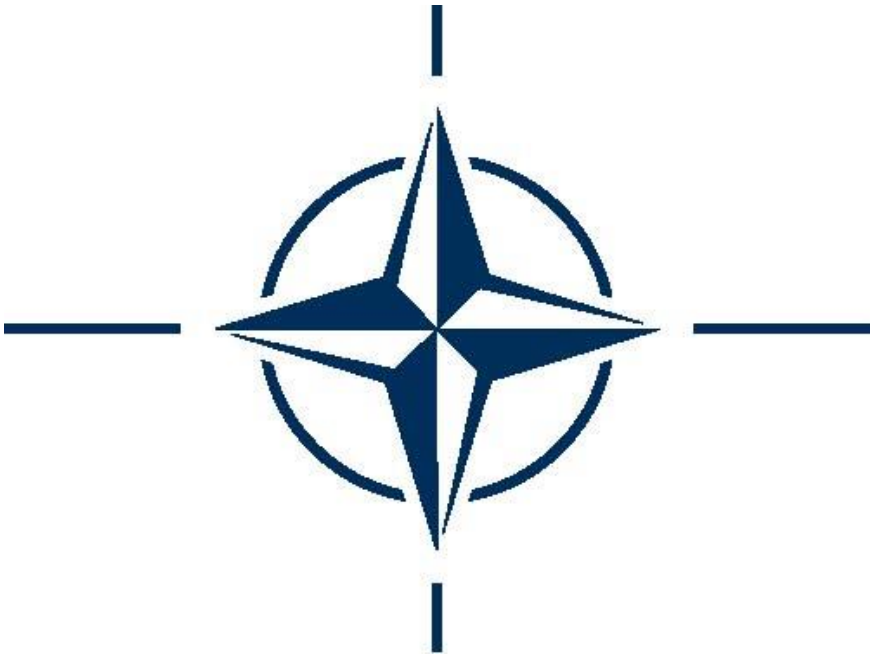
NATO STANDARD

ATP-102

NATO PROCEDURES FOR MARITIME INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE

Edition A Version 1

January 2020



NORTH ATLANTIC TREATY ORGANIZATION

ALLIED TACTICAL PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

INTENTIONALLY BLANK

NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

8 January 2020

1. The enclosed Allied Tactical Publication ATP-102, Edition A, Version 1, NATO PROCEDURES FOR MARITIME INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE, which has been approved by the nations in the Military Committee Maritime Standardization Board (MCMSB), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 1492.

2. ATP-102, Edition A, Version 1, is effective upon receipt.

3. No part of this publication may be reproduced, stored in a retrieval system, used commercially, adapted, or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the publisher. With the exception of commercial sales, this does not apply to member or partner nations, or NATO commands and bodies.

4. This publication shall be handled in accordance with C-M(2002)60.

for

Dieter Schmaglowski
Deputy Director NSO
Branch Head P&C

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

INTENTIONALLY BLANK

RESERVED FOR NATIONAL LETTER OF PROMULGATION

INTENTIONALLY BLANK

RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

INTENTIONALLY BLANK

RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
USA	a. The US has reservations with numerous terms throughout the publication that do not conform to the instructions found in PO(2015)0193 NATO Terminology Directive or the guidance in AAP-77 NATO Terminology Manual. Continued use of these terms introduces confusion with other components and with USA terminology during US led operations. This reservation will be withdrawn once approved terms are used throughout the AP or once revised terms are formally agreed by NATO and reflected in the NATO Term database. b. Reservation (effects/achieve). The United States does not accept the concept that "effects" can be "achieved." Specifically, paragraph 2-5, states "The commander is then able to decide on the desired targeting effect (lethal or non-lethal) and how to achieve it." Rationale: It is the United States joint doctrinal position that "effects" are created to achieve military objectives; they are not ends in and of themselves.
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

INTENTIONALLY BLANK

TABLE OF CONTENTS

TABLE OF FIGURES

INTENTIONALLY BLANK

FOREWORD

1. ATP-102, NATO Procedures for Maritime Intelligence, Surveillance, and Reconnaissance, provides the principles, fundamentals, and essential staff procedures for planning, directing, and executing intelligence, surveillance and reconnaissance (ISR) activities in the maritime domain, in support of the ISR effort at the joint level.

2. ATP-102 derives its authority from and compliments AJP-2.7, Allied Joint Doctrine for Joint Intelligence Surveillance and Reconnaissance.

3. Although intended primarily for NATO forces, the basic principles of ATP-102 also apply to military activities within the framework of a combined joint task force in a multinational force of NATO and non-NATO nations.

4. Comments and recommended changes to this document should be sent directly to:

CJOS COE
ATTN: TRANSFORMATION BRANCH
1562 MITSCHER AVENUE
NORFOLK, VA 23551-2487
USA

INTENTIONALLY BLANK

CHAPTER 1 - OVERVIEW

1.1 INTRODUCTION

1. The maritime environment ranges from the high seas to the more confined and/or shallow waters within littoral and coastal regions, estuaries, and the air and water space above and below them. Most human maritime activity is currently conducted within exclusive economic zones to which most maritime forces have unrestricted access to conduct routine operations.

2. The maritime domain provides extensive opportunities for intelligence, surveillance and reconnaissance (ISR). Oceanographic constraints, weather conditions, topographic limitations, electromagnetic spectrum complexity, congestion in littoral areas and traffic volume in sea lines of communication (SLOC) all present difficult challenges.

3. In maritime warfare, the generic term “scouting” is used to describe all surveillance and reconnaissance activities.[1] Navies have been conducting scouting since their inception. Surveillance and reconnaissance in the maritime domain involves the location, identification, and tracking of targets and elements of interest in the maritime and littoral environment and even ashore.

4. Intelligence, gained by analyzing information collected through surveillance, reconnaissance, and/or other activities is the lifeblood of every command and control system (C2S) and is therefore critical for the accomplishment of every mission. Accurate and timely intelligence leads to information superiority, a crucial element of combat power. Effective intelligence allows commanders at all levels to identify operational risks, threats, and opportunities in order to adequately address them in operations planning. It also supports decision-making and the targeting process.

5. Maritime intelligence, surveillance and reconnaissance (MISR) supports the joint intelligence, surveillance, and reconnaissance (JISR) effort in the maritime domain. In brief, MISR is the application of processes and mechanisms utilizing all available sensors and assets to understand the operational environment where maritime forces carry out their mission. MISR encompasses all intelligence and operations capabilities, to synchronize and integrate the planning and operation of all maritime collection capabilities. This includes the processing, exploitation, and dissemination of collected intelligence. As such, ISR is considered a critical enabler for maritime activities ranging from combat to humanitarian assistance.

[1] ATP-01, Volume I, Allied Maritime Tactical Instructions and Procedures.

1.2 PURPOSE

1. This publication establishes Allied maritime specific doctrine to guide the NATO command and force structure, and especially maritime commanders, staffs, and forces at sea engaged in MISR activities. This publication documents the principles, fundamentals, and essential staff procedures necessary to successfully plan, direct, and execute MISR in support of JISR activities to ensure timely and effective decision making.

2. Most probably, organic MISR sensor and asset availability will be limited. Therefore, a sound knowledge of sensor and asset capabilities and limitations is paramount for effective coordination and efficient employment of these capabilities. Additionally, the MISR results need to be disseminated to the right person, at the right time, in the right format, in support of NATO activities.

3. A functional MISR capability that provides effective sensing and situational awareness (SA) in the maritime environment requires complex integration of sensors and systems, tools to interpret and disseminate the information they collect, and the C2 capability to employ and direct them.

1.3 SCOPE

1. This publication describes the ISR process (i.e., TCPED: task, collect, process, exploit, and disseminate) as applicable to maritime units. Furthermore, it describes the generic procedures and interdependencies, and the required framework for the coordination and tasking of MISR assets, in order to ensure the commander's intelligence requirements (IRs) are answered.

2. This publication is aimed at commanders and their staffs operating at the higher tactical/operational level, such as a maritime component commander (MCC) and/or task force commanders conducting activities with both organic and non-organic ISR assets. This publication also provides unit commanders with an appreciation of the MISR processes and ways their units' organic assets are incorporated into the overall JISR plan.

1.4 TERMINOLOGY

1. This publication uses terms and descriptions defined in NATO capstone, keystone, and functional doctrine, and aligns itself with from AAP-06(2016), NATO Glossary of Terms and Definitions, whenever possible.

2. Throughout ATP-102, the generic term MISR assets is used to refer to all land or sea-based fixed-wing or rotary-wing air platforms, surface, subsurface, and land units, either manned or unmanned, employed in support of the maritime ISR mission.

3. The term MISR capability refers to a MISR asset supported by organizations, personnel, collectors, and systems that support infrastructure, processing, exploitation,

and dissemination (PED) processes and procedures to achieve a designated MISR result.

4. The MISR process is a framework through which a collection requirement (CR) is satisfied by a MISR capability following the same five sequential steps as the JISR process: task, collect, process, exploit, and disseminate (TCPED[2]).

5. To ensure consistency in describing MISR operations, processes, and capabilities, ATP-102 uses the following terms and definitions:

a. **Intelligence:** The product resulting from the directed collection and processing of information regarding the environment and the capabilities and intentions of actors, in order to identify threats and offer opportunities for exploitation by decision makers.[3]

b. **Surveillance:** The systematic observation of aerospace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means.[4]

c. **Reconnaissance:** A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.[5]

d. **Traditional intelligence, surveillance, and reconnaissance asset:** Assets that are primarily designed, equipped, and used for intelligence, surveillance and reconnaissance operations.[6]

e. **Non-traditional intelligence, surveillance, and reconnaissance asset**: Assets not primarily designed and equipped for intelligence, surveillance, and reconnaissance operations, but can contribute vital data and information especially in operations. These platforms are usually equipped with significant surveillance and/or reconnaissance capabilities to perform their primary tasks.[7]

f. **Intelligence cycle**: The intelligence cycle is the sequence of activities whereby data and information is obtained, assembled, and converted into intelligence and made available for users.[8]

[2] AJP-2.7, Allied Joint Doctrine for Joint Intelligence Surveillance and Reconnaissance, Chapter 3.2.
[3] AAP-06 (2016), NATO Glossary of Terms and Definitions.
[4] AAP-06 (2016).
[5] AAP-06 (2016).
[6] AJP-2.7.
[7] AJP-2.7.
[8] AAP-06 (2016).

g. **Operations cycle**: The cycle of the conduct of operations (referred to in this publication as the "operations cycle") includes the phases of operational-level analysis and planning, which compose the operational design. The operations cycle is completed by execution and assessment under operational management.[9]

h. **MISR result**: The outcome of the MISR process disseminated to the requester in the designated format.[10]

1.5 RELATED DOCUMENTS

1. ATP-102 is aligned with AJP-2.7. It is also directly connected and related to:

a. AJP-2, Allied Joint Doctrine for Intelligence, Counter-Intelligence and Security.

b. AJP-2.1, Allied Joint Doctrine for Intelligence Procedures.

c. AJP-3.1, Allied Joint Doctrine for Maritime Operations.

d. AIntP-14, Joint Intelligence, Surveillance and Reconnaissance Procedures in Support of NATO Operations.

e. AIntP-15, Countering Threat Anonymity: Biometrics in Support of NATO Operations and Intelligence.

f. AIntP-16, Intelligence Requirements Management & Collection Management (IRM&CM) Tactics, Techniques and Procedures.

g. ATP-101, NATO Procedures for Maritime Situational Awareness and Responding to Incidents of Intrusion and Harassment.

2. Figure 1.1 illustrates the place of ATP-102 within NATO doctrine architecture and the AJP-2 intelligence doctrine series.

[9] AJP-5, Allied Joint Doctrine for the Operational-Level Planning, Section V, 0248, Operational-Level Planning as a Cycle.
[10] This term is only used in this publication (AIntP-14 uses the term JISR result).

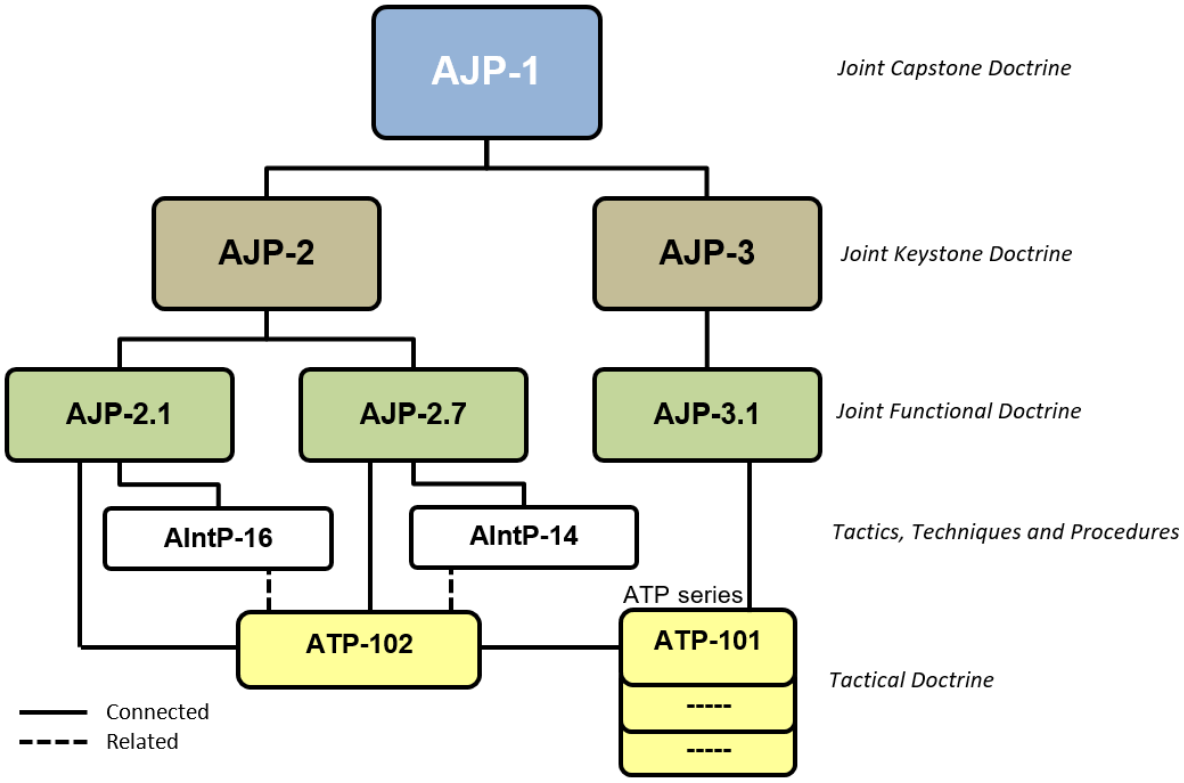


Figure 1.1: ATP-102 within the NATO Allied (Joint) Doctrine Architecture

INTENTIONALLY BLANK

CHAPTER 2 - MISR FUNDAMENTALS

2.1 INTRODUCTION

1. MISR is executed through the TCPED process, utilizing all available sensors and assets in the maritime environment or in support of maritime forces, to identify potential threats and exploit collected information to support the full range of NATO activities. MISR is a process employed at the tactical and operational level that:

a. Contributes to information superiority.

b. Supports decision making.

c. Improves operational effectiveness.

2. MISR is the application of intelligence, surveillance and reconnaissance to the maritime environment and this includes all domains: land, maritime, air, and cyberspace. While surveillance and reconnaissance help answer the questions what, when, and where, the combined elements of various ISR sources and disciplines answer how and why.

3. MISR is focused on a four-dimensional operational environment, considering the situation above, on, and below the surface of the sea as well as the littoral and cyberspace throughout the area of operation (AOO), area of interest (AOI), area of responsibility (AOR) or joint operations area (JOA). Collection of data and information through surveillance and reconnaissance is not a trivial task taking into account the complexity of the maritime environment and the inherent limitations of maritime sensors.

4. Operational needs for data, information and intelligence often exceed available organic capability and capacity, as in most cases a maritime commander will have a limited number of MISR assets. Therefore, it is critical that all available air and surface joint assets: traditional or non-traditional[11], organic or non-organic, manned or unmanned, are carefully managed and optimally employed to satisfy the commander's information needs.

5. In the maritime environment every platform is a sensor. Ideally every sensor should be linked in a real-time network to expand the reach and effectiveness of the task force (TF)/task group (TG) through common interfaces, data formats, and standards. A robust mix of sensor capabilities provides flexibility to the commander in acquiring the information required. MISR should enable the cross-cueing of sensors,

[11] Non-traditional ISR Assets: assets not primarily designed and equipped for intelligence, surveillance and reconnaissance operations, but can contribute vital data and information especially in operations. These platforms are usually equipped with significant surveillance and/or reconnaissance capabilities to perform their primary tasks. (AJP-2)

which improves operational efficiency by reducing the search area and maintaining operational tempo. It is also beneficial if MISR assets are modular in design so that they can be tailored to the needs of each mission.

6. A key tenet of maritime platforms is their persistence on station and ability to provide real-time or near real-time (NRT) surveillance data. Some maritime platforms are also able to deploy organic ISR assets, to gather intelligence beyond their horizons and even ashore.

7. MISR supports maritime situational awareness (MSA).[12] MSA requires continuous intelligence gathering, surveillance and reconnaissance by all available sensors and assets to establish and maintain a recognized maritime picture (RMP). The RMP in turn, is a vital component of the NATO common operational picture (COP).

2.2 SCOUTING OPERATIONS

1. The term scouting is used to describe all surveillance and reconnaissance activities carried out against any target or area. The primary purpose of conducting surveillance and reconnaissance is to collect specific items of information at a particular time and place. However, since maritime forces have a continuous need for information about the operational environment, they are constantly engaged in surveillance, and, as such, units may contribute to ISR whether or not specifically tasked to do so.

2. Surveillance and reconnaissance may be carried out overtly or covertly, and the tactical implications must be considered before missions are ordered and MISR assets are tasked. In general, overt tactics are adopted when concealing the unit's task is undesirable, unnecessary, or impracticable, and/or the need for speed in gaining contact overrides the need for concealment. Covert tactics are adopted to avoid detection of the ISR unit or at least minimize the warning to adversary defences, to deny the adversary continuous intelligence of the unit, to force the adversary to use active sensors, or to deceive the adversary.

3. Surveillance activities are conducted to provide indications and warning (I&W) of adversary initiatives and threats, as well as maintaining MSA. Surveillance missions may be persistent in nature, tasking multiple assets to work in a synchronized manner. The NATO surveillance coordination centre (SCC), in headquarters (HQ) MARCOM, coordinates all maritime surveillance operations in order to optimize the effort and the information obtained. There are two methods of conducting maritime surveillance:

a. Patrol. A patrol is a detachment sent out for the purpose of gathering information or conducting a systematic and continuing investigation along a line to detect or hamper enemy movements. The four basic types of patrol are fixed station, linear, cross-over, and area.

[12] Because of the synergy and seamless connection of MISR with MSA this publication should be read in conjunction with ATP-101, which describes the detailed procedures for MSA and responding to incidents of intrusion and harassment.

b. Search. A search is a systematic investigation of a particular area to establish the presence or the absence of (a) specific contact(s). The five basic types of search are rectangular, sector, expanding square, intercepting, and random.

4. Reconnaissance is a mission-specific task with a specific data collection plan, usually of relatively short duration. Use of maritime reconnaissance is critical to:

a. obtain information on the location and strength of adversary forces.

b. identify and report details of targets suitable for attack or defence against.

c. obtain topographical, environmental and electronic data which may affect the operations.

d. identify and report pattern of life (POL) activities.

e. determine principal commerce routes.

5. Reconnaissance operations are often classified according to the purpose for which they are undertaken (weather reconnaissance, beach reconnaissance, etc.) or according to the means employed in obtaining the information (radar reconnaissance, automatic identification system (AIS) reconnaissance, etc.). Electronic reconnaissance is undertaken to collect data concerning electronic emissions.

6. A description of scouting activities with the relationship between the various types of operations, missions, methods, and tasks is presented in Figure 2.1[13]. Details about surveillance and reconnaissance operations, the specific tasks/methods involved, and the responsibilities of the officer in tactical command (OTC) may be found in ATP-01, Volume I.[14]

[13] ATP-01, Volume I.

[14] Details of the methods for gathering information and exploitation of the recognized picture are contained in the relevant warfare publications: ATP-18, Allied Manual of submarine Operations, ATP-28, Allied Antisubmarine Warfare Manual, and ATP-31, NATO Above Water Warfare Manual.

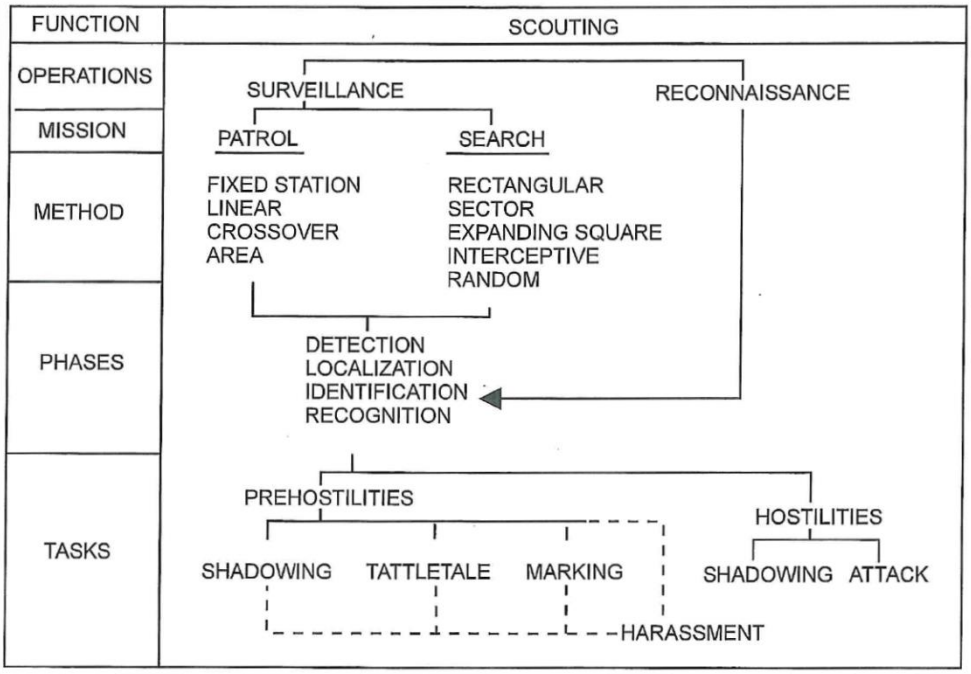


Figure 2.1: Scouting Activities (ATP-01, Volume I)

2.3 MISR IN THE OPERATIONAL-LEVEL PLANNING PROCESS

1. The NATO operations planning process (OPP[15]) in response to a rising crisis is based on current, strategic and basic intelligence to support the development of strategic assessments, planning products and directives. During peacetime, the intelligence required in support of the OPP Phase 1 (I&W and SA) is collected, processed, and disseminated by individual nations or other sources. After the troop-contributing process (force generation), transfer of authority (TOA), and initial deployment of forces, MISR supports the operational-level planning process (OLPP) by contributing to the JISR effort with the timely provision of current intelligence, which enables the continuous refinement of the campaign plan.

2. Planning occurs prior to the commencement of operations and continues throughout the entire campaign as current and future plans become current operations. MISR answers commanders' IRs and contributes significantly to the commander's SA. It is crucial that commanders and all staff sections participate in MISR planning, from the identification of IRs, the collection and reporting of information to answer priority intelligence requirements (PIRs), to the assessment of MISR activities and the updating of MISR plans. MISR planning should be fully synchronized, integrated and coordinated within a joint operation in order to fill any potential capability shortfalls.

3. Operation plans (OPLANs) should clearly state how coordination, tasking, reporting and dissemination of collected intelligence will occur. Operations planners

[15] See AJP-5, Allied Joint Doctrine for Operational Level Planning for details on the OPP and the OLPP.

supported by subject matter experts (SMEs) will determine the types, mix, and numbers of MISR assets (including non-traditional MISR assets) required for any given activity. In general, ISR collection assets can be divided into three groups:

a. Organic. Organic ISR assets are those at the tactical level that are an integral part of an organization, unit, or weapon system. These assets are readily available to maritime commanders and require the least level of coordination for their tasking. As such, they should be the first choice in satisfying commanders IRs.

b. Theatre. Theatre ISR assets are those assets that operate independent of an organization, unit, or weapon system, and that have utility throughout the whole theatre of operations. These assets are normally owned by the joint force and tasked through the JISR process. Theatre lSR assets require a high level of coordination not only for their tasking but also during and after mission execution. Some important factors to be considered are the handover points between component commands (CCs), possible communication issues between joint assets, the battle space management, and the need for NRT dissemination of collected information.

c. National. National ISR assets are those assets that are controlled by the owning nation. Access to these capabilities and their products require additional coordination and national approval. The owning nation may transfer authority of these assets to NATO (direct support) or keep them under national control (associated support).[16] Space-based sensors and submarines are typical examples of national ISR assets operating in direct or associated support of a NATO activity. The integration of assets operating under associated support and the efficient use of their products is always a challenge, as it depends on the owning nations' willingness to share information.

4. Each NATO activity will have unique reporting requirements based on the nature of the activity and the ISR assets available. The theatre collection manager (TCM), in consultation with other involved HQ and relevant national organizations, will establish the mission reporting procedures, criteria, and timings.

2.4 MISR IN SUPPORT OF THE INTELLIGENCE CYCLE

1. MISR, as an integral part of the JISR effort, supports the collection phase of the intelligence cycle by coordinating, integrating, de-conflicting and synchronizing the

[16] A national unit assigned in direct support will operate under the tactical control (TACON) of the OTC who is being supported; operational control (OPCON) and tactical command (TACOM) remain with the assigning authority. A national unit assigned in associated support operates independently of the supported force, under the TACON of the assigning authority, who coordinates the tasking and movement of the supporting unit in response to the supported OTC's requirements.

collection of data, information and intelligence assigned to the available MISR assets. The MISR results are further processed within the intelligence cycle and fused with intelligence results from other collection disciplines and sources to produce all-source intelligence products to meet the commander's objectives. See Figure 2.2.

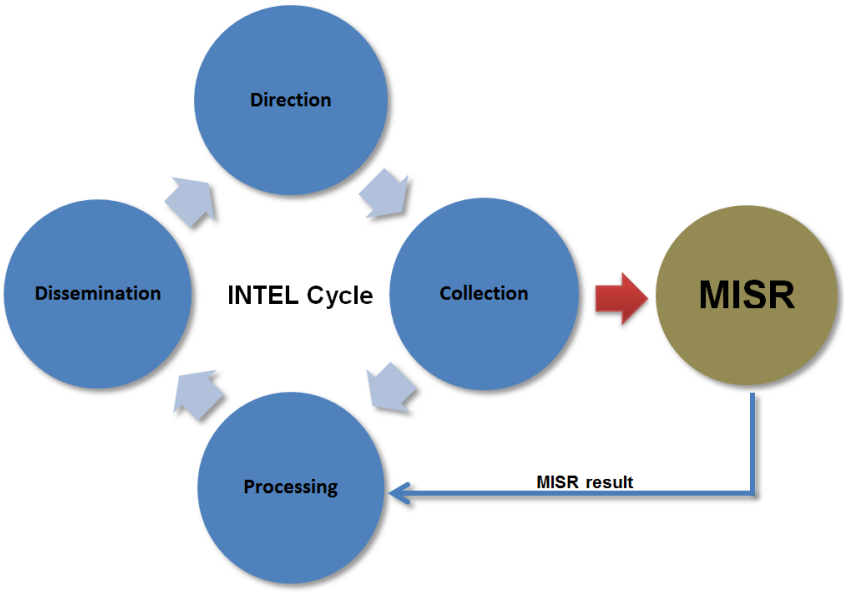


Figure 2.2: MISR in Support of the Intelligence Cycle

2. MISR direction is based on identified IRs. Through the intelligence requirements management & collection management (IRM&CM) process, IRs are converted into validated CRs. The IRM&CM process establishes requirements, develops tasking, and co-ordinates with appropriate collection sources or agencies while monitoring results and re-tasking, as required.

3. The intelligence staff, in coordination with other staff elements, sets out the strategy for the collection of information and intelligence to meet the requirements stemming from the commander, the joint intelligence preparation of the operational environment (JIPOE) process, and the targeting organization.

2.5 MISR IN SUPPORT OF THE TARGETING CYCLE

1. MISR provides intelligence for the joint targeting cycle. Targeting plays an important role in the commander's decision to employ forces. MISR operations contribute to the operational-level targeting cycle by detecting, locating, and identifying a target, analyzing its vulnerabilities, relative importance, and operational status, and later by providing input for the results of engagements (lethal or non-lethal) through assessment.

2. The principal phases of the targeting cycle[17] in which MISR is involved (see Figure 2.3) include:

a. Phase 2, Target development. MISR assets may be used to achieve this requirement with target analysis, vetting, and validation. The commander is then able to decide on the desired targeting effect (lethal or non-lethal) and how to achieve it.

b. Phase 5, Mission planning and force execution. MISR assets contribute to the find, fix, and track steps of target execution.[18] Traditional and non-traditional ISR assets are able to detect the presence of targets in named areas of interest (NAIs) and to detect conditions that make it appropriate for target engagement. MISR assets are equipped with sensors that allow the identification and geolocation of targets, the initial risk assessment, and the tracking of targets until their successful prosecution and engagement assessment.

c. Phase 6, Assessment. Battle damage assessment (BDA) is the assessment of effects resulting from the application of military action, either lethal or non-lethal, against a military objective.[19] It consists of a physical damage assessment, functional damage assessment and a target system assessment. Although the assessment is primarily an intelligence responsibility, it is an integral part of the targeting process and requires co-operation with the operations and fire support staffs. The production of BDAs in the maritime domain will give rise to a series of IRs that could be satisfied by suitable MISR assets. The effectiveness of the intelligence process supporting BDA will affect the conduct of operations and the intelligence staff must ensure that proper procedures are in place to provide support to the BDA process.

[17] See AJP-3.9, Allied Joint Doctrine for Targeting, for details on the joint targeting cycle.
[18] Target execution consists of seven steps: find, fix, track, target, engage, exploit, and assess (F2T2E2A).
[19] AAP-06 (2016).

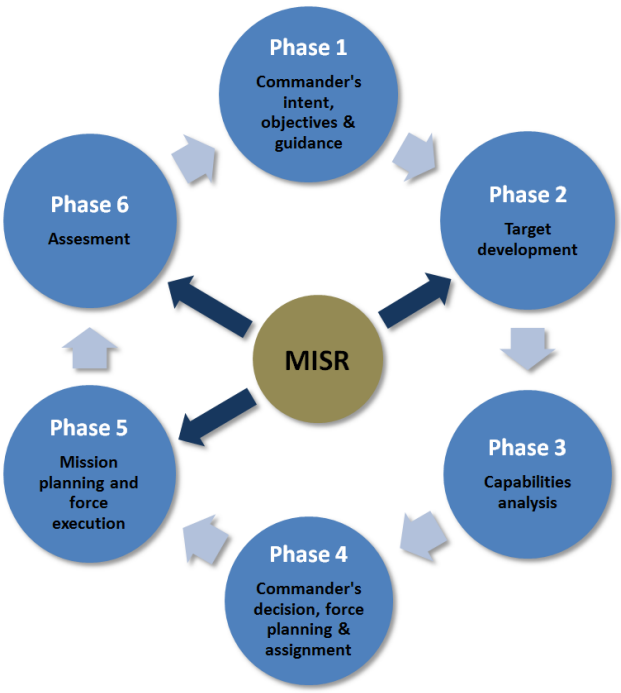


Figure 2.3: MISR in Support of the Joint Targeting Cycle

3. Timely satisfaction of target development, mission planning, target execution and BDA requirements is crucial to overall mission success. These requirements will be included on the component command's daily collection requirement list (CRL) to allow for deliberate planning of appropriate maritime assets in support of the entire joint targeting cycle. It is important for collection management personnel, intelligence analysts, and targeting personnel to remain engaged throughout the entirety of the targeting cycle to allow for effective and efficient use of all available ISR assets in support of targeting.

2.6 ROLES, FUNCTIONS, AND RESPONSIBILITIES

1. In general terms, the production of the ISR operational plan is the result of a shared effort between intelligence and operations staffs. It allows the collection requests to be vetted through ISR resources, suitable for meeting the demand. Consequently, the harmonization of intelligence and operations functions is essential to maximize the efficiency and effectiveness of the employment of MISR capabilities. The direction and management of the MISR process reflects the same organization of the JISR[20] adapted to the maritime specifics.

2. Completion of CRs should be achieved through the most efficient use of ISR assets. Organic and/or theatre assets may be used to achieve this aim. Maritime intelligence staff must follow the JISR process for the tasking of assets, including

[20] AJP-2.7, Chapter 2.

organic assets. Organic maritime assets may also be tasked for the fulfilment of other component commands requirements.

2.6.1 MARCOM Entities' Role in MISR

1. NATO maritime intelligence coordination centre (NMICC). Located in MARCOM by the maritime operation centre (MOC), NMICC is responsible for receiving, analysing, exploiting, fusing, and disseminating all source intelligence provided by organic and, non-organic assets and NATO nations. It is a source where NATO commanders may request intelligence/surveillance support from nations to meet their IRs.

2. Commander maritime air NATO (COMMARAIRNATO). Maritime air assets play a vital role in data/information collection. COMMARAIRNATO coordinates tasking for maritime air assets under its OPCON. It also maintains an awareness of assets not under its direct control.

3. Commander submarines NATO (COMSUBNATO). COMSUBNATO (CSN) commands NATO submarines as a functional role for MARCOM. On behalf of MARCOM, CSN serves as the coordinating submarine operating authority (SUBOPAUTH) with other NATO commands and national authorities. Submarines are valuable contributors to JISR, and provide a strategic, operational and tactical information-gathering capability. CSN provides direction and guidance to assigned submarines in order to enhance their contributions to the JISR effort and direct the dissemination of gathered information.

4. NATO shipping centre (NSC). The NSC is the primary point of contact in NATO with the broader maritime community, including the commercial maritime shipping organisations/agencies. It provides information exchange on merchant shipping matters and facilitates voluntary co-operation between NATO and commercial shipping operators. The NSC collects and processes merchant shipping information, developing a picture of shipping in AOIs in order to support military operational requirements and advises shipping about the evolving situation.

2.6.2 MISR Staff Functions

The essential MISR staff functions are focused on the commander's intelligence and operations priorities. The main objective is the timely harmonization of the working procedures between the intelligence and operations staffs, through an adapted battle rhythm or planning cycle. These staffs play an instrumental role ensuring MISR tasks are integrated in time and space with ongoing operations. There are no specific differences to be highlighted between management staff functions within a joint or maritime environment. The management functions summarized in the following paragraphs are described in detail in AJP-2.7, Chapter 2, and in AIntP-14, and AIntP-16.

2.6.2.1 Intelligence Requirement Management and Collection Management

1. IRM&CM coordination is critical to ensuring that intelligence and information requirements are satisfied. “IRM&CM” combines two distinct functions in one term. IRM&CM can be conducted by establishing separate IRM and CM functions or by combining the two functions into a single element. The IRM&CM staff is responsible for:

a. Developing the commander’s PIRs.

b. Developing, disseminating and implementing the intelligence collection plan (ICP).

c. Minimizing duplication of intelligence requests and managing the process of converting IRs into CRs.

d. Tasking and coordinating with appropriate collection sources and/or agencies, ensuring the de-confliction and synchronization of intelligence collection assets.

e. Monitoring the MISR results and re-tasking, as required.

2. The IRM&CM process starts with the receipt of an IR, a request for information (RFI[21]) or an intelligence, surveillance and reconnaissance request (ISRR[22]) submitted from any command level or from a national HQ. All requests forwarded to the IRM&CM staff should include information like the desired type of collection, the target to be collected, the duration of collection, the desired classification of the collected information, the format of the deliverable, and the justification for collection. The IRM&CM process ends when the requestor receives the requested information in the desired format.

3. IRM core activities. Upon receipt of a request, the IRM staff processes and validates the request to determine if it is lawful, appropriate, and justified. Invalid requests are returned to the requestor with a proper explanation. Next, the IRM staff examines whether the requested information is already held (in this case it could be provided immediately) or is available from an external source (in this case the IRM staff submits a request for dissemination). This is a critical step in the process. To ignore existing data/intelligence is a misuse of resources and only serves to create unnecessary tasking of limited capabilities. If the request is valid, not already held, and not available from an external source, it is forwarded to the CM staff as a validated IR.

[21] The format and content of an RFI is described in AIntP-8, Request for Information.

[22] An RFI used to request collection is often called an ISR request (ISRR). An ISRR is best when the requestor has sufficient knowledge of the capabilities, limitations and availability of ISR assets. ISRRs are not always based on IRs, but compete for the same assets. These requests are usually for real-time monitoring of adversary forces or a view of the situation as tactical forces execute manoeuvres and engagement. ISRRs are submitted with an ISRR message in accordance with AD 065-005, Annex E.

4. CM core activities. The CM staff converts the received, validated IR into a prioritised CR.[23] Subsequently it matches the CR to available MISR assets and produces/coordinates the plans for collection, processing, exploitation and dissemination of intelligence. If there is no availability of MISR assets in a given area or the requested information cannot be collected by a MISR asset, it is the CM staff's responsibility to determine the most appropriate supporting command/agency/entity to forward the request (usually through the joint collection management board (JCMB[24]) via its subordinate maritime collection management board (MCMB)), as an RFI. It should be noted that intelligence staffs involved in IRM and CM functions do not have the executive authority to issue orders in the operational area. Tasking is undertaken as a collaborative effort between the intelligence and operations staffs. For that reason, the agreed details of tasking should be clearly stated in the OPLAN, as well as the subordinate, subsequent, and supplemental plans, as appropriate. Figure 2.4 presents the core activities of the IRM&CM process.

5. This publication is focused on IRs and ISRRs that, when validated and converted into prioritised CRs, are satisfied by MISR assets and capabilities. Requests that are either not converted into a CR or are submitted as an RFI to be satisfied by a supporting command/agency with the use of a JISR collection asset, are not examined. The latter case falls under the JISR process described in AJP-2.7 and AIntP-14.

6. IRM&CM presents significant data management and interoperability challenges. Both IRM&CM require seamless linkages with external agencies, HQ, and the various requesting, managing, tasking, production, and distribution authorities. Due to these restrictions and the fact that HQ MARCOM, as the sole NATO SCC, is responsible for maintaining comprehensive SA throughout the maritime environment, the IRM&CM functions remain at HQ MARCOM. HQ MARCOM's IRM&CM provides guidance and in accordance with allied command operations (ACO) directives and Commander MARCOM PIRs, develops the ICP. HQ MARCOM's IRM & CM is the direct liaison with supporting-command IRM&CM sections (or equivalent staff), national intelligence liaison officers, national intelligence cells, national MOC's, and the IRM&CM element at forward headquarters level (FHQ).[25]

7. The IRM&CM element at the FHQ is usually limited in resources and in some cases the two functions, IRM and CM, are carried out by the same personnel in close coordination with the operations staff.

[23] See AIntP-14, Annex B for JISR prioritisation method examples.
[24] See AIntP-14 for details on the JCMB role and responsibilities.
[25] At the joint level, HQ MARCOM's IRM&CM is linked to SHAPE J2 OPS IRM and SHAPE J2 JISR CM.

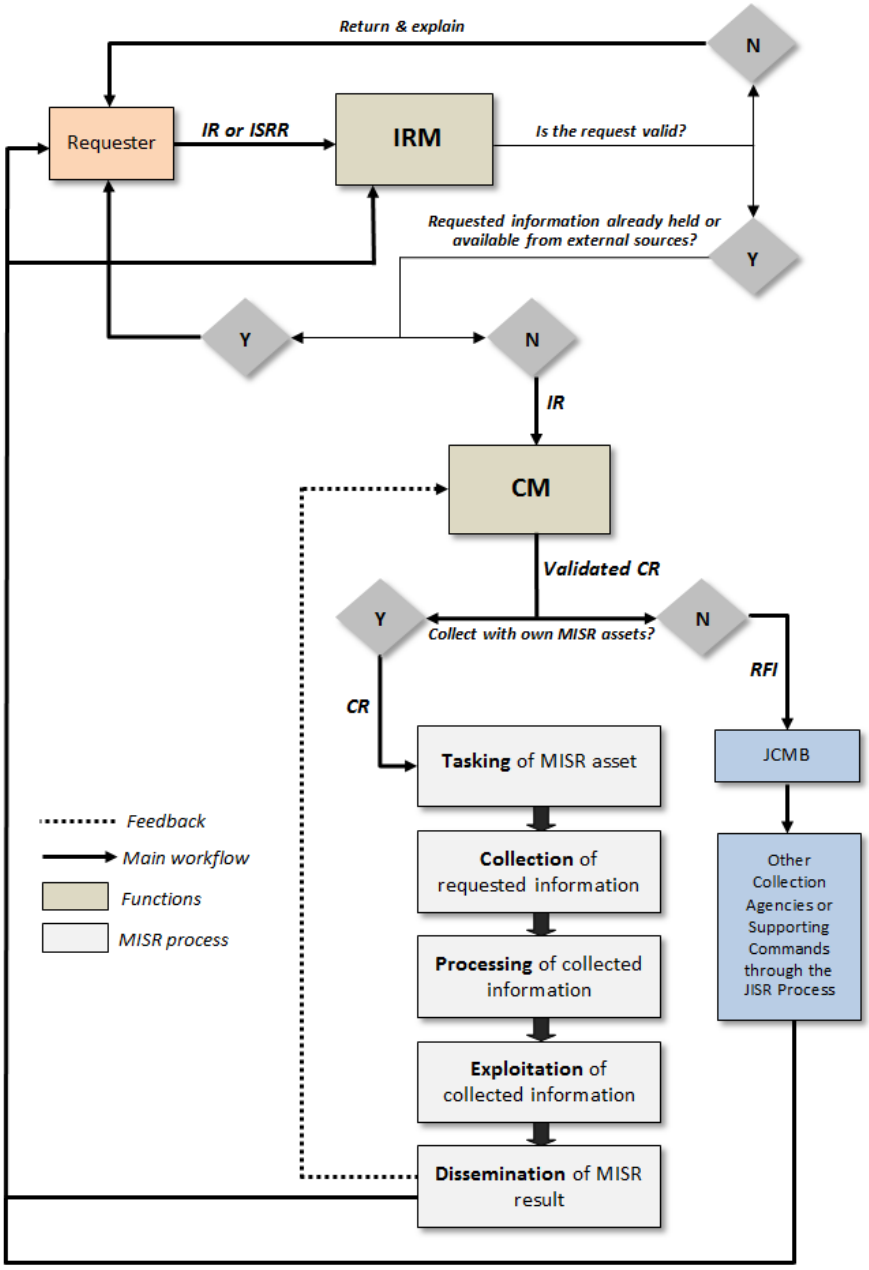


Figure 2.4: Overview of the JISR process[26]

2.6.2.2 Collection Management Authority (CMA)

1. CMA constitutes the authority to: develop, establish, validate, and prioritise collection requirements; establish MISR asset tasking guidance; and to develop and execute collection, exploitation, and dissemination plans and strategies.

[26] Figure derived from AJP-2.7.

2. The commander will delegate CMA to a CM element at the appropriate level of command to implement CM and the MISR process through the collection requirements management (CRM) and collection operations management (COM) authorities.

2.6.2.2.1 Collection Requirements Management

1. CRM is a management staff role, carrying the authority to develop, prioritise and control collection, processing, exploitation and reporting of CRs. CRM implements the tasking step of the MISR process and aims to answer satisfying CRs employing available MISR capabilities. The CMA may delegate CRM authorities to a subordinate operational level.

2. CRM starts once CRs are validated. CRM core activities encompass the prioritization of CRs, the development of related MISR tasks and the distribution of tasks to MISR capabilities whether organic, assigned to NATO commanders, or kept under national control. The MISR task will be given to the appropriate assets over which the CM element has authority. If the MISR task cannot be fulfilled by organic assets, the CM staff will generate a tasking request to be included in the collection requirement list (CRL). All tasking requests will be coordinated through the MCMB.

2.6.2.2.2 Collection Operations Management

1. COM is a management staff role, carrying responsibility for the integration of collection operations into the overall OPLAN. It has the authority to direct, schedule, prioritise, and control specific collection operations and the associated processing, exploitation, and information reporting resources. COM authority is usually held at the appropriate command level, which executes OPCON over organic or supporting ISR assets.

2. The key responsibilities of COM include managing the collection operation, performing the processing and exploitation of collected data, information, and single source intelligence, and disseminating MISR results.

3. Similar to CRM, COM is performed at different levels of command, and requires coordination at a higher level, particularly for the handling of urgent CRs that may necessitate the re-allocation of already tasked MISR assets.

2.6.2.3 MISR Liaison Officers

On a joint-level staff, each CC has a liaison officer (LO) to coordinate with the respective ISR effort. LOs should be SMEs on MISR capabilities and/or intelligence disciplines in support of the IRM&CM process. The LOs are primarily established to inform and mentor the CM staff on how to best plan for and leverage MISR support from their branches to maximize operational success. They provide advice on MISR mission planning and provide links between unit, task group, or adjacent commanders and intelligence collection agencies.

2.6.2.4 Electronic Warfare (EW) Responsibilities

1. Maritime EW assets and sensors play an important role in MISR. Their tasking in support of the ICP should be closely coordinated with operations and intelligence staff to maximize the results and avoid duplication of effort. The OPGEN and the OPTASK EW contain all relevant details and must be read in conjunction with the emission control (EMCON) plan. At the tactical level, the electronic warfare coordinator (EWC[27]), is the principal adviser of the OTC in all matters pertaining to the employment and exploitation of the electro-magnetic spectrum. The extent to which the EWC exercises actual control over assets should be clearly defined by the OTC.

2. In joint operations, an electronic warfare coordination cell (EWCC) and/or SIGINT and EW operations centre (SEWOC) must be established within MCC staff, on board the flagship, to provide coordination with joint HQ, other CCs, and the EW staff of static MCC. The EWCC or SEWOC coordinates the EW efforts of subordinate TFs/TGs, managed by EWCs, with shore-based assets and those of all other forces in theatre (e.g., allied, national forces).[28]

2.7 INTELLIGENCE REQUIREMENTS

1. Good intelligence flows from a command-led process that constantly defines what is important and what is urgent. The tasking of MISR assets should be driven by clear and detailed PIRs. PIRs are a vital part of the commander's critical information requirements (CCIRs). They are usually related to the commander's course of action, and as such they are critical to the accomplishment of the mission. PIRs may also stem from the IRs of higher or lower commands.

2. PIRs are normally formulated by intelligence staffs in close cooperation with the commander and other staff elements. They should be limited in number and further prioritised in terms of operational relevance and gravity. While there is no standard set of PIRs that will serve in all situations, good PIRs have these common characteristics:

a. They ask only one question.

b. They focus on a specific fact, event, or activity.

c. They request intelligence necessary to support a single decision.

3. PIRs are supported and complemented by specific intelligence requirements (SIRs), which provide a more detailed description of the requirement. SIRs are further broken down into more detailed questions known as essential elements of information (EEI).[29] SIRs are detailed questions resulting from the distillation of a complex IR (e.g., PIR, RFI, etc.). EEIs break SIR questions down to essential elements of information that the requested intelligence-collecting or producing asset is supposed to provide. Planners should make sure that EEIs for similar locations and times are grouped in

[27] ATP-01, Volume I details the EWC's functions and responsibilities.
[28] EW at the joint level is described in AJP-3.6, Allied Joint Doctrine for Electronic Warfare.
[29] AJP-2 provides details about PIRs, SIRs, and EEIs.

order to collect the requested information with the most efficient use of often-limited resources. Figure 2.5 illustrates the relation between PIRs, SIRs, and EEIs.

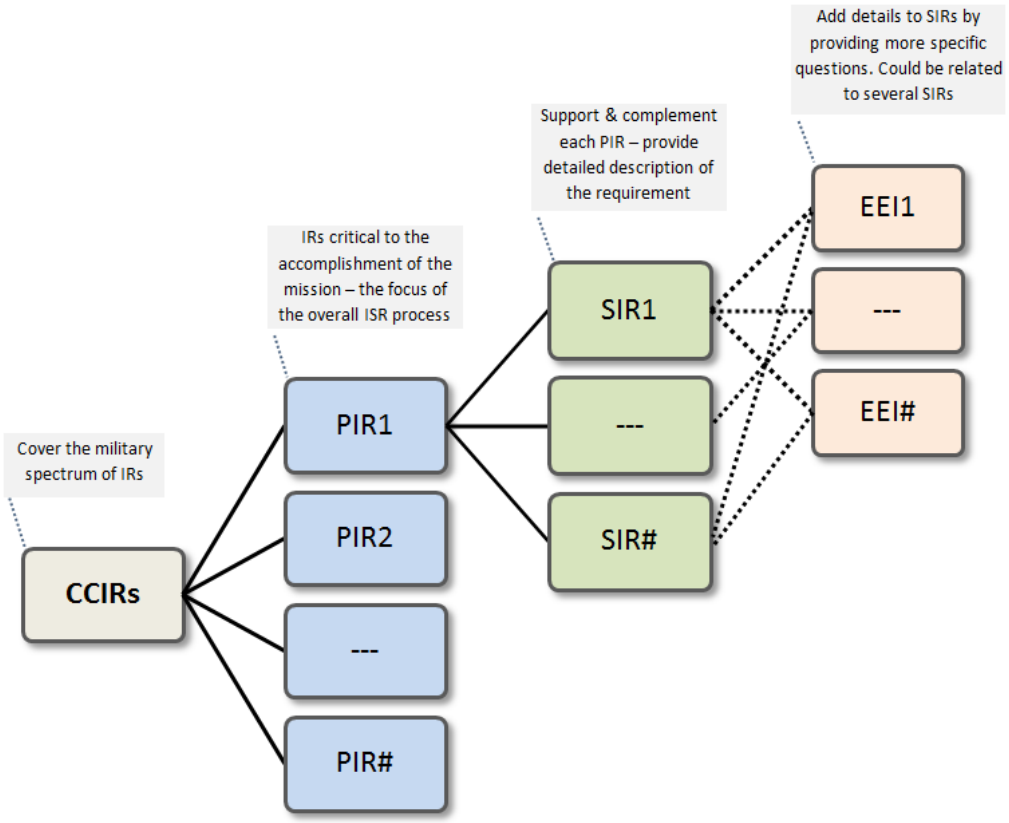


Figure 2.5: Relation between PIRs, SIRs, and EEIs

4. PIRs may be standing (enduring) or limited to a specific phase of an operation or activity/situation. In MARCOM-led activities, standing PIRs are promulgated via the OPTASK INTEL, which provides the necessary general guidance to safely and securely plan, coordinate, and conduct maritime intelligence collection and related activities in the NATO AOR. The OPTASK INTEL may be supported by supplemental intelligence guidance specific to each maritime activity. PIRs should be reviewed and updated accordingly in order to reflect the current operational developments.

2.7.1 Intelligence Collection Plan

1. The ICP is developed by the IRM&CM staff to assist it in satisfying and monitoring all IRs that cannot be satisfied with already available products. It serves as a planning tool for collection managers. A comprehensive maritime ICP (a generic example is shown in Figure 2.6) should include:

a. The PIRs with their associated SIRs and EEIs.

b. The AOI where collection should take place.

c. The time constraints associated with the intelligence collection.

d. The preferred intelligence discipline and the appropriate MISR assets, organizations or agencies to collect.

e. The preferred format (type) of intelligence report.

f. The commands, agencies, maritime units to receive the MISR product.

INTELLIGENCE COLLECTION PLAN

COMMAND/UNIT: | PERIOD: From …….. to …….

PIR	SIR	EEI	Area[1]	Time[2]	Intel. Discipline[3]						Collection Assets[4]				Type of Report[5]	Destination of Report[6]			
					IMINT	SIGINT	HUMINT	MASINT	ACINT	OSINT	SHIP#	HELO#	MPA #	ETC		MARCOM	JFC	NATION#	ETC
PIR1	SIR1	EEI#			x						x		x					x	
	SIR2	EEI#				x					x			x		x			x
	SIR#	EEI#							x			x					x		
PIR2	SIR#	EEI#			x			x		x			x			x			x
---	---	---					x					x						x	
PIR#	SIR#	EEI#				x		x	x				x			x			

[1]The name of the area if a NAI or its geographical boundaries if not.
[2]The requested time for collection (D+2, NLT D+3, NET D+1, etc.).
[3]The appropriate intelligence collection discipline to satisfy the IR.
[4]The most suitable MISR to collect the requested information.
[5]The type of intelligence report (intelligence summary, intelligence report, verbal, raw data, multimedia, etc.).
[6]The commands/agencies/nations/units to receive the intelligence report (MISR product).

Figure 2.6: Example of a Basic Intelligence Collection Plan

2. The overall collection effort is managed with the implementation of the ICP alongside the collection task list (CTL). The latter allows the allocation of each CR to a specific organic MISR asset. CRs that cannot be satisfied by dedicated MISR assets are included in the joint-level CRL, and forwarded for collection by higher or supporting HQ/commands.[30]

[30] Examples of a CRL and a CTL are in AIntP-14, Annex C and Annex D respectively.

2.8 COMMUNICATION AND CONNECTIVITY

1. MISR activities are normally conducted on Alliance-common classified networks.[31] When working with partner nations, MISR activities will need to be conducted on an agreed mission-common classified network. Although there may be NATO and national caveats precluding the sharing of some information at the mission-common level, architectures, systems, and processes must be interoperable between NATO, NATO nations, and partner nations. Operational-level planning should consider the currently available systems implemented in NATO and their respective capabilities and limitations. The resulting operational orders should reflect these considerations.

2. Maritime TFs base their C2 frameworks on a wide range of capabilities. These capabilities are mixed within the naval force, dependent on its size and composition. The variety of naval platforms allows the MCC to assign different C2 roles among the force, including a C2 platform capable of receiving and disseminating JISR results, and merging information in a common recognized picture. The C2 platform will issue tasking to the components and units in the force. The C2 unit can hold or delegate data and communication link management to other units for specific warfare domains or roles. This includes special operations forces (SOF) and landing forces, ensuring control over JISR activities conducted ashore, in the amphibious objective area, over the horizon, etc.

3. The communications and data exchange architecture within the maritime force is planned prior to the operation's execution. The dedicated OPLAN annexes and OPTASKs include details about roles, responsibilities, information management, resource assignment, and usage, from spectrum and bandwidth management to contingency and emergency communications plans and procedures.

4. The Alliance is constantly developing or updating already established common management standards, systems and tools for JISR C2, information sharing, data link and data exchange. These standards enhance the technical and operational interoperability for all forms of intelligence collection in a coalition environment. Transmitting the data/information collected from sensors to the PED nodes is a key issue to be addressed in all MISR activities.

2.9 CYBER DEFENCE CONSIDERATIONS

1. What changes the operational environment today is the digitalization of both maritime units and operational centres. Practically all major systems on ships, aircraft, submarines, and unmanned systems are networked to varying degrees. As such, despite the advanced ISR and C2 capabilities, cyber threats could have a detrimental effect on the conduct of maritime operations and the coherence of a joint force.

2. Current and developing sophisticated technologies provide new attack vectors that need to be protected against. The vulnerability of maritime units to a cyber-attack

[31]See MC 0195/10, NATO minimum interoperability fitting standards for communication and information systems equipment on-board maritime platforms.

has been demonstrated at the theoretical and exercise levels. The potential vulnerabilities of some widely used maritime systems like the electronic chart display and information system, the AIS, the global positioning system, etc., highlight the need for commonly accepted cyber security procedures. Furthermore, sensor and system operators should train and exercise in identifying and responding to the new security threats.

3. Effective cyber defence can lead to freedom of action in all operational domains, assuring that the allied theater commanders (strategic, operational and tactical) are able to achieve military objectives and mission assurance.

2.10 LEGAL CONSIDERATIONS

1. Upholding the rule of law in MISR activities planning and execution is of great importance. Various levels of legal restrictions compose a framework for the conduct of intelligence activities. The legal framework in multinational operations consists of international law and, each participating nation's domestic legislation, as well as policy and operational guidance and the respective national caveats.

2. MISR activities must be conducted within the overarching legal framework, as well as restrictions provided by national law and international treaties (as detailed in AJP 3.1).

2.11 MISR AND NEW TECHNOLOGIES

1. Increasingly sophisticated and complex MISR technologies are proliferating across the battlespace. Unmanned systems launched from the sea are invaluable in gathering intelligence through surveillance and reconnaissance. These systems are stealthy, have an ever-increasing operating range and endurance, and pack more potent sensor and weapons payloads, while at the same time providing a safer environment for the operator by minimizing mission risk.

2. Unmanned systems also have restrictions (e.g., bandwidth, weather conditions, etc.). Advanced MISR platforms generate data at higher rates and volumes. The transmission, reception, processing, and analysis of this volume of data create unique challenges that should be identified and taken into consideration when planning a MISR activity.

2.12 TRAINING REQUIREMENTS

1. Personnel involved in MISR activities should be qualified to NATO Intelligence Training standards detailed in AIntP-11[32]. Basic/individual training remains a national responsibility while NATO retains the responsibility of training assigned forces to NATO requirements.

[32] AIntP-11, NATO Intelligence Training, provides the training details and core competency requirements (CCRs) at the operational level; however, these apply equally to the tactical level.

2. Nations without the capacity to train their personnel according to NATO standards should consider the education and training opportunities catalogue (ETOC) to identify relevant education/training opportunities.

INTENTIONALLY BLANK

CHAPTER 3 - MARITIME ISR PROCESS

3.1 INTRODUCTION

1. MISR is an integral part of the JISR effort, following the same five step process known as TCPED, but with its own characteristics and procedures. See Figure 3.1.

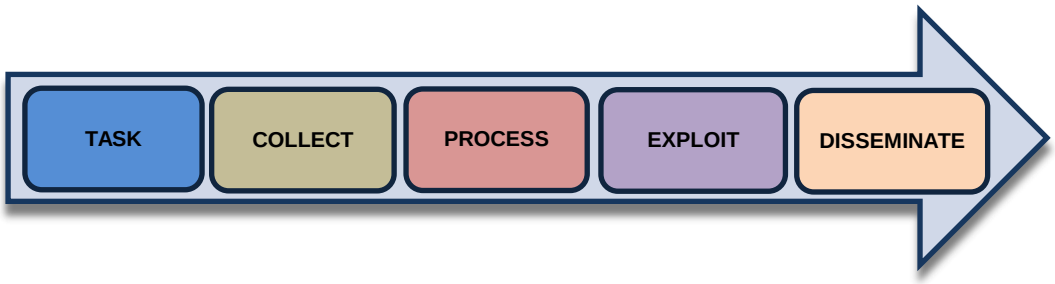


Figure 3.1: MISR Process

2. The TCPED process is a streamlined process used to satisfy IRs. As soon as a maritime IR is identified, validated, and prioritised, a MISR asset is tasked to collect the required information by means of surveillance and/or reconnaissance. The collected information is subsequently processed and exploited; either on site or off site, before being disseminated to the requestor and the involved parties, on a need-to-know basis.

3. The TCPED process is complex and involves numerous activities with their own cycles, operating at different levels and speeds. Some tasks may overlap and coincide so that they are often conducted concurrently rather than sequentially.

4. The application of the TCPED process in the maritime environment culminates in a MISR result. MISR results often have utility beyond the maritime domain, being fused into wider intelligence products. See Figure 3.2.

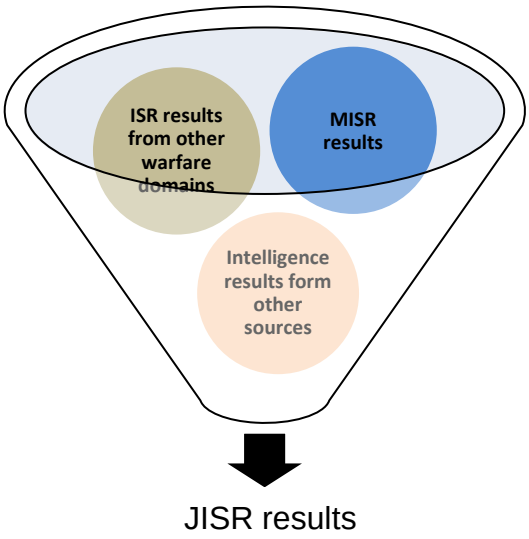


Figure 3.2: MISR Results as Part of the Intelligence Products

3.2 TASKING

1. Tasking is the first step of the TCPED process. It is initiated with the receipt of a validated CR and involves the development and issuance of collection, processing, exploitation and dissemination guidance, directives, and orders to coordinate MISR activities and assets.

2. The requirement for collection will often exceed the availability of MISR assets. Tasking should only occur when the requested information is not available in any other information repository or database. For the efficient use of MISR assets, commanders should prioritise their CRs and direct the intelligence staff accordingly regarding the intelligence they need and the time requirements.

3. IRM&CM functions play an important role in the tasking phase of the MISR process. Tasking is planned through the CRM process, and its outputs are executed through the COM process.

3.2.1 C2 of MISR Assets

1. SACEUR is the overall responsible authority for NATO-led activities, by exercising OPCON of assigned forces when TOA has been granted by contributing nations.

2. After initial TOA to Supreme Allied Commander Europe (SACEUR), OPCON is further delegated to a joint force command (JFC) or a single service command. TACOM and/or TACON may be subsequently delegated to subordinate commanders.

3. In general, NATO relies on contributions from NATO nations and, potentially, from non-NATO troop-contributing nations (TCNs), to satisfy ISR collection

requirements. Nations may or may not delegate tasking authority to NATO for the ISR assets assigned to the mission. Tasking procedures will have to be addressed on a case-by-case basis during the planning phase of all activities.

4. MARCOM coordinates the tasking of JISR assets operating in the maritime domain under their OPCON, and provides direction and guidance to maritime forces in order to accomplish their ISR tasks.

5. In maritime operations, the commander is assigned an area of intelligence responsibility (AIR), in which the commander is responsible for the provision of intelligence, with the means at the commander's disposal.[33] Therefore, ensuring the commander's access to the right set of MISR capabilities before and during mission execution is as vital as providing information, intelligence, and knowledge during operations planning.

6. In certain circumstances, nations may provide individual MISR assets/capabilities for use by NATO. If allocated to a maritime activity, such capabilities should be under a formal command relationship to the respective HQ; otherwise, they would continue to be controlled by the TCN. These declared capabilities will include a command element that has a power of veto over tasking, as a national control measure, to ensure that the collection asset is used in a manner that is appropriate for the operation and the posture of the owning nation.

3.2.2 Organic MISR Capabilities

1. Maritime commanders must be aware of their organic MISR assets' capabilities and limitations. Maritime units are required to send OPSTAT UNIT reports in advance before joining or supporting the force. This will inform the OTC, other authorities, and cooperating units, with information about their respective capabilities and limitations. This allows the OTC to make plans for detailed ISR tasking, based on each asset's capabilities.

2. After joining the force, any change in MISR asset equipment/capabilities should be transmitted to the OTC as soon as possible with the following standardized reports[34]:

a. NAVOPDEF. Report used to inform the command of restrictions on the operational capability of the unit, the intentions for repair, and to initiate repair assistance or advice as appropriate. It is required on initial discovery of defect, on a major change in the status of defect, and also to inform about its rectification.

b. OPSTAT DEFECT. Report used to provide information regarding operational defects and how they affect the operational capabilities of the

[33] AAP-06 (2016). AIR is part of the wider area of intelligence interest.
[34] APP-11, NATO Message Catalogue, describes the format and content of OPSTAT UNIT, NAVOPDEF, and OPSTAT DEFECT reports.

unit, or to report changes to this information. It is transmitted as required by the OTC and/or the TCN.

3.2.3 Theatre Tasking

1. The maritime intelligence staff may not be able to satisfy all MCC IRs with organic and/or assigned ISR capabilities. In these circumstances, RFIs will be sent and theatre assets will have to be leveraged.

2. When requesting fulfilment of IRs, the tasking of ISR assets will be coordinated through the TCM at the joint level. Therefore, establishing command relationships, LOs, and functional relationships between CRM/COM at different command levels is essential.

3.2.4 General Tasking Considerations

1. IRs in the AIR may be addressed in a variety of ways, depending on the operational scenario and mission needs, and may be satisfied by a variety of MISR assets. For effective coordination and efficient tasking of MISR assets, commanders should have a sound knowledge of their capabilities and limitations. When deciding on the appropriate MISR asset for each mission, commanders should consider these factors:

a. Suitability. Suitability for each mission is guided by varying factors such as: the equipped sensors (radar, electronic warfare support measures (ESM), sonar, imagery, electro-optical (EO)/infrared (IR), etc.) versus the type of requested information (intelligence collection discipline[35]), emission policy, and EMCON plan; the response time (speed, area coverage, etc.) to meet IRs; the communication capabilities versus the dissemination needs. These factors indicate asset flexibility and utility.

b. Availability. Maintenance schedule, equipment/sensor defects, and/or performance issues.

c. Risk. MISR assets have different vulnerabilities to physical and electronic attack and varying self-protection capabilities. Mission risk should be weighed against the operational value of the IR, particularly if the selected/available asset cannot be adequately protected.

d. Environmental conditions. Oceanographic and meteorological conditions may affect platform/sensor and mission performance.

[35] AJP-2. The intelligence collection disciplines are: acoustic intelligence (ACINT), human intelligence (HUMINT), imagery intelligence (IMINT), measurements and signatures intelligence (MASINT), open source intelligence (OSINT), and signals intelligence (SIGINT). SIGINT has two sub-disciplines: communications intelligence (COMINT) & electronic intelligence (ELINT).

e. Geographic location. Each geographical area (e.g., Open Ocean, inshore, territorial sea, etc.) and the familiarity of maritime forces with that location must be considered.

f. Operational situation. Important factors to be considered are the mission, the directives from higher command, the threat assessment, the type and behavior of the target, and the need to operate overtly or covertly.

g. National constraints and/or caveats. National constraints on the use of MISR assets and/or national caveats on the implementation of the ROE in force may impose limitations on the tasking of MISR assets.

h. ROE. ROE in force must be considered in selecting the type of assets and sensors to be used.

3.2.5 Tasking/Employment Practices

1. No single MISR asset can answer every IR. Therefore, coordinated operations are encouraged to maximize the advantages of each kind of unit. These tasking practices should be considered when employing MISR assets:

a. Layering or mixing. Tasking different assets with different collection capabilities to collect against the same CR, by overlapping within the same geographic area. A mix of sensors provides flexibility, reduces the chance of deception or errors and increases the level of confidence in the results. It ensures that the potential failure of a collection asset is compensated for by different assets capable of answering the collection need.

b. Cross-cueing. Allows an exchange of data between assets, which drives additional collection from another type of sensor on the same target, leading to higher-confidence reporting than a single asset can provide. Cross-cueing allows assets to take advantage of new information to increase the effectiveness and efficiency of collection. During planning, staffs should determine which other assets are scheduled to be in the same area at the same time to identify potential cross-cueing opportunities.

c. Redundancy. This method is used when the probability of mission success when using one asset with a certain collection capability is low; therefore, the use of multiple assets with similar capabilities increases the probability of success. This method is resource-intensive and planners should limit its use to high-priority operations.

3.2.6 Types of MISR Tasking

1. Depending on a plethora of parameters, such as the operating environment/AOO, the concept of operations (CONOPS)/OPLAN, the PIRs, the

availability of assets, but most importantly the urgency for specific intelligence/information collection to support the decision-making process, these types of tasking could be utilized:

a. Deliberate. Deliberate tasking occurs during the standard mission planning process and involves tasking that is included in the approved CTL.

b. Ad hoc. Ad-hoc tasking is used to integrate emerging and urgent CRs in an already released CTL prior to mission execution.

c. Dynamic. Dynamic tasking allows the integration of emerging, time-sensitive CRs into ongoing collection operations. See Figure 3.3.

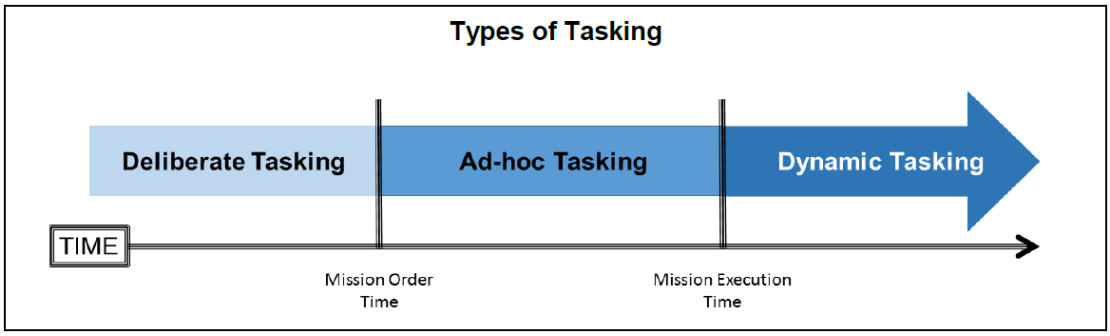


Figure 3.3: Types of Tasking[36]

3.2.6.1 Deliberate MISR Tasking

1. Deliberate tasking is planned tasking derived from following all steps of the IRM&CM process/cycle. This type of tasking allows sufficient time for detailed planning of the ISR mission.

2. The steps involved, the respective activities (simplified), and the responsible (lead) staff elements in the deliberate tasking process are summarized in Figure 3.4:

Deliberate MISR Tasking Process		
Step	**Activity**	**Who**
1	Receive RFI, ISRR, or self-generate IRs from PIRs, CCIRs	IRM
2	Refine, validate, and prioritise received IRs	IRM
3	Forward validated IRs (requests for intelligence/information not already held) to the CM/CRM staff	IRM

[36] Figure from AJP-2.7.

4	Convert the received, validated IR into a collection requirement (CR)	CM/CRM
5	Prioritise CRs	CM/CRM
6	Develop the CRL	CM/CRM
7	Develop the CTL	CM/CRM
8	Approve the CTL	Maritime Commander (in coordination with JCMB)
9	Forward the approved CTL to CM/COM	CM/CRM
10	Receive the approved CTL	CM/COM
11	Allocate collection tasks to available MISR assets	CM/COM
12	Issue mission (tasking) order	Operations staff

Figure 3.4: Deliberate Tasking Process

3. Deliberate tasking is integrated directly into mission planning for collection mission tasking of organic assets. If CRs cannot be satisfied by organic assets, due to lack of availability of assets or lack of required collection capabilities, the CM element must request collection support from higher and/or adjacent/supporting commands. Depending on the urgency of CRs if theatre assets are not available at higher and/or adjacent commands, national assets might be requested to fulfil the IRs.

3.2.6.2 Ad-hoc MISR Tasking

1. Ad-hoc tasking is used to satisfy urgent CRs emerging after the release of the CTL when there is still time to modify or even cancel an already issued mission order prior to scheduled execution. If the emerged CR is not urgent, the IRM&CM process should be followed. The modification of an already issued mission order is suitable for assets which are not tasked to their full capacity and therefore are able to collect data and/or information over additional assets on a non-interference basis to the asset's primary mission.

2. In ad-hoc tasking, CM staff must quickly validate and prioritise ad-hoc requirements to determine which original tasks can be cancelled or modified with the least negative interference, and then determine how to satisfy the affected requirements at a later stage. The ad-hoc tasking process is to be managed by the CM element holding CRM authority, as it will have a greater perspective on the wider impact to the CTL and the most efficient way to collect the information. However, if timeliness is an issue, it is likely that the CM element holding tasking authority will process the ad-hoc tasking with the awareness that its available assets might not be the most efficient means of collection.

3. Ad-hoc tasking process is concluded when the CTL is updated to include the ad hoc collection tasking and new mission orders are issued. Changes in the CTL that have occurred due to ad-hoc tasking must be promulgated to all requestors.

3.2.6.3 Dynamic MISR Tasking

1. Dynamic tasking occurs when the requester identifies important and urgent (time-sensitive) CRs after assets have been tasked and collection missions are already underway. Dynamic tasking may cause a disruption to the approved CTL, due to the required redirection of an already collecting asset.

2. Dynamic tasks are developed by the IRM&CM staff and are subsequently integrated and managed by the COM controlling the asset. Together with the IRM&CM staff, the COM will decide which asset and collection task will be redirected to satisfy the dynamic request.

3. Dynamic tasking is unplanned, but potentially prepared for, in the case of an anticipated event that will occur at an unknown time. It must be closely managed by operations staff and coordinated with intelligence staff to determine the intelligence gain/loss resulting from the fulfilment of dynamic collection missions and the cancellation of already scheduled missions. Requesters should be promptly informed in case their CRs will not be satisfied as scheduled because of higher-priority dynamic tasking See Figure 3.5.

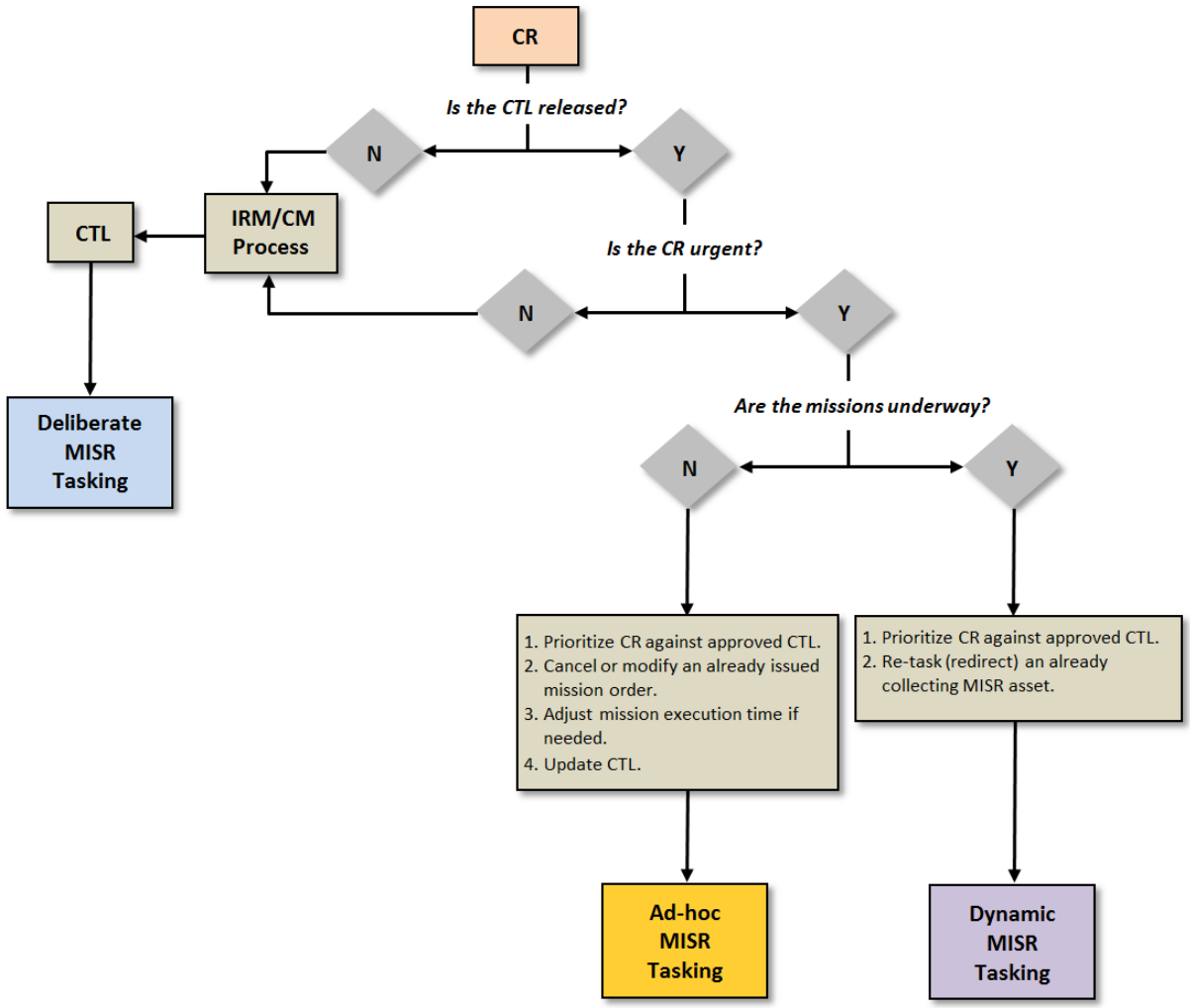


Figure 3.5: Types of Tasking

3.3 COLLECTION

1. Collection of data, information and intelligence in the maritime domain includes a wide array of activities which encompass surveillance and reconnaissance of:

a. air, surface, subsurface, seabed and land,

b. electronic and cyber,

c. imagery,

d. human collection including Maritime Situational Awareness Approaches (MSAA) or if necessary boarding, and engagement with locals.

Figure 3.6 provide an outline of maritime collection activities.

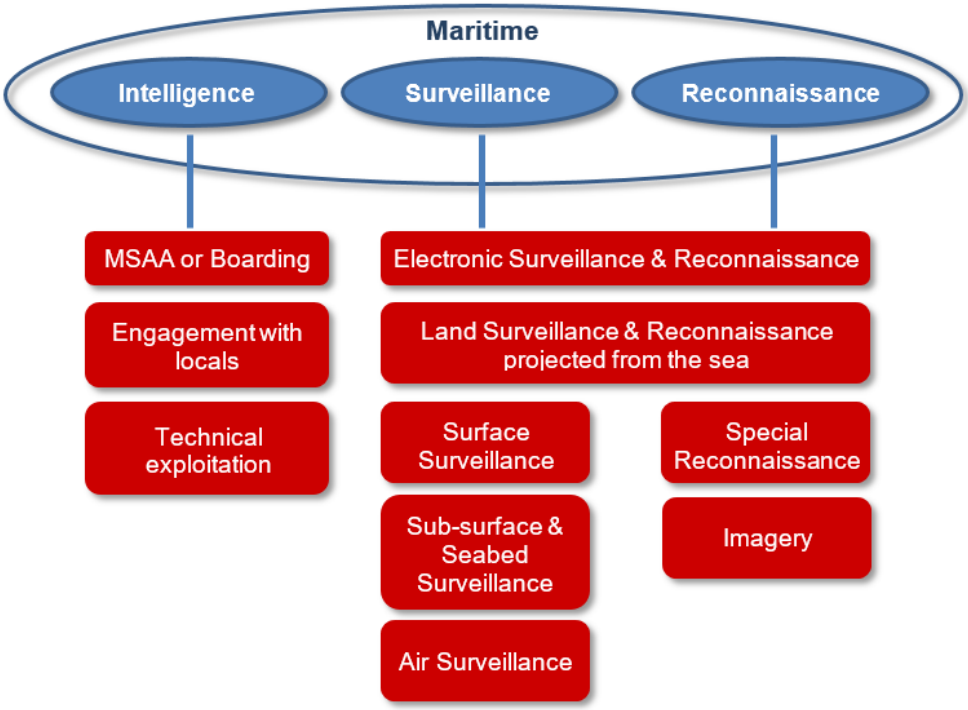


Figure 3.6: Outline of Maritime Collection Activities

3.3.1 MISR Assets

MISR air, surface, and subsurface assets collect data and information for many intelligence disciplines through several different sensors. An overview of the overarching intelligence collection disciplines is provided in Annex A.

3.3.1.1 Aerial Assets

1. Aerial assets may conduct air, surface, subsurface, and electronic surveillance as well as air reconnaissance activities. These can be executed using standoff or penetrating techniques, employing active or passive sensors.

2. Compared to surface and subsurface maritime assets, aerial platforms are faster, but have lower persistence. They also have a limited payload capacity and their mission performance may be affected by weather conditions. In general, airborne sensor coverage is greater than seaborne systems, as the altitude of a sensor determines its detection horizon. Aerial assets equipped with line of sight (LoS) and over the horizon (OTH)/beyond LoS tactical data links (TDLs) enable an immediate transmission of data.

3. Fixed-wing assets have long operational ranges and high patrol speeds, enabling them to cover large surveillance areas. Rotary-wing assets cover smaller areas, but are more reactive to tasking, as they usually require less coordination. EW aircraft may execute electronic surveillance missions operating outside the enemy´s

weapon range. Airborne warning and air control system (AWACS) are the most suitable platforms to conduct air surveillance, and may also contribute to surface and electronic surveillance. However, their employment in combined surface and air surveillance tasks may lead to a degradation of their performance in both roles.

4. Unmanned aerial systems (UASs) provide a specific set of high-end capabilities. Most UASs possess relatively low radar cross-sections (RCS) and minimized visual and acoustic signatures; however, they may be more vulnerable to weather conditions than manned air assets. Employment of UASs often requires the implementation of specific airspace coordination measures.

3.3.1.2 Surface Assets

1. Surface assets may conduct air, surface, subsurface and electronic surveillance, and also may obtain information from boarding, engagement with locals, and technical exploitation.

2. Persistence and versatility, due to the greater sensor payload, are surface assets advantages for surveillance missions. Area coverage may be limited compared to airborne assets, but surface assets are generally less affected by weather conditions. Surface assets with TDLs allow rapid transmission of data and information.

3. Unmanned surface systems (USSs) are self-propelled surface vehicles whose operation is under varying levels of supervisory control. The contribution to MISR depends on the specific sensor payload (radar, sonar, AIS, EO/IR) of each system. USSs enhance the ship’s sensor coverage, and their reduced signature is a key feature. Covert surveillance of littoral areas, pattern of life (POL) observation, and reconnaissance of targets/(AOIs) are some of the activities that USSs can conduct. These systems are, however, susceptible to sea conditions.

4. MSAA, boardings and local leader engagements (LLE), including face-to-face interactions, are great opportunities to gather information at sea that may be used to validate information collected with other means. To board a ship just for gathering information purpose is not allowed by international law.

3.3.1.3 Subsurface Assets

1. Subsurface assets can conduct covert missions for the preparation of the operating environment to deliver battlespace awareness to commanders. This includes mapping, description, and monitoring of the bottom and water column properties, including the acoustic, optical, electromagnetic and oceanographic parameters.

2. Subsurface assets can also provide I&W of potential targets and conduct acoustic and optical surveillance of underwater (e.g., submarines and mines), surface, and airborne assets using active or passive sensors. Electronic surveillance and reconnaissance may also be conducted whilst at the surface.

3. Compared to aerial and surface assets, subsurface assets are more difficult to detect. They (especially submarines) have high endurance, but usually a limited payload, and their operation is affected by underwater conditions. They also have limited levels of exposure, as they are very vulnerable when operating close to or at the surface.

4. Active acoustic sensors may be limited by power considerations, whereas passive acoustic sensor capability is determined by sensor size, processing power, and ambient noise. Subsurface assets benefit from lower self-noise characteristics compared to surface assets. Generally, subsurface assets are better suited to dynamically and adaptively explore sound channels to exploit the operating environment.

5. Underwater communication limitations constrain the speed, rate, and volume at which data and information can be transmitted in NRT for further processing and decision making. Moreover, the transmission itself may compromise the covert status of subsurface assets.

6. Unmanned underwater systems (UUSs) can provide multiple subsurface and seabed surveillance and reconnaissance capabilities. With a relatively low self-noise and sonar cross-section, and minimal visual and acoustic signatures, they have a reduced likelihood of detection. A fleet of UUSs, potentially incorporating different types of sensors, provides an important surveillance and reconnaissance capability. UUSs can be highly manoeuvrable but with lower endurance (e.g., propelled vehicles), or they may have less manoeuvrability and speed but longer endurance (e.g., vehicles using non-propelled modes such as underwater gliders). Underwater environmental conditions (e.g., the presence of strong currents, etc.) can severely impact the performance of operating UUSs.

7. Subsurface assets, either manned or unmanned, are capable of performing ISR tasks for JIPOE. They contribute to the synthesis of the RMP and the recognized environmental picture (REP). They provide detection, classification, and tracking of targets such as submarines and mines, but also I&W of possible targets that could be detected, classified and tracked by other means.

3.3.1.4 Other Assets

3.3.1.4.1 Amphibious Assets

1. Amphibious assets, projected from the sea, may conduct surveillance, including electronic surveillance, land reconnaissance, engagement with locals, and technical exploitation. Surveillance and reconnaissance of amphibious task force (ATF) objectives, landing sites (LS), landing zones (LZ), and drop zones (DZ), and hydrographic reconnaissance of the landing beaches and seaward approaches, are specific ISR missions to be conducted in an amphibious operation.

2. The complexity of amphibious operations[37] and the vulnerability of forces engaged require an exceptional degree of unity of effort and operational coherence. A balance must be struck between exposing amphibious assets for the early collection of information and compromising the execution of the action phase.

3. Ground reconnaissance units are constrained by their limited endurance and speed of advance, compared to other scouts. They are exposed and normally vulnerable to the opponent's actions.

3.3.1.4.2 Special Operation Forces

1. SOF maritime assets are capable of conducting special reconnaissance (SR) missions at sea and from the sea across the full spectrum of operations. They are organized and trained to conduct high-risk and high-payoff missions in hostile areas with minimal external support. Maritime special operations, though, are dependent on key platforms and specialized equipment that allow for infiltration into target areas from above, on, or below the surface.

2. Projected from the sea, maritime SOF can perform surveillance of NAI and target areas of interest (TAI) and provide commanders with real-time information. They are able to conduct coastal reconnaissance, covert hydrographic surveys and beach obstacle reconnaissance in advance of an amphibious operation. SOF can also support time-sensitive targeting, and conduct technical exploitation operations (TEO).

3.3.2 Collection Considerations

1. The following should be considered when tasking a MISR asset/sensor to collect data, information and intelligence against an intelligence collection discipline:

a. **IMINT**

(1) EO imagery considerations:

(a) EO imagery products can be affected by weather and the time of day (lighting conditions). As such, the quality of EO imagery products is dependent on the availability of meteorological and oceanographic (METOC) support for the operating area.

(b) It is susceptible to deception techniques/activities (camouflage, cover, etc.).

(c) Quality of EO imagery products is highly affected by the altitude and look angle of the collection asset.

[37] Amphibious operations are covered in the volumes of ATP-08.

(d) Most MISR assets, including non-traditional assets in routine missions, can satisfy some IMINT requirements.

(e) EO imagery products are commonly used to cue other intelligence disciplines.

(f) High-resolution imagery products for large areas may already have been collected and may be accessible via a database or by submitting an RFI.

(g) Depending on the resolution of the EO imagery products, a trained imagery analyst may be required to identify and recognize targets/activities under investigation.

(h) The dissemination method of high-resolution imagery products due to the size of the data files should be considered before tasking a MISR asset to collect.

(2) IR imagery considerations:

(a) IR imagery is able to detect the operational status of equipment (e.g., engines operating or not, etc.). It also has the ability to detect ongoing activity (based on heat levels), as well as past activity through residual thermal effects.

(b) MISR assets equipped with IR sensors are capable of collecting intelligence day and night.

(c) IR sensors require an LoS with the target; variable terrain (coastal environment, islands, etc.) can have an impact on whether the target is seen.

(d) The performance of IR sensors is affected by the temperature contrast between the surrounding environment (background) and the target (e.g., warm objects stand out well against cooler backgrounds). The target-background contrast is affected by many constantly changing variables. These include time of day, orientation (distance and angle) of the target with relation to the IR sensor, weather conditions (clouds, humidity, winds, water vapor and precipitation), solar/lunar angle of illumination, thermal crossover phenomenon[38], and the operating state of the target (static, idling, or moving).

(e) Highly dependent on the availability of METOC support.

[38] Thermal Crossover is the natural phenomenon which normally occurs daily when temperature conditions are such that there is a loss of contrast between two adjacent objects on infrared imagery.

(f) The quality of IR imagery depends on the sensitivity of the IR detector system (to include human operator performance). Cooled IR devices (their sensing elements are sealed inside a container that cools them to below freezing) provide heightened sensitivity and resolution, and can detect much smaller temperature differences than “normal” IR sensors (not enhanced with coolants).

(3) Synthetic aperture radar (SAR) and inverse synthetic aperture radar (ISAR[39]) considerations:

(a) SAR and ISAR are the only imaging systems that can generate high-resolution imagery (photograph-like surface image), anytime–even in inclement weather or darkness.

(b) SAR and ISAR systems utilize active sensors that can be detected by enemy ESM systems.

(c) SAR is best used for land masses and large-area tracking, such as the order of battle. In the maritime environment, it is best suited for coastal and island populated areas, and for harbour surveillance.

(d) ISAR is utilized in maritime surveillance aboard maritime patrol aircraft (MPA) for the classification (target recognition) of ships and other objects at sea.

(e) SAR/ISAR sensors provide imagery over land and water at considerable standoff distances.

(4) Full motion video (FMV)/television (TV) considerations:

(a) FMV sensors are susceptible to weather conditions especially those on-board UASs.

(b) Real-time video feeds require robust communication capabilities.

(c) FMV assets are best suited for on-call missions, cued to selective targets by other ISR assets.

(d) FMV sensors have limited scope and visibility, and therefore are ineffective in broad area searches. Due to

[39] ISAR is a radar technique using radar imaging to generate a two-dimensional high-resolution image of a target. It is analogous to conventional SAR, except that ISAR technology utilizes the movement of the target rather than the emitter to create the synthetic aperture.

their limited geographic focus, FMV assets operate in proximity to intended targets, and have the potential of being detected.

b. **SIGINT**

(1) SIGINT capabilities from both manned and unmanned MISR assets allow real time or NRT assessment of opponent air, surface, or maritime-based electronic emitters and the correlation of location, type, and mode of emitted signal with the radar tracking information.

(2) SIGINT collection in coastal areas and areas with dense maritime traffic or electromagnetic interference may be degraded.

(3) COMINT collections of voice communications (e.g., broadcast radio messages, point-to-point communications, etc.) may require the use of a translator on site (especially true for time-sensitive/critical information like enemy movements, actions, and intentions). Finding linguists, especially those who will understand uncommon dialects, is one of the practical challenges for COMINT organizations.

(4) The processing and exploitation of intercepted encrypted voice/data communication is a time-consuming process that requires advanced and complex cryptanalysis tools. In this case, arrangements should be in place for reachback support by SIGINT personnel.

(5) SIGINT products are usually of the highest classification and their handling requires the highest standards for personnel, physical, and information security. They are disseminated via systems accredited for the appropriate classification level, and shared with individuals of appropriate security clearance and a validated need-to-know status.

c. **ACINT**

(1) Acoustic intelligence uses broadband and narrowband analysis of acquired acoustic signals to classify and identify an underwater or surface contact at sea or low-flying aircraft such as helicopters.

(2) Broadband analysis concerns the analysis of the overall noise created by a platform, whereas narrowband analysis examines the spectra of the received energy at a more precise level. Broadband analysis is useful for identifying any vessel at a long range, whereas narrowband analysis is generally more useful for identifying the category, type, and ideally the individual vessel name.

(3) Side-scan sonar (SSS) and synthetic aperture sonar (SAS) systems can generate high-resolution images of the seabed and the water column. They can be deployed from ships, UUSs and USSs. They are used for seabed surveillance, and are best suited for the detection, classification, and localisation of mines and the delimitation of mine fields.

(4) Effective ACINT collection requires a regularly updated and detailed acoustic classification system (acoustic intelligence database). A change in a ship or submarine's equipment (e.g., the installation of new equipment) can result in a different acoustic signature of the vessel. Therefore, there is a need to collect its acoustic data again and update the ACINT database accordingly.

(5) ACINT collection requires highly trained acoustic operators/technicians/specialists. Despite improvements in acoustic technology and tactics, a highly trained specialist is most important in the collection and analysis of ACINT. Learning to distinguish the different types of underwater and surface noises is very important, as is learning to identify noises which probably pose a threat, like the ultra-quiet engines of advanced diesel/nuclear submarines, or the sounds of incoming torpedoes.

(6) ACINT collection can be passive (only listen), and thus is suitable for covert operations.

(7) ACINT helps mitigate our own acoustic vulnerabilities by providing guidance and advice for the improvement of our ships and submarines (making them quieter).

d. **MASINT**

(1) MASINT collection requires detailed planning.

(2) It usually has limited NRT exploitation capability.

(3) The exploitation of MASINT products requires a highly trained analyst.

(4) The collection of biometric samples/data may provide intelligence during operations. The collection of biometric samples/data for intelligence purposes may not be conducted under national responsibility unless Nations legislative regulations and databases permit.[40]

e. **OSINT**

(1) OSINT is useful for basic intelligence collection in areas that other capabilities cannot reach.

(2) Collecting information from open sources is usually less expensive and less risky compared to collection from other intelligence disciplines.

(3) OSINT, as a capability, can contribute to more effective employment of assigned MISR assets through the provision of tipping/cueing, monitoring, and SA, and also by reducing the number of RFI (to only those RFIs that cannot be fulfilled by open sources).

(4) OSINT can have political, military, economic, social, infrastructure, and information (PMESII) dimensions. These dimensions are useful for the planning and execution of all maritime activities. Geospatial OSINT is also useful for maritime forces. Typical examples include:

(a) Hard- and soft-copy maps, atlases, and port plans.

(b) Maritime and aeronautical publications.

(c) Navigation data.

(d) Environmental data.

[40] Reference paragraph 1.5.1.e.

(e) Commercial imagery.

(f) METOC data/statistics.

(g) Human environment data (cultural and economic).

f. **HUMINT**

(1) HUMINT provides reliable evidence of intentions, morale, and relationships among individuals and organizations. It offers the opportunity to gain insight into the perceptions and mentalities of POI and individuals.

(2) Every person, friendly, adversary or neutral, is a potential source of HUMINT.

(3) HUMINT collection requires a HUMINT collector, trained and authorized, to gather information from individuals to answer specific IRs.

(4) HUMINT collection should be protected to ensure sources of information/intelligence and methods used in obtaining them are not compromised.

(5) HUMINT collectors are subject to international and national laws, and qualified legal advice should be sought during the planning of HUMINT operations.

(6) HUMINT is of great value in the confirmation of IMINT and SIGINT products.

(7) In all kinds of maritime operations, engagement with key leaders in the JOA/AOO provides an opportunity for HUMINT collection.

(8) HUMINT support will greatly enhance the ability to conduct a successful MSAA. The ability of HUMINT collectors to converse with the master of the visited vessel in the master's language will help to recognize suspicious conversational nuances and improve the chances of the master cooperating with NATO.

(9) The provision of linguistic support is a key planning consideration for HUMINT operations.

3.3.3 Communication Considerations

1. TDLs and LoS downlinks play a pivotal role in the execution of most surveillance and reconnaissance activities. TDLs are communication paths which permit a rapid

and automatic exchange of information among units operating in the same area. Satellite communication (SATCOM) bandwidth limitation for NRT transmission of all collected information is a major challenge for sea-based ISR platforms.

2. Compared to terrestrial communication, underwater communication is very limited in range and bandwidth, because it uses acoustic waves instead of electromagnetic waves. In general, acoustic underwater communications have ranges in the order of a few hundred meters and very low data rates to transmit collected data, due to factors such as multipath propagation and strong signal attenuation.

3.3.4 Standing Information Requirements

1. Maritime forces, when transiting or participating in a NATO or national activity, are always in need of information regarding their operating environments. As such, they are constantly engaged in surveillance and intelligence collection against standing information requirements to support MSA and build understanding. Information to be collected on a regular basis includes, but is not limited to, the following:

a. Patterns of life (POL). It is required to report collected information over a period of time on any observed non-NATO military or civilian activity of interest. Collection must feed the common intelligence and operations pictures. Efforts shall be made to report collection relating to HQ MARCOM PIRs (published in the STANDING OPTASK INTEL) by the fastest secure means possible.

b. Contacts of interest (COIs). There is a standing requirement to collect information on vessels of collection interest (VOCI), COIs, and critical contacts of interest (CCOI), to support MSA, maritime security and intelligence operations, and enable higher authorities to disseminate information to civilian agencies. All COIs should be reported as soon as possible in accordance with the MARCOM OPTASK RMP and other relevant guidance in force when located and when contact is lost.

c. Naval surface, air, and submarine contacts operating in vicinity. In addition to COI, maritime forces should be able to identify all other contacts (air, surface, and submarine) operating in their vicinity. Accurate and timely reporting of contacts is critical in maintaining a current and relevant RMP.

3.4 PROCESSING

1. Processing is the third step in the TCPED process. It entails the conversion and/or refinement of collected data to produce information in appropriate readable and usable formats to enable further exploitation, storage, and dissemination.

2. It should be noted, though, that in many cases collected data are processed almost simultaneously (NRT); there are also cases where processing and exploitation occurs at the same time. For example, collected ESM data are processed instantly

and, if matched to an entry in the NATO emitter database (NEDB) or a national database, they are exploited immediately, providing information such as the identity and/or location of the source of the signal.

3. Processing needs to be planned in conjunction with the planning of collection and dissemination, taking into consideration parameters such as:

a. The format of the final MISR result.

b. The level of detail required.

c. The latest and earliest time produced intelligence is of value.

3.4.1 Data Formatting and Standardization for Sharing

Collected data and information, when processed, should be readily available for exploitation, either on site or off site. Thus, to provide for timely and efficient exploitation of collected data, the processing step should result in data compliant with relevant NATO standardized agreement (STANAG)[41] formats or with commonly accepted civil standards (when a STANAG is not available). In reality, as different intelligence principles perform discrete tasks, it may not be possible to standardize every database, but the aim should be to have the least deviations possible. This is an important factor to be considered when planning for processing capabilities in a joint operation.

3.4.2 Federated Processing Capabilities

When collected data and information is determined to be processed by a non-organic PED node, an architecture plan must be established to share collected data and information. Federated PED architecture allows better utilization of MISR resources, since collected MISR data are appropriately exploited using PED capabilities of another asset/facility.

3.5 EXPLOITATION

Exploitation is the fourth step in the TCPED process. It is where the refinement of processed data and information by trained personnel or automation takes place to provide information or actionable results relevant to the mission.

3.5.1 Levels of Exploitation

1. The depth of exploitation is determined by the nature of the information collected, the capabilities of the collection asset, and the requirements of the consumer. Some collection assets allow for immediate processing and exploitation;

[41] There are many STANAGS published dictating the agreed format for different types of data. Due to advances in technology, these standards are frequently updated/changed, and it would therefore be impractical to name them or make references in this publication.

others may require processing and exploitation from multiple resources over an extended period of time.

2. There are three levels of exploitation, and a PED node could execute one or multiple levels dependent upon its charter (see Figure 3.7). Some assets provide information that can be exploited in NRT for a rapid and preliminary assessment. Further exploitation may be executed by the same PED node or an additional node. This exploitation can include fusion with other information or deeper analysis of the raw data. If needed, the same information can be forwarded to a reachback exploitation facility (e.g., HQ MARCOM) for in-depth exploitation and/or fusion with other information sources. Some MISR assets provide raw data (e.g., COMINT collections of encrypted voice/data communication) that must be refined and interpreted by a reachback exploitation facility in order to deliver usable information to the consumer.

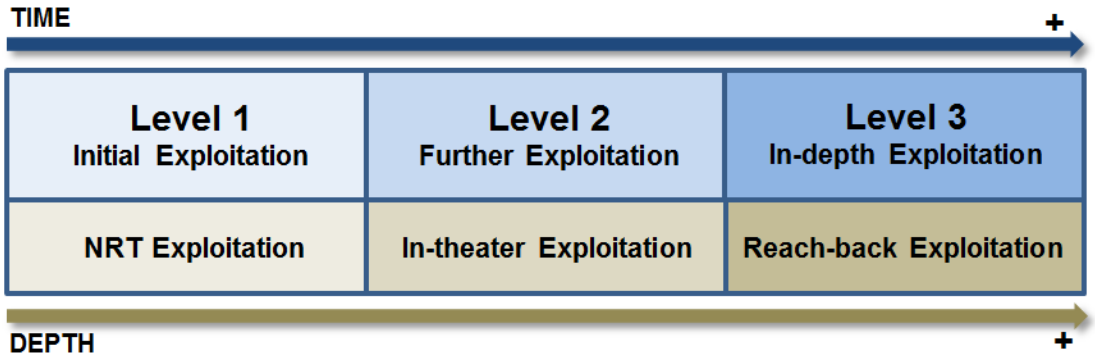


Figure 3.7: Levels of Exploitation

3.5.1.1 Level 1 Exploitation

Level 1, or initial exploitation, is the initial (NRT) assessment of collected MISR data and information, which is sent immediately to the requestor to support decision making in current operations. Initial exploitation is usually conducted by the sensor operator or an exploiter associated with the sensor system or the MISR asset.

3.5.1.2 Level 2 Exploitation

Level 2 exploitation is required when collected MISR data and information needs further evaluation prior to dissemination to consumers. A platform with limited exploitation capabilities will often necessitate the need for further exploitation. In-theatre exploitation may not be timely enough to support NRT decision making, but can be used to shape the planning of operations.

3.5.1.3 Level 3 Exploitation

Level 3 exploitation requires an in-depth assessment of collected data and information. This may be achieved by fusing data collected from multiple assets inside a specific intelligence collection discipline. Subsequent exploitation will be conducted in conjunction with information/intelligence already held in NATO or national databases.

This level of exploitation is time-consuming, and often requires specialized tools, access to intelligence databases, processing power, and/or the expertise of an all-source analyst prior to finalizing a MISR result or intelligence product for dissemination. Level 3 exploitation is best suited to support operations planning, order of battle assessments, and strategic decision making.

3.6 DISSEMINATION

1. The final step of the TCPED process is dissemination. In this step, collected information in response to an IR is made available to the requestor and to those who need it, in a timely manner, and in the right format, through the communication means specified in the MISR task. Results from standing IRs should be made available as soon as practicable. Dissemination requires communication security, conformity to the requester's requirement, and a feedback mechanism in order to improve the efficiency, value, and relevance of MISR collection operations.

2. Bandwidth constraints remain an issue in maritime operations. Intelligence and operations staffs should consider dissemination issues throughout the TCPED process.

3.6.1 Dissemination Formats

1. In order to be readily understood and directly usable, MISR results should be disseminated in the format that the recipient requested. Formats include:

a. Verbal. This method is quick and can be delivered to a wide audience through a plethora of communication means. Interpretation of the conveyed information can be an issue.

b. Written. Dissemination of results should be through standardised formats in accordance with APP-11. If not in accordance with APP-11, written reports should be in compliance with agreed NATO reporting procedures to guarantee the required interoperability between forces participating in a multinational operation.

c. Multimedia. It encompasses the dissemination of intelligence through pictorial, audio, and video formats. This type of dissemination format conveys information better, but requires increased data bandwidth.

d. Data. Data is information resulting from measurement, observation, or facts, which may not be subject to further analysis.

2. The standardization of exchanged data and information is necessary to allow for automated, seamless communication and dissemination of MISR results. Nations and HQ are responsible for complying with the relevant NATO standards, publications, and interoperability agreements.

3.6.2 Classification/Releasability of MISR Products

1. To the greatest extent possible, the entity responsible at the point of collection should classify the collected information with classification at the lowest possible level and appropriate releasable caveats to enable information sharing. Overclassifying information with restrictive caveats will significantly hamper sharing of information, as it adds to the burdens of administration by requiring additional coordination and time to make requests for releasability.

2. Depending on the specific requirements of each maritime activity, it may be necessary to share MISR results with non-NATO nations and/or with civilian agencies/organizations/entities. Such sharing is complicated, as there are limited legal frameworks in place. Ad-hoc agreements (usually a memorandum of understanding or a technical agreement) between NATO and other entities must be in place prior to any result sharing.

3.6.3 Database Management of MISR Results

1. Proper database management of collected information and intelligence is essential to increasing the efficiency of MISR activities. Intelligence staffs shall appropriately assign metadata profiles to ISR results in order for them to be searchable and retrievable.

2. Direct access to searchable intelligence repositories reduce unnecessary ISR tasking by mitigating duplicative CRs. Efficient intelligence databases create a pull system for requesters, where they are only receiving the information they need, instead of a push system, which requires the consumer to filter through extraneous information in order to find the required information.

CHAPTER 4 - ASSESSMENT

4.1 MONITORING AND EVALUATION

1. MISR assets are usually scarce and in high-demand. Maritime commanders should make sure each MISR activity is carried out in the most efficient way to maximize the results. This can be achieved if a monitoring and evaluation (M&E) mechanism is in place for the assessment of each step in the MISR process.

2. **Monitoring** is a continuous assessment that aims at providing all staff involved in a MISR activity with early, detailed information on progress or delay of ongoing activities.

3. **Evaluation** is a systematic and objective examination of the effectiveness and, efficiency of a MISR activity in the light of specified objectives. Evaluations identify and isolate mistakes and highlight inefficiencies in the MISR process. This allows action to be taken to correct inefficiencies as quickly as possible to ensure mistakes are not repeated in future MISR activities.

4. Although monitoring and evaluation are both management tools, they are different. Monitoring is a short-term assessment that does not take into consideration the results of MISR activities and their overall impact (desired effect) in a maritime operation. Evaluation is the process which assesses the MISR results and their impact to current operations.

4.2 ASSESSMENT

1. Intelligence staffs at all levels continuously monitor and evaluate to assess the effectiveness and performance of the MISR architecture, process and operations, including each individual step and associated activities. Assessment establishes links between past, present and future activities. This allows the creation of institutional knowledge and the capture of lessons learned (LL) and best practices to promote operational effectiveness and success.

2. The effectiveness of MISR assessment is highly dependent on timely feedback provided by the consumers (requesters or any other recipients) of collected information and by the operators of MISR assets. Timely feedback may result in real-time adjustments of ongoing missions, improving the collection tasks and preventing duplication of effort. Feedback allows intelligence and operations personnel to validate or consider ways to improve and adjust the MISR architecture, process, and operations. Without sufficient feedback from consumers and operators, an appropriately detailed assessment of a MISR activity cannot be produced.

3. The CM staff conducts assessments to measure, quantitatively and qualitatively, the performance and effectiveness of MISR activities. Assessments allow for the subsequent development of conclusions and recommendations in support of decision making on current and future MISR collection activities. Assessment may include some of the same information provided in feedback, but will take a more comprehensive approach. This approach will determine the quality and relative importance of the information being collected, and attempt to identify root causes of any problems encountered.

4. To assess performance and effectiveness at the operational level, it is necessary to select, before tasking a MISR asset to collect, an appropriate set of indicators which will facilitate the rating of the mission execution and its results. These indicators are:

a. Measures of Performance (MOP). MOP are quantitative metrics used to evaluate the progress and accomplishment of planned actions and the execution of the MISR task. Each measure of performance must correspond to one or more planned actions, describe the element that must be observed to measure the progress or status of the action, and have a known deterministic relationship to the action.

a. Measures of Effectiveness (MOE). MOE are qualitative metrics used to assess progress towards the creation of desired effects and the achievement of objectives and end state. Monitoring MOE over time will determine whether results are being achieved as defined in the plan. MOE can also be used to provide indications of the need to change actions because they are not achieving the aim.

5. Assessment will depend on the activities being conducted and any time constraints of the participants. Ideally, a full post-activity assessment should be conducted of all MISR activity, based on tailored MOP and MOE evaluated across all steps of the process.

6. Collection activities do not always occur as planned, due to changes in the operational environment and corresponding changes to CRs. Assessment must be flexible and adjust quickly to the rapidly changing plans. Assessments should be tailored to each type of MISR activity.

4.3 MISR ASSESSMENT FRAMEWORK

1. A MISR activity assessment has three phases:

a. **Phase I** – MISR Asset Performance

b. **Phase II** – MISR Mission Performance

c. **Phase III** – MISR Mission Effectiveness.

2. Phase I and Phase II should be conducted as soon as the mission is complete. Phase III should begin as soon as possible; however, it may take time for changes in the operating environment and/or adversary to be observed to assess mission effectiveness. Phase I and II assessments are primarily quantitative analyses of metrics associated with MOP. These assessments are conducted with input from decision makers, the MISR asset's operators, and inputs received from operations and intelligence personnel. Phase III is a **qualitative** analysis of MOE focused on evaluating how well the MISR activity met the IRs. Depending on the results of Phase II and Phase III assessments, a decision for retasking may be made. See Figure 4.1.

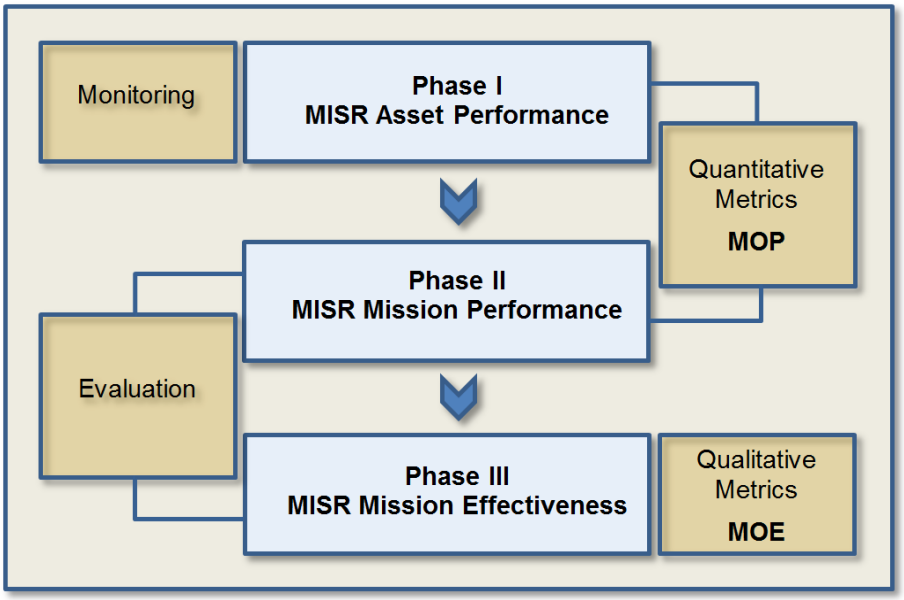


Figure 4.1: MISR Assessment Phases

4.3.1 Phase I Assessment–MISR Asset Performance

1. Phase I assesses the performance of the MISR asset by using these quantitative metrics (MOP):

   a. **A1:** Number of EEIs tasked in the MISR mission.

   b. **A2:** Number of EEIs collected during MISR mission.

   c. **A3:** The percentage of EEIs collected against EEIs tasked (i.e., A3% = (A2/A1) x 100).

2. During Phase I the key metric is A3, indicating the completion percentage of the MISR mission. This metric gives the first indication of mission success/failure.

4.3.2 Phase II Assessment – MISR Mission Performance

1. Phase II assesses mission performance using a set of quantitative metrics (MOP):

a. **B1:** Number of MISR results produced from MISR data and information supporting the desired mission effect.

b. **B2:** Number of deliberate, ad-hoc, or dynamic planned tasking events to support the mission, categorized by the intelligence collection disciplines.

c. **B3:** Number of EEIs not collected due to internal problems (IPs), such as system/sensor failure, a platform failure, etc.

d. **B4:** Number of EEIs not collected due to external problems (EPs), such as poor weather conditions, the retasking of the MISR asset due to a higher-priority mission, etc.

e. **B5:** Percentage of MISR missions affected by internal problems (i.e., B5% = (B3/A1) x 100).

f. **B6:** Percentage of MISR missions affected by external problems (i.e., B6% = (B4/A1) x 100).

g. **B7:** Percentage of MISR missions affected by internal and external problems (i.e., B7% = (B3+B4)/(A1) x 100).

2. The desired effect represents the desired end state for the mission and how it supports maritime activities. The desired effect answers: “At the end of the mission, will the commander possess the information they requested to inform decision making?”

3. During phase II, the key MOP are B1, B2, and B7. B1 provides an indication of the potential profit from the mission, whereas B2 provides an indication of the complexity of the mission. B7 combined with A3 provides an indication to assist the commander in deciding whether they need to retask the mission.

4.3.3 Phase III Assessment–MISR Mission Effectiveness

1. Phase III assesses the effectiveness of the MISR mission by examining whether the mission achieved its planned objective(s). MISR mission objectives are the goals set that, when reached, enable the achievement of operational objectives, which in turn contribute to the achievement of the desired end state. Phase III assessment uses qualitative metrics (MOE):

a. **C1:** Did the mission achieve its planned objective(s)?

b. **C2:** Did the mission contribute to the operational objective(s)?

2. During Phase III both MOE (C1 and C2) are equally important. These qualitative metrics focus on answering the question: “Did the mission succeed in providing the commander with sufficient answers to the original questions that triggered the IR?” Collaboration between intelligence and operations personnel is critical, and all staff should be given the opportunity to contribute to the assessment. Phase III assessment will take significantly more time than Phases I and II.

3. Annex B is a MISR assessment report form, based on the proposed assessment scheme.

INTENTIONALLY BLANK

ANNEX A - INTELLIGENCE COLLECTION DISCIPLINES

1. The overarching intelligence collection disciplines[42] are:

   a. **Acoustic intelligence (ACINT).** Intelligence derived from acoustic signals or emissions. This form of intelligence involves listening to the sea and categorizing the sounds which are heard. Being equipped with hydrophones and/or sound navigation and ranging systems (SONAR), all MISR assets and especially submarines, MPAs, and ASW Helicopters are well-suited for ACINT gathering.

   b. **Human intelligence (HUMINT).**[43] Intelligence derived from information collected and provided by human sources. Although every person is a potential source for HUMINT this discipline is best suited for SOFs or other qualified personnel (e.g., counterintelligence (CI) personnel). MISR assets' contribution to HUMINT is usually limited.

   c. **Imagery intelligence (IMINT).** Intelligence derived from collection and exploitation of image sequences. Imagery is often the most-requested intelligence product in all phases of a maritime operation. A clear picture will often serve to support or confirm intelligence derived from other collection disciplines. MISR assets are usually equipped with imaging sensors like EO, IR, FMV, and/or SAR/ISAR systems allowing them to contribute in IMINT. However, the bulk of imagery intelligence is derived from satellites and manned or unmanned aircraft.

   d. **Measurement and signature intelligence (MASINT).**[44] Intelligence derived from collection and analysis of scientific and technical data for the purpose of identifying any distinctive and differentiating features associated with the source, emitter, or sender. MASINT works on the principle that everything on the earth's surface leaves a form of signature that is measurable in some way. MASINT is derived from the collection and comparison of a wide range of emissions with a database of known scientific and technical data in order to identify the equipment or source of the emission. While there are specialized MASINT sensors, much of the MASINT discipline involves analysis of information from other sensors (e.g., ACINT, IMINT, ELINT, etc.).

[42] AJP-2, Chapter 3.
[43] HUMINT is described in AJP-2.3, Allied Joint Doctrine for Human Intelligence (HUMINT), and AIntP-5, Human Intelligence (HUMINT) Tactics, Techniques and Procedures.
[44] MASINT is described in AJP-2.8, Allied Joint Doctrine for Measurement and Signature Intelligence.

e. **Open source intelligence (OSINT).**[45] Intelligence derived from openly available or restricted access information. OSINT is collected from various sources like the media (newspapers, magazines, radio, television, and computer-based information); Internet; books and technical papers; satellite photography on the web; public data (e.g., government reports, marine and aeronautical safety warnings) etc. Although the availability of Internet access at sea allows maritime forces to take advantage of basic open source intelligence, the bulk of OSINT collection is undertaken by intelligence staffs at the HQ level.

f. **Signals intelligence (SIGINT).**[46] Intelligence derived from the collection and exploitation of foreign electromagnetic signals or emissions. SIGINT intercepts electromagnetic emissions and compares them with recorded signatures held in various databases. The main subcategories of SIGINT are COMINT and ELINT. COMINT consists of intelligence derived from intercepting, monitoring, and locating an opponent's communication and data link systems. ELINT, on the other hand, is intelligence derived from intercepting electromagnetic non-communication emissions. Modern MISR assets (manned or unmanned) are equipped with sophisticated SIGINT systems (both ELINT and COMINT) that allow real or NRT assessment of opponent air-, surface-, or subsurface based electronic emitters.

[45] OSINT is described in AJP-2.9 "Allied Joint Doctrine for Open Source Intelligence (OSINT)".
[46] SIGINT is described in AJP-2.4 "Allied Joint Doctrine for Signals Intelligence (SIGINT)".

ANNEX B - MISR MISSION ASSESSMENT FORM

MISR Mission Assessment			
Mission Objective(s):			
Mission Desired Effect(s)			
PHASE I – Asset Performance (MOPs)			
A1. Number of EEIs tasked:			
A2. Number of EEIs collected:			
A3. The percent complete of EEIs:	(A2/A1)x100=	%	
PHASE II – Mission Performance (MOPs)			
B1. Number of intelligence products produced:			
B2. Number of collection events to support the mission:		ACINT	
		HUMINT	
		IMINT	
		MASINT	
		OSINT	
		SIGINT	
B3. Number of EEIs not collected due to IPs: Comments (list reasons):			
B4. Number of EEIs not collected due to EPs: Comments (list reasons):			
B5. Percentage of missions affected by IPs:	(B3/A1)x100=	%	
B6. Percentage of missions affected by EPs:	(B4/A1)x100=	%	
B7. Percentage of missions affected by EPs:	(B3+B4)/(A1)x100=	%	
PHASE III – Mission Effectiveness (MOEs)			
C1. Did the MISR mission achieve its planned objective(s)? Answer:			
C2. Did the MISR mission contribute to the operational objective(s)? Answer:			
RECOMMENDATIONS			
1. Retasking required: YES or NO			
2. Other recommendations			

INTENTIONALLY BLANK

ANNEX C - ACRONYMS AND DEFINITIONS

C.1 ACRONYMS AND ABBREVIATIONS

ACINT	acoustic intelligence
AII	area of intelligence interest
AIR	area of intelligence responsibility
AIS	automatic identification system
AOI	area of interest
AOO	area of operations
AOR	area of responsibility
ATF	amphibious task force
AWACS	airborne early warning and control system
BDA	battle damage assessment
BSM	battle space management
C2	command and control
CC	component command
CCIR	commander's critical information requirement
CCIRM	collection coordination and intelligence requirements management
CCOI	critical contact of interest
CI	counter-intelligence
CM	collection management
CMA	collection management authority
COE	centre of excellence
COI	contact of interest
COM	collection operations management
COMINT	communications intelligence
COMMARAIRNATO	commander maritime air NATO
COMSUBNATO	commander Submarines NATO
CONOPS	concept of operations
COP	common operational picture
CP	collection plan
CR	collection requirement
CRL	collection requirements list

CRM	collection requirements management
CTL	collection task list
D&G	direction and guidance
DZ	drop zones
ECDIS	electronic chart display and information system
EEI	essential elements of information
ELINT	electronic intelligence
EMCON	emission control
EO	electro-optical
EP	emission policy
ESM	electronic warfare support measures
ETEE	education training exercise and evaluation
ETOC	education and training opportunities catalogue
EW	electronic warfare
EWC	electronic warfare coordinator
EWCC	electronic warfare coordination cell
FHQ	forward headquarters
FHT	field HUMINT teams
FMV	full motion video
GPS	global positioning system
HADR	humanitarian assistance and disaster relief
HQ	headquarters
HUMINT	human intelligence
ICAO	international civil aviation organization
ICP	intelligence collection plan
IMINT	imagery intelligence
INTREP	intelligence report
INTSUM	intelligence summary
IR	intelligence requirement
IR	infrared
IRM	intelligence requirements management
IRM&CM	intelligence requirements management and collection management
ISAR	inverse synthetic aperture radar
ISR	intelligence, surveillance and reconnaissance
ISRR	intelligence, surveillance and reconnaissance request

I&W	indications and warning
JCMB	joint collection management board
JFC	joint force command
JIPOE	joint intelligence preparation of the operational environment
JISR	joint intelligence, surveillance and reconnaissance
JOA	joint operations area
LLE	local leader engagement
LO	liaison officer
LoS	line of sight
LS	landing sites
LZ	landing zones
MASINT	measurements and signatures intelligence
MCC	maritime component commander
MCMB	maritime collection management board
METOC	meteorological and oceanographic
MIO	maritime interdiction operations
MISR	maritime intelligence surveillance and reconnaissance
MOC	maritime operations centre
MOE	measures of effectiveness
MOP	measures of performance
MSA	maritime situational awareness
MSAA	maritime situational awareness approach
MSO	maritime security operations
NILO	national intelligence liaison officers
NMICC	NATO maritime intelligence coordination centre
NNTCN	non-NATO troop contributing nation
NTISR	non-traditional intelligence, surveillance and reconnaissance
NAI	named area of interest
NEO	non-combatant evacuation
NETF	NATO education and training facility
NIC	national intelligence cell
NSC	NATO shipping centre
NRT	near real-time
OPCON	operational control
OPLAN	operation plan

OPP	operations planning process
OLPP	operational-level planning process
OSINT	open source intelligence
OTC	officer in tactical command
PED	processing, exploitation and dissemination
PIR	priority intelligence requirement
POI	persons of interest
POL	patterns of life
REP	recognized environmental picture
RFI	request for information
RMP	recognized maritime picture
ROE	rules of engagement
SA	situational awareness
SAR	synthetic aperture radar
SCC	surveillance coordination centre
SEWOC	SIGINT and EW operations centre
SIGINT	signals intelligence
SIR	specific intelligence requirement
SLOC	sea-lines of communication
SOF	special operations forces
SR	special reconnaissance
STANAG	standardized agreement
SUBOPAUTH	submarine operating authority
TAI	target areas of interest
TACON	tactical control
TACOM	tactical command
TCM	theatre collection manager
TCN	troop-contributing nation
TCPED	task, collect, process, exploit, disseminate
TDL	tactical data link
TEO	technical exploitation operation
TF	task force
TG	task group
TOA	transfer of authority
UAS	unmanned aerial system

UNCLOS	United nations convention on the law of the sea
USS	unmanned surface system
UUS	unmanned underwater system
VOCI	vessels of collection interest
WIT	weapon intelligence team

C.2 TERMS AND DEFINITIONS

Acoustic Intelligence (ACINT): Intelligence derived from acoustic signals or emissions. (AAP-06(2016))

Analysis: In intelligence usage, a step in the processing phase of the intelligence cycle in which information is subjected to review in order to identify significant facts for subsequent interpretation. (AAP-06(2016)

Area of Intelligence Responsibility (AIR): An area allocated to a commander, in which he is responsible for the provision of intelligence, within the means at his disposal. (AAP-06(2016))

Area of Operations (AOO): An area defined by the joint force commander within a joint operations area for the conduct of specific military activities. (AAP-06(2016))

Basic Intelligence: Intelligence, derived from any source, that may be used as reference material for planning and as a basis for processing subsequent information or intelligence. (AAP-06(2016))

Collection Management (CM): In intelligence usage, the process of converting intelligence requirements into collection requirements, establishing, tasking or coordinating with appropriate collection sources or agencies, monitoring results and re**-**tasking, as required. (AAP-06(2016))

Collection Management Authority (CMA): The authority to establish, validate and prioritise collection requirements; establish collection asset tasking direction and guidance; and develop collection plans. (AJP-2.7)

Collection Operations Management (COM): The authoritative direction, scheduling and control of specific collection operations and associated processing, exploitation, asset management and reporting resources. (AJP-2.7)

Collection Requirement (CR): A validated information requirement, for which the requested information is not already available in a repository and therefore requires collection through collection asset tasking or will be forwarded as a request to higher or adjacent commands. (AJP-2.7)

Collection Requirement Management (CRM): A staff management function that receives all collection requirements and joint intelligence, surveillance and reconnaissance requests and then consolidates and prioritises those requirements to produce the draft collection task list. (AJP-2.7)

Collection Requirements List (CRL): A list of all prioritised JISR collection and PED requirements, including those that may be fulfilled by a formation's JISR capabilities as well as requirements unable to be fulfilled by owned capability. (APP-11, 2015)

Collection Task List (CTL): A list of prioritised JISR collection and PED requirements, developed from the CRL, which are allocated to JISR capabilities of own or subordinated formations. The CTL will be approved by the Joint Collection Management Board (JCMB). [(APP-11, 2015)

Communications Intelligence (COMINT): Intelligence derived from electromagnetic communications and communications systems by other than intended recipients or users. (AAP-06(2016))

Contact of Interest (COI): Any platform in the maritime domain conducting activities qualified as illegal by international law considered to be a potential threat to NATO, NATO Nations maritime security interests and/or related assets. Designated by Commander MARCOM. (MC 0367/2)

Critical Contact of Interest (CCOI): Any platform in the maritime domain conducting activities qualified as illegal by international law and considered to be an imminent threat to NATO, NATO Nations maritime security interests and/or related assets. Designated by Commander MARCOM. (MC 0367/2)

Cross-cueing: A technique of coordinating multiple JISR capabilities using the information collected from one collection asset to provide a cue for further collection of more detailed or correlating information using another collection asset. (AIntP-14)

Deception: Those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce him to react in a manner prejudicial to his interests. (AAP-06(2016))

Electronic Intelligence (ELINT): Intelligence derived from electromagnetic non-communications transmissions. (AAP-06(2016))

Evaluation: In intelligence usage, a step in the processing phase of the intelligence cycle constituting appraisal of an item of information in respect of the reliability of the source, and the credibility of the information. (AAP-06(2016))

Human Intelligence (HUMINT): A category of intelligence derived from information collected and provided by human sources. (AAP-06(2016))

Information: Unprocessed data of every description, which may be used in the production of intelligence. (AAP-06(2016))

Intelligence: The product resulting from the directed collection and processing of information regarding the environment and the capabilities and intentions of actors, in order to identify threats and offer opportunities for exploitation by decision-makers. (AAP-06(2016))

Intelligence Collection Plan (ICP): The ICP is a detailed breakdown of how each intelligence requirement is to be satisfied. Normally in matrix or table form, it indicates by which means an

intelligence requirement can be best satisfied, the frequency of coverage required and the type of product expected. It will indicate the general level of detail required and will list the organizations, agencies or assets best suited to the task. (AJP-2)

Intelligence Cycle: The sequence of activities whereby information is obtained, assembled, converted into intelligence and made available to users. This sequence comprises the following four phases:
a. Direction - Determination of intelligence requirements, planning the collection effort, issuance of orders and requests to collection agencies and maintenance of a continuous check on the productivity of such agencies.
b. Collection - The exploitation of sources by collection agencies and the delivery of the information obtained to the appropriate processing unit for use in the production of intelligence.
c. Processing - The conversion of information into intelligence through collation, evaluation, analysis, integration and interpretation.
d. Dissemination - The timely conveyance of intelligence, in an appropriate form and by any suitable means, to those who need it. (AAP-06(2016))

Intelligence Requirement (IR): Intelligence requirements provide the rationale and priority for any intelligence activity as well as providing the detail to allow the intelligence staff to answer the requirement in the most effective manner. Intelligence requirements should cover the broad scope of information on the political, military, economic, social, infrastructural and informational (PMESII) spectrum. The military spectrum will be covered by the commander's critical information requirement (CCIRs). Military types of intelligence requirements are: priority information requirements (PIR), specific intelligence requirement (SIR), essential elements of information (EEI). (AJP-2)

Intelligence Requirements Management (IRM): The complex management function which validates and prioritises incoming intelligence requirements, coordinates the collection of associated information, quality controls processed outputs, and oversees dissemination of intelligence product. (AJP-2)

Intelligence Requirements Management and Collection Management (IRM&CM): IRM&CM is the combination of Intelligence requirements management and collection management, which provides a set of integrated management processes and services to satisfy the intelligence requirements, by making best use of the available collection capabilities. (AJP-2)

Intelligence Staff: Those personnel who are involved in the direction, collection, production and dissemination of intelligence through the conduct of the intelligence process. (AJP-2)

Interpretation: In intelligence usage, the final step in the processing phase of the intelligence cycle in which the significance of information and/or intelligence is judged in relation to the current body of knowledge. (AAP-06(2016))

Joint: Adjective used to describe activities, operations and organizations in which elements of at least two services participate. (AAP-06(2016))

Joint Intelligence, Surveillance and Reconnaissance (JISR): JISR is an integrated intelligence and operations set of capabilities, which synchronizes and integrates the planning and operations of all collection capabilities with processing, exploitation, and dissemination of

the resulting information in direct support of planning, preparation, and execution of operations. (AJP-2.7, this term and definition modifies an existing NATO-agreed term)

Measurement and Signature Intelligence (MASINT): Intelligence derived from scientific and technical analysis of data obtained from sensing instruments for the purpose of identifying any distinctive features associated with the source, emitter or sender, to facilitate the latter's measurement and identification. (AAP-06(2016))

Non-traditional intelligence, surveillance and reconnaissance asset: Assets not primarily designed and equipped for intelligence, surveillance and reconnaissance operations, but can contribute vital data and information especially in operations. These platforms are usually equipped with significant surveillance and/or reconnaissance capabilities to perform their primary tasks. (AJP-2)

Operational-level Planning: Note: The preferred English term to designate the planning of military operations at the operational level is "operational-level planning". The term "operational planning" is not to be used so as to prevent confusion with "operations planning". (AAP-06(2016))

Operations Planning: The planning of military operations at the strategic, operational and/or tactical levels. Note: The preferred English term to designate the planning of military operations at all levels is "operations planning". The term "operational planning" is not to be used so as to prevent confusion with operational-level planning.' (AAP-06(2016))

Open Source Intelligence (OSINT): Intelligence derived from publicly available information, as well as other unclassified information that has limited public distribution or access. (AAP-06(2016))

Reconnaissance: A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographical or geographic characteristics of a particular area. (AAP-06(2016))

Sensor: Equipment which detects, and may indicate, and/or record objects and activities by means of energy or particles emitted, reflected, or modified by objects. (AAP-06(2016))

Signals Intelligence (SIGINT): The generic term used to describe communications intelligence and electronic intelligence when there is no requirement to differentiate between these two types of intelligence, or to represent fusion of the two. (AAP-06(2016))

Source: In intelligence usage, a person from whom or thing from which information can be obtained. (AAP-06(2016))

Specific Intelligence Requirement (SIR): Intelligence requirements that support and complement each priority intelligence requirement and provide a more detailed description of the requirement. (AJP-2)

Surveillance: The systematic observation of aerospace, surface on subsurface areas, places, persons or things by visual, aural, electronic, photographic or other means. (AAP-06(2016))

Target (Tgt): The object of a particular action, for example a geographic area, a complex, an installation, a force, equipment, an individual, a group or a system, planned for capture, exploitation, neutralization or destruction by military forces. (AAP-06(2016))

Targeting: The process of selecting and prioritizing targets and matching the appropriate response to them taking into account operational requirements and capabilities. (AAP-06(2016))

Traditional intelligence, surveillance and reconnaissance asset: Assets that are primarily designed, equipped, and used for intelligence, surveillance and reconnaissance operations. (AJP-2.7)

Vessel of Collection Interest (VOCI): Any platform in the maritime domain involved in any activity of intelligence interest. Designated by Commander MARCOM. (MC 0367/2)

ATP-102(A)(1)