PRESS RELEASE

Telespazio-led Consortium to Automate Space Operations with AI, Enhancing Mission Efficiency

A consortium led by Telespazio Germany will develop AI-based solutions to automate operations preparation and simulation, improving efficiency and reducing manual workload.

- The European Space Agency (ESA) and a consortium of industry leaders, led by Telespazio Germany, have launched a project to integrate Artificial Intelligence (AI) into mission operations preparation, as part of ESOC's A²I Roadmap [A²I Roadmap | OPS Portal].
- The initiative aims to streamline spacecraft operations preparation by automating key tasks, improving flight procedure preparation and validation, as well as the usage and validation of operational simulators.
- The project will include a consortium consisting of Solenix Engineering GmbH, CGI Deutschland B.V. & Co. KG, OHB System AG, with support from EUMETSAT, ensuring broad expertise across AI, space operations, and mission simulation.

Darmstadt – Germany, 8th April 2025 – A consortium of companies, led by Telespazio Germany, have initiated the "AI for Automation of Operations Preparation and Operational Simulation" (OPOS) project, a key component of ESA's Artificial Intelligence for Automation (A²I) Roadmap.

This activity seeks to automate mission preparation and operational simulations, reducing the burden on flight control teams by eliminating repetitive manual tasks. The AI-powered systems will enhance fault detection, optimize resource management, and increase mission efficiency, allowing spacecraft operators to focus on high-level strategic tasks.

By integrating AI and automation, Telespazio Germany, in its leading role within the consortium, will optimize the most critical and frequently performed routine operations to maximize efficiency and impact. Currently, space operations depend on manual workflows, complex procedure updates, and labour-intensive validation processes. OPOS will address these challenges by automating routine tasks, helping detect regressions, enhancing preparation processes and hence streamlining ground operations. The consortium will ensure AI-driven automation is applied where it has the greatest impact in the preparation of missions.

To maximize effectiveness, the consortium is developing the solution in collaboration with ESA and EUMETSAT, aligning AI solutions with real-world operational needs. The OPOS project will be tested at ESA's European Space Operations Centre (ESOC) and EUMETSAT,

using the Copernicus Anthropogenic Carbon Dioxide Monitoring (CO2M) mission as a demonstration platform.

CO2M plays a critical role in global carbon dioxide monitoring, supporting climate mitigation efforts. AI-driven automation will enhance mission efficiency by improving resource allocation, optimizing data processing, and ensuring seamless satellite operations.

By significantly reducing manual processes and simplifying simulator validation and regression detection, OPOS will free up resources for future missions and space exploration initiatives. Its impact will extend beyond ESA's current operations, establishing new benchmarks for AI-driven mission preparation. The consortium unites specialists in operations preparation and mission simulations, leveraging their experience in AI advancements at ESOC and across European space programs. Their combined expertise ensures AI-powered automation becomes a core component of Europe's space operations infrastructure.

Sigmar Keller, CEO of Telespazio Germany, commented: *"Powered by an outstanding consortium and utilizing the CO2M mission as a demonstration platform, this project marks a transformative step in automating mission operations, setting a new benchmark for future satellite missions."*

Phil Evans, Director-General of EUMETSAT, added: *"As Europe's meteorological satellite agency, EUMETSAT is always at the technological forefront to empower our member states with accurate data in a timely and easy way. The OPOS project brings together European leaders to set new standards for satellite operations preparation and take us all one step further."*

About Telespazio Germany

Telespazio Germany, a subsidiary of Telespazio – a Leonardo and Thales 67:33 joint venture – is a leading company in space systems development and mission operations. Its activities range from the design of cloud-native, mission-control and ground systems to simulations, flight control, payload data processing and astrodynamics. Covering all mission phases, the company leverages its expertise to advance new technologies, specialising in AI, cybersecurity, satellite communications, ATM (air traffic management), training solutions, and drone services. As part of the Telespazio Group – with its network of 4 space centres, 25 operating sites, and presence in 15 countries – the German branch, with more than 400 employees, plays a key role in the space ecosystem.

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