

Independent Systems Analysis



Sula provides high quality, independent analysis of complex systems in a wide range of domains. We develop robust and auditable assessment processes, using domain expertise and engineering judgment to bring clarity to the most complex of subjects without compromising the detail needed to distinguish between approaches or concepts.

Our Expertise

Systems Engineering Analysis can be applied at a wide range of levels, from detailed technical analysis of components through to assessments of Systems of Systems comprising highly integrated networks of complex sensors, effectors and BMC4I elements. Our expertise encompasses all of these areas.

- Sula establishes both system and capability boundaries, ie the functions delivered by a system in isolation and those delivered through synergistic interaction with other assets.
- By analysing study aims and objectives and identifying all customers' needs, we deliver a clear understanding of the problem and the benefits and drawbacks of all potential solutions.
- We are independent, ensuring complete impartiality in our assessment of the key issues.
- Through the pragmatic application of engineering judgement, we ensure that our analysis delivers sufficient fidelity for the task, simplifying the problem without sacrificing comprehensive coverage and the ability to capture all relevant system behaviours.

Future Mine Countermeasures

The Future UK Mine Countermeasure (MCM) strategy sets out a vision to transform RN MCM through a mix of Portable, Organic and Dedicated systems.

Sula identified and explored feasible options for the Dedicated strand, analysing a very wide range of potential platform and MCM systems. For each option, we provided cost, capability, risk and maturity assessments.



We brought clarity to the complex problem of how to measure the through-life capability and cost of very different MCM concepts, and our ability to place the MCM capability in the wider operational context allowed us to identify key assumptions that needed to be verified through detailed Operational Analysis and doctrinal analysis.

Integrated Air Defence Systems

Sula has developed a robust and auditable process to identify and assess a series of synergistic countermeasure concepts

For more information about Sula and how we can help you, please contact us on 01453 844660 or email info@sula.co.uk

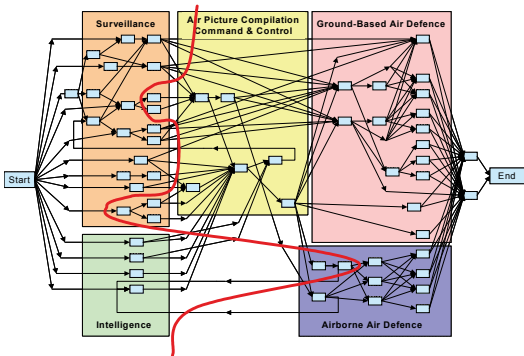
Sula ➤

capable of degrading or defeating an entire Integrated Air Defence Systems (IADS).



The variety of IADS is huge, ranging from one man with a shoulder-launched weapon and a mobile telephone through to an integrated network of highly capable sensor and weapon systems. As well as representing the performance of individual elements, we needed to capture all possible system behaviours including reversionary operating modes, fallback procedures and alternative communications paths or C2 structures.

Our approach was to develop a novel combination of functional breakdown and a mathematical graph theory to represent a generic IADS architecture, including all possible system behaviours.



When populated with detailed equipment attributes from Defence Intelligence publications, the graph could be used to identify weaknesses and to develop countermeasure concepts that could demonstrably defeat or degrade the entire IADS. Synergistic effects of different counters can be investigated explicitly and

in detail without the need for extensive modelling or scenario development.

Ballistic Missile Defence

Sula has provided analysis support to a number of major Ballistic Missile Defence (BMD) programmes.

Sula's engineering and operational judgement have been used to determine the expected behaviour of a wide range of different sensors, effectors and command and control systems. Sula developed analysis tools to characterise, visualise and investigate the complex interactions between geographically and functionally diverse systems in order to understand the BMD system as a whole, including its principal strengths and potential weaknesses.

This analysis produced clear and detailed descriptions of the various functions of the BMD systems, characterising the consequences of denying, degrading or confusing particular sets of functions or physical components.

Sula has also developed methods of investigating the synergistic effects of BMD countermeasures. Our analysis approach is able to quantify the ability of different countermeasure combinations or schedules to degrade the effectiveness of the BMD system as a whole.

MIDAS

Sula has provided systems analysis expertise in support of the electro-optic countermeasures, decoys and system integration concept studies for the Maritime Integrated Defensive Aids Suite.

We developed justifiable and auditable assessment processes; defined detailed metrics to capture and represent all relevant cost, capability, risk and maturity data; and conducted a series of cost-capability trades to optimise the various concepts.

For more information
about Sula and how
we can help you,
please contact us on
01453 844660 or email
info@sula.co.uk

Sula >