Awarded contract

IONA System and ORA Software for Robot Monitoring and Control

National Physical Laboratory

F15: Voluntary ex ante transparency notice
Notice reference: 2022/S 000-007076
Published: 15 March 2022, 10:45pm

Section I: Contracting authority/entity

I.1) Name and addresses

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

Email

nina.heath@npl.co.uk

Country

United Kingdom

NUTS code

UK - United Kingdom

Internet address(es)

Main address

www.npl.co.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Other activity

Research

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

IONA System and ORA Software for Robot Monitoring and Control

II.1.2) Main CPV code

- 48000000 - Software package and information systems

II.1.3) Type of contract

Supplies

II.1.4) Short description

IONA system and ORA software platform under the Strength in Places Funding innovation programme governed by UKRI Innovate UK. The equipment will support the Advanced Machinery and Productivity Institute (AMPI) project which aims to drive innovation for the UK's advanced machinery manufacturers, and create the new machines and engineers needed to manufacture tomorrow's technologies.

IONA provides an integrated approach to generate previously unavailable manufacturing process data via a network of sensors. This generates data and manufacturing insight to increase automation performance and the ORA software platform provides the data analytics required to improve the efficiency of smart factories, enabling low cost, flexible robots to be deployed on more challenging or variable applications whilst preventing costly, unplanned downtime in regular industrial automation applications.

II.1.6) Information about lots

This contract is divided into lots: No

II.1.7) Total value of the procurement (excluding VAT)

Value excluding VAT: £294,000

II.2) Description

II.2.3) Place of performance

NUTS codes

- UK - United Kingdom

Main site or place of performance

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

II.2.4) Description of the procurement

We propose to procure an IONA system and ORA software platform under the Strength in Places Funding innovation programme governed by UKRI Innovate UK. The equipment will support the Advanced Machinery and Productivity Institute (AMPI) project which aims to drive innovation for the UK's advanced machinery manufacturers, and create the new machines and engineers needed to manufacture tomorrow's technologies

IONA provides an integrated approach to generate previously unavailable manufacturing process data via a network of sensors. This generates data and manufacturing insight to increase automation performance and the ORA software platform provides the data analytics required to improve the efficiency of smart factories, enabling low cost, flexible robots to be deployed on more challenging or variable applications whilst preventing costly, unplanned downtime in regular industrial automation applications.

II.2.5) Award criteria

Cost criterion - Name: - / Weighting: -

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

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 cases listed below

- The procurement falls outside the scope of application of the regulations

Explanation:

INSPHERE Ltd is the manufacturer of the IONA system and developer of the ORA software platform. This procurement contains a requirement to procure equipment, software, and services from a UK-based instrument manufacturer. To our understanding INSPHERE are the only company within the UK to manufacture a system to this specification.

We require the capability to simultaneously measure multiple targets in six degrees of freedom. We require a system to improve robot positional accuracy by measure and correct methodology, stream data such as robot positions to an external system, and a method to visualise robot path accuracy by comparison of programmed paths versus actual.

The system must be expandable to increase/add additional work area and be moveable between areas and robotic systems. This would mean that the proposed system must not be a permanent fixture or limited in use to the installed cell or to the connected robotic system.

We require a system that:

• Measures and tracks multiple targets, and gather position and pose data of live robot equipment

• Can measure multiple bodies simultaneously in six degrees of freedom and provide multiple viewing angles to overcome line of sight issues

• Continuously streams live data of these multiple targets as an open protocol (e.g., non-proprietary formats)

• Updates robot path in real-time with provided software of this proposed solution (e.g., capable of move – measure – correct methodology)

• Has the ability for the system to be expanded (e.g., with additional cameras/sensors) to increase/add to the tracking volume of the system and moved to another robot cell

• Is commercially available and supported, with standardised warranty and SMA

• Can operate at a frequency of 3Hz and to an accuracy of 250µm

• Must have passive targets (I.e., non-powered)

• Can operate without the need for a visible flash or visible light source

• Has the ability to compare measured data to robot nominal programmes and highlight differences without third party software

• Has automated correction of robot program without third party software

• Is capable of MQTT data output protocol

• Supports native robot language communications (e.g. RAPID, KRL,etc)

• Does not require stable sensor/instrument mounting during operation.

The above will deliver a system whereby:

• The data captured from the tracking system will used to update the robot to achieve higher accuracy

• Software provided can compare a planned robot path with the actual robot path to visualise accuracy

• The addition of more sensors/cameras/trackers can be used to expand the work area to cover a wider range of the workshop

• Cost goes up if third party software required and bespoke integration needed to make it work for the application, this also impacts the robustness and support

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

The procurement is covered by the Government Procurement Agreement: No

Section V. Award of contract/concession

A contract/lot is awarded: Yes

V.2) Award of contract/concession

V.2.1) Date of conclusion of the contract

15 March 2022

V.2.2) Information about tenders

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

V.2.3) Name and address of the contractor/concessionaire

INSPHERE Ltd

The Innovation Centre, Bristol & Bath Science Park, Dirac Crescent, Emersons Green

Bristol

BS16 7FR

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor/concessionaire is an SME

Yes

V.2.4) Information on value of contract/lot/concession (excluding VAT)

Total value of the contract/lot/concession: £294,000

V.2.5) Information about subcontracting

The contract/lot/concession is likely to be subcontracted

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

Country

United Kingdom

VI.4.2) Body responsible for mediation procedures

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

Country

United Kingdom