ANNEX D – Call-Off Tasking Form

Call-Off Tasking Form Part A

CALL-OFF TASKING FORM [TO CONTRACTOR]

To: [IBM UK Ltd]	**From:** Dstl

REQUIREMENT *(to be completed by Dstl Demand Owner)* **Date Quotation Required:**

Project Manager	[REDACTED]	**Technical Lead**	
Call-Off Task Title:	**Software Defined Slicing (SDS)**	**Call-Off Task/Change**	
Required Start Date:	**15/09/21**	**Required End Date:**	**31/03/22**
Requisition No:			

CALL-OFF TASK DESCRIPTION AND SPECIFICATION *(to be completed by Dstl Demand Owner)*

Call-Off Task to be completed under Firm Price ☒ Ascertained cost ☐

Firm Pricing shall be in accordance with DEFCON 127 or DEFCON 643 and DEFCON 649 or Ascertained Costs DEFCON 653.

RISK ASSESSMENT Completed Y/N (NA – Office Working)

DEFCON 602A (Quality Plan) Y/N

DEFCON 602B (Quality Plan) Y/N

DEFCON 76 (Contractor's Personnel on The Authority's Premises) is called up for this tasking.

Statement of Requirement Reference no: (detail ownership, where background IPR is known, for each Deliverable).

Call-Off Task Deliverable: Acceptance / Rejection Criteria

DEFCON 524 Rejection ☐ Period [10 Days] As described below

DEFCON 525 Acceptance ☒ Period [10 Days] As described below

Task Description

Summary: This task is an extension to the previous Software Defined Slicing (SDS) tasking, based on DAIS ITA research into how future missions may allocate sets of analytic services across distributed coalitions.

The current Dstl programme funding this work comes to an end in March 2022, so deliverables and milestone payments are required in Feb 2022 to allow time for completion by the March 2022 deadline.

SOR Summary

Mandatory Requirements:

1. Enhanced Iterative Approaches for SDS

Building on Phase1 work during FY20/21, this research aims to investigate new iterative approaches for SDS:

- Identify inadequacy of determining the optimal task rates under static conditions, but where system evolves stochastically over time
- Develop enhanced iterative solutions and investigate how well the new technique performs in light of system dynamics
- Define how to estimate the gradients in dynamic systems e.g., by inference engines
- Aggregate gradients or pricing for multiple resources to simplify the approach
- Explore stochastic control by Markov Decision Process (MDP) and/or reinforcement learning

Deliverables:

- Workshop with stakeholders to identify, define and scope the use cases which will be used to show application of proposed approaches across multiple domains and coalition systems, supporting multiple scenarios. Report and presentation to inform and agree on progression. (Sept 21)
- Report or presentation summarising the research results and customer internal demo and feedback. Short capping paper aimed at stakeholders which highlights the key achievements and impact from this work in simple language, as well as presentational material to support this same goal. Handover of demonstrator and software to customer. (Nov 21)
- Conference publications for leading conferences such as MILCOM, ICMCIS, SPIE or IEEE INFOCOM. (Feb 22)

2. Development of SDS Research Environment

This proposed research continues Phase1 work during FY20/21, into the use of SDS for the agile provision of coalition services shall be investigated through the formation and dynamic control of SDS. This work will develop a low-TRL research concept demonstrator for assessing how SDS solution options would operate in scenarios under different stress conditions, showing dynamic service provision across multiple security domains, and coalition environments.

Deliverables:

- Report or presentation to inform and agree on progression to the second year of the task. (Oct 21)
- Report or presentation summarising the research results, internal demonstration and feedback. Short capping paper aimed at stakeholders which highlights the key achievements and impact from this work in simple language, as well as presentational material to support this same goal. Handover of demonstrator and software to customer. (Feb 22)

3. AI-Based Techniques for Tactical Edge

Massive Multiple-input and multiple-output (MIMO) is an effective strategy to handle interference in congested and contested environment, but Massive MIMO was developed for communication purpose and the algorithm complexity limits the performance gain of such MIMO systems. Driven by the increasing need to better make use of the spectrum (congested and contested electromagnetic environment problem) and provide greater autonomy to network and devices in edge-based environments, future signals need to be designed in an integrated manner for the multipurpose of communicating and sensing. This work aims to understand the limits of future integrated massive MIMO networks and develop the related signal processing, optimization and AI-based techniques to overcome complexity and scalability issues encountered by current techniques and to achieve the performance capability to operate in a tactical environment.

Deliverables:

- Interim report or presentation on state of the art of the characterization of the fundamental limits for how to communication, sense, and operate in edge-based environments. (Nov 21)

- Report or presentation on further progress made on the characterization of the fundamental limits for how to communicate, sense, and operate in edge-based environments, and identification of promising related signal processing, optimization, and AI-based techniques to achieve those limits. (Feb 22)

DELIVERABLES *(to be completed by Dstl Demand Owner) (state what is required e.g. reports etc)*

Interim Report ☐ **State how many if Interim** ___ **Final Report** ☐ **Assets Generated** ☐

Detail supply of any materials for each deliverable and required due date:

ISSUE OF EQUIPMENT/MATERIAL/INFORMATION *(Tick all relevant boxes and detail what has been issued)*

Not Applicable ☐ **Government Furnished Equipment** ☐ **Government Furnished Information** ☒

Government Furnished Facilities ☐

Details of equipment / information / facilities: Influence Scenarios

Accounting for Government Property (DEFCON 694):

Contract Embodiment Item ☐ **Contract Support Item** ☐ **Contract Work Item** ☐

QUALITY STANDARDS *(Define the applicable Allied Quality Assurance Publications (AQAPs) and Defence Standards (Def Stans)).*

SECURITY CLASSIFICATION OF THE WORK *(A Security Aspects Letter (SAL) amendment will be required for each Call-Off Task where additional security aspects are not stated in the overarching SAL)*

UK OFFICIAL X UK OFFICIAL SENSITIVE ☐ SECRET ☐ TOP-SECRET ☐

Dstl Commercial Contact	[REDACTED]
Contact Number	[REDACTED]

Any Call-Off Task placed as a result of your quotation will be subject to the Terms and Conditions of Contract Number DSTL/AGR/00803/01

CALL-OFF TASKING FORM [Return from Contractor]

To: Dstl FAO: [REDACTED] Tel:	**From:**

1. **Proposal Reference** DTIN10 Continuation Issue 1.0 020921.docx **(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 call-off tasking form).
- Breakdown of Deliverables and Interim Payments (Milestone/stage) due dates
- 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 apply Man Day rates in accordance with Annex E.

Provide a price breakdown which should include, but is not limited to: labour costs, direct costs i.e. facility charges, transportation, Sub-Contracting breakdown, 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 breakdown of costs.

Firm Price Quotation of £ 312,289 (ex VAT) is submitted for **Call-Off Task No** DTIN10 Continuation and breakdown attached in proposal DTIN10 Continuation Issue 1.0 020921.docx

(Define alternative pricing when applicable).

Start Date: 15/09/2021 **End Date:** 31/03/2022

Signed on behalf of the Contractor:

Name: [REDACTED] **Date:** 02/09/2021

Contractors Cost Breakdown

Allocated staff	Day Rate	Days	Total Price
[REDACTED]			
		TOTAL	**£312,289**

GENERATED IP Provide details of IP generated by Sub-Contractors and ensure that a DEFFORM 177 has been completed and returned to the Authority.	
SUB-CONTRACTOR	**DETAIL OF IP GENERATED**

Milestones Deliverables and Payments

	Description	**Amount £**	**Due Date**	**Deliverable DEFCON (Please insert as appropriate)**
Milestone 1	Completion of Outputs 1,2,3,4,6,9 Outputs are as described in the attached proposal IBM DTIN 10 Continuation Issue 1.0 020921.docx	£156,244.50	End Nov 2021	i.a.w Terms and Conditions of the DAIS ITA Transition Framework Agreement No DSTL/AGR/00803/01 dated 21 September 2016
Milestone 2	Completion of Outputs 5,6,8,10	£156,244.50	End Feb 2022	
TOTAL		**£312,289**		

Call-Off Tasking Form Part C

1. Offer of Contract: *(to be completed by Dstl Call-Off Task owner and forward to Dstl Commercial Services for approval)*

Dstl Commercial Name: [REDACTED] **Tel:** [REDACTED]

Approved Requisition Number: 1000167023

Commercial Approval: [REDACTED] **Purchase Order Number:** DSTLX-1000162730

Date: 14 September 2021

Please Note: Call-Off Task Authorisation to be issued by Dstl Commercial Services Department once the Purchase Order has been inserted. Any work carried out prior to issue is at the Contractor's own risk

2. Unqualified Acceptance of Offer: *(to be completed by the Contractor and return to Dstl Commercial Services)*

Contractor's Name: _____ **Tel:** _____

Position in Company: _____ **Signature :** _____

Date: _____

Please Note: Call-Off Task Authorisation to be issued by Dstl Commercial Services Department once the Purchase Order has been inserted. Any work carried out prior to issue is at the Contractor's own risk

Call-Off Tasking Form Part D

2. COMPLETION OF CALL-OFF TASK *(to be completed by Contractor and returned to the nominated Dstl Call-Off Task owner as detailed in Section 1-* ***failure to return completed Part 3 could result in payment being delayed****)*

Confirmation of Deliverables as per part 1 Y ☐ N ☐

Actual Start Date: **Actual Completion Date:**

Invoice Submitted on: **For Firm Price of:** £

Comments by Contractor on the Call-Off Task

Call-Off Task completed to Dstl's satisfaction *(to be completed by Dstl Call-Off Task owner)*

Signed: **Date:**

Comments by Contractor on the Call-Off Task

THE DSTL NOMINATED CALL-OFF TASK OWNER SHALL FORWARD A COPY OF EACH COMPLETED CALL-OFF TASKING FORM TO: DSTL COMMERCIAL SERVICES