

## Press Release

SPACE SYSTEMS

### **DLR commissions Airbus to develop the payload and payload ground segment for MERLIN – the first Franco-German Earth observation satellite**

MERLIN will measure the methane content of Earth's atmosphere to improve our understanding of global warming

Airbus develops a new LIDAR instrument

Ottobrunn, 17/02/2017 – Airbus Defence and Space, the world's second largest space company, has signed a contract with Space Administration at the German Aerospace Center (DLR) to develop and build all components of the German contribution to the German-French Earth observation mission MERLIN.

The German Aerospace Center and the French space agency Centre National d'Études Spatiales (CNES) are jointly developing this challenging mission on behalf of the French and German governments. With this step, Europe's two largest space-faring nations have resolved to seek a deeper understanding of the mechanisms that influence Earth's climate.

As the industrial prime contractor on the German side, Airbus in Ottobrunn, near Munich, was commissioned by DLR to develop the payload and the payload ground segment. As the industrial prime contractor for CNES, Airbus in Toulouse is responsible for the overall system, the satellite platform and integration of the instrument.

“By developing MERLIN through DLR and CNES, France and Germany are making an important contribution to better understanding the causes of climate change,” said Dr Michael Menking, Head of Earth Observation, Navigation and Science at Airbus Defence and Space.

Starting in 2021, MERLIN (MEthane Remote sensing Lidar missioN) will deploy a LIDAR (Light Detecting and Ranging) instrument to monitor the methane content in Earth's atmosphere from an altitude of around 500 kilometres, and additionally make possible the first-ever global map of concentrations of this critical greenhouse gas.

Highly precise global measurement and mapping of methane concentrations in the atmosphere is only possible from space, as it requires continuous, large-area

## Press Release

observation. Key areas such as tropical wetlands, rain forests and sub-Arctic regions are extremely difficult to survey without satellites.

To date, the methane concentration in the atmosphere has been measured from Earth observation satellites that use solely “passive” instruments. These utilise the sunlight scattered by the Earth’s surface to determine the content of trace gases (such as methane) in the atmosphere. They depend on daylight and only produce optimum results when skies are clear.

The MERLIN mission will be the first to use an “active” LIDAR instrument developed in Germany. It is equipped with an on-board light source (the laser) and can thus measure at night and even through thin cirrus clouds. The instrument emits two short light pulses at two slightly different wavelengths. As one wavelength is absorbed by the methane and the other is not, this difference between the two back-scattered signals can be measured and the methane concentration can be determined with unprecedented precision.

With the aid of data on wind speeds and directions, scientists around the world will be able to convert these values into global methane flow maps and determine the actual regional effects of methane. A better understanding of the global methane cycle is urgently needed in order to reliably predict changes in climate and pursue effective climate protection.

### About Airbus

Airbus is a global leader in aeronautics, space and related services. In 2015, it generated revenues of €64.5 billion and employed a workforce of around 136,600. Airbus offers the most comprehensive range of passenger airliners from 100 to more than 600 seats. Airbus is also a European leader providing tanker, combat, transport and mission aircraft, as well as Europe’s number one space enterprise and the world’s second largest space business. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions worldwide.

### Media contacts

Ralph Heinrich	+49 (0)171 30 49 751	ralph.heinrich@airbus.com
Jeremy Close	+44 (0)7766 536 572	jeremy.close@airbus.com
Alain Dupiech	+33 (0)7 86 29 54 71	alain.dupiech@airbus.com
Francisco Lechón	+34 630 196 993	francisco.lechon@airbus.com