

AMOS contributed to making the Final Design Review of ELT Main Structure a success!

The Extremely Large Telescope (ELT) is a giant telescope being built by the European Southern Observatory (ESO) in Chile. This telescope is the biggest amongst the next-generation telescopes under construction. Its dimensions are overwhelming: the main telescope mirror will have a diameter of approximately 39m and it will consist of 798 hexagonal mirror segments of 1.45 m size (corner-to-corner). This huge telescope is an engineering challenge. It is like having almost half a football field put on a structure that can move it between a horizontal and a vertical position, while keeping with a micrometer precision a 4 m secondary mirror at 30 m above it.

Cimolai S.p.A. is an Italian general contractor, worldwide leader in steel structures and mechanics industry, who leads the consortium that won the contract for the Design, Manufacturing, Transport, Construction, On-Site Assembly and Verification of the main telescope structure and for the dome of the observatory. This contract is the biggest in ESO's history. Following the Final Design Review of the Dome and Auxiliary Building, the consortium successfully passed the Final Design Review of the Main Structure of the telescope.

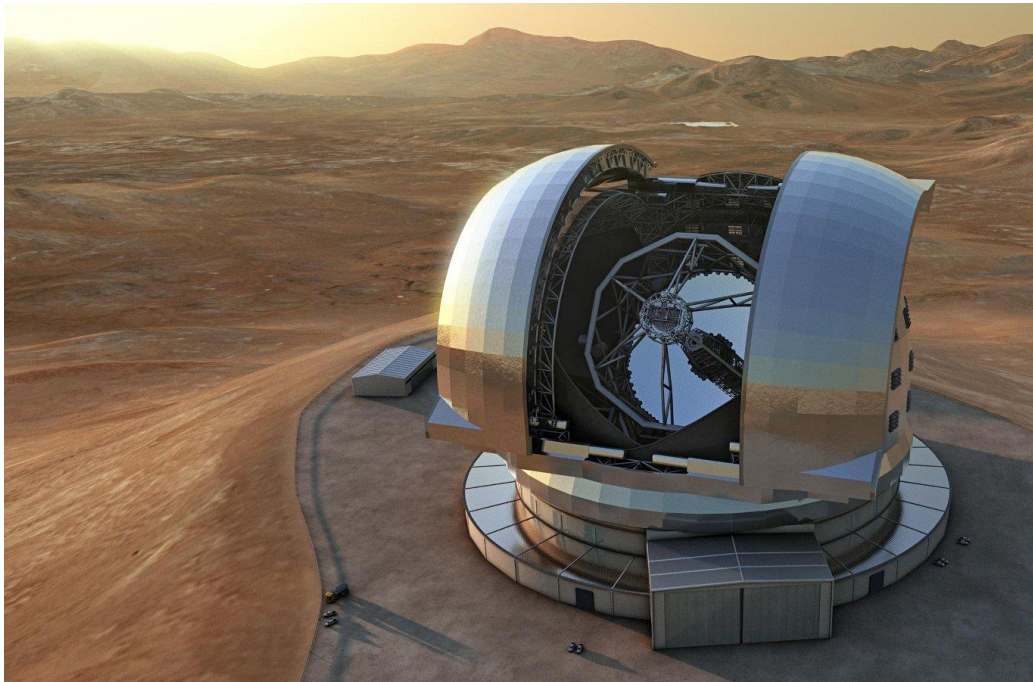
AMOS has been involved in the project to support Cimolai S.p.A. engineering teams in specific areas of expertise, mainly related to mechatronic and system engineering.

AMOS is indeed worldwide known for its expertise in designing, manufacturing, integrating, and installing professional astronomy telescopes around the world. AMOS has references in Chile for several European telescopes, in Hawaii, in mainland United States, in Spain, in the Canary Islands and several telescopes in India amongst others. It is now installing a 4 m telescope in Turkey and a 2.5 m telescope in India. Cimolai S.p.A. has decided to integrate the expertise of AMOS into its design work. AMOS contribution included estimating the impact of some design choices on the telescope final optical performance and supporting the design of the telescope main axes control system to ensure proper telescope movement and tracking. In addition, AMOS contributed to defining testing and integration activities related to some telescope critical items.

This successful collaboration, although disturbed by the travel and operational limitations imposed by the COVID-19 pandemic, helped the consortium achieve the Main Structure Final Design Review, the most critical milestone in the project.

"AMOS is proud of having been selected to contribute to this flagship project. This is a recognition of our expertise in astronomical telescopes." said Xavier Verians, Director Business Development of AMOS. "Our engineers were delighted to work on the design of the Main Structure of the biggest telescope being built in the world. This successful Final Design Review is also a testimony of the work accomplished."

“In the last difficult years, overcoming all the adversities and being conscious to be working on the forefront of the Large Telescope projects in the world, Cimolai S.p.A was able to achieve important goals, the last being the most impressive: The Final Design Review of the Telescope Main Structure. Looking at the next project phases, up to the acceptance on site, we commit that we will make, together with ESO and all the companies collaborating with Cimolai S.p.A., all the possible efforts to successfully complete this very challenging project” said Carmelo Bottecchia, CEO of Cimolai S.p.A.



Artistic rendition of the future ELT telescope. (Credits: ESO).

Regarding the project: <https://www.amos.be/project/elt-contributions>

General information on ELT: <https://elt.eso.org/>

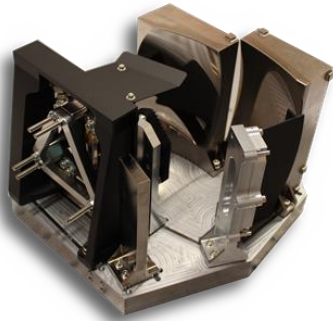
ELT main structure: <https://elt.eso.org/telescope/structure/>

Cimolai: <https://www.cimolai.com/portfolio/e-elt-project/>

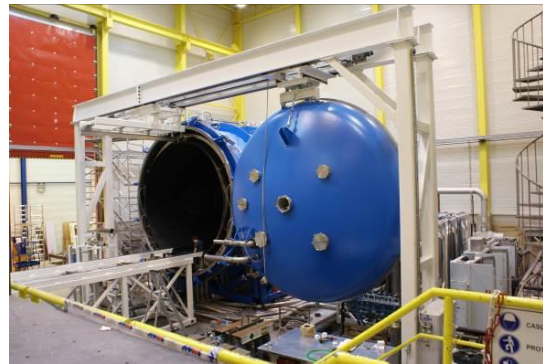
AMOS in a few words

Located in Belgium, AMOS has been designing and building high-precision optical and mechanical equipment for more than 35 years. Its main achievements are professional telescopes, space optical systems, test equipment for space instruments, and high-precision mechanical equipment. It employs more than 100 employees highly skilled in advanced technologies and offers services to the space industry, to the professional astronomy sector, to scientific laboratories and to industry.

AMOS has customers in Europe (ESA, ESO, AIRBUS DEFENCE & SPACE, THALES ALENIA SPACE, OHB), in United States (AURA), in India (ISRO, PRL, ARIES), and has more recently expanded its business in countries like China, Turkey and Russia.



Spectrometer of the ELOIS hyperspectral camera



Thermal-vacuum Test Facility for VSSC (ISRO)



ATS (Auxiliary Telescope Systems),
“mobile” telescopes of the VLTi in Chile (Cerro Paranal)

More info:

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