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Value from Space Assets

When thinking about Space-based capabilities and how they can help in the military effort, a quote from Albert Einstein comes to mind: “Make things as simple as possible, but no simpler.” By its very nature, Space is a realm that does not lend itself to simplicity. It is a very complex, technical environment with numerous areas to know and understand in order to put them to work for Warfighters. Understanding and applying that complicated technical knowledge, taking the complex and making the solution as simple as possible, is the value of a Space-savvy warrior.

Global Positioning System (GPS) and satellite communications are examples of intricate Space systems that have been simplified for everyday use. Many users take GPS availability for granted and often get caught short when interference issues arise, or when the GPS constellation is not positioned properly. Resolving these complex issues rests with the Space Soldier. It is their duty to understand the technical complexities and resolve them allowing the end-user to effortlessly fulfill requirements such as GPS-aided precision guided munitions. The Space community has a wide variety of tools and processes to help identify, characterize, geo-locate, predict and mitigate GPS electromagnetic interference. These same devices can be used to protect satellite communications signals as well. We must advocate and use the tools of our trade to make Space systems as simple and user friendly as possible without diluting their intricacies.

Another case in point is intelligence collected by satellites. Some may think that gathering imagery from a satellite will provide a complete answer to a question, but we know that on-orbit assets have limitations. For example, when the commander is looking for something small in a large area, he may have to make a trade-off in resolution to conduct the search. If the image is needed quickly, orbit and ground architecture constraints may prevent collection at the required resolution and processing within the time constraint. Weather and darkness may also preclude collection. There are always more collection requirements than there are collection

Simplified photo illustration of ARSST Team 3



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capabilities, so prioritization can also delay or preclude the use of satellites to support a particular requirement. It could be that the better, simpler solution may be to gather the intelligence from a non-Space platform.

Bridging

This is especially important in considering Space professionals as bridges between the commander who needs Space assets to successfully execute missions and the Space assets that enable. Most commanders understand that Space capabilities are not the solutions to every strategic, operational, and tactical situation, that they are merely combat multipliers. To make sound recommendations, we need to understand joint military operations as a whole and how the particular unit fits into the specific mission. Understanding and clearly explaining what Space system or tool is best suited for a mission, when it can be used, and how to apply it – this is the value Space professionals bring to their units.

People working in this field need to be creative and flexible in their application of Space knowledge and experience to best serve the unit. FA40s assigned to Space Support Elements (SSE) indicate that they are pulled away from their SSE planning duties to serve in Special Technical Operations cells. Since STO access is an inherent requirement for an FA40 to accomplish his mission, ingenuity will allow that Space professional to combine the STO and FA40 duties to maximize both and to bring the full spectrum of Space capabilities to the mission. As an example of this, look at the article about LTC Scott Parks on page 15. Parks’ story is an example of a diverse team of professionals from multiple disciplines that were enabled by Space-based technology integrating Space, air and ground assets to accomplish the mission.

Partnering

One of the most important partnerships within the Army has been that forged between members of the Space cadre as they sought advice, information, support, and mentoring from each other. As a result of all these actions, ground-based command-

ers have better access to Space assets and the Army has gained acceptance as a viable partner in Space operations.

Because the Army is the largest user of Space systems, but has a relatively small Space budget and is still building its cadre of Space professionals, the Army has worked, teamed and partnered with those outside and inside the Service to establish partnerships – educated partnerships – that have empowered members of the Army at all levels to advocate for Space assets and capabilities for commanders and Soldiers in the field. The Army has assigned FA40s to Space-centric organizations: the National Reconnaissance Office, National Security Space Office, Air Force Space Command, National Security Space Institute and Office of the Secretary of Defense for Strategic Initiatives. FA40s inside the Service have shown how the effective application of Space capabilities and effects can enable successful combat and logistical operations. This was accomplished by senior Space leaders talking with fellow senior leaders; sharp, qualified FA40s assigned to MTOE (Modified Table of Organization and Equipment) units working side-by-side with their combat arms brethren; Space professionals on the Department of the Army and the U.S. Army Training and Doctrine Command (TRADOC) staffs advocating Space Operations; and others incorporating Space scenarios in wargames.

From now on our partnerships with academia and the industrial base will take on added importance. As in the fiction book *Space War* by Scott, Coumatos, and Birnes, where the attacks on satellites are solved only through the involvement of commercial companies with civil and military “investigators,” there seems to be increased agreement in government circles that civilian firms are going to have to be more involved as partners, not just contractors, to help Department of Defense and the U.S. government solve problems ranging from cyber vulnerabilities and attacks to building new rockets and responsive Space vehicles. The Department of Defense’s ISR (intelligence,

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surveillance and reconnaissance) Task Force partnership with industry will be an interesting partnership to watch. The collaboration is designed to speed the development of long-duration unmanned airships that will carry ISR payloads for commanders in Iraq and Afghanistan.

Education and Experience

Formal education mixed with multi-faceted unit experiences can broaden your base and make you as a Space professional enormously valuable to your organization. As noted earlier, Space is a highly complex, technical environment and Space professionals must be as conversant with the art of military operations as we are with Space. The greater your knowledge in the field, the better your understanding, and the more able you are to advocate Space assets in an operations plan. Upon graduation from the Space Operations Officer Qualification Course or from a Space Operations Master's Degree program, education and training have only just begun. Army and civilian institutions

offer a wide variety of in-class and online programs that support continuous learning both in Space as well as military operations. Assignments in a variety of units, dealing with a variety of Space systems, and working on a variety of Space projects are another way to complement your professional growth.

Space operations should be focused on how the Space professional can most effectively bring the value of the host of Space assets to bear on a unit's military operations, how to make those systems work for commanders and their Soldiers. Space professionals can best harness the value of Space by concentrating our efforts on understanding military operations, how our unit fits into operations and how Space can enable the mission; partnering with those inside and outside the Army who can best help provide Space capabilities to the warfighters; and continuing to grow professionally.

Does all this matter?

Our Nation and its defenders need Space-savvy experts to ensure mission success and national security. Let me quote GEN C. Robert Kehler, Commander, U.S. Air Force Space Command, "Space capabilities provide intelligence that would otherwise be lost, warning that would otherwise be undetected, and communications that would otherwise be impossible. Space is no longer just the high ground; it is an integral part of the joint fight. And today, our Space capabilities are embedded in a complex of systems that serve joint forces and commanders at every level and across the spectrum of diplomatic, informational, military, and economic activities from peace through crisis and war. Operational plans and advanced weapons depend on Space, as never before and this dependence is likely to increase ..." It is the job of the Space professional to understand how to make the employment of those systems as simple as possible, but no simpler.

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— GEN C. Robert Keller
Commander, U.S. Air Force Space Command

Simplify

ROUND"



Simplified photo illustration of SGT Mark Bagwell, 1st Space Battalion