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ESA's Council of Ministers decides the future of European space exploration - Germany, the leading partner

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Council of ESA Ministers

On 25-26 November 2008, the Ministerial Council of the European Space Agency (ESA) met at the World Forum in The Hague, Netherlands. The key features of the programme decided on by ESA's 18 member states and Canada are the third generation of the European weather satellite Meteosat, Europe's guaranteed autonomous access to space using competitive launch systems and the exploitation of the International Space Station (ISS). The total value of the programmes endorsed by the member states amounts to just over 10 billion euro. The German federal government subscribed for a total of 2.7 billion euro in the coming years. This means that Germany remains the foremost space nation in the joint European space effort. In 2008, Germany's 603 million euro contribution already made it the leading partner in ESA, and in the future it will continue to shoulder about a quarter of the total contributions.

Peter Hintze, parliamentary state secretary in the German Federal Ministry of Economics and Technology (Bundesministerium für Wirtschaft und Technologie; BMWi), represented the German government in the negotiations. He was backed by the German delegation in the ESA Council, headed by Professor Dr Johann-Dietrich Wörner, Chairman of the Executive Board of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR).



Parliamentary State Secretary Peter Hintze

Speaking after the conference, Mr Hintze stressed: "Climate change is one of the biggest challenges facing humanity in this century. I am therefore especially proud of the fact that we were able to expand our leading position in Earth Observation even further. German high technology will put reliable and sustained research into climate change on a secure footing. The programmes that were endorsed by the Ministerial Council create the necessary conditions for Germany and Europe as a whole to monitor and forecast the weather, natural disasters and the climate with a level of accuracy never seen before. And by committing itself to this leading role, Germany also secures outstanding expertise in high-tech sectors such as satellite construction and the manufacture of scientific instruments.

Professor Wörner remarked on the outcome of the conference: "I am delighted that, despite the many different and wholly justified interests of the individual ESA member states, we were able to come to a positive and sustainable compromise. All partners have demonstrated continued commitment to their joint efforts in space exploration. This will ensure that Europe will remain an important player in international space exploration in the future as well. The outcomes of the conference give a boost to the challenging research topics, programmes and projects that we work on at DLR.

Funding for Scientific Programme to increase by 3.5 percent annually



The Herschel Space Telescope

Funding for ESA's Scientific Programme will increase by 3.5 percent annually from 2009. In this way, the ESA ministers ensure that space research will remain at the forefront of European space activities in the future. The ESA partners will invest 2 327 million euro in the science programme until 2013, of which 484 million euro, or 21 percent of the total, is contributed by Germany. This is a clear demonstration of Germany's leading position. Over the past decades, the benefits of participation in the ESA science programme for both industry and science in Germany have been greater than could have been expected on the basis of Germany's share in the contributions alone. The highlights of space research in the coming years will be the Herschel/Planck space telescope (to be launched in spring 2009), the GAIA mission (2011) to chart a three-dimensional map of our galaxy, the Milky Way, and the BepiColombo space probe's journey to Mercury, the closest planet to the Sun (2014).

Germany remains at the forefront of Earth Observation

One topic of particular importance to Germany and Europe is Earth Observation. With a 37 percent contribution, Germany takes the lead in the ESA/EU joint initiative on environmental and security policy GMES (Global Monitoring for Environment and Security). This amounts to 317 million euro earmarked for the construction of the space systems. This puts Germany in prime position with regard to environmental monitoring, disaster forecasting and security-related services. Moreover, it means that Germany will remain at the forefront of scientific Earth observation.

With regard to weather forecasting, the Ministerial Council endorsed the third generation of the European Meteosat satellite system (MTG, Meteosat Third Generation), which will be implemented during the period 2009-2020. MTG consists of six geostationary satellites. These will add new data, with better temporal, spatial and spectral resolution, to the series already obtained by the previous Meteosat generations. In addition to this, their storm warning functionality will be enhanced by the addition of lightning detection and they will be able to record the three-dimensional distribution of temperatures, humidity and wind speeds. At the meeting in The Hague, Germany subscribed to the new satellite series for a contribution of 34 percent, amounting to 292 million euro. This brings Germany on a par with France, which has been solely responsible for Meteosat systems management for three decades.

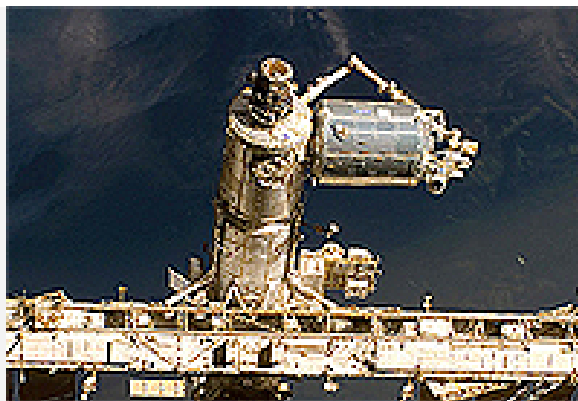


Ariane 5 ECA launcher clears the launch tower at Europe's Spaceport in Kourou

Three launchers for Europe's access to space: Ariane 5, Soyuz and Vega

In the future, Europe will have autonomous access to space using three launch systems. This will enable Europe to exploit space without hindrance and independently of other space nations in crucial areas such as Earth Observation, meteorology, intelligence, communications and navigation. To achieve this objective, Germany is contributing about 25 percent to the Ariane 5 programme and its further evolution. This amounts to about 293 million euro. One of the key objectives of the further development of Ariane 5 is to increase its payload capacity by about 1.5 tonnes, in order to guarantee double-launch capacity for the medium term with an eye to the launch vehicle's commercial exploitation. Another key objective is to make the system more flexible by using a re-ignitable cryogenic upper stage made in Germany, enabling it to reach a range of target orbits. Moreover, Germany also backs the future launch of Soyuz rockets from Kourou in French Guiana, as well as the deployment of the small new European launch system Vega for loads of up to 1500 kilogrammes from 2009.

Operation and exploitation of the International Space Station and space exploration



The European space laboratory Columbus is part of the ISS

In The Hague, Germany was able to get the backing of its partners for the continued ambitious exploitation of the ISS in the future. The launch of the European Columbus laboratory in February 2008, and the successful mission of the Automated Transfer Vehicle (ATV) this spring and summer have brought Europe's outstanding expertise in this area of space exploration to the world's attention. In the context of ESA's programme for the operation of the space station, Germany contributes 38 percent of the fixed costs as well as 25 percent of the variable costs. From 2008 to 2012, this amounts to about 562 million euro. This will go towards the operation of the Columbus laboratory, the construction, launch and operation of future ATVs, integration and operation of payloads, as well as training and support for European astronauts.

Germany subscribed to the third period of the ELIPS programme (European Programme for Life and Physical Sciences in Space), aimed at conducting research under space conditions, for a contribution of 37 percent or 146 million euro. ELIPS is the backbone of Europe's exploitation of the ISS. With a share of 90 percent of the total, it is the most important utilisation programme by far. Its first objective is the advancement of scientific knowledge in the fields of medicine, biology, materials science and physics. In

addition, it is also aimed at developing new practical applications on Earth, for instance in the fields of materials and medicine. By making a higher than average contribution to this programme, the German government emphasises Germany's leading position in microgravity research. Over 40 percent of the European ISS experiments were developed by German scientists. The financial returns for Germany are substantial: The total funds received by German research institutions exceed Germany's contribution to the ESA programme by 40 percent.



Automated Transfer Vehicle - 'know-how' for future missions

The ministers also endorsed a study on further development of the ATV to enable safe re-entry into the Earth's atmosphere, as well as a study on a robotic mission to land on the Moon. Taking into account a number of smaller studies, Germany will participate in this area to a total amount of 25 million euro.

The costs for the ExoMars mission to Mars had increased from 593 million euro in to the original plans (with a German share of 14.5 percent) to 1.2 billion euro. The ministers decided to reorganise the programme, which is substantially funded by Italy, and set a maximum of one billion euro. The launch is now expected to take place in 2016. ExoMars will explore the Martian surface to find traces of life and to determine the geophysical characteristics of the planet. German scientists contribute to 19 of the 23 scientific instruments.

Germany takes the lead in the Data Relay Satellite System and communication satellite programmes

ESA's ARTES programmes make a lasting contribution to the competitiveness of the European satellite industry, which has been established in the world market for a long time already. ARTES (Advanced Research in Telecommunication Systems) covers innovative mobile services, broadcasting, data relay, and search and rescue systems, all aimed at improving quality of life of citizens. Germany has committed itself to contributing about 220 million euro to the joint satellite communications programme, which amounts to 22 percent of the total.



ESA Ministerial Council

The ministers' endorsement of a European Data Relay Satellite System in geostationary orbit is of strategic importance. Improved data connections with ground stations and data centres will, among other things, enable faster utilisation of GMES data and thus faster decision-making with regard to the environmental and security situation. Based on its contribution of 49 percent, amounting to 113 million euro, Germany will henceforth be responsible for systems management in this area.

In addition to this, Germany's leading position in the programme for new, small communication satellites with a maximum payload of 300 kilogrammes and three kilowatts of power was also confirmed at the meeting in The Hague. At the moment, this market is served by the US and since recently also by India, which makes this a particularly challenging endeavour for Europe.

Contact

Dr. Niklas Reinke

Deutsches Zentrum für Luft- und Raumfahrt (DLR) - German Aerospace Center
Corporate Communications
Tel: +49 228 447-394
Fax: +49 228 447-386
E-Mail: Niklas.Reinke@dlr.de

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

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