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EDF – Projects & Partners

June 2024

Call title: EDF-2024-RA-DIGIT-ASMEP: Automated structural modelling for effect prediction – *Consortium looking for members*

Call description: This topic addresses the automated modelling of structures such as building, plants, etc. for effect prediction. Proposals must address the development and evaluation of software systems for modelling structures from multisource imagery and other relevant available data, and for accurately predicting the effects of weapons on these structures.

Suggested project: 3D Air Screen

Organization: Budapest University of Technology and Economics

A research on an aerial surveillance is conducted which could cover an area of 1km2 in less than 2 minutes. The study is about processing aerial data with data obtained from the ground, so later on, high level detailed models could be created based on this information. Special attention is paid to low computing capacity and optimized operation as efficiently as possible. In this way, calculations could also be performed locally in the operational area.
With its regular high ranking position, BME is among the top universities globally having 8 faculties and 76 departments. The University is an active member of the European Engineering Learning Innovation and Science Alliance European University, the CESAER Association of Universities of Science and Technology and the European University Association. BME is a public university and therefore fully eligible to participate in HE projects and sign legal commitments grants and contracts.

Call title: EDF-2024-SME-NT: Non-Thematic development actions by SMEs – *Consortium looking for members*

Call description: This call topic encourages the driving role of innovative SMEs to turn technology and research results into defence products in a fast and cost-efficient way, possibly by adapting technologies from civil applications or addressing hybrid warfare.

Suggested project: AI-powered Access Risk Monitoring of Military Data

Organization: Falcon GT Consulting

The subject of this research & development project is an innovative cybersecurity solution called Access Risk Monitoring. It shall be capable of dynamically detecting and measuring the potentially maximum access capabilities of users in business administration or military applications or background systems.

Falcon GT's objective is to quantify the real digital risk for our customers and to demonstrate the identified IT risks and the associated solutions. As the specialist of digital data & system protection we target to prepare our customers for becoming resistant against the constantly changing threat landscape.

Open to join forming consortium on the topics below

Topics

- AI, Robotics, Next Generation Internet, cloud and edge computing
- Energy, Battery, sustainable power generation and transmission
- Space technology, Manufacturing technology, transformation of industry
- Telecommunication, Quantum computing, Quantum materials

Suggested organization: Budapest University of Technology and Economics

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Call title: EDF-2024-DA-CYBER-NGCR-STEP - Next-Generation Cooperative Cyber Range – *Looking for Consortium*

Call description: This topic aims to address the remaining challenge on design and development of solutions that deliver notable progress vis-à-vis the current state-of-the-art, including in view of wider technology landscape. This means that focus has to shift from creating cyber ranges that fulfil basic needs to cyber ranges that target next-level capability requirements. Therefore, the specific objective is about the use of cyber ranges for trainings and exercises.

Suggested organization: Alverad Technology Focus

Alverad – established in Hungary, Budapest – is an independent cybersecurity advisory company. They provide comprehensive suite of security services by our 360° security management platform from initial identification through planning up to implementation support of security tools, techniques, and best practices for Information Technology (IT) and Operation Technology (OT). DIANA membership gives them the opportunity to represent Hungary in the global cybersecurity community.

Key company facts:

- 15 years proven track record as an independent cybersecurity advisory
- Accredited Cybersecurity Testing Lab (ISO/IEC 17025:2017)
- NATO DIANA Certified Test Centre and NATO Supplier status
- Active participant at NATO Locked Shields Cyber Defence Exercise (2022, 2023, 2024)
- Technology focus (25 internal + 40 external experts)
- Unique combined expertise in IT and OT (ICS/DCS/SCADA)
- Dedicated Research and Development team in-house

Call title: EDF-2024-DA-ENERENV-EEMC-STEP: Energy-independent and energy-efficient systems for military camps - *Looking for consortium*

Call description: Specific objective of this topic is to substitute the fossil fuel dependency reduction in military deployable camps (support and mobility) without any drop of operational performances.

Suggested project/solution:

•Result-oriented cooperation between a scientific (ZalaZONE InnoTech) and a technical (MOLARIS) partner to create a dual-use innovative energy solution for battlefield or to special cases e.g. natural disasters and/or other incidents.

•Modular, mobile energy supply system utilizing renewable energy sources, incorporating different energy storage methods including battery and hydrogen-based solutions with flexible energy consumption characteristics.

•Advanced energy management software coordinates the operation of the system and optimizes different target functions for on-grid and off-grid operation.

•Modularity makes it possible to modify the capacity and other characteristics of system elements.

•Scalability ensures energy production and supply ranges from some kilowatts up to the megawatt range, while energy storage capacity can efficiently be extended by increasing hydrogen storage capacity to several megawatt hours.

•Marine container-based design ensures easy transportation and installation.

Call title: EDF-2024-DA-ENERENV-EEMC-STEP: Energy-independent and energy-efficient systems for military camps – *Part 2*

Suggested organization: MOLARIS is a Hungarian IT development company that has experience in software development for enterprise-size companies and in the public sector by creating high-security governmental IT systems; substantial competence in robust backend systems and in BigData technologies such as data collection, data analysis and data visualization. MOLARIS focuses on solutions for defence and space purposes that require the use of advanced analytics, data-driven techniques and machine learning models. MOLARIS is a certified NATO supplier (2012), adheres to necessary ISO standards, involved in European Defence Fund (EDF) programme.

References, experiences

•EDF-2023-RA-SI-MATCOMP-HPM High-performance materials for Defence applications, ESR: Seal of excellence, Molaris task: data-based modelling, process sequences and methodologies (Decision tool).

•EDF-2023-DA-MATCOMP-MJR-CBDIN Technologies and processes for maintenance, joining and repair through an innovation test hub project, not submitted but prepared, Molaris task: predictive maintenance platform.

Call title: EDF-2024-DA-GROUND-UGS-STEP: Multipurpose unmanned ground systems - *Looking for consortium*

Call description: Thus, the aim of this topic is to develop an unmanned modular system of systems capable of supporting dismounted, mechanised and motorised infantry in all types of European geographic and operational land environments, including denied environments, in adverse light and weather conditions with evolving levels of autonomy and robustness.

Suggested organization: MouldTech

MouldTech Systems is a solution ecosystem that sells engineering and manufacturing capabilities and provides engineering services, prototyping and the serial production of ready-made products. Additionally, it also develops R&D projects as part of it's CSR activities.

Relevant R&D activities:

- Kit-car manufacturing
- Defense applications
- Vehicle customizations
- EV development capabilities

Call title: EDF-2024-DA-GROUND-AIFV: Next generation armoured infantry fighting vehicle - *Looking for consortium*

Call description: Armoured Infantry Fighting Vehicles (AIFV) remain a pivotal element of land military manoeuvre, both in a conventional warfare context as well as in the asymmetric one, thanks to EN 142 EN the combination of protection, mobility, and firepower. Nonetheless, AIFVs currently numbered in the fleet inventories of the EU Member States are to some extent either ageing or obsolete and, therefore, the same States face the compelling need to modernise their in-service platforms and replace those of them approaching the end of their operational life. There is also a need to accelerate the acquisition and increase the size of the AIFV fleets updating some of the new requirements stemming from the war in Ukraine and the new threat scenarios. Against this background, the upgrade of the current and development of the next generation armoured infantry fighting vehicle capable of outstanding operational effectiveness and mission success in all possible future scenarios are highly necessary

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Suggested organization: EU-Fire Ltd

EU-FIRE Real Estate Development and Consultancy Ltd. was founded in 2001 and has since built up several business divisions with a focus on sustainability and innovation. Industrial production has been part of the company's portfolio for more than 10 years, with two plants recently handed over: the Kocsord plant of EU-FIRE Ltd. was handed over in 2021 and the Mátészalka plant in 2022.

References: The company obtained NATO supplier certification in 2022, holds necessary domestic military technology manufacturing licenses, and is a member of the Defence Industry Association. It participated in the Defence Industry Supplier and Development Programme by N7 Holding Zrt. and VIBIF Ltd. Its team includes specialists with extensive defence industry experience, including regular training and work on search and targeting scopes, military compasses, optical equipment for tanks, Gepard sniper rifle components, and tank ammunition loading equipment.

Competences related to the call

- plastic and silicone injection moulding
- precision metal machining (for all materials)
- sheet metal forming and cold forming (using presses and other technologies)
- welding (including special welds)
- abrasion protection
- cutting of armoured glass and armoured steel
- material processing (including vacuum annealing furnaces)
- procurement of special raw materials
- production capacity
- assembly capacity
- engineering capacity
- re-engineering

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