

## ALPAO is part of TeQuantS, European Space Agency's project for quantum satellite communications

**Grenoble (France) – January 31, 2023 – ALPAO, world leader in the field of deformable mirrors and adaptive optics, is part of European Space Agency's TeQuantS<sup>1</sup> project to develop quantum space-to-Earth communications technologies under Thales Alenia Space's prime contractor ship.**

Satellites are today viewed as the best bet for long-distance quantum communications, as ground-based fiber-optic links directly transmitting quantum information are limited to a range of about 150 kilometers.

The key challenge for quantum information networks is to enable future quantum computers and sensors to talk to each other and fulfill their promised exponential gains in performance. Quantum communications are currently the focus of major research and development programs.

The TeQuantS project aims to develop quantum technologies for future quantum information networks and cybersecurity applications. These technologies will enable project's partners to design and build satellites and optical ground stations by the end of 2026. TeQuantS will help to demonstrate the performances of long-distance quantum satellite links. This project is supported by French space agency CNES (*Centre National d'Etudes Spatiales*) and Austrian space agency.

The project, led by Thales Alenia Space, will draw on the expertise of a consortium composed of Airbus Defence and Space, seven SME, including ALPAO, and two research laboratories. The project partners will be working together to advance quantum communications in pursuit of Europe's objectives. ALPAO will be in charge of designing high performance and robust new Adaptive Optics system architecture.

"ALPAO is delighted to be involved in the TeQuantS project. With the synergy of the consortium, we will develop highly secure free space optical communication, based on the efficient laws of quantum physics. ALPAO will bring and share its expertise as leader in adaptive optics to develop a key architecture for this project." **said Vincent Tempelaere, President at ALPAO.**



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### About the TeQuantS consortium members & expertise

- ALPAO: Adaptive optics
- Thales Alenia Space : Project leader and Quantum systems
- Airbus Defence & Space: Quantum systems
- AUREA Technology: Quantum equipment and components
- Bertin Technologies: Optomechanical systems
- Miratlas: Atmospheric channel metrology
- OGS Technologies: Optical ground stations
- QTLabs: Quantum key distribution
- Sigmaworks: Quantum channel synchronization
- LIP6– Sorbonne University: Quantum systems
- INPHYNI– Côte d'Azur University/CNRS: Quantum systems

<sup>1</sup> Technological development for space-based Quantum reSource distribution



*Leading the light*

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**About ALPAO**

The aim of ALPAO, leader in optical wavefront control, is to revolutionize optics by removing aberrations. ALPAO has been designing and marketing a full range of adaptive optical products for research and industry since 2008. ALPAO markets deformable mirrors, wavefront sensors and software. ALPAO products are tailor-made for various applications such as astronomy, ophthalmology, microscopy, wireless optical communications and laser technologies.

With over 10 years of experience in adaptive optics, ALPAO deformable mirrors offer large strokes, high dynamic motion, high resolution images and very good optical quality. ALPAO is an international company with customers over 4 continents in more than 20 countries. Over 90% of its turnover comes from export. ALPAO is also involved in a specific French program to build with other companies, from various economic fields, a business climate convention.

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