Contract

Proton range verification detectors

The Christie NHS Foundation Trust

F03: Contract award notice
Notice identifier: 2022/S 000-015374
Procurement identifier (OCID): ocds-h6vhtk-030de2
Published 1 June 2022, 3:01pm

Section I: Contracting authority

I.1) Name and addresses

The Christie NHS Foundation Trust

The Christie NHS Foundation Trust, Wilmslow Road

Manchester

M20 4BX

Contact

Mr Chris Robson

Email

christopher.robson4@nhs.net

Telephone

+44 1614468531

Country

United Kingdom

NUTS code

UKD3 - Greater Manchester

Internet address(es)

Main address

https://www.christie.nhs.uk

Buyer's address

https://www.christie.nhs.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Health

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Proton range verification detectors

Reference number

DN591219

II.1.2) Main CPV code

- 38431000 - Detection apparatus

II.1.3) Type of contract

Supplies

II.1.4) Short description

The PRECISE proton therapy research group at the University of Manchester and the Christie NHS Foundation Trust is developing a system to verify range during proton beam therapy treatments. Range uncertainty is arguably one of the biggest challenges in proton therapy. Range uncertainty arises from a number of sources: imaging, dosimetry, stopping powers, however, the largest uncertainty is always the patient. Patient setup, highly heterogeneous tissue, implants, or bone/tissue interfaces as well as anatomical changes during treatment can all influence proton range and thus, treatment outcomes. The full potential of proton beam therapy, particularly when there are organs-at-risk in the vicinity of the tumour, cannot be exploited unless these uncertainties are reduced or mitigated.

One possible method of determining proton range is through the detection of the prompt gamma-rays that are emitted naturally during therapy. It has been shown experimentally that the maximum intensity of these prompt gamma rays correlates well with the Bragg peak and end-of-range. By detecting these prompt gamma-rays and determining their origin the proton beam range could be established.

The system being developed is based on an array of scintillator detectors coupled with an image reconstruction algorithm based on gamma-ray coincidences. The detectors of choice are LaBr3 scintillators which exhibit good energy and timing resolution for the detection of the high energy gamma-rays emitted. The typical gamma-ray energy range of interest is 2 – 8 MeV so large crystal, 38.1 mm (1.5”) diameter and 50.8 mm (2”) long, detectors are required in order to obtain full energy photo peaks. As the reconstruction

algorithm utilises gamma-ray coincidences, the detectors need to have an energy resolution of 3.5% or less at 662 keV and a coincidence resolving time of 0.5 ns or less. Ideally we are also looking for the detectors to have an anode pulse rise time of 0.8 ns or less and an electron transit time of 16 ns or less.

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: £120,290

II.2) Description

II.2.2) Additional CPV code(s)

- 38431000 - Detection apparatus

II.2.3) Place of performance

NUTS codes

- UKD3 - Greater Manchester

II.2.4) Description of the procurement

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II.2.5) Award criteria

Quality criterion - Name: Quality / Weighting: 70

Cost criterion - Name: Cost / Weighting: 30

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

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Section IV. Procedure

IV.1) Description

IV.1.1) Type of procedure

Open procedure

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.2.1) Previous publication concerning this procedure

Notice number: 2022/S 000-001865

Section V. Award of contract

Contract No

1

Lot No

1

A contract/lot is awarded: Yes

V.2) Award of contract

V.2.1) Date of conclusion of the contract

24 May 2022

V.2.2) Information about tenders

Number of tenders received: 2

Number of tenders received from SMEs: 2

Number of tenders received from tenderers from other EU Member States: 0

Number of tenders received from tenderers from non-EU Member States: 0

Number of tenders received by electronic means: 2

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

V.2.3) Name and address of the contractor

Mi-Net Technology Ltt

30 Summerleaze Road

Maidenhead

SL6 8EN

Country

United Kingdom

NUTS code

- UKD3 - Greater Manchester

The contractor is an SME

Yes

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

Total value of the contract/lot: £120,290

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

The Christie NHS Foundation Trust

Manchester

Country

United Kingdom