

PRESS RELEASE

Palaiseau, October 14, 2024

## ONERA accelerometers to equip ESA's Next Generation Gravity Mission



**The European Space Agency (ESA) has entrusted ONERA with the development of MicroSTAR accelerometers for the future NGGM (Next Generation Gravity Mission) space geodesy mission.**

ESA and ONERA have signed a €27.3 million contract **for the** Next Generation Gravity Mission (NGGM), **within which** the French aerospace research center will develop and qualify the MicroSTAR accelerometer by 2027, with a view to deliver 7 flight models in 2028. The ESA member states have just confirmed this choice with an ambitious mission configuration.

This choice is **a** further worldwide recognition of ONERA's expertise in the field of ultra-sensitive accelerometry. NASA **also chose** to equip its future GRACE-C mission with ONERA's most sensitive accelerometers, **following on the GRACE** and GRACE-FO missions.

ESA's NGGM mission **aims at precisely mapping** the Earth's gravity field and its monthly **evolutions**. **The challenge is to lay the first milestone to a continuous monitoring of changes in the Earth's gravity field, therefore enabling** to track the evolution of water masses (including subterranean), **like** ice melt, **transfer of watersheds or monitoring of groundwater tables critical for the agriculture**. The technologies developed by ONERA will thus contribute to a better analysis of **the climate change impacts**.

NGGM forms part of the joint NASA/ESA MAGIC mission, consisting of a constellation of four satellites: the NASA satellites of the GRACE-C will be launched at the end of 2028, while the two ESA satellites will be launched around 2032. Thanks to ONERA's MicroSTAR accelerometer, the constellation will provide unprecedented measurements in terms of spatial resolution and accuracy (a few tenths of a pico-g), the best precision ever achieved for Earth observation.

ONERA CEO Bruno Sainjon commented: "ONERA, supported by AID and DGA, has been NASA's *the exclusive partner for the precision* space accelerometers for many years. This latest selection by ESA is *a further confirmation that ONERA's accelerometers are the best in the world. It is the recognition of the unique know-how of our scientists, who work to the benefit of French aerospace and defense advances.*"

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## About ONERA, the French aerospace research center

ONERA, a key player in aerospace research, employs around 2,000 people. Under the supervision of the French Ministry of the Armed Forces, it has a budget of 289 million euros (2023), more than half of which comes from commercial contracts. As a government expert, ONERA prepares the defense of tomorrow, meets the aeronautical and space challenges of the future, and contributes to the competitiveness of the aerospace industry. It masters all the disciplines and technologies in the field. All the major civil and military aerospace programs in France and Europe bear part of ONERA's DNA: Ariane, Airbus, Falcon, Rafale, missiles, helicopters, engines, radars... Internationally recognized and often awarded, its researchers train many doctoral students.

<http://www.onera.fr>



### ONERA press contacts: Guillaume

#### Belan

Media Relations Manager

[Guillaume.belan@onera.fr](mailto:Guillaume.belan@onera.fr)

Tel: +33 1 80 38 68 54 / +33 6 77 43 18 66

#### Neila Boujenane

Media Relations Officer

[neila.boujenane@onera.fr](mailto:neila.boujenane@onera.fr)

Tel: +33 1 80 38 68 69