

RCloud Tasking Form – Part B: Statement of Requirement (SoR)

Title of Requirement	Semantic Database Enhancement
Requisition No.	1000170916
SoR Version	0.1

1.	Statement of Requirements
1.1	Summary and Background Information
	<p>Enhancement of existing Semantic Database, Ontology and web-based Graphical User Interface (GUI)</p> <p>Under previous contract (DSTLX1000142832), a Semantic Database has been populated with data extracted from structured and unstructured documents. An existing Authority ontology was extended to give a hierarchy and structure to the extracted data.</p> <p>Under contract DSTLX-1000140459, a web-based GUI for the Database was developed and further data extracted.</p> <p>This requirement is aimed at implementing a demonstration of the semantic reasoning and inference potential of the combined database and ontology, as well as implementing some identified enhancements to the current web GUI and extracted data.</p>
1.2	Requirement
	<p>The requirement is split into 3 tasks. The tasks must be completed by 31st March 2022.</p> <p>As with previous contracts, due to release-ability/ownership of information constraints, all work relating to real data extracted from the provided source documents shall take place on the secure laptop provided as Government Furnished Equipment (GFE).</p> <p>TASK 1: Data Cleansing</p> <p>During Authority usage of the initial version of the database, issues with the existing data have been identified; some of which were also previously identified by the Contractor. These issues include but are not limited to: triples/components/parts not attributed to the ontology, components/parts not attributed to a partID, some duplication of triples for each component.</p> <p>The contractor shall examine the previously extracted data, validate identified deficiencies, and propose rectification work. A workshop shall then be held with the Authority to confirm the proposed changes and assist in implementing them (e.g. removal of duplicates,</p>

extending/validating vocabulary mapping to ontology). The Authority shall provide appropriate Subject Matter Expertise (SME) for the workshop.

After the workshop, the contractor shall then implement the agreed changes to the data and/or ontology and/or vocabulary. The updated data shall be imported into the database.

Outputs:

- 1) Cleansed and restructured data (triples) in .n3 format
- 2) Updated vocabulary document (MS Excel or other suitable format)
- 3) Updated ontology (.n3 format) if applicable
- 4) Updated instance of the Blazegraph database (e.g. running in a VM on GFE laptop and a copy of the .jnl file) using the updated data and ontology (if applicable)
- 5) Short summary document describing the work carried out under the Task

TASK 2: Web GUI Optimisation

During Authority usage of the initial version of the web GUI, it has been noted that the originally implemented design does not work optimally with the data as extracted from the source documents. In addition, the need for some additional filter options has been identified.

As part of the workshop for Task 1, the contractor shall propose optimizations (e.g. reformatting of the initial landing page), changes (e.g. implementation of additional filters) and fixes (e.g. “greater than/less than” functionality) for the agreement of the Authority that will better match the Task 1 data. The Authority shall provide prioritisation of changes if necessary. The requirements document shall be updated to reflect the agreed changes and provided to the Authority for approval.

The agreed changes shall then be implemented in an updated version of the GUI. **The updated GUI shall be tested using the updated and cleansed data from Task 1.** A test methodology and evidence of successful test pass is required.

Outputs:

- 1) Update source code (git bundle or .zip file)
- 2) Updated Docker container containing updated web GUI (.tar format)
- 3) Updated web GUI running in a VM on GFE laptop.
- 4) Updated web GUI requirements document, test methodology and test pass evidence (MS Word or similar)

TASK 3: Reasoning Demonstration

	<p>To take advantage of the semantic nature of the database, a demonstration of a reasoning/inference engine using the data and ontology in the database is required.</p> <p>A simple example would be automatically classifying a device based on its characteristics. This may require updates to the ontology, for example adding a hadDeviceTypeName or similar property. A more advanced example would be classifying a device based on incomplete data.</p> <p>As part of the workshop for Task 1, the contractor shall propose such a demonstration and describe how it may be implemented, for discussion and approval by the Authority.</p> <p>The demonstration shall then implemented such that it can be repeated by the Authority without contractor involvement. The web GUI shall be updated to support this if necessary. Appropriate demonstration instructions/material shall be provided.</p> <p><i>Outputs:</i></p> <ol style="list-style-type: none"> 1) Reasoning/inference demonstration, implemented in the web GUI as necessary 2) Updated database, web GUI and ontology as per Tasks 1 and 2 if necessary. <p>Short summary paper describing any changes and including instructions for repeating the demonstration.</p>
1.3	Options or follow on work <i>(if none, write 'Not applicable')</i>
	<p>Subject to future funding and further tasking, follow on work may include:</p> <ol style="list-style-type: none"> 1) Further data extraction and cleansing/validation. 2) Further feature enhancement to GUI and/or underlying database, for example implementation of the ability to store and display images, ability to upload additional data natively in GUI. <p>Implementation of enhanced reasoning/inference engine within database and GUI.</p>
1.4	Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement
	Not applicable

1.5	Deliverables & Intellectual Property Rights (IPR)					
Ref.	Title	Due by	Format	Expected classification (subject to change)	What information is required in the deliverable	IPR Condition
D1	Review Meetings	KO: T0+1 week, Final: T0+3 Months (by 31 st March 2022)	Presentation (.pptx)	Redacted under FOIA Section 24 - National Security	<p>Kick-off (T0), Final (T0+3months, by 31st March 2022).</p> <p>Presentation pack to include but not limited to:</p> <ul style="list-style-type: none"> • Update on technical progress • Progress report against project schedule. • Review of risk management plan. • Commercial aspects. • Review of deliverables. • Risks/issues. • GFA and supplier performance <p>To be held at Authority or Contractor premises (to be mutually agreed). Key actions and decisions to be recorded by the contractor and communicated to Dstl.</p>	DEFCON 705 shall apply

D2	Data, GUI and Inference Workshop	T0+1 month	Workshop	Redacted under FOIA Section 24 - National Security	Workshop as per Tasks 1, 2, 3 above. To be held at Authority or Contractor premises (to be mutually agreed)	DEFCON 705 shall apply
D3	Progress Updates	Fortnightly	Email (Phone call if necessary)	Redacted under FOIA Section 24 - National Security	General progress update, to include but not limited to: <ul style="list-style-type: none"> • Technical Progress • Progress against schedule • Commercial Aspects • Risks and Challenges 	DEFCON 705 shall apply
D4	Database and GUI	T0+3 (31 st March 2022)	As per Task outputs above	Redacted under FOIA Section 24 - National Security	All outputs listed under Tasks 1, 2, 3 above.	DEFCON 705 shall apply

1.7	Deliverable Acceptance Criteria
	<p>Standard deliverable acceptance criteria: as per Framework T&C's</p> <p>Specific deliverable acceptance criteria: D4 - Accepted after receipt of the GFE laptop by the Authority at end of contract, and verification of outputs contained on it.</p>

2	Evaluation Criteria
2.1	Method Explanation
	<p>The suppliers proposal shall be assessed on the following basis:</p> <ul style="list-style-type: none"> • Technical – assurance that the supplier has the technical capability to meet this single source requirement • Commercial – assurance that the supplier can meet the requested commercial requirements as detailed below <p>The placing of any contract will depend upon consideration of the proposal received and the Authority reserves the right, at its sole discretion, not to proceed to contract for any part or all of a contractors proposal. And if necessary, not to place any contract as a result.</p>
2.2	Technical Evaluation Criteria
	<p>The supplier shall provide evidence to demonstrate that they can meet the full requirement as outlined in section 1.4 of this SOR. This should be presented in a technical proposal redacting any commercially sensitive information.</p>
2.3	Commercial Evaluation Criteria
	<p>The supplier shall provide evidence to demonstrate that they can meet the following commercial requirements;</p> <ul style="list-style-type: none"> • A completed 'Tasking Order Form' confirming a resulting contract will be in accordance with the R-cloud Version 4 Terms and Conditions • The supplier must provide their full FIRM price breakdown for all costs to be incurred to fulfil this requirement, including: What rates are being used for what Grade (using their respective R-Cloud Grades), Quantity of manpower hours per Grade, Materials costs

	<p>Facility costs, Profit rate applied, Any sub-contractor costs and the level of sub-contracting required, Any other costs applicable to this requirement.</p> <p>The Authority will assess the proposal to ensure that all costs are fully detailed, in line with the R-Cloud rates and price shall be commensurate with the work to be undertaken.</p> <p>When placing any contract the Authority is required to satisfy itself that the agreed price represents Value for Money (VFM). In single source contracting you must provide to the Authority sufficient information in support of your price proposal and during subsequent price negotiation, to enable the Authority to fulfil its obligation to assure VFM. The Authority approaches all contract pricing on the basis of the NAPNOC principle (No Acceptable Price, No Contract). The Authority reserves the right to not enter into any contract that is unacceptably priced or unaffordable.</p>
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