

Raven Whispers: The Need for Speed

BY JAMES SPRIET

After spending a few weeks analyzing over two dozen active Broad Agency Announcements, SBIR topics, and special notices across DARPA, AFRL, ONR, and the Naval Warfare Centers, a pattern emerges that transcends agency boundaries and service-specific language. Strip away the acronyms, decode the procurement-speak, and I found one word that defines what the Department of Defense is buying in electronic warfare: speed.

Not bandwidth. Not power. Not capability. Speed.

This isn't an abstract observation. It's a procurement reality with concrete implications for every organization competing for EW research and development funding in 2026 and beyond.

The Seven Speeds

The speed imperative manifests across every phase of the EW kill chain and the acquisition process itself.

Speed of sensing. DARPA's SMART SBIR program demands real-time RF spectrum awareness for dismounted tactical units. The Navy's N252-094 topic seeks machine learning algorithms that can aggregate signals into classes and distinguish platforms by spectral signatures on COTS processors. The requirement isn't better sensing. It's faster sensing. Pattern-of-life development that once took analysts hours must now happen in seconds.

Speed of processing. The AFRL Kaiju program, with \$150 million dedicated to cognitive EW, exists because human operators cannot process the modern electromagnetic environment fast enough to make a difference. The program's technical areas read like a manifesto against human-speed analysis: autonomous

threat classification, real-time waveform optimization, and machine cognition for spectrum dominance. When the Air Force dedicates \$44.3 million annually to a program element titled Cognitive Electromagnetic Warfare, the message is clear. Human processing speed is now a vulnerability.

Speed of decision. Navy topic N252-111 specifies sub-second RF system reconfiguration. That threshold isn't arbitrary. It represents the boundary between human and machine reaction times. DOD has chosen the machine. Autonomous waveform selection, adaptive jamming responses, and dynamic spectrum allocation all point toward decision cycles measured in milliseconds, not minutes.

Speed of effect. The Air Force's Low-Cost Payloads for Electronic Warfare SBIR topic demands coordinated EW effects from distributed platforms at scale. The target unit cost of \$10,000 per system tells the story: these are expendable, numerous, and meant to deliver effects faster than an adversary can adapt. Mass and speed substitute for precision and deliberation.

Speed of adaptation. Closed-loop learning appears in nearly every cognitive EW solicitation. The requirement isn't just for systems that respond quickly, but for systems that learn quickly. Systems that adapt to adversary countermeasures without returning to the lab, without software updates pushed from rear echelons, without human retraining. The electromagnetic battlefield of 2030 will reward systems that evolve in contact.

Speed of acquisition. The emphasis on TRL 6+ technologies, DARPA's 30-day accelerated award path, and the \$906 million flowing to the Defense Innovation Unit for commercial technology scaling all reflect an uncomfortable truth: traditional acquisition cannot deliver capability fast enough. When DARPA's Defense Sciences Office advertises accelerated processing for proposals under \$2 million, they're

acknowledging that speed of fielding matters as much as speed of operation.

Speed of deployment. The universal demand for COTS hardware, SOSA-compliant architectures, modular open systems, and commercial 5G integration serves one purpose: faster deployment. Bespoke systems with custom components cannot be manufactured, integrated, or sustained at the pace the threat demands.

The Adversary Timeline

Why this focus on speed? The solicitations don't explicitly say it, but the threat briefings do: China's kill chain is becoming faster than ours.

The PLA's integrated air defense systems, counter-intervention capabilities, and electromagnetic warfare doctrine all emphasize speed and saturation. Their sensors feed targeting data to shooters in timeframes that potentially current human-in-the-loop processes cannot match. Their EW systems adapt to our waveforms faster than we can push updated threat libraries. Their decision cycles operate at machine speed while ours still pause for commander approvals.

Every solicitation I analyzed maps to closing this gap. The cognitive EW programs exist because reactive jamming is too slow. Distributed EW mesh architectures exist because centralized command-and-control is too slow. The AI/ML emphasis exists because human analysis is too slow. The affordable mass doctrine exists because exquisite systems are too slow to field in sufficient numbers.

The potential 2030 fight will be won or lost in the first hours. Systems that require human reaction time will not survive contact. Programs that cannot reach IOC before the threat window closes are academically interesting and operationally irrelevant.

Implications for Industry

For organizations competing for EW funding, this analysis suggests several strategic pivots.

Frame every proposal around time advantage. The most compelling technical approach is one that demonstrably compresses timelines, whether sensing, processing, deciding, or effecting. If your solution requires human analysis, explain why that doesn't create an exploitable delay. If your architecture requires depot-level updates, explain how that doesn't create an adaptation gap.

Design for the \$10,000 price point. The affordable mass doctrine is here. Program managers increasingly view expensive solutions as speed limiters. Slow to procure, slow to field, slow to replace when lost. The winning proposals will deliver "good enough" at scale rather than optimal in limited quantities.

Prove it works now. TRL 6+ is the new minimum. The days of winning development contracts with PowerPoint and promises are ending. Demonstrated prototypes, proven algorithms, and hardware that exists today will beat elegant concepts that require five years of maturation. DOD is buying speed, including speed to operational capability.

The Uncomfortable Truth

There is a tension in these solicitations that reflects a deeper institutional struggle. Program managers ask for revolutionary, disruptive, game-changing technology, then evaluate proposals against SOSA compliance, TRL readiness, and risk matrices designed to prevent revolutionary anything. The rhetoric wants disruption. The process wants safety.

The organizations that win will be those that deliver revolutionary outcomes through evolutionary execution. Cognitive EW capabilities implemented on proven hardware.

Distributed architectures built from commercial components. AI/ML algorithms running on certified platforms. Give them the speed they need without the risk they fear.

The electromagnetic battlefield is entering an era where human-speed operations become a competitive disadvantage. The funding landscape reflects this reality. For those who can deliver speed in technology and execution, the opportunities are substantial. For those who cannot, the solicitations will read like a language they no longer speak.

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