Planning

SARS/CoV2 Next Generation Pathogens Genomics Processing, Analysis and Operations

UK Health Security Agency

F01: Prior information notice
Prior information only
Notice identifier: 2021/S 000-028101
Procurement identifier (OCID): ocds-h6vhtk-02f532
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Section I: Contracting authority

I.1) Name and addresses

UK Health Security Agency

Nobel House, 17 Smith Square

London

SW1P 3JR

Contact

Allen Chan

Email

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Country

United Kingdom

NUTS code

UKI32 - Westminster

Internet address(es)

Main address

https://www.gov.uk/government/organisations/uk-health-security-agency

Buyer's address

https://www.gov.uk/government/organisations/uk-health-security-agency

I.3) Communication

Additional information can be obtained from the above-mentioned address

Electronic communication requires the use of tools and devices that are not generally available. Unrestricted and full direct access to these tools and devices is possible, free of charge, at

http://health.atamis.co.uk

I.4) Type of the contracting authority

Ministry or any other national or federal authority

I.5) Main activity

Health

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

SARS/CoV2 Next Generation Pathogens Genomics Processing, Analysis and Operations

II.1.2) Main CPV code

- 72212180 - Medical software development services

II.1.3) Type of contract

Services

II.1.4) Short description

Provision and operation of a system offering rapid, resilient, scalable and interoperable services for processing microbial pathogen sequence data, initially for SARS-CoV-2 genomes.

II.1.6) Information about lots

This contract is divided into lots: No

II.2) Description

II.2.3) Place of performance

NUTS codes

- UKI - London

II.2.4) Description of the procurement

The Authority requires an enhanced service converting SARS-CoV2 microbial genome sequence data into epidemiologically useful information. In particular, it needs to track mutations, to assign evolutionary lineage present in the sequence and monitor inter-sample relatedness; this will require multiple algorithms/computational approaches to provide public health experts with a battery of analytical outputs to ascertain genomic characteristics to a forensic level to inform individual and collective public health decision making. Such services will need to be standardised, secure, and scalable, to be applicable to the sequencer outputs currently prevalent, to facilitate sharing of sequence data between organizations, and to be interoperable with various internal processes occurring within the Authority.The Authority would like to • Understand the current market

availability of such services globally • Assess Provider appetite in hosting such services within the United Kingdom • Understand whether services provided by the supplier are currently in use on a regional, national or international scale• Understand the estimated duration required for these services to be setup and hosted within the United Kingdom• Understand the nature of the technical process the solution uses in order to achieve the goals• Understand how the infrastructure used could be applied to processing pathogens other than SARS-CoV-2• Review documentation and/or certifications that demonstrate adherence to technical, clinical, security, environmental, process, quality and governance standards. Initially the Authority would like meet Providers who can demonstrate that their genomic processing, analytical and operational capabilities can meet these requirements. Based on its findings and information collected, The Authority expects to launch a further competition to all Providers, subject to internal approvals, that will allow it to fully assess the capabilities of the Providers. The exact procurement procedure has yet to be determined but The Authority will be seeking to fairly assess and measure all qualified Providers on their capabilities.The Authority is refactoring its genomics computational infrastructure to establish a systematic and scalable service for rapidly processing sequence-data that meets industry and ISO standards, and is available for its specialist scientific and clinical practitioners. The service should deliver accurate and quality-controlled sequence-data processing, analysis and reporting. It should support both the increasing number of samples sequenced domestically, and their comparison with those generated a global surveillance level, and should facilitate sharing of data between consenting organisations.

II.2.14) Additional information

Further background information can be found in the attached document.The Authority is agnostic about the mechanism(s) by which the solutions are implemented. Software as a Service (SaaS) or software running on provider owned and maintained equipment, are acceptable solutions. So too are arrangements in which a software stack is run by the provider on The Authority owned infrastructure.

II.3) Estimated date of publication of contract notice

3 January 2022

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

Technical and Functional Service Requirements• The solution must be capable of accurately processing sequencer output (e.g. BAM/fastq), as well as assembled sequences, and of returning outputs within 4 hours of loading the sequence. • The solution must be capable of incorporating new algorithms into the per-sample sequencing pipeline on a short release cadence to meet evolving public health requirements.• Production and storage of assembled sequence and lineage assignation and variant data is required; these will allow the Authority to detect outbreaks of SARS-CoV-2.• The solution must have options to match a local sequence to global lists of Variants of Concern or other features.• The solution must enable users to upload, analyse and share identifiers necessary to identify genomes.• The solution must be capable of processing at least 100,000 samples a week and be able to ramp up this upwards if required.• A mechanism must exist such that during the upload process, the identifier stored and any other identifiable metadata available to the uploading laboratory (including the laboratory number of the specimen) are provided securely to a secure endpoint designated by the Authority. • The solution must be capable of storing and allowing interrogation of large volumes of processed sequence outputs providing results rapidly. At present, over 1 million sequences have been generated in the UK alone.• The solution must be capable of producing reports in standardised formats as well as generating new reports on an on-demand basis drawing upon information generated in the solution. • Interaction with the system, including data upload, download, querying of stored data, and reporting must be achievable by both fully automated means such as an authenticated REST API, and by interactive web interfaces.• The framework used by the solution must be demonstrably extensible to other pathogens. A plan will be required showing how pipelines processing up to 10 new pathogens could be introduced over the next 12 months using the same framework.• The solution must be able to ingest data from multiple sources including CLIMB-COVID, ENA, GISAID among other sources. The solution must be able to develop interfaces to ingest data from further sources that may be identified in the future. • The solution should allow secure and auditable sequence sharing, if the Authority elects to do so, with defined organisations which may be using the same system. Key Non-Functional Service Requirements• The solution must have a robust support wrapper to ensure continuity of service and the capability for failovers to avoid surveillance blackouts.• There is no requirement for this solution to provide a long-term archive of sequencer output (e.g. BAM/fastq) as part of the solution. By contrast, there is a requirement to store the outputs from analysis of this information.• There is no requirement for the solution to store any patient identifiable data. Samples in the system will be identified by an identifier provided during the upload process.• The solution provider, as data processor, must securely process, store or in transit, all data within the United Kingdom• The solution should be capable of user access management. • A plan must exist for accrediting the solution to ISO15189, ISO17025 or other relevant standards for diagnostic systems• The solution

must minimally comply with the following standards: Cyber Security Essentials.