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Project Code: 74361

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TO BE PUBLISHED ONLINE

CALL FOR EXPRESSION OF INTEREST
(For submission of proposals for the conclusion of a project lease contract)

The Research Committee (Special Account for Research Funds) of Aristotle University of Thessaloniki (ELKE AUTh), in the framework of the project **"Sustainable Water-Injecting Turbofan Comprising Hybrid-electrics - SWITCH"** funded by European Union and supported by CLEAN AVIATION JOINT UNDERTAKING UNDER HORIZON EUROPE, with Academic Head Prof. Kyriakos Yakinthos AUTH, invites candidates to submit proposals for **four (4) positions** as described below, through the award of a project contract, starting from the signing of the contract until **31/12/2025** end date of the project and with a total anticipated remuneration **128.296,00€** (VAT and taxes included). The contracts can be extended in case of extension of the project, until the new end date and within the approved limits of its budget.

Production and Management Engineer – PhD candidate / until 31-12-2025 / up to 42.672,00€

1. **Project Description (A)**

- Validate high-fidelity methods for numerical detail design (3D aero-thermo CFD) of condenser
- Analyze water accumulation mechanisms supported by two-phase CFD computations.
- Analyze installation effects, e.g. flow non-uniformities, orientation, relative flow angle
- Experimental testing of heat exchanger (condenser) cores with advanced plate-fin designs (single phase flow)
- Numerically study of the water formation mechanisms in the condenser
- Experimentally testing and performance assessment of specimen condenser cores (single phase flows)
- Characterization of condenser core performance data

The above actions will take place in the following project Work Package:
WP14: Condenser

2. **Required Qualifications**

- Diploma degree of Production and Management Engineering of Engineering Schools
- PHD candidate in flow modelling and heat transfer modelling in gas turbines/aeroengines.
  (Note: The qualification is documented with a recent confirmation of the relevant Department from which it is proven that the candidates have the required qualification during the proposal submission)
- Proven knowledge of the usage of Computational Fluid Dynamics – CFD software (e.g. Ansys CFX or Ansys Fluent or OpenFoam or Numeca Fine/Turbo)
- Proven knowledge of C programming language
- Proven knowledge of computed aided design software (Computer Aided Design - CAD)
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Good knowledge of English Language (B2 Level)

3. Additional Qualifications

- Proven Knowledge on modelling and analysis of internal turbulent flows (e.g. flow in nozzles, diffusers, heat exchangers) with the use of computational fluid dynamics - CFD.
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Seminars - Trainings on work safety.

4. Qualifications Assessment

	Qualifications criteria	Credits (Researchers)
1	Diploma degree mark	mark * 40
2	Proven Knowledge on modelling and analysis of internal turbulent flows (e.g. flow in nozzles, diffusers, heat exchangers) with the use of computational fluid dynamics - CFD.	50
3	Seminars - Trainings (per hour) – 300 hours max or 5 max	0,25 per hour or 15 per seminar

All the qualifications listed above are in relevance with the project requirements and objectives.

Mechanical and Aeronautical Engineer – PhD candidate / until 31-12-2025 / up to 39.624,00€

1. Project Description (B)

- Develop condenser matrix design tool by using multi-fidelity, multi-physics models and multi-objective optimization (low-fidelity 0D & 1D, multi-physics models) to support the condenser design activities
- Develop and refine methods for multi-disciplinary predesign of advanced fin condensers
- Develop and refine methods for multi-disciplinary predesign of Additive Manufactured condensers
- Validate methods for multi-disciplinary predesign of condensers
- Experimentally analyze water accumulation mechanisms. The analyses will be focused on correlating the condensation starting point inside the condenser and the amount of water gathering at the condenseroutlet to the condenser geometrical characteristics and operational conditions.
- Analyze experimentally the impact of installation effect, e.g. flow non-uniformities, orientation, relative flow angle

The above actions will take place in the following project Work Packages, Tasks and Sub-tasks:
WP14: Condenser

2. Required Qualifications

- Diploma degree of Mechanical Engineering and aeronautics of Engineering Schools
- PHD candidate in experimental fluid mechanics and heat transfer focused on heat exchangers for aeroengines
  (Note: The qualification is documented with a recent confirmation of the relevant Department from which it is proven that the candidates have the required qualification during the proposal submission)
- Proven knowledge in experimental fluid flow measurements
- Proven knowledge of C programming language
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Good knowledge of English Language (B2 Level)

3. Additional Qualifications

- Proven Knowledge on MATLAB programming environment.

Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).

- Additional knowledge of English Language

4. Qualifications Assessment

	Qualifications criteria	Credits (Researchers)
1	Diploma degree mark	mark * 40
2	Proven Knowledge on MATLAB programming environment.	50
3	Very good knowledge of English Language (C1 Level)	50
4	Excellent knowledge of English Language (C2 Level)	70

All the qualifications listed above are in relevance with the project requirements and objectives.

Mechanical Engineer – PhD candidate / until 31-12-2025 / up to 30.000,00€

1. Project Description (C)

- Develop and refine high-fidelity methods for numerical detail design (3D aero-thermo CFD) of condenser and provide support to all the related activities
- Provide support in the analysis of the computations for the water accumulation mechanisms exploration
- Support the test rig setup and instrumentation installation
- Refine the respective high-fidelity condenser design evaluation methods to support design activities

The above actions will take place in the following project Work Package:
WP14: Condenser

2. Required Qualifications

- Diploma degree of Mechanical Engineering of Engineering Schools specializing in aeronautics and aeroengines.
- PHD candidate in the area of fluid mechanics
  (Note: The qualification is documented with a recent confirmation of the relevant Department from which it is proven that the candidates have the required qualification during the proposal submission)
- Proven knowledge in pre- and post-processing software for CFD applications (e.g. BETA ANSA or META)
- Proven knowledge of the usage of Computational Fluid Dynamics – CFD software (e.g. Ansys CFX or Ansys Fluent or OpenFoam or Numeca Fine/Turbo)
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Good knowledge of English Language (B2 Level)

3. Additional Qualifications

- Proven Knowledge on MATLAB programming environment.
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Publications in scientific international journals in fluid mechanics/aerodynamics

4. Qualifications Assessment

	Qualifications criteria	Credits (Researchers)
1	Diploma degree mark	mark * 40

2	Proven Knowledge on MATLAB programming environment.	50
3	Publications in scientific journals (per publication) – 6 max	40 per publication

All the qualifications listed above are in relevance with the project requirements and objectives.

Mechanical Engineer / until 31-12-2025 / up to 16.000,00€

1. **Project Description (D)**

• Experimental flow and thermal characterization of condenser specimens
• Numerical validation CFD models for condensation
• Support in the project experimental activities regarding test rig setup and instrumentation setup
• Derive numerical tools for thermal and pressure drop characterization of the condenser specimens

The above actions will take place in the following project Work Package:
WP14: Condenser

2. **Required Qualifications**

- Diploma degree of Mechanical Engineering of Engineering Schools specializing in aeronautics and aeroengines.
- Proven knowledge of the usage of Computational Fluid Dynamics – CFD software (e.g. Ansys CFX or Ansys Fluent or OpenFoam)
- Proven knowledge in experimental measurements in fluid mechanics
- Proven knowledge in 0-D and 1-D simulation software
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).
- Good knowledge of English Language (B2 Level)

3. **Additional Qualifications**

- Proven Knowledge on MATLAB programming environment.
  Note: The knowledge is documented with a relevant certificate or with a relevant bachelor's / master's dissertation / doctoral thesis or with relevant courses of the study cycle (detailed grade and if the correlation does not immediately result from the title of the course, the detailed course score must be accompanied by description of the course in the Study Guide) or with teaching of relevant courses (certificate of institution and / or contract).

4. **Qualifications Assessment**

	Qualifications criteria	Credits (Researchers)
1	Diploma degree mark	mark * 40
2	Proven Knowledge on MATLAB programming environment.	50

All the qualifications listed above are in relevance with the project requirements and objectives.

Required Documents:

1. Submission of Proposal - Statement (see appendix)
2. Detailed Curriculum Vitae
3. Copies of the Degrees (Note: In case the specialization / direction do not result from the Degree, the Detailed Score should be attached. In cases where the degree is a grading criterion and is not indicated in the copy of the degree then the detailed score is submitted additionally)
4. Copies of certificates and certifications of previous service, as well as any other document that will certify the information mentioned in the CV and which are related to the Required or Additional qualifications-criteria of this call for expression of interest.
5. Copy of certificate of military stats or discharge papers / Copy of deferral of enlistment (for male candidates)

All the above concerning the experience apply if the candidates during their participation held the required basic qualification or the required professional license or other professional license or certificate.

Male candidates must have fulfilled their military obligations or have been legally discharged from them or have been deferred for the entire duration of the project. In case the time for which a deferral of enlistment has been received does not cover in its entirety the duration of the project, ELKE AUTh is obliged to terminate the respective contract at the expiration time of the above deferral. Both the contractor of the Special Account and the Academic Head Officer of the project are obliged to immediately inform ELKE AUTh one (1) month before the end of the deferral.

Proposals and required documents should be submitted either via e-mail to kyak@auth.gr or in person or by post to the following address: Laboratory of Fluid Mechanics and Turbomachinery, 9th Floor, Department of Mechanical Engineering, Buidling D, Faculty of Engineering, AUTH, 54124, Thessaloniki GR within hours 10:00 – 14:00 no later than **16/10/2023** at **14:00**. Proposals will be attributed a reference number from the Secretariat of the Department of the Academic Head of the project.

This Invitation will be published on the website of ELKE AUTh https://rc.auth.gr/proskliseis-gia-apasholisi-se-erga and on the website of "Diavgeia".

For more information and questions regarding the position, candidates may refer to ***00302310996411*** For information on the proposal submission process candidates may contact ELKE AUTh at ***00302310-994022, 994052, 994053, 994082.***

Submitted proposals will be evaluated by a three-member Evaluation Committee based on the requirements/provisions of the call.

The candidate who wishes to submit an objection to the result (Decision for Approval of Results) is entitled to recourse either via e-mail to prosk@rc.auth.gr or in person or by post to the Special Account of Research Authorities of the Aristotle University of Thessaloniki (Research Committee AUTh, 1st floor, Office 101 - 3rd September Str., University Campus 546 36, Thessaloniki, Greece) within five (5) days from the day following the posting of the Decision for Approval of Results on the website of ELKE AUTh and Diavgeia. The candidate has the obligation to be informed about the posting of the results from the website of ELKE https://rc.auth.gr/proskliseis-gia-apasholisi-se-erga in the online posting of this call for expression of interest in Diavgeia. Candidates are entitled to access the data of the individual proposal file and the assessment and evaluation papers of their own and of their other co-candidates, upon written request within five (5) days of the day following announcement of the results on the website of Diavgeia and under the conditions of articles 5 of Law 2690/1999, 42 of Law 4624 / 2019 and 6 par. 1 lit. f of the GCC (EU 2016/679).

ELKE AUTH takes all appropriate measures for the protection of personal data during the evaluation process and it is strongly recommended that you read about the data protection policy and your rights on the AUTh website https://www.auth.gr/gdpr.

EVALUATION PROCEDURE – OTHER CONDITIONS

1. From all the proposals submitted according to the above specifications, the one that best meets the project's requirements will be selected and awarded a work contract on the basis of contractual freedom.
2. Only proposals / objections that will be received by the set date and time will be considered. In the case of postal submission, the deadline is judged on the basis of the date mentioned in the shipping file, provided that it will be received by ELKE AUTh no later than the announcement of the results. ELKE AUTh bears no responsibility for the content of the candidacy files that will be sent.
3. Changes to the proposals (replacements, corrections or submission of additional documents) are not allowed after the expiration of the deadline.
4. Any diplomas of higher education (undergraduate, postgraduate and doctoral) which are included in the Required or Additional Qualification and have been awarded by institutions abroad, must be accompanied by certificates of recognition by the Hellenic National Academic Recognition and Information Center (Hellenic NARIC). In case the diplomas mentioned above have not been recognized during the submission of the proposal, the relevant application for recognition by NARIC can be submitted. It is pointed out, however, that a contract cannot be concluded without the submission of the recognition of the academic titles by NARIC. In any case, ELKE AUTh reserves the right and discretion, depending on the needs of each research project and especially the time of its implementation, to finally contract with the next candidate that holds such certificates. In addition, when the call for expression of interest stipulates a grading/points scale of the degree, it is required to submit a certificate of the equivalent degree grade issued by NARIC. In the case that, all certificates for the recognition of a degree are provided but the certificate of the equivalent degree grade by NARIC is not submitted, the candidate's proposal will be accepted but no points for the degree will be awarded.
5. In case the diplomas of higher education have been awarded by institutions in Greece and the call requires a grading /points scale of the degree, it is required that the grade is indicated in the presented degree. If the grade is not indicated in the degree, then the detailed course score is presented. In case the degree does not indicate the grade and a detailed course score has not been submitted, the proposal of the interested person is not rejected, but the specific required qualification is not graded.
6. It is pointed out that the procedure for submitting proposals for the conclusion of a project lease contract is not competitive, while the selection of a contractor has the character of accepting the proposal and not "recruitment". The evaluation process will be completed by compiling a ranking list and / or a list of excluded, while those selected will be notified individually. In case of a tie, the proposal of the interested person is selected in order a) with the longest experience, b) with the highest bachelor's degree mark, c) with the highest master's degree mark.
7. The proposal that is first in the ranking table and has the highest score in all the scoring criteria will be the one that will be selected. In case of obstruction of the person who submitted it, the next proposal is selected until the ranking order is exhausted.
8. Any submitted proposal that does not meet the criteria of the call of the expression of interest will not be examined any further and will be automatically rejected.
9. Throughout the duration of the project, it is possible that the selected candidate(s) may be replaced, if necessary, by other candidate(s) of the present call and in accordance with the ranking list.
10. The contract may be extended without restriction, following a decision of the competent body of ELKE AUTh and if the required budget of the project allows it, without a new invitation, until the end date of the project (and in case of extension of the project until its new end date).
11. ELKE AUTh does not undertake any commitment to conclude a contract, as it is left to its full discretion to conclude or not contracts, as well as their number, excluding any claim of the interested parties.
12. The project assignment will take place in accordance with the provisions of the Program Implementation Guide.
13. The knowledge of foreign languages is certified in accordance with the provisions of the Presidential Decree 85/2022 "Determining the qualifications for appointment to positions of public sector" (A΄232/17.12.2022), especially according to the articles 10, 14 par. 3 and 15 par. 7.
14. Foreign documents must be accompanied by photocopies of their official translation into the Greek language except for English, French, German, Italian and Spanish language certificates which, if they meet the conditions of the P.D. 85/2022, are accepted without requiring their translation.
15. For candidates, computer skills shall be certified according to the Presidential Decree 85/2022 "Determining the qualifications for appointment to positions of public sector" (A΄232/17.12.2022), especially according to the article 9.
16. It should be noted that the project assignment to candidates employed in the Public Sector, in Public and Private Bodies, etc. is subject to the provisions of paragraph 14 of Article 12 of YAKED 110427/EYTHY1020/01.11.2016

The President of the Research Committee

Professor Efstratios Stylianidis
Vice Rector Research and Lifelong Learning

SUBMISSION OF PROPOSAL - STATEMENT*
(with consequences of law on false/inaccurate statement)

Mobile phone: ..... E-mail: ..... VAT number: .....

Please note in this proposal - statement and outside of the postal file the following

(To be completed by the candidate):

1. The protocol number of this call

2. The code of project object you would like to participate (A, B, C or D)

I affirm that the information given in
this proposal - statement is accurate and true.

SIGNATURE

Date: ___/___/_____

Find attached: 1.
2.

****Incomplete filling of the proposal – statement constitutes a criterion for exclusion***