Feasibility study: Radar Wind Profiles at Sea

Company: S&AO Ltd

Location: Harwell Campus or Home University

Code: 18/51

Company Description:

S&AO Ltd is the innovation company re-writing the atmospheric observations sector with new solutions. Under the brand name visionAIR-Klugmann it offers solutions that deal with known shortcomings and capability gaps of existing remote sensing systems. These solutions provide users with the information they need at costs they can afford and allow new kinds of observations and applications.

S&AO Ltd is the observation systems developer that combines scientifically established methods with latest components into sensor technique – brand name visionAIR-Klugmann – providing affordable and reliable operational measurements. This enables organisations using meteorological data to optimise their operations, save money and prevent the loss of lives.

Project Description:

The project is a feasibility study for the hardware of a sea surface based Radar Wind Profiler (RWP). It is the crucial first step for rolling out a RWP network on the global oceans for complementing satellite based wind observations. The project will implement an RF design of the applicant.

The project will be realised in phases. It is based on a recently selected RF designs based on the availability and documented performance of the required components. The project will be realised utilising components (some already procured) tailored to the selected RF design. The already procured components have been inspected after delivery and performance tested in stand-alone operation.

In the initial project phase the components of the feasibility demonstrator will be assembled according to the selected RF design. This will be tested using lab bench test equipment. During the second project phase Command and Control as well as data acquisition software to run the end-to-end system of the feasibility demonstrator will be coded in LabVIEW. The resulting code will then undergo a performance test.

If project progress allows, the optional third phase would be to run the first demonstration of the feasibility demonstrator. This would include pointing the feasibility demonstrator on easily detectable targets and evaluating the data recorded of the return signals by the data acquisition software created in the second phase.

The project will run during term time on a flexible schedule – latest end date 28 February 2019.

Applicant Specification:

A promising candidate is likely to be in the 3rd / 4th year of an electro engineering or physics / meteorology related undergraduate course and to provide sufficient electronics, technical, mathematical and computing knowledge.

Candidates in the 3rd / 4th year of a computer science or applied mathematics related undergraduate course with an interest in hardware systems integration and basic electronics knowledge will also be considered. Candidates from completely different backgrounds that cover the skills set indicated above will also be considered.

If working from the Home University, the successful candidate is expected to travel to the Harwell Campus on occasions during the working week.

Minimum Requirements:

Good knowledge in at least one of the following areas:

- Electronics
- RF engineering
- LabVIEW
- Octave / Matlab
- Statistics and numerical mathematics

Preferred Additional Requirements:

Knowledge in more than one of the areas listed under *Minimum Requirements*.

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around 15 November 2018. Salary is £1,500 per calendar month (pro rata). It is assumed that the successful candidate will have to work in part-time during term time. The contract will end at or before 28 February 2019.

Closing Date for Applications:

7 December 2018

Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.