

EUCASS, and how it happened

A continental aerospace learned society
at the service of European research scientists, industry and agencies...
...from Atlantic Ocean to Pacific Ocean

Until the late nineties, it was customary for European aerospace scientists to get together at the AIAA Aerospace Sciences meeting held in January in Reno, Nevada. There, they would of course also meet with their American colleagues...

In 1998 the idea came up among researchers at Onera and DLR to hold a joint annual symposium, the Onera-DLR Aerospace Symposium ODAS. The two research establishments were already very much engaged in collaborations, notably on helicopters and hypersonics, and co-editing the journal Aerospace Science and Technology (AST). ODAS was to be an elegant way of (1) exposing and fostering the multidisciplinary character of the concerned R&D domains and (2) attracting, thanks to its critical mass, the European and national authorities, the funding agencies and Industry. The latter could then keep up with progress made at the service of taxpayers and for the benefit of major players like EADS, Eurocopter, Dassault, etc.

The first ODAS was held in France in 1999. It was followed every year alternatively in Germany and France, with initial attendance of the order of 100 participants.



Fig. 1 ODAS 2001 banquet.
from L to R: V. Dmitriev & S. Chernyshev
(TsAGI Directorate), E. Taran and M. de
Gliniasty (Onera, Chief Scientist)

Visitors from other countries were also invited to attend. In 2001, following earlier TsAGI-Onera contacts and lab visits since the mid sixties, a few officials from TsAGI were welcomed at the third ODAS (Fig. 1). The TsAGI suggestion to launch a similar bilateral annual workshop with Onera was endorsed and finalised there. The first of these took place a few months later in Moscow, to be followed alternatively in France and Russia, and opened to invited scientists from additional institutes in Russia and in France.

At the same time a “mini EUCASS” was already in action at the hands of EHA, the European Hypersonics Association, born in Novosibirsk at the 2000 ICMAR¹ conference. That community, rich of the best specialists from Russia, Germany and France amongst others, was meeting several times a year to advance the field of hypersonic flight. Noteworthy is the fact that, at the time, most if not all of the actors were involved in east-west collaborations supported by ISTC².

The foundations of EUCASS, the European Conference for Aerospace Sciences, then were in plain sight. It did not take long to realise that, with a little extra work and the participation of robust conference professionals, the small group that was in charge of running ODAS plus the Onera-TsAGI seminar plus EHA could embrace the entire spectrum of aerospace activities. And then, scientists of

¹ International Conference on Methods in Aerophysical Research

² International Science and Technology Center

the Continent would meet after two-hour journeys at the most, instead of the nine hours it took to reach Reno, and at a substantially cheaper cost.

In late 2003, the EUCASS project was proposed to the key players listed above and it received enthusiastic and unanimous support. The suggestion to hold the very first conference in Russia was also embraced. Vigorous encouragements came from ISTC, and then ESA, CNES and EADS, all of which immediately pledged financial support. The French aerospace association AAAF came forward to organise it in Moscow under CEAS umbrella and began discussions with the partners in the Russian Academy of Sciences (RAS). However it quickly appeared that there existed a financial risk which could not be precisely quantified, and AAAF prudently withdrew its offer one year before the conference would open. A portage over to the three historical players TsAGI, Onera and RAS, which could easily cover the eventual deficit, was promptly agreed to save it.

The first ever EUCASS conference took place on schedule. It attracted 430 participants and turned up a small profit (Figs 2 & 3).



Fig. 2 EUCASS 2005 party, the host team
L to R: S. Chernyshev & V. Dmitriev (TsAGI Directorate), E. Babayan (ANDK) & V. Fortov (IHED President & RAS)



Fig. 3 EUCASS 2005 party, the host team
L to R: TsAGI: V. Dmitriev (President), RAS: E. Babayan, V. Fortov (IHED President), A. Panova, Onera: J.-P. Taran (Deputy Chief Scientist)



Fig 4 EUCASS foundation, the signatories.
Front J.-P. Taran, W. Koschel (DLR, 1st EUCASS President)
Second row P.-G. Amand, G. Degrez, M. Calabro, M. Riethmuller (VKI, EUCASS Treasurer), M. Carbonaro (VKI Director & EUCASS Treasurer)

This breakthrough was a terrific boost to the organising team, which pledged to continue preparing future issues of the conference. It was suggested in vain that CEAS take up the leadership of that action. The decision was then taken by the organising team to incorporate into an international non-profit association under Belgian law (AISBL) in order to operate the conference in a robust, professional way. Thus, and since the landmark date of 19 April 2006 (Fig. 4), EUCASS has been held another six times, in Brussels, Versailles, St Petersburg, Munich, Krakow and Milan. Beginning in Munich in 2013 (Figs. 5, 6), its attendance has consistently exceeded the mark of 600 effective participants, which makes it the second largest continental aerospace conference after AIAA's SCITECH Forum.



Fig. 5 Munich 2013 opening ceremony



Fig. 6 Munich 2013 J.P. Taran remits the Eucass recognition plaque to S. Chernyshev (TsAGI Director)

EUCASS today

The EUCASS eyesight is trained on innovation and breakthrough science. The conference programme is organised so as to stimulate cross-fertilisation between aeronautics and space and between scientific disciplines that must be developed in synergy. The programme is, for the moment, mainly focused on enabling sciences divided into the five main chapters of Flight Dynamics GNC & Avionics, Flight Physics, Propulsion Physics, Structures and Materials, System Integration. It will occasionally digress into Programmes and Missions and run dedicated workshops on hot topics. In addition to the large biennial conference, the Aerospace Thematic Workshops (ATW) were launched very early on in the spirit of the Gordon Research Conferences. ATWs are dedicated to promising scientific approaches in physics, maths, etc. that are likely to revolutionise some well-established fields. Such are the ongoing topics of “Flow and combustion control by plasmas”, or “Collisions of fast particles with surfaces”. All conference proceedings are now available in open access mode, in compliance with Government and EU recommendations. In addition, authors are free to submit their work in dedicated European Journals, pending screening via peer review and duly quoting prior publication at EUCASS.

EUCASS is fully dedicated to the advancement of science for the benefit of all players in Europe. The welfare of Aeronautical and of Space Agencies, of Industry and, by way of consequence of all citizens of Europe, is the core motivation of its Board and its Technical Committees.

EUCASS can be viewed as a hub centre, thanks to the following dispositions:

- the facilitation of multidisciplinary collaborations is a very exciting and promising feature, rendered possible by the comprehensive coverage of all relevant scientific and technical disciplines at each biennial conference;
- partnerships with “disciplinary” learned associations serving other economic sectors, e.g. in applied maths or mechanics (ECCOMAS, Ercoftac, ICCS, Euromech, Euroturbo, etc., in part thanks to the E-CAero initiative launched and supported by the EC), and so exerting careful oversight and promoting excellence;
- serving the existing networks like EREA, Pegasus or EASN and offering them a forum to expose the challenges ahead and some hot research topics they wish to advertise in front of a broad audience;
- consulting for EC and assisting them in search of partners, a service that has fostered the development of research collaborations within the framework programmes as with Russian institutes in the mid 2000s; it is a matter of pride for EUCASS that several very fecund collaborations between institutes, agencies and manufacturers from the Eastern and Western confines of Europe could be launched on such occasions.

The usual EUCASS European patron/conference participants already are members of their national associations. EUCASS of course is not competing with these national aerospace learned societies. The latter play a vital role locally, i.e. within the borders of the different nations, communicating in their native languages and caring for the local academic and industrial players. But EUCASS ambitions to procure a top-down oversight and service and, in addition, has become the natural cradle for those countries like the Newly Independent States (NIS) and several eastern EU states that have not yet

established a local association. In particular, one notes that Russia, which has no national association, sends an average 100 participants, the same as Germany or France with their well-established and respected DGLR and 3AF. This somehow vindicates the notion that all members/conference participants effectively are citizens of the continent, somehow as a parallel to and in line with the spirit and ambitions that led to the founding of Airbus or ESA.

EUCASS is managed by a Board of twenty University professors and research scientists. At the time of this writing, it counts about 200 Technical Committee members from EU, Japan, Russia, USA. The whole team possesses all the necessary skills to operate conferences, establish the scientific programme and the publication of the proceedings in partnership with a local organiser responsible for logistics in whatever country featuring significant aerospace visibility. And results are there: in less than two decades, the conference has established itself as the second largest aerospace conference after AIAA's SciTech.