The European Organisation for Astronomical Research in the Southern Hemisphere (ESO) is the foremost intergovernmental astronomy organisation in Europe and the world's most productive ground-based astronomical observatory. ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities enabling astronomers to make important scientific discoveries.

ESO operates three unique world-class observing sites in northern Chile: La Silla, Paranal and Chajnantor (home to ALMA and APEX), and the ESO Headquarters are located in Garching, near Munich, Germany.

At Paranal, ESO operates the Very Large Telescope, the world's most advanced visible-light astronomical observatory, and will host and operate the southern array of the Cherenkov Telescope Array, the world's largest and most sensitive high energy gamma-ray observatory. ESO is a major partner in ALMA, the largest astronomical project in existence. And on Cerro Armazones, ESO is building the 39-metre Extremely Large Telescope (ELT), which will become "the world's biggest eye on the sky" and whose operations will be fully integrated into the Paranal Observatory.

Due to the need for additional resources associated with the ELT, for the ELT Programme Office within the Directorate of Programmes (DOP), at its Paranal/ Armazones site in Chile, ESO is advertising the position of

ELT AIV Manager

The ELT Assembly, Integration & Verification (AIV) Manager will perform a wide range of duties at the ELT construction site on Cerro Armazones/Paranal, Chile with the objective of delivering the fully functional Telescope to Operations.

This is an excellent opportunity for professionals who have extensive experience in Assembling, Integration, Testing and Verification of large scientific, technology or engineering projects and who wish to play a key role in a large international project.

The planning of the ELT AIV has been ongoing over several years, performed by a team of engineers led by the AIV Planning Manager and it is evolving following the design developments of the Telescope subsystems.The AIV phase is expected to start on-site in 2021, when the first components will be received in Chile. Prior to this phase, the selected candidate shall be very familiar with the project, contribute to the AIV planning and procure the supporting systems needed for the AIV.

During the AIV execution at Paranal/Armazones, the successful candidate shall, in cooperation with the relevant Project/Work-Package Managers, supervise and coordinate the:

a) Assembly Integration and Verification of the whole ELT system;
b) Technical commissioning of the ELT and hand over to the Science Commissioning Team.

During the Science Commissioning, the AIV Manager shall supervise the AIV Team and ensure the necessary support.

Main Duties and Responsibilities

- Build up the on-site AIV Team defining the resources to be provided by other Organisational Units through the ESO matrix or to be outsourced.

- Coordinate the definition, procurement and installation of supporting systems (plants, equipment and tools) required for AIV and future operation, for instance:
  - The mirror coating plants, both for the M1 mirror segments and for the larger mirrors;
  - The M1 Washing and Stripping plants;
  - Other equipment to be installed in the ELT Technical Facility;
  - Specific handling and transportation tools;
  - Components of the cryogenic system;
  - Alignment tools, consumables, etc.
- In cooperation with the AIV Planning Manager and the AIV Team to follow-up subsystems procurements, participate in systems/subsystem reviews (design, acceptance, etc.) and in technical meetings with contractors or internal project teams that are developing ELT subsystems to ensure that these are suitable for an effective AIV.
- In cooperation with ESO's Safety Managers and specialists covering various technical disciplines, to ensure that the subsystems, related tools and planned activities meet the relevant safety requirements.
- Take part in the trainings provided by the contractors (in Europe or/and in Chile) for AIV and maintenance purposes.
- Cooperate with the AIV Planning Manager, the Programme Engineer and the Programme Controller in the development, review and optimization of the planning and preparation of the on-site AIV activities. Contribute to the finalization of the AIV plan including defining strategies, budget and resources.
- Participate in the development of an integrated AIV plan for the ELT instruments in collaboration with the instrument consortia.
- Together with the AIV Team review and refine the AIV workflows and procedures to be followed on site, basing on subsystem documentation and experimental facilities such the ELT M1 Test Facility at ESO Headquarters, recommending optimizations/changes to the specific designs and defining and procuring the required equipment (tools, metrology instruments, etc.).
- Supervise and coordinate the AIV Team on-site to ensure that the ELT is ready for scientific commissioning. Specifically:
  - Perform incoming inspections of each ELT component delivered on-site ensuring proper warehouse storage and inventor, in collaboration with the relevant subsystem Project Manager;
  - Coordinate the first coating of the mirrors: M1 segments, M2, M3, M5, M6;
  - Assemble the components of each subsystem and integrate them into the relevant host subsystem (Main Structure, Dome, building infrastructure) according to the procedures defined by the delivering party;
  - Pre-align the various optics: M1 to M5, Prefocal station, Laser Guide Star, etc.;
  - Pre-calibrate the various look-up tables and pre-tune the various control loops to ensure that the functional performance requirements are met, in collaboration with the Control System team;
  - Evaluate system performance against the requirements according to the ELT Verification plan and relevant procedures;
  - Obtain the "First Light";
  - Complete the Technical Commissioning in collaboration with the Telescope Scientist;
  - Coordinate and support the AIV activities of the Instruments done under the responsibility of the Instrument consortia off-telescope and on-telescope;
  - Integrate the Instruments into the Telescope.

- Provide support during the scientific commissioning until start of operations.
- Maintain and follow up the AIV Plan and associated requirements ensuring, with the support of the Programme Controller, it is properly implemented in the scheduling tool (Open Plan).
- Organise the training of ESO staff for early operation and maintenance of the ELT.
- Ensure data entry of information, documents and drawings into the Paranal maintenance and documentation archive.
- Ensure the whole ELT system is properly maintained until handover to Operations.
- Regularly report to the Management as well as to the ESO Govering Bodies, as needed.

During the AIV on-site, the AIV Manager will cover the functional role of ELT Site Manager having the overall responsibility for the Armazones Site. In this function the selected candidate will coordinate the activities and resolve conflicts that may arise for instance due to overloading of contractors (e.g. access to machinery and other facilities) or clashes of resources within ESO, minimizing the impact. In addition they will liaise with the Paranal Organisational Units to coordinate support, access to facilities, supply of services (board, lodging, Security, Safety, etc.) for the involved personnel.

The above responsibilities are not exhaustive and a flexible approach and willingness to adapt to operational needs is required.

As defined in the applicable policies and staff rules and regulations, performing duties at altitudes exceeding 3000 m above sea level, requires regular medical assessments to ensure physical fittness.

Reports to:

The Programme Engineer of the ESO Extremely Large Telescope

Experience:

Essential:

- The successful candidate will have at least ten years of relevant professional experience in the management/ AIV and Commissioning of large multidisciplinary high technology projects.
- Familiarity with the standard Project Management tasks and concepts, such as structural breakdowns, schedule and resource planning, change and risk management, as well as demonstrated ability to build, develop and lead project teams.
- Solid background in contract management of projects of relevant size.
- A strong technical background in one or more relevant disciplines, e.g. opto-mechanics, controls, electronics, etc.
- An established record of successful management and technical leadership in assembling, integrating, testing and verifying large multidisciplinary projects.

Optional:

- Knowledge and experience with the development, testing or operations of astronomical instruments (optical and/or infrared, ground or space based) is considered a valuable asset.

Key Competences:

- Leadership competencies including: ability to formulate and communicate long-term visions, interpersonal communication and negotiation skills and capacity to foster effective teamwork developing close working relationships also with team members located in different geographical locations/time zones, with different cultural background and from different professional specialities.
- Capacity to interact diplomatically and constructively with other organisational units, contractors, research institutes and governmental authorities.
- Ability to provide clear, concise and timely oral and written communication identifying key issues, examining options and proposing steps ahead presenting information in a clear and logical manner.
- Ability to monitor progress of own work performed and that of the team, plan activities, contribute to system design and to work under pressure to deliver to agreed deadlines and standards.
- Familiarity with scheduling/planning tools such as Open Plan, MS Project, etc.
- Prepared to travel frequently among the ESO sites and to Contractors and Partners (in Europe and elsewhere).

Qualifications:

University degree (MSc) in Mechanical or Optomechanical Engineering or Physics, or an equivalent educational level. A formal qualification as a project management professional will be considered an asset.

Language Skills:

A very good command of the English language - oral, reading and writing is essential and a working knowledge of Spanish would be an advantage.

Remuneration and Contract:

We offer an attractive remuneration package including a competitive salary (tax free), comprehensive pension scheme and medical, educational and other social benefits, as well as financial help in relocating your family.

The contract is for a fixed term duration of three years, and is subject to successful completion of the probation period. There is a possibility of extension(s) subject to individual performance and organisational requirements, in particular for the ELT Programme, and as defined in the applicable policies and staff rules and regulations. For any further information, please visit ESO's conditions of employment.

Duty Station:

Paranal/Armazones, Chile. The default working schedule will be 8 days (including travel) on duty with accommodation provided on-site and 6 days off duty. However the schedule can be discussed and adjusted to serve operational needs as required.

Career Path: VI

Application:

If you are interested in working in areas of frontline science and technology and in a stimulating international environment, please visit http://www.eso.org for further details.

Applicants are invited to apply online at http://jobs.eso.org/. Applications must be completed in English and should include a motivation letter and CV. Within your CV, please provide the names and contact details of three persons familiar with your work and willing to provide a recommendation letter upon request. Referees will not be contacted without your prior consent.

Deadline for applications is 31 January 2020.

Interviews are expected to be held soon afterwards.

No nationality is in principle excluded however, recruitment preference will be given to nationals of Australia, Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, the United Kingdom and Chile irrespective of gender, age, disability, sexual orientation, race or religion.