

# Strategic Deployment Analysis Toolset



**BAE SYSTEMS**

## **We are Techmodal**

A collaborative data consultancy, bringing the capability and creativity you need to unlock the strategic potential in your data.

As Defence and Government experts, we understand the unique complexity of your constraints. Adaptive, imaginative and iterative, we meet you where you are – and start with what you have.

We focus on making more of your existing tools and technology. Applying smart thinking and continuous improvement to uncover the insight in your data – and help you move past your stickiest problems. Optimising your investments, operations and outcomes. Maximising the impact of your resources towards a better future.

Our clients operate in high-stakes, highly technical and highly secure environments. The pace is fast; the demands are complex and the cost of getting decisions wrong is high. They need partners who bring clarity, precision and practical expertise – not complexity for its own sake.

Our value comes from combining deep analytical strength, applied technology expertise and hands-on consulting experience. We turn ambiguity into clarity and insight into action.

## **What we offer**

We operate at the cutting edge of digital innovation and at the heart of organisations that keep vital infrastructure running, national security protected, and armed forces prepared. Our teams provide:

### **Decision advantage**

We give organisations the insight to act with clarity and pace, ensuring choices made today hold up under tomorrow's pressure.

Our strength comes from being data-led, operationally aware and grounded in real-world context. We explore options, test scenarios and highlight trade-offs before action is taken, building confidence in complex and high-consequence environments.

### **Technology that works**

We help organisations unlock the full value of their technology and existing investments. Our solutions are shaped to our clients' environments – secure, scalable and designed for reuse – delivering faster outcomes and greater value for money.

We stay user-driven, not technology-driven, ensuring what we build is usable, dependable and impactful.

## **Delivery impact**

We work shoulder-to-shoulder with clients to turn ambition into results. Our approach is collaborative, adaptive and focused on rapid progress.

We build momentum early, provide clear answers before the conversation moves on and ensure delivery stays aligned to purpose. Whether defining strategy or supporting implementation, we bring clarity, structure and practical leadership.

## **Strength in secure and complex environments**

All our work is delivered by security-cleared teams who understand the realities of Defence, national security and critical infrastructure.

We design and assure solutions that are resilient, secure and governed — engineered to work in environments where constraints are real and reliability matters.

## **Powered by BAE Systems Digital Intelligence**

We combine the pace, creativity and agility of a specialist consultancy with the depth, reach and security of BAE Systems.

Clients benefit from a unique blend of niche expertise and enterprise-scale capability, with seamless access to Digital Intelligence, engineering, cyber and equipment programmes when required.

## **Service Overview**

Techmodal's Deployment Analysis toolset is designed to enable complex operational and strategic planning. It can be used to support a range of problems including real-life operational planning, force development events, wargames and Balance of Investment decisions as part of a Defence and Security Review.

The design of the toolset draws on Techmodal's deep understanding of UK MoD process and data, abstracted to ensure a generic, flexible tool which puts powerful Operational Analysis capability in the hands of users.

The toolset has been developed using the latest open-source technologies, prioritising supportability, interoperability and reusability, and is easily deployable in both on-premises or cloud infrastructure.

The toolset is made up of two elements:

- Deployment Analysis Tool
- Geospatial Analysis Tool

### **Deployment Analysis Tool**

During a Balance of Investment or Strategic Review cycle, options must be analysed accurately and rapidly to build a comprehensive evidence base. The workflow of our

Deployment Analysis Tool is specifically designed to allow the user to generate this evidence very rapidly which enables a live decision loop.

Starting with a high-level force design, expected destination and concept of operations (including days at each intensity), our tool quickly creates a Force Element list (broken down by unit, equipment and known volumetrics) and builds the strategic and operational Coupling Bridge. Transit can be by sea, air or land and the tool automatically calculates distance and transit times between nodes in the network providing headline deployment information. An example of this Coupling Bridge creation is shown below in Figure 1 below.

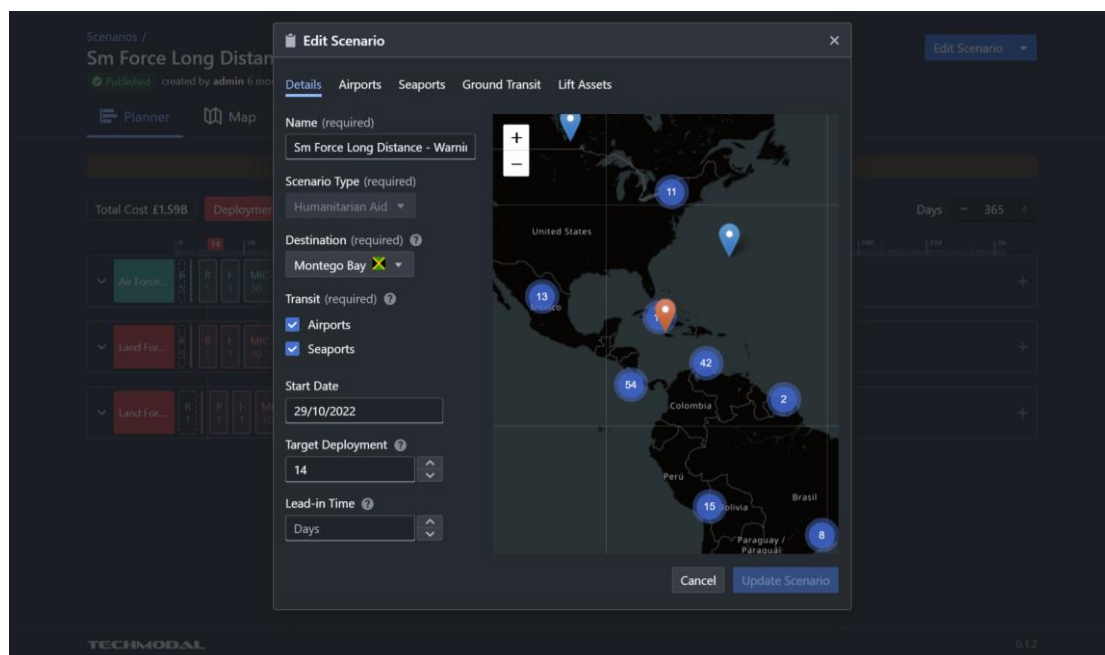


Figure 1: Coupling Bridge creation (ILLUSTRATIVE ONLY)

Strategic Lift assets are then assigned and a baseline deployment plan is created, along with detailed sustinment volumetrics. This baseline can be easily adjusted and will dynamically recalculate live with each user input. An example of a deployment plan is shown below in Figure 2 below.

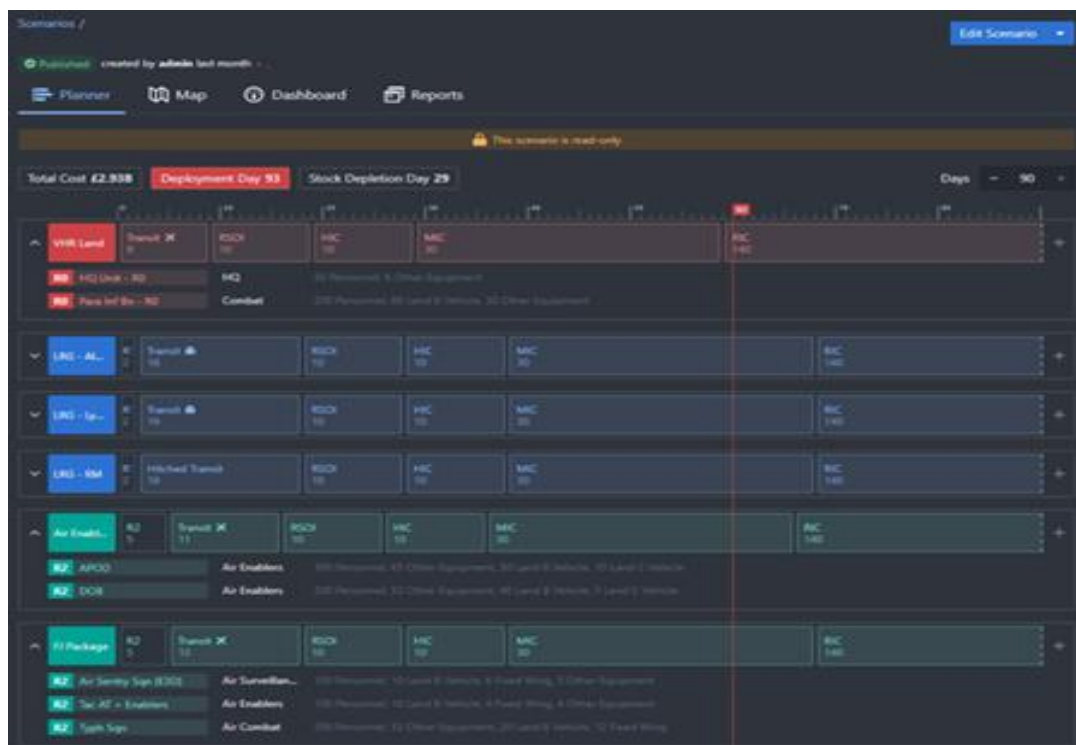


Figure 2: Force Element list and deployment plan (ILLUSTRATIVE ONLY)

In order to further analyse the deployment plan, the tool features detailed reporting across all relevant metrics. For example, the reporting can drill into the performance and utilisation of the Coupling Bridge plan and identifies the key cost drivers of the deployment phase as demonstrated in 3 below).

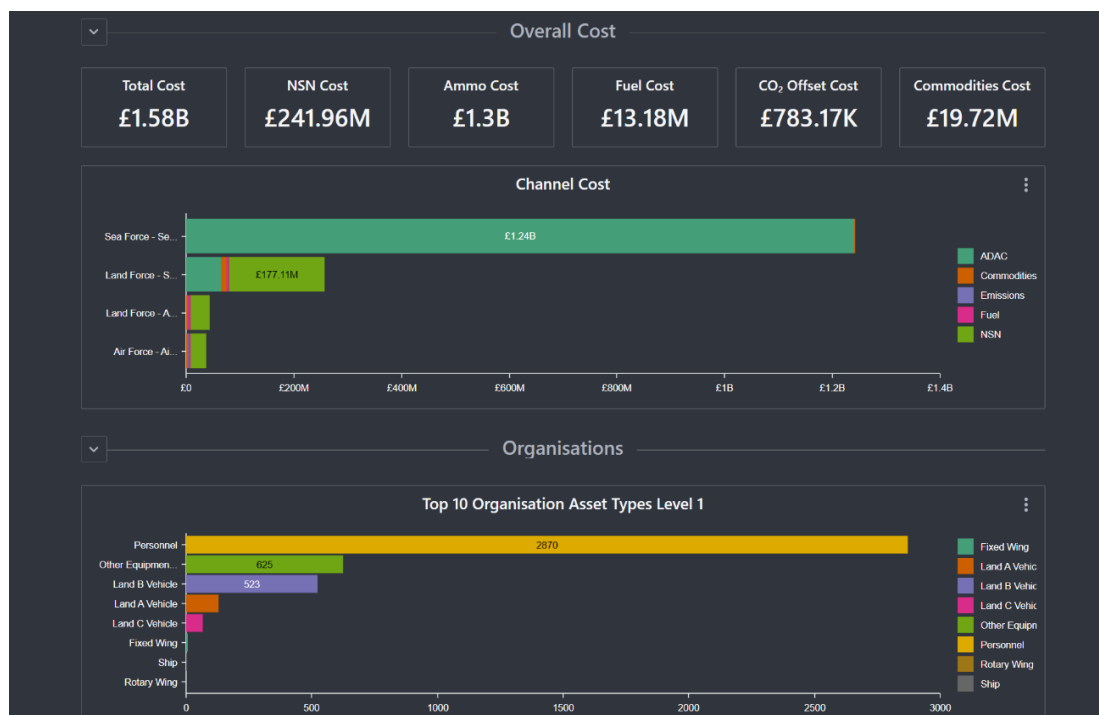


Figure 3: Performance reporting (ILLUSTRATIVE ONLY)

Deployment plans and costs can also compare against each other through a variety of metrics.

The tool can answer questions such as:

- How long will it take to deploy a force to a destination?
- What is the optimum mix of strategic lift assets to minimise deployment timelines?
- What is the cost of deploying that force for XX days of varying intensities?
- What is the ammunition, fuel and carbon cost of this deployment?
- How would different force structures compare in time and cost?
- What are the critical spares for this operation and when will they be depleted?

### Geospatial planning tool

For operational and geospatial planning, the tool offers a simple interface for demonstrating ranges of any type on a geographical display. The tool enables users to pin locations on a map and determine maximum transit distance by sea and air through the visualisation of isochrones and using complex routing algorithms to find shortest paths. Combining world geography and the ability to generate their own no-access zones or to close off choke points, the user can represent complex movement options in order to inform operational planning and scenario wargaming.

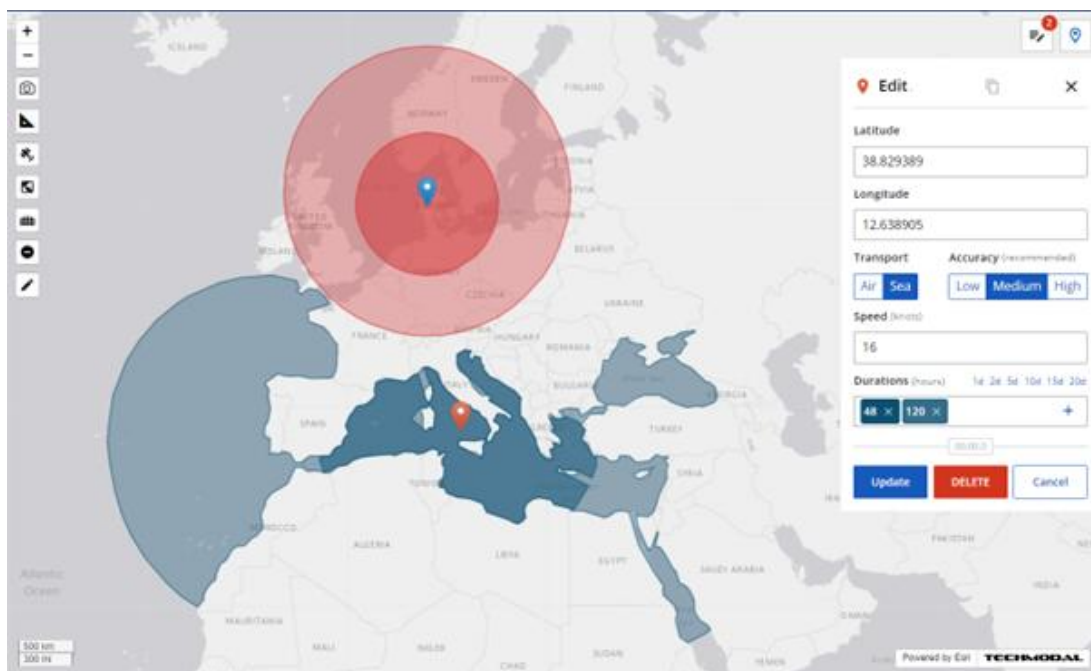


Figure 4: Air and Sea geospatial analysis

From each location pin, the user sets the transit speed and time and the tool rapidly generates each ring. Multiple pins can be displayed on the same map to examine intersections and areas can be marked as inaccessible, such as no-fly zones or blocked canals.

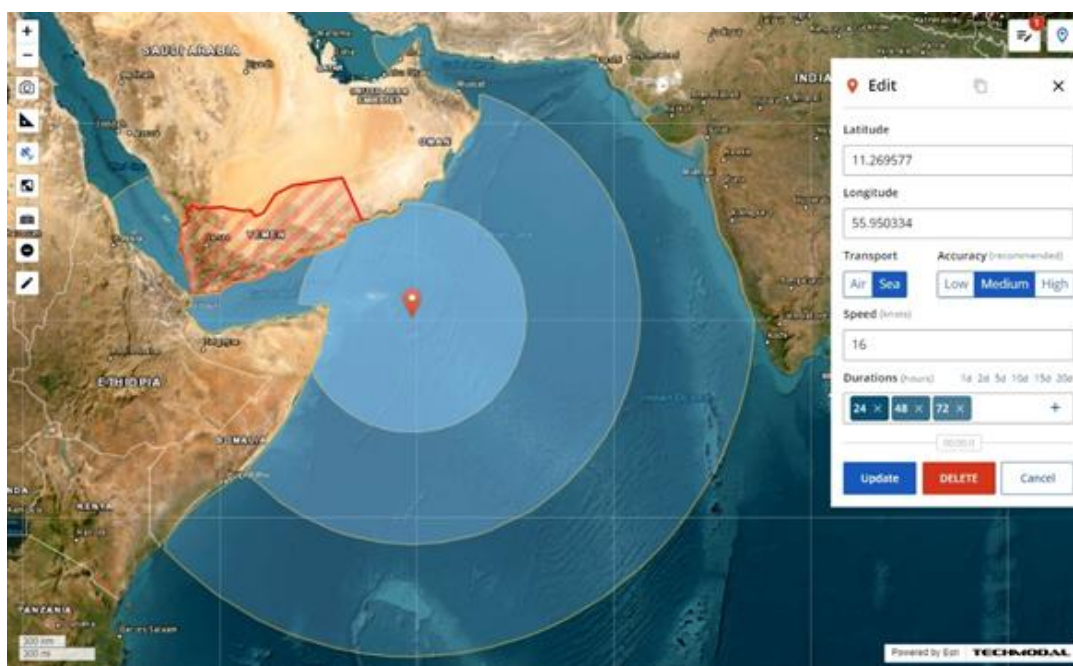


Figure 5: Combining range rings to demonstrate gradated range

The tool can answer questions such as:

- Where in the world can a vessel sail to within XX days?
- What is the maximum geographic aspiration of a force package?
- Where should I position a key node in order to stay with 4 hours travel of each forward location?
- What is the impact of closing the Suez Canal on deployment timelines?

## Flexible Deployment and Hosting

We work with our customers' existing technology stacks wherever possible to maximise the pace of delivery, align with wider digital and data strategies and derive maximum value from existing investments. To support this, we are experts in using a range of COTS and open-source tools and platforms, ensuring we can bring the most effective solution to our customer's challenges.

Techmodal has repeated experience of developing and deploying data science and analytics solutions on customer platforms, including on-premises infrastructure and cloud environments such as Amazon Web Service (AWS), Microsoft Azure, Google Cloud Platform (GCP), and Oracle Cloud Infrastructure (OCI). Our work spans different classification levels and we have experience of MODCloud (AWS, Azure and Palantir Foundry), Army Hosting Environment (AHE) and Navy Digital environments.

## Service Features

- Global deployment planning for any size and scale of force
- Sophisticated transit calculations
- Operational demand profiling
- Operational cost profiling
- Carbon analysis
- Consumption & sustainment analysis
- Options comparison
- Dashboards & Reporting
- Map-based user interfaces
- Repeatable data processing and Extract Transform & Load (ETL) pipelines

## Service Benefits

- Machine speed deployment analysis
- Puts Operational Analysis in the hands of users
- Evidence based Balance of Investment
- Ability to compare multiple deployment plans
- Rapid financial cost calculation
- Sustainability metrics included

**End of document**

**Contact: John Atkins**  
[tenders@techmodal.com](mailto:tenders@techmodal.com)