

Postdoctoral call for application Project AIRMES

Université de Technologie de Compiègne recruits one postdoctoral researcher in the context of the Project AIRMES in the Computer Engineering department - Laboratory Heudiasyc (UMR CNRS 7253). The AIRMES project aims to develop a modular software architecture dedicated to coordinating a fleet of heterogeneous drones that simultaneously cooperate within the same mission.

▶ **Workplace**

Department: Génie Informatique
Laboratory Heudiasyc UMR CNRS 7253, Compiègne

▶ **Contract type**

Fixed term contract

▶ **Contract duration and expected date of recruitment**

24 months

▶ **Salary**

2544 € (gross monthly)

▶ **Mission**

The postdoctoral researcher will study the challenges and open issues related to the design and implementation of communication protocols for a drone fleet.

▶ **Activities**

Infrastructure monitoring (e.g. electricity grids, railways) has become one of the industrial priorities. Although being effective, the existing solutions for monitoring (based on human inspection, sensors, the use of helicopters, etc.) could be optimized in terms of cost, measurement accuracy and personnel security.

Performing inspections with aerial drones as a non-intrusive system, without impacting the monitored infrastructure, partially addresses this problem. However, the unmanned aerial vehicles are usually limited to their single-task application. Furthermore, their low physical and decisional autonomy minimizes the interest to use them. The use of a fleet of heterogeneous drones allows us to combine and benefit from the characteristics of each autonomous aerial vehicle to carry out a complex or multi-tasked mission precisely and securely.

The postdoctoral researcher will address the communication part of the project in order to allow drone cooperation in the fleet, and between the fleet and the ground station. In order to achieve these tasks, the postdoc will propose communication protocols for fleet control messages, as well as reliable and secure communication protocols for video transmission with real-time constraints. These protocols will be implemented in the Heudiasyc laboratory test-bed, in order to ultimately implement a larger system that will allow fleet teleoperation from a remote location. He or she will participate in technical meetings with the project consortium members, and provide a technical follow-up of tasks related to communications protocols.

▶ **Candidate profile**

PhD in Computer Science

▶ **Timeline**

- April 27th, 2016: application opening
- May 13th, 2016: application submission deadline
- May 15th, 2016: shortlist notification of the selected candidates
- Third week of May, 2016: interview of the selected candidates
- July 2016: position start date

▶ **Work environment**

Recruitment will be done in the Project AIRMES dedicated to control of a fleet of cooperating heterogeneous drones, that aims at offering solutions for infrastructure monitoring (e.g. electricity grids, railways, etc). Partners in the project are Eurogiciel, SNCF, EDF, Aerosurveillance and the laboratory Heudiasyc.

Candidate should expect to be occasionally asked to travel elsewhere in France or abroad for assignments.

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A CV and a cover letter should be submitted through the following dedicated application site:

(à préciser par le pôle recrutement)

For any additional information, please contact:

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Direction des Ressources Humaines

Pôle recrutement

UTC/DRH/PR/2014