



Job offer  
Royal Military Academy - Patrimony



**Senior Researcher in Robotics for demining (M/F/X)**  
Department of Mechanics

Publication: 02/08/2024

## Job description and associated tasks

In the framework of multiple European projects on the subject of robotics for demining, we are looking for an experienced full-time researcher. Candidates should either have a PhD. in Applied Sciences / Engineering / Physics / Computer Science / Informatics or a Master degree in the same field with at least 5 years of equivalent relevant experience.

The Royal Military Academy (RMA) values diversity and equal opportunities. We enthusiastically welcome applications from all individuals, regardless of gender, origin, or other personal characteristics. Whether you are a man, a woman or X, or come from any background, we firmly believe that diversity enriches our community, and we encourage all qualified candidates to apply.

### 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 Defence department ([www.rma.ac.be](http://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 Defence department or external sources.

You work within the multi-national research cell 'Robotics & Autonomous Systems' - RAS (<https://mecatron.rma.ac.be/>) of the department of Mechanical Engineering of the Royal Military Academy and together with a large consortium of research institutes and companies, conducting scientific research at university level in the context of collaborative European research projects.

The Ukraine conflict has given rise to an increased attention towards the terrible problem of land mines and other hidden explosive threats. The EU is investing heavily in the development of novel robotic solutions to tackle this problem more efficiently, which is direly needed. To give you an idea of the problem: it is estimated that demining Ukraine will take more than **700 years** using classical demining tools and techniques. We need **you** to make that quicker.

RMA is involved in multiple European research projects ([GENIUS](#), [AIDEDex](#), [CONVOY](#), eUGS) that tackle this problem, some focusing more on the mine-detection aspect, some more on the disposal and neutralization aspect, which implies (careful!) mobile manipulation of explosive treats. For this position, we seek a Principle Investigator who acts as the primary RMA point of contact and responsible in these projects. The exact project will be decided in agreement with the candidate, based upon the matching between the project and the candidate profile.

You will work in a multidisciplinary team of 20-25 robotics researchers, from which around 5-10 are working specifically on robotics for demining. As a senior researcher, you are expected to lead the junior researchers in the team.

## What we offer

- The ability to have an impact and perform research on societally relevant topics. In these research projects, we are seeking solutions for mine clearance in Ukraine, so your research could save lives.
- Highly varied job content, giving you the opportunity to work on a very wide range of novel robotics systems in a very international context.
- Opportunity to work in and with an international & dynamic team of research engineers and robotics experts.
- The flexibility and freedom to innovate and realize your own ideas.
- An employer that strives towards maintaining a good work-life balance for its employees.
- A competitive salary package supplemented with benefits like meal vouchers.
- Possibility to travel for field trials with partners.

## Main Tasks

- Develop a multi-agent demining solution, based on existing swarming robotic platforms
- Assist with the field trials of the robotic demining systems
- Act as Principal Investigator for RMA in the European demining project. This entails:
  - o Organize the work to be done at RMA (steer and lead junior researchers) in the framework of the project
  - o Perform reporting duties (deliverables...) in the framework of the study.
  - o Represent RMA in the General Assembly of the EU project
  - o Documentation of the performance of the robotic demining system as recorded during the trials
- Ensure active co-creation and co-development with end users (mainly the DOVO team)
- Integrate an autonomous mobile navigation capability for singular robotic assets
- Develop an optimal fleet / multi-agent coordination approach to demine an area as soon & safe as possible
- Follow-up of master thesis students on subjects related to your study.

## Required skills

### Technical skills

**The applicant shall have a PhD. in Applied Sciences / Engineering / Physics / Computer Science / Informatics or a Master degree in the same field with at least 5 years of equivalent relevant experience.**

“MUST HAVE” skills:

- Training or experience in robotics & AI
- Experience in programming is required (Python is required, C/C++)
- Training or experience in unmanned ground systems
- Knowledge of ROS (<https://www.ros.org/>).

“HIGHLY RECOMMENDED” skills:

- Training or experience in project management
- Training or experience in mobile manipulation
- Training or experience in Perception, Control Engineering and sensor integration
- Proficiency in technical documents production

- Experience with complex software architectures assemblies, deployment and testing.

“NICE TO HAVE” skills:

- Knowledge of software engineering life cycles, Agile methodologies and Scrum experience
- Knowledge of deep learning algorithms
- Training or experience in applied research and or design.

## Personal skills

- You conduct scientific research in an independent and upright way within a multidisciplinary environment
- You communicate your results in a clear, concise and precise manner.
- You take initiative, are involved and result oriented.
- You are honest, loyal toward the institution and respect confidentiality.
- You will be working very closely together with industrial partners and will get insight in their proprietary intellectual property. Moreover, you will be working very closely together with the Belgian Armed Forces and will get insight in their modus operandi. Confidentiality is therefore an absolute must.

## Other skills

- The applicant shall have very good knowledge of English (oral & written), which will be tested during selection.
- Minimum knowledge of French or Dutch is an added value for collaboration with peers.

## Specific requirement

- For this study, the researcher will 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 Defence.
- The researcher will be working within the context of a European Defence Fund project. Due to this project framework, this position is **only open for NATO / EU citizens**.
- Working for the Patrimony requires living in Belgium for the duration of the study.

## Application

You will be working in a military environment, so everyone is required 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> (Dutch) or [https://rma.ac.be/sites/default/files/2021-03/Demande%20d%27Avis%20de%20S%C3%A9curit%C3%A9\\_F.pdf](https://rma.ac.be/sites/default/files/2021-03/Demande%20d%27Avis%20de%20S%C3%A9curit%C3%A9_F.pdf) (French).

There is unfortunately no English version of this document.

Please mention clearly the reference of the project: **“DEMINING”** and 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.de.cubber@mil.be](mailto:geert.de.cubber@mil.be)) & Mr. Emile LE FLECHER ([Emile.LeFlecher@mil.be](mailto:Emile.LeFlecher@mil.be)) and to Mrs. Helena BRUYNINCKX ([erm-deao-rsw@mil.be](mailto:erm-deao-rsw@mil.be)).

**Application deadline: 30/08/2024.**

Shortlisted candidates will be invited for an (online) interview. In the unlikely case that we would hold in-presence interviews, then these would take place at the Royal Military Academy, Hobbemastraat 8, 1000 Brussels. 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).

To be very clear: your contract will be open-ended, but the financing of the contract will be tied to the funding project, which ends at the end of the year 2027. The financing of your contract beyond that period is therefore not 100% guaranteed. However, the RMA-RAS unit has a policy to keep the good elements on board and the research focus of this job offer fits within our core research activities, so there is a very high chance that we will be able to offer you follow-up projects beyond that date if you decide to stay.

- Wage scale: class **A2** (holder of an PhD degree or equivalent Master's in Engineering Sciences, doctor's degree in the same area of expertise). The sub-salaryscale will be evaluated in function of the experience of the candidate. RMA-Patrimony applies a merit-based research career track, allowing researchers to advance in wage scale based upon annual evaluations.
- 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);
- Meal vouchers (6€/day)
- Flexible working hours within the 38-hour week + Teleworking possible with allowance;
- Holidays:
  - 29 days holiday / year from the 1st year of contract (then from 45 years: +1 day holiday every 5 years)

- + 1 week OFF every year between Christmas and New year's Eve
- 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 travels abroad for scientific conferences, field trials, etc.

## Points of contact:

- Questions concerning the research project: to Mr. Emile LE FLECHER ([Emile.LeFlecher@mil.be](mailto:Emile.LeFlecher@mil.be)) & Mr. Geert DE CUBBER ([geert.de.cubber@mil.be](mailto:geert.de.cubber@mil.be))
- Questions concerning the recruitment modalities (e.g. net salary calculation): [erm-deao-rsw@mil.be](mailto:erm-deao-rsw@mil.be)
- More information about
  - The Royal Military Academy: <http://www.rma.ac.be>
  - The Robotics & Autonomous System unit: <https://mecatron.rma.ac.be/>