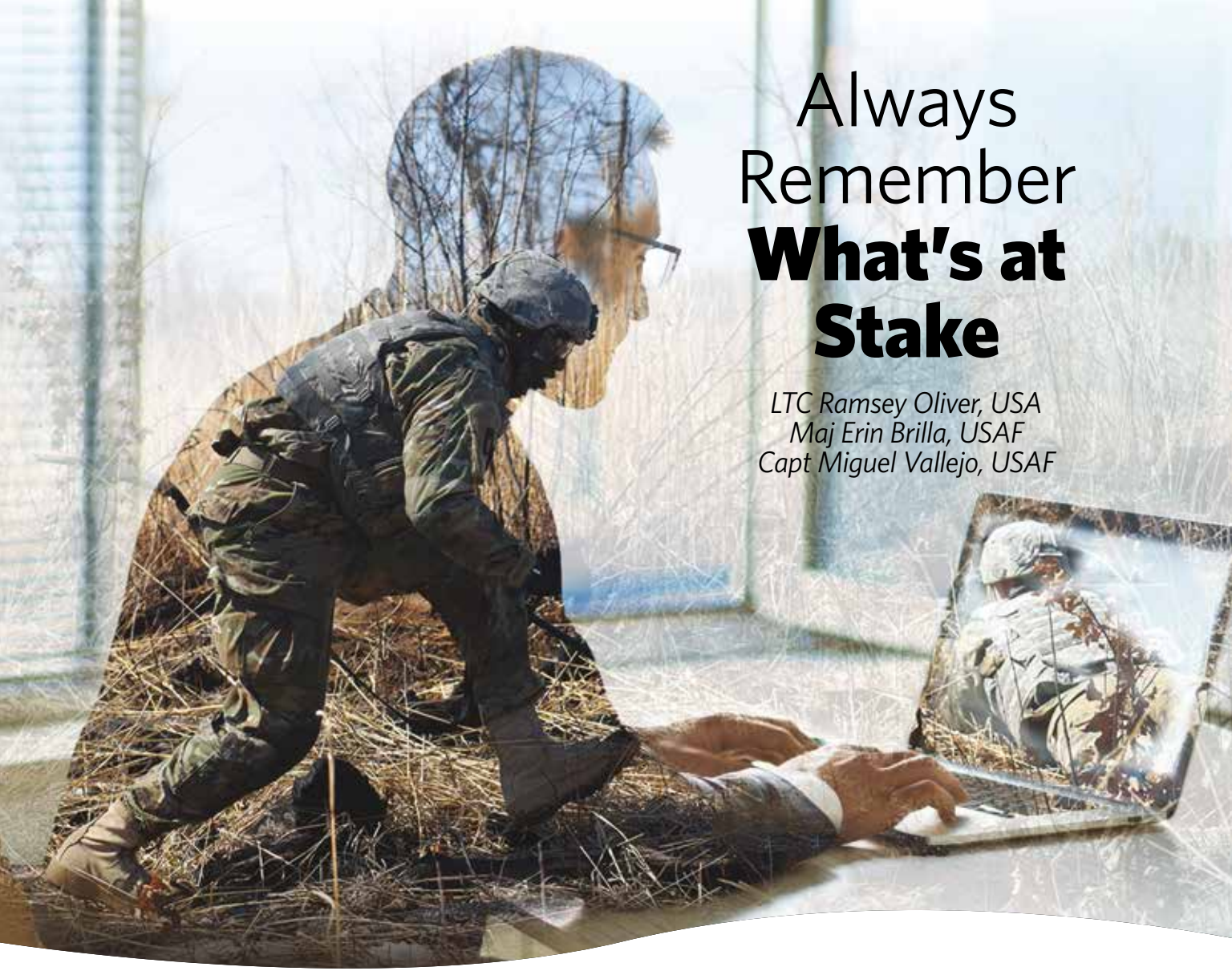


Always Remember **What's at Stake**

LTC Ramsey Oliver, USA
Maj Erin Brilla, USAF
Capt Miguel Vallejo, USAF

ACQUISITION PROFESSIONALS OCCASIONALLY ARE ACCUSED OF BEING DISCONNECTED FROM THE battlefield—fighting the good fight in cubicles, on spreadsheets and in lab simulations. This mentality can leave program offices feeling far removed from the proverbial "tip of the spear," especially when they are supporting programs that are years away from final fielding of capability or lacking a source of feedback from the field. The foundational importance of the work for the warfighter is clear; nevertheless, the close targets often become Program Executive Office (PEO) execution reviews, congressional staffer requests for information, and quick-turn budget drills. Often, all it takes is one desperate call from a soldier downrange to shift perspective, disrupting the seemingly comfortable program office tempo with the powerful reminder of the operational impacts of shrewd acquisition acumen.

Members of the Acquisition Corps often measure success in the form of obligation and expenditure rates, key performance parameters, operational tests or on-time deliveries. The end users of the product measure success in terms of enemies captured or killed, battles won or avoided, and overall mission accomplishment. At the U.S. Special Operations Command (USSOCOM), the program office is integrated and acutely aware of the impact of its contribution to success

Oliver *is the program manager for Counterproliferation in the Special Operations Forces (SOF) Warrior Systems Program Executive Office at the U.S. Special Operations Command headquarters, MacDill Air Force Base in Florida.* **Brilla** *is the SOF Counterproliferation Division Chief and* **Vallejo** *is the Electronic Countermeasures Division Chief.* *Reference in this article to any specific commercial products, process or service by trade name, trademark, manufacturer or otherwise, does not necessarily constitute or imply its endorsement, recommendation or favoring by the U.S. Government. The views and opinions of the authors are their own and do not necessarily reflect those of the U.S. Government and are not to be used for advertising or product endorsement purposes.*

or failure. This article hopes to inspire other acquisition professionals to remember what is at stake and the importance of buying smarter, to reinvigorate the critical link between "business as usual" and the "tip of the spear."

The Modi Electronic Countermeasure (ECM) system, produced by Sierra Nevada Corporation, began fielding to Special Operations Forces (SOF) in 2016. The Modi system is an Acquisition Category (ACAT) III program of record that consists of a man-portable backpack providing protection against evolving radio-controlled Improvised Explosive Device (IED) threats. As new threats emerge, new capability gaps are discovered in combat requirements, and information about them is sent directly from deployed units to USSOCOM's PEO SOF Warrior and the Counter-Proliferation (PMCP) program manager, eliminating as much bureaucracy as possible between operator needs and the subject-matter experts who can identify the solution.

In the ECM portfolio, PMCP typically is able to respond to combat mission needs nearly in real time. Think of it as "just-in-time fielding," which requires continuous updates to the Modi deployment plan and rapid delivery of each new system in response to the changing battlefield. With SOF operators embedded in the program office and requirement shops, feedback from the end users is never more than a phone call away. As new systems roll off the production line, operational needs and headquarters priorities' are evaluated continuously. and new systems are delivered to the units that need them most. For SOF acquisition professionals, there is a very intimate and immediate connection with the SOF end users' needs, its agile acquisition process structure and the empowerment and flexibility to respond accordingly.

In 2018, the Modi system was entering its fourth production cycle and the program office made a commitment to purchase 106 systems for its customers. However, when the initial proposal for the fourth production lot arrived from the prime vendor, the office was shocked to see a drastic 50 percent increase in the cost per unit over the previous purchase. At the new proposed price, it would be impossible to field even half the systems as originally promised. This was not acceptable. Any scenario that would result in a phone call to units downrange to inform them they would not receive the systems this year was a non-starter. The plan was to purchase and field 106 systems, and 106 systems it would be.

Exploiting Economies of Scale

The first step, in an effort to contain cost growth and provide maximum flexibility for future procurements, was to ask the prime vendor to provide a stepladder fixed-price structure through Fiscal Year 2021 in order to identify potential quantity price breaks and guarantee locked-in pricing for the next 3 years. With this new price structure, it was clearly possible to significantly reduce the unit cost and therefore purchase more units if there was more money to bring to the table. Like in many program offices operating under fiscal constraints, finding more money was not an option. Therefore, the program office set out to find additional partners to join the cause.

The Army already had an approved combat requirement for a new ECM capability. After conducting multiple evaluations and a face-to-face capability briefing between the Army's Electronic Attack office and PMCP, the Army committed its programmed funds toward the next production lot of the Modi system. The U.S. Marines Corps (USMC) also expressed an interest because they were invested heavily in a Modi variant called the "Modi II." The USMC was able to commit additional funds to achieve optimal economic order quantities for the procurement of band module kits. The band module kits comprise the bulk of the Modi system and cost, and are identical to those used on the USSOCOM configuration (see Figure 1).

With the collaborative success and the majority of the funding in-hand by July 2018, a September 2018 award was set and successfully executed. The Lot 4 procurement contract included a 90-day option to purchase more systems, thereby deliberately inserting even more flexibility into the overall strategy by creating an opportunity to leverage both programmed and potential fall-out funding across 2 fiscal years. Ultimately, the collaborative procurement plan corralled $156 million and fused system requirements from three major government organizations: USSOCOM, USMC, and the Army. Alone, each would have had only enough funding to procure 464 systems. Together, using collaborative buying power, the team was able to procure a total of 1,089 interoperable Modi systems and band module kits, saving more than $32,000 per system.

Improve Manufacturing

Simultaneously, PMCP met with the prime vendor to investigate the source of the drastic cost growth and determine if there were any other options to streamline costs. A series of programmatic reviews revealed to both PMCP and the prime vendor that a primary driver in the price increase was a major sub-contractor's dramatically increased operating costs due to escalating labor rates, burdens and fees—costs that were passed through to the prime vendor, and, ultimately, to the government. After numerous negotiations, the prime vendor proposed bringing in-house the Modi system's assembly and fabrication. This shift took advantage of the prime vendor's organic engineering and manufacturing facility while reducing the cost per system by 30 percent. As part of award negotiations, the prime vendor offered to make additional capital investments

in the equipment to conduct environmental stress screening to improve production reliability and throughput.

Collectively, these positive changes enabled the procurement team to reclaim affordability and increase the operational availability of the Modi system, all while maintaining a delivery schedule commensurate with mission requirements. This commitment to pursue efficient and effective acquisition principles, merge efforts with other Services, and work with the vendor to improve manufacturing processes, is a prime example of the importance of buying smart. These efforts resulted in a total cost saving of $35.4 million, enabling the procurement of more than twice as many systems and thereby meeting the operational requirements of warfighters in USSOCOM, the U.S. Army and the USMC.

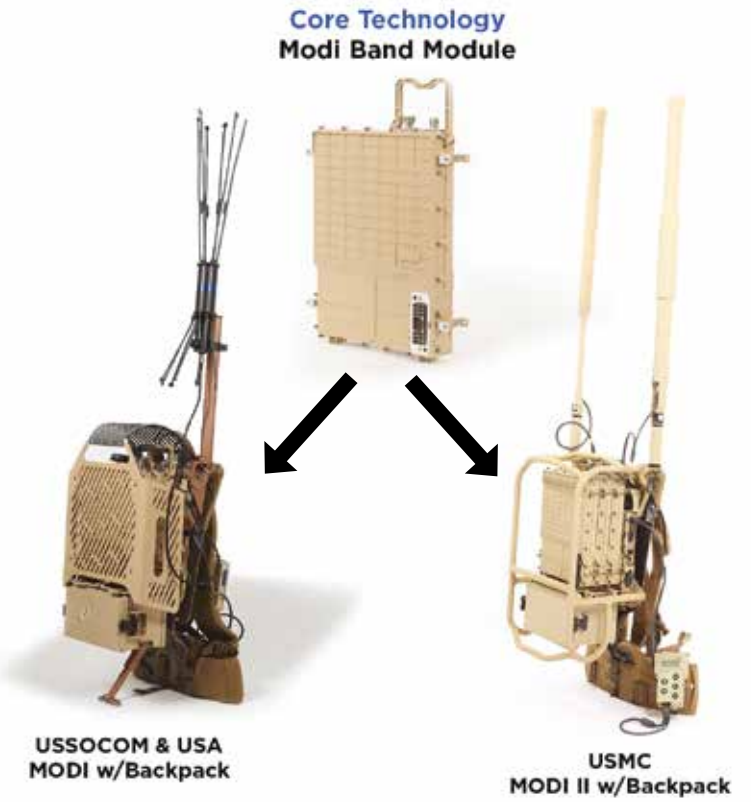
Forging Commonality and Interoperability

With that acquisition success accomplished, PMCP next conducted a thorough technical analysis of the current dismounted ECM family of systems across the three organizations to identify technical redundancies and discrepancies. Over the years, the SOF and Service-level technical requirements had diverged. By 2018, there was only 70 percent commonality of hardware and software in the currently fielded systems. This drove higher prices for technology refreshes, upgrades and maintenance. It also created significant sustainability issues in the field with noninterchangeable spare parts, software and separate maintenance technical orders. To simplify both procurement and sustainment, the Modi community needed to identify a single dismounted configuration that could be easily upgraded, swapped, transported, and maintained, regardless of who owned or operated it.

To accomplish this, PMCP arranged a working group with key stakeholders across the entire Department of Defense enterprise. This included USSOCOM, the U.S. Army, USMC, and other government organizations that use the Modi system. This comprehensive user group scrutinized the Modi hardware configurations, software baselines and the Tactics, Techniques and Procedures (TTPs) of each organization. The working group identified the "best-of-breed" solutions and fused technical requirements and operational TTPs into a single Modi baseline.

The group began by establishing a common software baseline. Software upgrades, development and testing costs could now be cost-shared among stakeholders. Furthermore, software commonality meant that the Modi enterprise could adapt, learn and benefit from the experience of any single organization or Service. For instance, one Service could develop and share a new jamming technique against emergent threat across all Modi systems with no additional development or integration costs. The program office expects that the ability to use the same software across all Modi systems will continue yielding dividends well into the future, saving millions across the life cycle of the system.

Figure 1. Current Dismounted Modi Configuration



Source of figures: Sierra Nevada Corp. for USSOCOM and USMC.

Similarly, fusion of the Modi system hardware baselines to 95 percent commonality across the SOF and Service variants further increased the system's interoperability and paved the foundation for simpler acquisition in the future. This will enable stakeholders to share the cost of replacing obsolescent parts and components, thus streamlining the overall production process and boosting each Service's individual return on investment. Merging the hardware baseline increases overall interoperability and eases sustainment in the field, resulting in significant cost-avoidance for the remainder of the Modi life cycle.

Create Competition

The above initiatives collectively created wins for both the government and the prime vendor. Manufacturing

improvements and economies of scale resulted in better affordability, while commonality and increases in order quantities improved availability. Throughout the analysis of the Modi technical baseline, the stakeholders emphasized the need to develop an open architecture approach to incentivize innovation in industry and promote competition among other vendors for both subcomponent development and future system procurement. PMCP worked with the Defense Threat Reduction Agency (DTRA), with the Modi vendor in support, to develop a government-owned design for a Software Defined Radio (SDR) module that can attach to the Modi system. DTRA developed 18 prototype modules and conducted environmental qualification, bringing the design to Technical Readiness Level (TRL) 8. As a proof of concept, DTRA has hosted and tested two major government-owned ECM software applications on this module and produced a complete technical data package ready for third party production.

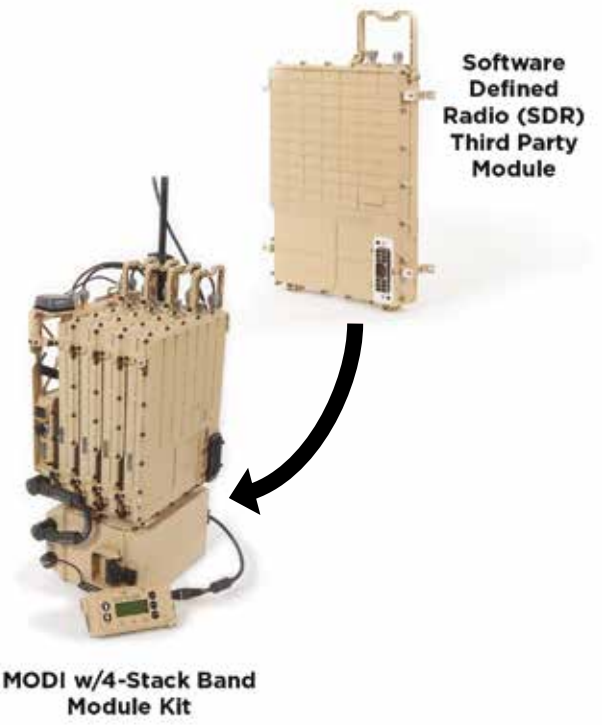
Open architecture represents a win-win-win situation for the other industry partners, the prime vendor and the government. For other industry partners, open architecture creates new competition among commercial technologies striving for government procurement and incorporation. For the prime vendor, open architecture represents a chance to explore complementing products, as the government's base platform capabilities increase the overall demand and market opportunity for a host of other supplemental capabilities and increased applications. Very much akin to what successful cell phone companies found when they allowed complementing products (i.e., third-party developed applications) to run on their platforms, SDRs offer a near-limitless opportunity for additional aftermarket products (See Figure 2).

Finally, for the government, open architecture increases the opportunity to gain additional capability for fielded hardware, facilitating the ability to rapidly incorporate emerging technologies and evolve with the enemy. In addition, the program office plans to use some of the new acquisition tools to procure this capability, including Section 804 (Middle Tier Acquisition) authority and Other Transaction Agreements to keep pace. By leveraging this government-owned/third-party vendor module, Modi stakeholders, present and future, will avoid millions of dollars in expenditures on research and development of disparate hardware platforms and be positioned to take advantage of new, cutting-edge technology.

Operational Impact

The USSOCOM 2018 award of $156 million to Sierra Nevada Corporation for Modi resulted in the largest procurement of dismounted ECM systems in the program's history. Through aggressive application of buying smarter and acquisition reform principles, the procurement team

Figure 2. Stacking Added Capabilities to Modi



identified myriad cost efficiencies, driving a 54 percent cost reduction per unit and $35.4 million total cost savings across the Modi enterprise, all while fielding more than twice the number of systems to SOF and Service operators. Fusing the hardware and software baselines resulted in commonality across all organizations and increased interoperability. From an acquisitions perspective, the team was able to procure 625 more Modi systems than originally thought possible and, as a result, will field the current operational requirement 4 years ahead of schedule. From an operational prospective, these systems will deliver to multiple forward operating bases, airstrips, communication nodes, SOF teams, convoys and remote outposts where they will save lives.

Acquisition professionals should always remember what's at stake, take advantage of the latest reform initiatives or rapid acquisition tools when it makes sense, and never allow their work to become just numbers on a spreadsheet. End users rely on acquisition professionals to deliver what they need, when they need it, and that it will perform as expected. It is up to the ingenuity, skill and resourcefulness of the Acquisition Corps to stay focused on the final objective and Buy Smarter.

The authors may be contacted through **robert.oliver@socom.mil**.