

Climate change space project awarded to Airbus UK

Airbus has been awarded a contract to prepare a mission to collect the most accurate measurements of energy coming into the Earth from the Sun, and light reflected off Earth's surface, to help understand changes in balance (global warming) and mankind's impact on the planet.

The mission will not only make measurements itself, but also improve the performance of other missions through calibration from space, becoming a new 'gold standard' reference for climate measurements.

The contract is backed by the UK Government and awarded as part of the European Space Agency's TRUTHS satellite mission, which will rapidly improve our ability to track and monitor climate change from Earth Observation data. It will allow climate scientists to better compare and calibrate data from other satellites while making the reasons for climate change action more certain and enabling progress from those actions to be seen in the shortest possible time.

Earth observation satellites collect hundreds of terabytes of data per day, delivering vital intelligence about how fast glaciers flow, the size of forest fires in the Amazon, and the quality of the air that we breathe. Measurements from these satellites will arm policy makers, governments and industry with the best quality data and knowledge needed to track and better understand the impacts of climate change.

The TRUTHS mission was originally conceived in the UK by Professor Nigel Fox of the National Physical Laboratory (NPL) – a world leading centre for measurement science – to act as the first ever 'climate and calibration laboratory in space'.

Richard Franklin, Managing Director of Airbus Defence and Space in the UK said:

Validating data on Earth's changing climate is at the heart of this exciting mission, which will have a profound impact on future studies. It will provide the gold standard of calibration for space-based Earth observation – a kind of 'standards laboratory in space'.

For the first time the international scientific community will be able to cross-reference their measurements and data, enabling much more accurate forecasts and analysis, from both large institutional and small commercial missions.

The TRUTHS mission will build on the UK's status as a world-leader in tackling climate change, with Airbus now set to lead the industrial charge in

helping provide this novel mission.

Many other UK companies will be part of the programme, UK science and expertise will guide its requirements and the resultant data has the potential to help revolutionise our understanding of the planet.

UK Science Minister Amanda Solloway, said:

We have to use every tool at our disposal to help understand and tackle major issues such as climate change, whether that's locating harmful carbon emissions or tracking the effects of deforestation.

This ambitious mission to create a 'climate laboratory' in space – the first of its kind – will help increase the accuracy of future climate projections by arming our leading scientists with the most reliable data and insight we have ever had access to – helping us take action to tackle this here in the UK, and around the world.

TRUTHS will carry a Cryogenic Solar Absolute Radiometer (CSAR) to provide a primary calibration standard in order to benchmark measurements of both incoming solar radiation and outgoing reflected radiation with unprecedented accuracy.

The TRUTHS study and pre-developments marks a determined approach by the UK to propose and lead missions within the European Space Agency that meet UK objectives and will include key partners from the UK space industry including Teledyne e2v UK, NPL, RAL, University of Leicester, Thales Alenia Space UK, CGI IT UK, Telespazio-UK and Goonhilly Satellite Earth Station as well as important contributions from companies and institutes from the participating nations: The Czech Republic, Greece, Romania and Switzerland. The overall contract is worth approximately €16 million.

The UK has embarked on a strategy to take a leadership role and build national capacity in this domain ranging from the strong climate science expertise and the innovation and expertise in developing new satellite instrument concepts, through to the build of operational missions which provides data for science, government and the space-enabled service companies who are building commercial climate services on trusted data.

By working with the engineering experts in ESA and by collaborating with our colleagues in other countries the UK Space Agency not only aims for a new mission but one that through building and operation offer an opportunity to inspire the next generation to be involved in an exciting and stimulating career of climate and Earth Observation.