

Job offer
Royal Military Academy - Patrimony

**Researcher (M/F/X) in standardized system validation /
Counter - Unmanned Aircraft Systems**
Departement Mechanics
project "COURAGEOUS"
Publication date: 16/05/2022



Job description and associated tasks

In the framework of the study COURAGEOUS on the development of standard test methods for counter-UAS solutions, we are looking for a full-time researcher with a university master or PhD degree.

Context:

The Royal Military Academy of Belgium (RMA) is a military institution responsible for the basic academic, military and physical training of future officers, and for the continuing advanced training of officers during their active career in the Belgian Defense department (www.rma.ac.be). It is fully recognized as a university, fulfilling the same criteria as civilian universities. The Royal Military Academy is also conducting scientific research at university level for projects funded by the Belgian Defense department or external sources.

You work within the research cell 'Robotics & Autonomous Systems' (<https://mecatron.rma.ac.be/>) of the department of Mechanical Engineering of the Royal Military Academy and in close collaboration with a dozen partner institutes from all over Europe in the scope of an international collaboration project. You conduct scientific research at university level on a project entitled 'COURAGEOUS' (<https://courageous-isf.eu/>).

You work within a research team and in close collaboration with multi-national police forces, including INTERPOL.

Study:

As Unmanned Aerial Systems (UAS) or drones become more and more available, law enforcement agencies find themselves confronted with the novel task of having to police the access to the lower airspace. Commercial providers have already developed a wide range of solutions to this extent, but the capabilities of these systems are hard to benchmark. The result is that end-users have a hard time in matching the right tools to the specific use cases that they encounter.

To remedy this situation, the COURAGEOUS project will develop a standardized test methodology for detection, tracking and identification of nefarious drones' utilizing countermeasure systems to protect the lower airspace. This standardized test methodology will be based upon a series of standard user-defined scenarios representing a wide set of use cases (e.g. prison & airport security, critical infrastructure protection, border security, drugs & human trafficking, etc). For these scenarios, operational needs & functional performance requirements will be extracted by the COURAGEOUS end-users. Using this information, an integral test methodology will be developed that allows for a fair qualitative and quantitative comparison between different counter-UAS systems. This test methodology will be validated during three user-scripted validation trials, in Belgium, Greece and Spain.

COURAGEOUS is an international collaboration project coordinated by RMA, in partnership with research partners like TNO, KEMEA, University of Seville and WAT, police units from six countries (Belgium, Spain, Romania, Greece, Luxemburg, Estonia), a standardization body (ASRO) and INTERPOL.

Main Tasks

- Technical coordination of the project: Organization of meetings, preparing minutes, quality control of project outputs, ensuring inert-workpackage collaboration & data exchange
- Contribution to the elaboration of Standard Scenarios for counter-UAS test methods
- Risk analysis and definitions of metrics required for counter-UAS systems
- Development of functional and integral tests for counter-UAS systems
- Development of Validation methodologies for counter-UAS tools
- Planning & execution of the Belgian demonstration in COURAGEOUS. This entails discussing with actors in the counter-UAS industry, the Belgian Ministry of Defence, the COURAGEOUS developers & the military base of Lombardsijde in order to organize a successful demonstration event.
- Evaluation of the results and the test methodology in a qualitative and quantitative manner.

Required skills

Technical skills

The applicant shall have a university master or PhD degree. This is a multi-disciplinary study, requiring a mix of project management skills (for the technical coordination of the project), more theoretical skills (on counter-UAS systems technology) and organizational skills (for the preparation of the Belgian demonstration).

- Training or experience in counter-UAS is required;
- Training or experience in system testing & validation is required;
- Training or experience in Sensor integration is recommended;
- Training or experience in Perception is recommended;
- Training or experience in project management is an added value;
- Training or experience in event organization is an added value;
- Experience in the counter – UAS industry is an added value;
- Training or experience in applied research and / or design is an added value;

Personal skills

- You will be responsible as task leader for the Belgian validation campaign. This means that you will have to manage the other partners that are involved in this task, manage the resources and budget, organize the logistics of the field trials, present the progress and results of the work package towards the European Commission, etc. This means that you need to have management skills.
- You will be working very closely together with multiple project partners from across Europe and with the Belgian Federal Police. The ability to work well in a team and to preserve confidentiality is therefore an absolute must.
- This study calls for both managerial, theoretical and organisational skills. You will need to perform field validation campaigns on different locations (Athens, Lombardsijde, Seville) in order to account for different types of environmental conditions. A practical attitude and willingness to bring novel scientific innovations into practice is therefore certainly required.
- You conduct scientific research in an independent and upright way within a multidisciplinary environment.

- You think in an innovative and creative way.
- You communicate your results in a clear, concise and precise manner.
- You solve problems autonomously and find alternatives or solutions.
- You behave in a respectful way toward the others, their ideas and opinions as well as toward procedures and instructions.
- You are capable of writing qualitative technical reports on your work
- You are capable to manage, direct and assist with the composition of deliverables towards the funding authority
- You are capable to write and present scientific papers about your work

Other skills

- The applicant shall have excellent oral & written knowledge of English.
- Minimum knowledge of French or Dutch is an added value for collaboration with peers.

Specific requirement

The researcher may be exposed to classified information and will therefore have to obtain the required security clearance. The candidate must consent with the background check required to obtain this clearance, which will be executed by Belgian Defense.

Application

You will be working in a military environment. That is why everyone is expected to undergo a security verification. Please add to your application the filled out document. The form can be downloaded from: <http://www.rma.ac.be/nl/aanvraag-veiligheidsverificatie>

Send by email:

- a motivational letter;
- a CV
- a scan of your ID card (both sides);
- the filled out security document

to Mr Geert De Cubber (geert.decubber@mil.be) and to Mrs Helena BRUYNINCKX (erm-deao-rsw@mil.be).

Please mention clearly the reference of the project: "COURAGEOUS".

Application deadline: 10/07/2022.

The interviews will take place at the Royal Military Academy, Hobbemastraat 8, 1000 Brussels. In case of access restriction due to COVID-19 or non-Belgian application, on-line interviews will take place. The date and time of the interview will be communicated to the preselected candidates.

Miscellaneous

Contract

- Probable date of recruitment: as soon as possible, in consultation with the applicant.
- Status: Full-time employment based on an open-ended contract with the Patrimony of the Royal Military Academy (you will not be a civil servant). Please do note that the financing of your contract is tied to the COURAGEOUS project (which ends on 30/09/2024).
- Wage scale: class A1 (holders of a Master's degree in Science) / class A2 (Ir ; holders of a Master's degree in Engineering ; doctor's degree in the same area of expertise).
- Holiday pay.

Extra-legal benefits

- Possibility to benefit from a bilingualism allowance (Dutch/French) following a SELOR test;
- End-of-year bonus;
- Free DKV hospitalization insurance. Possibility of additional affiliation for one or more persons living under the same roof: spouse, child(ren) (50% of the price per additional member);
- Bike allowance / Free public transport (home-work commute);
- Free access to campus sports facilities outside working hours;
- On-campus restaurant and cafeteria with democratic prices (discount on the daily menu);
- Flexible working hours within the 38-hour week;
- Teleworking possible ;
- Holidays:
 - 26 days holiday / year from the 1st year of contract (then from 45 years: +1 day holiday every 5 years)
 - + 3 extra days-off / year of "service dispensation" offered by the department
 - + 1 week OFF every year between Christmas and New year's Eve (independent of the annual balance of holidays).
- Advantages and interesting offers thanks to the Benefits@work card (discounts, vouchers...);
- Entitlement to services offered by the 'Office Central d'Action Sociale et Culturelle de la Défense' (OCASC): among others holiday centres, discount on travel organised by the tour operator...;
- Possibility of benefiting from the nursery funded by Belgian Defence (subject to availability).

Workplace

- Royal Military Academy, Avenue de la Renaissance 30, 1000 Brussels;
- Occasional travel abroad for scientific conferences, etc.

Points of contact

- Concerning the research project: to Mr Geert De Cubber (geert.decubber@mil.be)
- Concerning the recruitment modalities: Mrs Helena Bruyninckx (erm-deao-rsw@mil.be)
- For more information about:
 - the Royal Military Academy, see <http://www.rma.ac.be>
 - the research cell 'Robotics & Autonomous Systems', see <https://mecatron.rma.ac.be/>
 - COURAGEOUS, see <https://courageous-isf.eu/>