



Emerging technology behind the scenes of defence

The world's defence and aerospace organizations are seeking greater mission-readiness for their complex assets. What challenges do they face, what digital solutions can help and how can they deploy complex asset management most effectively?

Complex asset management challenges

With data generated from numerous assets across different time zones and geographies, the challenge of effectively assimilating and acting on that data is significant.

Data fragmentation and working across silos creates:



A lack of interoperability between systems



Disconnects that delay decision-making



Gaps for exploitation



Challenges adhering to evolving regulations and mandates

82%

Agree access to the right data is critical to ensuring complex assets are mission-ready

81%

Feel that preparing their physical assets to be mission-ready is stressful for their teams

48%

Are implementing tools for managing complex physical assets, but lack consistency or scalability

only 12%

Say they consider their stage of asset management as either 'advanced' or 'optimized'

The top challenges experienced as a result of not effectively managed complex physical assets via digital solutions

- Failing to meet regulation, quality standards and/or standard operating procedures (28%)
- Decreased customer and/or stakeholder satisfaction (28%)
- Cost repercussions (26%)

The top concerns influencing the investment in digital solutions deployed to support asset management in complex defence environments

- The inability of systems to talk to one another, preventing information moving seamlessly (40%)
- Ensuring compliance with strict regulatory requirements for data management (35%)
- Data generated being too much to manage and a lack of data standardization (20%)

“ Defense organizations face specific data challenges. It's not just about bringing data together, but in terms of data aggregation, if you are to have a single source of truth around assets, that solution must be trusted, explainable, safe and secure.

Darren Nice
Head of Mission Applications, BAE Systems

Identifying digital solutions for defence and aerospace

What digital solution are organizations already looking into to better manage their complex physical assets and what capabilities are they looking to unlock?

As part of their complex asset management strategy, organizations are already adopting digital solutions. Existing deployments include:

26%

Standards-based technologies

24%

PLM/ERP

24%

Condition-based monitoring systems

24%

Advanced simulation and monitoring tools

24%

Big data and advanced analytics

82%

Confirm that leveraging AI is at the forefront of their digital strategy

“ AI is most useful when it is deployed alongside a robust and integrated set of data and within a decision-making chain that continues to prioritize human expertise. We are seeing the rise of intelligent autonomous systems, for example, that can collaborate to interpret data.

These can help to improve mission planning and coordinate action because they allow decision-makers to get the crucial information faster.”

Dr Edward Jackson
Director and Co-Founder, Oxford Dynamics

The main capabilities organizations are seeking from digital solutions to ensure the mission-readiness of complex assets

28%

Hygiene supplies on-board for crew/employees

55%

Full knowledge of maintenance programs and requirements

32%

Having the correct levels of food and drink for on-board crew/employees

21%

Access to data about the asset

33%

Having the correct levels of fuel

The most sought-after benefits of investing in digital solutions for complex physical asset management by country



More efficient supply chain mgmt. and traceability



Enhanced decision-making



Easier compliance with regulations



Cost savings/efficiencies



Improved system reliability

What would most help their organizations' complex asset management by country



Better interoperability with existing infrastructure



Improved data integration across multiple systems



Enhanced predictive maintenance capabilities



More user-friendly interfaces



Stronger cyber security and data protection measures/enhanced predictive maintenance capabilities



AI-driven analytics for smarter decision-making



Better interoperability with existing infrastructure



More user-friendly interfaces



Better interoperability with existing infrastructure/stronger regulatory compliance and risk management tools

“ A lack of interoperability is not only a system related challenge, but also a trust and access issue... In a military context, information is decision advantage, so users need to have high-quality information about their equipment in order to plan/assure their missions.”

Simon Pettersson
Director Industry Vertical Defense, eurostep

The future of asset management

Organizations across land, sea and air are aware of the challenges of failing to digitize, but also the challenges of implementing new technologies if not guided correctly

What do organizations see shaping the future of complex physical asset management via digital solutions?



High-profile cyber attacks



Regulatory compliance and government mandates



Supply chain vulnerabilities



Increasing reliance on interconnected systems

The future is dictating organizations' ambitions to enhance levels of:

- Interoperability
- Compliance
- Security
- Health and safety
- Communication
- Supply chain management
- Autonomous and AI-driven solutions

80%

Agree that complex asset readiness is crucial to navigating geopolitical tensions

83%

Agree that managing assets effectively through non-digital means is too complex

66%

Of organizations are planning to invest more into digital solutions for complex asset management than previous years

only 8%

Say that they are fully utilizing complex asset management via digital solutions currently

“ While we have digitized (military) processes into zeros and ones, we haven't actually 'digitalized' them—but that shift is happening and modern systems are breaking that paradigm. This is a step change for defense—one for which we are starting to see a new appetite.”

Chris Morton
Global Industry Director, Aerospace and Defense, IFS

What do organizations consider to be most important when looking for a digital solution to manage complex physical assets (in order of priority)?

1

Simple integration with existing systems/applications

2

Advanced analytics and reporting capabilities

3

Compliance with regulatory requirements

4

Integration with IoT and real-time monitoring

5

Global support and deployment capabilities

6

Enhanced collaboration tools

7

Customizability

8

Vendor support and reliability

9

Open architecture/standards

10

Futureproofing and adaptability

Make complex assets mission-ready

METHODOLOGY

BAE Systems surveyed 540 decision makers in defense and aerospace from the UK, Canada, Australia, Sweden, Denmark, Norway, Japan, France and the Kingdom of Saudi Arabia about their perceived level of mission-readiness when it came to complex asset management, and their plans for further digital adoption.

Who can guide you through these critical adoptions? To learn more about the results and how BAE Systems deliver integrated product support across an asset's entire lifecycle, take a look at the full report:

READ THE FULL REPORT HERE >