

Job description: Vacancy for a researcher Modelling and Simulation (M/F) at the Royal Military Academy, department of Mathematics, Research Group Modelling Simulation and Optimization - project MWMW SMS 16-01

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1. Job description:

The Royal Military Academy-Patrimony is recruiting a full-time researcher (M/F) to conduct research in the domain of modelling and simulation.

The conducted research is part of the research project at university level “An expert simulation system for mine countermeasures (MCM) operations using unmanned systems”.

The objective of this research is threefold: first of all the development of a simulator which allows the performance evaluation of a planned maritime MCM operation; secondly the integration of a simulation optimisation module that will allow the deduction of “best practices” for a wide range of MCM scenarios; and finally the development of an expert system that can propose an efficient planning for a MCM operation in quasi real-time and that is able to react to unexpected changes during the scenario.

Function description:

- You are responsible for the study and analysis of the different systems, platforms, sensors and scenarios, as well as the maritime environment.
- You develop and validate a mixed discrete event and continuous time simulation model. This is a computer model which mimics the behaviour of a real system, more specifically a system whose system state can change due to events that happen at specific (discrete) moments in time, and that is also subject to continuous changes.
- You analyse the obtained results and publish the conclusions in international scientific journals (on international level).
- You work independently on the research project but can rely on your colleagues and fellow researchers for support and advice.
- There is a possibility to conduct a PhD within the framework of this research project.

The researcher will be integrated in the research team headed by Filip Van Utterbeeck and Ben Lauwens.

2. Required competencies	
Technical competencies	<ul style="list-style-type: none"> • You hold a Master's degree in Engineering, (Applied) Science or (Applied) Economics, or equivalent. • If you hold an equivalent degree to those described above, but did not graduate from a Belgian University, you will be required to obtain legal proof of equivalence (either at the Vlaamse Gemeenschap or Communauté Wallonne) after your recruitment • You are knowledgeable about modelling, discrete event simulation and continuous time simulation. • You are proficient in English.
Specific requirement	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 the Belgian Defence.
Behavioural competencies	<ul style="list-style-type: none"> • You can interpret and analyse complex data, generate alternative solutions and can reach appropriate conclusions. • You can tackle complex problems independently, investigate alternative solutions and implement a solution. • You take decisions based on (in)complete information and take targeted actions to execute those decisions. • You will create and foster the team spirit by sharing your ideas and opinions with your colleagues and by contributing to the resolution of conflicts between co-workers. • You transparently and objectively assist internal and external customers with integrity, render a personal service and maintain constructive contacts. • You act with integrity, according to the expectations of the organization. You respect confidentiality, honour commitments and avoid partiality. • You actively manage and plan your personal growth, taking into account your possibilities, interests and ambitions by scrutinizing your own functioning and by your continuous pursuit to gain new insights, skills and knowledge. • You have the motivation, the will and the ambition to book results and to assume responsibility for the correctness of your actions.
Experience/other skills	<ul style="list-style-type: none"> • Experience with computer programming is considered an asset. • Experience with the Julia programming language is considered an asset.

3. Application and interview	
<ul style="list-style-type: none"> • Send a motivational letter, a copy of your id-card and your curriculum vitae to Filip Van Utterbeeck (filip.van.utterbeeck@rma.ac.be) and to Thierry Deprez (Thierry.Deprez1@rma.ac.be) • Always refer clearly to the project code: MWMW SMS16-01 • Deadline for applications: 31 July 2017. • The interviews will take place in the Royal Military Academy, Rue Hobbema 8, 1000 Brussels (as from 7 August 2017). 	
4. Miscellaneous	
Points of contact	<ul style="list-style-type: none"> • For information about the research project: Filip Van Utterbeeck (filip.van.utterbeeck@rma.ac.be) and Ben Lauwens (ben.lauwens@rma.ac.be) • For matters concerning recruitment: Thierry Deprez (Thierry.Deprez1@rma.ac.be) • For additional information about the Royal Military Academy, consult http://www.rma.ac.be
Others	<ul style="list-style-type: none"> • Probable date of recruitment: 15 September 2017 • Contract: Full-time employment through an open-ended contract with the Patrimony of the Royal Military Academy. This does not correspond with civil servant under the staff regulations. • Salary scale: A11 (Master's degree in Science or Economics) / A21 (Master's degree in Engineering/Applied Science) • Extra-legal advantages: <ul style="list-style-type: none"> • Possibility to obtain a bonus for bilingualism (Dutch/French); • Holiday allowance; • Year-end bonus; • Hospital insurance; • Free commuting with public transportation; • Access to the sports infrastructure of the campus. • On-campus restaurant and cafeteria. • Workplace: <ul style="list-style-type: none"> • Address: Royal Military Academy, Avenue de la Renaissance 30, 1000 Brussels • A pleasant and stimulating work environment