Job Offer

Unité d'affectation	UMR 8518 - LOA
Emploi-type	Software engineer- E2C45
Fonction	Computer and scientific computing engineer for atmospheric observation network

Missions

The main mission of the engineer will be the development and updating of observation assistance software within the French and European component of the "Aerosols-Remote Sensing" Center of Expertise of the ACTRIS research infrastructure. Scientific and technical observational data are largely produced by automated procedures. These data serve the scientific needs of users and allow the technical team to ensure proper management of nearly a hundred automatic instruments in the PHOTONS / AERONET network. The engineer will have to produce software (design, coding and tests), write the associated documentation and ensure the deployment of applications ensuring the operations of the PHOTONS / AERONET automatic photometer network. He / she will work in close collaboration with the software managers and the IT team of the LOA and the AERIS-ICARE Data Center at the University of Lille. Finally, he / she must be sensitive to compliance with quality provisions and programming standards.

Activities

• Take charge of all or part of the project management activity (estimate, plan, monitor)
• Contribute to the establishment and compliance with quality provisions and standards
• Write and update technical and functional documentation
• Development
• Model, design and / or configure all or part of the software solution
• Develop and test objects and components
• Ensure the evolutionary and curative maintenance of the developments carried out
• Qualification
• Develop the test strategy, design, specify and execute functional and / or technical tests
• Integration
• Create and test application packages and production deployment scripts
• Deployment
• Receive, install, document, make available the packages by ensuring the follow-up of the versions
• Provide functional and / or technical assistance to operators and users
• Design technical and functional training actions
• Interaction with CIMEL Electronique, Paris

Skills

• Good knowledge of the LINUX operating system
• Good knowledge of object programming techniques and appropriate tools
• Mastery of programming methods and techniques
• Specialization in the development of applications or system scripts: experience in Python essential, practice of other languages appreciated (among C / C ++ / Fortran + Shell or Perl scripts)
• Knowledge of web development welcome (HTML5, modern JavaScript, knowledge of a frontend or backend framework)
• English read / written / spoken (B2 - C1)

• General knowledge of engineering sciences and techniques relating to instrumentation and physical measurement (instrument control, etc.).
• Ability to write technical user documents
• Ability to work in a team

Context

Laboratory presentation

The activity will be carried out within the Atmospheric Optics Laboratory (LOA), a research laboratory of the University of Lille and the CNRS. The research area of the laboratory is the physics of the atmosphere. He has international recognition in the fields of observation and modeling of the atmosphere, and more particularly in the study of atmospheric dust (aerosols), clouds, gases and their interaction with atmospheric radiation (solar and thermal infrared). LOA, through its work and projects, improve knowledge in atmospheric sciences and thus feed the scientists preparing the report of the Intergovernmental Panel on Climate Change (IPCC). Remote sensing of atmospheric components from the ground (networks, observation services, instrumented sites, etc.), from airborne measurements (planes or balloons) or from satellite, is the main tool of our research. The laboratory has around 65 people spread over two research teams (IAR and IRN) and two SNOs (PHOTONS / AERONET and NDACC) depending on the IAR team and common technical services. The SNO PHOTONS / AERONET includes a dozen people mainly in Villeneuve d´Ascq (around 6 FTE).

The LOA is part of a national and international approach of mutualization and service for the scientific community since it hosts a National Observation Service in charge of monitoring aerosols by remote sensing from the ground (PHOTONS / AERONET-EARLINET). This service is labeled by INSU / CNRS, the French Ministry of Research, and is also one of the components of the French / European research infrastructure ACTRIS and of the international AERONET network. The fundamental objective of SNO PHOTONS / AERONET-EARLINET is to carry out long-term monitoring of atmospheric variables relevant for understanding the atmosphere and more precisely its particulate component: aerosols. Each point or site of the network is equipped with an automatic solar / lunar photometer produced and marketed by the company CIMEL, Paris. Some sites are also equipped with lidar. In particular, the reception team is at the forefront of instrumental synergies involving passive (photometer) and active ("aerosol" lidar) observation systems recently integrated within the scope of the SNO). During integration into the laboratory, activities will focus on SNO PHOTONS.

The engineer will work under the direction of the head of the Observation Service, also responsible for the IAR team.

Specific constraints related to the position
The activity is mainly located in Villeneuve d'Ascq, with meetings or workshops with our French partners (ACTRIS-France), in Europe (ACTRIS-Europe) or the head of the network in the United States (NASA).

Contacts :
Applications should be sent to the following people:
Philippe Goloub : philippe.goloub@univ-lille.fr
Luc Blarel : luc.blarel@univ-lille.fr

Salary :
Between € 1,750 and € 2,000 net depending on the candidate's experience (from 0 to 3 years to more than 5 years).

Duration : 1-year fixed-term contract on December 1, 2021 with the possibility of a one-year extension