

TENDER DOCUMENTATION

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INVITATION TO TENDER

issued pursuant to Section 28 paragraph (1) point b) and Section 53 paragraph (1) of Act No. 134/2016 Coll., on Public Procurement, as amended (hereinafter the "Act"),

for preparation of bids for below-threshold public contract for supplies

contracted within the simplified below-threshold procedure pursuant to Section 53 of the Act

NAME OF THE PUBLIC CONTRACT:

Software for thermodynamic and kinetic calculations in the field of materials engineering

Contracting Authority:



TENDER DOCUMENTATION – INVITATION TO TENDER

This Tender Documentation (hereinafter the “TD”) forms a basis for preparation of bids in simplified below-threshold procedure seeking public contract for supplies pursuant to the Act. The rights, obligations and terms and conditions not stipulated herein are governed by the Act.

Public Contract name: Software for thermodynamic and kinetic calculations in the field of materials engineering

Contracting Authority: Fyzikální ústav AV ČR, v. v. i.
Seat: Na Slovance 1999/2, 182 00 Praha 8, Czech Republic
Identification No.: 68378271
Tax Identification No.: CZ68378271
Person authorized to represent the Contracting Authority: RNDr. Michael Prouza, Ph.D., Director

(Hereinafter the “**Contracting Authority**” for the purposes of this TD and / or “**Buyer**” for the purposes of the hereto attached Purchase Contract)

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Provision of explanation of TD:

Request for explanation of this TD can be submitted electronically – in particular via the electronic tool **eGORDION v. 3.3 - Tender arena** (hereinafter “**Tender arena**” - <https://www.tenderarena.cz>). Public Contract details can be found at: <https://tenderarena.cz/dodavatel/seznam-profilu-zadavatele/detail/Z0001082>.

The Contracting Authority will not respond to inquiries submitted in any other way than in electronic form in accordance with Section 211 (3) of the Act. Furthermore, the Contracting Authority will not provide any explanation for telephone inquiries.

In response to a request for explanation of this TD, the Contracting Authority publishes it on the Contracting Authority Profile at <https://www.e-zakazky.cz/profil-zadavatele/74e987e1-b4a1-4571-b8b6-2cd93fe6f932>.

Information on access to TD:

TD, including all attachments, is published on the Contracting Authority Profile at: <https://www.e-zakazky.cz/profil-zadavatele/74e987e1-b4a1-4571-b8b6-2cd93fe6f932>
TD is freely available for download at the given link.

1 DEFINITION OF THE SUBJECT-MATTER OF THE PUBLIC CONTRACT

1.1 Classification of the subject matter of the Public Contract

Classification of this Public Contract corresponds to item:

- CPV code: 48461000-7 Analytical or scientific software package

Type of public contract: below-threshold public contract for supplies

Type of procurement procedure: simplified below-threshold procedure

1.2 Description of the subject matter of the Public Contract

The subject matter of this Public Contract is the supply of a software for thermodynamic and kinetic calculations in the field of materials engineering. The parameters of the software:

- thermodynamic calculations of equilibrium and non-equilibrium states
- modelling of phase diagrams, phase stability, transformations during heating or cooling, temperature and compositional dependence of phases (support for binary to multicomponent systems required)
- modelling of diffusion processes in heterogeneous systems (multi-zone modelling capability required, including, for example, the development of phase interfaces over time)
- prediction of the composition of individual phases depending on diffusion coefficients, time and temperature
- calculation of microstructural evolution (nucleation, growth, coalescence, dissolution of precipitates), outputs must include size distributions, phase fractions over time, etc.
- modelling of additive manufacturing processes (at least for SLM) including simulation of cooling curves and prediction of phase evolution, calculation of temperature field, prediction of grain size, residual stresses, segregation
- automation of calculations using Python (creation of custom calculation loops, batch processing, optimization and data visualization)
- must include scientifically validated thermodynamic and kinetic databases for calculations in selected alloy groups (specifically Ni-based, Ti-based and Fe-based alloys).

The Contracting Authority requires a permanent license without time limits, network/floating (so that anyone who has TC with a license key installed can work on the license, but only one person at a time). The offered software solution must be fully compatible with the already operating Thermo-Calc NWL-1 network license and allow access by multiple users. More detailed specification is provided in Article 4 below and in Annex No. 3 of this TD (Draft Contract).

1.3 Term

The subject of performance of the Public Contract must be properly delivered and handed over no later than **1 month from the date of conclusion of the contract**. Delivery means installation and acceptance by the client. The bid price must include **maintenance and SW updates at least until the end of 2028**.

1.4 Place of Performance

Place of performance is Fyzikální ústav AV ČR, v.v.i., Na Slovance 1999/2, 182 00 Praha 8, Czech Republic.

1.5 Estimated value

Estimated value of the Public Contract is **167 300 € excl. VAT (4 120 683 Kč bez DPH)**.

The subject matter of this Public Contract is mainly financed from the subsidy of the project



"Metamaterials for extremely thermally stressed machine components" (METEX) (Metamateriály pro extrémně tepelně namáhané strojní součásti - METEX) under the *Operational Programme Jan Amos Komenský* (OP JAK) within the framework of EU funds, project registration number **CZ.02.01.01/00/23_020/0008501**.

2 CONDITIONS AND REQUIREMENTS REGARDING THE DRAWING UP OF A BID

- 2.1 Bids shall be submitted in electronic form only, in accordance with the provisions of Section 211 (3) of the Act, using the electronic tool Tender arena. Bids in paper form are not permitted. Other form of delivery is not considered proper submission of the bid.
- 2.2 Bids shall be submitted no later than on **9th September 2025, by 11:00 am**. A bid delivered after this deadline shall not be considered to constitute a properly delivered bid.
- 2.3 To submit a bid, bidders will use the certified electronic tool Tender arena, available at <http://www.tenderarena.cz>. Bidders may find at this link also a guide for using the Tender arena electronic tool (via link "Help" in footer) and helpdesk contact details.
- 2.4 To be able to submit a bid, the bidder must be registered as a contractor in the **Central Contractor Database**. The link to register is <https://cdd.fen.cz/#/>. Registration of the bidder takes up to 48 hours (on working days) after all required documents have been submitted (either by post or electronically). Registration in the system is not charged. Detailed information on the registration to the Central Contractor Database is available at <https://cdd.fen.cz/#/faq>.
- 2.5 The bidder must have a personal computer with a minimum of the following performance: CPU 1 GHz, 1024 MB memory, 20 GB hard drive. Personal computer must be connected to the Internet at a minimum connection speed of 2 Mbps (DOWNLOAD) / 512 Kbps (UPLOAD) and have an Internet browser installed (Mozilla Firefox version 73.0 and higher, Google Chrome version 80.0.3987.106 and higher, Opera version 66.0.3515.72 and higher, Microsoft Edge version 80.0.361.54 and higher).
- 2.6 The Contracting Authority points out that it bears no responsibility for any technical conditions on the Bidder's side. The Contracting Authority recommends Bidders to consider especially the speed of their Internet connection when submitting bids so that they are submitted within the time limit for submission. This means the final submission of the bid to the Tender arena electronic tool after uploading all the attachments that make up the bid.
- 2.7 Bids must be prepared in Czech or English language.
- 2.8 The bid must include **identification data of the bidder**, i.e. primarily: business name, registered office, legal form (if the Bidder is a legal person), or the business name or name and forenames (if the Bidder is a natural person), as well as the identification number, if assigned to the Bidder.
- 2.9 The bid shall not exceed 200 MB; of which a maximum of 100 MB are documents proving qualifications and a maximum of 100 MB are other documents provided in bids. The bid must be processed through acceptable file formats, i.e. Microsoft Office (Word, Excel), Open Office, PDF, JPEG, GIF, or PNG. The bid values as specified in this TD will also be submitted to the procurement procedure by inserting them into the tender form, which will be displayed when submitting the bid. This is without prejudice to the obligation to submit other documents making up the bid.



- 2.10 Bids must be encrypted using a public key in the Tender arena electronic tool (the public key for encrypting the bid is published within the tender detail in the electronic tool). The **bid encryption** with the public key **is carried out automatically in the Tender arena** electronic tool before the bid submission is finalized. In the case of a bid being encrypted with other public keys (certificates), such a bid will be considered not delivered to the Contracting Authority in the proper manner and it will not be considered as submitted.
- 2.11 In the case several bidders jointly participate in the Procurement Procedure, they will also identify the person who shall be authorized to represent them in contact with the Contracting Authority during the Procurement Procedure.
- 2.12 The Contracting Authority does not specify the *award period* for this procurement procedure.
- 2.13 The bid must be submitted in the following structure:
- a) **Cover Sheet** (please refer to Annex No. 1 hereto);
 - b) **The Bid Price** as set out in Article 5 hereof;
 - c) **description of the subject of performance of the Public Contract** as set out in Article 4 hereof;
 - d) **Draft Contract**, including annexes with filled marked data (please refer to Annex No. 2 hereto);
 - e) **documents proving fulfilment of the qualification** (please refer to Annexes No. 3 hereto).

3 QUALIFICATIONS

- 3.1 The Contracting Authority requires proof of basic qualification according to Section 74 of the Act. The Bidder shall prove the fulfilment of basic qualification in accordance with Section 53 (4) of the Act by a written affirmation. A sample affidavit is in Annex No. 3 hereto. Fulfilment of all basic eligibility criteria must be demonstrated no later than 3 months before the start of the procurement procedure.
- 3.2 Fulfilment of the technical qualification will be demonstrated by a bidder, who submits a list with significant supplies provided over the past three years before the commencement of this procurement procedure, including price and date of provision and the identification of customer of the supply (supplies). The list must contain information on the provision of min. 3 significant supplies with a specific description of the performed performance and contact (phone or e-mail) of the customer for the purpose of possible verification; being a significant supply shall be considered by the Contracting Authority as the **supply of a software for thermodynamic and kinetic calculations in the field of materials engineering** with financial value of **at least 40 000 € excl. VAT**.
- 3.3 In accordance with Section 53 (4) of the Act, the bidder submits plain copies of qualification documents and is entitled to replace these documents with an affidavit or a uniform European certificate for public procurement pursuant to Section 87 of the Act.

4 DETAILED DESCRIPTION AND TECHNICAL SPECIFICATION OF THE SUBJECT MATTER

- 4.1 The subject matter of this Public Contract is the supply of a software for thermodynamic and kinetic calculations in the field of materials engineering. The parameters of the software:



- thermodynamic calculations of equilibrium and non-equilibrium states
- modelling of phase diagrams, phase stability, transformations during heating or cooling, temperature and compositional dependence of phases (support for binary to multicomponent systems required)
- modelling of diffusion processes in heterogeneous systems (multi-zone modelling capability required, including, for example, the development of phase interfaces over time)
- prediction of the composition of individual phases depending on diffusion coefficients, time and temperature
- calculation of microstructural evolution (nucleation, growth, coalescence, dissolution of precipitates), outputs must include size distributions, phase fractions over time, etc.
- modelling of additive manufacturing processes (at least for SLM) including simulation of cooling curves and prediction of phase evolution, calculation of temperature field, prediction of grain size, residual stresses, segregation
- automation of calculations using Python (creation of custom calculation loops, batch processing, optimization and data visualization)
- must include scientifically validated thermodynamic and kinetic databases for calculations in selected alloy groups (specifically Ni-based, Ti-based and Fe-based alloys)

(hereinafter the “SW”).

- 4.2 The Contracting Authority requires a permanent license without time limits, network/floating (so that anyone who has TC with a license key installed can work on the license, but only one person at a time).
- 4.3 The Contracting Authority requires online access to remote training, e.g. with accessible training videos from the basics to very detailed things.
- 4.4 The bid price must include maintenance and online support and updates of the SW at least until the end of 2028.
- 4.5 The offered SW must be fully compatible with the already operating Thermo-Calc NWL-1 network license and allow access by multiple users.

5 STRUCTURE OF THE BID PRICE

- 5.1 Bidders are obliged to indicate the total bid price, including all required performance; the total bid price is to be quoted in EUR excl. VAT.
- 5.2 The **total bid price** must include the entire subject matter of the Public Contract and shall represent a fixed, binding amount as the maximum amount and **maximum admissible price**, including all fees and other costs that may be associated with the performance provided hereunder, such as installation costs, license payment, maintenance, support and updates of the SW at least until the end of 2028, etc.
- 5.3 Bidders shall fill in the value of Bid price in the Cover sheet (Annex No. 1 of the TD) and in paragraph 5.1 of the Draft Contract (Annex No. 2 of the TD). If a Bidder indicates unmatching values, the Contracting Authority will consider the data in the Draft Contract binding.



6 TERMS AND CONDITIONS, PAYMENT TERMS

- 6.1 Terms and conditions incl. payment terms are specified in the attached binding Draft Contract, which form an integral part hereof as Annex No. 2.

7 EVALUATION CRITERIA

- 7.1 The bids will be evaluated on the basis of their economic advantageousness. The Contracting Authority will evaluate the economic advantageousness of the bids on the basis of the lowest Bid price. The Contracting Authority will evaluate the total Bid price in EUR excl. VAT.

7.2 Evaluation method:

- 7.2.1 Bids will be ranked according to Bid price from lowest to highest. The winner is the Bidder with the lowest Bid price.

8 ADDITIONAL REQUIREMENTS AND CONDITIONS

- 8.1 The Contracting Authority does not admit variants of bids.
- 8.2 The Contracting Authority reserves the right to verify any information provided by bidders using third parties (Section 39 (5) of the Act) and bidders shall be obliged to provide the Contracting Authority with all necessary cooperation in this matter.
- 8.3 The Contracting Authority reserves the right to change, specify or supplement the conditions of this Procurement Procedure in accordance with Section 99 of the Act.
- 8.4 Cooperation in financial control
Bidders must note that according to Section 2 (e) of Act No. 320/2001 Coll., on financial control in public administration, as amended, the selected bidder will be a person obliged to cooperate in the performance of financial control during the performance of a public contract. This obligation also applies to those parts of the bid, contracts and related documents that are subject to protection according to special legal regulations (e.g. as trade secrets, classified information), provided that the requirements set by legal regulations (e.g. Act No. 255/2012) are met Coll., on inspection (inspection regulations), as amended). The bidders take note that the selected bidder will also be obliged to contractually bind its subcontractors with a similar obligation. The obligation according to this paragraph lasts for a period of 10 years from the date of entry into force of the relevant contract.
- 8.5 In line with Section 53 (5) of the Act, the Contracting Authority reserves the right that the notifications of the Contracting Authority associated with the course of the procurement procedure (notice of exclusion of a bidder and notice of the selection of the economic operator) shall be considered to be delivered at the point of time of their publication on the Contracting Authority Profile at <http://www.e-zakazky.cz/Profil-Zadavatele/74e987e1-b4a1-4571-b8b6-2cd93fe6f932>.
- 8.6 The selected bidder will be obliged to ensure compliance with all labour law regulations (remuneration, working hours, rest periods between shifts, paid overtime), as well as regulations concerning employment and occupational safety and health, for the entire duration of the contractual relationship established on the basis of this Public Contract, valid in the country of



his registered office or place of business, to all persons, which will participate in the performance of the Public Contract (regardless of whether it is the Bidder himself or his subcontractors).

- 8.7 The selected bidder will be obliged to ensure compliance with environmental law in force in his country of residence or place of business, which meets the environmental policy objectives related to climate change, resource use and sustainable consumption and production, for the entire duration of the contractual relationship based on this Public Contract. The selected Bidder must therefore take all measures that can reasonably be required of him to protect the environment and reduce damage caused by pollution, noise and other activities, and must ensure that emissions, soil pollution and wastewater from his activities do not exceed the values laid down in the relevant legislation.
- 8.8 The selected bidder undertakes, within its internal processes, to support a corporate culture based on the motivation of employees to implement innovative elements, processes or technologies.

9 BUSSINESS TERMS

- 9.1 Bidders are obliged to accept the Draft Contract without reservation and not to change its text. Bidders are authorized to fill in their identification data, the bid price and other clearly marked information that are to be filled in. Bidders are not authorized to change or add to the Draft Contract in any manner, with exception of those parts which the Contracting Authority highlighted. Any breach of this condition may result in exclusion of the Bidder from the Procurement Procedure.

10 OPENING OF BIDS

- 10.1 The opening of the bids will take place electronically, in accordance with Section 109 of the Act.

11 VISIT TO THE SITE OF PERFORMANCE

- 11.1 Due to the nature of the subject of performance, the Contracting Authority does not foresee a visit to the site of performance.

12 COMMUNICATION DURING THE PROCUREMENT PROCEDURE

- 12.1 The Contracting Authority will communicate with suppliers during the procurement procedure in accordance with § 211 of the Act.
- 12.2 For communication during the procurement procedure, the Contracting Authority prefers the use of the electronic tool **Tender arena**.
- 12.3 Documents related to the procurement procedure will be sent by the Contracting Authority through the **Tender arena** electronic tool account of the Contracting Authority and the bidder or via their data boxes or e-mail with a guaranteed electronic signature (if possible).
- 12.4 In order to be able to communicate with the Contracting Authority via the electronic tool, bidders must be registered in the Central Contractor Database. The registration is carried out in accordance with paragraph 2.4 of this TD.



- 12.5 The Contracting Authority further emphasizes with Section 4 (1) of Decree No. 260/2016 Coll., on the establishment of more detailed conditions regarding electronic tools, electronic actions in the awarding of public contracts and certificates of conformity, that according in the case of communication carried out via the electronic tool, **the document is delivered at the moment of receipt of the data message** to the electronic mailbox of the recipient or recipients of the data message within the electronic tool.

13 COMPLIANCE WITH THE PRINCIPLES OF SOCIALLY RESPONSIBLE PROCUREMENT, ENVIRONMENTALLY RESPONSIBLE CONTRACTING AND INNOVATION

- 13.1 The Contracting Authority fulfils the principle of socially responsible procurement in relation to the nature and meaning of this public contract, especially in the area of decent working conditions in terms of the requirement to comply with occupational safety and health requirements set out in the draft contract in Annex 2 to this TD. The Contracting Authority further fulfils this principle by appropriate setting of the parameters of this public contract and the required conditions for participation in this procurement procedure so that this procurement procedure and the performance of this public contract are also accessible to small enterprises.
- 13.2 The Contracting Authority fulfils the principle of environmentally responsible procurement in relation to the nature and meaning of this public contract, especially in terms of compliance with environmental legislation, which meets the environmental policy objectives related to climate change, resource use and sustainable consumption and production in force in the country its registered office or place of business, enshrined in the draft contract in Annex No. 2 to this TD.
- 13.3 The Contracting Authority fulfils the principle of innovation in relation to the nature and meaning of this public contract by purchasing a new instrument for the purposes of excellent scientific research, which will be used for calculation of phase equilibria and thermodynamic and thermo-physical properties, for simulation of diffusion behaviour (diffusion profiles, homogenization conditions, etc.) and diffusion-controlled phase transformations, and for the simulation of additive manufacturing processes of high entropy alloys. The acquired SW will significantly help to gain new knowledge, which will find its application in basic and applied research. The principle of innovation is thus implicitly expressed by the very nature of this contract.

14 CONCLUSION

- 14.1 Information and data provided herein (incl. all Annexes) define the binding requirements of the Contracting Authority with respect to the performance of the public contract. These requirements must be accepted by all bidders in full and without reservation, respecting these requirements in preparation of their bid. Non-acceptance of these requirements / conditions (incl. those specified in the respective Annexes) shall be deemed to constitute failure to comply with the tender conditions.
- 14.2 Should this TD or its Annexes refer to specific commercial trademarks / products or solutions, or other designations or visual presentations having relation to a specific supplier / manufacturer, it shall be understood as delineation of an anticipated characteristics and the bidder is entitled to propose other technically or qualitatively fully compliant solution.
- 14.3 By submitting a bid, the Bidder confirms that he has fully acquainted himself with the TD to this



Public Contract (incl. all Annexes), that the assignment is comprehensible and clear and that before submitting his bid, he has clarified any disputed provisions or technical ambiguities and agrees with and respects the conditions of the Public Contract.

LIST OF ANNEXES:

1. Cover sheet
2. Binding Draft Contract with annexes
3. Affidavits to prove basic qualification and list of significant supplies