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SpaceCloud makes its maiden spaceflight with D-Orbit in Q2 2021

Unibap AB (publ) has signed a launch service and mutual collaboration contract for In-Orbit Validation (IOV) and In-Orbit Demonstration (IOD) of SpaceCloud hardware and services with D-Orbit UK Ltd. The contract covers launch and operations of an Unibap SpaceCloud iX5-100 payload under a no-exchange of funds agreement. Unibap and D-Orbit will jointly perform the validation and demonstration for the purpose of evaluating and developing future commercial cloud computing services in space. Unibap contributes with flight computer hardware, SpaceCloud software. The D-Orbit contribution is the integration and launch of the SpaceCloud payload. Both organisations will demonstrate sophisticated applications using the SpaceCloud ecosystem.

Unibap's SpaceCloud solution will be integrated into D-Orbits ION Satellite Carrier spacecraft scheduled for launch in Q2 2021. The ION spacecraft will operate in a Polar, close to Sun Synchronous orbit (SSO).

Under the collaboration agreement, Unibap will deliver flight hardware and software to D-Orbit for spacecraft integration in March 2021. Unibap will support the spacecraft integration on ION and joint operations after launch. The ION platform is designed, manufactured, and operated by D-Orbit. While its primary function is to deliver and deploy smaller satellites into precise orbits and orbital slots, the spacecraft includes a plug-and-play mechanical, electric, and data interface that streamlines the integration of hosted payloads, like innovative technologies developed by startups, experiments from research entities, and instruments from traditional space companies with a mass ranging between 1 and 200kg.

The purpose of this mission is to demonstrate these new capabilities, characterize performance and gain practical experience in the operation of a cloud node in a spacecraft, connected securely to the cloud environment on the ground. A range of innovative solutions will be demonstrated, for advanced geospatial Earth Observation (EO) and Space Surveillance and Tracking (SST) applications using sophisticated, Artificial Intelligence/Machine Learning (AI/ML) algorithms for extremely low-latency decision support. In addition, we will experiment with a variety of compression techniques for telemetry, and streaming video and other types of data.

The joint team will upload additional SpaceCloud applications and experiments as permitted by onboard resources and platform availability throughout the mission lifetime to maximize the business potential of in-space data processing. Opportunities for third parties to demonstrate the software as the first commercially available Cloud in Space may also be offered.

Unibap is supported by the European Space Agency through an ongoing project within the General Study Technology Program (GSTP) for supporting third party applications and aimed at the technology maturation of the SpaceCloud reliability SafetyChip and SafetyBoot features. SpaceCloud enable containerized orchestration and isolation which allow the resources to be assigned to parallel execution of applications. Unibap have teamed with a range of organisations including ENEA, US-based SaraniaSat Inc, 12G Flight Systems AB for SpaceCloud ecosystem capabilities and application demonstrations.



- We are very pleased that D-Orbit will be the first satellite integrator and operator to demonstrate SpaceCloud in space. I am personally proud that both companies are European and that we can together demonstrate an exciting pathway for opening a future a data-driven space business era with cloud computing, says Dr. Fredrik Bruhn, Chief evangelist, and company director of Unibap

- We have been preparing for the use of advanced computing platforms in space in order to offer (cloud/AI enabled) computing as an important element in the range of On-Orbit services that we offer to our customers, says Simon Reid, D-Orbit' UK's COO. "Unibap's solution, which addresses the issues of deploying high power, modern COTS processors in the harsh space environment meant they were exactly the partner we needed for this mission."

- In the last few years, we have seen an increase in the interest of on-board data processing to increase the flexibility and lower the latency in generation of payload data products. The planned IOD with Unibap and D-Orbit will demonstrate a new concept of a single payload computer generating multiple data products in parallel, a method which can enable new mission concepts in the future, says David Steenari, On-Board Payload Data Processing Engineer from ESA

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For more information, contact:

Anders Blomberg
CEO
ceo@unibap.com
+46 738 21 37 79

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About Unibap

Unibap is a high-tech company that aims to automate and streamline industries on earth as well as in space. With smart solutions based on AI and robotics, we want to increase quality and productivity for our customers while eliminating dangerous tasks that today are performed manually. Unibap strives to have a positive impact on both society and the environment. The company's Quality Management System is certified according to SS-EN ISO 9001:2015. The company is listed at Nasdaq First North Growth Market.

For more information, please visit the Company's website unibap.com.

FNCA Sweden AB, +46 8-528 00 399, info@fnca.se, is the Company's Certified Adviser.