



# Validating the Digital Backbone of Allied Logistics

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AM Village 2026

March 16-20, Albacete-Los Llanos Air Base



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# Mission: Validate the Digital Backbone of Allied Logistics

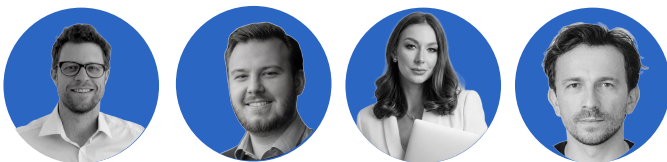
The AM Village (Additive Manufacturing Village) is a massive multinational capability workshop organized by the European Defence Agency (EDA). The recurring, five-day workshop hosts organizations from the industry and armed forces with the intention of exchanging additive manufacturing (AM) research and experience within a military context. This year, AM Village was held at the Albacete Military Air Base in Albacete, Spain and featured armed forces representing 12 European countries. 3YOURMIND was selected as one of the 60+ private industry companies invited to attend the five-day event. 3YOURMIND's objective was to demonstrate its solution as an indispensable digital backbone for allied forces. Specifically, it addressed concerns to replace vulnerable supply chains with rapid, decentralized, and secure digital production exactly at the point of need.

This report summarizes the outcomes of three technical exercises conducted by 3YOURMIND during AM Village 2026:

- 1) The ability to seamlessly synchronize local, offline production data back to the central inventory the moment connectivity is restored.
- 2) Securely share TDP data between NATO countries via an integration with RAPiD-e.
- 3) Demonstrate Push-to-Print functionality to centralize and secure part recipes to ensure repeatable quality for military units.

Throughout the event, 3YOURMIND deployed 1 local server, 2 workstations, 1 monitor, 2 routers with eSIM cards, 2 network switches, and various power/network cables. In addition, 3YOURMIND connected to 9 printers during the event, including EOS, Ultimaker, and Cosmyx machines, distributed across 3 locations at the Albacete Military Air Base. 3YOURMIND interfaced with 3 Allied nations to directly enable multi-nation workflows between the Netherlands, Finland, and Sweden. Furthermore, 3YOURMIND facilitated the first-ever cross-national exchange and localized printing of a real OEM part, without requiring USBs or e-mail – highlighting a significant security milestone.

## On-Site Operations



## Remote Command



## Partners & Participants



### 3YOURMIND Team

**TR, L to R:** Dominik Lindenberger, Sr. Product Mgr; Lars de Jongh, CuSu Lead; Dominika Bucholc, Head of Strategy; Aleksander Ciszek, CEO  
**BR, L to R:** Dennis Hezel, Software Dev.; Simone Dal Poz, VP Backend Eng.; Serhii Zavadskyi, Lead Backend Eng.

## Technical Objective #1

# Offline Sync for Deployed Units

### Overview

#### The Challenge

In high-threat environments, working completely air-gapped creates dangerous data silos. Deployed vessels become isolated, unable to share newly qualified parts or update localized digital inventories across the wider fleet.

#### The Strategic Payoff

Break data silos by seamlessly synchronizing local, offline production data back to the central inventory the moment connectivity is restored.

#### The Core Scenario

Participants observed a simulated environment where an engineer retrieved a validated file from a local offline server to trigger production. The goal was to validate the end-to-end workflow, while proving that once reconnected, the software automatically syncs data fleet-wide so all missions benefit from shared, peer-approved assets.

#### Technical Execution

To prove the software's interoperability in a 'live' environment, the team deployed

- 1 local server
- 2 workstations & 1 monitor
- 2 routers with eSIM cards
- 2 network switches
- Connection with 9 printers (EOS, Ultimaker, Cosmyx) across 3 locations.

#### Operational Impact

3YOURMIND ensures fleet wide asset availability while strictly regulating user permissions, part visibility, and intellectual property tracking via seamless machine connectivity.

*Fig 1. Even in an offline environment, personnel can use 3YOURMIND to produce parts.*



**Scenario:** High-threat environment. All satellite communications out. A critical part fails

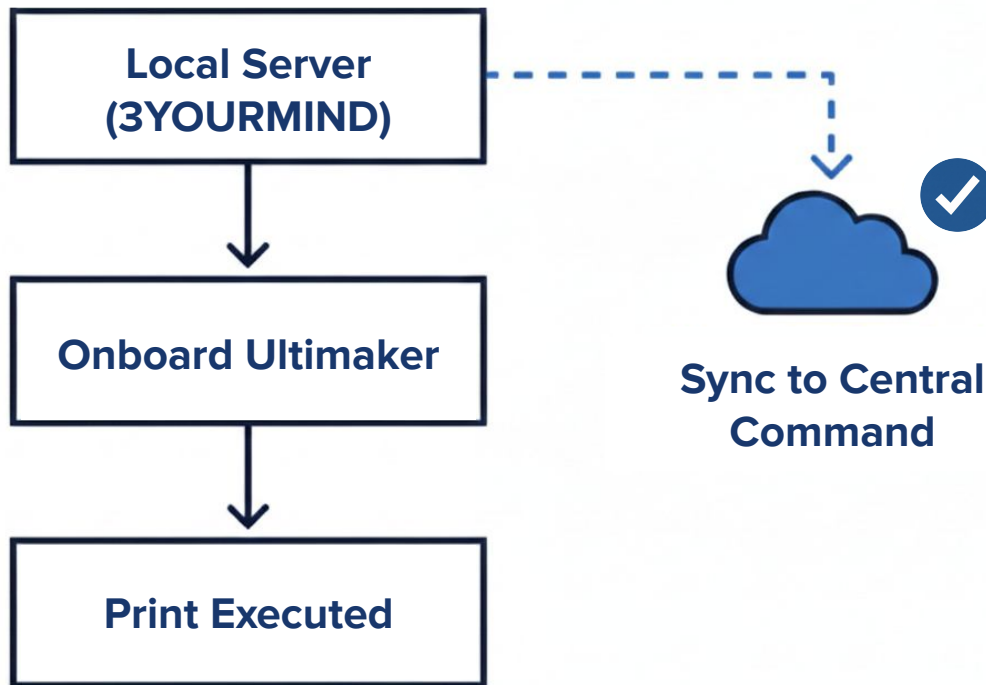


Fig 2. The software syncs to central command when communication is re-established.

## Summary

Led by 3YOURMIND with collaboration from Ultimaker and Fraunhofer IAPT and participation from the Royal Dutch Navy\*, the session demonstrated how naval vessels and remote units maintain 3D printing capabilities and operational readiness when satellite links are severed or intentionally silenced (Fig 1).

This activity was designed for naval commands, maintenance engineers, and any unit operating in disconnected environments where 3YOURMIND, acting as a resilient offline digital inventory for MODs, was essential.

Participants observed a simulated scenario where an engineer retrieved a validated file from a local offline server to trigger production on an onboard Ultimaker printer.

The objective was to validate the end-to-end workflow for scanning and qualifying new assets, and to demonstrate secure synchronization of new TDPs and production data once connectivity was restored. This demonstration highlighted how a distributed network keeps local and central inventories in sync, ensuring data integrity and logistics self-sufficiency regardless of location.

## Impact

In a precarious scenario where satellite communication is unavailable, offline sync enables military personnel to continue producing parts from digital inventories using only a local, on-premises server.

When communication is re-established, the local server syncs to central command to receive the latest updates, such as new TDPs, updated part iterations, and part quality reports (Fig 2).

## Technical Objective #2

# NATO RAPID-e Interoperability

### Overview

#### The Challenge

While knowledge sharing is fundamental to NATO's success, a single shared repository cannot address each nation's unique equipment sustainment needs or protect localized OEM intellectual property.

#### The Strategic Payoff

Empower allied forces to maintain operational availability by securely sharing technical data packages (TDPs) and driving remote part certification rather than shipping physical spare parts.

#### The Core Scenario

The Dutch MOD requested a validated TDP for a cable clip assembly from the Finnish Defence Forces via RAPID-e. Finnish OEM, Patria, approved the request, routing the file through 3YOURMIND to print locally in a Dutch micro-factory completely offline.

#### Allied Participants

This exercise directly enabled multi-nation workflows between:

- The Netherlands
- Finland
- Sweden

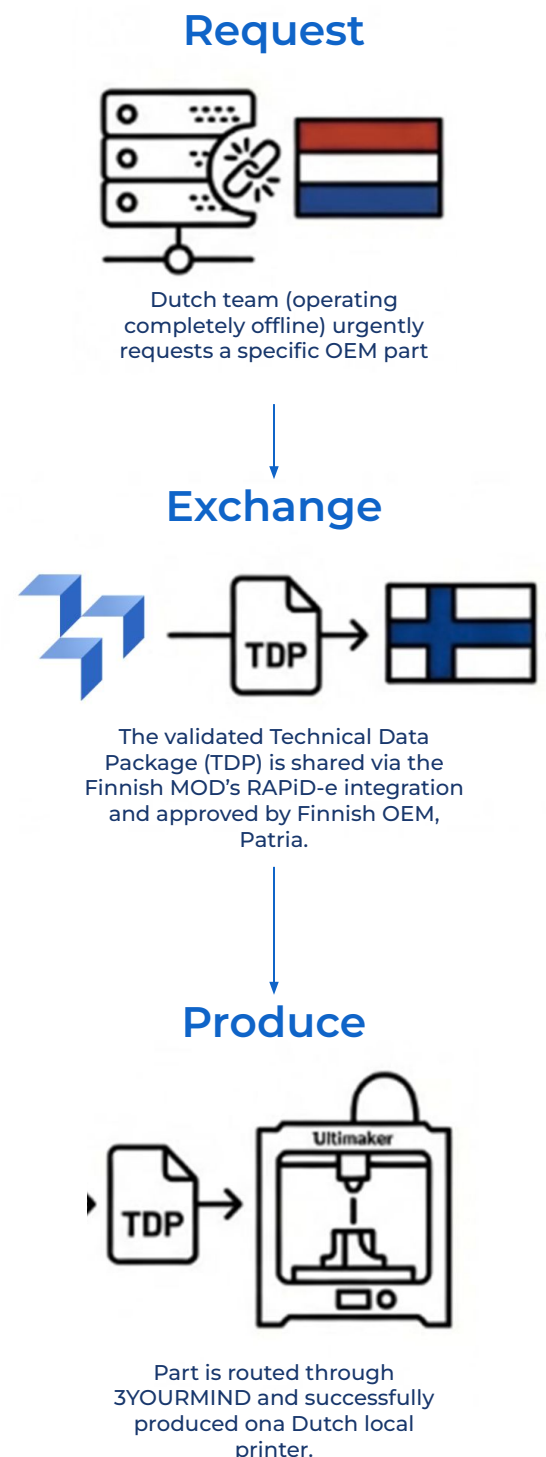
Hardware Utilized:

- Ultimaker S8 Printer
- CPE+ Material

#### Operational Impact

This marked the first-ever cross-national exchange and localized printing of a real OEM part without requiring USBs or e-mail.

Fig. 3: Agencies can request parts via RAPID-E and produce them remotely using their 3YOURMIND workflow



## Summary

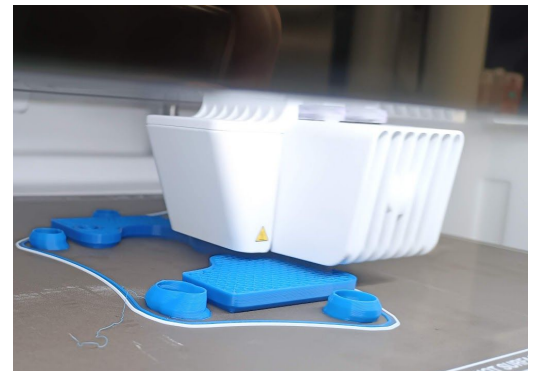
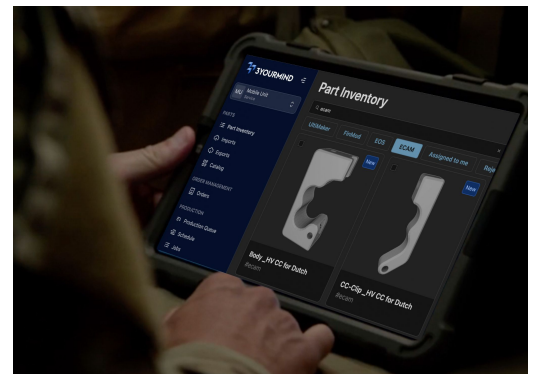
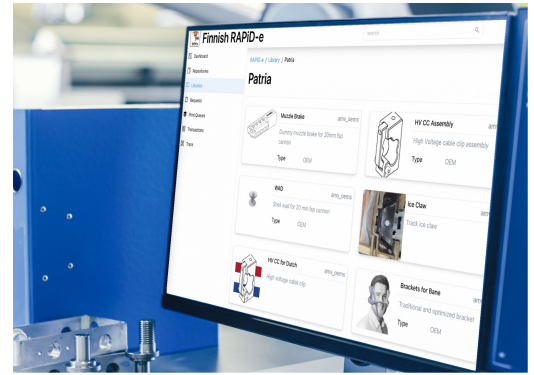
Led by 3YOURMIND with participation from the Dutch Armed Forces, Finnish Armed Forces, and Patria, this Improved Readiness session witnessed how Allied Forces maintain operational availability by sharing Technical Data Packages (TDPs) rather than physical spare parts.

The activity was designed for NATO defense agencies and partner nation Logistics Commands, Maintenance Units, and Digital Transformation Officers interested in cross-border interoperability. The objective was to demonstrate a seamless workflow from initial part digitization to international exchange using RAPiD-e and 3YOURMIND, the primary digital inventory for managing MOD parts and data. A simplified workflow can be viewed in Figure 3.

Attendees saw the Dutch MOD request a validated TDP from the Finnish Defence Forces, who then autonomously trigger production at a Dutch micro factory and return a quality report to the Finnish Defence Forces, who originally designed the part. This demonstration proved that shared digital assets and closed-loop feedback can replace physical logistics chains, ensuring rapid response and localized manufacturing in-theater.

## Impact

RAPiD-e is a NATO-aligned repository of parts, contributed by participating NATO nations. Though knowledge sharing is fundamental to NATO's success, a shared repository cannot address each nation's unique parts and equipment-sustainment needs. Nationally owned and operated part repositories remain in high demand. To this end, 3YOURMIND empowers NATO nations to build their own privately managed part repositories while enabling individual nations to push and pull parts from the RAPiD-e shared repository. With this approach, collaboration is enhanced via RAPiD-e/3YOURMIND interoperability, while continuing to address the needs of individual NATO members.



### Photos top to bottom:

The cable clip assembly was requested via RAPiD-e and pushed to the 3YOURMIND solution and printed on an Ulimaker S8 using CPE+ material.

## Technical Objective #3

# Execute Push-to-Print Live Demos

### Overview

#### The Challenge

Most forward units suffer from a major disconnect between software and hardware. Critical 3D printing recipes are trapped on local computers or transferred via insecure USB drives. This causes massive engineering redundancies, part quality variations, and deters OEMs from sharing their high-value digital assets due to zero traceability.

#### The Strategic Payoff

Unlock IP-controlled production by centralizing and securing part recipes, ensuring repeatable quality for military units and complete data traceability for OEMs.

#### The Core Scenario

A secure software connection locked qualified production recipes centrally and the exact parameters were pushed directly to remote hardware—enabling non-expert operators to safely execute error-free prints..

#### Technical Execution

Ecosystem testing included:

- EOS Machines (Powder)
- Ultimaker Machines
- Cosmyx (FDM printers)

A live, on-site software integration with a Cosmyx FDM machine was successfully completed within hours at the event.

#### Operational Impact

Enables a centralized Center of Excellence (CoE) to securely support remote depots. Pushing parameters over-the-air slashes local engineering time, removes physical media vulnerabilities, and builds the tracking trust needed for OEM to share assets.



*Click the image to watch a Push-to-Print live demo.*

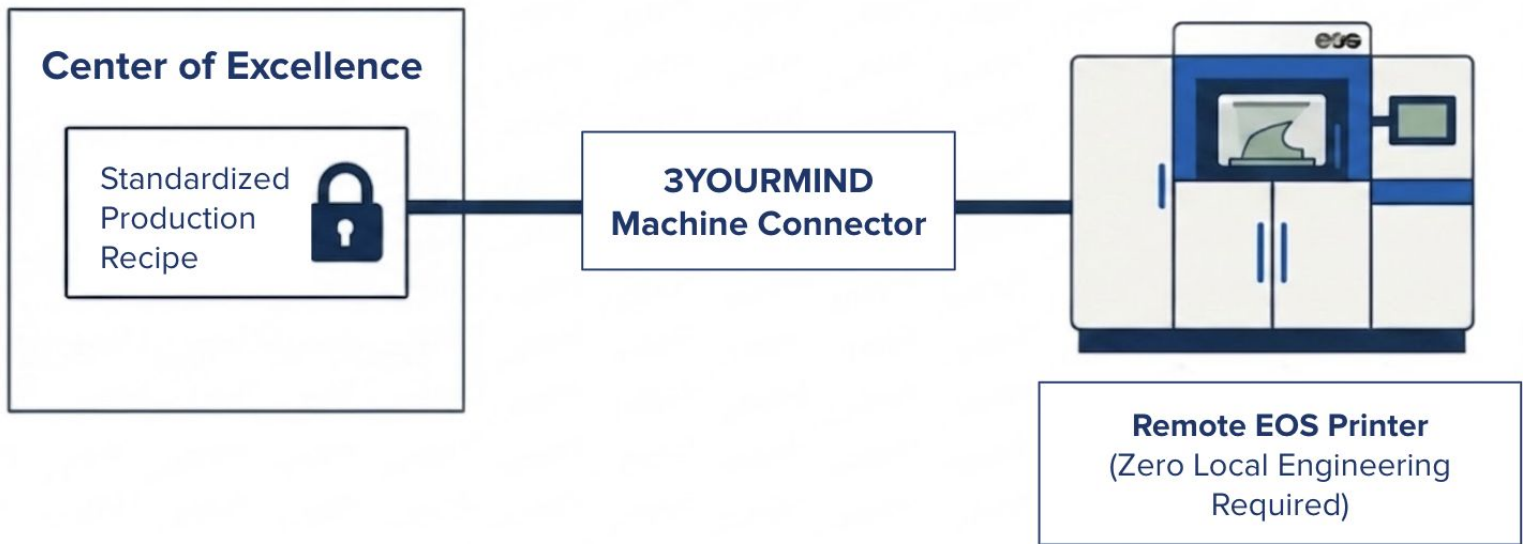


Fig 4. Parts are sent directly to the printer, reducing manual steps and minimizing security vulnerabilities.

## Summary

Led by 3YOURMIND in collaboration with EOS and the Armed Forces of a NATO-aligned non-member nation, the Push-to-Print session saw how regional support hubs and depots can execute industrial 3D according to specific print parameters which can be traced and verified by the OEM. This activity was designed for maintenance and logistics commands managing distributed production facilities as well as AM program managers focused on quality standardization.

The objective was to demonstrate a live software connection between EOS hardware and 3YOURMIND, the digital inventory containing qualified MOD part data and production recipes (Fig. 4). By locking the build files and parameters in a centralized space, the workflow demonstrated that a fully qualified recipe can be transmitted to the machine with the push of a button, allowing local operators to focus entirely on machine preparation.

This demonstration highlighted how a central center of excellence can support multiple remote locations, ensuring zero-error production and consistent part quality across the entire supply chain.

## Impact

Push-to-Print acts as both an efficiency and security multiplier. There's no need to download build files, save them to external drives, or send them via e-mail, thereby eliminating IP exposure and minimizing security vulnerabilities. Because the part is sent directly to the printer without requiring intervention from expert personnel, individuals are empowered to print their own parts with fewer manual steps.

Looking Forward:

# Operational Efficiencies to Be Realized

In response to the shared efforts between 3YOURMIND and its partners and collaborators at AM Village, two key operational efficiencies have been identified to further refine the solution and workflow.

The first is to expand the Push-to-Print functionality to include more machine manufacturers, including Prusa machines, which are widely used by Ministries of Defense (MODs). Before AM Village, 3YOURMIND coordinated with EOS and Ultimaker to develop and test the Push-to-Print functionality at the event. The demonstration of this functionality established proof of concept and also led to an on-site integration with Cosmyx, a French industrial 3D printing manufacturer specializing in FDM 3D printers. The on-site integration was completed within hours, demonstrating 3YOURMIND's compatibility and ease of integration with various machine manufacturers. 3YOURMIND will continue to integrate with machine manufacturers in line with user requirements to ensure Push-to-Print is available to meet demand.

The second opportunity is to explore developing a feedback loop with RAPiD-e to improve processes for part certification. In its current form, the integration with RAPiD-e enables allied nations to push and pull parts from their national inventories to RAPiD-e. In the future, a feedback loop would enable the part owner to receive production reports from the requesting party and validate whether the produced part meets quality requirements, thereby certifying the part remotely. Remote part certification processes via connected feedback loops represent a significant step toward realizing sovereign manufacturing capabilities on par with OEM-produced parts.

*“We’ve talked about this case for two or three years, and now we have realized the first part in this manner. This is historic.”*

Innovation Manager at the Dutch Armed Forces, in reference to interoperability with RAPiD-e.



# Upcoming Exercises

## NATO Coalition Warrior Interoperability eXploration (CWIX)

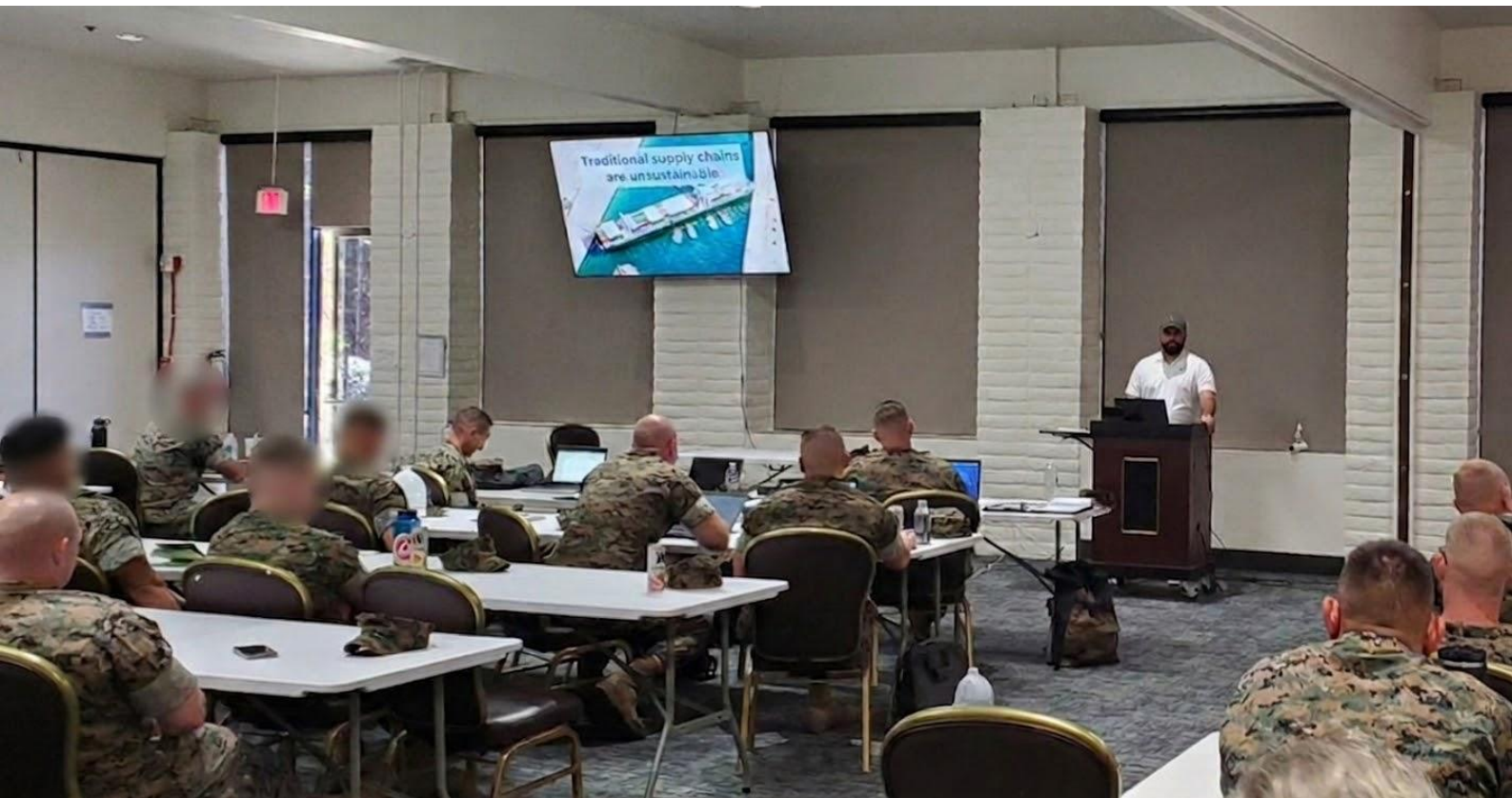
As part of an exercise focused on interoperability and information exchange, 3YOURMIND will conduct additional tests of its integration with RAPID-e. Specifically, it will demonstrate both how to push parts from RAPID-e to national digital inventories supported by 3YOURMIND (i.e., request parts) and how to pull parts from individual 3YOURMIND digital inventories and publish them on RAPID-e (i.e., share parts with all NATO collaborators).

## On the Road to RIMPAC 2026

In preparation for the 30th edition of the Rim of the Pacific (RIMPAC) exercise, held biannually in Hawaii, 3YOURMIND will conduct testing at several U.S. military exercises. 3YOURMIND will attend JIFX on May 11-14 in Camp Roberts, California, as well as Valiant Shield on June 22-26 in Okinawa, Japan. These exercises will focus on expanding on the offline sync and push-to-print functionalities demonstrated at AM Village, with an emphasis on distributed manufacturing across dozens of production sites.



*3YOURMIND's William Cuervo presenting to Marines at Camp Pendleton in California, USA.*





3YOURMIND is a solution provider with a mission to strengthen sustainment readiness by turning technical data into controlled, reusable digital assets. We do this by standardizing how parts are identified, qualified, published, and fulfilled across distributed production environments. We focus on secure governance, qualification discipline, and traceable execution so organizations can respond faster to part needs without sacrificing control or accountability.

**Get Started**



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