Service Support in Scientific Operations at ESAC

Company: FRACTAL S.L.N.E

Reference Nr.	**FR19100**
Position	Operations Scientist for INTEGRAL Operations
Place	European Science Operation Centre, ESAC (Villafranca del Castillo, Madrid)

Contact Persons:

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FRACTAL Partner and Senior Software Engineer

Please send your CV and motivation letter to the contact person, and enter your CV in AstroJobs for giving FRACTAL permission to contact you: https://www.fractalastrojobs.com/candidate.html

The following specific tasks and requirements are applicable

Specific Tasks

- Interaction with the INTEGRAL Science Data Centre (ISDC) for the dissemination of data from the archive created and maintained at the ISDC.

- Support the Time Allocation Committee (TAC) and Project Scientist during the proposal evaluation process, e.g., by technical evaluation of proposals or serving as secretary for TAC panel meetings.

- Contribution to INTEGRAL ToO activities especially linked to the detection and follow-up of electro-magnetic counterparts of Gravitational Wave and High Energy Neutrino events.

- Support to the planning and development of the INTEGRAL Legacy Science Archive.

- Maintenance of and support to the OSA scientific data analysis software and INTEGRAL instrument calibration.

## Requirements

The service will require:
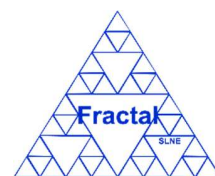
- A good knowledge of applied physics, at least part of which related to Space Technologies and Astrophysics.

- Expertise in the development and command of modern and commonly used scientific analysis software, ideally with applications in Space Science.

- Good understanding of Scientific Operations of an international space-based observatory.

- Excellent analytical and communication experience.

- Flexibility and appreciation of diversity and of international working-environment.

General tasks and requirements

Operations Support. Operations Scientists

The Operations Scientist works within the Science Operations Centre (SOC) with responsibilities that may include:

- Generation of conflict free and optimized science instrument operations plan, timelines and command sequences. In addition, this may include:
  - the instrument configuration for each observation
  - coordination with other observatories
  - Support the work of SOC in their goal to produce a consolidated & harmonized Long-Term Plan
  - Support the project scientist in addressing schedule & resource conflicts that may arise during the LTP phase.
  - Check the validity of pointing.
  - Produce relevant planning products for transmission to MOC
  - the generation of or the response to an alert for Targets of Opportunity in order to change/interrupt the observing program (bearing in mind that the decision whether or not to interrupt current observation is the responsibility of Project Scientist).
  - Support the generation of procedures where relevant

- Target of Opportunity on call service.

- For Observatory class missions, coordination of the release of Announcements of Opportunity for observing time, and provide support to the Project Scientist in the subsequent proposal peer review process by the Observing Time Allocation Committee.

- Support to the set-up of calibration observations, including coordination with instrument teams or to engineering observations requested MOC.

- For PI led missions, liaise with the PI teams to enable overall optimization of science program.
- Interact with instrument teams, as requested in order to acquire and maintain instrument-specific knowledge at the SOC.
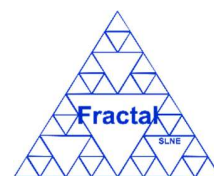
- Provide second line support on helpdesk queries as requested.
- Provide feedback to and attend appropriate working groups as requested in agreement with the service company manager.
- Participate in internal and external group meetings as requested.
- Provide feedback to users and promote the mission at scientific conferences, e.g., by presentations.
- Certain tools specific to each mission are needed (proposal/planning/validation) for these:
    - Installation, testing and validation of SOC tools
    - o Raising problem reports on tools as well as suggested improvements
    - o Following up the correct fixing of any problems with the implementers
- For Observatory class missions, provision of instrument expertise in support of the scientific community and operational activities.
- Contribute post-launch to the SOC systems tuning and its operational maintenance and as required to the validation and improvement of the Science Analysis software. Including
    - Contribute to the maintenance of the overall system, including configuration control and versioning
    - Installation, testing and validation of SOC tools and analysis software
    - Raising problem reports on tools as well as suggested improvements
    - Following up the correct fixing of any problems with the implementers
    - Follow procedures and operate systems as required
    - Assist in automation of SOC procedures
- In order to enhance the capability to support the user community, if other tasks permit, up to 20% of the work under this RT may involve original science research.

Output and Service Performance Monitoring:

- Timeliness and efficiency of short-term planning of observations, including calibration and engineering observations
- Overall efficiency of long-term planning, effective coordination with other observatories as possible.
- Quality and timeliness of the support to the TAC during the proposal evaluation process.
- Level and quality of the interactions with instrument teams as required for operational duties.
- Correct and timely update of user documentation.
- Documents generated in the period at the dates required by the project milestones and internal plans.
- Reporting inline/in time with the approved schedule.
- Meeting/work group attendance and presentations in line with requests.
- Identification of updates & improvements to SOC tools
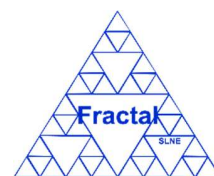
- o Bug reports raised and analyzed
- o Functioning and validated tools.
- Support to the engineering system development particularly for the planning software (ASPEN, MAPPS, EPS) as well as to Instrument Model Development
- Documented process and procedures in the appropriate format for the mission
- Identification of updates & improvements to those tools
- Support to the engineering system development particularly for the planning software (ASPEN) and downlink (NAVCAM, data volume analysis, data analysis)