ASTRID – TASKING FORM – Part A

Once complete please email the Tasking Form to:
• Official – ASTRID@baesystems.com.
• Official Sensitive – ASTRID@baesystems.r.mil.uk.

Note to Commercial Staff:
ASTRID has been let and is owned by Defence Science & Technology Laboratory (Dstl) and any work placed under it is subject to UK Govt DEFCONs. Full DEFCON definitions can be found here: https://www.aof.mod.uk/aofcontent/tactical/toolkit/content/defcons/defcon.htm (note account required to access but easy to set up)

TASKING FORM			
To:	CORDA	**From (Organisation):**	DSTL

Framework contract number:	DSTL/AGR/01142/01
Agreed quotation date (if known):	

REQUIREMENT SUMMARY AND AUTHORITY CONTACTS:	
Project Manager (name & telephone)	Redacted under FOIA Exemption 40 - Personal Information
Technical Lead (name & telephone)	Redacted under FOIA Exemption 40 - Personal Information
Commercial Officer (name & telephone)	Redacted under FOIA Exemption 40 - Personal Information
Task title (for Dstl: max 30 characters inc AST/ prefix)	Neuromorphic Computing at Edge
Anticipated start date	1 Sep 22
Anticipated end date (core work)	31 Aug 23
Anticipated end date (options)	31 Aug 24
Requisition or Purchase Order ref	RQ0000012185
ASTRID task number	177
Task description	Please see attached Statement of Requirement

SCHEDULE OF REQUIREMENTS:
Brief list of requirements (core and options) – add rows as appropriate (full details appear in the attached Statement of Requirement)

Item No	Core or Option	Description / Title
1	Core	producing a detailed plan, which describes: • The Defence-relevant problems that will be considered. This should be clearly related to "analytics at the edge". Potential example problem classes include: machine learning models (including model training and model merging); symbolic artificial intelligence; spatial-spectral-temporal signal processing; model based scene understanding; multi-agent models; constraint-satisfaction/optimisation problems (enabling timely and adaptive re-planning); graph-based processing (enabling analysis of multi-hypotheses about partially observed systems across a variety of data sources of varying veracity). • The design of the neuromorphic computing demonstrator. This should provide sufficient detail so that the feasibility of implementing the demonstrator can be established. It should also clearly describe the level of information the demonstrator will provide. The key aspect of the demonstrator will be the neuromorphic computing hardware. This could be provided in several ways, for example: using readily-available hardware (and extrapolating to performance in a Defence context in the 2030-2040 timeframe); using prototype hardware; using emulations of potential future hardware. Whilst the hardware is the key aspect, the demonstrator is required to consider the "end-to-end" problem. This includes any software development tooling (including that associated with providing assurance of the coded algorithm), as well as transfer of data onto, and from, the neuromorphic computing hardware. It also includes and datasets necessary to allow the problem to be investigated. The demonstrator needs to be adaptable to investigate a number of Defence "analytics at the edge" problems; thus the demonstration plan must address, at least, two classes of Defence “analytics at the edge” problems. • The intended measurement plan. This should describe the test cases that will be conducted using the demonstrator and the measurements that will be recorded (including likely uncertainty). It should also describe how comparator measurements, based on commonly-adopted approaches to computing hardware (e.g. CPU, GPU) will be produced. The output from this phase should be captured in a detailed design proposal, which should be briefed to the MOD team.
1	Option	The second phase is concerned with implementing the plan developed in the first phase. It includes generating results for the specific problems considered. It should also include an analytical discussion of any challenges associated with adapting the demonstrator for assessing other classes of problem. In addition, any significant barriers to the adoption of neuromorphic computing within Defence should also be detailed.

		The results of this phase should be captured in a formal report, which directly addresses the hypothesis "neuromorphic computing can provide a significant contribution to Defence analytics at the edge". In addition, a very short report, suitable for use with a wide audience with varying levels of knowledge, should also be produced. Although not a strict requirement, production of a conference paper is also encouraged. The demonstrator itself should also be a deliverable item. Where necessary, this should also include relevant documentation and training. It should be noted that Dstl is looking to encourage ambition and creativity in the proposed delivery approach, with a view to maximising the scope of insights gained. Suppliers should respond accordingly.

Pricing:	
Firm Price	☒
Ascertained cost* *only at Authority's discretion	☐
Firm Pricing shall be in accordance with DEFCON 127 or DEFCON 643 and DEFCON 648 Ascertained Costs shall be in accordance with DEFCON 653 or DEFCON 802.	

Cyber Risk:	
Risk level:	Redacted under FOIA Exemption 26 - Defence
Assessment ref:	Redacted under FOIA Exemption 26 - Defence
DEFCON 658	☒ (applicable for all risk levels except 'N/A')

Limitation of Contractors Liability Risk: *(see attached SOR and Risk Assessment for more detail)*

ASTRID Liability Spreadsheet:

Demanders are required to complete an ASTRID liability spreadsheet that will look at the direct and indirect risks associated with their requirement. Performing this assessment before submitting the Task to CORDA prevents delays post receipt of proposal, which can add circa 4 weeks to the time to award.

The ASTRID liability spreadsheet can be found at the following address:

http://org/org/ent/CME/ASTRID/SitePages/Home.aspx

Each risk must be assessed in turn and a score for that risk entered in to the spreadsheet.

A completed copy of the spreadsheet must be attached to this Tasking Form & SOR when submitting to CORDA. A copy must also be placed on ICAS with the requisition

Direct Risk: Redacted under FOIA Exemption 43 - Commercial Interests		In the event that a risk is scored as "Green" or "Yellow" the risk will be capped at pre-agreed limits of liability and demanders may continue with the submission of their requirement to CORDA. In the event that a risk is identified as "Amber" or "Red" demanders should discuss their requirement with their Commercial POC before the Task is submitted to CORDA.

Indirect/Consequential Risk Redacted under FOIA Exemption 43 - Commercial Interest		In the event that the risk is "Excluded" demanders may continue with the submission of their requirement to CORDA. In the event that the risk is identified as "Included" demanders should discuss their requirement with their Commercial POC before the Task is submitted to CORDA.

DEFCONS (Defence Conditions):

Please confirm which specific DEFCONs are required for the task (Dstl staff click here for greater DEFCON detail and NIPPY Guidance). If you are unsure, please discuss with your IP contact, or commercial

91	Edn 11/06	Intellectual Property Rights In Software	☒
539	Edn 08/13	Transparency (automatically included unless removed by Authority Commercial staff for exemption reasons)	☒
703	Edn 08/13	Intellectual Property Rights - Vesting In the Authority To be specified on the Tasking Form	☒
705	Edn 11/02	Intellectual Property Rights - Research and Technology To be specified on the Tasking Form	☒

Acceptance or rejection of deliverables
This MUST match the number of days stated in the SOR. The default for reports is 'up to 30 days', and the default for software is 'up to 60 days'. Please specify if requesting different and discuss with commercial

524	Edn 10/98	Rejection	60	days
525	Edn 10/98	Acceptance For the Purposes of schedule of requirements item 2 of this Contract the period for acceptance and rejection of deliverables shall be specified within the Tasking Form at Annex D.	60	days

Defence Based Simulation and Modelling:		
Defence Standard	03- 050	☐
Other		☐

DELIVERABLES: Please see attached SOR for full details

GFX:	
Yes	☐
No	☒

If yes, please see attached SOR for full details of equipment / information / facilities

Security Classification of the Work: (delete as appropriate*)

Redacted under FOIA Exemption 24 - Defence

**Failure to delete unnecessary higher classifications will result in delays at the firewall*

The overarching ASTRID contract contains a Security Aspects Letter (SAL) covering tasks up to Official Sensitive at quotation stage. If the Statement of requirement (SOR) is a higher classification, please complete the relevant SAL and send with this tasking form and SOR.

If this is the case, please tick the box to indicate you are attaching a separate SAL for your task Redacted under FOIA Exemption 24 - Defence

Any task placed as a result of your quotation will be subject to the Terms and Conditions of Dstl contract number DSTL/AGR/01142/01	
ASTRID – TASKING FORM – Part B	
To:	**From:** CORDA
FAO:	**PoC:** Redacted under FOIA Exemption 40 - Personal Information
Tel:	**Tel:**

Proposal Reference AST\CMRCL\Prop\02387 (attached)

The proposal shall include, but not be limited to:

- A full technical proposal that meets the individual activities that are detailed in Statement of Requirement (Part A to Draft Tasking Form)
- A Work breakdown structure/project plan with key dates and Deliverables identified including required delivery dates for Government Furnished Assets.
- A clear identification of Dependencies, Assumptions, Risks and Exclusions which underpin your Technical Proposal.

COST BREAKDOWN (to be completed by the Contractor)

You are to use rates that have been previously agreed within the Analysis for Science & Technology Research in Defence (ASTRID) at Annex E.

Please also provide a price breakdown which should include, but is not limited to: labour costs, transportation, travel and subsistence, overheads and profit. In support of your Proposal you are requested to provide clear details of all Dependencies, Assumptions, Risks and Exclusions that underpin your price

Price quotation of **£726,151.48** (ex VAT) is submitted for **Task 0177 – Neuromorphic Computing at the Edge** and breakdown attached

Ascertained Price	☐	
Firm Price	☒	
Hybrid*	☐	*if hybrid, please specify which pricing mechanism applies to which work packages and/or deliverables in the “Milestones Deliverables and Payments” table

VALUE FOR MONEY EVIDENCE - KPI 1 (to be completed by the Contractor)

The Collaborative sourcing mechanism was utilised for supplier selection. This maximises Value for Money by:

- Deploying the optimum team to deliver the work (maximising quality)
- Promoting discussions with the customer during proposal work up:
  - Better aligning the supplier's understanding of the requirement,
  - Better informing the customer's understanding of their problem and the solution to solving it,
  - Eradicating 'gold plating',
  - Deploying the appropriate SQEP and;
  - Reducing technical (and financial) risk.
- Enforcing use of suppliers lowest UK Government rates
- Reviewing effort levels to ensure that they are commensurate with the required level of work
- The Technical Lead will provide assurance that the Statement of Work is delivered as per the specification

QinetiQ will deliver excellent Value for Money by:

 Deploying an expert and multidisciplinary team that blends academic and practitioner experience of neuromorphic systems and defence applications;

 Bringing State of the Art background IP, current innovative Neuromorphic research and links into leading chip manufacturers;

 Tailored Project Management and Technical Leadership to oversee the delivery of all project activities and manage the project budget effectively on behalf of the customer.

In particular this proposal contains the following elements:
- Reuse of supplier's IP and/or toolsets, reducing the amount of effort required in delivering the Task and/or improving quality
- Confidence that a supplier will deliver the agreed requirements for an agreed firm price
- Task Lead rates have been scrutinised and actively challenged on framework signup to drive value for money.

Start date:	T0 (assumed as no later than 7th November 2022)	End date:	T0 + 23 weeks

Redacted under FOIA Exemption 40 - Personal Information

Signed on behalf of the Contractor:

Printed name:	Redacted under FOIA Exemption 40 - Personal Information	Date:	26th October 2022

Contractor's Cost Breakdown

Redacted under FOIA Exemption 43 - Commercial Interests

Redacted under FOIA Exemption 43 - Commercial Interests

Request for Limitation of Liability
The Authority has performed a review of the risk profile for this Task and the proposed limitation of contractors liability is summarised in part A of this Tasking Form, and detailed in the ASTRID Liabilities spreadsheet attached to the Statement of Requirement. If required to do so by the Liabilities spreadsheet, or if the the Contractor believes that the risk profile is incorrect, they should complete Annex A providing details of the identified risk, the mitigations in place, and the revised limitation of contractors liability requested.
Redacted under FOIA Exemption 43 - Commercial Interests

Requested Amendments to Framework Conditions
The Prime should detail below any requests for amendments to the terms and conditions of the Framework if deemed necessary for this particular task
It is assumed that there is no requirement for a deliverable quality plan. Liability Clause Redacted under FOIA Exemption 43 - Commercial Interests

Redacted under FOIA Exemption 43 - Commercial Interests

Redacted under FOIA Exemption 43 - Commercial Interests

			Options and Payments
Item No	**Description / Title from Part A**	**£ (ex VAT)***	**Expiry Date**
1	**Phase 2**	**£2m (ROM)**	**n/a**
*Price(s) quoted to be held valid until end date of options ☐ *(If unticked a requote will be required)*			

ASTRID – TASKING FORM – Part C			
1. Offer of Contract: *(to be completed by Authority Commercial Services)*			
Commercial Officer:	Redacted under FOIA Exemption 40 - Personal Information	**Tel:**	Redacted under FOIA Exemption 40 - Personal Information
Vendor Agreement No (if applicable)**:**			
Purchase Order Number:	DSTL0000009376		
Start date (T0) is deemed to be:	19/01/2023	If preferred, CORDA has given permission for you to amend the table in Part B to show actual due dates. If you make any changes, please change the font to RED and draw attention to them in the 'comments & clarifications' box below.	
Commercial comments and clarifications to proposal:			

Commercial Approval:	Redacted under FOIA Exemption 40 - Personal Information
Date:	19/01/2023
Please Note: Task Authorisation to be issued by Authority Commercial Services Department once the Vendor Agreement and Purchase Order numbers have been inserted. Any work carried out prior to issue is at the Contractor's own risk	

2. Unqualified Acceptance of Offer made in Part C.1 above: *(to be completed by the Prime Contractor and returned to Authority's Commercial Services)*			
Name:		**Tel:**	
Position in Company:			
Signature :		**Date:**	

ASTRID – TASKING FORM – Part D

COMPLETION OF TASK *(to be completed by the Prime Contractor and returned to the nominated Authority Task owner as detailed in Part A - failure to return could result in payment being delayed)*

For the avoidance of doubt, Section D confirms the final value of the task. The value stated in this section will be the contracted value for the task and will take precedence over any previous values referred to in sections above.

Confirmation of Deliverables as per Part A:

Yes ☐ **No ☐**

Actual Task start date:	
Actual Task completion date:	
Final invoice submitted on:	
For firm price of:	£
For the final LoL price of:	£

Comments from Contractor on the task:

Task completed to Authority's satisfaction *(to be completed by nominated Task owner)*
Comments from Task owner on the task:

Anticipated exploitation inc timescales:	
Follow-up date with End User if necessary:	

Key Performance Indicators (KPIs):
Timeliness of deliverables: This KPI is a pass or fail question and each deliverable will be given a score of either 1 for meeting the required date or 0 for failure to meet the required date. Where any agreed contract amendments or changes to the delivery dates have been made, the revised delivery date will supersede the previous agreed date. Where a Deliverable is late as a result of the Authority's actions, and this is agreed to by the Authority, the deliverable shall be marked as on-time.

Total number of deliverables within task: _____	
Of which on time:	
Of which deemed late:	
Comments / Notes:	

Quality of Deliverables:
Deliverables are deemed to be accepted once the Authority has reviewed them and has confirmed that they are of an acceptable standard and is willing to pay the invoice associated with the deliverable. Deliverables can be rejected on the grounds of technical, financial and grammatical errors.

Mark:	Measure:	Number of deliverables in this category:
Accepted	Technically and editorially acceptable. Minor changes may be needed to improve exploitability of the output or to tailor the output for the end customer.	
Minor revisions	Deliverables require minor editorial and/or technical revisions prior to acceptance. Minor changes may also be needed to improve exploitability of the output or to tailor the output for the customer.	
Major revisions	Deliverables require significant editorial and/or technical revisions and further review by the Authority.	
Rejected	Deliverables do not meet the requirement and are rejected	

Any additional comments / Notes:	
Signed:	

Date:	

DIRECT LOSS - DEFCON 76 (Damage to Government Establishments)								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								
TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY								

DIRECT LOSS - DEFCON 514 (Material Breach)								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								
TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY								

DIRECT LOSS - DEFCON 611 (Loss of or damage to Issued Property)								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								
TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY								

DIRECT LOSS - DEFCON 612 (Loss of or damage to Articles)								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								
TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY								

DIRECT LOSS - NEGLIGENCE (that is not included within DEFCON 76, 514, 611 & 612 above)								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								
TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY								

INDIRECT/CONSEQUENTIAL LOSS								
RISK (Situation)	Worst Case Scenario	Worst Case Cost £	Mitigation	Post Mitigation Cost £	Proposed LOL	Contingent Liability	Probability	Impact
Please see above liability cap								

TOTAL PROPOSED CONTRACTOR'S LIMIT OF LIABILITY				