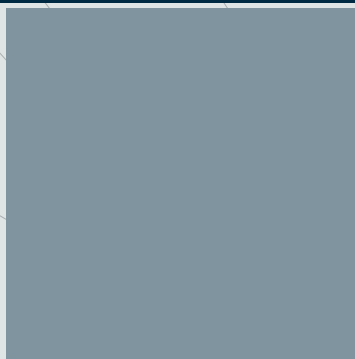


THE NEXT BATTLEFIELD ADVANTAGE: DATA AND CONNECTIVITY



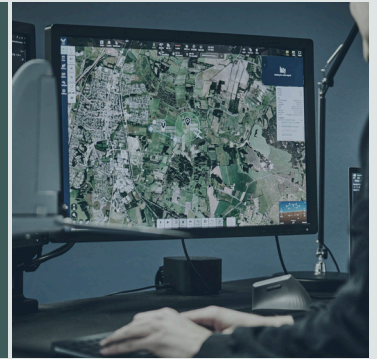
The future of drone warfare will not be won by platform superiority but by software-enabled adaptability.

A conversation with Dr. Neil Renic, a lecturer and researcher in modern conflict and military ethics, clarifies how data is now regarded as a critical military asset. And why digital readiness must be a central focus of any future force design.



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INTEGRATE OR FALL BEHIND

As warfare accelerates, strategic advantage will go not to those with the most drones, but to those with the best-connected systems. Code is now a core component of military power. Integrating software, data, and systems must be treated not as a support function — but as a front-line priority.

According to Dr. Renic 'Drones might be shaping the modern battlefield, but it's not just the hardware doing the heavy lifting'. He continues 'Behind every effective drone operation lies software: code that connects systems, accelerates decisions, and turns raw data into tactical and operational advantages.'

THE NEED FOR A DIGITAL BACKBONE

It's the software which defines whether a drone can share intelligence, coordinate with other assets, or respond in real time. And as battlefield tempo increases, these digital functions are no longer optional, they are essential.

The shift toward mosaic warfare, where flexibility, redundancy, and adaptability replace single-point systems, makes software an operational cornerstone.

For the new modular, self-healing systems to work, they must operate on a shared, digital infrastructure. In other words, the systems are only effective if they operate in sync. And that means software-defined operations, which can turn data into decisive action for:

- Rapid target identification
- Real-time situational awareness
- Coordination across dispersed units
- Compression of decision cycles

'The basic idea of mosaic warfare is adaptability. Not investing in monolithic platforms but building modular forces that can substitute and adapt.' Dr. Renic notes.

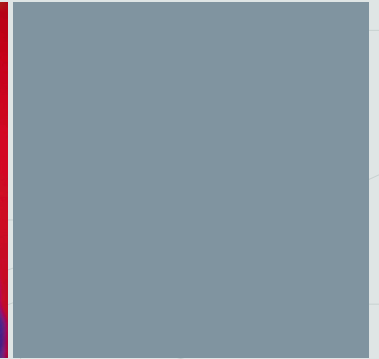
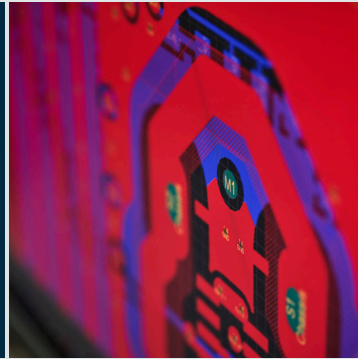
TURN VISION INTO ACTION

Today's drone systems produce an enormous volume of ISR data. But that data is only useful if it's accurate, rapidly processed, shared, and applied. In the context of drone operations, it's no longer just about what the drone sees. It's about how quickly that information travels, and how smartly it's interpreted.

'War is unpredictable, messy,' says Dr. Renic. 'Inaccurate or incomplete data, or the failure to responsibly and effectively process data, can undermine both our military performance and our moral and legal duties on the battlefield.'

One of the clearest lessons from Ukraine is that the speed of warfare has changed. Ukraine has demonstrated how effective software integration can collapse targeting cycles from 30 minutes to under 5. Algorithms now assist in prioritizing threats, suggesting responses, and triggering follow-up actions in seconds.

'The ambition is to compress and accelerate kill chains... to do things faster than the enemy can react.'



THE SYSTEM IS THE STRATEGY

Algorithms now assist in prioritizing threats and recommending responses. Functions that humans, unaided, can no longer manage at required speed. The drone is no longer the capability, only the system is. Modern drone effectiveness lies in being part of a larger digital architecture. With software connecting sensors to decision-makers to effectors, all in near real time.

According to Dr. Renic 'Software is a strategic asset. It must be updatable, secure, and interoperable because future success will not come from a platform that flies, but from a system that responds.'

Drones are no longer standalone tools — they are nodes in a larger network. Their effectiveness depends on the systems they plug into battle management systems, command platforms, data layers, sensor arrays, and fire control systems.

'In mosaic warfare, the system is the strategy' Renic concludes 'And software is the glue that holds it all together'.

As nations and defense organizations consider their next steps in drone acquisition, one thing is clear: investing in hardware without matching investment in software, data architecture, and training is a strategic liability.

ABOUT NEIL RENIC

Neil Renic is a fellow at the Centre for Military Studies at the University of Copenhagen, a lecturer in ethics at the University of New South Wales and member of the International Committee for Robot Arms Control (ICRAC). He is also the Associate Director of the Military Ethics Research Lab and Innovation Network (MERLIN) and has several publications including "Asymmetric Killing: Risk Avoidance, Just War, and the Warrior Ethos" (Oxford University Press 2020).



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