

**Germany-Munich: Industrial machinery**

**OJ S 150/2022 05/08/2022**

**Contract notice**

**Supplies**

**Legal Basis:**

Directive 2014/24/EU

## Section I: Contracting authority

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### I.1. Name and addresses

Official name: Technical University of Munich - Munich Institute of Robotics and Machine Intelligence (MIRMI)

Postal address: Arcisstraße 21

Town: Munich

NUTS code: DE212 München, Kreisfreie Stadt

Postal code: 80333

Country: Germany

E-mail: [f.wu@tum.de](mailto:f.wu@tum.de)

**Internet address(es):**

Main address: <https://www.mirmi.tum.de/mirmi/home/>

### I.3. Communication

The procurement documents are available for unrestricted and full direct access, free of charge, at: <https://www.dtv.de/Satellite/notice/CXP4YK0R12Z/documents>

Additional information can be obtained from the abovementioned address

Tenders or requests to participate must be submitted electronically via: <https://www.dtv.de/Satellite/notice/CXP4YK0R12Z>

### I.4. Type of the contracting authority

Body governed by public law

### I.5. Main activity

Education

## Section II: Object

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### II.1. Scope of the procurement

#### II.1.1. Title

tactile mobility systems

Reference number: 030/2022

#### II.1.2. Main CPV code

42000000 Industrial machinery

#### II.1.3. Type of contract

Supplies

#### II.1.4. Short description

The Munich Institute of Robotics and Machine Intelligence (MIRMI) of the Technical University of Munich (TUM) has launched the first AI.FACTORY, KI.FABRIK in German, in Bavaria - as announced by the Bavarian government in its high-tech agenda. The KI.FABRIK Bayern aims to become a completely flexible and interconnected location for the local, crisis-safe, and profitable production of state-of-the-art IT and mechatronic high-tech components in Bavaria. The researchers in the KI-Fabrik project are not only going to address the traditional automation problems, but also investigate problems which are currently not possible to automate by the state-of-the-art industrial automation solutions. For instance, physical interaction with the environment is a challenging task for robots, which halts many industries from using robotics in their assembly processes. Recently, with the introduction of tactile manipulators (cobots) this problem is partly resolved. However, the topic of tactility in mobile systems is still very new, even to the research community. Human-centered, Tactile mobility is one of the main topics of research in the KI-Fabrik project. In order to facilitate this research, a list of necessary hardware systems have been identified by our researchers. As the required hardware cannot be found as a ready to buy solution, this document provides a possibility for the providers to deliver the systems according to a timetable. This tender describes the specifications for the procurement of tactile mobile robotic systems that are denoted as "tactile mobile robot", "tactile mobile manipulator" and "tactile humanoid". The providers or contractors are requested to prepare offers according to the necessary criteria and to submit them in the due time.

#### **II.1.5. Estimated total value**

#### **II.1.6. Information about lots**

This contract is divided into lots: no

### **II.2. Description**

#### **II.2.2. Additional CPV code(s)**

42000000 Industrial machinery

#### **II.2.3. Place of performance**

NUTS code: DE212 München, Kreisfreie Stadt

Main site or place of performance: Munich Institute of Robotics and Machine Intelligence (MIRMI) Georg-Brauchle-Ring 60-62 80992 München

#### **II.2.4. Description of the procurement**

The Munich Institute of Robotics and Machine Intelligence (MIRMI) of the Technical University of Munich (TUM) has launched the first AI.FACTORY, KI.FABRIK in German, in Bavaria - as announced by the Bavarian government in its high-tech agenda. The KI.FABRIK Bayern aims to become a completely flexible and interconnected location for the local, crisis-safe, and profitable production of state-of-the-art IT and mechatronic high-tech components in Bavaria. The researchers in the KI-Fabrik project are not only going to address the traditional automation problems, but also investigate problems which are currently not possible to automate by the state-of-the-art industrial automation solutions. For instance, physical interaction with the environment is a challenging task for robots, which halts many industries from using robotics in their assembly processes. Recently, with the introduction of tactile manipulators (cobots) this problem is partly resolved. However, the topic of tactility in mobile systems is still very new, even to the research community. Human-centered, Tactile mobility is one of the main topics of research in the KI-Fabrik project. In order to facilitate this research, a list of necessary hardware systems have been identified by our researchers. As the required hardware cannot be found as a ready to buy solution, this document provides a possibility for

the providers to deliver the systems according to a timetable. This tender describes the specifications for the procurement of tactile mobile robotic systems that are denoted as "tactile mobile robot", "tactile mobile manipulator" and "tactile humanoid". The providers or contractors are requested to prepare offers according to the necessary criteria and to submit them in the due time.

#### **II.2.5. Award criteria**

Price is not the only award criterion and all criteria are stated only in the procurement documents

#### **II.2.6. Estimated value**

#### **II.2.7. Duration of the contract, framework agreement or dynamic purchasing system**

Duration in months: 25

This contract is subject to renewal: no

#### **II.2.10. Information about variants**

Variants will be accepted: no

#### **II.2.11. Information about options**

Options: no

#### **II.2.13. Information about European Union funds**

The procurement is related to a project and/or programme financed by European Union funds:  
no

#### **II.2.14. Additional information**

### **Section III: Legal, economic, financial and technical information**

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#### **III.1. Conditions for participation**

##### **III.1.2. Economic and financial standing**

List and brief description of selection criteria:

Self-declaration of the total yearly turnover of the economic operator, based on the last three fiscal years.

##### **III.1.3. Technical and professional ability**

List and brief description of selection criteria:

Self-declaration (according to the following requirements) of a sufficient level of experience and product quality demonstrated by:

a) At least 4 reference projects of Sale and delivery or research about tactile robots (in the fields of tactile manipulators and tactile mobile platforms with at least one from each field) stating name, address and email address of a contact person of the contracting body of the reference project, a project name and description of the services provided by the tenderer and the date and duration of the project. TUM reserves the right to verify the tenderer's details by interrogating the contracting body of the reference project.

In the case of groups of economic operators, it must be clearly identifiable which reference project should be assigned to each member. The reference projects of the members fulfilling the minimum requirement are attributed to the group of economic operators.

Only the reference projects specified by the tenderer in the tender form will be considered. For each reference, an additional project sheet (one page) with an illustration of the reference project is permitted.

b) At least 15 published papers in the selected conferences/journals (see the list below) in which the tactile manipulator and mobile platform (at least one in each area) has been used as the experimental setup:

The TUM Tactile Mobility Systems should be equipped with robotic manipulators based on the most advanced tactile robot system with the right high-performance interfaces, precise dynamic models, and interconnectivity to state-of-the-art software ecosystems. Since there will be a lot of collaborations around the world, the robotic setup / sub-systems should be a research platform that is frequently used and widely known by researchers from different research institutes to facilitate collaboration opportunity. For this reason, it is essential to purchase robots that are internationally recognized and used by researchers commonly. Therefore, each tenderer has to provide a list of at least 15 papers published to the following list of conferences and journals.

List of Conferences: IEEE International Conference on Robotics and Automation (ICRA), International Conference on Intelligent Robots and Systems (IROS), Robotics: Science and Systems (RSS), International Conference on Machine Learning (ICML), Conference on Neural Information Processing Systems (NIPS)

List of Journals: IEEE Transactions on Robotics, The International Journal of Robotics Research, Science Robotics, IEEE Robotics & Automation Magazine

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## **Section IV: Procedure**

### **IV.1. Description**

#### **IV.1.1. Type of procedure**

Open procedure

#### **IV.1.3. Information about a framework agreement or a dynamic purchasing system**

#### **IV.1.8. Information about the Government Procurement Agreement (GPA)**

The procurement is covered by the Government Procurement Agreement: no

### **IV.2. Administrative information**

#### **IV.2.2. Time limit for receipt of tenders or requests to participate**

Date: 02/09/2022 Local time: 18:00

#### **IV.2.3. Estimated date of dispatch of invitations to tender or to participate to selected candidates**

#### **IV.2.4. Languages in which tenders or requests to participate may be submitted**

German

#### **IV.2.6. Minimum time frame during which the tenderer must maintain the tender**

Tender must be valid until: 31/10/2022

#### **IV.2.7. Conditions for opening of tenders**

Date: 02/09/2022 Local time: 18:01

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## **Section VI: Complementary information**

### **VI.1. Information about recurrence**

This is a recurrent procurement: no

## **VI.2. Information about electronic workflows**

Electronic ordering will be used  
Electronic invoicing will be accepted  
Electronic payment will be used

## **VI.3. Additional information**

Bekanntmachungs-ID: CXP4YK0R12Z

## **VI.4. Procedures for review**

### **VI.4.1. Review body**

Official name: Nachprüfungsstelle - Vergabekammer Südbayern  
Postal address: Maximilianstraße 39  
Town: München  
Postal code: 80538  
Country: Germany  
E-mail: [vergabekammer.suedbayern@reg-ob.bayern.de](mailto:vergabekammer.suedbayern@reg-ob.bayern.de)  
Telephone: +49 89-21762411  
Fax: +49 89-21762847  
Internet address: [https://www.regierung.oberbayern.bayern.de/ueber\\_uns/zentralezustaendigkeiten/vergabekammer-suedbayern/](https://www.regierung.oberbayern.bayern.de/ueber_uns/zentralezustaendigkeiten/vergabekammer-suedbayern/)

## **VI.5. Date of dispatch of this notice**

02/08/2022