



# Department of Defense INSTRUCTION

**NUMBER** 5105.58

April 22, 2009

Incorporating Change 2, Effective September 24, 2020

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USD(I&S)

**SUBJECT:** Measurement and Signature Intelligence (MASINT)

**References:** See Enclosure 1

1. **PURPOSE.** This Instruction reissues DoD Instruction (DoDI) 5105.58 (Reference (a)) to establish policy, assign responsibilities, and provide instructions for MASINT management in accordance with the authority in DoD Directive (DoDD) 5143.01 (Reference (b)) and consistent with DoDD 5105.21 (Reference (c)).

2. **APPLICABILITY.** This Instruction applies to:

a. OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components"). The term "Military Services," as used herein, refers to the Army, the Navy, the Air Force, and the Marine Corps (including Active and Reserve Components).

b. Other non-DoD Governmental entities that are conducting MASINT under Secretary of Defense authority.

3. **DEFINITIONS.** See Glossary.

4. **POLICY.** It is DoD policy that:

a. MASINT operations and activities shall be treated as high priority efforts and receive full and pro-active support in all resourcing and programmatic actions.

b. DoD MASINT activities will be executed in a coordinated, coherent, and decentralized manner to effectively respond to U.S. Defense Intelligence priorities in support of national

security objectives, and in accordance with all applicable laws, Presidential directives, and applicable DoD guidelines and, when appropriate, consistent with Director of National Intelligence (DNI) guidelines.

c. MASINT data and products or new MASINT capabilities or tools will be compatible and consistent, as practicable, with DoD and Intelligence Community (IC) data standards, architectures, processes, and procedures. In addition, MASINT data and products will be accessible, and intelligence sources and methods will be protected through applicable classification, compartmentation, and dissemination controls.

d. DoD elements with data from non-intelligence DoD sensor systems that have potential MASINT attributes or capabilities shall, to the greatest extent practicable, provide that data to the MASINT community to accomplish MASINT objectives and meet DoD and IC requirements.

5. RESPONSIBILITIES. See Enclosure 2.

6. INFORMATION REQUIREMENTS. Intelligence continuity plans, including all response mechanisms and reporting requirements referred to in this Instruction, do not require licensing with a report control symbol in accordance with Paragraph 3 of Volume 1 of DoD Manual 8910.01 (Reference (d)).

7. RELEASABILITY. **Cleared for public release.** This instruction is available on the Directives Division Website at <https://www.esd.whs.mil/DD/>.

8. SUMMARY OF CHANGE 2. This administrative change updates the title of the Under Secretary of Defense for Intelligence to the Under Secretary of Defense for Intelligence and Security in accordance with Public Law 116-92 (Reference (e)).

9. EFFECTIVE DATE. This Instruction is effective April 22, 2009.

A handwritten signature in black ink, appearing to read "James R. Clapper, Jr.", is positioned above the printed name.

James R. Clapper, Jr.  
Under Secretary of Defense for Intelligence

Enclosures

1. References
  2. Responsibilities
- Glossary

ENCLOSURE 1

REFERENCES

- (a) DoD Instruction 5105.58, “Management of Measurement and Signature Intelligence (MASINT),” February 9, 1993 (hereby canceled)
- (b) DoD Directive 5143.01, “Under Secretary of Defense for Intelligence and Security (USD(I&S)),” October 24, 2014, as amended
- (c) DoD Directive 5105.21, “Defense Intelligence Agency (DIA),” March 18, 2008
- (d) DoD Manual 8910.01, Volume 1, “DoD Information Collections Manual: Procedures for DoD Internal Information Collections,” June 30, 2014, as amended
- (e) Public Law 116-92, “National Defense Authorization Act for Fiscal Year 2020,” December 20, 2019
- (f) Executive Order 12333, “United States Intelligence Activities,” as amended
- (g) DoD Directive 5240.01, “DoD Intelligence Activities,” August 27, 2007, as amended
- (h) DoD Directive 5250.01, “Management of Intelligence Mission Data (IMD) in DoD Acquisition,” January 22, 2013, as amended
- (i) Director of National Intelligence Memorandum, “(U) Execution of the Measurement and Signature Intelligence Services of Common Concern,” December 22, 2007<sup>1</sup>
- (j) DoD Instruction 3305.16, “DoD Measurement and Signature Intelligence (MASINT) Training and Certification,” August 13, 2015, as amended
- (k) Memorandum of Agreement Between the Director of National Intelligence and the Secretary of Defense, “Management of Acquisition Programs Executed at the Department of Defense Community Elements,” March 25, 2008<sup>2</sup>
- (l) DoD Directive 5134.01, “Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)),” December 9, 2005, as amended

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<sup>1</sup> Copies are available to authorized users at:  
[https://osdext.osd.mil/sites/ousdi/j\\_cws/Shared%20Documents/Forms/AllItems.aspx](https://osdext.osd.mil/sites/ousdi/j_cws/Shared%20Documents/Forms/AllItems.aspx)

<sup>2</sup> Copies are available to authorized users at: [https://usdi.dtic.mil/usdi\\_docs/keyref/usdi\\_keyref.cfm](https://usdi.dtic.mil/usdi_docs/keyref/usdi_keyref.cfm)

ENCLOSURE 2

RESPONSIBILITIES

1. UNDER SECRETARY OF DEFENSE FOR INTELLIGENCE AND SECURITY (USD(I&S)). The USD(I&S) shall:

a. Pursuant to Reference (b), exercise the Secretary of Defense's authority, direction, and control over the Defense Agencies and DoD Field Activities that are intelligence components and that conduct MASINT activities; exercise planning, policy, and strategic oversight over all DoD MASINT policy, plans, and programs.

b. Exercise the direction and control and provide for the fiscal management of the DoD MASINT mission under the Military Intelligence Program (MIP), in accordance with Executive Order 12333 (Reference (f)).

c. Exercise planning and policy oversight of human capital so that MASINT activities are manned, trained, equipped, and structured by the Military Departments to support national requirements and DoD missions and to fully satisfy the needs of the President, the National Security Council, the Intelligence Community (IC), and the Combatant Commands.

d. Coordinate, assess, and deconflict MASINT-related MIP requirements in association with National Intelligence Program (NIP) requirements.

e. With the assistance of the Chairman of the Joint Chiefs of Staff and the Director, Defense Intelligence Operations Coordination Center (DIOCC), evaluate DoD MASINT plans and programs for adequacy and responsiveness in support of intelligence planning and provide direction and guidance to DoD Components conducting MASINT activities.

2. DIRECTOR, DEFENSE INTELLIGENCE AGENCY (DIA). The Director, DIA, in addition to the responsibilities in section 8 of this enclosure and under the authority, direction, and control of the USD(I&S), shall:

a. Serve as the DoD MASINT Manager. Advise the Secretary of Defense, the USD(I&S), the Chairman of the Joint Chiefs of Staff, and the Combatant Commanders on MASINT issues.

b. Establish, lead, and operate a unified, effective, and efficient defense intelligence community for MASINT activities.

c. Manage DIA MASINT activities in accordance with Reference (c), DoDD 5240.01 (Reference (g)), and DoDD 5250.01 (Reference (h)), including research and development to support the transition of successful technology demonstrations into advanced development, fielding, and operations.

d. Submit a nomination for National MASINT Committee (MASCOM) Chair for DNI or designee approval. Assign personnel and provide administrative support to the MASCOM.

e. Invest in MASINT-related research, development, training, technical demonstration activities, and acquisition consistent with guidance, within resource limitations, and in coordination with appropriate DoD Components, with the goal of transitioning successful technology developments into advanced development, fielding, and use.

f. Foster MASINT support to forensics, biometrics, and identity management activities.

g. Support MASINT collection requirements and operations.

h. As the Defense Human Intelligence (HUMINT) Manager, develop, coordinate, and provide integrated HUMINT support to MASINT and MASINT-related activities, as needed.

i. Establish, manage, and resource the National MASINT Management Office (NMMO), consistent with DNI Memorandum (Reference (i)), as appropriate, the director of which shall:

(1) Provide the means and mechanisms necessary to assist the Director, DIA, in leading the Defense MASINT community as a fully integrated enterprise.

(2) Serve as the principal MASINT advisor to the Director, DIA, the DIOCC, and the National Intelligence Coordination Center.

(3) Manage, direct, program, plan, and oversee the U.S. MASINT System (USMS) for the Department of Defense, as appropriate, that will:

(a) Develop and maintain the MASINT Portal, and other follow-on tools as appropriate, to provide a central means of discovery for federated dissemination of MASINT products.

(b) Develop an end-to-end MASINT enterprise architecture to ensure an enterprise approach to the entire MASINT discipline.

(c) Prescribe and mandate MASINT standards to ensure interoperability; validate the integration of standards and architectures into the USMS; and support information sharing, advanced data-mining, and IC access to MASINT products, data, tools, and signatures.

(d) Develop and maintain the National MASINT Requirements System and future evolved systems to facilitate management of MASINT requirements receipt, registration, validation, tasking, tracking, and user satisfaction.

(e) Develop and maintain the National MASINT Data Broker and other future evolved tools to facilitate information sharing and data-mining throughout the MASINT enterprise.

(f) Guide the National Consortium for MASINT Research (NCRM) to foster research and development of new technologies from academia, industry, and the national laboratories.

(g) Foster MASINT research and development and technical demonstration activities within guidance and resource limitations, building upon the innovations developed in the NCRM and elsewhere. The goal is to find, develop, and demonstrate successful technologies and transition them into the larger MASINT enterprise, to include the USMS, for advanced development, fielding, and use.

(h) Foster MASINT support for geospatial intelligence (GEOINT) and signals intelligence (SIGINT) activities.

(i) Facilitate the advocacy, coordination, and satisfaction of MASINT threat signature data needs to support the DoD and IC signatures organizational structures developed in response to Reference (h).

(j) Develop consistent and coordinated MASINT policy implementing guidance for the USMS, including but not limited to MASINT classification and foreign disclosure and release; ensure uniform alignment and implementation with the IC and with allied partners.

(k) Leverage non-intelligence DoD sensor systems to accomplish MASINT objectives and meet requirements.

(l) Ensure the technical adequacy of MASINT training, including issuance and oversight of policies, standards, certifications, and procedures.

(m) Oversee and review military and civilian MASINT career development, certification, and training programs in the manner prescribed in DoDI 3305.16 (Reference (j)).

(n) Provide program management and execution advice on MASINT resources within the General Defense Intelligence Program and the MIP.

(o) Within established channels, provide outreach to Congress, the Department of Defense, the IC, and other MASINT customers through MASINT liaison officers and other subject matter experts. Inform various forums, processes, and organizations on current and future MASINT capabilities.

(4) Establish and provide Executive Secretariat support for a MASINT Board of Governors to provide senior, cross-community advice to the Director, DIA, in his or her capacity as the Defense MASINT Manager.

(5) Evaluate MASINT plans and programs for adequacy and responsiveness in support of MASINT requirements, and make recommendations to USD(I&S) in support of the Chairman of the Joint Chiefs of Staff; the Director, DIA; and the Director, DIOCC.

(6) Standardize MASINT-specific equipment, processes, and facilities, and eliminate unwarranted efforts, in coordination with DoD Components.

(7) Coordinate and support, as appropriate, MASINT activities across the Department of Defense.

(8) Utilize, when available, foreign government-derived MASINT or MASINT-related data and services necessary for SIGINT and GEOINT and their related applications.

(9) Foster sharing of MASINT with foreign partners and governments, consistent with policy, constraints, and restrictions.

j. As Director, DIOCC:

(1) Provide departmental validation of MASINT requirements received from DoD Components.

(2) Monitor and track the status of DoD MASINT requirements.

(3) Contribute to IC and DoD assessments on the performance of MASINT activities.

(4) Provide representation to the National MASINT Committee, sub-committees, and boards.

(5) Maintain continuous, integrated MASINT representation in the DIOCC to monitor and report status and disposition of MASINT sensors, platforms, and operations.

3. DIRECTOR, NATIONAL SECURITY AGENCY (NSA). The Director, NSA, in addition to the responsibilities in section 8 of this enclosure and under the authority, direction, and control of the USD(I&S), shall:

a. Support MASINT collection and data requirements that require SIGINT systems action.

b. Develop and provide SIGINT support to MASINT or MASINT-related activities and operations, consistent with law, directives, policies, constraints, and other restrictions.

c. Evaluate SIGINT plans, programs, and activities that support MASINT or MASINT-related activities for adequacy and responsiveness in support of intelligence needs, and make recommendations to USD(I&S) as appropriate and in coordination with the Director, DIA.

d. To the greatest extent practicable, ensure SIGINT standards and end-to-end SIGINT technical architectures are interoperable with MASINT.

e. Utilize, when appropriate, foreign government-derived SIGINT or SIGINT-related data and services necessary for MASINT and MASINT-related applications.



f. In coordination with NMMO, foster sharing of SIGINT-derived MASINT with foreign partners and governments, consistent with policy, constraints, and restrictions.

4. DIRECTOR, NATIONAL GEOSPATIAL INTELLIGENCE AGENCY (NGA). The Director, NGA, in addition to the responsibilities in section 8 of this enclosure and under the authority, direction, and control of the USD(I&S), shall:

a. Support MASINT collection and data requirements that require GEOINT systems action.

b. Coordinate with the Director, DIA, to develop and provide integrated support to MASINT and MASINT-related activities, as needed.

c. Coordinate with the Director, DIA, to provide interoperability between the National System for Geospatial Intelligence and the USMS architectures in support of intelligence objectives.

d. Provide GEOINT support to MASINT or MASINT-related activities outside the Department of Defense to include, but not limited to, national and civil activities.

e. Evaluate GEOINT plans, programs, and activities that support MASINT or MASINT-related activities for adequacy and responsiveness in support of intelligence needs, and make recommendations to USD(I&S), as appropriate, in coordination with the Director, DIA.

f. In coordination with Director, DIA, foster sharing of joint GEOINT-MASINT products and data with foreign partners and governments, consistent with policy, constraints, and restrictions.

5. DIRECTOR, NATIONAL RECONNAISSANCE OFFICE (NRO). The Director, NRO, in addition to the responsibilities in section 8 of this enclosure and under the authority, direction, and control of the USD(I&S), shall:

a. Establish policies for the acquisition of national space-based MASINT systems in coordination with the DNI; the USD(I&S); Director, DIA; the Secretaries of Military Departments; the Chairman of the Joint Chiefs of Staff; and others, as appropriate. Major systems acquisitions that are majority-funded by the NIP shall be executed in accordance with the Memorandum of Agreement between DNI and the Secretary of Defense (Reference (k)).

b. Research, develop, acquire, launch, and maintain the operational capability of national space-based MASINT collection systems to meet DoD and IC requirements. Maintaining operational capability includes command and control of platforms and other systems required to enable space-based MASINT intelligence collection, processing, and dissemination.

c. Provide architectural-related recommendations to the USD(I&S); Director, DIA; and DNI for mission decisions in relation to space-based MASINT systems architecture.

6. UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS (USD(AT&L)). The USD(AT&L), in accordance with DoDD 5134.01 (Reference (l)) shall:

a. Establish policies for the acquisition of MASINT systems (except national space-based systems) in coordination with the DNI; USD(I&S); Director, DIA; Secretaries of the Military Departments; Chairman of the Joint Chiefs of Staff; and others, as appropriate. Major systems acquisitions that are majority-funded by the NIP shall be executed in accordance with Reference (k).

b. Develop and maintain a DoD science and technology investment strategy to support the development, acquisition, and integration of technological advances in national and DoD MASINT systems and platforms managed by the Military Departments.

7. GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE. The General Counsel of the Department of Defense shall provide legal advice and assistance to the Secretary of Defense; USD(I&S); Director, DIA; and other DoD officials on MASINT activities, and as appropriate, in conjunction with the Attorney General.

8. HEADS OF THE DoD COMPONENTS. The Heads of the DoD Components shall assign responsibilities and establish procedures, as appropriate, within their organizations to implement this Instruction.

9. SECRETARIES OF THE MILITARY DEPARTMENTS. The Secretaries of the Military Departments, in addition to the responsibilities in section 8 of this enclosure, shall:

a. Designate an organizational entity within their respective Military Service as the Service MASINT focal point for all Service-related MASINT activities. Each Service element shall:

(1) Develop plans, programs, budgets, policy, doctrine, tactics, techniques, procedures, and lessons-learned relating to Service-specific MASINT activities and coordinate MASINT policy within the Service and with oversight organizations.

(2) Facilitate MASINT federation and integration by orchestrating Service MASINT tasking, collection, processing, production, exploitation, and dissemination functions as well as federated production and capability development. Implement Service MASINT plans, programs, budgets, policy, doctrine, tactics, techniques, procedures, and system requirement in organizing, training, and equipping Service-specific MASINT capabilities and forces.

(3) Assist DIA, NMMO, NRO, and others in conducting research and development to meet U.S. MASINT needs by coordinating MASINT requirements with the MASINT community and accomplishing specified research and development tasks within approved programs in accordance with DoD guidance and direction.

(4) Program and/or provide military personnel to perform MASINT missions in accordance with approved requirements and procedures.

b. Conduct or oversee respective Military Service MASINT activities, training, and operations in support of Service specific activities and Combatant Commands, as appropriate, through respective Military Services' MASINT training organizations and programs.

c. Operate and maintain MASINT facilities, platforms, sensors, and resources to conduct and support MASINT operations (with the exception of national space-based systems) as authorized and directed by the Secretary of Defense and USD(I&S), including military Reserve programs to meet emergency or wartime requirements for MASINT resources. Provide Director, DIA, with data from non-intelligence DoD sensor systems to assist in meeting MASINT requirements.

d. Submit MASINT information requirements to DIA, while simultaneously providing information copies to the National MASINT Committee.

e. Ensure their respective Military Service-managed space-based MASINT collection systems are researched, developed, acquired, launched, maintained, and operated to meet DoD and IC requirements. Maintaining operational capability includes command and control of platforms and other systems required to enable space-based MASINT intelligence collection, processing, and dissemination.

10. CHAIRMAN OF THE JOINT CHIEFS OF STAFF. The Chairman of the Joint Chiefs of Staff, in addition to the responsibilities in section 8 of this enclosure, shall:

a. Monitor the responsiveness of MASINT systems to military requirements and make recommendations regarding overall effectiveness to the Secretary of Defense.

b. Respond to, coordinate, and allocate resources to Combatant Commander requests for military-operated USMS platforms, units, or other assets.

c. Validate USMS systems and platform requirements through appropriate DoD and Joint Staff processes.

d. Develop and maintain joint doctrine for core, supporting, and related MASINT capabilities in joint operations.

11. COMMANDERS OF THE COMBATANT COMMANDS. The Commanders of the Combatant Commands, in addition to the responsibilities in section 8 of this enclosure and, as appropriate, through the Chairman of the Joint Chiefs of Staff, shall:

- a. Integrate, plan, and execute MASINT operations in support of intelligence planning, approved plans, and operations that have been directed by the Joint Staff.
- b. Submit MASINT information requirements to DIA, simultaneously providing information copies to the National MASINT Committee.
- c. Exercise operational control of military platforms, units, or other warfighter assets that have a MASINT capability in accordance with established procedures, taking into consideration other MASINT advisory and supplemental tasking, as appropriate. Provide the Director, DIA, with data from non-intelligence DoD sensor systems to assist in meeting MASINT requirements.
- d. Apprise the Secretary of Defense, USD(I&S), Chairman of the Joint Chiefs of Staff, and Director, DIA, of the operational status of all allocated MASINT resources.

GLOSSARYPART I. ABBREVIATIONS AND ACRONYMS

DIA	Defense Intelligence Agency
DIOCC	Defense Intelligence Operations Coordination Center
DNI	Director of National Intelligence
DoDD	DoD directive
GEOINT	geospatial intelligence
HUMINT	human intelligence
IC	Intelligence Community
MASCOM	National Measurement and Signature Intelligence (MASINT) Committee
MASINT	measurement and signature intelligence
MIP	Military Intelligence Program
NCMR	National Consortium for Measurement and Signature Intelligence (MASINT) Research
NGA	National Geospatial Intelligence Agency
NIP	National Intelligence Program
NSA	National Security Agency
NMMO	National Measurement and Signature Intelligence (MASINT) Management Office
NRO	National Reconnaissance Office
SIGINT	signals intelligence
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USD(I&S)	Under Secretary of Defense for Intelligence and Security
USMS	United States Measurement and Signature Intelligence (MASINT) System

PART II. DEFINITIONS

These terms and their definitions are for the purpose of this Instruction.

Board of Governors. A senior-level IC body, chaired by the Director, DIA, and charged to formulate guidance for the future direction of the MASINT enterprise, achieve unity of purpose, establish a common vision, and address issues of mutual concern to the MASINT enterprise and its stakeholders.

General Defense Intelligence Program. The Defense component of the NIP and the vehicle for bringing the national and defense intelligence capabilities to bear on DoD issues.

MASINT. Information produced by quantitative and qualitative analysis of physical attributes of targets and events to characterize, locate, and identify them. MASINT exploits a variety of phenomenologies to support signature development and analysis, to perform technical analysis, and to detect, characterize, locate, and identify targets and events. MASINT is derived from specialized, technically-derived measurements of physical phenomenon intrinsic to an object or event and it includes the use of quantitative signatures to interpret the data.

MASINT community. The collaborative confederation of various IC organizations, agencies, and entities performing MASINT management, collection, processing, analysis, and/or production activities, and including some consumers of MASINT.

MIP. Programs, projects, or activities that support USD(I&S) intelligence responsibilities and provide capabilities to better meet warfighters' operational requirements, as outlined in Reference (b).

NCMR. A research and development program designed to focus nationwide researchers on scientific and technological areas that will enhance existing MASINT capabilities or introduce new ones. Projects incubated in the NCMR are transitioned to other USMS, DoD, and national MASINT organizations for further application-specific development and fielding.

NIP. All programs, projects, and activities of the IC, as well as any other programs of the IC designated jointly by the NIP Director and the head of a U.S. department or agency or by the President. This does not include programs, projects, or activities of the Military Departments to acquire intelligence solely for the planning and conduct of tactical military operations by the U.S. Armed Forces.

MASCOM. The DoD and IC sounding board for MASINT issues. MASCOM advises the USD(I&S) and DNI on the status and strategic direction for U.S. MASINT capabilities. The National MASINT Requirements Subcommittee of MASCOM validates and prioritizes MASINT collection requirements for the Department of Defense and IC.

NMMO. A joint organization, subordinate to the Director, DIA, that manages and executes, on behalf of the Department of Defense and IC, the MASINT Services of common concern and other MASINT-related activities. NMMO provides the means and mechanisms to assist the Director, DIA, in leading the decentralized MASINT community as a fully integrated enterprise.

National MASINT Requirements System. A Web-based collection management application that supports the creation and submission of MASINT requirements and tracking of user satisfaction.

USMS. The combination of technology, policies, capabilities, doctrine, activities, people, data, and communities necessary to produce MASINT in an integrated multi-intelligence, multi-domain environment. The USMS includes the IC, the Joint Staff, the Military Departments (to include the Services), the Combatant Commands, and selected international and civil partners.

The USMS is a network-centric system-of-systems that provides the framework for tasking, collection, processing, exploitation and dissemination and research and development activities that support varied intelligence solutions for the national policymakers and the DoD community.