Congressional Research Service
Informing the legislative debate since 1914

IN FOCUS

Updated October 8, 2020

The Army's Project Convergence

What Is the Army's Project Convergence?

Project Convergence is what the Army calls a "campaign of learning," designed to further integrate the Army into the Joint Force. It is how the Army plans to be a part of Joint All Domain Command and Control (JADC2), the Department of Defense's (DOD's) plan to connect sensors from all the military services—Air Force, Army, Marine Corps, Navy, and Space Force—as well as Special Operations Forces (SOF), into a single network which, theoretically, could be more effective and less costly. Reportedly, on September 29, 2020, the Army and Air Force signed a two-year agreement to collaborate on developing combined JADC2, affecting future joint force training, exercises, and demonstrations.

Designed around five core elements—soldiers, weapons systems, command and control, information, and terrain—Army Futures Command (AFC) plans to run Project Convergence on an annual cycle; achieving objectives from frequent experiments with technology, equipment, and soldier feedback throughout the year and culminating in an annual exercise or demonstration. In basic terms, the Army reportedly wants to "take the service's big ideas for future warfare and test them in the real world. The Army wants to figure out what works and what needs fixing—and figure that out as early on as possible, when it's much cheaper to make changes."

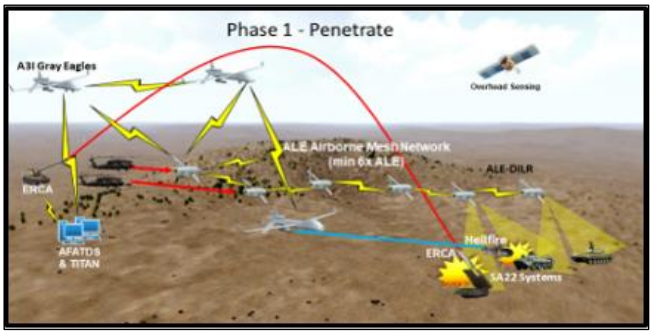
Project Convergence 2020 (PC20)

Taking place at Yuma Proving Ground, AZ between August 11 and September 1, 2020 and involving about 500 personnel, Project Convergence 2020 (PC20) was intended to provide experience to support decisions to

- change how the Army fights by shaping how it organizes for combat;
- highlight opportunities to optimize operational processes;
- evolve how the Army visualizes, describes, decides, and acts on enemy threats; and
- build soldier and leader trust in emergent technologies.

PC20 concentrated on what the Army calls the "close fight" by integrating new enabling technologies at the lowest operational level so that tactical networks could facilitate faster decisions. At the unit level, PC20 focused on Brigade Combat Teams (BCT), Combat Aviation Brigades (CAB), and Expeditionary Signal Battalion-Enhanced (ESB-E). At the system level, PC20 involved the Army's MQ 1C Grey Eagle unmanned aerial vehicle (UAV), the Air Launched Effects (ALE) —a multi-purpose helicopter-launched system—and the tactical network. The tactical network are those command, control, communications, intelligence, and computer systems used by the Army in combat.

Figure 1. Representative Exercise Operational Scenario



Source: From Army Briefing provided to CRS dated September 10, 2020

One of the experiments at PC20 reportedly included using low-earth orbit satellites and Grey Eagle UAVs to perform sensing for air targets and simultaneously on the ground to detect a target. Data from the two systems was passed back to an organization at Joint Base Lewis McChord, WA, where the target was processed.

The data was then passed back to Yuma Proving Ground to a system to engage the target—either a self-propelled artillery system such as the Extended Range Cannon Artillery (ERCA) system currently under development, a Grey Eagle, or another ground platform. This entire experiment was supposedly accomplished within 20 seconds.

The Army's Plans for Project Convergence 2021 and 2022 (PC21 and PC22)

While the Army intends Project Convergence to be "a campaign of learning" and an annual event, currently, the Army has made planning information publicly available only for 2021 and 2022.

Project Convergence 2021(PC21)

According to the Army, in 2021 they plan to transition from an Army-exclusive operation and integrate with other Services and unspecified government agencies. The Army is said to have commitments from the Navy, Air Force, Marine Corps, and the Intelligence Community to participate. The Army plans for about 1,000 personnel from the Joint Force to participate in PC21. The Army's focus on systems for PC21 is to make decisions faster at echelons, moving from the BCT to the Division and Multi-Domain Task Force (MDTF) level. PC21 also plans to integrate aspects of DOD's draft Joint Warfighting

Concept, which is expected to be published in December 2020.

Draft objectives for PC21 include demonstrating

- a cloud-based network delivering the right data, to the right place, at the right time.
- conditional autonomy in target detection, recognition, and prioritization.
- increased range and lethality of long range fires.
- artificial intelligence (AI) capabilities to enhance visualization, understanding and maneuver on the battlefield.
- joint air and missile defense (AMD) integration from sensing, to cueing, through engagement.
- interoperability across Army and Joint systems to enable Joint All Domain Operations.
- operations in contested electromagnetic spectrum (EMS) environment.

Project Convergence 2022 (PC22)

In PC22, the Army plans to include allies and partners - focusing on closes allies and security partners such as Australia, Canada, New Zealand, and the United Kingdom. The project is to expand to the Combined Joint Task Force (CJTF) level and bring more technologies and assets to the battlefield. The goal is to exercise from competition through conflict and return to competition levels of conflict. In addition to the CJTF (Corps and Division-level), the Army also plans to include a Multi-Domain Task Force (MDTF), Brigade Combat Teams (BCT), and Allied and Partner Mission Command Elements in PC22.

Potential Issues for Congress

How Might Project Convergence Affect Army Force Structure and Modernization Efforts?

The Army has compared Project Convergence to the Army's Louisiana Maneuvers conducted all across the United States in 1940 and 1941 that played a major role in how the Army organized for, equipped itself for, and fought World War II. If this is the case, by what formal mechanisms or processes, will the observations/findings of Project Convergence inform Army force structure and modernization decisions, as well as those of Congress? Will this be exclusively an Army Futures Command function? Will other entities, such as Combatant Commands, play a role? How will the results of Project Convergence be reflected in the Army's Planning, Programing, Budget and Execution (PPBE) process? How does the Army plan to communicate with Congress as PC21 and PC22 move from planning to execution?

How Much "Buy In" Is There from the Other Services?

As noted, PC21 plans to expand involvement from the other Services. While Navy, Air Force, Marine, Space Force, and SOF involvement will likely benefit the Army as it endeavors to refine its role in the new Joint Warfighting Concept, how much "value" are the other Services and U.S. Special Operations Command deriving from Project Convergence? Are they merely casual participants and have similar service-specific demonstrations or experiments planned or underway? Or is there value in "elevating" Project Convergence to the Joint level? Such a Joint endeavor might result in expanded Service participation which might truly test DOD's new Joint Warfighting Concept. In addition, such a Joint Project Convergence could result in budgetary savings within the Services and DOD.

Involvement of Allies and Partners

As noted, PC22 plans to include mission command elements (MCEs) from selected Allies and Partners with the intent of enabling them to seamlessly plug into the network and establish a common operating picture with U.S. forces. While such interoperability can be viewed as essential for Coalition operations, this could prove elusive for some Allies and Partners who lack the resources and technology afforded to DOD. Taking this into consideration, does the Army plan to test alternative means to integrate less-capable Allies and Partners into operations envisioned in the new Joint Warfighting Concept? Or, instead, will they be expected to play "catch up," possibly excluding them from participating in future Coalition operations?

Project Convergence: Operations in a Denied Electromagnetic Spectrum (EMS) Environment and Signature Management

In examining the basic goal of Project Convergence—integrating sensors and shooters to more rapidly identify and engage targets at close and long distances—it becomes apparent that achieving this goal depends on unfettered access to the electromagnetic spectrum. As previously noted, one of the objectives of PC21 is to successfully conduct operations in a contested electromagnetic spectrum environment and it is likely that future Project Convergences will continue to stress this ability. This raises the issue of how the Army will function if instead of the EMS spectrum being "contested" it is instead "denied." For example, what if a significant part of the EMS is "denied" as it would be if U.S. space-based assets are attacked and significantly damaged or destroyed? Are there redundancies (systems or processes) envisioned for testing during future Project Convergences to address how the Army would detect and engage targets beyond visual range if aerial or space assets become unavailable by kinetic actions or by some other means such as electronic warfare or cyberattack?

Another related issue is that of signature management for the Army's networks and systems under development. In this context, signature management refers to all the various signatures—visual, infrared, radar, sound, electromagnetic—that a system emits. Potential enemies could also rapidly detect these signatures and engage and destroy U.S. systems in a similar manner as Project Convergence is attempting. Signature management seeks to control and reduce the detectability of systems and their vulnerability to attack. Given the importance of signature management, what are the Army's objectives for future Project Convergences efforts to address signature management associated with networks and systems?

Andrew Feickert, Specialist in Military Ground Forces

Disclaimer