

Fincantieri: IDS successfully tested the transponder antenna within ESA Biomass Mission

Trieste, July 8, 2022 – Fincantieri NexTech, through its subsidiary IDS – Ingegneria Dei Sistemi, in collaboration with C-CORE, have been selected to develop and install the P-band Biomass Calibration Transponder (BCT) in New-Norcia, Australia. This activity is part of the contract awarded to Airbus Defence and Space Ltd. by the European Space Agency (ESA) to build its Biomass satellite for the next Earth Explorer mission.

The [ESA Biomass mission](#) will provide crucial information about the state of our forests and how they are changing. The data will be used to better understand the role of forests in the carbon cycle. Biomass will also provide essential support to UN on the reduction of emissions from deforestation and forest degradation.

The calibration transponder will receive signals from the satellite and transmit a reference signal to ensure the accurate calibration of the first space-borne P-band synthetic aperture radar in order to deliver exceptionally accurate maps of tropical, temperate and boreal forest biomass, not obtainable by ground measurement techniques. The BCT antenna, in charge to IDS, has been set up as a passive dual-linear polarized planar array, realized by assembling four antenna segments, and responds to a number of challenging RF requirements in terms of Gain, SLL, XPD, channels imbalance, electrical boresight stability and others. In addition, the feature of the antenna to be large-sized but lightweight (coarsely 5m diameter and 600 Kg weight) has increased dramatically the challenges in complying with the RF requirements while maintaining accurate manufacturing, modularity, reliability and manoeuvrability.

This was the most demanding multi-disciplinary antenna design and development activity ever faced in IDS, requiring tight collaboration among electromagnetic, mechanical, measurement and logistic functions and a severe program control.

The BCT antenna has been measured in the [ESA HERTZ facility in March-April 2022](#) and the required performances have been successfully verified.

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IDS Ingegneria Dei Sistemi S.p.A., a Fincantieri NexTech company, is an engineering and systems technologies company providing research, innovation and products in Electromagnetic Engineering, Satellite Communications, Robotics and Unmanned Systems, and Radar based safety and protection systems for civil and defense applications. Since the outset in 1980, IDS has specialized in providing consulting services for high-tech engineering projects and in developing integrated hardware and software solutions. IDS has a strong customer focus and is committed to meeting customer requirements with high quality innovative solutions. IDS is an international company with 250 professional employees worldwide, mostly electronic, telecommunications and aerospace engineers. The IDS headquarters are in Pisa, Italy and the company has several other offices in the country. It also has a strong international outlook with four subsidiary companies located in UK, Australia, Canada and South Korea. This international presence helps IDS to provide better, localized services and support to its international clients.

www.idscorporation.com

Fincantieri is one of the world's largest shipbuilding groups, the only one active in all high-tech marine industry sectors. It is leader in the construction and transformation of cruise, naval and oil & gas and wind offshore vessels, as well as in the production of systems and component equipment, after-sales services and marine interiors solutions. Thanks to the expertise developed in the management of complex projects, the Group boasts first-class references in infrastructures, and is a reference player in digital technologies and cybersecurity, electronics and advanced systems. With over 230 years of history and more than 7,000 ships built, Fincantieri maintains its know-how, expertise and management centres in Italy, here employing 10,000 workers and creating around 90,000 jobs, which double worldwide thanks to a production network of 18 shipyards operating in four continents and with over 20,000 employees.

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