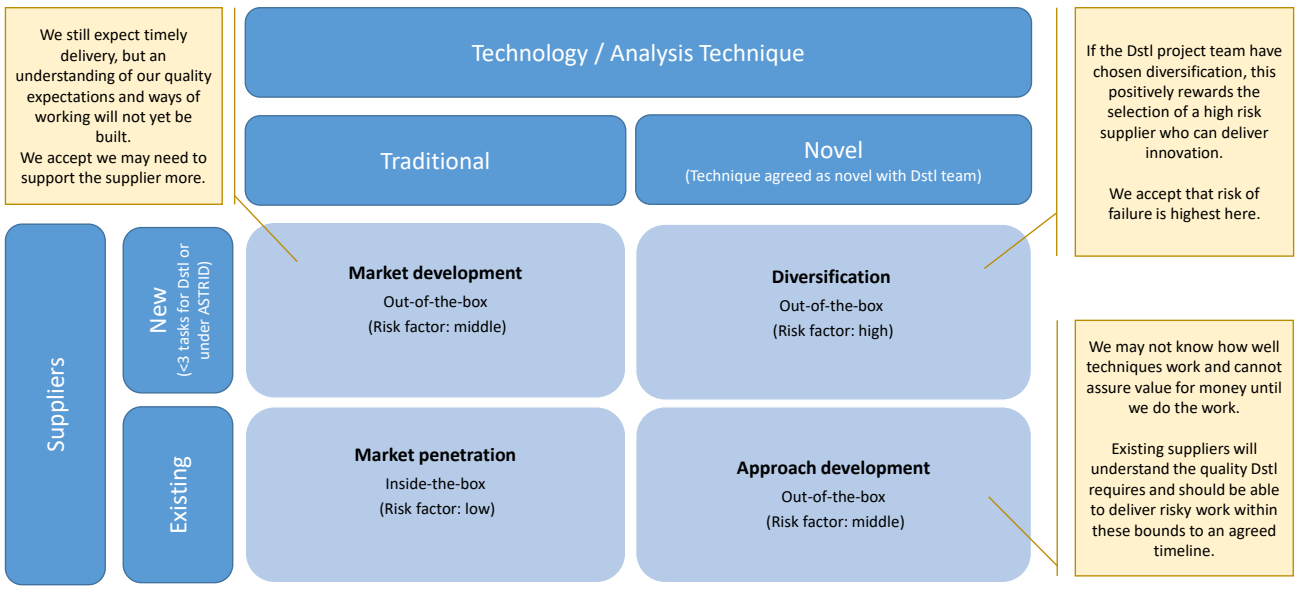
Statement of Requirement (SOR)

Contact & Project Information:

Project Manager	Name	Redacted under FOIA Section 40 – Personal information		
	Email	**Redacted under FOIA Section 40 – Personal information**		
	Telephone number	Redacted under FOIA Section 40 – Personal information		
Technical Partner	Name	Redacted under FOIA Section 40 – Personal information		
	Email	**Redacted under FOIA Section 40 – Personal information**		
	Telephone number	Redacted under FOIA Section 40 – Personal information		
iCas project number	709513			
Owning division	Exploration	**Delivering division**	Exploration	
Programme	Policy & Capability Enterprise Support (PCES)			
Indicative task budget(s) £k	Core / initial work:	**£150k**	Options / follow on work:	£

Innovation risk appetite:	High
Narrative (if applicable):	

Using the Ansoff matrix below, please indicate your risk appetite with regards to accepting innovative bids/solutions. The type of analysis/experimentation technique is included within 'Technology/Product'.



Use of Outputs:
This section is used to inform risks, liabilities, mitigations and exploitation. Questions 1-10 below should be a Yes/No/NA response. Please indicate if the questions do not make sense in the context of your task.
Intended uses (including the approximate time before use and any key decisions that will use the output):
The work will form part of wider Dstl understanding of the use of games for analytical purposes and will help to inform future developments in this area.
Possible uses:
The work may contribute to projects which seek to compare and contrast the usefulness of particular methods of analysis when dealing with complex topics.
Excluded uses:
The work will not be directly reproduced by Dstl and presented as original work nor will it be the sole basis for future original game development. The work will not be published elsewhere before it has been delivered to and accepted by Dstl. It will also not be published elsewhere without making mention that the work was conducted on behalf of/commissioned by Dstl.

1	Will any output be directly used as part of a safety critical system, or will it be one of the most important factors in decisions on Cat A/B investments (>£100M), or at Ministerial level policy making?	No
2	Is this task collating and presenting previous work without making further / new recommendations?	No
3	Is this task research - for example, an exploration of new methods, models or tools?	Yes
4	Will a re-run of the modelling or analysis be required before outputs are presented to a decision maker?	No
5	Will the outputs form a minor part of the work that will be combined by the Dstl Project Team before being used for decision-making?	Yes
6	Has the approach to the work (how to undertake the work) been fixed by Dstl/MOD?	No
7	Will 100% of the technical assurance of the outputs provided by the Dstl Project Team?	No
8	Is the Dstl Project Team capping the maximum levels of verification and validation to be carried out on outputs?	No
9	Is this task developing or maintaining a method, model or tool (MMT) which will be used for multiple use cases over a period of time by Dstl Project Teams?	Yes
10	Can you confirm that there are no known intended uses of the outputs over and above those described here that could result in new risks if the output was incorrect?	Yes

Statement of Requirement (SoR)

Project's document ref	**20210722-AST070_GZ_Gaming_SoR_v1.0**
Version number	**1.0**
Date	**22/07/2021**

1.	**Requirement**
1.1	**Title (including AST/ prefix)**
	AST074/Theoretical review of the use of analytical gaming methods and techniques to explore the utility of defence in grey zone competition.
1.2	**Summary**
	This work will contribute to wider studies and understanding of the utility of defence in complex situations such as grey zone competition. It will do this by helping to inform the ways in which complex questions about complex topics can be explored and analysed in order to provide guidance and understanding. The work should be an in-depth assessment that draws upon subject matter expertise rather than simply being an evidence review. It should be innovative and useful to experienced wargamers rather than an introductory piece for those unfamiliar with the subject matter.
1.3	**Background**

	Dstl has produced extensive work on theories of success in situations of constant competition and how the utility of defence in such situations might be considered. Building on this, Dstl has experimented with a variety of rapid-prototype games as part of efforts to identify the extent to which war gaming constant competition scenarios can produce useable analytical outcomes.
	
	Based on previous work (conceptual development/systems analysis) Dstl believes that:
	
	• There are various approaches to **analytical gaming** which could be useful.
	• A useful way to think about grey zone competition is to conceptualise it as a **complex system** – and as one phase of wider international competition.
	• Any **theory of success** for competing against grey zone competition:
	  • Must have **three elements**: problem diagnosis, policy guidance, coherent strategy.
	  • Must **influence actor perception** through exploiting **intervention points.**
	• The **utility of defence** in grey zone competition can be assessed through the ability to influence intervention points – in **specific situations** against **specific adversaries**.
	
	Redacted under FOIA Section 26 – Defence

1.4	Requirement

Requirement #1: Project Specifics

Within the boundaries identified in requirement #2 below, the supplier will address the following points in a detailed, cohesive, and coherent manner to produce a report that accurately addresses the suitability of analytical gaming methods and techniques to explore complex topics such as the utility of defence in grey zone competition.

1. Explore whether you can artificially bound a complex, unbounded problem so that specific variables can be isolated and studied in detail (ideally through a game or using game-like systems). Within this, the following issues should be addressed:
    a. On what basis should choices be made about what elements of the complex, unbounded problem be kept in or removed from a system model?
    b. How should factors outside of the model which will impact behaviour within the model be accounted for?
    c. Can games looking at cross-domain issues effectively isolate one domain (i.e. military) for study without undermining the utility of the research?

2. Identify methods which can be used to verify and validate the outputs from games that look at strategic issues in an experimental way. Within this, the following issues should be addressed:
    a. How can such verification and validation methods account for controversial/complex topics where there is no consensus about how the system operates?
    b. How does verification and validation account for situations where there is little or no empirical data?
    c. How does verification and validation account for situations where the body of evidence that informs planning approaches is informed/distorted by a limited number of high-profile real world instances?
    d. What level/standard of verification and validation would appropriately balance the analytical needs of a study with the complexities of studying unbounded, complex problems? How do our peers approach this?

3. Analyse what sort of topics experimental games are best suited to analysing. Within this, the following issues should be addressed:
    a. What are appropriate research questions for experimental games to reasonably be expected to answer about complex topics?
    b. What data should be captured from such games?
    c. What analytical techniques should be used in the exploitation of outcomes from such games given any caveats identified in 2. above?

4. Assess how experimental games achieve repeatability and rigour when dealing with complex and potentially ill-defined topics. Within this, the following issues should be addressed:
    a. How are variations in player skills / knowledge or learning effects with the same players best managed without distorting outcomes?
    b. How are games structured and adjudicated so that they are as consistent and repeatable as possible?

5. Examine how experimental games should deal with cognitive effects?
    a. How much of a complex topic/system should/could be mechanised within the structure of a game and how much should remain in the minds of the players and be openly interpreted?
    b. How can cognitive effects be isolated and studied without skewing the conduct or outputs of the game?

Deliverables:

- Final Report as detailed in requirement #2.

Acceptance Criteria:

- The report must address each of the issues identified above with explanation as to the success or failure of the project/supplier to answer particular questions within the established context of the project.
- The report must present any findings with a clear understanding of the subject matter and should, where applicable, make reference to and build upon existing Dstl work on grey zone competition.

Requirement #2: Project Generalities

The supplier must manage the project in order to deliver the work to high quality standards, on time and to budget, The supplier must nominate a suitably qualified and experienced Project Manager to control the execution of the project and manage the successful delivery of the project's outcomes. In their proposal, the supplier must generate a compliance matrix showing how it addresses each of these mandated requirements

During the contract, the supplier must monitor the project's progress, ensure any issues, risks or blockages in delivery are identified early and agree approaches with Dstl to mitigate them.

Monthly project management progress reports are to be prepared and e-mailed to the Dstl Project Manager at the end of each month to cover the duration of the contract in accordance with ASTRID T&Cs. It is anticipated that the monthly report will be a short document that covers: actions taken in response to meetings in the last month, meetings planned, key successes in the last month, current challenges, challenges likely to arise (informed by work undertaken to date), stakeholders engaged with, deliverables made / due, and updates to the risk register.

A mid-term progress report is to be delivered in place of the January 2022 monthly progress report. This report will detail all progress to date.

A final technical report is to be delivered at the end of the contract. The scope and contents of the final report will be agreed with the Dstl Technical Partner ahead of the report being written. It is likely that the final report includes the following:

1. Executive summary
2. Introduction outlining the background, scope of work, approach and report structure.
3. Summary of the supplier's approach to the task including challenges identified before and during the project.
4. Detailed description of the work produced in response to the specific requirements of the task including illustrative examples using the utility of defence in grey zone competition.
5. Assessment of the approaches used by the supplier and discussion of lessons identified as a result of the work.
6. Exploitation plan for both the work produced by the supplier and aspects of the subject matter which might benefit from further examination.
7. Conclusions.
8. Appendices detailing any information used in support of point 4 above (as required).

The technical report will be accompanied by a formal presentation, which will summarise its output. It is expected that the presentation will be of a similarly professional standard as the technical report.

In accordance with standard ASTRID T&Cs, Dstl will require 30 working days after report submission for review and for the supplier to implement corrections / changes, BEFORE final acceptance is confirmed. That said, Dstl will make best efforts to turn around in less, e.g. approximately 10 days.

	The supplier will attend meetings either virtually, or in person if/when the Covid-19 lockdown period has been relaxed at Dstl Portsdown West, as required. These meetings will be arranged as appropriate. ***Deliverables:*** • Mid-term progress report. This must be delivered by mid-January 2022. • Final Report. This must be delivered by 25 February 2022. • Presentation. This must be delivered by 4 March 2022. ***Acceptance Criteria:*** • Monthly progress reports must be delivered to Dstl on time and provide meaningful updates relating to the specifics of the project. Areas of progress and identified impediments to progress are to be made clear in these reports. • Queries and questions raised by Dstl in relation to the content of the monthly reports are to be answered satisfactorily within one week of the monthly report to prevent work progressing in a manner which may deviate unsatisfactorily from the requirements. • The final report is to be written in accordance with MOD report writing guidelines. The standard of writing, formatting, and presentation is to be of a professional standard. • The final report will be reviewed by a select body of Dstl personnel prior to acceptance.
1.5	**Options or follow on work**
	Not Applicable

1.6	Deliverables & Intellectual Property Rights (IPR)						
Ref.	**Title**	**Due by**	**Format**	**TRL ***	**Expected classification (subject to change)**	**What information is required in the deliverable**	**IPR DEFCON/ Condition** *(Commercial to enter later)*
D – 1	Mid-point progress report	Mid Jan 22	Presentation (.pptx)	n/a	Redacted under FOIA Section 26 – Defence	Presentation pack to include but not limited to: • 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	*DEFCON 705 shall apply*
D - 2	Technical Report	25th Feb 2022	Word (.doc)	n/a	Redacted under FOIA Section 26 – Defence	Refer to section 1.4	
D - 3	Presentation	4th Mar 2022	*Presentation (.pptx)*	n/a	Redacted under FOIA Section 26 – Defence	Summary of technical report.	

*Technology Readiness Level required, if applicable

1.7	**Standard Deliverable Acceptance Criteria**
	Deliverable Acceptance Criteria (As per ASTRID Framework T&Cs) 1. Acceptance of Contract Deliverables produced under the Framework Agreement shall be by the owning Dstl or wider Government Project Manager, who shall have up to 30 calendar days to review and provide comments to the supplier. 2. Task report Deliverables shall be accepted according to the following criteria except where alternative acceptance criteria are agreed and articulated in specific Task Statements of Work: • All Reports included as Deliverables under the Contract e.g. Progress and/or Final Reports etc. must comply with the Defence Research Reports Specification (DRRS) which defines the requirements for the presentation, format and production of scientific and technical reports prepared for MoD. Reports shall be free from spelling and grammatical errors and shall be set out in accordance with the accepted Statement of Work for the Task. • Interim or Progress Reports: The report should detail, document, and summarise the results of work done during the period covered and shall be in sufficient detail to comprehensively explain the results achieved; substantive performance; a description of current substantive performance and any problems encountered and/or which may exist along with proposed corrective action. An explanation of any difference between planned progress and actual progress, why the differences have occurred, and if behind planned progress what corrective steps are planned. • Final Reports: shall describe the entire work performed under the Contract in sufficient detail to explain comprehensively the work undertaken and results achieved including all relevant technical details of any hardware, software, process or system developed there under. The technical detail shall be sufficient to permit independent reproduction of any such process or system. 3. Failure to comply with the above may result in the Authority rejecting the Deliverables and requesting re-work before final acceptance. 4. Acceptance criteria for non-report Deliverables shall be agreed for each Task and articulated in the Statement of Work provided by the Contractor.
1.8	**Specific Deliverable Acceptance Criteria**
	In addition to the criteria presented in sections 1.4 and 1.7 above, the following specific acceptance criteria apply: • The final product must not present its final findings in a manner which lacks focus. E.g. ‘In conclusion, the topic is highly complex and requires further work’. • The final product must not present its final findings in a manner which is overly prescriptive. E.g. the product showcases one highly-specific example method of applying games to a complex topic for analytical purposes. • The product must not represent a single point of view or opinion. Evidence of a balanced and reasoned discussion on the topics covered must be evident.

2.	Quality Control and Assurance
2.1	**Quality Control and Quality Assurance processes and standards that must be met by the contractor**
	☒ **ISO9001** (Quality Management Systems) ☐ **ISO14001** (Environment Management Systems) ☐ **ISO12207** (Systems and software engineering — software life cycle) ☐ **TickITPlus** (Integrated approach to software and IT development) ☐ **Other:** (Please specify)
2.2	**Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement**

3.	Security	
3.1	**Highest security classification**	
	Of the work	Redacted under FOIA Section 26 – Defence
	Of the Deliverables/ Output	Redacted under FOIA Section 26 – Defence
	Where the work requires more than occasional access to Dstl premises (e.g. for meetings), SC Clearance will be required.	
3.2	**Security Aspects Letter (SAL) – Note the ASTRID framework has an overarching SAL for quotation stage (up to OS)**	
	Redacted under FOIA Section 26 – Defence	
3.3	**Cyber Risk Level**	
	Redacted under FOIA Section 26 – Defence	
3.4	**Cyber Risk Assessment (RA) Reference**	
	Redacted under FOIA Section 26 – Defence If stated, this must be completed by the contractor before a contract can be awarded. In accordance with the please complete the Cyber Risk Assessment available at	

4.	Government Furnished Assets (GFA)

GFA to be Issued - Choose an item.

If 'yes' – add details below. If 'supplier to specify' or 'no,' delete all cells below.

GFA No.	Unique Identifier/ Serial No	Description: *Classification, type of GFA (GFE for equipment for example), previous MOD Contracts and link to deliverables*	Available Date	Issued by	Return or Disposal *Please specify which*
GFA-1	TR133396	A meta-analysis of 'grey zone' games	22/7/21	Dstl	Disposal
GFA-2	TR123926	How Can Dstl Expand Our National Security Gaming Toolset To Generate More Meaningful And Valid Insights?	22/7/21	Dstl	Disposal
GFA-3	WP134692	Principles for Experimental Gaming.	22/7/21	Dstl	Disposal

If GFA is to be returned: It must be removed from supplier systems and returned to the Dstl Project Manager within 2 weeks of the final Task deliverable being accepted. (Any required encryption or measures can be found in the Security Aspects Letter associated with the Task).

If GFA is to be destroyed: It must be removed from supplier systems and destroyed. An email confirming destruction should be sent to the Dstl Project manager within 2 weeks of the final Task deliverable being accepted

5.	Proposal Evaluation
5.1	**Technical Evaluation Criteria**
5.2	**Commercial Evaluation Criteria**
	As per ASTRID Framework T&Cs.