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Planning

Supply, Delivery and Commissioning of a Specialised Propeller-Rudder System Hydrodynamic Testing Rig

University of Strathclyde

F01: Prior information notice
Prior information only
Notice identifier: 2021/S 000-007935
Procurement identifier (OCID): ocds-h6vhtk-02a670
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Section I: Contracting authority

I.1) Name and addresses

University of Strathclyde

40 George Street, Procurement Department

Glasgow

G1 1QE

Email

david.flockhart@strath.ac.uk

Country

United Kingdom

NUTS code

UKM82 - Glasgow City

Internet address(es)

Main address

http://www.strath.ac.uk/

Buyer's address

https://www.publiccontractsscotland.gov.uk/search/Search_AuthProfile.aspx?ID=AA00113

I.2) Information about joint procurement

The contract is awarded by a central purchasing body

I.3) Communication

Additional information can be obtained from the above-mentioned address

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

Supply, Delivery and Commissioning of a Specialised Propeller-Rudder System Hydrodynamic Testing Rig

Reference number

UOS-19815-2021

II.1.2) Main CPV code

- 42000000 - Industrial machinery

II.1.3) Type of contract

Supplies

II.1.4) Short description

The University of Strathclyde is seeking notes of interest for a potential tender opportunity for the detailed design, supply, delivery and commissioning of a specialised and flexible testing rig for measuring the hydrodynamic forces and moments on the propeller using an accurate propeller dynamometer and twin rudders, which can be actuated, using load balances.

The specialised rig will interface with the existing towing tank model carriage of the Strathclyde University's Kelvin Hydrodynamics Laboratory. The test rig will include an open-water type propeller dynamometer to measure the propeller thrust, torque and shaft speed to be driven by an electric motor. The test rig will also include a twin rudder arrangement (e.g. to simulate a Gate Rudder System), that may also be actuated by electric motors, and the hydrodynamic loads (X, Y, Mz) on each rudder will be measured by suitable load balance system. The propeller dynamometer, rudders and their drive/actuator systems will be mounted on a base platform which will then be secured to the towing carriage. The system will be able to measure the propeller and rudder hydrodynamic loads on the propeller and rudders in calm water as well as in waves.

II.1.5) Estimated total value

Value excluding VAT: £87,000

II.1.6) Information about lots

This contract is divided into lots: No

II.2) Description

II.2.2) Additional CPV code(s)

- 42600000 - Machine tools
- 42611000 - Special-purpose machine tools

II.2.3) Place of performance

NUTS codes

- UKM82 - Glasgow City

II.2.4) Description of the procurement

1. The potential tender is for the supply of an open water test rig as the combination of an accurate propeller dynamometer and automatically controlled two rudder load balance systems to interface with the existing model towing carriage of the UoS' Kelvin Hydrodynamics Laboratory.

2. The successful supplier is expected to detailed design, build, supply, deliver and commission the system

3. The successful supplier is expected to deliver the equipment to the University, assemble it on-site and test its correct function and carry out site acceptance tests.

4. The propeller dynamometer should be capable of measuring the propeller thrust up to 1500N, and torque up to 75Nm with up to 150% permitted overload.

5. The system must have AC Servo Motor and Controller rated to 30kW

6. The system must have an AC inverter controlled that has a speed range up to 2500RPM at 30kW

7. The system must have an open collector type encoder that is directly coupled to the drive motor for precise speed measurement of the test propeller.

8. Static Calibration Device for Measurements of Thrust and Torque for the propeller

dynamometer should be provided with the system with sufficient precision weights for the calibration.

9. Two sets of rudder load balance systems with calibration devices to measure high load cycles and low load cycles of the rudders as following:

a. For low rudder load condition X and Y forces up to 10N and moments up to 0.2Nm with a rudder with a helm angle rate of 0.5 to 1 deg/s

b. For high rudder load condition X and Y forces up to 20N and moments up to 2Nm with a rudder a helm angle rate of 0.5 to 1 deg/s

10. Design and development of a base platform to attach the above dynamometer, rudders, load cells and their drive and control systems. The base platform will interface and secured to the model towing carriage. The base platform may have an interchangeable lid/section where the rudders will be located.

II.2.14) Additional information

Please note your interest against this PIN by COB Friday 23rd April 2021. After this, any details on further activity will be released.

II.3) Estimated date of publication of contract notice

24 May 2021

Section IV. Procedure

IV.1) Description

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

The procurement is covered by the Government Procurement Agreement: Yes

Section VI. Complementary information

VI.3) Additional information

NOTE: To register your interest in this notice and obtain any additional information please visit the Public Contracts Scotland Web Site at https://www.publiccontractsscotland.gov.uk/Search/Search_Switch.aspx?ID=650836.

(SC Ref:650836)