

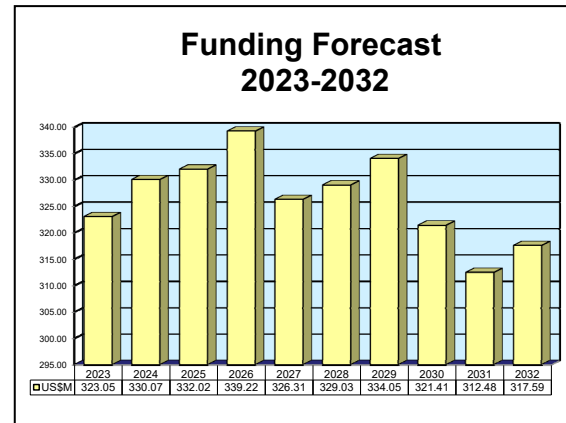
ARCHIVED REPORT

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Missile Defense Integration and Operations Center

Outlook

- Jacobs is acting as the MDIOC prime contractor, but a number of subcontractors will benefit from contracts related to infrastructure, support, and operation
- The U.S. MDA is expected to support the MDIOC with high levels of funding for decades to come
- The importance of MDIOC continues to grow as strong rhetoric from Russia about the use of nuclear weapons persists through the Ukraine-Russia conflict



Orientation

Description. The Missile Defense Integration and Operations Center (MDIOC) is a 676,000-square-foot facility housed on Schriever Air Force Base, Colorado, and a field operating activity of the U.S. Missile Defense Agency (MDA). The MDIOC supports all aspects of the MDA's mission, housing C2BMC, ground-based midcourse and system flight test control, digital modeling and simulation, intelligence support and analysis, warfighter support, and ground test activities. It also comprises a Space Center, an Enterprise Sensors Lab, a Joint Early Warning Laboratory, the Joint Functional Component Command for Integrated Missile Defense, and the 100th Missile Defense Brigade.

The MDIOC was formerly known as the Joint National Integration Center (JNIC) and prior to that, the Joint National Test Facility (JNTF).

Sponsor

United States Department of Defense
 Missile Defense Agency
 Washington, DC

Missile Defense Integration and Operations Center
 Schriever Air Force Base, Colorado

Status. Ongoing operation, as well as research, development, test, and evaluation.

Application. The MDIOC supports all aspects of the MDA's mission, including Ballistic Missile Defense System development, operations, and testing.

Missile Defense Integration and Operations Center

Contractors

Prime

Jacobs	http://www.jacobs.com , 1999 Bryan St, Suite 1200, Dallas, TX 75201 United States, Tel: + 1 (214) 638-0145, Fax: + 1 (214) 638-0447, Prime
ARES Corporation	http://www.arescorporation.com , 851 University Blvd SE, Suite 100, Albuquerque, NM 87106 United States, Tel: + 1 (505) 289-1450, Fax: + 1 (505) 257-3735, Program Participant (MDIOC/JNIC Subcontractor)
Axient	http://axientcorp.com , 1400 Crystal Dr, Suite 800, Arlington, VA 22202 United States, Tel: + 1 (703) 413-7750, Program Participant (MDIOC/JNIC Subcontractor)
Boecore	http://boecore.com , 90 S Cascade Ave, Ste 500, Colorado Springs, CO 80903 United States, Tel: + 1 (719) 540-5635, Fax: + 1 (719) 538-0265, Program Participant (MDIOC/JNIC Subcontractor)
Booz Allen Hamilton	http://www.boozallen.com , 8283 Greensboro Dr, McLean, VA 22102 United States, Tel: + 1 (703) 902-5000, Program Participant (MDIOC/JNIC Subcontractor)
COACT Inc	http://coact.com , 9140 Guilford Rd, Suite N, Columbia, MD 21046 United States, Tel: + 1 (301) 498-0150, Fax: + 1 (301) 859-4608, Email: info@coact.com , Program Participant (MDIOC/JNIC Subcontractor)
Colsa Inc	6726 Odyssey Dr, Huntsville, AL 35806-3302 United States, Program Participant (MDIOC/JNIC Subcontractor)
DXC Technology	http://www.dxc.technology , 1775 Tysons Blvd, Tysons, VA 22102 United States, Tel: + 1 (703) 876-1000, Email: generalinformation@csc.com , Program Participant (MDIOC/JNIC Subcontractor)
Davidson Technologies Inc	http://davidson-tech.com , 530 Discovery Dr, Huntsville, AL 35806 United States, Tel: + 1 (256) 922-0720, Fax: + 1 (256) 971-6861, Program Participant (MDIOC/JNIC Subcontractor)
ExVera Inc	http://exvera-us.com , 16445 Cathys Loop, Peyton, CO 80831 United States, Tel: + 1 (719) 432-9866, Program Participant (MDIOC/JNIC Subcontractor)
IBM Corp	http://www.ibm.com , New Orchard Rd, Armonk, NY 10504 United States, Tel: + 1 (914) 499-1900, Fax: + 1 (914) 765-7382, Program Participant (MDIOC/JNIC Support)
ITT Corp	http://www.itt.com , 1133 Westchester Ave, White Plains, NY 10604 United States, Tel: + 1 (914) 641-2000, Program Participant (MDIOC/JNIC Subcontractor)
International Preparedness Associates, IPA	http://theipagroup.com , 2610 Potters Rd, Suite 206, Virginia Beach, VA 23452 United States, Tel: + 1 (757) 321-0371, Fax: + 1 (757) 321-1882, Program Participant (MDIOC Support)
KBR	http://kbr.com , 345 Bob Heath Dr, Huntsville, AL 35806 United States, Tel: + 1 (256) 895-8845, Program Participant (MDIOC/JNIC Subcontractor)
L.C. Wright Inc	http://lcwright.com , 1847 Rhode Island Ave, McLean, VA 22101 United States, Tel: + 1 (703) 536-7706, Program Participant (MDIOC/JNIC Subcontractor)
L3Harris	http://www.l3harris.com , 600 Third Ave, New York, NY 10016 United States, Tel: + 1 (212) 697-1111, Fax: + 1 (212) 490-0731, Program Participant (MDIOC/JNIC Subcontractor)
Lockheed Martin Corp	http://www.lockheedmartin.com , 6801 Rockledge Dr, Bethesda, MD 20817 United States, Tel: + 1 (301) 897-6000, Fax: + 1 (301) 897-6704, Program Participant (MDIOC/JNIC Subcontractor)
Mantech International Corp	http://www.mantech.com , 2251 Corporate Park Dr, Herndon, VA 20171 United States, Tel: + 1 (703) 218-6000, Program Participant (MDIOC/JNIC Subcontractor)
Marzen Group LLC	http://www.marzen.com , 24 Railroad Sq, Nashua, NH 03064-2278 United States, Tel: + 1 (603) 889-9522, Email: info@marzen.com , Program Participant (MDIOC/JNIC Subcontractor)

Missile Defense Integration and Operations Center

Metron Inc	http://www.metsci.com , 1818 Library St, Suite 600, Reston, VA 20190 United States, Tel: + 1 (703) 787-8700, Fax: + 1 (703) 787-3518, Email: info@metsci.com , Program Participant (MDIOC/JNIC Subcontractor)
NMR Consulting, Network Management Resources	http://www.nmrconsulting.com , 15000 Conference Center Dr, Suite 420, Chantilly, VA 20151 United States, Tel: + 1 (703) 229-1055, Fax: + 1 (703) 229-1056, Program Participant (MDIOC/JNIC Support)
Northrop Grumman Mission Systems	http://www.northropgrumman.com , 12011 Sunset Hills Rd, Reston, VA 20190-3285 United States, Tel: + 1 (703) 968-1000, Historical Prime
Phacil LLC	http://www.bylight.com/phacil/ , 8484 Westpark Dr, Suite 600, McLean, VA 22102 United States, Tel: + 1 (703) 526-1800, Email: info@phacil.com , Program Participant (MDIOC/JNIC Subcontractor)
QinetiQ North America	http://www.qinetiq.com , 7918 Jones Branch Dr, Ste 350, McLean, VA 22102 United States, Tel: + 1 (703) 752-9595, Program Participant (MDIOC/JNIC Subcontractor)
Raytheon Intelligence & Space	http://www.raytheonintelligenceandspace.com , 2501 W University Dr, McKinney, TX 75071 United States, Tel: + 1 (972) 952-2000, Program Participant (MDIOC/JNIC Subcontractor)
Sparta Inc, A Parsons Company	http://www.parsons.com , 25531 Commercentre Dr, Suite 120, Lake Forest, CA 92630 United States, Tel: + 1 (949) 768-8161, Fax: + 1 (949) 583-9113, Program Participant (MDIOC/JNIC Subcontractor)
Teledyne Brown Engineering Inc	http://www.tbe.com , 300 Sparkman Dr, PO Box 070007, Huntsville, AL 35807-7007 United States, Tel: + 1 (256) 726-1000, Fax: + 1 (256) 726-5556, Email: publicrelations1@tbe.com , Program Participant (MDIOC/JNIC Subcontractor)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

Technical Data

The Missile Defense Integration and Operations Center (MDIOC), formerly the Joint National Integration Center (JNIC) and Joint National Test Facility (JNTF), is a secure two-building complex consisting of a 455,000-square-foot research facility and an adjoining 110,500-square-foot consolidated support facility for administrative personnel. The MDIOC provides mission-critical system technical capabilities and subject matter expertise in a dedicated and adaptable environment that enables developers, testers, and operators to deliver the capabilities for layered missile defense. The MDIOC interfaces with the Information Technology and Information Assurance Enterprise to provide high availability access to worldwide secure communications, along with network health and status monitoring, restoral capability, and technical expertise for all MDA-directed activities.

The operations, training, and research facility has high-performance automated data processing equipment and features dedicated global networking and state-of-the-art computer simulation capabilities. The facility houses several tenants, including the U.S. Air Force Space Warfare Center, the Attack and Launch Early Reporting to Theater (ALERT) Center, and the Cheyenne Mountain Training System.

Real-Time Models. A major focus of MDIOC real-time simulations is the evaluation of concepts for military operations. This wargaming activity takes place in the MDIOC's Gaming Center. The center represents, at national and theater levels, various command and control nodes that are used to evaluate "human-in-control" aspects of defense operations. A variety of simulations support this activity. These simulations are fully interactive – the outcome of a given wargame is dependent on real-time human decisions. The MDIOC routinely participates in distributed wargames linked to models and players at remote centers.

Non-Real-Time Models. The MDIOC has developed models for use in evaluating the design of ballistic missile defense and space systems. Depending on requirements, these models range from point designs of specific systems to parametric, rapidly configurable analysis tools. The MDIOC hosts a broad variety of simulations, including those developed at the MDIOC and other models from the simulation community. These models range from force exchange and architecture analysis models to specialized models dealing with environments, sensor coverage, object tracking and correlation, logistics support, and cost estimation.

Missile Defense Integration and Operations Center



Missile Defense Integration and Operations Center (MDIOC)

Source: U.S. Missile Defense Agency

Program Review

MDIOC research and development activities are funded under PE#0603904C, Missile Defense Integration & Operations Center.

MDIOC activity from the mid-2000s includes the following:

In FY07, the MDIOC program conducted fleet demonstrations to prove that deployed AEGIS ships can be integrated into the BMDS command and control structure. In FY08, the program conducted a wargame called Future Epoch Wargame.

In FY09, the program built and upgraded the Command and Control, Battle Management, and Communications test environment to support integration and testing of C2BMC Spiral 6.4 functionality and architecture.

From FY10 through FY16, the program continued to maintain a mission execution platform to provide an infrastructure (to include hardware, software maintenance, licenses, and upgrades) that supports RDT&E at the MDIOC of MDA elements/components and combatant command and warfighter operational elements.

Other work during this timeframe included installing communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, test,

training, and operational activities. This work continued into FY17.

In FY16-FY17, the program worked on computer-hosting specified threat models and supported the integration of related tools as required. The program also worked on managing network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources.

In FY18, the program worked to establish a DoD-compliant Special Purpose Processing Node (SPPN) to perform the unique network and data center services required to develop and deploy a layered BMDS to defend the United States. It also worked to sustain core communications distribution services across the MDA enterprise.

In FY19, the program launched plans to supply the SPPN infrastructure with routers, switches, firewalls, and intrusion detection systems that would provide IT support to over 10,500 MDA classified/unclassified users worldwide.

Work on the SPPN continued into FY20 with installation of the routers, switches, firewalls, and intrusion detection systems. Major facility updates were also underway, including the repurposing of basement space to accommodate growing IT and infrastructure

Missile Defense Integration and Operations Center

support personnel and the overhaul of the HVAC system with new, "green" HVAC components.

In FY21, the department provided the distinctive specifications and provisioning requirements associated with MDA RDT&E. The MDIOC would enable collaboration in near real-time with National Research Laboratories and test ranges.

Through FY24, the center will continue to support command, control, battle management, and communications across all service areas. Funding

remains stable, and typically goes toward operational maintenance and hardware upgrades

Of the many projects currently being funded, several are of note. First, as discussed above, is the establishment of a DoD-compliant SPPN capable of providing the unique network and data center services required to develop and deploy a layered Missile Defense System to defend the United States. Other funding supports the maintenance of facilities across the U.S., ranging from electrical and gas utilities to the utility infrastructure and delivery systems.

Funding

U.S. RDT&E FUNDING							
	PRIOR <u>AMT</u>	FY22 <u>AMT</u>	FY23 <u>AMT</u>	FY24 <u>AMT</u>	FY25 <u>AMT</u>	FY26 <u>AMT</u>	FY27 <u>AMT</u>
RDT&E (U.S. MDA)							
<i>PE#0603904C -</i>							
<i>Missile Defense Integration and</i>							
<i>Operations Center (MDIOC)</i>	530.882	44.188	49.367	50.549	56.624	58.02	59.193
MD22: Missile Defense							
Integration and Operations							
Center (MDIOC)	496.857	41.467	46.926	48.081	53.897	54.973	56.074
MC22: Cyber Operations	4.45	0.608	0.648	0.671	0.689	0.703	0.717
MD40: Program-Wide Support	29.575	2.113	1.793	1.797	2.038	2.344	2.688

All \$ are in millions.

Source: U.S. Department of Defense, FY24 Budget Estimates, Defense-Wide Justification Book, Vol. 2A, RDT&E, Missile Defense Agency,

Worldwide Distribution/Inventories

The U.S. MDA has signed a Memorandum of Agreement with the defense agencies of five nations to share information, including **Israel** and the **U.K.** This allows facilities in **Europe** and **Israel** and other allied countries to connect remotely with the U.S. Missile Defense Integration and Operations Center. However, the MDIOC enterprise itself is solely a program of the U.S. MDA.

Forecast Rationale

The Missile Defense Integration and Operations Center (MDIOC) is a primary facility of the U.S. Missile Defense Agency. The MDIOC performs many roles for the MDA. In addition to supporting ballistic missile defense training, it serves as a secure RDT&E facility and as a C2BMC node for the Ballistic Missile Defense System (BMDS). The MDIOC is crucial in virtually every aspect of the MDA's activities.

In 2017, program management firm Jacobs took over the MDIOC prime contractor title from long-serving Northrop Grumman. At the time, Northrop Grumman said that it would likely have to pursue layoffs as a

result of the decision, showing the enormous value that the MDIOC represents to its prime contractors.

The MDIOC contract will be lucrative not only for Jacobs but also for an extensive list of subcontractors that will share a large part of the funding. With over \$3.5 billion in funding forecast for the MDIOC over the next 10 years, there will be many opportunities for participation by subcontractors.

Basic RDT&E activities for the MDIOC are funded through the MDA's PE#0603904C – Missile Defense Integration and Operations Center (MDIOC) budget line, but this encompasses only the most fundamental

Missile Defense Integration and Operations Center

aspects of the facility's activities. Additional funding is provided for the MDIOC through at least 21 other MDA RDT&E budget lines, among them activities for the AEGIS BMD, Long Range Discrimination Radar (LRDR), and Space Tracking and Surveillance System (STSS). A great deal of the MDIOC's RDT&E activity is also performed under the Integrated Research and Development for Enterprise Solutions (IRES) contract, through which the MDIOC provides operations and oversight.

The MDA is expected to fully support the MDIOC's operation for many years to come, with funding expected to stretch into the 2050s and beyond. Many opportunities will be available to MDIOC contractors and subcontractors. Activities in 2023 are focused on the maintenance of facilities and ensuring future operation.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR COMMINGLED FUNDING (in millions US\$)												
Designation or Program		High Confidence				Good Confidence			Speculative			
	Thru 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
MFR Varies												
Missile Defense Integration and Operations Center (MDIOC) <> United States <> Armed Services												
<small>Note: Funding is a sum of MDIOC contracts and budget allocations</small>												
	6,917.21	323.05	330.07	332.02	339.22	326.31	329.03	334.05	321.41	312.48	317.59	3,265.21
Total	6,917.21	323.05	330.07	332.02	339.22	326.31	329.03	334.05	321.41	312.48	317.59	3,265.21