

EDF-2022-LS-RA-DIS-EAD: Looking for partners with experience in designing and building a power source and a projectile

Summary

Profile type	Company's country	POD reference
Research & Development Request	Romania	RDRRO20220727002
Profile status	Type of partnership	Targeted countries
PUBLISHED	Research and development cooperation agreement	• World
Contact Person	Term of validity	Last update
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General Information

Short summary

A Romanian defense higher education institution is seeking partners to apply for a project under conditions of EDF-2022-LS-RA-DIS-EAD: Electromagnetic artillery demonstrator call for proposals financed by European Defense Fund (EDF). A highly experienced researcher from the institution has conducted research with a focus on electromagnetic launch systems and it's looking for a partner with experience in designing and building a power source and a projectile to create a consortium.

Full description

A prestigious Romanian defense higher education institution is looking for partners to apply for EDF-2022-LS-RA-DIS-EAD: Electromagnetic artillery demonstrator call for proposals financed by European Defense Fund (EDF) call. The Romanian institution was founded in 1995 and it is specialized in the education of jet pilots, air traffic controllers, surface-based air defense officers, and radar officers. The institution is part of the national research and development system as a higher education institution. The scientific research activity takes place at the level of each department, within its own scientific research center. The results of scientific research are disseminated through their own journal indexed on 4 international research bases.

One area of research is focused on electromagnetic launch systems by providing the design of the accelerator system. To complete the project, further expertise is required from a research and development organization able to design and build a power source and a projectile. The partner must operate in the electrotechnical sector, and they must have experience in developing and building a direct current source able to power an electromagnetic launch

system and to develop a projectile for high speed. The institution is also looking for a project coordinator for this call.

EDF-2022-LS-RA-DIS-EAD: Electromagnetic artillery demonstrator

The combination of electromagnetic artillery guns with smart ammunition can provide long-range precision strikes, as well as increased air defense and anti-surface warfare capabilities. Such a combination is expected to improve the effectiveness and the protection of future European land and naval systems. Electromagnetic guns might provide a drastic superiority over conventional guns due to their hypersonic muzzle velocities, while guided projectiles will provide higher accuracy and precision.

The objective of the topic is to solve the current technical challenges and increase the maturity of the critical components required to develop a medium-caliber electromagnetic artillery system.

The focus is set on the following tasks:

- A. Requirement analysis and system specifications of a medium caliber electromagnetic gun dedicated to air defense (primary mission) and anti-surface warfare (secondary mission).
- B. Improved design and development of the critical system components, namely (1) the electromagnetic gun, (2) the pulsed power supply, and (3) the hypervelocity projectile, according to the overall system specifications.
- C. Assessment of the components at the laboratory level (minimum TRL 4), including their performance validation and the feasibility of their integration at a system level.

The priority of this call is to work on the critical components and to make progress on their maturity (B and C), especially for the pulsed power supply.

Advantages and innovations

The institution undertook the evaluation by The Romanian Agency for Quality Assurance in Higher Education, being granted the "High Confidence Rating".

The institution publishes twice a year a journal that hosts articles and papers written by university professors and specialists from the field of the air force.

Experience in research and development in the field of the air force and in collaborating on international projects.

Experience in designing an electromagnetic launch system.

Stage of development

Under development

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 17: Partnerships to achieve the Goal**

IPR Status

No IPR applied

Partner Sought

Expected role of the partner

The institution is looking for research and development organizations interested in applying for a project under conditions of EDF-2022-LS-RA-DIS-EAD call.

The institution has enough experience to cover the first task of the project [requirement analysis and system specifications of a medium caliber electromagnetic gun dedicated to air defense (primary mission) and anti-surface warfare (secondary mission)] and a part of the second task of the project [Improved design and development of the critical system components, namely (1) the electromagnetic gun].

The partner should be able to cover a part of the second task of the project [(2) the pulsed power supply and (3) the hypervelocity projectile, according to the overall system specifications] and the third task of the project [assessment of the components at laboratory level (minimum TRL 4), including their performance validation and the feasibility of

their integration at system level].
The partner should also assume the role of coordinator of the project.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **R&D Institution**
- **University**

Dissemination

Technology keywords

Market keywords

- **03003 - Power Supplies**

Targeted countries

- **World**

Sector groups involved