach the objective to create a strengthened and highly motivated UK aerospace centre of excellence?

To date, the transfer of the Airbus UK Filton wing facility to GKN has been the most successful disposal within the EADS Power8 restructuring programme for Airbus production. The scale of the Filton's operation propels GKN into a new level of new level of UK production capability, and to

The A400M wing assembly jig.



This advanced curved mandrel machine can lay up complex shapes using composite materials.

face up to the challenge, this is being addressed by a range of initiatives and projects. Some are company funded, others fall within EU technology programmes. Serious levels of new investments in technologies, materials and methodologies are the key.

WORLD – WIDE CUSTOMERS

GKN's aerospace activities cover fixed-winged and rotary-wing aircraft and engines, encompassing civil (about 45%) and military (about 55%) markets. The customer base is very large, including in addition to Airbus: Boeing, Lockheed Martin, Northrop Grumman, Raytheon, Sikorsky, Eurocopter, AgustaWestland, Honeywell, Rolls-Royce, Embraer, Bombardier, GE, Pratt & Whitney, Goodrich, Spirit, Cessna, Bell and Honda.

RAPID MANUFACTURING

Rapid manufacturing methods are required for the next generation of large civil aircraft and GKN is one of the few global producers that is currently capable of manufacturing very large composite primary structures on the mass production scale needed to meet known and anticipated customer demands.

EUROPEAN INITIATIVES

GKN is playing a major role in contributing to the identified ACARE proposal to support research into reducing the operating costs of future aircraft by at least 15%. The target is a 20% weight reduction with no increase in recurring costs. A study that is receiving much attention on the Isle of Wight is the Advanced Low Cost Aircraft Structures ("ALCAS") wing spar design. This ALCAS initiative is 50% EU funded. It aims to greatly reduce the parts count and emerge with stronger and lighter components. The work involves many companies, including GKN and QinetiQ, working in partnership with Airbus. In the process flow, are particularly to be mentioned: automated tape layering, double diagram forming, self heated curing tools, five-axis machining, non-destructive testing and component assembly.

GKN is also very active in developing metallic structure technologies: pressure forming, etched forgings and machined hybrid materials, friction welding and novel tooling metals, metal matrix composites and advanced metals processing.

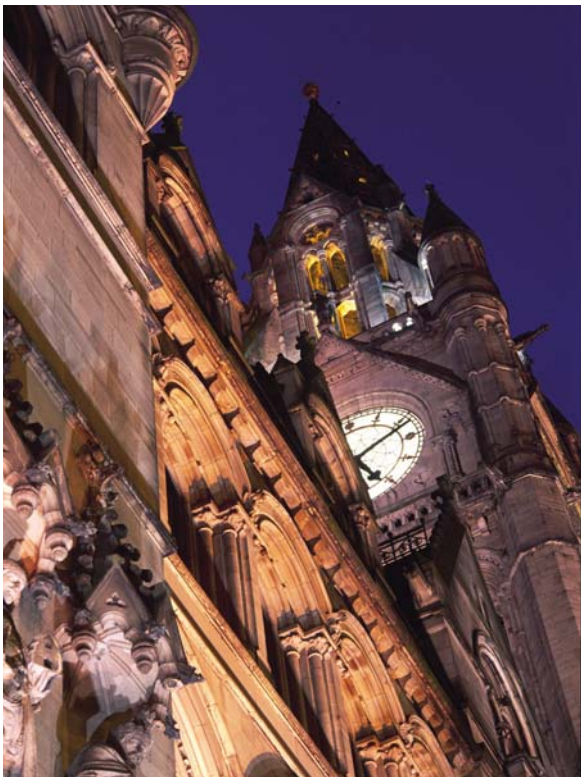
Besides there is still a lot of research works to be accomplished in the engine companies – Rolls-Royce, GE, P&W, Safran/Snecma and GKN – to achieve real progress. The EU-funded "VITAL" project looks at: lightweight fans for future engine generation, bird-strike safe operations, speed of manufacture, fatigue, bonding, casing clearance, balance, need to maintain identical part standards.

> ***With A400M main wing spars under series construction, at a rate that allows for four sets a month, the GKN facility on the Isle of Wight is certainly close to the heart of future composite mass manufacturing. The Integrated Wing demonstrator programme, and other initiatives, should ensure that this global lead in advanced composite manufacturing stands a good chance of being maintained for some considerable time to come.***

JPS - Article extracted from Aerospace International of January 2009, "Safeguarding aviation expertise" (pp.15-18) and published with the authorization of Richard Gardner.

VENUE OF THE CEAS 2009 CONFERENCE

Competing with Birmingham or Edimburgh for the title of "the UK's second city", Manchester,home to Manchester United Football Club and at the centre of the one of Europe's leading aerospace industrial clusters,is an ideal venue for CEAS 2009. The event will take place in the award winning Manchester Central international convention complex.



Space Propulsion 2008 Conference

• Propulsion for spacecraft and space transportation were the main subjects of an International conference that took place in Heraklion, Crete from 5 to 8 May 2008. This was a unique opportunity to monitor and stimulate progress in these two important areas of space technology.

The conference was jointly organised by ESA and 3AF and the program of the technical events was made possible by a joint effort between ESA, CNES, DLR, ASI and other major European space agencies.

At a time when propulsion clearly demonstrates to be an essential technology to enable future space missions as well as making the current ones more effective and economically viable, this conference addressed all the major technical and programmatic subjects in the area of Space Propulsion, providing an up to date overview of advancements and challenges in this key technology area for space applications.

• The organisation in Europe of such an event at international level following an initiative from both space Agencies and European companies was a premiere. Despite the European leadership, papers presented were written by authors from all over the world, with a significant participation of representatives from the major space-fairing nations outside Europe.

In addition to the classical contents of a specialized technical conference, the two co-chair of the conference, Giorgio Saccoccia, Head of the Propulsion and Aerothermodynamics Division at ESA and Pierre-Guy Amand of SNPE intended to organise the first day of the meeting as an event on its own. For this reason, the program of the opening day featured speeches by Mr.Scheller, 3AF President, agency and industry leaders, such as Mr. Courtois and Mr. Fabrizi, ESA Directors, Pratt&Witney Rocketdyne's President, Mr.Maser and Astrium's CTO, Mr. Breard. Furthermore, a round table involving 20 VIPs from Propulsion Companies, Spacecraft Primes, SMEs and Agencies addressed challenging questions related to the status and future of space propulsion.

The whole conference was characterised by technical sessions on specific topics and inspirational plenary events of great interest for the two communities operating in the spacecraft and the space transportation sectors.

• The effort dedicated by the Organising committee led by the 3AF Bureau in combination with the beautiful venue of Crete made it possible for delegates to take advantage of four days of intense work activities while enjoying some unique moments of conviviality.

International participants to Space Propulsion 2008 have expressed their appreciation of the organisation of such an event in Europe. The success of the conference in Crete indicated that the time is mature now to introduce on a regular basis an international forum in Europe to allow the two communities of spacecraft and space transportation propulsion to get together and exchange ideas and information in support of ongoing and future work in the field.

For this reason ESA and 3AF, in collaboration with the major National Agencies in Europe and using the organising support of 3AF, will introduce this conference on a regular basis, every two years.

About Space Propulsion 2010

The next edition is planned for May 2010 in Mallorca (Spain) and the programme of the event will be organised using a formula similar to the one adopted in Crete, while introducing events and themes specific for this edition and of particular interest for the application of Space Propulsion in the coming years. Particular attention will be dedicated to interacting with the end-users of propulsion systems, in order to support a better preparation of future products in the field.

Technical as well as programmatic issues will be debated in order to support the preparation of future activities and roadmaps in all subjects of space propulsion.

The Call for Papers for Space Propulsion 2010 is scheduled for March 2009.

By Giorgio Soccocia, ESA/ESTEC

Calendar of Events:

First Announcement	October 2008
Call for Papers	March 2009
Abstract Deadline	September 2009
Author's Notification	January 2010
Preliminary Programme	February 2010
Conference	3-6 May 2010

The Organising Committee

Giorgio Saccoccia	(ESA)
Pierre-Guy Amand	(SNPE - 3AF)
Lisa Gabaldi	(3AF) - main contact

WWW.PROPULSION2010.COM
CONTACT: Lisa.Gabaldi@aaaf.asso.fr

THE SUCCESSFUL ESA COUNCIL MEETING

The Hague, 25-26 November 2008

On 25 – 26 November 2008 in The Hague, the Ministers in charge of the space activities in the 18 European Space Agency's Member States and Canada concluded a successful Council meeting, agreeing to undertake new initiatives in several fields and endorsing the next phases of a set of ongoing programmes. The decisions taken are a further step towards giving Europe the means to respond to global challenges. In keeping with the European Space Agency Policy, designed in cooperation with the European Commission, the measures will further strengthen Europe's role in the development and exploitation of space applications serving public policy objectives and the needs of European citizens and enterprises. They have particular relevance at the present time, showing as they do Europe's determination to invest in space as a key sector providing for innovation, economic growth, strategic independence and the preparation of the future.

Four Resolutions

1) The role of space in delivering Europe's global objectives – covering the political and programmatic highlights of the Council.
2) The level of Resources for the Agency to cater for Space Science Programmes and basic activities in the period 2009-2013.
3) The renewal of the contribution of ESA Member States to the running costs of the Guiana Space Centre .
4) Outline of the future evolution of ESA, spanning its financial management reform, decision-making processes, industrial and procurement policies and the further development of site infrastructures for ESA programmes.

Decisions on Programmes and Activities

ESA MANDATORY ACTIVITIES

The mandatory activities cover the Scientific Programme and the Mandatory Basic Activities. The corresponding Level of Resources over the period 2009-2013 which were approved are: **2,327 MEuro for Science; 1,087 MEuro for Basic Activities - i.e. 3,414 MEuro in total for the period 2009 – 2013.**

- The scientific community looks to the ESA Scientific Programme for leadership. Particularly, ESA provides opportunities to fly the larger, more technologically challenging missions that are not within the capabilities of single Member States.
- The Mandatory Basic Activities cover: General Studies Programme, Technology Research Programme, Basic Technical Activities, Technology Harmonisation, Earthnet (international agreements for cooperation with other space agencies), Education Activities, Corporate and Administrative Activities.

ONGOING OPTIONAL PROGRAMMES AND START OF NEW PROGRAMMES

- ***Launchers:*** the budgets approved are:

Ariane 5 Post-ECA: **357 MEuro for 2009 - 2013.**
Ariane 5 Research & Technology Accompaniment Programme Extension (ARTA): **497.5 MEuro for 2011 - 2013.**
Vega Research & Technology Accompaniment Programme Extension (VERTA): **98.5 MEuro for 2011 - 2012.**
Guiana Space Centre: **91 MEuro for 2009 - 2013.**
Future Launchers Preparatory Programme (FLTP step 2 – period 2 covering 2009 – 2012): (i) future launchers; (ii) Intermediate eXperimental Vehicle.
Total (i)+(ii)= **169.5 MEuro for 2009-2012** .
Total for launchers: 1,513.5 MEuro

- ***Human Spaceflight:*** the budgets approved are:

ISS Exploitation Programme, Columbus exploitation, Automatic Transfer Vehicle (ATV): **1,373.6 MEuro for 2008 - 2012.**
ISS Evolution Programme: **0**
Microgravity – European Programme for Life and Physical Sciences -: **285 MEuro for 2008 – 2012.**
Transportation and Human Exploration: (i) Automated Reentry Vehicle(ARV); (ii) Cooperation with Russia; (iii) Scenario Studies; (iv) Lunar Lander studies; (v) Early Activities.
Total (i)+(ii)+(iii)+(iv)+(v)= **160 MEuro**

- ***Exploration***

Enhanced ExoMars (due for launch in 2016): **850 MEuro** (subscription open till end 2009 and 663 already subscribed in 2005) **for 2006-2018.**
Future Mars Robotic Exploration Programme: **24 MEuro for 2009 – 2012.**

- ***Applications***

Telecommunications: the primary objective across the range of ESA Telecommunications : to undertake demonstration projects leading to operational systems in partnership with users, operators and service providers. This is done through ARTES (Advanced Research in Telecommunications Systems) Programme. ARTES 1 is the preparatory element of the Telecommunications programme. ARTES 3, 4 and 5 are designed to allow the generic development of technology, equipment and systems for industry's target markets and to allow updates and improvements to existing products.

ARTES 7 aims at preparing the European Data Relay Satellite (EDRS) which will replace Artemis. ARTES 8 proposes to extend the capability of the large platform Alphabus and to support exploitation of the performances of the Alphasat satellite. ARTES 10 "Iris" will achieve the development of a modern communication system enabling safety-of-life Air Traffic Management (ATM) communications via satellites. ARTES 11 is aimed at consolidating and improving the small GEO satellite platform. ARTES 20 is the Integrated Applications Promotion Programme (use of integrated space systems and technologies – telecommunications, Earth observation, meteorology...).
Budgets approved: ARTES 1 for 2009-2013 - ARTES 2 for 2009-2013 - ARTES 3-4 for 2009-2013 - ARTES5 for 2009-2013 - ARTES 7 for 2009-2014 - ARTES 8 for 2009-2013 - ARTES 10 for 2009-2011 - ARTES 11 for 2009-2013 - ARTES 20 for 2009-2013 - Future.

Total Telecommunications: 816 MEuro

Navigation: with the objective of sustaining and improving the competences of industry and ESA in navigation technologies for the future evolution of the European Global Navigation Satellite System infrastructure - i.e. EGNOS and Galileo – the European GNSS Evolution Programme (EGEP) is proposed for extension.
Budget approved: **53.1 MEuro for 2009-2011**

Earth Observation:
GMES: Global Monitoring for Environment and Security.
Segment 2 of the GMES space component programme provides the initial space capacity to deliver effective global monitoring of the environment. Segment 2 of the GMES Space Component Programme will span the period 2009 – 2018, overlapping with the on-going segment (2006-2013).
Budget approved: **831.5 MEuro for 2009-2013**

MTG: in the field of meteorology, the objective is to develop the technologies and systems which allow Eumetsat to continue and enhance the European meteorological service, and particularly to address the next generation of European geostationary satellite systems. Meteosat Third Generation - MTG – will enhance the accuracy of forecasts by providing additional measurement capability, higher resolution and more timely provision of data.
Budget approved: **943 MEuro Budget for 2009-2020**

Climate Change Initiative: Climate change is probably the greatest challenge facing humankind this century. The ESA Climate Change Initiative aims to provide consistent long-term global records of the "Essential Climate Variables"– greenhouse gas concentrations, ocean salinity and temperature, sea and lake levels, sea-ice and snow extent, fire disturbance, etc. – that are required by the Global Climate Observing System (GCOS) to support the work of the International Panel on Climate Change. The programme will focus on those climate variables for which ESA satellite data sets (30 years of archives) will make major contribution to complement that of international partner space agencies.
Budget approved: **72.3 MEuro for 2009-2014.**
Total Earth Observation 1,848.6 MEuro

Space Situational Awareness:
SSA: the objective of this initiative is to contribute to the protection of European space systems, in particular those related to operational services, against space debris, and solar flares (space weather). This will help guarantee the availability of such services by providing timely and quality information on the space environment, threats and the sustainable exploitation of outer space surrounding Earth.
Budget approved: **50 MEuro for 2009-2011.**

General Support Technology Programme:
The **GSTP 5** (fifth period of the GSTP) will start in 2009. It is a part of the product policy aimed at reducing risks to projects and promoting reuse. It will strengthen European non-dependence while aiming at breakthrough innovation and promoting technology spin-in.
Budget approved: **320 MEuro for 2009-2013.**

• ***Complementary subscriptions on ongoing programmes***
Level of Resources approved: 300 **MEuro**

THROUGH THIS MEETING, THE ESA MINISTERS HAVE SEIZED THE OPPORTUNITY TO CAPITALISE ON THE RECENT SUCCESSES AND ACHIEVEMENTS OF EUROPE IN SPACE AND TO TRANSLATE THE POLITICAL IMPETUS INTO NEW PROGRAMMES ABLE TO DELIVER KNOWLEDGE, SERVICES AND COMPETITIVENESS AND TO SHAPE ESA TO ASSERT ITSELF AS A GLOBAL SPACE AGENCY, INDISPENSABLE TO THE WORLD IN CONTRIBUTING TO GLOBAL POLICIES.

From ESA Press Release 47-2008 and ESA News, 18 November 2008.

THREE PARTICULARLY IMPORTANT SCIENTIFIC SATELLITES ARE ABOUT TO BE LAUNCHED: GOCE, HERSCHEL, PLANCK

GOCE : launch now envisaged on 16 march 2009

ESA IS GEARING UP TO RETURN TO RUSSIA TO OVERSEE THE LAUNCH OF ITS GOCE SATELLITE, PRESENTLY PLANNED FOR 16 MARCH 2009.

This follows implementation of the corrective measures after the anomaly with the Rockot launcher that delayed the launch of this satellite by Eurockot Launch Services last October 2008.

The GOCE satellite was described in the issue 3-2008 of the CEAS Quarterly Bulletin.

The GOCE Satellite in course of integration (Credit ESA)

HERSCHEL

HERSCHEL, WHICH WILL BE LAUNCHED IN SPRING, IN PRINCIPLE ON 16 APRIL 2009, WILL INVESTIGATE THE HISTORY OF HOW STARS AND GALAXIES FORMED AND TO STUDY HOW THEY CONTINUE TO FORM IN OUR OWN AND OTHER GALAXIES. HERSCHEL WILL OBSERVE AT WAVELENGHTS NEVER COVERED BEFORE, FROM FAR INFRARED TO SUB-MILLIMETRE WAVELENGHTS.

MISSION

There was a time when galaxies were not there, simply because they did not even exist yet. Astronomers have several questions about this time. When did galaxies form? How did it happen? Did they all form at about the same time, or is there a non-stop galaxy-making machine at work? Were the first galaxies like those we see now? The galaxies are made of stars, ..., did the stars form first and then get together to form galaxies, or was it the other way around? How do stars form? When they form, do they normally form planets as well?

ESA's Herschel mission has been designed to answer these kinds of questions. With its ability to detect far-infrared light, it will let astronomers see, for the first time, dusty and cold regions that have been hidden so far.

The HERSHEL Satellite (Credit ESA)

SPACECRAFT AND TELESCOPE

Herschel satellite

It is a tall 'tube' 7.5 metres high and 4 metres wide, with a mass of about 3.3 tonnes. It will carry the infrared telescope and three scientific instruments. The bulk of the spacecraft consists of liquid helium thermos bottle inside which the instrument detectors sit and are cooled down to only a few degrees above absolute zero(- 273.15 K).

Herschel telescope

- It is a Cassegrain telescope, with a primary mirror diameter of 3.5 metres, built by Astrium (Toulouse, France). This is the largest space telescope ever to be built and a great technological challenge that Europe faces alone. It has to be light enough to be placed into a very far orbit. The mirror's surface has to be extremely smooth: its bumps are smaller than thousands of millimeter. It has to whithstand very hard environmental conditions.

Three Scientific instruments

- Photodetector Array Camera and Spectrometer (PACS),a camera and a low-to-medium- resolution spectrometer for wavelengths up to about 205 micrometres.
- Spectral and Photometric Imaging Receiver

(SPIRE), a camera and a low-to-medium-resolution spectrometer for wavelengths longer than 200 micrometres.

- Heterodyne Instrument for the Far Infrared (HIFI), a highly accurate spectrometer aimed at obtaining information about the chemical composition, kinematics, and physical environment of infrared sources.

PACS and SPIRE will allow to take pictures in six different 'colours' in the far-infrared.

JOURNEY

Herschel will be launched atop an Ariane 5/ECA, together with the Planck satellite. The launch slot begins on 10 April 2009 and lasts for four weeks. In less than six months, Herschel ,will reach its operational orbit around a point in space known as the second Lagrangian point (L2), situated at 1.5 million kilometres away from the Earth.

Herschel has been designed to perform routine science operations for a minimum of 3 years at L2. The mission will end when the helium used to cool the focal plane of the scientific instruments is depleted.

PARTNERSHIP

Prime Contractor: Thales Alenia Space Industries (Cannes, France), leading a consortium of industrial partners with Astrium (Friedrichshafen, Germany), responsible for the Extended Payload Module and the Thales Alenia Space Industry branch of Torino (Italy), responsible for the Service Module. There is also a host of subcontractors spread throughout Europe.

PACS was designed and built by a Consortium led by MPE, Garching (Germany), of scientists and institutes – under their own funding – from Germany, Belgium, Austria, France, Italy, and Spain.

SPIRE was designed and built by a Consortium led by University of Wales (Cardiff, UK) of scientists and institutes – under their own funding – from the UK, France, Canada, China, Italy, Spain, Sweden, and USA.

HIFI was designed and built by a Consortium led by SRON, Groningen (The Netherlands), of scientists and institutes – under their own funding – from The Netherlands, France, Germany, and Canada, Ireland,Italy, Poland, Russia, Spain, Sweden, Switzerland, and Taiwan.

The HERSCHEL telescope (Credit ESA)

PLANCK

PLANCK IS EUROPE'S FIRST MISSION TO STUDY THE RELIC RADIATION FROM THE BIG BANG (13,7 THOUSAND MILLION YEARS AGO) EVER SINCE THE DETECTION OF SMALL FLUCTUATIONS IN THE TEMPERATURE OF THIS RADIATION,CALLED "COSMIC MICROWAVE BACKGROUND", ASTRONOMERS HAVE USED THE FLUCTUATIONS TO UNDERSTAND BOTH THE ORIGIN OF THE UNIVERSE AND THE FORMATION OF GALAXIES.

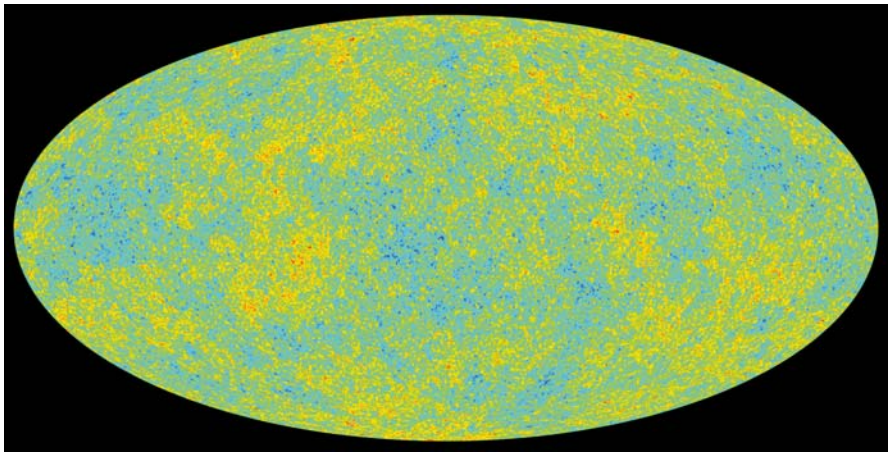
MISSION

Some of the key questions Planck will answer are:

- Will the Universe continue its expansion forever, or will it collapse into a 'Big Crunch'?
- What is the age of the Universe?
- What is the nature of the co-called 'dark matter', which may account for more than 90% of the total amount of matter in the Universe but that has never been detected directly?
- What is the nature of dark energy, a hypothetical form of energy that may account for the Universe's expansion at an accelerating rate?

SPACECRAFT AND INSTRUMENTS

The Planck spacecraft, weighing 1900 kg at launch, is 4.2 metres high and has a diameter of 4.2 metres. It will carry a telescope with a 1.5 metre-primary mirror, which will focus radiation from the sky onto the payload, two highly sensitive detectors called the Low Frequency Instrument (LFI) and the High Frequency Instrument (HFI). The telescope and the instruments are placed on top of an octagonal service module, a baffle surrounding them to prevent straylight from the Sun and the Moon to spoil the detection of the microwave radiation. This baffle is also used to effectively radiate to cold space the heat generated by the focal plane units and to provide to the instruments coolers a cold and stable background environment of about -223°C.



Simulation of cosmic ray background, as Planck would see it (Credit ESA)

The Low Frequency Instrument

The LFI is an array of 22 tuned radio receivers that will be operated at -253°C and that will work grouped in four frequency channels centred between 30 and 70 GHz. High Electron Mobility Transistors will amplify the signal collected by the antenna (telescope) and the amplified signal, once converted into a voltage, will be stored in a computer for further analysis.

The High Frequency Instrument

The HFI is an array of 52 bolometric detectors, which work by converting radiation to heat which is measured by a tiny electrical bolometer, the signal from which is converted to a temperature by a computer. The HFI detectors, operated at -272.9°C (a few tenths of a degree above absolute zero), will work in six frequency channels centred between 100 and 857 GHZ. The spacecraft is equipped with the means of cooling the detectors to the required levels, ranging from -253°C to -272°C.

A view of the spacecraft (Credit ESA)

JOURNEY

Planck will be launched together with the Herschel spacecraft, in a dual configuration. The launch slot begins on 10 April 2009 and lasts for four weeks.
After about 2.5 hours after launch Planck will separate from Herschel and in less than six months, the satellite will reach its final orbit, located at 1.5 million km away from the Earth around L2, the Second Lagrangian Point.
Routine science observations at L2 will last 15 months, allowing two sky surveys.

PARTNERSHIPS

The Prime Contractor for the Planck satellite is Alcatel Alenia Space (Cannes, France). It leads a Consortium of industrial partners: Alcatel Alenia Space Industry branch in Torino (Italy), for the Service Module, ESA and the Danish National Space Centre (Copenhaguen,Denmark) for the provision of the telescope's mirrors, manufactured by EADS Astrium (Friedrischshafen, Germany). There is also a host of subcontractors spread throughout Europe, with a few more in the USA.

The LFI was designed and built by a Consortium, led by the Istituto di Astrofisica Spaziale e Fisica Cosmica in Bologna (Italy), of scientists and Institutes from Italy, Finland, UK, Spain,USA, Germany, The Netherlands, Switzerland, Norway, Sweden, Denmark.
The HFI was designed and built by a Consortium, led by the Institut d'Astrophysique Spatiale (CNRS, Orsay, France), of scientists and Institutes from France, USA, UK, Canada, Italy, Spain, Ireland, Germany, The Netherlands, Denmark, Switzerland.

Many funding agencies contributed to the LFI and HFI instruments; CNES (F), ASI (I), NASA (USA), PPARC (UK), Tekes (FIN), MEC (E), ESA.

JPS. From ESA News "Herschel overview" and "Planck overview".

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The Council of European Aerospace Societies - CEAS -

The CEAS:an International Non-Profit Association
Located: Belgium - Rue du trône 98 - 1050 Brussels
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The CEAS aims to develop a framework within which the major aerospace societies in Europe can work more closely together. The Member Societies: AAAF (France), AIAE (Spain), AIDAA (Italy), DGLR (Germany), FSAE (Finland), FTF (Sweden), HAES (Greece), NVvL (Netherlands), RAeS (United Kingdom), SVFW (Switzerland). Following its establishment as a legal entity conferred under Belgium Law,this new organisation began its operations on 1st January 2007.
The basic mission of the Association is to add value at a European level to the wide range of services provided by the constituent Member Societies,allowing for greater dialogue between the latter and the European institutions,industry,governments and academia. The Council is governed by a Board of Trustees,with representatives of each of the Member Societies.
The officers of the Board for the year 2009 are:

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The successor of Mr Alain Garcia will be appointed on 24 April.
- Chairman of the Space Branch :
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- Editor-in-Chief,CEAS Quarterly Bulletin :
Dr-Ing.Jean-Pierre Sanfourche – jpsanfourche@dbmail.com

Among the Main Coming Events 2009

- **5 March**: RAeS - Law Seminar :Who bears the costs of terrorism? Allocating the risk under the draft ICAO Unlawful Interference Convention. -London.
- **19 March**: SVFW - Schadstoffemissionen im Flugzeugtriebwerk - Lecture - ETH Zurich.
- **18-19 March**: RAeS - Corporate, Air Taxi & Personal Jets: Current Challenges and Future Prospects - London.
- **23-25 March**: 3AF - 44th Applied Aerodynamics Symposium - Ecole centrale de Nantes.
- **24 March**: RAeS - Finding the Right Stuff: The Medical Selection Aircrew and Astronauts - Aerospace Medicine Group - London.
- **26-27 March**: DGLR - Aircraft Systems Technologies (AST 2009) - Hamburg.
- **8 April**: RAeS - Concorde - The Supersonic Achievement: 40th Anniversary Concorde Conference - London.
- **21-23 April**: RAeS - Aerospace 2009: Facing up to the Future - RAeS Annual Conference - London.
- **11-13 May**: CEAS - 15th AIAA/CEAS Aeroacoustics Conference - Miami, USA-glegg. glegg@oe.fau.edu - www.aiaa.org/events/aeroacoustics
- **13-15 May**: FTF - European Workshop on Aircraft Design Education - Linköping University.
- **12-14 May**: DGLR - Key Aerodynamic Technologies (CEAS/KATNet II) - Bremen.
- **25-29 May**: NVvL - 31st Conference and 25th Symposium of the International Committee on Aeronautical fatigue (ICAF) - "Bridging the gap between theory and operational practice" - Rotterdam. nvvl@nlr.nl - www.icaf2009.nl
- **3-4 June**: RAeS - The Edge of the Envelope: Technology Advances in Flight Simulation - Spring Flight Simulation Conference - London.
- **10-11 June**: RAeS - Support of Helicopter operations / Through Life Capability Management - Rotorcraft group Conference - London.
- **23-24 June**: RAeS - The Handley Page Centenary: 100 years of Education in Aeronautics - Time for a change? - Annual Training Conference - London.
- **23-24 June**: CEAS - AIAA/CEAS International Forum on Aeroelasticity and Structural Dynamics (IFASD) 2009 - Seattle, USA. vrossi@azimuth-corp.com - www.ifasd2009.com
- **29 June-3 July**: AIDAA - 20th National congress of AIDAA - Milan. www.aidaa2009.org
- **30 June**: RAeS - Space Tourism - Space Group Conference - London.
- **1-2 July**: DGLR - Eucomas 2009 - Augsburg.
- **9 July**: RAeS - Human Factors in Design for Flight Safety - Human Factors Group Conference - London
- **8-10 September**: DGLR - German Aeronautics Congress (DRLK 2009) Aachen. www.dlrk2009.dglr.de
- **10 September**: RAeS - Handley Page Ltd - Celebrating the Centenary of the first British Aircraft Company - Historical Group Conference - London.
- **22-25 September**: DGLR - 35th European Rotorcraft Forum - Hamburg - www.erf2009.org
- **23-24 September**: RAeS - A Training & Regulatory Environment for Tomorrow - Annual International Flight Crew Training Conference - London.
- **28 September-2 October**: NVvL - International Council of the Aeronautical Sciences (ICAS)- PC Meeting and Workshop - nvvl@nlr.nl - www.icas.org
- **14-16 October**: DGLR - IMAPP Conference - Hamburg.
- **26-29 October**: Manchester (UK), 2nd CEAS European Air & Space Conference 2009. Please consult regularly the Website www.ceas2009.org in order to keep exactly informed of the evolution of the preparation process..
- **6 November**: RAeS - Aerospace & Aviation Careers Fair
- **18-19 November**: RAeS - Fixed -wing and Rotary-wing FSTDs - The way ahead - Automn Flight Simulation Conference - London.
- **3-4 December**: 3AF- Space for Defence and Security International Conference- Paris - lisa.gabaldi@aaaf.asso.fr

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