



## **Hyperspectral Sounding Products Generation Prototyping Specification and Validation Engineer based at EUMETSAT, Darmstadt, Germany**

HAMTEC Consulting a provider of quality staff to the aerospace industry.

We are currently seeking a University educated engineer in a relevant discipline, with a minimum of at least three years of experience in the field of scientific computing.

Location: Darmstadt, Germany

Start Date: 2nd Quarter 2016

Closing date: 8<sup>th</sup> February 2016

### **TASKS:**

The Key Person will be part of the HSIRL2 team. The Key Person shall especially contribute to the specifications documentation and prototyping of the IASI-NG principal components (referred to as L1D in EPS-SG context) and L2 products generation functions and to the support of the operational software implementation during the initial development phase of the Payload Data Acquisition and Processing. Support to the preparation and completion of the commissioning of IASI/Metop-C is also expected.

The tasks of the Key Person will typically include:

- Analysis of similarities and specificities to the IASI and IASI-NG processing within the EPS and EPS-SG contexts and the required products, with the aim to maximize algorithm re-use.
- Maintenance and evolution of the IASI-NG products generation specification documents, taking into account the above identified commonalities and specificities.
- Maintenance and evolution of the documentation including new science resulting from internal developments or external studies or contributions.
- Contribution to the review and analysis of specification documents for the input data to the IASI-NG processing chain, e.g. IASI L1c, MWS L1b etc.

- Contribute to clarifications and answers to issues raised during the reviews of IASING L1D and L2 documentations; evolve the IASI-NG products generation specification documents taking the review outcome into account.
- Support the porting and re-use of IASI processing software in the context of EPS-SG for IASI-NG, including the preparation and documentation of S/W packages, test and verification data.
- Prototype functions of the IASI-NG L1D and L2 processing chain.
- Adapt and evolve the existing IASI L2 operational processor to form an IASI-NG prototype, e.g. make it ready to ingest IASI-NG and MWS L1 synthetic test data.
- Contribution to the harmonisation of the IASI and IASI-NG processors.
- Integration and verification of external software deliveries in the prototype processor
- Software anomaly fixing
- Code optimisation
- Development and documentation of prototype software and test procedures
- Generation of test data
- Statistical analysis and visualisation of hyper-spectral infrared principal components and Level 2 products
- Support L2 monitoring facilities and interpretation
- Contribution to validation reports for IASI operational and IASI-NG prototype products.

## **Qualifications and Experience**

- University degree in a relevant discipline
- The Key Person shall have at least three years of experience in the field of scientific computing. Specifically, the Key Person shall have experience and skills in

## **Essential Skills**

- Numerical algorithms;
- Development and testing of complex scientific software;
- Documentation of complex scientific software;
- Generation and documentation of test data and test procedures;
- Handling and processing of big amounts of data;
- NetCDF format and using associated libraries;
- Object oriented techniques for scientific computing;
- Concurrent S/W development in a team and Software tools for revision control;
- Very good skills in C++;
- Advanced use of data analysis and visualisation with tools like IDL or Matlab; preferably with satellite data;

## Desirable Skills

- Inverse problems
- Principal component analysis
- Further mathematical modelling techniques (non-linear optimization, regression, neural networks, Kalman filters, etc.)
- Familiarity with satellite data, preferably from IASI or other hyper-spectral infrared instruments
- Use of radiative transfer models
- Retrieval of atmospheric parameters from infrared and/or microwave radiances
- Software testing
- Validation and visualization of satellite products
- Software libraries for numerical linear algebra and similar subroutines
- Experience with further programming relevant languages and tools such as Perl,
- Python, Java, etc.
- Multi-threads programming

Please send you CV in English to:

Simon Davidson via [recruit@hamtec.co.uk](mailto:recruit@hamtec.co.uk)

To register with HAMTEC Consulting and to view current opportunities go to our website:

<http://www.hamtec.co.uk>