

## OTFL EXECUTIVE INTERVIEW



# Lt Gen Michael Groen

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### Author's Note

Thanks for giving us the opportunity to speak about the Department of Defense, the JAIC and advancements in AI. There is a lot of work to be done and our focus this year is helping create an integrated AI enterprise that sets up the Department to be AI ready by 2025 and AI competitive by 2027. How are we going to do that?

We now have an office, the Chief of Digital and Artificial Intelligence Office (CDAO) in the Pentagon that will streamline and enhance the efforts of the JAIC, the Chief Data Office and the Defense Digital Services; all key organizations in transforming the Department.

Beyond the organizational, we also have a really exciting initiative announced recently by Deputy Secretary of Defense Hicks called “ADA”. The AI and Data Accelerator (ADA) will help accelerate the adoption of data modernization and AI across the Department of Defense; specifically, Joint Force commanders who urgently need data and AI-enabled capabilities to achieve decision advantage.

The acronym itself is a shout-out to one of the very first programmers, Ada Lovelace. ADA is designed to generate foundational capabilities through a multi-year series of implementation experiments, each one purposely building understanding through successive and incremental learning.

ADA has three components to build an AI-enabled Joint Force: Data, Analytics, and AI Implementation. ADA begins with the data environment. Operational data teams (led by the DoD Chief Data Officer) will go to combatant commands to help find, generate, organize and curate their data. This will help them predict data flows and understand how that data is used in a crisis environment.

Building on the data environment, AI Expert Teams (AIETs) will work with the command staffs to analyze their decision work-flows. Looking at their priority use-cases, the AIETs will help identify where better decisions can be enabled through automation, data integration, and human-machine teaming. When appropriate, the solutions will be scaled vertically and horizontally to benefit the wider Joint force.

The AIETs will also begin to construct an integration layer that enables rapid additions of AI capabilities from the Services, industry and other partners. There are several other DoD partners that are going to surge into this acceleration. This set of experiments will be designed to accelerate, illuminate, and scale our digital capabilities. We are lighting the fire for a transformed set of capabilities.

**Q: What do you see as the most promising areas where AI can help DoD?  
How do you think these capabilities could help the rest of government?**

**A. Lt Gen Groen:** As we've discovered with commercial industry, AI is not just the token addition of a few algorithms to a software stack. It is actually a transformation of how we think about our knowledge environment, and how we use data and AI to make faster and better decisions. It means a whole new operating model for the way we execute our missions.

We believe scaling and integrating this capability will be transformational. This is going to help us across the board. Decision-making, battlefield understanding, logistics management, efficient management of battlefield resources, planning and simulating are all going to be enhanced.

Similarly, the ability of our force to operate with greater safety and precision will be key. Use-cases are everywhere, but they do not fully capture the transformational nature of these technologies applied to our problem sets. It is a new way of operating (informed, efficient, effective, safe) that is the real story.

Artificial Intelligence will provide significant advantage to the full-range of DoD operations, giving us an information and operational edge. It is foundational to the Department's innovation agenda, and leverages what the commercial environment has already learned.

When you think about the missions of the rest of government, you can readily see the parallels to what is already out there in industry and how any large scale data enterprise can gain from this. AI and related technologies serve as a capability multiplier across almost every arm of government—giving organizations, agencies, and taxpayers more effective and efficient services. The military applications create similar advantages.

Not everyone has to understand data science or be a coder in this modernized environment. It takes a team of operators, practitioners, technologists, visionaries and leaders.

The AI work DoD is doing has potential to benefit the whole range of tasks that governments execute. DoD missions span from healthcare, logistics, efficient application of capabilities, planning, continuous situational awareness, cyber network security and global operations on land, sea, air and space. There are parallels and lessons learned that can be leveraged across the US government.

The JAIC and DoD have partnered with many government partners on AI adoption efforts – from government working groups to operational AI efforts – including COVID responses, healthcare, humanitarian assistance, disaster relief, and fighting wild fires out West.

## Q. What has been the biggest lesson the JAIC has learned about AI?

**A. Lt Gen Groen:** That's easy, but the answer might surprise you. Successful AI adoption is not so much a technology challenge as it is a cultural transformation challenge. AI makes the Department rethink how it does business. When you look at your challenges through the lenses of data, AI and software capabilities, it opens up a completely different set of opportunities. Historically, our processes were centered on the acquisition of hardware, after a long period of requirement optimization.

Today, a growing number of our capabilities come from software. Software capability development is done quite differently, where your requirement evolves with the delivery of capability. It's a virtuous cycle of optimization and expansion. Today, as we learn to be better in developing iterative software approaches we sometimes bump into our formal processes for hardware acquisition. This is a set of cultural artifacts that we have to overcome.

To take advantage of what we see all around us, our people also need to learn about, gain the right skills for, and embrace in an AI-enabled future. The future of AI in the DoD relies on the Department's ability to build and develop a workforce for the digital era. An AI ready workforce is essential to delivering AI at scale.

This is another area of potential misunderstanding. Not everyone has to understand data science or be a coder in this modernized environment. It takes a team of operators, practitioners, technologists, visionaries and leaders to fully realize the potential of this transformative technology.

The DoD recognizes this and is working holistically to grow an AI-ready workforce. In 2020, the DoD released its DoD AI Educational Strategy that guides the education for both technical and non-technical roles, across all grades and ranks, civilian and military. Over the past year,

Each person in the DoD needs to understand why AI is vital and those that that will benefit from this transformation need to start thinking about AI implementation now.

the JAIC has led a series of training pilots for several different AI ‘archetypes’ — capturing the wide range of skills necessary to build a coherent and integrated set of capabilities for our warfighters.

That complements the great work of the individual Services, the Combatant Commands, and many others. The JAIC interacts with this broad range of stakeholders daily, and hosts annual DoD AI Symposiums that bring together the DoD AI ecosystem for several days of conversations and sessions.

Each person in the DoD needs to understand why AI is vital and those that that will benefit from this transformation need to start thinking about AI implementation now. We look at AI readiness as a core element of our national and military competitiveness. This is a high-stakes competition, and we are working fast to build an integrated and truly competitive enterprise.

## Q: How is AI helping in your Cyber Detection and Response?

**A. Lt Gen Groen:** There are obvious sensitivities around this. We see both sides of the cyber coin. On one hand, we know that AI capabilities are a target that our opponents will try to attack. We have worked diligently with multiple partners to protect the integrity of our data, training environments and algorithms. At the same time, AI is a critical tool for detecting cyber activity, identifying threats, and generating responses. For example, government cyber analysts wanted to improve their ability to detect malicious cyber activity on their network. One of our recent projects, MADHAT, was developed at the University of Maryland’s Laboratory of Physical Sciences and operationalized by the DoD. MADHAT is a software search tool that uses AI to automate network behavior analysis of IP addresses in a computer network. It greatly accelerates the discovery of suspicious activity for human analysts. It is currently supporting thousands of users, at a number of government laboratories, universities, and industrial locations.

The Tradewind consortium enables the DoD to quickly and repeatedly identify, acquire, and operationalize critical AI technologies from traditional and non-traditional companies.

## Q: How is AI helping in the Healthcare of your Warfighters?

**A. Lt Gen Groen:** The health of DoD’s military service members is critical to U.S. national security, as it impacts the readiness and effectiveness of the fighting force. The JAIC is focused on improving medical outcomes using military health data through the successful integration of AI applications.

One of the advantages DoD has in leveraging machines to assist with healthcare diagnoses are the great data repositories we have on medical records going back years. This is a gold mine of tissue samples, x-rays, medical records and other sources of data that can support both research and diagnosis. In partnership with DIU and industry, JAIC has fielded Augmented Reality Microscopes (ARMs) to ten military treatment facilities and VA hospitals.

These microscopes leverage computer vision and machine learning to help practitioners identify cancerous regions on pathology tissue slides. Fielding algorithmic tools to accelerate and improve medical diagnosis is one area where DoD really shines. But it is not just diagnosis. AI can leverage medical data to allow clinicians to predict future risk of injuries, assess risks of medical separation or ensure access to the right specialized care.

For example, we developed a tool called the Medical Evaluation Readiness Information Tool (MERIT) that matches service members' personnel and medical records against known disability and treatment timelines. It also delivers AI-enhanced business practices and clinical decision support to enable doctors to detect potential health issues.

One of the most important challenges we are trying to address is suicide among service-members. The JAIC and a multidisciplinary team of experts from academia, private technology, and data science firms are developing an AI-informed suicide intervention and prevention risk model, the Commander's Risk Mitigation Dashboard, that will improve a leader's situational awareness of when members of their team may be at elevated risk for a variety of destructive behaviors.

**Q: The private sector has been putting considerable time and resources into developing AI capabilities. How can Government partner with the private sector to capitalize on this work?**

**A. Lt Gen Groen:** It is no mystery why both the government and private sectors are investing in this exploding industry. In what is anticipated to be a \$16T industry in the next decade, there is enormous power for making lives better, making economic activity more robust and a host of other benefits. American military and economic competitiveness is rooted in American innovation, especially in AI.

Fortunately, our superb universities and fast-growing businesses are some of the global drivers of AI and AI-related technologies. It is critical that DoD leverages this expertise. AI and AI-enabling technologies are advancing at rates unprecedented in history. It is only natural that the DoD leverages these technologies for the same reasons many other industries do. Making better decisions based on data, ensuring greater productivity of our processes, gaining efficiency and effectiveness of our expenditures; all are hallmarks of a modernized Department that seeks to gain the best return on the investments made in our Service members. The ethical application of AI helps us operate safely, reliably, and responsibly.

Thankfully, we have partnered with a large number of great companies in the private sector. We have great relationships with the tech-industry majors, Defense contractors, and an ex-

panding portfolio of small innovative firms. We continue to enjoy great partnerships, and hope to expand the number of technology companies we work with.

The JAIC has created several new contract vehicles that streamline our process and make it easier and faster to acquire the needed technologies and expertise to successfully transform the Department.

The first of our vehicles, the Tradewind consortium enables the DoD to quickly and repeatedly identify, acquire, and operationalize critical AI technologies from traditional and non-traditional companies.

“Tradewind” provides market research through easy-to-use collaboration tools, facilitates agreements, provides business process that supports the acquisition cycle – from ideation to transition, and facilitates teaming arrangements built on the collective expertise of industry, academic, and DoD partners. ([www.tradewindai.com](http://www.tradewindai.com))

As AI requirements become more and more complex, there is an increasing demand for a “try-before-buy” capability for “demo testing” of existing AI solutions. “Try AI” uses a merit-based Commercial Solutions Opening approach to order demos of innovative commercial solutions, leveraging funds or access to data to enable a more robust DoD-wide awareness of potential capabilities. ■

#### ***About The Author***

**Lieutenant General Michael S. Groen** assumed his current position as the Director, Joint Artificial Intelligence Center on 1 October 2020. As a member of the JAIC team, he leads the transformation of U.S. Joint warfighting and departmental processes through the integration of Artificial Intelligence.

Prior to this nomination, General Groen was assigned to the National Security Agency and served as the Deputy Chief of Computer Network Operations, leading this premier Computer Network Exploitation organization. In 2018/2019, he served as the Director for Intelligence, Joint Staff (J2) in direct support of the Chairman of the Joint Chiefs and the Joint Staff. He also served as the Vice J2. Prior to his Joint Staff assignments, General Groen served as the Director of Marine Corps Intelligence (DIRINT) where he championed the redesign of intelligence capabilities into a Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE).