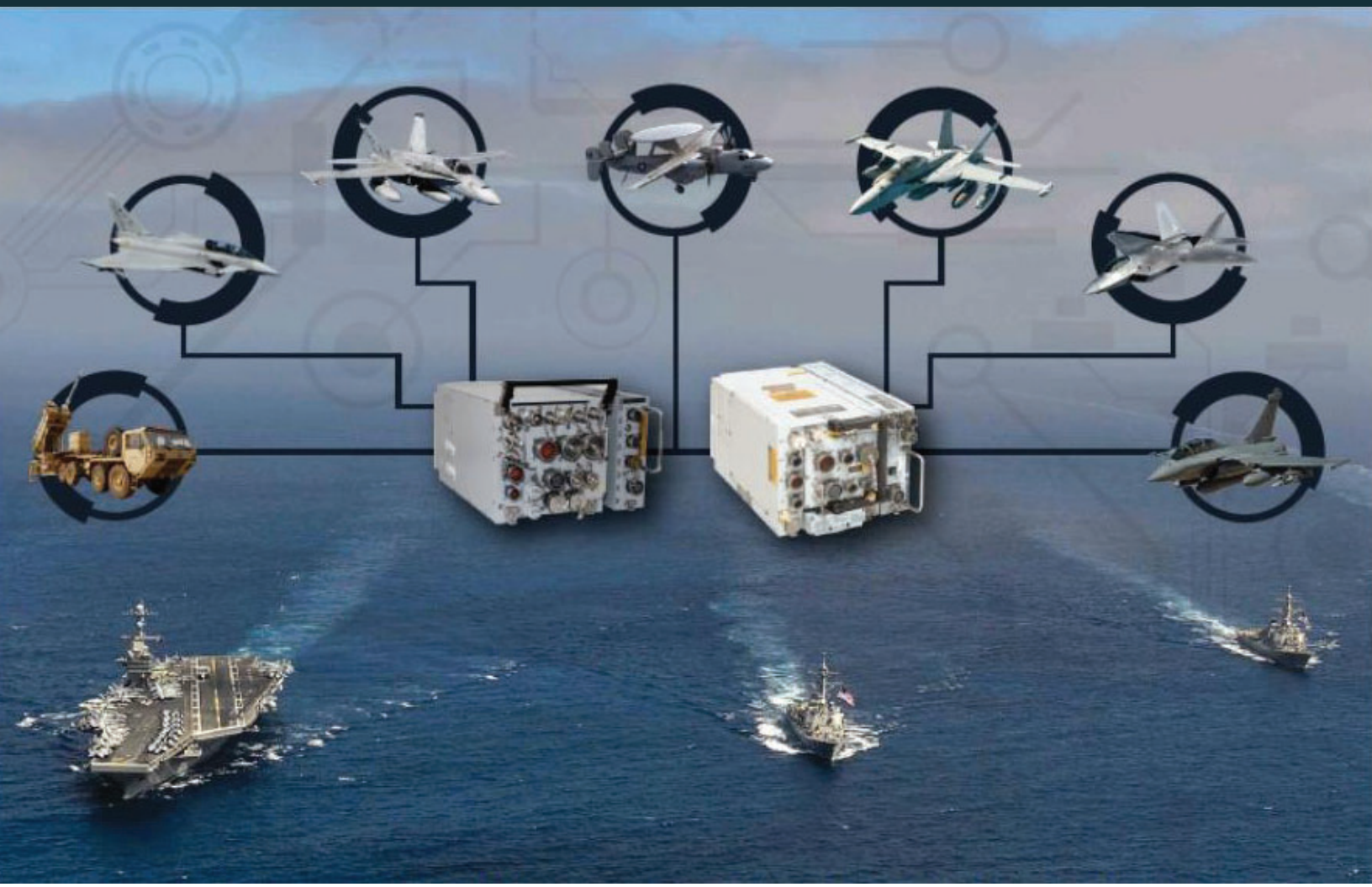
Multi-Functional Information Distribution System (MIDS)



Component-level cyber testing by the Navy's Operational Test and Evaluation Force and Naval Air Systems Command occurred in September 2022. Operational testing for the Block Upgrade 3 is planned for FY23.

SYSTEM DESCRIPTION

The Multi-Functional Information Distribution System (MIDS) Joint Tactical Radio System (JTRS) core terminal set provides Link 16 digital datalink, Link 16 digital voice communications, and Tactical Air Navigation (TACAN) capabilities.

The MIDS JTRS terminals with Concurrent Multi Net-4 (CMN-4) reception have improved digital receivers, improved message buffering, and faster processing to enable host aircraft to simultaneously receive additional Link 16 messages during periods of assured high message exchange rates to meet mission requirements.

The MIDS JTRS terminals with Tactical Targeting Network Technology (TTNT) provide the host aircraft with higher throughput and lower information latency communications, supported by applications that enable faster updates of precise target locations and identification data, while using an expanded radio frequency range. The Internet Protocol design also supports faster routing of messages and balancing of message traffic among the participating nodes.

The system under test includes the MIDS JTRS TTNT terminal set and the host platform components such as controls, displays, antennas, and external power amplifiers that support delivery of the MIDS JTRS communications, navigation, and identification capabilities.

The MIDS Program Office is managing the design of a tailored MIDS JTRS CMN-4 system for integration into the Air Force's F-22 fighter aircraft. This design will also provide TACAN, legacy Link 16, CMN-4, and Identification Friend or Foe/ Selective Identification Feature transponder capabilities.

MISSION

U.S. military commanders and allied nations use MIDS terminal variants on aircraft, ships, and ground units to communicate with their forces by secure and jam-resistant Link 16 voice and datalinks, along with Internet-Protocol-based TTNT communications through the entire range of military operations.

MIDS JTRS-equipped units rapidly exchange information, including air and surface tracks, identification, platform fuel/ weapons, cooperative integrated fire control, mission status, engagement orders, targeting data, and engagement results.

MIDS TACAN supports aircraft navigation, aircraft-to-aircraft station keeping, aircraft carrier recovery marshalling, and airfield approaches.

MIDS JTRS Identification Friend or Foe/Selective Identification Feature supports commercial airspace transit and safety, as well as secure, jam-resistant combat identification.

PROGRAM

The MIDS JTRS is an Acquisition Category IC program. DOT&E approved the MIDS JTRS TTNT Operational Assessment Plan (0357-07-OT-D4-1) on June 17, 2019. The Navy plans to continue platform integration testing of MIDS JTRS TTNT on E-2D and EA-18G in FY23. Development of an updated Test and Evaluation Master Plan for future increments of MIDS JTRS TTNT is expected in FY23.

» MAJOR CONTRACTORS

- Viasat, Inc. – Carlsbad, California
- Data Link Solutions – Wayne, New Jersey and Cedar Rapids, Iowa
- The Boeing Company – St. Louis, Missouri
- Northrop Grumman – Melbourne, Florida
- The MITRE Corporation – San Diego, California and McLean, Virginia

TEST ADEQUACY

MIDS JTRS TTNT component-level cyber testing, conducted in accordance with the DOT&E-approved Operational Assessment Plan (0357-07-OT-D4-1), occurred in September 2022. This event was observed by DOT&E. The adequacy of that testing will be evaluated after the test data are received by DOT&E.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

DOT&E will evaluate any impacts to effectiveness, suitability, and cyber survivability from the results of the component-level cybersecurity testing scheduled for 4QFY22.

RECOMMENDATIONS

The Navy should:

1. Ensure adequate component-level cybersecurity testing is completed before the beginning of platform-level MIDS JTRS TTNT cybersecurity testing.
2. Coordinate with DOT&E on an updated Test and Evaluation Master Plan for the next increment of MIDS JTRS.