

Mechanical Engineering effort to support the design of Astronomical Instrumentation & Telescopes: current status and post-PNRR scenarios

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The design and development of astronomical Instrumentations and Telescopes of the ELT (Extremely Large Telescope) class represents one of the most complex technological challenges of recent times. This task, from an engineering point of view, certainly deserves an innovative, curious and proactive approach that can always support and stimulate the activity of the researchers involved in it. Technologies in the field of advanced 3D CAD (Computer Aided Design) mechanical design and CAE (Compute Aided Engineering) finite element structural validation have been consolidated strongly in recent years, providing increasingly precise and reliable results. The use of specific professional design software and the know-how gained in several ESO (European Southern Observatory) VLT (Very Large Telescope) and ELT projects, by the technological INAF (National Institute for Astrophysics) group of Naples, will allow us to move, in a very short time and using a Concurrent approach, from the conceptualization phase of an idea to the finalization/definition of a technological case study.

All these activities have found further life as well as a strong infrastructural strengthening in the framework of the PNRR (Piano Nazionale di Ripresa e Resilienza) STILES (Strengthening the Italian leadership in ELT and SKA) project. Thanks to this program, laboratory activities with a high technological impact, now present in INAF-Capodimonte facilities, such as Reverse Engineering, Additive Manufacturing FDM (Fused Deposition Modelling) and SLA (Stereo-lithography) as well as Laser Metrology, will assist and strengthen INAF's technological leadership in the design, prototyping and validation of the next generation of astronomical instrumentation.

sessioni congresso

Tecnologie avanzate e strumentazione

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