

## A SMILE for future space weather forecasting as Payload Module travels to China

Structural Thermal Model delivered after successful review

Pioneering future space weather forecasts

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**Madrid, 17 March 2022** - The structural thermal model (STM) of the payload module (PLM) of the SMILE (Solar wind Magnetosphere Ionosphere Link Explorer) mission has successfully passed its Delivery Review Board (DRB). The SMILE STM payload is now on its way to Luxembourg from where it will start its journey to Shanghai. On arrival it will be integrated onto the Chinese platform, to complete the qualification of the satellite.

“This is the first time that ESA and China have jointly selected, designed, implemented, launched and operated a space mission and Airbus is very pleased to be part of it,” said Philippe Pham, Head of Earth Observation and Science at Airbus. “Understanding space weather is key to being able to predict events that can affect our planet’s magnetosphere, satellites in orbit and even electrical infrastructure here on Earth.”

The STM payload module returned to Airbus in Spain after completing thermal testing and deployment tests of the magnetometer’s boom at ESA-ESTEC, in the Netherlands. A mechanical test was then carried out at Airbus’ Madrid-Barajas site, finalizing the environmental test campaign that lasted three months.

Integration onto the Chinese platform is expected to begin in early April. Once the complete satellite is finished, it will undergo a comprehensive five month long qualification test campaign including thermal, mechanical, EMC, magnetic, deployment and functional tests at system level. Airbus will give remote support.

SMILE will study the Earth’s magnetic environment (magnetosphere) on a global scale, building a more complete understanding of the Sun-Earth interaction. It will do this by observing the flow of charged particles streaming out from the Sun into interplanetary space (the solar wind) and exploring how these interact with the space around our planet. This interaction is also called space weather.

SMILE is the first joint European-Chinese mission. ESA is responsible for the Payload Module, the launch vehicle, one of the scientific instruments and part of the science operations, while the Chinese Academy of Sciences (CAS) is responsible for three scientific instruments, the platform, and the mission and science operations. Airbus delivered the STM model of the SMILE PLM on time in line with ESA and CAS’ requirements.

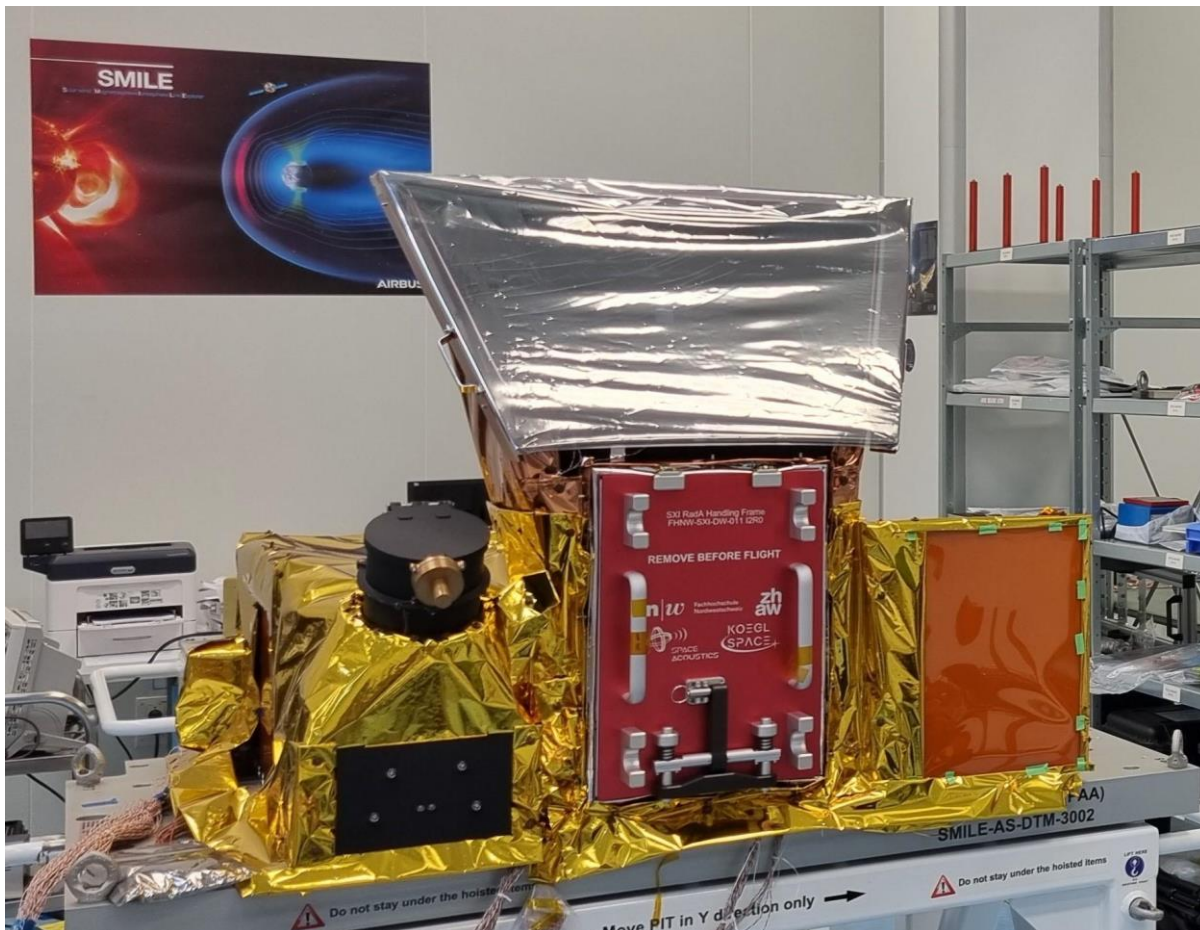
ESA selected Airbus in Spain in July 2019 as the main contractor of the SMILE payload, the European component. The launch of the mission is scheduled for late 2024 or early 2025 from Europe’s Spaceport in Kourou. The SMILE mission will have a lifetime of three years and

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builds upon findings and studies by ESA satellites such as Cluster and XMM-Newton, also built by Airbus.



Structural thermal model of the SMILE Payload ready for shipment – Copyright Airbus2022

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