

Cyber Academia and Innovation Hub - CAIH
CALL for its implementation

Title:

Cyber Academia and Innovation Hub (CAIH)

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CAIH DESCRIPTION

Built upon the experience acquired during the Portuguese leadership of the NATO Smart Defence project “*Multinational Cyber Defence Education and Training*” (MN CD E&T) and the “Cyber Defence Discipline” of the European Union (EUMTG/CD Discipline), Portugal is implementing the Cyber Academia and Innovation Hub (CAIH), under the aegis of the National Defence Resources Directorate (DGRDN) of the Ministry of National Defence (MDN).

CAIH was approved by order of the Portuguese Minister of National Defence with the mission of stimulating Education and Training (E&T), Research, Development and Innovation (RD&I), and Industry Development in the field of cyberspace, to feed the national and international ecosystem with the required knowledge and skills for a new generation of professionals, as well as to support the development of cyber defence and cybersecurity capabilities.

It is envisioned that the CAIH be constituted as an international Centre of Excellence on cyber defence and cyber security which interconnects Universities, Research Centres, Industry and other entities and organizations of the public and private sector.

CAIH will develop the following strategic lines of action:

- i. **E&T** for the development of cyber security and cyber defence competencies and skills, building resilience and an effective response to cyber threats.
- ii. **RD&I** with the creation of an incubator for capacity building projects (Knowledge Incubation Centre), involving Academia and Industry.
- iii. **Industry Development support** through information sharing and interaction, based on a collaborative approach, allowing for the experimentation, evaluation, and certification of new solutions and technologies, as well as knowledge sharing.

In this context, CAIH will develop a programme of work that responds to its proposed mission, including but not limited to:

- Specialized technical support in the areas of cyber defence and cyber security (value chain vs tasks), through studies, doctrinal and lessons learned documents, good practices, collaborative projects and/or support in the development of actions which result in the increase of cyber resilience.
- Identification and development of E&T instruments, namely by determining education and training needs (E&T gaps), analysing education profiles and developing specific and specialized programs to structure a shared and autonomous training database, sharing best practices and improve cyber threats prevention and cyber combat capacities.

- Education (courses and academic programmes), through the development of specialized education programmes, including “train the trainers” and advanced and operationally oriented learning with a national and international guidance.
- Training (individual, collective) and Exercises (national and international) support, with the organisation of events dedicated to both training and exercises, in the scope of looking into education support and operational training.
- Test and certification of the use of new technologies (Cyber Lab), through experimentation, evaluation and certification of developed products and technologies.
- E&T and Experimentation support platforms (systems, laboratory, software, hardware, etc.), to stimulate research, development and innovation, and evaluate new solutions and technologies, allowing for the creation of appropriate technology tools for knowledge sharing.
- Awareness and information sharing events (conferences, seminars, workshops), establishing CAIH as a relevant international stakeholder for cyber E&T.

Under this framework, CAIH will develop E&T activities from technical to decision-makers level, including certification, modelling and simulation, and emulation of cooperative cyber defence and cyber security. It will also promote awareness, information sharing, and organise events, available to national and international audiences, the Armed Forces, Security Forces, the Defence Technological and Industrial Base, the Scientific and Technological System and others public and private sector entities.

The CAIH will be available to the EU and NATO, in accordance with the EU-NATO Joint Declaration, to the Portuguese Speaking Countries Community (CPLP) and to the Defence Initiative 5+5.

Given its international dimension, the possibility of applying for EU funds remains open and shall be taken into consideration in the development of projects of common interest, in collaboration with Academia and Industry, namely the European Defence Fund (EDF), with the respective added value associated with the Permanent Structured Cooperation (PESCO).

With a privileged location in the centre of Lisbon, CAIH will have an auditorium, a classroom and training room, an innovation room and respective training rooms, a multipurpose room, a technical room, and a Cyber Lab/Cyber Range focused on testing and verification of new technologies, as well as individual and team education and training, at basic, intermediate, advanced and specialised levels, presential or through distance learning.

CAIH ESTABLISHMENT

The National Defence Resources Directorate, of the Portuguese Ministry of Defence, has already initiated the process for the adaptation and modernization of CAIH facilities at the Military Academy – Lisbon Campus, with an initial approved investment of approximately € 1,000,000.

It is now important to formalize CAIH partnerships, in its Strategic Lines of Action, with entities whose contribution is considered to be relevant for the implementation of CAIH, as well as for its sustainability.

To this end, an appropriate legal and administrative framework for the operation of the CAIH must be established, under the auspices of the Portuguese Minister of Defence, counting on the cooperation of a wide range of public and private entities. Considering the public interest in the CAIH's mission, its establishment shall be promoted, as a non-profit private association, looking towards the fulfilment of public interest, clearly defining the objectives to be pursued, while identifying the participating entities in the CAIH at the time of its constitution.

The statutes of the CAIH, under civil law terms, shall be approved by the founding members and will regulate the functioning and the association bodies, as well as the rights and obligations of the respective members.

In case the selection process of the entities to participate in the CAIH, to result from the present CALL, is concluded before the formal constitution of the association and the approval of its statutes, it may be temporarily established, through a Memorandum of Understanding (MoU), as a grouping of entities, with no legal entity. The rights and obligations of the parties, including their respective contribution to the CAIH, will be described in the MoU, until the conditions for the constitution of the association are met.

CALL OBJECTIVES

Under the principles of openness, transparency, equal treatment and opportunities, and non-discrimination, it is necessary to define and publish CAIH access rules based on clear and objective criteria, with a view to promote an adequate selection of participating entities.

As a result, this CALL is intended to ensure the appropriate disclosure of CAIH establishment, which is envisioned to be open and inclusive in order to ensure the greatest possible participation of potential stakeholders, according to the existing legal framework, aiming to obtain the best contribution of each participating entity to enable the implementation and operation of the CAIH with a shared cost model (Burden Sharing) laid down in the CAIH statutes or in the MoU to be concluded if the conditions for the approval of the CAIH statutes are not yet met.

1.1. CAIH ELIGIBILITY CONDITIONS

CAIH will be open to any entities, public or private, single or collective, with or without profit, that develop activity and intend to ensure a relevant contribution to the strategic lines of action of CAIH – E&T, RD&I and Industry Development, namely: Universities, Training Centres and Research Centres; Industry related to CAIH activity; as well as any other entities that pursue activities with relevance or interest for the implementation and development of this initiative.

In addition to the condition referred to in the previous paragraph, entities must also fulfil the following eligibility conditions:

- Have a registered office in one of the EU countries.
- Hold a national security clearance of CONFIDENTIAL or higher.
- Have their situation regularized, concerning taxes and social security in Portugal or if applicable in the State in which their main establishment is located.
- Not be in any of the inhibition situations described in paragraph 1 of article 55 of the Portuguese Public Contracts Code.
- Contribute with at least € 10,000 (ten thousand euros) to the initial investment, or in kind (money equivalent).

1.2. INITIAL INVESTMENT, BURDEN SHARING AND SELECTION OF PARTICIPANTS

Interested entities shall commit to contribute to the pursuit of CAIH's strategic lines of action, regular functioning and budget, in a burden sharing model, enjoying the rights and obligations described in the CAIH's statutes/MoU, in the proportion of their participation/share.

The initial investment should be of at least € 10,000 (ten thousand euros), and may take the form of a contribution in kind, such as equipment to be supplied, human resources to be allocated, or services to be provided.

If the initial investment is made in kind, interested entities must submit a duly substantiated proposal describing the technology, equipment, allocated human resources or provided services, accompanied by the respective in kind contribution financial value.

The proposal thus presented is subject to an evaluation by a Jury established for this purpose, which may re-evaluate and amend the proposed values. In the event of a re-evaluation by the Jury, the revision will be presented to the interested entities for acceptance.

The entities that will be part of the CAIH commit themselves, without prejudice to the right to withdraw, to continue supporting the CAIH's budget for a minimum period of 3 years, in the proportion of their participation/share. This share will be described in the CAIH's statutes/MoU, both in terms of the initial investment, as well as in terms of the annual financial effort to CAIH's operation and maintenance.

1.3. LEGAL FRAMEWORK

CAIH will take the form of a private non-profit association, oriented towards the pursuit of the public interest, to be governed by the provisions of its statutes.

Nevertheless, CAIH may take on a temporary basis the form of a Group of Entities, with no legal entity, coordinated administratively and financially by the National Defence Resources Directorate of the Portuguese Ministry of Defence, and governed by the provisions established in a Memorandum of Understanding (MoU). This modality shall assume a transitory nature - ideally during the first year of CAIH's activity - seeking to create the conditions for its evolution as a private non-profit association.

This framework will allow the adoption of modalities of relation or association with other entities and institutions, national and international, including through the Permanent Structured Cooperation (PESCO) of the European Union, around the following points:

- Implementation of an entity capable of pursuing the public interest recognized by a public authority;
- Obtaining certification/accreditation as a national and international E&T entity;
- Participation as institution (member or observer) in international organisations relevant to the scope of its activity, namely, as an example, CPLP, initiative 5 + 5, EU, NATO, OECD, etc.

1.4. APPLICATIONS

Applications for this CALL shall be formalized by sending and filling in the form in ANNEX A, alongside the following documents:

- Proof of the entity's constitution, designation and corporate purpose, as well as the identification of the members of the respective corporate bodies of administration, direction or management (certificate of commercial registration or an equivalent document).
- Certificate of criminal record (extract from police records or similar document drawn up by a competent authority) of the mentioned members of the bodies of administration, direction or management.
- Certificate of regularized situation concerning taxes and Social Security contributions (or tax exemption certificate).

- National security clearance certificate in the required degree or proof that the security clearance process is ongoing.

Interested entities may add additional information to their application that they consider relevant.

1.5. APPLICATIONS - ANALYSIS AND EVALUATION

Applications will be analysed by a selection Jury, established for this purpose, responsible for examining the received proposals in accordance with the eligibility conditions and the initial investment, as abovementioned under points 3.1 and 3.2. The Jury shall proceed with their admission or exclusion, in case the applications do not meet the eligibility criteria and/or present the documentation as specified in this CALL.

The accepted proposals will be evaluated and ranked by the Jury, according to the score obtained from the following factors and formula:

- Financial contribution: 30%
- Non-financial (in kind) contribution: 70%
- $Ts = [Fcs \times \%] + [Ncs \times \%]$

Em que:

- ⇒ Ts – Total score
- ⇒ Fcs – Financial contribution score
- ⇒ Ncs – Non-Financial contribution score

For investments in the form of financial contribution (money payment): the minimum amount (€ 10,000) corresponds to 1 point, with a linear rule being applied to obtain the score corresponding to the proposed financial contribution (Fcs).

In case the investment is made in kind, the contribution score will be attributed according to the values of the proposal presented (market values), subject to eventual harmonization by the Jury, having as reference 1 point for each € 10,000 and Table 1 reflecting the basic equipment and services needed to establish the CAIH, with a commitment for 3 years of CAIH's operation.

Table 1 – Basic equipment and services

	DESCRIPTION/TECHNOLOGY
1. General Support	
1.1 Hardware	
1.1.1 Network Systems	<ul style="list-style-type: none"> • 5 x Gb Routers • 10 x Gb Switches • Wireless APs
1.1.2 Security Systems	<ul style="list-style-type: none"> • Perimeter security and remote access (Firewall + VPN) • Reverse proxy (Web Application Firewall) • Others
1.1.3 Housing	<ul style="list-style-type: none"> • Complete solution for: Minimum storage of 75 VDI (each with 8GB of RAM and 500 MB of HDD/SSD) + Minimum storage of 5 servers (DC, LMS, VMWare, Others) (each with 32GB of RAM and 1 TB of HDD/SSD) • Backup Server • VTC Server
1.1.4 Workstations	<ul style="list-style-type: none"> • 10 x Workstations Intel i7 10th Gen, 64GB RAM, 1TB SSD, <i>dockstation</i>, 20 x Monitors 24" • 10 x Workstations Intel i7 7th Gen, 16GB RAM, 1TB SSD, <i>dockstation</i>, 20 x Monitors 24" • VTC terminals • 50 x <i>Thin Client/zero client</i>
1.2 Software	
1.2.1 Software	<ul style="list-style-type: none"> • Server virtualisation + VDI • Client/Server software licensing (Microsoft) • Backup Software • VTC • <i>e-learning</i> and score system • Information sharing platform

2. Education and Training (E&T)	
2.1 Cyber Range	<ul style="list-style-type: none"> • At least 300 VMs simultaneously (10 VM/30 Users, 5 VM/60 Users) • Virtual Scenarios: Red team & Blue team • Network traffic generator/simulator • Security Information and Event Management (SIEM)
2.2 Training Academies	<ul style="list-style-type: none"> • Microsoft • Cisco • Palo Alto • Check Point • Others
3. Research, Development and Innovation	
3.1 Cyber Lab	<p>Set of tools for analysis, validation, integration tests / development of new technologies, such as:</p> <ul style="list-style-type: none"> • SDR • Cyber intelligence • Pen test and vulnerability assessment • Network traffic simulator • 10 scenarios library for a Cyber Lab • Forensic analysis • Ethical hacking
3.2 SOC	Deployable SOC
4. Human Resources	
4.1 Human Resources (one staff element for a period of 3 years)	<ul style="list-style-type: none"> • Trainers • Researchers • Others
5. Infrastructure and equipment to support the operation	
5.1 Wi-Fi	Wi-Fi coverage with management for all its infrastructure (for 3 years)
5.2 E&T	<ul style="list-style-type: none"> • Complete set of Programs and Courses from the technical / tactical to the Strategic level • E&T platforms
5.3 School and office furniture	<ul style="list-style-type: none"> • Meeting tables and office tables to equip the training rooms and the laboratory • 36 x Operating and 15 x meeting chairs to equip the rooms
5.4 Internet	<ul style="list-style-type: none"> • 1Gb internet service for 3 years • Implementation and maintenance of CAIH's website for 3 years
6. Others	
	<ul style="list-style-type: none"> • Other proposed technologies, equipment or services assessed by the jury according to its relevance for the materialization of CAIH's strategic lines of action.

The proposal, as mentioned in point 3.2, is subject to the evaluation of a Jury constituted for the purpose, which may re-evaluate and change the proposed value. The Jury will prepare a preliminary report and a final report for the admission and evaluation of applications, ensuring, under the terms of the law, the hearing of interested parties.

1.6. DEADLINES

The timeline for submitting proposals starts at 00:00 AM on April 19, 2021 and ends at 24:00 PM on June 14, 2021. Applications shall be sent to the National Defence Resources Directorate/Direção-Geral de Recursos da Defesa Nacional, under Avenida Ilha da Madeira, 1400-204 Lisbon, addressed to Colonel José António da Silva Vieira, or sent by email to jose.svieira@defesa.pt.

The process of analysing and evaluating the proposals will run until 24:00 PM on June 28, 2021, culminating with the release of a preliminary report prepared by the selection Jury. The final report will be released at 24:00 on July 12, 2021.

1.7. CONTACT US

For any questions or concerns during the application period, please contact Colonel José António da Silva Vieira (jose.svieira@defesa.pt).

STRUCTURE AND FUNCTIONING

1.8. ORGANIZATIONAL STRUCTURE

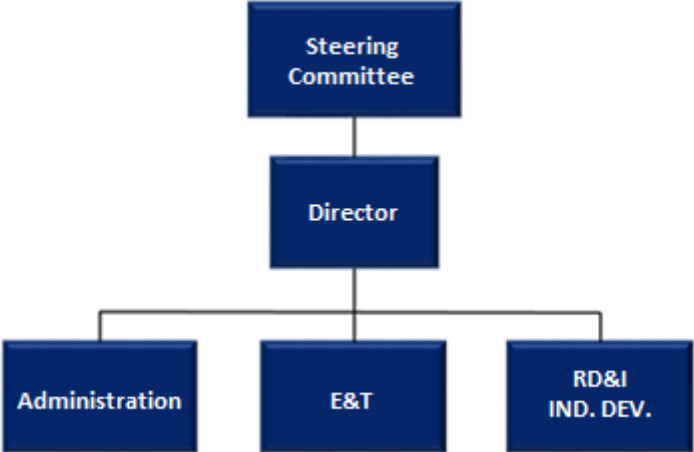


Figure 2 – CAIH structure

The organizational structure of the Cyber Academia and Innovation Hub will enable the accomplishment of its mission, to develop its activities and to achieve its proposed outcomes. It will be comprised of:

Steering Committee - it is composed of representatives of each member of the CAIH, proportionate to their contributions, both in terms of the initial investment and for the programme of work. This proportion shall be reflected in the CAIH statutes or the MoU, in case the statutes are not yet approved. The Steering Committee will be responsible for providing direction, on questions related to the object and strategy of the CAIH. It shall coordinate and approve the execution of the Programme of Work (PoW), the budget, and supervise its execution.

Director – it is responsible for providing Direction and Management, it is responsible for directing all the activities of the CAIH and its representation; headed by a member appointed from the entities of the National Defence of Portugal. Until the constitution of an association, it will be designated by order of the Director of Resources of the National Defence, of the Portuguese Ministry of Defence.

Administration - it supports the Director, exercising legal advice, administrative coordination, protocol and communication, external relations and public relations.

Education and Training - it is responsible for the development and quality of Education, Training and Exercise-related activities developed under the CAIH Program of Work.

Industrial Research, Innovation and Development - it is responsible for the development of activities related to industry and the promotion of cyber economy.

1.9. PROGRAMME OF WORK

CAIH's working languages will be English and Portuguese. The Director will annually prepare and present a draft PoW to the Steering Committee for the following year. The Steering Committee, taking into account all requests for services and products, including associated costs, will approve the PoW and the required budget for the CAIH.

1.10. HUMAN RESOURCES

The Group of Entities (established as a sequence of the CALL) will fill the posts at the CAIH structure in a timely manner, by appointing appropriate and qualified personnel, in accordance with the job description of the approved functions.

The inclusion of human resources must be flexible in order to allow the progressive implementation of the CAIH, from its initial operational capacity to the fully development of its Strategic Lines of Action.

1.11. ESTABLISHMENT AND OPERATION AND MAINTENANCE COSTS

The CAIH budget will be proposed to fulfil the execution of the approved annual PoW, based on a burden sharing model. The members will assume all the financial responsibilities arising from its constitution and functioning, to include administrative expenses, salaries and other costs related to

human resources, expenses related to Information and Communication Systems and associated services, laboratory equipment related to the PoW, and Public Relations services as well as events' organization.

The CAIH model for budget establishment and definition will be determined in CAIH's statutes or in the MoU celebrated between the participating entities, and it shall not foresee less than 3 years of participation in CAIH budget.

1.12. ACCOUNTING AND AUDITING

The financial contribution provided by the members of the CAIH will be managed and controlled in accordance with the management principles in force in the Portugal.

At the end of each fiscal year, the Director of the CAIH shall present a budget report to the Steering Committee. The audit functions for CAIH's budget will be performed in accordance with the directives of the Steering Committee.

LIST OF ACRONYMS

ACRÓNIMO	DESCRIÇÃO
APs	Access Points
CAIH	Cyber Academia and Innovation Hub
CPLP	Portuguese Speaking Countries Community
DC	Domain Controller
DGRDN	National Defence Resources Directorate/Direção-Geral de Recursos da Defesa Nacional
E&T	Education and Training
EDF	European Defence Fund
Fcs	Financial contribution score
Gb	Gigabit
GB	Gigabyte
HDD	Hard Disk Drive
LMS	Learning Management System
MB	Megabyte
MDN	Ministry of National Defence/Ministério da Defesa Nacional
MoU	Memorandum of Understanding
Ncs	Non-Financial contribution score
PESCO	Permanent Structured Cooperation
PoW	Programme of Work
RAM	Random Access Memory
RD&I	Research, Development and Innovation
SIEM	Security Information and Event Management
SOC	Security Operations Centre
SSD	Solid State Drive
TB	Terabyte
TLS	Transport Layer Security
Ts	Total score
VDI	Virtual Desktop Infrastructure
VM	Virtual Machine
VPN	Virtual Private Network
VTC	Video Conferencing
Wi-Fi	Wireless Fidelity

ANNEX A
APPLICATION FORM
Cyber Academia and Innovation Hub (CAIH)
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_____ (*corporate name, registered office and registered capital or equivalent*), _____ (*corporate purpose*) with the tax payer identification number _____, and the number of the register in the Commercial Registration Office¹ _____, represented by (name, number and validity of the respective identification document and position held in the entity/corporation), having taken full knowledge of the content of this CALL, declares to accept it unreservedly and considers meeting all the conditions to access the CAIH, hereby declares his interest in participating with the investment of (... €) (*indicate the amount by a numerical expression and in full*), in the form of financial contribution/contribution in kind (*delete if not applicable*), for a minimum period of 3 years, in the exact proportion corresponding its participation/share, which shall be described laid down in the CAIH statutes or in the MoU to be concluded if the conditions for the approval of the CAIH statutes are not yet met. This contribution is both for the initial investment as well as to support the annual financial effort to CAIH's operation and maintenance.

(In case the investment is in kind, detail the equipment or services that are part of the entity's contribution and the respective estimation).

(Indicate any other information that may be relevant for the evaluation of the proposal, namely its description and connection to one or more CAIH'S activities and its relevance in terms of CAIH's implementation and future development).

It further declares on oath that it is not in any of the situations described in paragraph 1 of article 55 of the Portuguese Code of Public Contracts, and that it renounces the special forum and submits to the Portuguese legislation in force in all matters that respect to the execution of the CAIH.

This proposal is valid for 120 (working) days.

Annexes (...)

(Place and Date)

Signature(s)

¹ Delete if not applicable.

