Lab-STICC "From Sensors to Knowledge to communicate and decide" UMR CNRS 6285, Brest, France

1-year Postdoc Position

"Unmanned Aerial Vehicle Functions Mapping on Reconfigurable FPGA Architecture"

Lab-STICC, CNRS Laboratory, UBO University, Brest, France.

Available March 2014.

Context:

A 1-year postdoc position is available commencing March 2014 to support "SWARMS", a three year collaborative project between Lab-STICC, a CNRS / Telecom Bretagne / UBO Univ. / UBS Univ. Lab. in Brest and Lorient in France, and the Australian Research Centre for Aerospace Automation (ARCAA) supported by Queensland University of Technology in Brisbane, Australia. The main research focus of the project is UAVs with embedded intelligence, divided into three themes of Human-Machine Interactions, Trajectories / Path Planning, and Embedded Systems. The proposed postdoc position will address the SWARMS embedded system level, to be dynamically configured according to UAV mission requirements.

The postdoc position is located in Brest, France, and the successful candidate will work closely with researchers at UBO University and the Telecom Bretagne Engineering School.

Project:

The SWARMS UAV system architecture is composed of three levels: UAV Control, Navigation and Mission. The main objective of the project is to adapt existing and new functions (to be defined during the project) of the second level (Path Planning, Image Processing and Classification, Advanced Control,…) so that they can be implemented at run-time on a FPGA-based platform (e.g. Xilinx / Zynq hybrid device).

The candidate will be in charge of the development of different implementations for each function with different area/performance/resolution capabilities so that load balancing can be decided at runtime according to mission requirements (functions priority, response time, resolution).

Profile:

The postdoc candidate must have a strong background in embedded systems including ARM processors and FPGAs. A good knowledge of basic image and signal processing as well as algorithm optimization required.

Contacts:

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Net salary: 22K€.

Non-salary benefits: Social security, 1 month of vacation, travel cost possibly funded.

UBO