

**Denmark-Lyngby: Vibration analysers**  
**OJ S 168/2018 01/09/2018**  
**Contract award notice**  
**Supplies**

**Legal Basis:**

Directive 2014/24/EU

---

**Section I: Contracting authority**

**I.1. Name and addresses**

Official name: Danmarks Tekniske Universitet / Technical University of Denmark

Postal address: 2800

Town: Lyngby

NUTS code: DK012 Københavns omegn

Country: Denmark

Contact person: Johanne Liv Pedersen

E-mail: [jolip@dtu.dk](mailto:jolip@dtu.dk)

**Internet address(es):**

Main address: <http://www.dtu.dk/>

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

Body governed by public law

**I.5. Main activity**

Education

---

**Section II: Object**

**II.1. Scope of the procurement**

**II.1.1. Title**

Structural Dynamic Mechatronic Testing System

**II.1.2. Main CPV code**

38434400 Vibration analysers

**II.1.3. Type of contract**

Supplies

**II.1.4. Short description**

Subject of the acquisition is the integrated solution for testing and modelling of mechanical systems.

Main components of the acquisition are interconnected and work together:

- i) hardware;
- ii) software;
- iii) 3rd party equipment; and
- iv) services.

**II.1.6. Information about lots**

This contract is divided into lots: no

### **II.1.7. Total value of the procurement**

Value excluding VAT: 2 000 000,00 DKK

## **II.2. Description**

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

38430000 Detection and analysis apparatus

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

NUTS code: DK012 Københavns omegn

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

Subject of the acquisition is the integrated solution for testing and modelling of mechanical systems.

Main components of the acquisition are interconnected and work together:

- i) hardware;
- ii) software;
- iii) 3rd party equipment; and
- iv) services.

Hardware:

Main part of the acquisition is a LMS SCADAS Mobile Frontend. It serves as a central unit for the measurement data acquisition and processing. It has a modular setup allowing to plug into the mainframe different acquisition modules dedicated to different sensing technology (current, voltage, charge etc). SCADAS mobile is at the same time the signal generator to facilitate control of the actuators exciting the tested object. We plan to use SCADAS mobile in the Multiple Input Multiple Output configuration. SCADAS allow for the future extension of the system through the connection of multiple mainframes. This is extremely relevant for measurement of the long span blades of wind turbines exceeding lengths of meters. SCADAS has also recorder functionality which allows to develop entire measurement campaign without interaction of the human operator. It can be programmed and put in the remote location (spinning hub of wind turbine in operation) collecting signals from the plugged sensors. SCADAS, through modular build is compatible with majority of the sensors available on the market for measuring mechanical, acoustic, flow and electric measurands. LMS SCADAS frontend is an industry standard and world class reference in the Noise Vibration Harness testing.

Software:

The LMS Test. Lab software suite governs the LMS SCADAS Mobile hardware. It complements the hardware capacity and covers entire scope of experimental approaches required by members of CASMaT — ranging from static, environmental, durability, acoustics, vibration and mechatronic testing including Hardware in the Loop and Model in the loop. LMS Test. Lab software has a modular structure. All the existing modules can be classified into 2 groups: data acquisition and signal processing and data post processing and analysis. There are dedicated modules for the vibration, environmental, noise, rotary machinery (angle domain analysis), video, GPS and durability. The licensing of the software is based on the Token concept. Each module uses a given number of tokens. We intent to purchase the license of NN Tokens which in practice will enable us to access any and every software module available. Next to the LMS Test. Lab software the acquisition of the LMS Imagine. Lab Amesim system simulation software will be acquired. LMS Imagine Lab Amesim

3rd party equipment:

LMS SCADAS Mobile Mainframe for the data acquisition together with integrated software LMS Test. Lab need the equipment which is not directly manufactured by Siemens Industry

Software. We plan to acquire vibration acceleration triaxial transducers, force transducers with long cables, electrodynamic shakers and modal hammers for the structure excitation. All above described items constitute the fully operational measurement system. Each single component can not provide the expected functionality and they have to be acquired and used together.

Support:

In the planned acquisition there is a built in Maintenance service regarding the hardware firmware and software updates. This service is also enabling the access to the Customer Service Helpdesk for active support in problem solving situations.

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

Price

#### **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 IV: Procedure**

---

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

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

Award of a contract without prior publication of a call for competition in the Official Journal of the European Union in the cases listed below

- The works, supplies or services can be provided only by a particular economic operator for the following reason:
  - absence of competition for technical reasons

Explanation:

There are several important reasons for lack of reasonable alternatives to meet the technical and research requirements. These are:

- token based licensing LMS Test. Lab has a modular structure. Main module can be extended with dedicated acquisition and analysis modules. These modules are grouped with regard to a different applications domains, such as structural dynamics, acoustics, operational testing and durability. LMS Test. Lab offers a unique token based system for the module licensing. Pool of tokens can be used to activate dedicated software modules. This approach enables access to all the modules available,
- integration of the hardware and software for testing and simulation,
- Simcenter modules share the same intercompatible data format ensuring seamless transfer of the analyses between testing and simulation,
- Simcenter platform enables development of the wind turbine blade digital twin. It comprises of the physical system connected to its numerical representation through a Siemens hardware and software.

It allows hybrid modelling to combine test and simulation models within one integrated environment being unparalleled functionality of the planned purchase.

LMS Test. Lab supports Strain Modal Analysis which enables the utilization of already deployed strain sensors for the estimation of the parameters of the modal model. Low weight with high channel count. LMS SCADAS Mobile mainframe can include up to 120 channels at only 6 kg weight resulting with only 50 gram/channel compared to 250 gram/channel of competition. Planned research activities require low mass of system. Automatic Mode Shape Expansion. The software allows for the automatic expansion of the animation on FE model based on test modal model without defining slave DOF.

PolyMAX:

Polymax parameter estimation method provides very good results in majority of the test scenarios of high and low modal density, with mode shapes with high or low damping value).

Openness: user programming through Windows Automation; native support of import/export to Matlab; full flexibility to define shaker excitation signals ("arbitrary sources" next to already broad availability of most common as well as advanced excitation signals)

MLMM:

MLMM stands for Maximum Likelihood estimation of a Modal Model. Starting from an initial modal model, it will optimize the modal parameters to maximize the fit to the measure data. Thanks to its unique features, it will yield the best modal estimates also in the most scenarios.

#### **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: yes

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

#### **IV.2.1. Previous publication concerning this procedure**

Notice number in the OJ S: [2018/S 088-197556](#)

#### **IV.2.8. Information about termination of dynamic purchasing system**

#### **IV.2.9. Information about termination of call for competition in the form of a prior information notice**

## **Section V: Award of contract**

---

A contract/lot is awarded: yes

### **V.2. Award of contract**

#### **V.2.1. Date of conclusion of the contract**

29/08/2018

#### **V.2.2. Information about tenders**

Number of tenders received: 1

The contract has been awarded to a group of economic operators: no

#### **V.2.3. Name and address of the contractor**

Official name: Siemens Industry Software A/S

Town: Ballerup

NUTS code: DK01 Hovedstaden

Country: Denmark

The contractor is an SME: no

#### **V.2.4. Information on value of the contract/lot**

Total value of the contract/lot: 2 000 000,00 DKK

## V.2.5. Information about subcontracting

### Section VI: Complementary information

---

#### VI.3. Additional information

#### VI.4. Procedures for review

##### VI.4.1. Review body

Official name: Klagenævnet for Udbud / The Complaints Board for Public Procurement

Postal address: Nævnenes Hus, Toldboden 2

Town: Viborg

Postal code: 8800

Country: Denmark

E-mail: [klfu@erst.dk](mailto:klfu@erst.dk)

Telephone: +45 35291000

Internet address: <https://erhvervsstyrelsen.dk/klagenaevnet-for-udbud>

##### VI.4.3. Review procedure

Precise information on deadline(s) for review procedures:

Pursuant to Danish Act on The Complaints Board for Public Procurement (act No. 492 of 12.5.2010 with subsequent amendments — available at [www.retsinformation.dk](http://www.retsinformation.dk)), the following time limits for filing a complaint apply: Complaints must be filed with The Complaints Board for Public Procurement within:

- 1) 45 calendar days after the Contracting Authority has published a contract award notice in the Official Journal of the European Union (with effect from the day following the publication date);
- 2) 30 calendar days starting the day after the Contracting Authority has informed the tenderers in question, that the Contracting Authority has entered into a contract based on a Framework Agreement through reopening of competition or a dynamic purchasing system, provided that the notification includes a short account of the relevant reasons for the decision;
- 3) 6 months starting the day after the Contracting Authority has sent notification to the candidates/tenderers involved that the Contracting Authority has entered into the Framework Agreement, cf. § 2(2) or § 171(4) of the Act on Public Procurement, provided that the notification included a short account of the relevant reasons for the decision;
- 4) 20 calendar days starting the day after the Contracting Authority has published a notice concerning his decision to uphold the contract, cf. § 185 (2) of the Act on Public Procurement. The complainant must inform the Contracting Authority of the complaint in writing at the latest simultaneously with the lodge of the complaint to The Complaints Board for Public Procurement stating whether the complaint has been lodged in the standstill period, cf. § 6(4) of the Act on The Complaints Board for Public Procurement. If the complaint has not been lodged in the standstill period, the complainant must also state whether it is requested that the appeal is granted delaying effect, cf. § 12(1) of the said Act. The email of The Complaints Board for Public Procurement is stated in Section VI.4.1. The Complaints Board for Public Procurement's own guidance note concerning complaints is available at the internet address stated in Section VI.4.1.

##### VI.4.4. Service from which information about the review procedure may be obtained

Official name: Konkurrence- og Forbrugerstyrelsen / Danish Competition and Consumer Authority

Postal address: Carl Jacobsens Vej 35  
Town: Kgs. Lyngby  
Postal code: 2800  
Country: Denmark  
E-mail: [kfst@kfst.dk](mailto:kfst@kfst.dk)  
Telephone: +45 41715000  
Internet address: <http://www.kfst.dk/>

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

30/08/2018