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DLR and Kayser-Threde sign contract for German Earth Observation satellite EnMAP

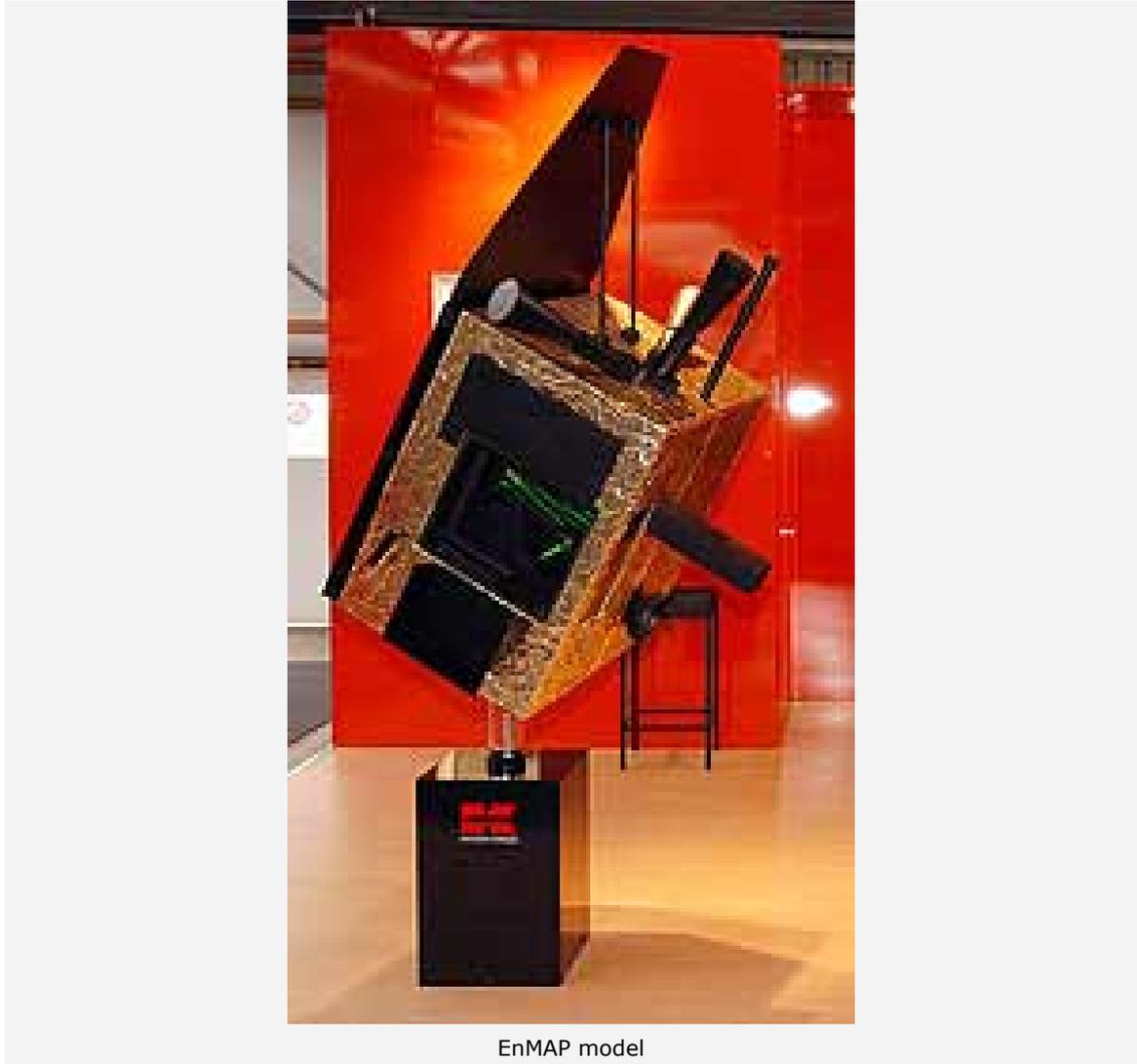
11 November 2008



Dr Ludwig Baumgarten (DLR) and Jürgen Breitkopf (Kayser-Threde GmbH)

On 11 November 2008, the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) and Kayser-Threde GmbH signed a contract for the development and construction of the EnMAP satellite (**E**nvironmental **M**apping and **A**nalysis **P**rogramme) in Bonn. EnMAP is a hyperspectral Earth observation satellite. Hyperspectral instruments record solar radiation reflected from the Earth, from visible light to near infrared. This enables us to obtain accurate information about the condition of the Earth's surface and how it is changing. The mission, which will be launched in 2012, is scheduled to last for five years.

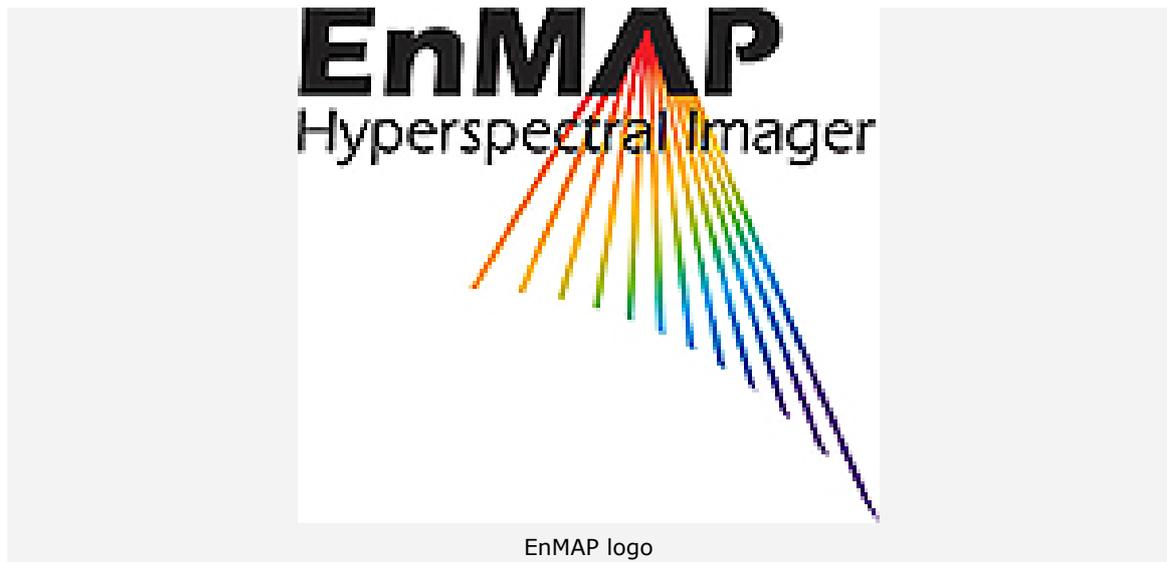
Hyperspectral sensors provide information on soil, plants and bodies of water



Conventional multispectral sensors record radiation reflected from the Earth in a small number of very broad channels. They provide reliable data and information, for example on land cover and its geographical distribution. These methods of measurement are adequate for qualitative research, for example regarding types of vegetation. But for quantitative information, for example relating to the supply of nutrients for crops or the quality of water in lakes, high-resolution spectral data is required.

The EnMAP satellite is equipped with a so-called hyperspectral instrument, a spectrometer that will map the Earth's surface in over 200 narrow colour channels at the same time. This will give us detailed information on vegetation, land usage, rock surfaces and bodies of water. The data will tell us about the mineral composition of rocks, the level of damage to plant life caused by air pollutants or the level of soil pollution.

The satellite will be sent into an orbit approximately 650 kilometres above the surface of the Earth. From this orbit, it will be able to fly over every point on Earth twice in four days. This makes EnMAP ideal for documenting changes over time and across different areas, such as processes of erosion or vegetation periods. Spectroscopic Earth observation can provide us with information about the distribution and status of ecosystems in many different natural environments, whether it be coastal areas, landscapes altered by human activity, steppes, deserts or forests.



In the EnMAP mission, a high-quality hyperspectral sensor will be used in conjunction with a satellite. The data gathered by the satellite are expected to open up new possibilities for its use. This data may also help to answer current questions relating to the environment, agriculture, land usage, water management and geology on a global scale.

DLR's Space Agency is in charge of the overall EnMAP mission, which will cost about 90 million euros in total. Kayser-Threde GmbH has now been entrusted with the development, construction and launch of the satellite and the hyperspectral instrument. The project scientist for the mission is Professor Dr Herrmann Kaufmann of the Research Centre for Geosciences in Potsdam. The construction of the ground segment has been assigned to DLR in Oberpfaffenhofen. This includes satellite control as well as data reception, archiving and processing.

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