EUROPEAN SPACE AGENCY

Optical & Quantum Network Engineer

Job Req ID: 12962
Closing Date: 17 January 2022
Publication: Internal & External
Vacancy Type: Permanent
Date Posted: 01 December 2021

Vacancy in the Directorate of Telecommunications and Integrated Applications.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. We therefore welcome applications from all qualified candidates irrespective of gender, sexual orientation, ethnicity, beliefs, age, disability or other characteristics. Applications from women are encouraged.

This post is classified A2-A4 on the Coordinated Organisations' salary scale.

Location
ESTEC, Noordwijk, Netherlands

Description
If appointed to this post, you will report to the ScyLight Strategic Programme Line Manager and will functionally support the HydRON Implementation Manager. You will also be responsible for the network-related activities of the HydRON project, a component of ESA's ARTES Strategic Programme Line Optical Communication – ScyLight.

The HydRON project concerns the definition, design, development and in-orbit verification and validation of a Demonstration System of a high-throughput optical network in space.

The HydRON Demonstration System is composed of a space segment, a ground segment, a user segment and a control centre (part of the ground segment) orchestrating all space and ground assets. The in-orbit verification of the system will demonstrate the key technologies enabling the deployment of a high-throughput optical network in space. The ultimate goal of the HydRON project is to showcase the end-to-end system functionalities and provide a minimum viable service for HydRON users.

Duties
You will be responsible for defining all networking requirements and coordinating all networking-related developments, integration and testing activities of the space and ground segments of the HydRON Demonstration System.
You will also be responsible for all networking aspects in order to ensure seamless interoperability with high-capacity terrestrial networks.

Your main responsibilities will cover:
- preparing the definition of the networking and interface requirements and allocating segment requirements;
- managing all networking aspects of the architectural design of the data, control and management plans;

- supporting the development of all space and ground segment networking equipment
- modelling and evaluating network performances, including network design optimisati according to defined QoS (quality of service) parameters and system-level requirements;
- evaluating the acceptability of the industrial activities related to all networking aspect by participating in major technical reviews and preparing inputs for the decision-mak process;
- identifying potential networking risks and proposing risk mitigation measures;
- supporting the definition of the in-orbit validation plan of all networking aspects;
- supporting the verification and validation of all networking activities during the Development phase in cooperation with industrial partners;
- managing the verification and validation of all networking activities during the Demonstration phase in cooperation with industrial partners.

Technical competencies
Proven knowledge of architectural design of core and access optical transport networks, from physical layer 0 up to transport layer 4
Proven knowledge of protocol design and standards of optical transport networks, from physical layer 0 up to transport layer 4
Proven knowledge of routing and switching strategies of optical transport networks
Proven knowledge of control and management design of optical transport networks
Experience in specifying, modelling and simulating optical transport networks, including design optimization techniques according to system level requirements

Behavioural competencies
Result Orientation
Operational Efficiency
Fostering Cooperation
Relationship Management
Continuous Improvement
Forward Thinking

Education
A Master's degree in a scientific or engineering discipline for this post is required.

Additional requirements
Engineering experience in complex space programmes, preferably in telecommunications up to launch and in-orbit testing is desirable.
Direct experience of working with commercial telecommunications industry and operators will be a distinct advantage.
You must be eligible to obtain security clearance from the relevant national authorities.
You have experience in working in a cross-functional team and in promoting innovation through a creative collaboration process.

Other information
For behavioural competencies expected from ESA staff in general, please refer to the ESA Competency Framework.

The working languages of the Agency are English and French. A good knowledge of one these is required. Knowledge of another Member State language would be an asset.

The Agency may require applicants to undergo selection tests.

during the recruitment process. If you would like to discuss this further please contact us email contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, German Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom and Canada, Latvia, Lithuania and Slovenia.

According to the ESA Convention the recruitment of staff must take into account an adequate distribution of posts among nationals of the ESA Member States. When short-listing for an interview, priority will first be given to internal candidates and secondly to external candidates from under-represented Member States.
(https://esamultimedia.esa.int/docs/careers/NationalityTargets.pdf)

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening befor appointment.

Recruitment will normally be at the first grade in the band (A2); however, if the candidate selected has little or no experience, the position may be filled at A1 level.