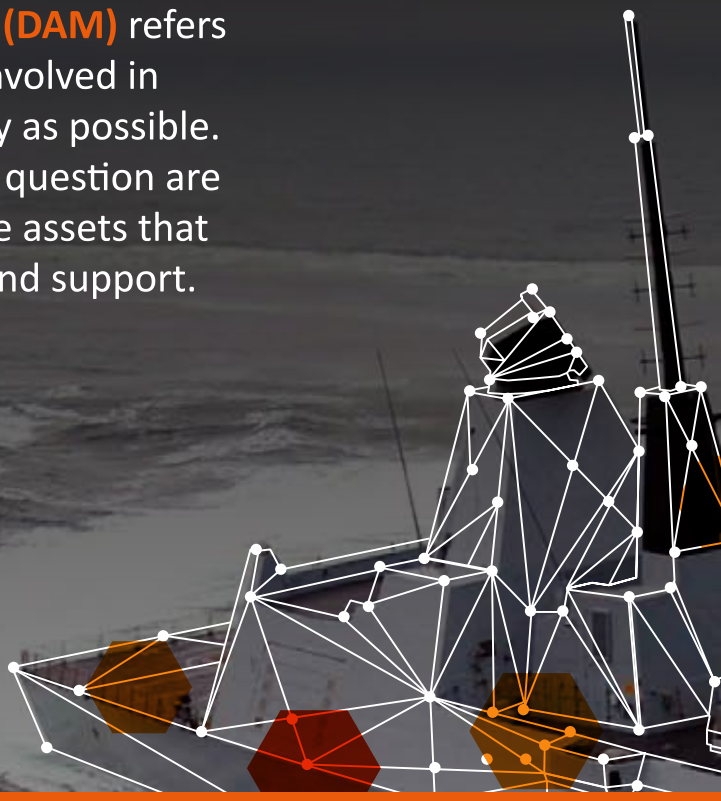
Shining the spotlight on Asset Management in Defence

Digital Intelligence

BAE SYSTEMS

Introduction

In simple terms, **Digital Asset Management (DAM)** refers to the applications, data and technologies involved in managing assets as efficiently and effectively as possible. Within the context of Defence, the assets in question are typically large, highly complex and expensive assets that generally require specialised maintenance and support.



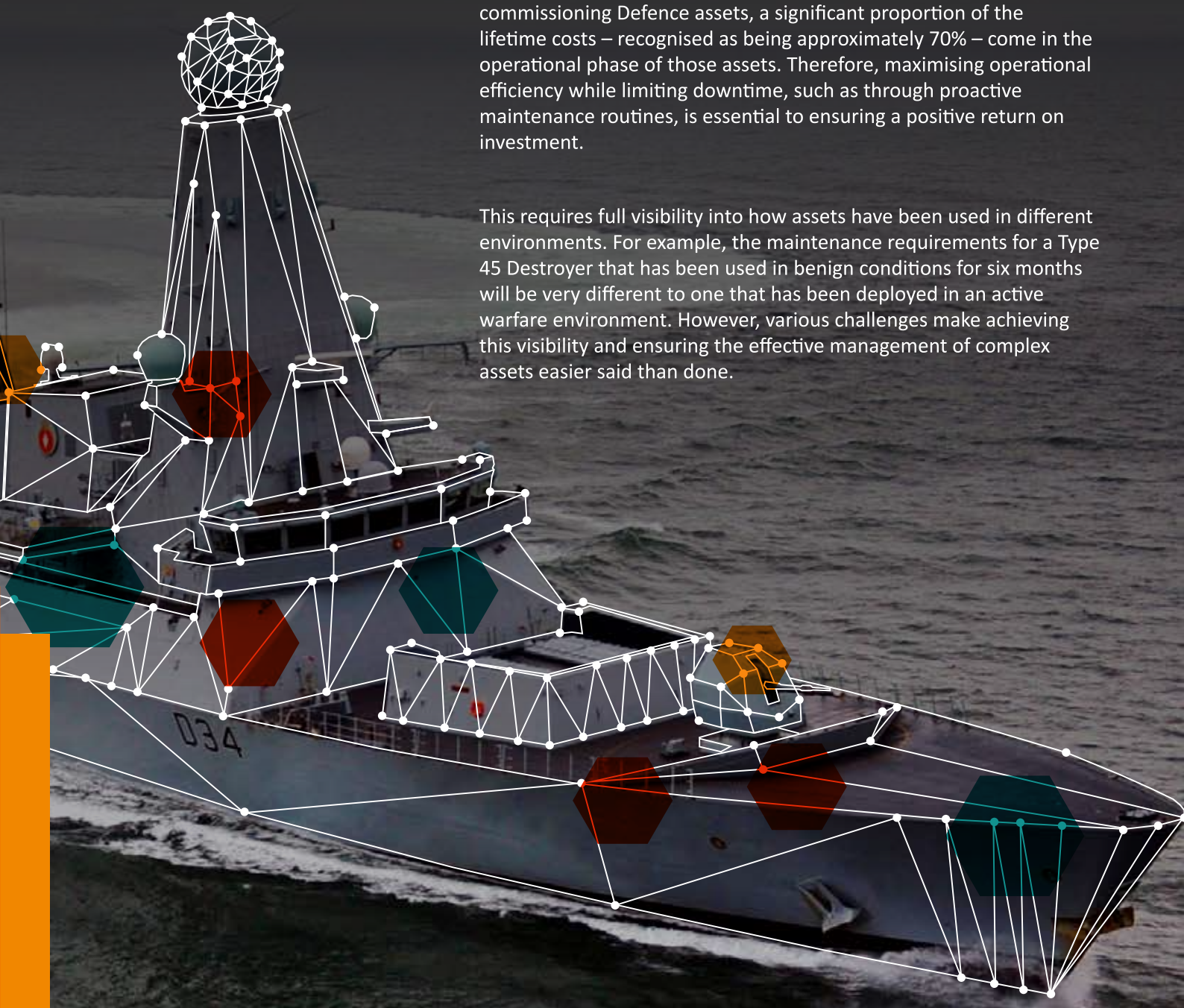
The digital element refers to the way those assets are managed, rather than the assets themselves. After all, at the core of effective asset management in Defence is data. The structure, quality, control and accessibility of that data provides the bedrock against which the complex processes of delivering engineering support and maintenance can be done quickly, efficiently and accurately.

The right data provides an ability to understand the material state or the configuration status of those assets and platforms, enabling users to answer critical questions such as:

- Is the asset/platform healthy and operational?
- Are there elements on that asset/platform that I need to worry about or risk manage?
- What can I do to improve the availability and/or affordability of a particular asset?

There are several reasons why asset management and integrated product support should be seen as a priority for Defence leaders. Along with increasing availability so that assets can be deployed when and where they are needed, the most prominent is arguably cost. While there's usually a high capital investment involved in commissioning Defence assets, a significant proportion of the lifetime costs – recognised as being approximately 70% – come in the operational phase of those assets. Therefore, maximising operational efficiency while limiting downtime, such as through proactive maintenance routines, is essential to ensuring a positive return on investment.

This requires full visibility into how assets have been used in different environments. For example, the maintenance requirements for a Type 45 Destroyer that has been used in benign conditions for six months will be very different to one that has been deployed in an active warfare environment. However, various challenges make achieving this visibility and ensuring the effective management of complex assets easier said than done.



Industry challenges

When we analyse the current state of the asset management technology ecosystems across the Defence industry, several key issues become apparent.

The first is fragmentation. There are typically a multitude of systems managing different assets and sitting across different parts of the ecosystem, resulting in a distributed set of information that is not orchestrated as a single view of the truth. Generally, this is because individual teams tend to buy systems to address specific problems or to meet a particular need, rather than taking a 'through life' approach to an asset.

Separate teams commission different systems that can't always communicate with each other, resulting in siloed data and a lack of visibility across assets. In such a complex environment like Defence where complex assets are constantly generating data across different time zones and geographies – not to mention the fact that multiple organisations will likely be providing information about the sub- elements of these assets – users will never be able to generate a holistic view of the information.

This also translates into cost efficiency – or a lack thereof. Defence organisations are constantly under pressure to ensure value for money, specifically optimising their through-life finance with regards to ongoing maintenance and support. In order to optimise through-life costs, users need to tap into data with the appropriate engineering expertise to identify cost drivers and gain insights into the optimal utilisation of their assets.

Without a digital thread connecting their assets and systems, this is simply not possible. Multiple systems deliver a limited scope of output that does not correlate to the full integrated asset support picture – negatively impacting cost efficiency over time as users aren't in a position to optimise their through-list costs.

Asset management challenges in Defence:

- Fragmentation
- Data silos
- Poor cost-efficiency
- Limited visibility

We must also consider the characteristics of the data itself. As well as connecting disparate datasets, understanding how to maximise the value of assets requires the right scope and quality of data. Organisations often either have too much data that they don't know what to do with, have data that is corrupted, or aren't collecting data in the right format. The challenge with realising asset performance improvements is that it can't be achieved without quality data in a standardised format.

In a Defence context, failure to address these challenges could be significant. This could range from a major asset malfunction to the complete unavailability of an asset, for example if it required some unexpected maintenance. Or the obsolescence of a platform may get mismanaged to the extent that a certain component is no longer available, thereby resulting in even longer downtime. Not only could this leave a military unit operationally vulnerable, but it will also lead to additional costs.

Ultimately, it leaves users having to work in a reactive way with a focus on recovering assets, rather than managing them proactively. The whole concept of proactive asset management is about understanding where the risks are and what can be done to ensure timely interventions that save resources and money in the long-term.

The role of tech

The good news is that digital solutions blended with engineering expertise can help solve the various challenges facing Defence. For example, the right asset management tool can bring a web of systems and organisations together in a way that enables proactive asset management. So, rather than multiple teams relying on point solutions for specific problems – leading to separate, disconnected data repositories – users get a holistic view of the information they need to deploy assets more efficiently and effectively throughout their lifecycle.

While this has always been important, the idea of optimising capability has taken on a new-found significance in recent years with the growing prominence of Multi-Domain Integration. The ability to achieve an effect or deliver an outcome through multiple assets comes with a requirement to integrate the management and operation of those assets.

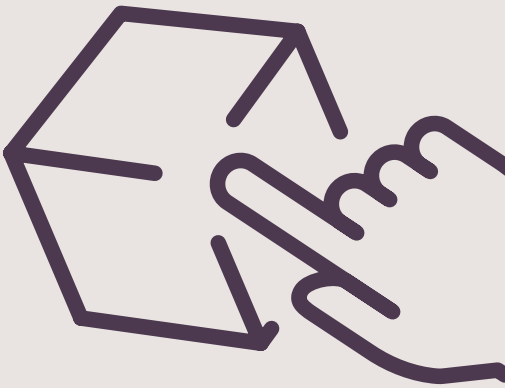
The right asset management solution can also provide important modular capabilities. When Defence organisations buy a new asset, the lifespan might be 30 years but requirements will constantly change. That's true across all the Defence domains. This presents a need to evolve and reconfigure assets as part of an overall infrastructure depending on how they are being deployed – e.g. a humanitarian mission vs a conflict operation. In today's world, Defence assets can't be rigid; they must be able to quickly adapt to situational requirements.

Finally, technology can be used to support humans and empower them to make better decisions through AI and data insights. There's a hunger for data-informed decisions across the Defence landscape but, because of the scale involved, humans can't do it all themselves. AI technologies empower users to create effect – to understand which assets are best placed to achieve an objective – either through real-time analytics or through autonomous capabilities as part of a multi-domain connectivity approach.

Clearly, digital innovation is enabling Defence users to work in new ways. Even something as relatively simple as implementing cloud-based services can have a significant impact – in the context of asset management, connecting information to provide a more dynamic means of operating. The key is to provide technologies that enable better outcomes, supporting both the individual user and the broader Defence objective.

Why choose BAE Systems?

Our key differentiator is the deep domain knowledge and experience our teams possess. We understand the unique integrated product support requirements of the Defence industry – specifically the need to manage the lifecycle of highly technical assets and maintain deployment readiness. We know this is a complicated challenge, but our teams are adept at unlocking data in a way that makes it visible to key stakeholders across the Defence ecosystem rather than being locked in silos.



> "Prophesea is a flexible plug and play suite of integrated support-focused applications assembled to the customer's scope in a way that meets their specific requirements."

This is what we enable through our Prophesea product. Prophesea is a flexible plug-and-play solution that can integrate with existing systems and, more importantly, provide a truly connected view across an existing infrastructure. Users simply plug Prophesea into the systems or capabilities they already have in place, supplemented by additional functionality, to construct a digital thread across their operations without requiring a multitude of new systems.

This enables Defence customers to maximise the value of their assets by providing much-needed intelligence and visibility through a sea of data – thereby increasing availability and reducing costs of their most critical assets.

What's more, Prophesea's modular nature allows customers to select the support capabilities or applications required to deliver maximum value based on their requirements. We give customers the flexibility and ability to decide what's plugged into the core offering.

Ultimately, when thinking about asset management in the context of Defence, the vision is clear. A single version of the truth, spread across an integrated and common set of systems that enable data-led decisions to be made. This is what will increase the availability – and confidence in the availability – of assets deployed in military scenarios to the benefit of the soldiers on the ground and nations as a whole.

We are Digital Intelligence

BAE Systems Digital Intelligence is home to 4,800 digital, cyber and intelligence experts. We work collaboratively across 16 countries to collect, connect and understand complex data, so that governments, nation states, armed forces and commercial businesses can unlock digital advantage in the most demanding environments. Launched in 2022, Digital Intelligence is part of BAE Systems, and has a rich heritage in helping to defend nations and businesses around the world from advanced threats.

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