Demonstrating the next generation of high-speed satellite data chain technology

In June 2022, a team of European funded space technology experts will demonstrate of the next generation of high-speed satellite data chain technologies.

UNITED KINGDOM , May 31, 2022 /EINPresswire.com/ -- An international team of leading space technology developers is preparing to deliver an end-to-end demonstration the next generation of high-speed data chain technologies to futureproof satellites used for Earth Observation and Telecommunications.

With backing from the Horizon 2020 research and innovation framework programme a group of world-leading experts in satellite technology has been collaborating to develop a suite of integrated technologies for the high-speed management, processing, and transfer of large quantities of satellite data, such as the data collected by Earth Observation satellites.

To date, the project has delivered substantial advances in the performance of individual components of the data chain. These include the development of:
• a high-performance, high-reliability and high-availability network to interconnect the data chain elements;
• a modular data compression system capable of processing the very high instrument data rates foreseen for future Earth Observation missions;
• a high performance very versatile payload processing unit that can be programmed on the fly, in just 40us;
• a high-rate RF downlink transmitter for high-speed-data transmission from Earth Observation or data relay satellites to the ground;
• an optical terminal that supports high-speed data transfer and downlink;
• and a file protection scheme to safeguard satellite data against long error-bursts/outages in optical satellite downlinks.

While these individual advances represent significant improvements over current satellite payload technologies, Hi-SIDE's main achievement will be the demonstration of the complete

data chain architecture, which is designed to handle an aggregate instrument data-rate of at least 50 Gbit/s in the near term and greater than 100 Gbit/s in the future. The team are currently completing the verification of the individual data chain elements, and on the 16th of June 2022 they will integrate and demonstrate the end to end performance of the data chain, from instrument to ground-station.

For further information about the project and updates on emerging results, please visit the Hi-SIDE website.

ABOUT THE PROJECT: Hi-SIDE, which stands for High-speed integrated satellite data systems for leading EU industry, started on 1st January 2018 and runs until 30th June 2022. The Hi-SIDE consortium includes Airbus Defence and Space SAS (France), Tesat-Spacecom GmbH & Co.KG (Germany), Deutsches Zentrum Luft - und Raumfahrt e.V. (Germany), STAR-Dundee Limited (UK), STAR-Barcelona (Spain), Integrated Systems Development S.A. (Greece), Kongsberg Spacetec AS (Norway), Erzia Technologies SL (Spain), Universitat Autonoma De Barcelona (Spain), Ethniko Kai Kapodistriako Panepistimio Athinon (Greece) and Modus Research and Innovation Limited (UK).

To develop the technology being demonstrated, Hi-SIDE was granted 6.9 M€ from the European Union's H2020-COMPET-2017 Research and Innovation Framework Programme under Grant Agreement no 776151.

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