

**DISRUPTIVE TECHNOLOGY
FOR DEFENCE TRANSFORMATION**

IN PARTNERSHIP WITH



DIGITISATION IN DEFENCE



Defence agencies worldwide are adopting automation, cloud, artificial intelligence, and data analytics to form the IT backbone of their modernisation initiatives across weapon systems, personnel, and strategy. However, agencies are over-allocating resources towards maintaining and trying to modernise their existing legacy infrastructure. This is failing to seize the opportunity facing them. Complex and inflexible legacy software needs to be replaced to unify siloed data and exploit the efficiencies innovative technology like automation with low-code can offer.

Looking specifically at the U.S. Department of Defence, its agencies are transforming their IT environment with flexible and rapid next generation low-code technologies that increase efficiencies and build agile, adaptive platforms that can rapidly adjust to changing requirements at low cost. This frees internal processes to be routinely optimised for performance, rather than being compromised and restricted by inflexible hosting technology. Mind-sets and expectations need to change. If hosting technology can't rapidly

'shape-shift' to stay tightly aligned to operational requirements, it's the wrong technology.

Modern agile intelligent automation technologies connect data across complex system environments, improving accuracy and integrity. This helps power better, faster, and more proactive decision-making, while delivering exceptional experiences to the end-user - whether that's an administrator, manager, or war fighter. By leveraging the collaborative power of innovative technology and exploiting the rapid access it provides to more accurate and relevant data, agencies improve 'insight-decision-action-effect' process cycle times, improving current capability deployment, and performance, and future capability planning with more accurate, timely, relevant robust data delivered by technology that integrates disparate data environments and systems, fusing and surfacing complex information into a single 'agility layer'.

Digitisation of Defence has gathered significant pace as methods of creating and analysing big data have become more accessible and feasible with data analytics and artificial

intelligence. The rise of digitisation is fueled by the emergence of agile, enterprise-grade, low-code and automation technologies alongside other digital revolutions occurring throughout industry and the defence sector (secure cloud for example). These technologies are bringing together the advantages of having a tightly customised solution but with all the benefits of commercial-off-the-shelf (COTS) - for example, delivered rapidly and being well supported. Technology has entered its 'beyond COTS' era and it is opening up transformative new ways to do business.

The challenge for defence is how to purchase that the existing tightly regulated and increasingly out-of-step defence procurement processes fail to provide the opportunity for buyers to engage and assess the unique value these 'beyond COTS' technologies bring. Their custom-built nature requires collaborative waterfall development at every stage - including building proofs-of-concept and 'demos', which doesn't fit with the 'show me your solution' model of COTS procurement.



GOING DIGITAL

The opportunity available to defence agencies, once grasped and engaged, is substantial. The replacement of manual processes with enterprise-grade low-code technologies permits a streamlined approach to contract writing as more decisions are automatically taken by software. With the aid of central IT dashboards, rules-based logic, and acquisition suites, organisations can arrive more efficiently at a contract that takes into account organisational processes and limitations in a far greater scope than humans. Digitisation combined with automation allows organisations a higher degree of responsiveness and efficiency, this includes government operations.

Traditional budgeting practices in the defence organisations around the world are too ponderous for the responsive needs of Defence. US Army CIO Raj Iyer mentioned in the C4ISRNET webcast: "Given how lengthy our budget cycles are, right now we're at the beginning of our planning and programming for [Program Objective Memorandum] POM 24, which is our

funding, our budgeting year that starts 2024." The lack of responsiveness means that forces rely heavily on foresight: "If we don't get our priorities in there and the right programs and initiatives, then it's very hard for us to make changes, given how inflexible the process is later in the out years."

Government source election can be improved through the application of Polarised Integration of Artificial Intelligence and Robotic Process Automation. The opportunity to improve has not gone unrecognised among some circles. In the U.S. Army's digital transformation strategy, for instance, the Chief Information Officer has outlined the transformation of the budgeting process as the top priority for the next two years.

Released on the 20th of October 2021, the strategy aims to synchronise the Army's technology modernization efforts and better posture it for multi-domain operations. Ultimately, it is intended to help the service do business differently, enabling greater collaboration with industry, coalition

partners and even intergovernmental partners to modernise its digital enterprise.

Past experiences have also re-emphasised the need for more responsive data techniques in the field of operation. Referring to the 2021 evacuation of Afghanistan, Iyer mentioned "For all of you that were following how hard it was for us to understand how many U.S. citizens were still in Afghanistan and how many had gotten out and where they were, that all speaks to a data challenge, nothing else. But we struggled with the data."

The value of responsiveness in an operational context has been noticed throughout the US government. "The government is beginning to integrate these data streams and sources into mission-critical operations like Afghanistan, which five years ago never would have been thought of." It is clear that "insight superiority" will play a significant role in equipping the forces for their operations.



THE NEED FOR NEW IDEAS

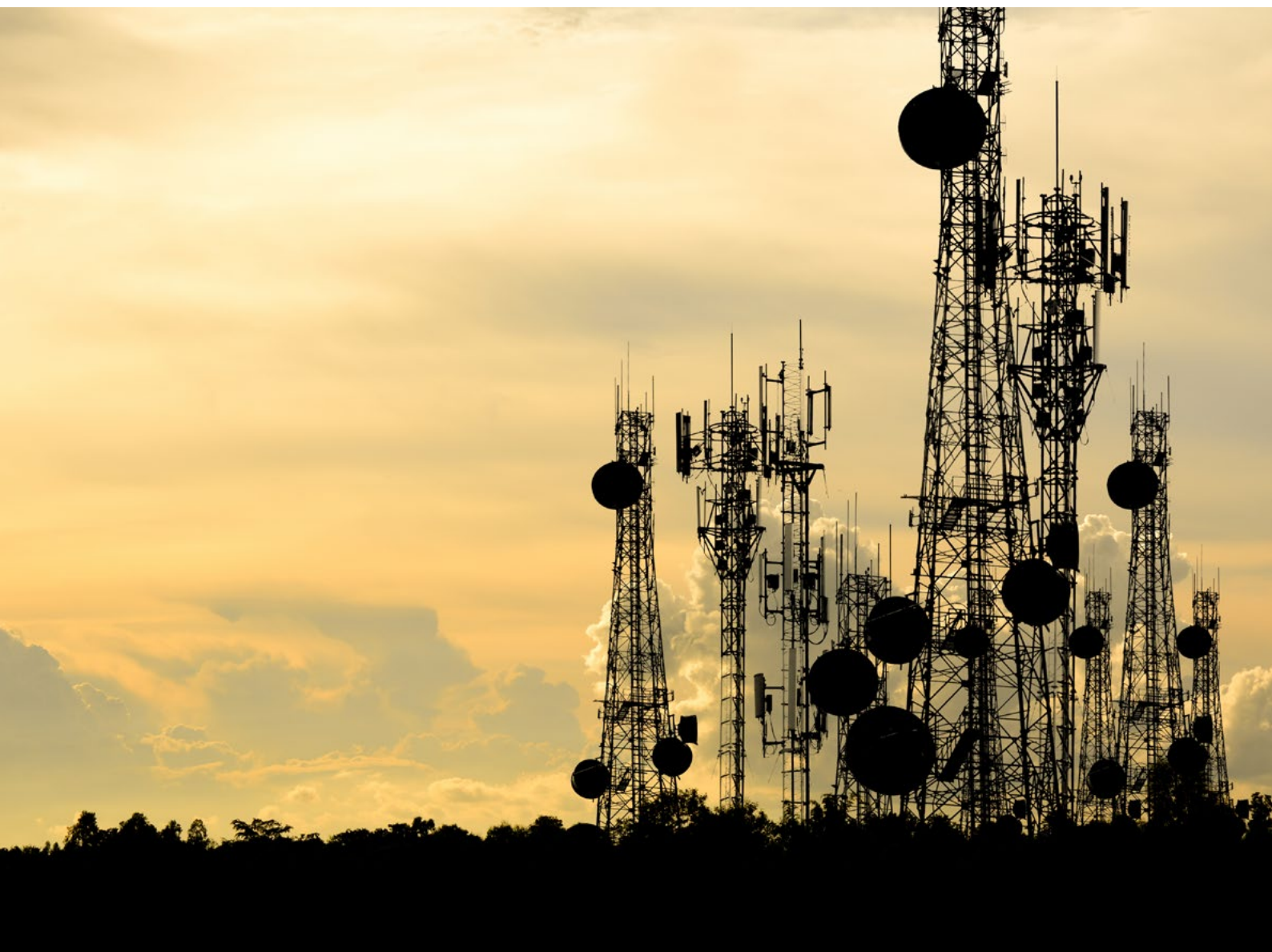
Created to equip the armed forces with information superiority over its adversaries, the U.S. Defence Information Systems Agency (DISA) recognised gaps within the efficiency of its procurement process.

DISA's previous approach to procurement was hampered by separate manual checklists outside of the system, separate log-ins to all subsystems, and contract documents that were manually edited by contracting staff. DISA "needed to improve efficiency and drive automation in its procurement processes. The agency wanted increased collaboration through a single web-based system for customers, contractors, and

administrators to manage all pre-award, award and post-award activities".

To achieve greater efficiency, DISA created the cloud-based and mobile-enabled Integrated Defence Enterprise Acquisition System (IDEAS). At the time of its deployment, the system was the largest and most comprehensive BPM-based acquisition management solution in the United States Federal Government. IDEAS connects procurement operations, systems, and DISA personnel (including over 300 Contracting resources) in a single end-to-end procurement solution that manages all aspects of procurement work from pre-award to award and post-award activities. ⁽¹⁾

Since going live, "IDEAS has processed more than \$1.7 Billion in contracts, covering more than 36,000 procurements requirements and producing more than 38,000 contract actions. IDEAS has replaced 12 separate legacy systems, streamlining the work and the work experience for procurement professionals and contractors, while also greatly reducing the agency's IT Operations & Maintenance budget." ⁽¹⁾ Built on Enterprise-grade Low-code, it is the largest and most comprehensive BPM-based acquisition management solution in the United States Federal Government. ⁽¹⁾



HIGH SPEED, LOW-CODE

The United States Air Force's senior leadership has set a goal of shaving a collective 100 years from the schedules in the service's acquisition programmes. The Air Force has achieved significant early success with Low-code software development. It resulted in some application development projects that formerly took years, to be deployed in weeks or months. (2) The Air Force's Contracting-Information Technology (CON-IT) programme is a model for successful digital transformation in the Department of Defence (DoD).

Like DISA, the US Air Force built its CON-IT programme on a low-code platform. The system was deployed in fewer than 9 months and processed more than \$15B worth of contracts in 2021. The CON-IT programme's success was such that the initiative will "migrate all of its contracting offices to a single contract management system. The application will eventually replace seven legacy contract writing systems"⁽²⁾.

Standardising acquisition contract writing across the Air Force through CON-IT "is expected to drive efficiency for the acquisition and contracting communities, reduce costs, and enable fast functional enhancements and statutory changes."

The U.S. Marine Corps Recruiting Information Support System II demonstrates the breadth of use-cases that this technology can be utilised for. It "manages the recruiting processes from the first moment with an applicant to the time they leave boot camp, with reliability, capability, and speed." The USMC's also built their future IT backbone for all their logistics business operations using the same enterprise-grade Low-code platform technology, and reduced application access time by 95%.

These examples were all built using Appian's critically acclaimed low-code technology and demonstrate the scale of organisational, operational and administrative mission-critical use-cases and requirements that low-code is suitable for. However, it is worth noting the use of the expression 'enterprise-grade'. Low-code comes from a wide variety of standards and it is in common use today as a descriptor applied by many software vendors who want to reposition their technology to stay relevant in this new market. Bolting on a low-code function to a high-code ERP or CRM system is a very different value offering to an automation platform built using Low-code from top to bottom. It pays to do your homework and to set competing solutions demanding but realistic challenges at proof-of-concept stage that demonstrate the solutions ability to meet the through-life value an enterprise-grade low-code solution should provide.

DIGITAL FORCE, TODAY AND TOMORROW

An increase in global instability, both at home and abroad, demands reactive decision making, reinforcing the urgent need to turn data into insight quickly. Digital Defence's impact on the warfighter is immense. As Iyer put it, in the past "we would have said, 'Oh let's bring the analysts and let's all sit, sit in a room together, let's pour our volumes of data and let's try to figure this thing out", he explained. "But,

recent events have shown that we don't have to wait for the future battle. Even with our current operations, our readiness is based upon how rapidly we're able to synthesise this data and use it for decision making." The value of time and efficiency offered by the digital transformation is changing the way the US fights, and should be studied carefully as a model to

follow as the UK Ministry of Defence embarks on a similar journey of Digital transformation. Anyone involved in setting, driving or delivering this Strategy can be assured that the decision advantage opportunity is significant and this will be critical in maintaining a ready combat-effective force fit for the demands of future operations.



Appian is the unified platform for change. We accelerate customers' organizations and businesses by discovering, designing, and automating their most important processes. The Appian LowCode Platform combines the key capabilities needed to get work done faster, Process Mining + Workflow + Automation, in a unified low-code platform. Appian is open, enterprise grade, and trusted by industry leaders. For more information, visit appian.com/government.

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Defence Academy
of the United Kingdom



Strategic
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MILLENNIUM GLOUCESTER HOTEL, LONDON
27-29 SEPTEMBER 2022

SPEAKERS INCLUDE



General Sir James Everard
Formerly DSACEUR
(2017-2020)
Conference Chairman



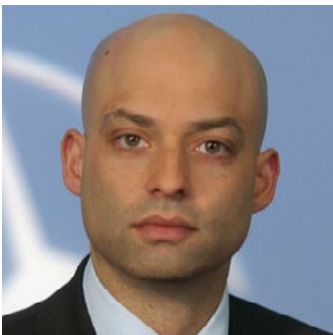
Laurence Lee
Second Permanent Secretary
UK Ministry of Defence



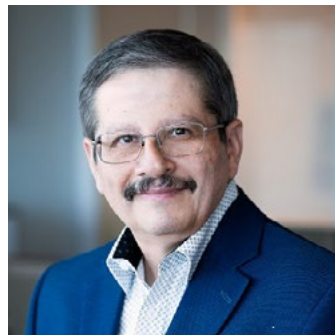
Maynard Holliday
Deputy Chief Technology
Officer for Critical
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Michael Clark (SES)
Director for Acquisition and
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**U.S. Cyber Command
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James Appathurai
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Sami Khoury
Head, Canadian Centre for
Cyber Security
Canadian Government
(Subject to final confirmation)



**Lieutenant General
Michael Vetter**
Head Cyber and Information
Technology Division
German FMoD



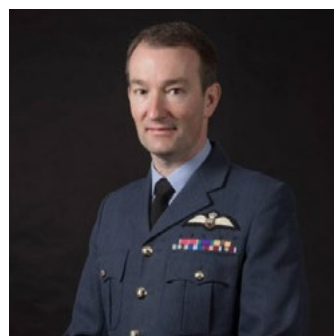
Air Marshal Ian Gale
Director General, Joint Force
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**Air Marshal (Ret'd) Sir
Christopher Harper KBE RAF**
Former Director General
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Director of Strategy and
Military Digitisation
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Head of III Department
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Italian Army