



FIELD ARTILLERY AUTONOMOUS RESUPPLY

# AUTOMATING ARTILLERY LOGISTICS AND OPERATIONS

## THE AUTONOMOUS RESUPPLY PROBLEM

More than a century has passed since WWI, when major innovations in the use of artillery changed the battlefield and shaped the course of history. While the U.S. Army has advanced considerably since that time, our approach to storing, shipping, and loading munitions has not fundamentally changed in the past 100 years.

Meanwhile, the commercial market has driven incredible logistical advancements and efficiencies through automation and robotics. From manufacturing to online shopping, today's businesses work faster, cheaper, and smarter thanks to these technological innovations. Militaries in other countries have implemented similar tools to their benefit, and the U.S. Army has an opportunity to do the same.

## TACKLING THE PROBLEM

The Army Futures Command (AFC) includes eight Cross Functional Teams (CFTs) to tackle modernization issues like this head on. Each CFT addresses a capability gap for the Army and streamlines functions that were previously isolated — concepts and requirements together with engineering and acquisitions — into one team.

- The CFTs only work on high-priority projects aligned to the Army's Big Six modernization priorities.
- The autonomous resupply problem — or Field Artillery Autonomous Resupply (FAAR) — is led by the Long Range Precision Fire CFT and is a top Army priority.
- The Army Applications Laboratory (AAL) is working with the CFTs and industry partners to find new ideas and applications of technology from expected sources.

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A Soldier from WWI would recognize the Army's process for loading rounds today, because not much has changed in the last century.

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Together, we plan to uncover autonomy and robotics solutions from those who may never have worked with the Army before — startups, entrepreneurs, tech companies, VCs, universities, research labs, and more.

By connecting ideas from a broad range of nontraditional solvers with the right people and organizations within the Army, we can put fewer people in harm's way, save taxpayer dollars, and respond to threats faster.

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# With the right technology, we can put fewer people in harm's way, save taxpayer dollars, and respond to threats faster.

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## Here's what we need:

### **AUTONOMOUS FIELD VEHICLE RESUPPLY SYSTEMS**

Autonomous robotic systems to support vehicle resupply operations for palletized and individual unit inventory assets and materials:

- Must support rapid stocking, re-stocking, and transfer of boxed and individual unit inventory assets, including automated loading of material from vehicles to field artillery weapon systems and a capability to automatically accommodate materials of varied sizes.
- Should consider needs for low electromagnetic signatures, cybersecurity protections, shock and vibration management, and standard power supply constraints.



**That's it.** There are no additional constraints in terms of hardware platforms, software languages, or past performance of the potential solutions. We want the best technologies to address these problems and don't intend to exclude any viable options from consideration.

### **HOW YOU CAN GET INVOLVED**

The Army is ready to use commercial innovations in autonomous and semi-autonomous robotics to improve performance – while reducing costs and human effort – of field artillery weapon supply chain systems and processes. If you have a prototype solution (or part of a solution) that could address our needs, we want to learn more. Visit [aal.army/FAAR](https://aal.army/faar) for additional information or with any questions.

Those with the strongest and most promising concepts will be invited into discussions to accelerate solutions within the Army. With the right technology, we can better handle both the inventory management and the operation of these systems.

### **ABOUT THE ARMY APPLICATIONS LABORATORY**

The Army Applications Laboratory (AAL) was established in 2018, along with the stand-up of the Army Futures Command (AFC), to act as a concierge service across the Army's Future Force Modernization Enterprise (FFME) and the broader commercial marketplace of ideas. At AAL, our mission is to align innovative solutions and technologies with Army problems, resources, and programs to rapidly discover, validate, and transition technology applications in support of Army modernization. In other words, AAL exists to connect ideas from a broad range of nontraditional solvers – startups, entrepreneurs, tech companies, VCs, universities, research labs, and more – with the right organizations within the Army to close capability gaps and field novel solutions. Learn more at [aal.army](https://aal.army).