

## DLR and US corporation TBE sign partnership for Earth observation instrument on board the ISS

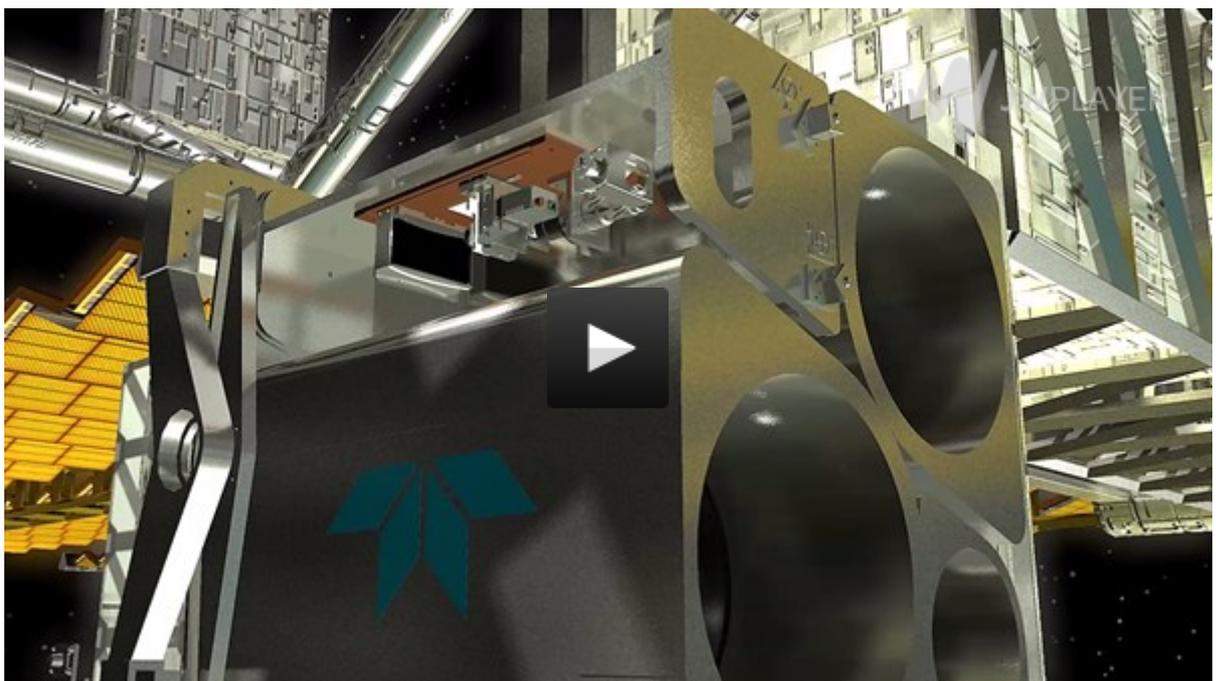
20 May 2014

On 20 May 2014 at the ILA Berlin Air Show, the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) and the US corporation Teledyne Brown Engineering, Inc. (TBE) signed an agreement to install and operate the imaging spectrometer DESIS (DLR Earth Sensing Imaging Spectrometer) on board the International Space Station (ISS). This DLR-built instrument will be one of four camera systems for remote sensing fitted to the MUSES (Multi-User System for Earth Sensing) instrument carrier to be installed by TBE on the ISS. DESIS will be able to detect changes in the land surface, oceans and atmosphere; it will contribute to the development of effective measures to protect the environment and climate.

"This scientific-industrial partnership with TBE will enable us to use the ISS as a long-term carrier of Earth observation instruments as it travels through space," explained Johann-Dietrich Wörner, Chairman of the DLR Executive Board. The project is intended to open up new possibilities in Earth observation and is the first to be developed in cooperation with a commercial enterprise.

### A reliable view of Earth from the ISS

The MUSES platform has an area of 85 by 85 centimetres and can accommodate four instruments. It will be attached to a pivot arm on the side of the ISS facing Earth during an astronaut spacewalk scheduled for 2015. What sets this project apart from other satellite instruments is that the ISS instruments can be replaced or updated continuously to accommodate new technical innovations. The technology manufacturer TBE will operate the DESIS hyperspectral sensor on the ISS and will cooperate with DLR in using the data in various areas, for instance systematic and applied research.



Video: View of Earth from the ISS

## **Environmental monitoring using hundreds of spectral channels**

DESIS is a hyperspectral camera that records image data using an array of up to 240 closely spaced channels, covering the visible and near infrared portions of the spectrum (450 to 915 nanometres) with a ground resolution of approximately 90 metres. This multifaceted information allows scientists to detect changes in ecosystems and to make statements on the condition of forests and agricultural land. Among other things, its purpose is to secure and improve the global cultivation of food. The data from the ISS instruments will be available quickly in the event of a catastrophe and can help rescue teams operating on the ground to organise their deployment. DLR and TBE seek to combine the data from other MUSES instruments to develop advanced methods for remote sensing of the Earth. Cooperation in this scientific and commercial use will also promote hyperspectral technologies for future satellites.

Installation on the ISS will also mean that the instruments can be brought back to Earth after a service life of between three and five years to analyse the influence of the space environment on the remote sensing instruments. The platform with the DLR DESIS instrument is scheduled to commence operations in 2016.

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### **Contacts**

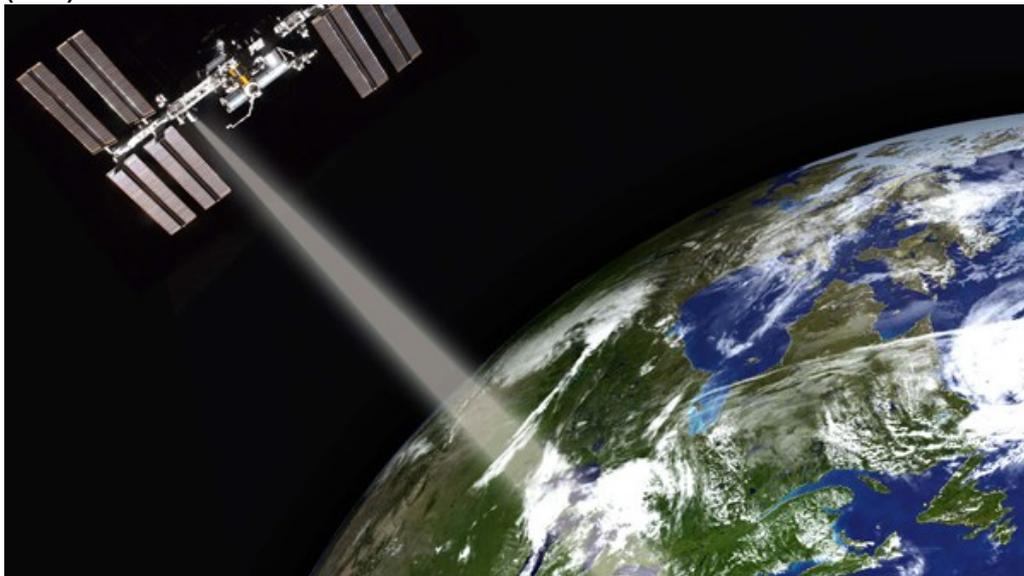
*Andreas Schütz*  
*German Aerospace Center (DLR)*  
*Corporate Communications, Spokesman*  
*Tel.: +49 171 3126-466*  
*Andreas.Schuetz@dlr.de*

*Andreas Eckardt*  
*German Aerospace Center (DLR)*  
*DLR Institute of Optical Sensor Systems*  
*Tel.: +49 30 67055-539*  
*Fax: +49 30 67055-532*  
*Andreas.Eckardt@dlr.de*

*Uwe Knodt*  
*German Aerospace Center (DLR)*  
*Corporate Development and External Relations*  
*Tel.: +49 2203 601-2857*  
*uwe.knodt@dlr.de*

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### **Cooperation between DLR and US corporation Teledyne Brown Engineering, Inc. (TBE)**



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