News Archive Space 2008

DLR Institute of Space Systems up and running

13 October 2008

Inauguration of the new laboratory and office building at DLR's Bremen site

DLR Institute of Space Systems in Bremen

With the inauguration of their new laboratory and office building on 13 October 2008, the 68 staff members of the Institute of Space Systems (Institut für Raumfahrtsysteme) of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) have now fully taken up their scientific duties at DLR's new Bremen site. This strengthens Bremen's position as a centre for space technology even further. The new DLR institute will focus especially on developing space systems. It will implement new, innovative technologies and procedures that will enable space missions to be realised more efficiently and economically.

"Today, DLR has started its scientific activities in Bremen, its 13th site in Germany. By joining forces with Bremen's industry and academia, the new institute will make an important contribution to the fields of systems analysis and systems technology", stated Professor Johann-Dietrich Wörner, Chairman of the DLR Executive Board. Professor Wörner added: "In addition to this, the DLR Institute of Space Systems will carry out space projects requiring systems engineering in cooperation with other research institutions and industry, work with the University of Bremen to promote better education, and act as an interface between applied research and industrial application."

The scientists received the keys to the building in the presence of Jens Böhrnsen, President of the Senate and Mayor of the Free Hanseatic City of Bremen, and Renate Jürgens-Pieper, Senator of Education and Science.

Future tasks

One of the core tasks of the new DLR institute is the analysis of complex space systems: Engineers and scientists develop and evaluate designs and concepts for future space missions.

The Institute's role in the realisation of space missions focuses on the development, integration and verification of systems. The Bremen-based scientists are currently already conducting research into cryogenic upper stages, compact satellites, on-board computer systems, on-orbit experimental platforms, high-precision position control, and exploration technology. They also facilitate sounding rocket and sounding balloon experiments designed by school pupils and students, for example in the frame of the REXUS/BEXUS program.

Now that the scientific research activities at DLR's new Bremen site have started, the first research cooperation agreements have also been signed. DLR's cooperation partners are EADS Astrium and the University of Bremen. The goal of this cooperation is to develop a new upper stage for a launch vehicle system.

Investment in the future

The systems technology section focuses especially on developing hardware and software that forms the system's core and that is not otherwise available. Additional components and subsystems are supplied by other DLR institutes.

A total of about 12.5 million euro has been invested in the new DLR site so far. The funds were provided by the German Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie; BMWi), the German federal state of Bremen and the European Development Fund. A total of about 17.5 million euro per annum is available to cover operational costs.

A so-called CEF laboratory (Concurrent Engineering Facility), an optical landing navigation facility and a dynamics simulator have already been installed at the DLR institute, with an eye to fulfilling the objective of "achieving system capability". This refers to the capability to observe a space system as a whole, including all its subassemblies and the interactions between them.

The CEF laboratory enables scientists to conduct concept studies in tandem with all parties involved in the project. If for instance changes are made to the planned mass of a spacecraft, the effects this has on other system components and units, such as the required size of the launch vehicle, can immediately be identified. This technique allows faster completion of the planning process, thereby saving costs.

With the aid of the optical landing navigation facility, approach procedures of planetary space probes are simulated. This should lead to the development of innovative methods to guide space probes during the final approach of their mission target, in order to prevent them from getting damaged.

The dynamics simulator uses two completely smooth granite tables weighing about 16 tonnes. On these, scientists simulate formation flying of satellite fleets using air-cushion vehicles.

A second construction phase for DLR's Bremen site is currently in the planning stage. It involves adding a large assembly hall and additional laboratories. Their completion, scheduled for 2011, will allow the twelve remaining scientists and engineers of the DLR Institute for Space Systems who are currently still working at DLR's Berlin-Adlershof site - for instance using large test facilities - to relocate to Bremen as well.

Related Contacts

Andreas Schütz
Deutsches Zentrum für Luft- und Raumfahrt (DLR) - German Aerospace Center
Corporate Communications, Spokesman
Tel: +49 2203 601-2474
Mobile: +49 171 3126466
Fax: +49 2203 601-3249
E-Mail: andreas.schuetz@dlr.de
