Rationale for Space Control as an Army Mission

By Ed Zehner

Terrestrial-based Space control is in the Army domain, it is an Army responsibility and, while it has not been codified as an Army mission, it clearly falls within the Army realm of operations — the Army has a specific interest in using it because it directly supports land operations. There are some who hope it will indeed be codified as an Army mission in the near future. The draft Army Space Control Mission Need Analysis lists the mission: "develop, operate, and maintain ground based Space control capabilities that support assured access to Space enablers, ensure freedom of action of Space systems and, if directed, to deny same to our adversaries."

Space control operations ensure freedom of action in Space for the United States and its allies, and, when directed, deny an adversary freedom of action in Space. Space control involves four interrelated objectives:

- Surveil Space to be aware of the presence of Space assets and to understand real time satellite mission operations.
- Protect our Space systems from hostile actions.
- Prevent unauthorized access to, and exploitation of our Space systems.
- Negate hostile Space systems that place our interests at risk.

Each of these Space control mission areas are detailed in other columns in this issue so doctrinal definitions will not be repeated here. Instead, the purpose of this article is to argue that Space control should be an official Army mission. Not only is Space control directed by the President of the United States as Commander-in-Chief of the Armed Forces, but it is necessary for Army force protection, it is needed to protect the Space force enhancement capabilities the Army is critically dependent upon, it contributes to Information Operations, and it has its own merit as an offensive weapon. This article discusses each of these reasons in more detail, but the starting point for this argument is the opening line: terrestrial-based Space control is in the Army domain. It is not only a natural, but also a necessary, fit.

Space control itself covers a wide range of mission areas, which introduces the need for variety in tools and weapons to execute it. In fact, each of the components of Space control requires at least several different types of systems to be reliably accomplished. The Space Control Capstone Requirements Document — validated by the Joint Requirements Oversight Council — calls for a range of systems to be used to provide robustness through diversity across the spectrum of military operations. The Council followed up with assessments of service satisfaction of negation and protection requirements, and consistently confirmed that a variety of tools, weapons, and methods is needed. While it did not go so far as to assign specific responsibilities to the services, the Council is clearly signaling that Space control is the responsibility of all services.

Practically speaking, tools, weapons, and methods operated from each of the domains — land-sea-air-Space — are needed to properly execute Space control. We can effect Space greatly from the ground and, in so doing, we can effect our land warfighters' environment and battlefield conditions. For example, electronic warfare has long been a part of U.S. warfighting and is recognized as fundamental to modern warfare. Space control executed against ground terminals, the communication link with satellites, or against the Space segment itself is nothing more than traditional electronic warfare.

The Army's interest in electronic warfare used as Space control is two-fold. First, the shooter is in the Army domain. Terrestrial-based Space control negation weapons are battle capabilities executed from the ground, potentially anywhere in or around the theater of operations, among soldiers, and for soldiers. Second, the targets are command and control, navigation and timing, and intelligence assets which directly

effect the adversary capability to fight effectively, especially on the ground.

Attacking such adversary assets is so significant it is recognized as a foundational element of Joint Vision 2020 and Army Vision 2010: information dominance. The upcoming revision of Joint Vision 2020 takes it one step further, calling for establishment of decision superiority by U.S. forces. Decision superiority, like information superiority, is a relative entity. Its value is based on our level of decision-making support capability relative to that of the adversary at any given time and over time. This is a function not only of keeping our information systems effective, but also of fouling adversary information systems. Space control offers a very significant way of both protecting our own and attacking adversary systems. This is as significant in the new realm of information warfare, and the need for information dominance, as guns and bullets. While this is a joint concern overall, on the battlefield it is no more critical to anyone than it is to Army land force operations. It should not be left to any other service. No other service has this fundamental interest in the success of ground operations. The Army clearly should maximize participation in, and contribution to, an effective Space control capability.

With the clear "good fit" of Space control with land force operations, it is hardly necessary to give additional reasons for Army interest in Space control. However, they are abundant and substantial so, for completeness, I will list them.

The most obvious is that national Space policy places a high value on Space control, requires the Department of Defense to develop and maintain Space control capabilities, and does not restrict this direction to any single service. This follows from the National Security Strategy which emphasizes the importance of Space and therefore of controlling Space. The National Space Policy codified in Presidential Decision Directive 49 directs DoD to develop and maintain Space control capabilities. The National Military Strategy directly calls on use of Space and on controlling Space to achieve its objectives. It clearly states the case: "Space control capabilities will ensure freedom of action in Space and, if directed, deny such freedom of action to adversaries." The DoD Space policy (DoD Instruction 3100.10) requires DoD to assure mission capability and access to Space; deter, warn, and if necessary, defend against enemy attack; ensure hostile forces cannot prevent the U.S. use of Space; counter, if necessary, Space systems and services used for hostile purposes.

The Army Space Policy says "… the Department of the Army will conduct Space and Space-related activities that enhance operational support to warfighters and contribute to successful execution of Army missions … . The Army's future is inextricably tied to Space." This is from the 1994 policy which is certain to have even stronger direction for Army participation in Space and Space control when it is updated. The historical approach has never been that satisfying these policies is necessarily an Air Force responsibility. None of the above documents assign specific responsibilities to particular services. The mission is apparently to be accomplished by the service whose domain hosts the operation or the service having sufficient interest in the effect of the operation to ensure it is properly done.

Another reason the Army should accept Space control as its own mission is for force protection. Since the first intelligence, surveillance and reconnaissance satellites were used to gather information about formerly inaccessible land areas, the high vantage point of Space has been recognized as a great military asset. Despite the secrecy of early efforts, the difficulty of eventual proliferation of enabling technologies is now upon us with a number of commercial systems providing militarily useful imagery. It is through Space control that this imagery is controlled before it can be used against our warfighters. Similarly, we might jam Galileo

The Army is the premier user of DoD Space force enhancement capabilities. These are Space-based communications; position, navigation and timing; weather; warning; and intelligence, surveillance and reconnaissance. The nature of our land force operations, including the number and dispersion of soldiers, propels us to be the premier user.

(a European position, navigation, and time constellation being considered for development) or even our own Global Positioning System timing and navigation signals in-theater to prevent adversaries from using them to communicate (the timing signal supports communication) and maneuver against us. In these and any number of other examples, Space control is used for the purpose of protecting the land warfighter.

The Army is the premier user of DoD Space-force enhancement capabilities. These are Space-based communications; position, navigation and timing; weather; warning; and intelligence, surveillance and reconnaissance. The nature of our land force operations — including the number and dispersion of soldiers — propels us to be the premier user. This is the basis for the third reason for Army interest in the Space control mission. One of the components of Space control is protection — protection of our own Space capabilities — and, since Army operations are thoroughly dependent upon Space force enhancement operations, the Army should clearly be interested in protecting them. Space control protection actions range from using encrypted satellite communication links to providing physical security for a satellite ground station to developing robust Space and ground architectures with anti-jam capabilities, spare satellites and user equipment sets, and architectures which provide system-level backups in case primary capabilities are damaged or destroyed. The Army should be especially careful to build protection measures into its user equipment and to diligently guard ground assets, and advocate investment in protection of Space-based assets as well.

Another reason for Army interest in Space control is the contribution Space control makes to Information Operations (IO). Mark Goracke's article in this issue explains the relationship between the two, and makes it clear that Space control functionally comes under the IO umbrella. Each of the components of Space control (surveillance, protection, prevention, and negation) supports Information Operations. Conversely, IO tools can be used to accomplish Space control. Computer network operations could be used to disrupt operations at a satellite control station, or to disrupt electrical power servicing a satellite control station, for example. Or, in the case of electronic warfare, an attack might be classified as Space control and IO simultaneously. This is the case for using electronic warfare to jam satellite receiver ground equipment. As the Army as a whole increasingly embraces IO, the case for doing Space control is also strengthened.

Finally, when exploring Army interest in Space control, we can not miss that Space control is an effective offensive capability, and can directly contribute to winning wars. The most obvious case involves Space control negation. If, consistent with U.S. objectives and the war effort, we destroy an adversary's satellite used for C3I, we unequivocally degrade his ability to coordinate and synchronize forces. These aren't capabilities we now have, but could with modest effort given work that has already been done with such programs as Kinetic Energy Anti-Satellite and the Mid-Infrared Advanced Chemical Laser.

Or, possibly we could jam a satellite communications link, or dazzle a satellite optical sensor so it could not "see," in any case depriving the adversary of significant capabilities. This loss of C3I or of intelligence capabilities could certainly cripple an enemy force, or at the very least cause them to lose confidence in their own capabilities, and therefore effect their resolve to continue. The ability to disrupt enemy command and control on the battlefield through Space control is not only tactically relevant, but potentially just as significant as artillery, for example, in terms of battlefield impact if applied at decisive points and times by a knowledgeable commander seeking information superiority, decision superiority, and a decisive win.

This article does not begin to detail all the ways Space control can effect Army land warfighting operations. Still, the "inextricable tie" between Space, Space control and the soldier is more than clear. Terrestrial-based Space control is executed in the Army domain, it benefits our soldiers more than any other warfighters, it is an Army responsibility, and therefore simply must be an Army mission. Furthermore, the Army should pursue this mission with the same energy and determination, the same forceful character and unabashed focus on victory, on dominance across the full spectrum of conflict, that has left a proud and compelling legacy upon which the Objective Force is being masterfully built. Space control is not some fringe capability better left for someone else. It is an Army mission.

Ed Zehner supports the U.S. Army Space and Missile Defense Command Force Development and Integration Center in Colorado Springs, Colorado. He retired from the Air Force in 2001 after a tour on the Joint Staff. He commanded two launch squadrons at Vandenberg AFB, Calif., was a satellite operator at Falcon AFB, Colo., and a Minuteman III ICBM launch officer at F.E. Warren AFB, Wyo.