



WORK Microwave to Develop State-of-the-Art Optical Modem for European Space Agency and German Aerospace Center

Modem Enables Optical Space-to-Ground Communication Via Laser Link at a Very High Throughput Rate With Secure Data Connection

HOLZKIRCHEN, Germany — Oct. 5, 2022 — WORK Microwave, a leading European manufacturer of advanced satellite communications equipment, today announced that the European Space Agency (ESA), with the support of the German Aerospace Center (DLR), has awarded WORK Microwave a contract to develop a state-of-the-art optical modem for space-to-ground communication as part of the ARTES Strategic Programme Line for Optical and Quantum Communication - ScyLight and its technology development program. WORK Microwave's modem will enable optical communication between space and Earth at a very high throughput rate with secure data connection to satisfy a growing demand for institutional and commercial space missions.

Elodie Viau, Director of Telecommunications and Integrated Applications at ESA, said: "Optical communications in space are essential to ensuring the safety and security of citizens on Earth, as set out in ESA's Agenda 2025. Within ARTES we support ScyLight product-oriented development and enhancing the maturity of Optical Communication in space."

"Over the last 10 or more years, there has been an increased focus in space-based optical communication from institutional and commercial users aiming for the high throughput and secure connection that optical links provide," said Dr. Harald Hauschildt, ScyLight Strategic Programme Line (SPL) Manager at ESA. "We have tapped WORK Microwave to develop a full-stack optical modem for multi-mission support and to demonstrate future technical standards in optical space-to-ground communication based on their extensive knowledge of the technology."

The objective of the multi-mission optical modem project (M3O) is to develop a suite of prototype products for receiving an Optical-On-Off-Keyed (OOK) laser waveform from spacecrafts. WORK Microwave's modem will be a key element in the world's first full-stack optical ground station solution that provides space-to-ground communication via an optical laser

link, offering an extensive feature set and support for a wide range of specifications, including the Consultative Committee for Space Data Systems (CCSDS) standards. The optical modem will support data rates from 100 Mbps to 10 Gbps, with CCSDS modulation, synchronisation, and coding per O3K standards. In addition, the modem is being designed with soft decision input modality, scalable data buffering, and is ready to support the High Photon Efficiency CCSDS standard for deep space missions.

“WORK Microwave is committed to bringing a high-speed optical modem to market that is geared towards the commercial industry,” said Thomas Fröhlich, CEO of WORK Microwave. “Our company has a history of advancing optical communication, as demonstrated by our early-phase optical modem product launch and our contribution to the optical standards in the CCSDS working group. Our innovation track record for quickly adapting new technology to the ever-evolving requirements of the satellite communication industry helped us secure this development deal with ESA and DLR.”

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About WORK Microwave (www.work-microwave.com)

Headquartered in Holzkirchen, Germany (near Munich), and comprised of four operating divisions — Satellite Communication, Navigation Simulators, Defence Electronics, and Sensors and Measurement — WORK Microwave leverages over 35 years of experience to anticipate market needs and apply an innovative and creative approach to the development of frequency converters, DVB-S2/S2X equipment, and other digital signal processing technologies while maintaining the highest standards for quality, reliability, and performance.

WORK Microwave's Satellite Communication division develops and manufactures high-performance, advanced satellite communications equipment for earth observation, NGE0 constellations, direct-to-home broadcast, IP networks, teleport management, government communications, and many more applications.

About ESA (www.esa.int)

The European Space Agency (ESA) is Europe's gateway to space. ESA is an intergovernmental organisation, created in 1975, with the mission to shape the development of Europe's space capability and ensure that investment in space delivers benefits to the citizens of Europe and the world. For more information see esa.int

The Telecommunications and Integrated Applications Directorate (TIA) supports innovation to boost the competitiveness of the European industry in the global space market. This involves a wide range of activities, from space-based technology, systems, and products for telecommunications development to the down-to-Earth application of space-based services. It also calls for engagement with a wide range of industrial, academic, and institutional partners. For more information, please visit our website: <https://artes.esa.int/>

More details on ESA ARTES Project:

<https://artes.esa.int/projects/aseries-dog>

More details on WORK Microwave's Digital Optical Ground Station:
<https://work-microwave.com/digital-optical-groundstation/>

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Link to Word doc: www.202comms.com/WorkMicrowave/221005-WORK_Microwave-ESA_Satellite.docx

Photo Link: www.202comms.com/WorkMicrowave/DOG-1_Modem.png

Photo Caption: WORK Microwave's DOG-1 Multi-Mission Optical Modem, designed to support the processing of optical links between space and Earth.

Photo Link: www.202comms.com/WorkMicrowave/Logo_DOG_1500x1500.png

Photo Caption: WORK Microwave's Digital Optical Ground Station logo

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