

Navy Demonstrates AI-enabled Autonomy for Future Collaborative Combat Aircraft



The U.S. Navy's BQM-177A subsonic aerial target launches autonomously from a simulated platform during a Dec. 11 demonstration at Point Mugu Sea Range, California. (U.S. Navy photo)

From Naval Air Systems Command, Jan 12, 2026

NAS PATUXENT RIVER, Md. – The U.S. Navy recently completed a second successful demonstration advancing multi-platform coordination of autonomous systems, an essential step toward developing future Collaborative Combat Aircraft (CCA).

The Dec. 11 event at Point Mugu Sea Range in California focused on maturing manned-unmanned teaming capabilities for CCA, which are intended to extend the reach of carrier air wings and deliver scalable, cost-effective

platforms capable of operating in contested environments.

“This demonstration is an important step toward advancing autonomous capabilities for the fleet,” said Rear Adm. Tony Rossi, Program Executive Officer for Unmanned Aviation and Strike Weapons (PEO (U&W)). “Integrating AI-enabled autonomy across manned and unmanned platforms will be critical as the Navy develops next-generation air wing concepts and prepares for more complex operational environments.”

PEO (U&W)’s Aerial Targets (PMA-208) and Strike Planning and Execution Systems (PMA-281) program offices led the effort with industry partners Shield AI, Kratos, and CTSI. Shield AI served as lead systems integrator and mission autonomy provider, overseeing platform modifications, payload integration, and technical coordination across government and industry. Kratos supplied the aircraft, and CTSI delivered the mission planning and pilot-vehicle interface front end.

During the demonstration, two BQM-177A subsonic aerial targets were flown autonomously using Shield AI’s Hivemind software and connected to a Live Virtual Constructive (LVC) environment. This environment included a virtual F/A-18 and two simulated adversary aircraft, allowing real and simulated assets to operate together in the same scenario.

In this setup, the virtual F/A-18 acted as the mission lead, directing the BQM-177As to defend designated Combat Air Patrol locations. When the simulated adversary aircraft attempted to move into those areas and threaten U.S. forces, the autonomously controlled BQM-177As responded according to their mission tasking.

The event also marked major progress in implementing the Navy’s Autonomy Government Reference Architecture (A-GRA) interfaces, which is key to improving interoperability and accelerating the integration of mission autonomy across future unmanned naval platforms.

“The fact that this is the first time we’re flying a fully autonomous aircraft in execution of a mission beyond the visual range of the remote-control operator is laying the foundation for allowing autonomous mission planning in the future,” said Veronica Wesson, PMA-281 special projects integrated program team lead. “Being able to accomplish all of this over only a 16-month period using the new agile methods of contracting was a great experience.”

This event builds on an August demonstration in which the Navy and Shield AI validated the foundational Advanced Vehicle Control Laws (AVCL) and basic autonomous behaviors required for autonomous control of the BQM-177A.

The Navy and Shield AI plan to conduct additional development and fleet exercises in 2026 and beyond. The use of surrogate platforms like the BQM-177A allows for rapid testing and improvement, providing a cost-effective alternative to operational platforms during early development phases. This approach validates that surrogate platforms accelerate the autonomy testing cycle, ensuring the system can handle real-world conditions, enabling continuous improvement in a cost-efficient and iterative manner.

PMA-208 and PMA-281 fall under the PEO (U&W) and play critical roles in delivering advanced capabilities to the fleet.