Maritime Theater Missile Defense Forum Advances Interoperability, Relevance at Critical Time



Experts across varied aspects of integrated air and missile defense engage in a panel discussion during the Maritime Theater Missile Defense Forum (MTMD-F) at the Naval Postgraduate School (NPS), March 4, 2026. The MTMD-F returned to NPS for a series of engineering and program management meetings essential to advancing their critical mission. (U.S. Navy photo by Mass Communication Specialist Seaman Apprentice Zadi Watkins)

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Effective integrated air and missile defense (IAMD) requires an unparalleled level of international cooperation and

interoperability, concepts on full display in current operations. The system of systems necessary to be effective, however, requires much more than just collaborative coalition operations.

Effective IAMD also takes a persistent collaborative effort of interdisciplinary research and development with many partners, and exhaustive analyses across a broad swath of highly technical disciplines. It also demands the agility to work through stovepipes and unforeseen challenges, in addition to anticipating strategic futures.

Meeting this challenge is the Maritime Theater Missile Defense Forum (MTMD-F), an international cooperative of 12 allied nations' navies charged with achieving interoperability in all aspects of maritime theater air and missile defense. Building upon previous meetings in Monterey in 2006, 2013, 2017 and 2020, the forum and its team of engineers, technicians and National Points of Contact returned to Naval Postgraduate School (NPS) campus in February and March 2026 for a series of engineering and program management meetings essential to advancing their critical mission.

The importance of that mission, and its relevance to Chief of Naval Operations Adm. Daryl Caudle's recently released Fighting Instructions, is why NPS placed a high priority on supporting the multi-week forum of both classified and unclassified program management and technical interchanges, said NPS president retired U.S. Navy Vice Adm. Ann Rondeau.

"The conversations you will have this week – about integrated air and missile defense, sensor fusion, battle management, hypersonic threats, and coalition interoperability – are no longer just about future force design concepts. They reflect present operational reality," Rondeau said in welcoming the MTMD-F to campus.

"IAMD capability development must begin years before the

commencement of operations," added retired U.S. Navy Capt. John Hammerer, IAMD warfare chair at NPS. "Essential developmental efforts spanning the disciplines of systems engineering, modeling and simulation, acquisition, interoperability testing, and operational testing begin years before real world operations."

NPS, and the technical leaders the institution graduates, are critical to this development, Hammerer says.

"Take U.S. Navy efforts to use directed energy for terminal defense, highlighted in the CNO's Fighting Instructions," he continued. "NPS graduate Cmdr. Brian Curran, a Meyer Scholar who earned his PhD in laser physics, is now using that acquired expertise to lead [Program Executive Office Integrated Warfare Systems] (PEO IWS) to accelerate fielding of shipboard lasers."

The MTMD-F keeps essential development on track across multiple technical teams and lines of effort. Leading each navy's efforts is the MTMD-F's National Point of Contact (NPOC) forum. Belgian Navy Capt. Philippe De Cock, the current NPOC chair, says the forum's focus on innovation, analysis and expertise in maritime IAMD – qualities shared at NPS – are critical enablers to its mission.

"The forum was born from a shared appreciation that only a small, agile partnership of nations with subject matter expertise could move quickly enough to anticipate trends and solve the critical problems of maritime missile defense interoperability facing allied nations," De Cock said. "The concentration of subject matter expertise for data analysis and maritime IAMD operations makes the forum-NPS partnership mutually beneficial."

"NPS is an ideal venue for forum collaboration," echoed U.S. Navy Capt. John Mastriani, U.S. NPOC. "The combination of

secure facilities, adaptive layout and combat systems engineering expertise make this a highly productive place for the forum's technical projects, working groups and leadership to meet."

Current NPS students and faculty were able to engage with MTMD-F representatives, gaining a deeper perspective on the technical, procedural and operational challenges that enable interoperability in maritime missile defense. NPS' popular Meyer Scholar program, initiated by Hammerer, prepares officers to contribute to this essential capability by advancing their technical understanding of naval combat systems, from concept to employment.

"Meyer Scholars take on this work in addition to their normal coursework," Rondeau said. The program combines NPS' rigorous graduate education with a focused combat systems curriculum, operationally relevant seminars, industry visits and research tied to real-world warfare system challenges.

"Meyer Scholars are trained to lead interoperability rather than chase it, by understanding the technical, tactical, and programmatic dimensions of integrated air and missile defense, and to translate emerging technologies into fleet-ready capabilities," she said.

Looking ahead, student and faculty participation in MTMD-F discussions identified potential pathways for further NPS contributions to IAMD interoperability and collaboration. The forum highlighted promising opportunities for IAMD-related research at NPS in areas such as:

- Support for the post-mission analysis of combat systems performance following At Sea Demonstration/Formidable Shield (ASD/FS), Pacific Dragon (PD), and Hardware in the Loop (HWIL) test events.

- The Ballistic Missile Defense Integration (BMDi) Project, which accelerates the development of BMD support, sensor and weapon capabilities.

- The Interoperability and Common Tactical Picture (IaCTP) Project, which promotes the development of a common operating picture across an international task group by analyzing and promoting standardization in datalink systems implementation.

- The Force Level Operational Architecture Technical Standard (FLOATS) Project, a platform-agnostic standard for combat-systems data exchange.

- The Force Threat Evaluation and Effects Coordination (FTE2C) Project, an effort to develop and compare decision support systems and coordinate kinetic and non-kinetic effects across the Coalition Task Group.

As Rondeau stressed to the group, the importance of these developments could not be a more evident call to action.

“The missile defense mission is active, consequential, and demanding of your excellence in both technology and leadership,” she said. “That reality sharpens the purpose of this essential forum and follow-on actions for national security and homeland defense.”