

PRESS RELEASE

Nîmes, September 1st, 2020



CREDITS: SYMETRIE - HEXAPODS USED TO POSITION
THE SEGMENTS AND THE REFERENCE

Four Symetrie hexapods are testing the 931 segments of the primary mirror of ESO ELT!

Symetrie was chosen by Safran Reosc to supply the positioners used to test the segments of the ELT primary mirror.

Operated by ESO, the European Southern Observatory, the Extremely Large Telescope (ELT) will be the most powerful giant telescope in the world, with an M1 primary mirror of 39 meters in diameter. It will be 4 to 5 times larger than current equipment and collect 15 times more light.

ESO entrusted Safran Reosc with the polishing and testing of the 931 segments, each about 1.40 m width: 798 segments forming the M1 mirror and 133 spare segments.

The general concept of this project is to realize a modular telescope, which allows manufacturing parts in large quantities and considerably reduced costs.

To meet this industrial challenge, Safran Reosc has created a production plant in Poitiers, in which four Symetrie hexapods are installed: a hexapod is used to characterize the blanks of the segments, a hexapod positions the segments, a hexapod sets the reference and another hexapod aligns the deflection mirror at the top of the several meters tower.

The main characteristics of these hexapods are their very good resolution of 0.1 μ rad and their excellent stability of 0.1 μ rad over 1 hour, which required the creation of specific measuring tools.

Two of these hexapods incorporate a 360 ° turntable integrated in the mobile platform of the hexapod, while having a load capacity of 2 tons.

According to Laurent-Daniel Haret, ELT-M1 Safran Reosc metrology project manager, "we now have a set of machines on site that will allow us to position our optical parts with remarkable precision and stability. "

Built in Chile at an altitude of 3,046 m, the ELT will allow significant progress in astronomy (stellar archeology, discovery and characterization of exoplanets, etc.). Its "first light" is scheduled for 2024.

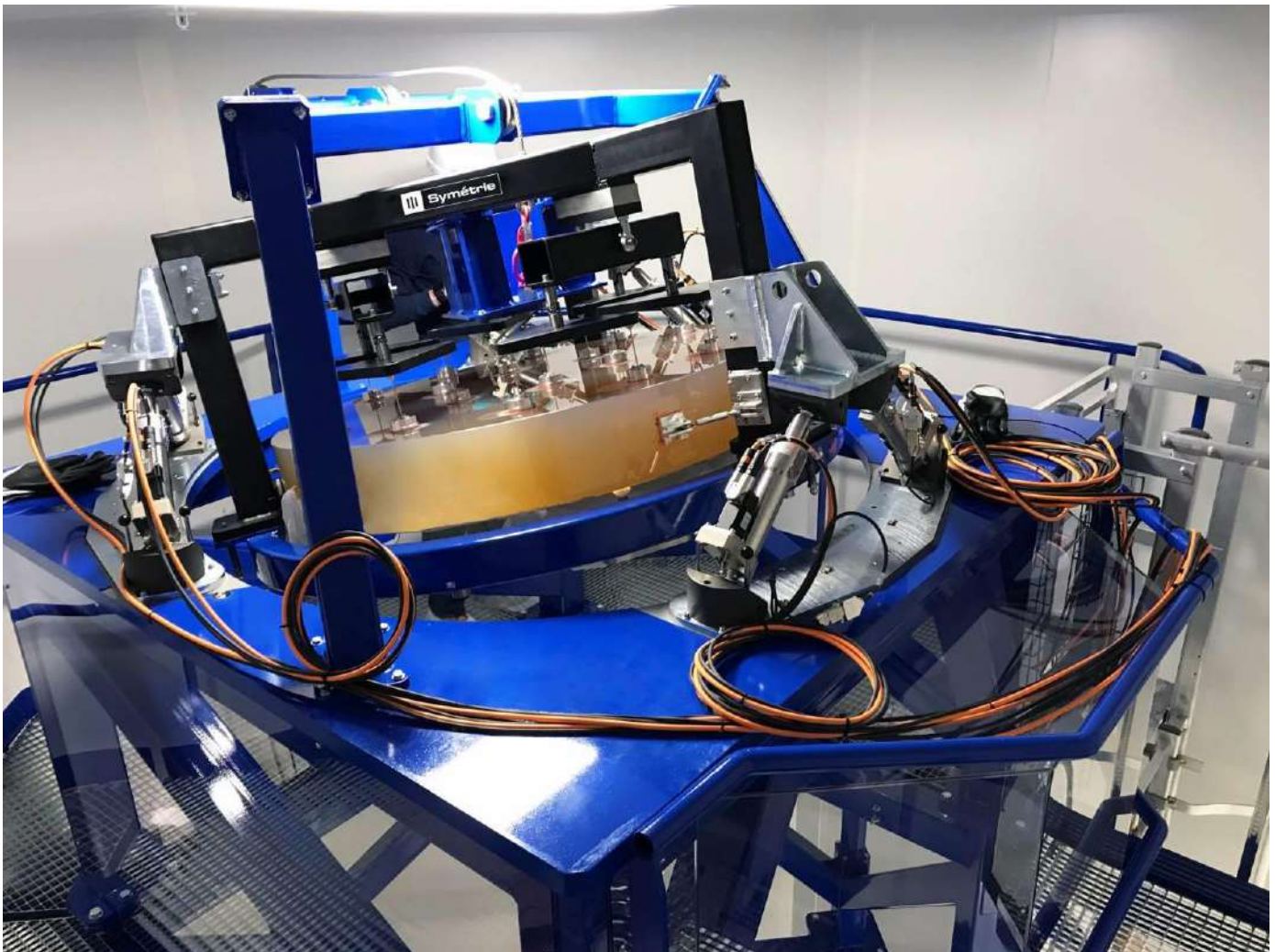
SYMETRIE is an innovative company specialized in high precision positioning and motion hexapods of all sizes for nearly 20 years.

SYMETRIE in a few words:

- 5 M€ turnover, an R&D department, 70% of engineers
- Major customers: Airbus Defence and Space, Leonardo, Naval Group, Rio Tinto, Safran, Thales, University of Hawaii, University of Western Australia...
- Large scale technological projects: Megajoule Laser; ground or space telescopes: DAG, DOT, JWST, NOEMA, OAJ and Pan STARRS 2; spacecrafts: BepiColombo, EnMAP, Euclid, Gaia, MPO, MTG, PLATO, Sentinel 5, synchrotrons: APS, the Australian Synchrotron, DLS, Elettra, ESRF, IHEP, LBL, LNLS, MAX-lab, PAL, PSI, RRCAT, SLAC, SOLEIL, SSRF...

Contact us for more information!

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CREDITS: SYMETRIE - HEXAPOD ALIGNING THE DEFLECTING MIRROR



CREDITS: SYMETRIE - HEXAPOD CHARACTERIZING THE MIRROR BLANK



CREDITS: ESO - COMPARISON OF ELT, VLT AND ARC DE TRIOMPHE