

COMPARING JADC2 INTEROPERABILITY AND ORGANIZATIONAL PROCESSES
BETWEEN U.S. AND RUSSIAN MILITARY FORCES

BY

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In order for the United States (US) to maintain supremacy in all domains of warfare and outpace Russian efforts in Joint All-Domain Command and Control (JADC2), the US must prioritize vertical procurement processes in acquisition, but horizontal implementation and employment of military efforts within its democratic government to prioritize and ensure interoperability amongst all within the Department of Defense (DoD).

Interoperability, when talking about the next generation of warfare, covers a broad scope under Joint Chiefs of Staff Publication 1-02. Military leaders often only consider the Strategic, Operational, and Tactical levels of warfare and integration of systems or capabilities within their specific branch. Because of the broad and generic language used, how all of the aforementioned aspects should communicate, operate, and evolve into the 21st century was never properly dictated. Due to ambiguity and democratic bureaucracy, systems have been independently and often vertically procured and developed under JADC2 efforts with little to no regard for horizontal DoD interoperability. Russia, a top threat within Great Power Competition, is able to rapidly and efficiently dictate and develop their own version, Automated Command-and-Control Systems, meeting little resistance because of an autocratic political system and vertical acquisition and employment process.

When discussing the capability procurement and employment process, I argue two organizational approaches: vertical or horizontal. Vertical focuses on desired outcomes from a central leader or group of leaders. It is procured top-down, and disregards niche needs for particular branches, but rather focuses on interoperability across all branches. Alternatively, the horizontal approach still comes from a central leader, but is applied across, rather than down, and allows for focus on niche requirements within the respective branch. The horizontal approach is inherently biased and does little to mitigate interoperability without forcibly doing so.

Interoperability has long plagued US forces. From Grenada, where Marines and Army Rangers lacked communication due to uncoordinated radio frequencies, to the Gulf War where Navy carriers could not receive Air Tasking Orders from the Air Force due to security and protocol issues. Even today, to conduct close air support (CAS), a Joint Air-Ground Integrations Center (JAGIC) must overcome itself to mitigate C4I issues between the Air Force and Army. Link-16, a military tactical data link, is not viewable to Army counterparts. Because of this, the Army has to plot each of the enemy air defense and ground systems so that it can understand the air picture and communications over the radio. To further compound the issue, Advanced Field Artillery Tactical Data Systems (AFADS), which the Army uses to nominate targets, does not properly communicate with Air Force C4I making the targeting and CAS process incredibly difficult and slow for our Tactical Air Control Party (TACP). Concerted efforts to mitigate interoperability issues continue to reduce military effectiveness and efficiency.

JADC2 was created to mitigate interoperability, create a system to better aggregate information, and to rapidly inform all relevant players of current information within the US military. At its core, it seeks to connect sensors from all branches into a single network. In theory, the culmination of data into one place, that all branches have access to, would increase effectiveness, efficiency, and situational awareness. The DoD is so confident in the JADC2 concept, it requested \$302.3 million budget for FY2021, which was reduced to \$216.3 million by the House. Yet, in order to successfully employ JADC2, all branches must make an overarching effort to procure capabilities vertically from Chairman of the Joint Chiefs of Staff (CJCS) down to service then employ horizontally across services to mitigate interoperability.

Even with the DoD commitment to JADC2, each branch continues to procure and acquire horizontally with their own priorities in mind. There are a number of reasons for this, but to

highlight a few: legacy systems, differing acquisition processes, differing needs from identical systems, proprietary technologies, etc. For example, the Army and Air Force both use a version of Distributed Common Ground System (DCGS) for their ISR capabilities. The Air Force has created a weapon system, but the Army has used it for a situational awareness and data ingestion tool. Although the intent was for the DCGS to progress in likeness between the two branches, both have procured different software and development systems that do not communicate with one another. Without a definitive top-down approach, branches will continue to seek systems and capabilities, with respect to JADC2, that benefit their specific realm of warfare, rather than considering the DoD writ large.

Russia's Armed Forces has similarly been trying to radically improve their JADC2 capabilities. Since 2016, Russia has been developing the Automated Command and Control System (Avtomatizirovannyye Sistemy Upravleniya – ASU), with operational testing as early as 2019. The goal of this program is to create a centralized network in which all data flows through. Thus, information about the battlespace would inform commanders and reduce their decision time significantly. It also encompasses situational awareness, logistics, and enemy information tools. Additionally, Russia invested \$65.1 billion in 2019 after declining in 2017 and 2018, with a majority of the budget used on ASU. While Russia is still in the trial phases of ASU, it aims to cover all communication relays to include wired, radio, and satellite across all military branches and warfare domains. Russia's autocratic political system and top-down approach lends efficiency in adapting and employing ASU.

Russia's autocratic government allows for President Vladimir Putin to standardize efforts across Russia's Armed Forces. When comparing US and Russian defense budgets, the US is nearly eleven times greater, however Russia is better equipped to rapidly implement ASU with a

vertical implementation method and top-down approach. The lack of bureaucracy and democratic processes allow for more efficient procurement and employment across all branches of the Russian Armed Forces. It also allows for Russia to bypass a competitive market and dictate the needs and cost of requirements for ASU, rapidly decreasing any lag time from producer to consumer.

In order to combat Russian dominance within all-domain warfare, the US must fight to adjust how it approaches interoperability. Specifically, it cannot abandon the doctrinal approach to “centralized command, decentralized control,” but must make every effort to ensure decentralized control is effective, efficient, and interconnected across all branches. Starting with the CJCS, there needs to be an understanding of what JADC2 means for all branches. Define the end state and what each branch is responsible for. Then procurement, research and analysis, and vendors need to be agreed upon so that development of new capabilities happens “under one roof” forcing interoperability. Contract legislation needs to be refined to ensure that, although the system was built branch centric, the underlying software or data transmission is able to be adapted and used by all branches. Tools, weapon systems, and capabilities need to be tested in the initial operational capability (IOC) in a joint environment. Thus, allowing for all branches to determine whether they are able to augment or employ as needed. Finally, the feedback for the procurement and employment of JADC2 capabilities needs to be streamlined to ensure CJCS visibility and action as needed.

Interoperability among all branches’ systems, infrastructure, and tools is difficult, but can be forced to work with a balance of vertical and horizontal organization. However, the DoD must also leverage the understanding that interoperability is largely affected and slowed by democratic and bureaucratic processes and mitigate where able. The United States cannot abandon

“centralized command, decentralized execution” as it makes it one of the most effective and efficient fighting forces in the world, however, it should rapidly rethink organizational processes both vertically and horizontally to maintain superiority in the Great Power Competition.

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