



Students from across Europe design this summer the future “Ariane 6” launcher

To commemorate the 30th anniversary of the first Ariane launch in 1979, the Community of Ariane Cities (CVA) has prepared a busy Summer with three educational programmes aimed at different target groups: high school pupils, engineering students, and teachers of math and science.

The CVA brings together 18 city administrations and as many industrial firms involved in the Ariane launcher programme, with the objective of informing the citizens about the importance of space investments and of European collaboration, and motivating the younger generation to embark in scientific and technical careers.

Each educational programme is tailored to the specificities of the participants' age and background, but they all share the basic principles of intercultural learning and of European technology cooperation. Participants learn about the players in the design, manufacturing and operation of the Ariane rockets, they visit space-related research and industrial facilities around the city hosting the programme, and they work in teams to think about the future of European cooperation in space.

“Not only is the CVA helping us to inform our citizens about the benefits of space technology on our everyday life, but we also benefit from the CVA’s powerful network to reach our national and European decision makers with the right arguments, so that they can take more informed decisions on public space investments” says Harry Brunnet, Mayor of Hardthausen/Lampoldshausen and current president of the CVA.

Scientific Holidays at the rocket test facility of Lampoldshausen

During the first half of July, as many as 30 high school students aged 15 to 17 and representing different CVA member cities from Belgium, France, Germany, Spain and Switzerland, have just spent 10 days in the Heilbronn region (Germany), hosted by the City of Hardthausen/Lampoldshausen and by the German Aerospace Centre (DLR). DLR has here a major rocket propulsion test facility, in operation since 50 years, for small and large propulsion systems for launchers and satellites.

At the Space Centre Lampoldshausen, there is also a production facility for propulsion systems from EADS Astrium, which inaugurates this year a brand new building for 100 employees, bringing the total employment at the space centre to 500 staff. Among cultural and sports facilities, the young participants to the CVA's Scientific holidays had the privilege to visit the impressive test facilities and to learn in hands-on workshops at DLR's “School Lab”, an innovative concept of laboratory experiments where students “learn by doing” on the basic principles of liquid propulsion, vacuum environment, micro-gravity, etc, with the help of retired engineers and scientists from the centre.

The Scientific Holidays programme has been held for seven times since it started in 2002, in the French cities of Millau, Sissonnes and Longpont s.Orge, and also in Barcelona, Toulouse and Liège. It counts with the valuable contribution of specialised coaches from CVA partner organisations such as *Planète Sciences* and *Peuple et Culture*. The programme will be hosted in Madrid in 2010, as part of the city's presidency of the CVA next year.

Teachers become students for a few days, and they also launch water rockets:

For three days, CVA's students from the Scientific Holidays were joined by the participants to CVA's REVA teachers' seminar, also held at Hardthausen/Lampoldshausen. A dozen teachers of math and science, who also came from different "Ariane cities", learned and shared good practices in using "space" as a motivating subject in the classroom: many basic principles of physics and many mathematical concepts can be illustrated with practical examples of space science and technology: propulsion, materials, electromagnetism, astronomy, microgravity, optics, geology, meteorology, the natural environment (water cycle, global warming, forest fire monitoring, disaster management, etc) are just a few areas where space examples can make the class more exciting and open the curiosity of the pupils towards space and earth sciences, and engineering.

This teachers' seminar was originally designed by CNES and ISSAT (a Toulouse-based space education association), and was held for the first time in 2008 at the Cité de l'Espace in Toulouse. The third session is already scheduled to take place in Bremen in July 2010, in conjunction with the COSPAR meeting.

August 27th: teams of young engineers from across Europe propose "Ariane 6" concepts

CVA's itinerant Summer School started on August 1st in Augsburg and brings together as many as 36 students of engineering and young graduates working in the space industry, for a one-month course on European Space Transportation. The programme is hosted by the City of Augsburg, the University of Applied Sciences and by MT Aerospace. Participants have been selected from 9 Ariane Cities across continental Europe and French Guiana, and lecturers and professors come from space agencies (CNES, DLR,



The 36 participants of the CVA 2009 Summer School were welcomed at the City hall of Augsburg by representatives from the City, the Augsburg University of Applied Sciences and from MT Aerospace.

ESA), space industry (Arianespace, Avio, EADS, SAFRAN, etc) as well from universities who partner with the CVA (Bordeaux, Bremen, Liège, Toulouse, etc).

The intensive programme includes lectures on different disciplines related to space transportation: propulsion and launcher systems engineering, materials and structures, launch operations, flight dynamics, space applications, project management and costing, history of the Ariane programme and future European strategies, communication and media relations, etc.

In addition, the programme includes workshops on team building, company visits and a team project.

Students also improve their language skills in English or German, they learn how to work in interdisciplinary and intercultural teams. Juan de Dalmau, ESA staff member seconded as General Delegate of the CVA, recently said *“Each year, at the CVA alumni gathering, we are pleased to see that among the 250 alumni from our Summer School, more and more are taking promising positions in the European space sector”*.

The “Team Project” topic chosen for this year will commemorate the 30 years since the first Ariane launch, and the students will work in six competitive teams, each producing a conceptual design of the next generation of Ariane launchers for satellites, but also for human flights, with a detailed document and a presentation in front of a jury. Final student team presentations are scheduled for August 27th during the closing day, at the University of Applied Sciences in Augsburg. The CVA’s itinerant Summer School has been running yearly since 2000, hosted by the Ariane cities of Bremen, Toulouse, Turin, Liège, Barcelona, Heilbronn-Lampoldshausen and Madrid. The 2010 Summer School will take place in Bordeaux.

Europe’s Spaceport in Kourou, a “must” destination for the future space professionals

Thanks to the contributions of its almost 40 members, the CVA can provide financial help to a group of about 40 of its alumni to join the yearly professional visit to the Guiana Space Centre, Europe’s Spaceport in French Guiana. Through detailed briefings and visits to the facilities, the future space professionals can see on site how the launch operations are managed and carried out, and they can discuss informally with employees coming from different European countries about employment opportunities, living conditions, etc. This is no doubt an unforgettable experience for all involved. As a special feature in commemoration of the 30th anniversary of the first Ariane launch, the CVA is making a few places available for professionals in the space field and to journalists, for the trip to Kourou scheduled from December 4th to 9th, 2009.

For more information, or to register to the student presentations of 27 August in Augsburg, or to the Kourou trip in December 2009, please contact:

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