The technology advantage

Applying proven technologies across your defence engineering programmes can deliver extensive time and cost savings.

Digital technologies, including automation, robotics and AI, are unlocking significant efficiency gains across complex defence engineering programmes. This five-point agility guide looks at how these cornerstone technologies can be applied to both new and existing projects to accelerate your critical path safely, securely and cost-effectively.

#1 Digitalise data to optimise efficiency across the value chain

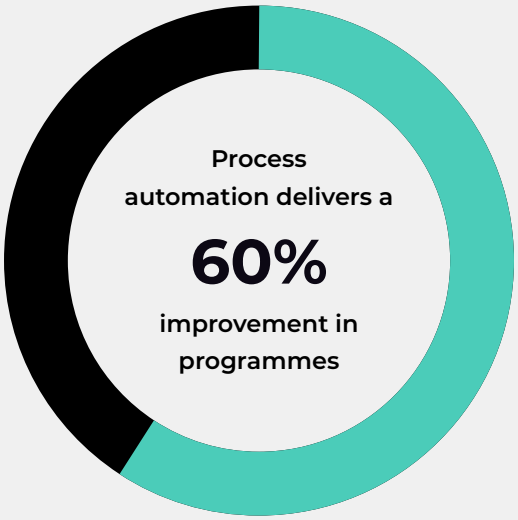
Digitalisation of data is key to delivering value and improving performance at all stages of your defence project – from design and engineering through to manufacturing and support and maintenance. Big data analytics is critical, extracting value from stored data to enhance the quality and integrity of decision making, as well as identify time and cost efficiencies. Organising data in dedicated configurable directories with an automated advanced search tool ensures lessons are learnt from non-conformities, or when modifications are needed, improves quality and effectiveness. Data consistency supports digital thread capability throughout the value chain.

#2 Automate repetitive tasks and streamline workflows

Process automation for manual and repetitive tasks delivers significant programme improvements, up to as much as 60% according to Expleo. Rules-based processes with digital, structured inputs and those with high transaction volumes benefit from automation, such as robotic process automation (RPA), optical character recognition (OCR), process mining, analytics and AI solutions. These technologies are a critical route to reducing project costs and also refocus a scarce engineering resource to where it can add value.

#3 Analyse current configurations for improved quality and cost savings

Optimise complex production processes by analysing existing automation configurations to identify incremental gains and improve decision making. Cobotics, the interaction of humans and robots, may not be fully integrated on manufacturing lines, and by adding sensors to robots, efficiency can be measured and adjusted. Apply new solutions, such as machine learning, to fine tune processes, support continuous improvement and agile working methodologies.



#4 Apply scalable digital modelling and simulation technologies

Take advantage of the latest modelling capability to optimise project outcomes and reduces costs. Using simulation and digital twin technology, scalable representations that take into account relevant environmental influences can be modelled using different digital-based specifications to define optimal performance parameters at every development stage. Simulation models can be deployed for synthetic evaluation and training systems and are a sophisticated and efficient tool to accelerate modernisation.

#5 Access next-gen technologies to future-proof projects

Accessing cross-industry expertise and embracing disruptive technologies developed outside defence can be hugely beneficial to defence projects. Artificial intelligence (AI) is already being utilised successfully in the development of new materials and its ability to deal with large amounts of data can be used for advanced analysis to identify improvements. As connectivity opens up new defence communication and infrastructure possibilities, technical expertise in collaborative and autonomous defence technologies will be game changing.

About Expleo

Expleo is a global engineering, technology and consulting service provider that partners with leading defence organisations. Through cross-industry fertilisation and advanced digitalisation, our security-vetted people help you reshape your R&D, engineering and production approach to deliver complex defence projects faster and more efficiently.

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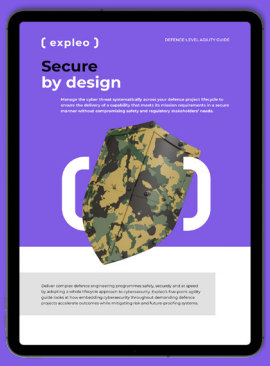
Agility guides

Download Expleo's agility guides below and learn how our supported, secure and technological interventions increase project visibility and efficiencies.



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