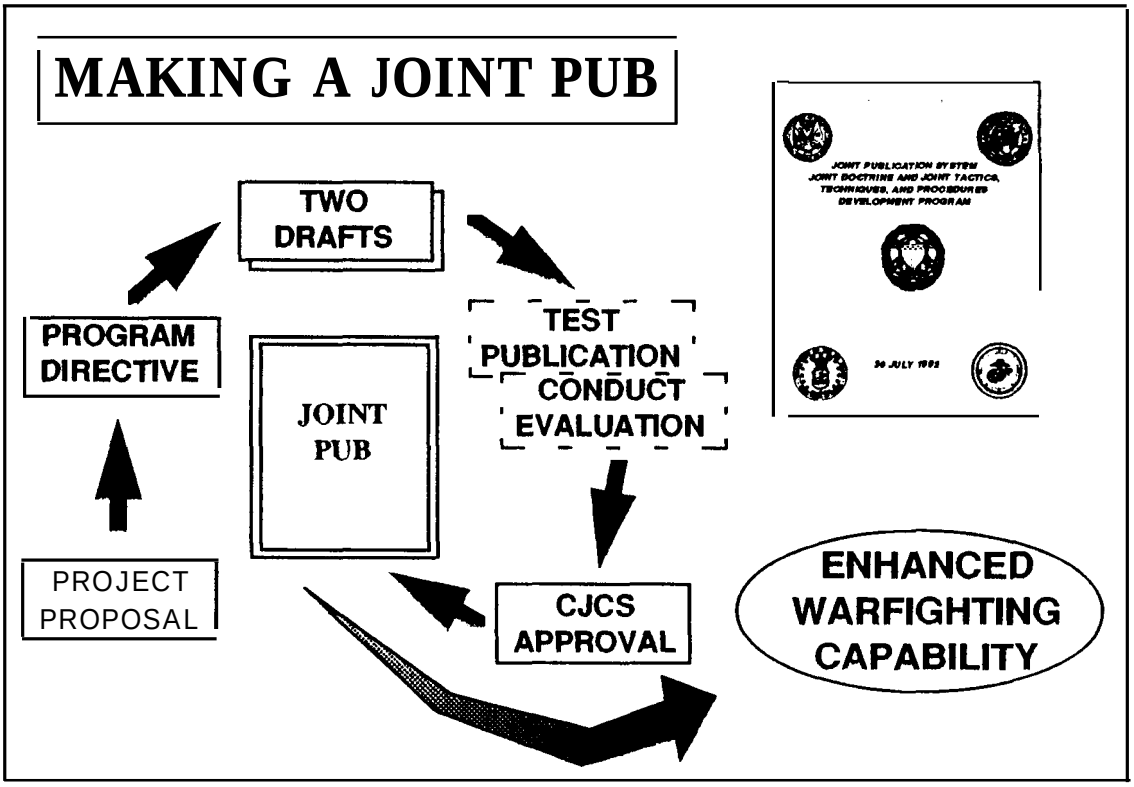
JOINT PUB 3-55

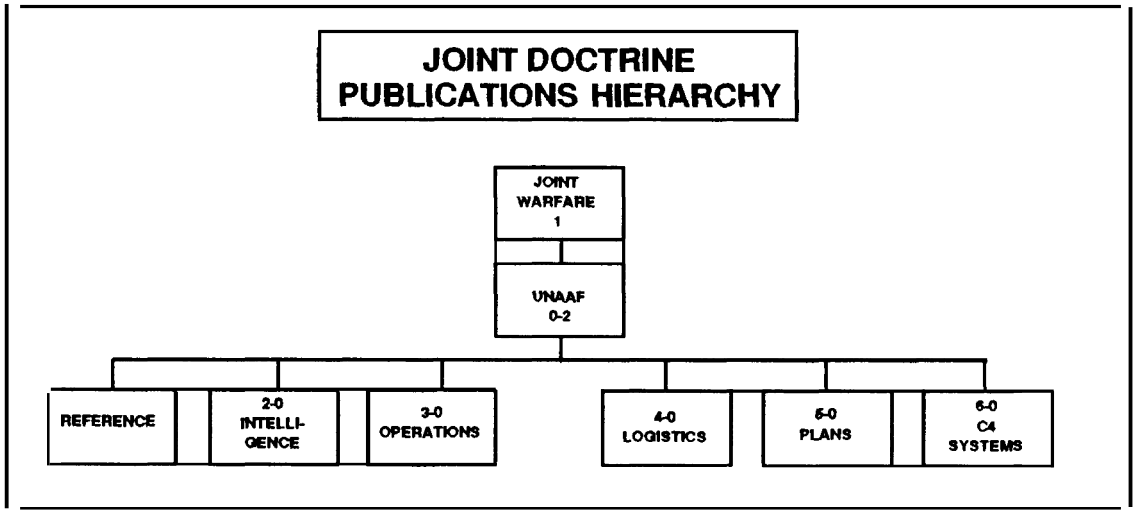
DOCTRINE FOR RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION SUPPORT FOR JOINT OPERATIONS (RSTA)

14 APRIL 1993

A large body of joint doctrine (and its supporting tactics, techniques, and procedures) has been and is being developed by the US Armed Forces through the combined efforts of the Joint Staff, Services, and combatant commands. The following chart displays an overview of the development process for these publications.



All joint doctrine and tactics, techniques, and procedures are organized into a comprehensive hierarchy. Joint Pub 3–04 .1 is located in the operations series of joint publications .



Joint Pub 1–01, "Joint Publication System, " provides a detailed list of all joint publications. Joint pubs are also available on CD–ROM through the Joint Electronic Library (JEL) . For information, contact : Joint Doctrine Division, J-7, 7000 Joint Staff Pentagon Washington, D. C. 20318–7000 .

Reply ZIP Code:
20318-0400

Joint Pub 3-55
14 April 1993

MEMORANDUM FOR: Distribution List

Subject: Joint Pub 3-55, "Doctrine for Reconnaissance, Surveillance, and Target Acquisition Support for Joint Operations (RSTA)"

1. This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff. It sets forth principles, doctrine, and military guidance to govern the joint activities and performance of the Armed Forces of the United States.

2. Recommendations for changes to this publication should be submitted to the Director for Operational Plans and Interoperability (J-7, JDD), Joint Staff, Washington, D.C. 20318-7000.

3. When a Joint Staff directorate submits a proposal to the Chairman of the Joint Chiefs of Staff that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal.

4. The Military Services and other organizations are requested to notify the Director, J-7, Joint Staff, when changes to source documents reflected in this publication are initiated.

5. Additional copies of this publication can be obtained through Service publication centers.

6. Local reproduction is authorized and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified joint publications must be in accordance with DOD Regulation 5200.1-R.

7. The lead agent for this publication is the US Air Force.

8. The Joint Staff doctrine sponsor for this publication is J-7.

For the Chairman of the Joint Chiefs of Staff:

H.L. SHEFFIELD
Captain, USN
Secretary, Joint Staff

Enclosure

Distribution:

By Secretary, Joint Staff:

Joint Staff	OSD	NSA	CIA	JWC	USELMNORAD
FEMA	DISA	DIA	DLA	DMA	DNA
NDU	MCCDC	JEWC	AFSC	JDC	DISA-JIEO
CIO					

Additional copies may be obtained from the Secretary, Joint Staff (Documents Division).

Five copies each to: Offices of CSA, CNO, CSAF, CMC, USCG

Copies each to:

USLANTCOM (25)	USCENTCOM (25)	USEUCOM (25)	FORSCOM (25)
USPACOM (25)	USSOUTHCOM (25)	USSPACECOM (25)	
USSOCOM (25)	USSTRATCOM (25)	USTRANSCOM (1)	

Additional copies should be obtained from the Military Service assigned administrative support responsibility by DOD Directive 5100.3, 1 November 1988, "Support of the Headquarters of Unified, Specified, and Subordinate Joint Commands."

By Military Services:

Army: US Army AG Publication Center,
2800 Eastern Boulevard, Baltimore, MD 21220-2898.

Air Force: Air Force Publications Distribution Center,
2800 Eastern Boulevard,
Baltimore, MD 21220-2896.

Navy: CO, Navy Aviation Supply Office,
Distribution Division (Code 03443)
5801 Tabor Ave, Philadelphia, PA 19120-5000.

Marine Corps: Marine Corps Logistics Base,
Albany, GA 31704-5000.

(INTENTIONALLY BLANK)

JOINT PUB 3-55
DOCTRINE FOR RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION SUPPORT FOR JOINT OPERATIONS (RSTA)

RECORD OF CHANGES

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

In accordance with the procedures contained in Joint Pub 1-01, change recommendations to this publication will be forwarded to:

Urgent: TO: HQ USAF WASHINGTON DC//XOXD//
INFO: JOINT STAFF WASHINGTON DC//J7/JDD//

Routine: Operational Plans and Interoperability
Directorate, J-7, JDD
Joint Staff
Washington, D.C. 20318-7000

LIST OF EFFECTIVE PAGES

The following is a list of effective pages. Use this list to verify the currency and completeness of your document. An "O" indicates a page in the original document.

PAGE	CHANGE	PAGE	CHANGE
i thru vi	O	IV-1 thru IV-6	O
I-1 thru 1-4	O	A-1 thru A-2	O
II-1 thru II-12	O	B-1 thru B-10	O
III-1 thru III-8	O	GL-1 thru GL-10	O

Deleted pages: None.

DOCTRINE FOR RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION SUPPORT FOR JOINT OPERATIONS (RSTA)

PREFACE

1. Purpose. This publication sets forth principles and doctrine to govern the joint activities and performance of the Armed Forces of the United States. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders and prescribes doctrine for joint operations and training. It provides military guidance for use by armed forces in preparing their appropriate plans with regard to reconnaissance, surveillance, and target acquisition (RSTA) support in joint operations.

2. Application

a. Doctrine and guidance established in this publication apply to the commanders of combatant commands, subunified commands, joint task forces, and subordinate components of these commands. These principles and guidance also may apply when significant forces of one Service are attached to forces of another Service or when significant forces of one Service support forces of another Service.

b. In applying the doctrine set forth in this publication, care must be taken to distinguish between distinct but related responsibilities in the two channels of authority to forces assigned to combatant commands. The Military Departments and Services recruit, organize, train, equip, and provide forces for assignment to combatant commands and administer and support these forces. Commanders of unified and specified commands exercise combatant command (command authority) over these assigned forces. Service component commanders are responsible both to joint force commanders in the operational chain of command and to the Military Departments and Services in the chain of command for matters that the joint force commander has not been assigned authority.

c. This publication is authoritative but not directive. Commanders will exercise judgment in applying the procedures herein to accomplish their missions. This doctrine should be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence for the

activities of joint forces unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance.

3. Scope. The principles, guidelines and conceptual framework described in Joint Pub 3-55 are provided for the Services, combatant commands, subunified commands, joint task forces, and subordinate units of these organizations. They are written for those who:

a. Provide strategic direction of RSTA operations.

b. Employ joint forces involving RSTA operations.

c. Support or are supported by RSTA operations.

d. Prepare joint forces for RSTA operations.

RSTA doctrine as promulgated in Joint Pub 3-55 does not focus on specific collection systems, acquisition programs, or tactical procedures. Its focus is on the planning, prioritizing, tasking, coordinating, and executing of RSTA operations to support joint US military forces across the operational continuum. It also addresses the architecture for planning, prioritizing, tasking, coordinating, and executing RSTA operations. RSTA doctrine is intended to assist the joint force commander (JFC) in accomplishing the assigned mission by supporting the JFC’s ability to obtain information necessary for plans and operations. RSTA assets are force multipliers. Effective use of these assets enables commanders to maximize the effectiveness of their combat forces by optimizing strengths, exploiting enemy weaknesses, and countering enemy strengths. Whether planning for aerial or aerospace reconnaissance, sea surveillance, or ground reconnaissance, the availability of assets and their capabilities are critical to mission success. All RSTA assets have innate characteristics that make each uniquely suited to their own special mission. Commanders must be aware of these capabilities and limitations and thoroughly weigh each against the mission objectives. They must consider the survivability of the RSTA assets and determine the risk at which they place them to obtain the intelligence information necessary to accomplish the mission.

4. Basis. Joint Pub 3-55 is based on the sources listed in Appendix A.

TABLE OF CONTENTS

CHAPTER		PAGE
I	RSTA MISSION AREAS AND TASKS	I-1
	Overview.	I-1
	RSTA Mission Areas.	I-1
	Operations Security (OPSEC)	I-3
	Operational Deception (OPDEC)	I-4
II	REQUIRED JOINT RSTA CAPABILITIES	II-1
	Overview.	II-1
	Types of Information.	II-1
	Collection Capabilities and Limitations	II-2
	Required Capabilities	II-9
III	OPERATIONS	III-1
	Overview.	III-1
	The Intelligence Cycle.	III-1
	Command Relationships	III-3
	Planning RSTA Operations.	III-4
	Tasking RSTA Operations	III-5
	RSTA Coordination	III-6
	RSTA Execution.	III-7
IV	TARGETING.	IV-1
	Overview.	IV-1
	Targeting Objectives.	IV-1
	The Target.	IV-1
	Target Development.	IV-3
	Weaponeering Assessment	IV-4
	Force Application Planning.	IV-4
	Execution Planning.	IV-4
	Battle Damage Assessment.	IV-4
	Mission Cycle	IV-4
	Coordination.	IV-10

APPENDIX		
A	References	A-1
B	Users Evaluation Report.	B-1

Glossary

Part I--Acronyms and Abbreviations. GL-1
Part II--Terms and Definitions. GL-3

CHAPTER I

RSTA MISSION AREAS AND TASKS

1. Overview. This chapter focuses on how the results of RSTA operations are used within broad strategic, operational, and tactical areas. Reference mission areas and the manner in which the products are used are not meant to categorize types of systems as strategic, operational, or tactical. They illustrate RSTA support at the various levels of war and establish the scope of application for the products of those operations. The primary objective of RSTA operations is to support military operations across the operational continuum. RSTA operations are performed by forces with a primary RSTA mission and other forces with either a collateral mission or the capability to perform such a mission. Modern intelligence collection systems can accumulate vast amounts of information. To be useful, the information must be relevant, accurate, analyzed, properly formatted, and disseminated in a timely manner to the appropriate user. Also, the information must be appropriately classified to protect the RSTA system and its technology but sanitized to the degree necessary to allow dissemination to the appropriate user level.

2. RSTA Mission Areas. RSTA mission areas are essentially the same for the strategic, operational, and tactical levels of operations and interest. However, the tasking within these mission areas will vary based on the level, focus, need, and forces available. RSTA mission areas include: indications and warning (I&W), planning and employment, and assessment.

a. Indications and Warning

(1) Strategic and Operational. Strategic- and operational-level RSTA operations provide information necessary to assess forces and installations that threaten the United States and its allies. It may be used to enhance an allied nation’s ability to conduct military operations on a global, theater, or regional basis. RSTA missions may require both continuous surveillance and as-required reconnaissance to provide timely I&W of a threat or impending attack. RSTA assets can assist in monitoring or verifying compliance with international agreements, e.g., arms control agreements.

(2) Tactical. Tactical RSTA operations provide information and intelligence similar to the strategic and operational level necessary to assess force strength and deployment, defensive and offensive capabilities, and other factors that may affect US and/or allied military plans and operations. RSTA missions may require both continuous surveillance and as-required reconnaissance. They can assist in providing I&W of a threat or impending attack in sufficient time for an appropriate response.

b. Planning and Employment

(1) Strategic. Strategic RSTA operations may be used to support the planning and conduct of nuclear and nonnuclear operations for all military environments, including:

(a) Monitoring centers of gravity critical to a nation’s warmaking capability.

(b) Single Integrated Operational Plan (SIOP)/-limited attack option (LAO) data base planning, adaptive planning, Unified Command Plan (UCP) responsibilities, and Joint Strategic Capabilities Plan (JSCP) taskings.

(c) Information on system capabilities, location, and other installations for the National Target Base (NTB) and other target bases.

(2) Operational. Operational RSTA operations provide commanders with current data on areas to include the environment, organizations, infrastructures, and forces necessary for planning theater campaigns and major operations, including contingencies. Additionally, they can provide for adaptive real-time planning for current operations. RSTA operational-level support includes the following:

(a) Monitoring centers of gravity critical to a nation’s warmaking ability and enemy orders of battle against which the JFC must concentrate his operations.

(b) Strategic conventional attack data base planning.

(c) Information on enemy offensive and defensive system capabilities, locations, and other data bases.

(d) Collection of information on the conduct of combat or support operations across the operational continuum.

(3) Tactical. Tactical RSTA operations forces and assets can provide the required detailed information (i.e., terrain, enemy disposition, orders of battle, movement, offensive and defensive capabilities) needed to plan and to employ forces successfully. This support includes providing target detection and acquisition, near-real-time intelligence, etc., that provide opportunities for offensive and defensive actions and help reduce casualties and achieve victory.

c. Assessment. RSTA operations provide assessment support to all levels of command before, during, and after the conduct of military operations. They can provide an important means for assessing friendly deception efforts. Assessments like BDA can provide information on the success of military operations and the need for follow-up or new operations. They can assist in determining where and when to employ scarce resources and concentrate efforts. Such assessments will affect the formulation of policy and military plans at all levels of conflict.

3. Operations Security (OPSEC). Operations security must be used when generating RSTA resources, while sustaining and protecting the forces, and in planning and conducting reconnaissance and surveillance operations. The purpose is to enhance combat effectiveness by gaining and maintaining essential secrecy about friendly military capabilities, intentions, and operations. RSTA operations and planning must be closely coordinated with primary mission strategies and objectives to ensure activities and communications do not reveal indications of the primary mission that may be exploited by adversaries. Essential secrecy is required about the specific characteristics of sensors and data links, wartime reserve mode designs, deployment intentions, areas under surveillance, when and where reconnaissance will take place, patterns of operations that may imply operational objectives, and processing capabilities. For more detailed discussion on OPSEC, see Joint Pub 3-54, "Joint Doctrine for Operations Security."

4. Operational Deception (OPDEC). RSTA operations may be used in four ways to support OPDEC. The first way tasks RSTA assets to identify and locate appropriate targets for OPDEC within the enemy C2 structure. The second way involves RSTA operations to monitor enemy actions or inactions relative to deception plans being implemented by the JFC. Enemy actions may include troop movement in reaction to perceived friendly movement or increased surveillance activity by the enemy in attempts to monitor friendly activities. Third, increased RSTA activity in a specific area away from the main thrust of a planned operation may deceive the enemy into thinking that friendly forces may be preparing an operation into a specific area. Such RSTA activities, along with other OPDEC inputs, confuse enemy commanders, allowing friendly commanders to exploit the situation. And fourth, RSTA assets may be used to support detection of enemy OPDEC. For more detailed discussion on OPDEC, see Joint Pub 3-58, "Doctrine for Joint Operational Deception."

CHAPTER II

REQUIRED JOINT RSTA CAPABILITIES

1. Overview. This chapter focuses on the broad capabilities that RSTA assets must possess. No single system can stand alone to meet all the JFC's information needs; therefore, the types of data that may be needed will be addressed along with general characteristics of RSTA platforms and capabilities.

2. Types of Information

a. Different types of information are required to support various types of military operations; for example, the needs of a fleet commander differ from those of an armored brigade commander. It is important to note that RSTA operations do not always collect intelligence; rather, they collect data that becomes intelligence after it is processed, evaluated, and integrated with other pieces of information and data (fused). The following is a list of intelligence source types through which RSTA operations gather data and information. This list reflects the variety of information that may be needed by or be available to the JFC.

(1) Human resources intelligence (HUMINT).

(2) Imagery intelligence (IMINT).

(a) Electro-optical-infrared (EO-IR).

(b) Photographic intelligence (PHOTINT).

(c) Synthetic aperture radar (SAR).

(3) Measurement and signature intelligence (MASINT).

(a) Acoustic intelligence (ACINT).

(b) Infrared intelligence (IRINT).

(c) Optical intelligence (OPTINT).

(d) Laser intelligence (LASINT).

(e) Nuclear intelligence (NUCINT).

(f) Unintentional radiation intelligence (RINT).

(g) Radar intelligence (RADINT).

(4) Signals intelligence (SIGINT).

(a) Communications intelligence (COMINT).

(b) Electronic intelligence (ELINT).

(c) Foreign instrumentation signals intelligence (FISINT).

(5) Counterintelligence (CI)

b. Although there are many forms of intelligence, not all of them are of immediate use to commanders and their staffs in planning and conducting operations. For example, FISINT can provide important technical information on enemy systems supporting technical threat assessments and US weapon system acquisition activities; however, it usually has very limited utility in the near term for planning or conducting military operations. Comprehensive intelligence support to the JFC requires analysis and integration of multiple intelligence collection products in order to resolve ambiguities and provide the most accurate information. Sanitization may be necessary to protect sensitive sources and methods for information requiring broad dissemination. Timely support also requires that information be properly formatted for processing, display, and dissemination in a manner that makes efficient use of available communications resources and is in a form useful to the users.

c. Although not an intelligence discipline, meteorologic and oceanographic information is required by the JFC to plan and conduct combat operations. RSTA assets can provide timely data to meteorological and oceanographic support forces that process the data into information for JFC use.

d. Commanders also require mapping, charting, and geodesy (MC&G) support to conduct military operations. MC&G support is provided through the Defense Mapping Agency (DMA). Commanders identify prioritized MC&G product and component requirements to DMA for validation in accordance with CJCS MOP 31. DMA then requests RSTA support to update the areas of interest. DMA normally requests national-level RSTA support directly to national agencies.

e. Counterintelligence is a discipline separate and distinct from foreign intelligence. Through the implementation of the four functions of CI, operations, investigations, collection, and analysis and production, CI can support the commander's RSTA capabilities. Joint Pub 2-03, "Joint Tactics, Techniques, and Procedures for Counterintelligence Support," provides commanders information on the capabilities and responsibilities for CI support to the JFC and component commanders.

3. Collection Capabilities and Limitations

a. RSTA forces and assets that may be used in support of the joint force encompass a broad range of capabilities and limitations to include:

(1) Comprehensive collection systems with a narrow range of data.

(2) Limited specific collection capability with a broad range of data.

(3) Near-real-time (NRT) collection systems that cover limited geographical areas.

(4) Limited response systems that cover large geographical areas.

These assets provide the JFC the capability to obtain the information required to plan and conduct successful combat operations. The assets discussed here include aerial systems (manned and unmanned), subsurface systems, surface systems (ground and sea), space systems (military and nonmilitary), and national systems.

b. Aerial systems are the primary source of RSTA assets for the JFC. All the Services possess and operate these systems, which have varying, but complimentary, capabilities, limitations, and operating characteristics.

(1) Systems such as unmanned aerial vehicles (UAVs) offer significant advantages and limitations. The greatest advantage of these systems is that they are relatively threat-insensitive because they normally do not put friendly personnel at risk. Furthermore, because of their relatively small radar cross-section, they can be sent into high-threat areas with an enhanced probability of undetected ingress and mission accomplishment. They can provide a broad range of collection capabilities, including SIGINT,

ELINT, SAR, electro-optical, infrared imagery, multispectral imagery, and real-time television imagery. UAVs can also be used as a line-of-sight communications relay for forces attacking at low level. Future systems may include laser designators to highlight targets for attacking weapon systems. The range and endurance of UAVs vary considerably depending on the situations for which they are designed to be employed. Close-range UAVs (CR-UAV) have an approximate range of 50 km and provide the capability for 24-hour coverage. Short-range UAVs (SR-UAV) have an approximate range of 150 km beyond the forward line of own troops (FLOT) and an endurance of approximately 8 to 12 hours. Medium-range UAVs (MR-UAV) will serve as a tactical reconnaissance platforms which will have a range on the order of 650 km, but will have an on station endurance of only two hours. Presently, only one UAV system is fielded, the Pioneer system. During Operation DESERT STORM, UAVs were successfully employed by the Army, Navy, and Marine Corps to provide NRT day/night RSTA, BDA, and battlefield management. The primary limitation of these systems is their lack of flexibility. Generally, because of their payload limitations, they can carry only one sensor and must be either preprogrammed or controlled by personnel within line of sight. The smaller, short-range unmanned systems, although cheaper than manned systems, are limited in range and payload. As their payload and loiter time increase, their cost increases significantly. They are also susceptible to adverse weather conditions. For a more detailed discussion of UAVs, see Joint Pub 3-55.1, "Joint Tactics, Techniques, and Procedures for Unmanned Aerial Vehicles."

(2) Manned aerial systems are also available to support RSTA operations and offer the JFC several important capabilities. They generally are among the most mobile and responsive RSTA assets available, capable of carrying out critical missions and gathering vital information in near-real-time. Manned systems can often respond to changing conditions and may be able to modify missions while in progress. They can cover relatively large areas and can carry a wide range and mix of sensors, including IMINT, MASINT, and SIGINT sensors. Many RSTA systems have common data link capabilities that can provide large volumes of data. Other RSTA systems have voice-only or no NRT dissemination capability. Without a NRT dissemination capability, a RSTA system’s critical information loses its timeliness and, therefore, its usefulness to the consumer. Users must understand RSTA assets must collect and

process their data prior to disseminating it. This processing includes developing target data to a point where there is confidence that the information is correct and required accuracy is achieved. It is this processed data that is sent via the dissemination medium. The primary disadvantage of manned systems is that they put friendly personnel at risk during military operations where damage to RSTA assets has historically been high. In addition, standoff requirements limit depth of sensor capability before and during hostilities. Also, adverse weather conditions degrade many of the sensor systems, especially optical sensors.

c. Subsurface systems vary greatly in size, complexity, and capability. These include sensors generally best suited for long-term surveillance of a specific and limited geographic region. Seismic detectors, for example, can indicate that enemy forces might be moving in an area, making further reconnaissance of the area useful. Submarines, on the other hand, are invaluable platforms for clandestine reconnaissance operations within waters peripheral to enemy territory.

d. Surface platforms also vary greatly in size and complexity, with great differences between land-based and sea-based assets.

(1) Land-based RSTA assets provide a diverse mix of capabilities that can range from a small force conducting a reconnaissance patrol, to dedicated SIGINT and electronic warfare units, to highly technical target acquisition radars. Such assets can be employed to support operations across the operational continuum and can obtain extremely diverse types of information. For example, a reconnaissance patrol can determine the extent and location of obstacles and defensive positions while also performing counterreconnaissance operations to deceive and deny friendly force disposition to the enemy. As with aerial platforms, there are advantages and disadvantages to land-based RSTA systems. The primary advantage is that they are generally organic to the tactical commander, allowing direct access to the required information. However, their range is usually limited by physical constraints or the military situation and the risk factor of personnel assigned will need to be taken into account.

(2) Sea-based surface platforms have varying degrees of RSTA capability, including organic manned and unmanned aerial platforms. Part of this capability is required for defense of maritime forces, such as sonar and underwater acoustic surveillance of enemy submarines and surface ships and various radar for air and surface targets. Other capabilities, such as SIGINT-gathering assets, can support a broad range of military activities ranging from monitoring arms control treaty compliance to establishing enemy orders of battle and preparation of combat strike plans. Deployment aboard ships also provides sea-based RSTA assets with several advantages. Ships have greater power and load-carrying capabilities than do some other RSTA platforms, enabling them to carry heavier and bulkier equipment that may have greater information gathering and processing capabilities. Ships also possess the advantages of mobility and sustainability, enabling them to position and reposition RSTA assets. Access is relatively unrestricted because maritime areas of interest to RSTA are often close to international waters. Many classes of ships have organic air assets that can extend shipboard sensor horizons and provide valuable on-site reconnaissance. These qualities at times provide advantages over other RSTA assets.

(3) Special operations forces (SOF) are valuable assets and should be considered for employment in joint RSTA operations. Special reconnaissance (SR) operations can be conducted when there is a need to obtain or verify information about enemy capabilities, intentions, and activities, or to gather data about meteorological, hydrographic, or geographic characteristics of an area not available using technical sensors. SR operations complement national and theater RSTA assets across the operational continuum to obtain specific, time-sensitive information of strategic and operational significance. SOF offer the availability of technically knowledgeable observers to verify critical information about targets or target complexes. These observers will use their human judgment to defeat enemy deception attempts and transmit a more complete picture of what is happening on the target.

e. Space systems have become an integral part of the national military forces providing support across the

operational continuum and at all levels of war. Space systems provide information allowing commanders to assess the situation, develop concepts of operations, and disseminate changes to their forces quickly. During Operations DESERT SHIELD and DESERT STORM, space systems provided a myriad of support functions. These include communications, navigation, surveillance, and environmental monitoring support functions. However, commanders must be aware of the advantages and limitations of these systems. The prime advantage of these systems as it pertains to RSTA is their ability to provide worldwide, quick-reaction coverage of areas of interest, especially those remote or hostile areas where little or no data can be obtained from conventional sources. Other advantages these RSTA system possess are their survivability and relative immunity to enemy action, the ability to place satellites into orbits that maximize their effectiveness, their mission longevity, and their ability to maneuver. Their limitations, especially to surveillance systems, include atmospheric and weather disturbances that effect most imagery systems. In addition, space systems schedules are predictable and are therefore vulnerable to deception practices and signature control activities such as emission control, camouflage, etc. The kinds of support provided by space systems are divided into military and nonmilitary space systems.

(1) Military space systems provide and support warfighting capabilities. Military space systems employ a variety of sensor suites and provide a broad and increased range of capabilities. Space support focuses first on deterrence, and if deterrence fails, on aiding, protecting, and complementing joint combat operations. This principle in no way ignores the important support that space forces provide to hostilities other than war and war. Space systems routinely support military activities during peacetime. These include, but are not limited to, joint training exercises, peacekeeping operations, indications and warnings, disaster and humanitarian assistance, and counterterrorism and counternarcotics operations. Space surveillance systems' unique advantage of global coverage allows commanders to observe areas of operations or other areas of interest over great distances and where other RSTA systems cannot be employed. Access to space surveillance information helps commanders determine where the enemy is, how strong he is, and what his intentions are. Detection and warning sensors

provide early detection of ballistic missile attack and down-link this data to ground stations, allowing commanders to take appropriate action against the missiles. Environmental monitoring systems are crucial in understanding and reacting to weather and ocean conditions that may affect military operations. The information acquired by these systems helps in the assessment of the environmental impacts on both friendly and enemy forces alike. Ignorance of environmental conditions can jeopardize the success of a mission. Space surveillance systems provide joint forces with terrain and threat information necessary to enhance mission planning capabilities. Often, these systems can cue or be cued by other RSTA systems to watch a specific area of interest, enhancing accuracy and reaction times to the user.

(2) Nonmilitary space systems (including civil, commercial, and allied space capabilities) may augment DOD space systems. These capabilities are used when they are the only means available to provide the type of requested support, when the requests outstrip available military means, or if primary DOD capabilities are lost. These systems possess a variety of capabilities, many of which complement rather than duplicate those of DOD-controlled space systems. These include weather, communications, and multispectral imagery satellites. Remote sensing imagery was used extensively by US and allied forces during air campaign against Iraq for attack planning, target coordinates, and mission execution. Additionally, these products were used extensively by ground forces for terrain analysis and map substitutes. The JFC may be able to task these systems directly depending on how share-use agreements are negotiated with the owners. The next chapter will discuss these procedures.

f. National RSTA systems are controlled by the US Intelligence Community and provide direct support to the National Command Authorities (NCA). The information provided by these systems is used by senior government leaders to make strategic political or military decisions, and is also of great utility to combatant commanders. Information from national systems is provided to the JFC via Service component Tactical Exploitation of National Capabilities Program (TENCAP) systems. Army corps, numbered Air Force, or numbered Navy

fleet, or Marine Air-Ground Task Force (MAGTF) receive raw data or processed reports, dependent upon the specific TENCAP equipment organic within the element. Dependent upon the specific intelligence discipline, timelines can be good--within seconds of collection. Other disciplines are inherently slow--hours to days from the request. Accuracy is system dependent. Additionally, the security of these systems and their sources may require sanitization of the information before it can be made available to the user. National RSTA systems provide invaluable intelligence, especially when local access by conventional RSTA systems is denied by range limitation, lack of air superiority, or political reasons. The JFC must develop specific requirements well in advance so the responses will be usable and timely. These systems should be considered when the JFC's organic RSTA assets cannot satisfy the intelligence requirements or to verify information using another collection source. The JFC has the ability to request specific support from these systems and should exercise the process during peacetime exercises.

4. Required Capabilities. Lessons learned from Operations DESERT SHIELD and DESERT STORM demonstrated that the speed of modern warfare dictates that commanders receive timely and accurate information to support them in the decisionmaking process. Along with being timely and accurate, RSTA forces must be survivable, reliable, suitable, and interoperable (connectivity). To achieve these capabilities, they must be exercised during peacetime with the goal of being able to operate within the commander's operational planning cycle. RSTA forces require the following:

a. Timeliness. Joint RSTA assets must be sufficiently responsive to meet the needs of the JFC at any point along the operational continuum and in any scenario. The commander should have RSTA assets available to provide information when and where needed. The responsiveness of the RSTA assets available to any commander must be looked at in aggregate and is driven by the missions that must be accomplished. The JFC must examine the range of required missions and ensure that appropriate and sufficient RSTA assets are obtained and positioned to meet C2 needs.

b. Geolocation Accuracy. Geolocation accuracy is a crucial requirement for target acquisition, especially with the employment of precision-guided munitions. Reconnaissance and surveillance may not require pinpoint accuracy, but target acquisition requires a sensor suite

that ultimately produces a target location or aim point suitable for attacking systems.

c. Survivability. The same principles that the JFC must examine with timelines hold true for the survivability of RSTA capabilities. Survivability must be assessed for the entire RSTA system--collection platforms, sensors, communications and data links, ground stations, processing facilities, personnel and operators, etc. Not all systems, or nodes within a system, will have the same degree of survivability, nor is it necessary. Such an effort would be far too costly. RSTA systems should possess survivability of the aggregate functions, e.g., survivability of an ELINT collection or photographic reconnaissance capability. Survivability must be commensurate with the threats to which the RSTA assets will be exposed during the course of operations. These assets must be as survivable as the operational systems and forces they support. Not only are many RSTA assets vulnerable, they are also scarce, and commanders must consider how they would compensate for the loss of a RSTA capability should any specific asset or group of assets be destroyed or otherwise become unavailable. Besides careful mission planning, intelligent tasking, and effective employment tactics, redundancy and overlap of capability are perhaps the best ways of ensuring the survivability of specific RSTA capabilities and functions.

d. Reliability. RSTA systems must be able to provide reliable information despite enemy deception measures such as camouflage and decoys. This may require the employment of other RSTA systems to verify information acquired by the previous systems. Operation DESERT STORM provided many examples of one RSTA system identifying a potential target or target set and cueing another system to verify the target. As an example, Joint Surveillance and Target Attack Radar System (STARS) was able to use its wide area radar search capability to identify potential SCUD missile sites and relay the information to an orbiting F-15E, which then used its radar to search the area and attack the target if verified as a SCUD site. The development and evaluation of RSTA systems should be integrated with the development and evaluation of potential enemy concealment and deception capabilities.

e. Suitability. Suitability is an important consideration in planning the employment of collective RSTA assets. Tasking must be based on an asset’s capability and on its suitability within the context of the

overall plan. For example, several assets may be capable of collecting against a single target, although one or more of these have unique capabilities against a second target. Intelligence requirements may necessitate tasking these RSTA assets against the second target if other assets can maintain adequate coverage of the first target. Suitability also applies to the format of the processed intelligence. Both the information and format must be useful to the user. Intelligence analysts must avoid disseminating technical data that only other intelligence analysts would understand. A key objective of training exercises should be to determine new requirements for RSTA systems and countermeasures, as well as better ways to employ these complementary capabilities.

f. Connectivity. Connectivity is a critical aspect of any RSTA system. Interoperability, commonality, reliability, and robustness of sensors, data links, supporting ADP, and C3I systems are crucial to the responsiveness, survivability, and overall combat effectiveness of an RSTA system. If the components of a RSTA system are dissimilar, or if connectivity among sensors, supporting systems, and supported systems and elements is too fragile to withstand the stress of combat, commanders will be deprived of important intelligence information essential to conducting combat operations. The RSTA network must be able to transmit accurate and timely information to those who must receive it when they need it. Connectivity depends on active management of the information flow. Tailoring information to the needs of the commander prevents critical intelligence from being delayed or lost in irrelevant data. Information on vital enemy targets acquired by RSTA assets becomes useless unless disseminated in a timely fashion to the forces tasked to attack and destroy the targets. Interoperability, commonality, and connectivity improve and unify RSTA capabilities and enhance execution planning. Interoperability and commonality also improve the overall capability of RSTA through cross-cuing, information enhancement, and analytical exchange to accurately portray the battlefield. The multidiscipline, multisource approach reduces the possibilities of being deceived by the enemy.

(INTENTIONALLY BLANK)

CHAPTER III

OPERATIONS

1. Overview. This chapter focuses on the factors that affect the planning, tasking, coordination, and execution of RSTA operations. It concentrates on those considerations that involve how RSTA assets are tasked. RSTA doctrine is intended to assist the JFC in using assigned and supporting RSTA forces in the most efficient and effective ways possible, thereby providing combat forces with the means to achieve the JFC's objectives.

2. The Intelligence Cycle. The intelligence cycle is the process by which information is obtained, converted into intelligence, and made available to the requester. This section looks at the intelligence cycle as it relates to RSTA operations. (See Joint Test Pub 2-0, "Doctrine for Intelligence Support to Joint Operations," for greater detail on this subject.) The five steps in the cycle include planning and direction, collection, processing, production, and dissemination. Understanding the intelligence cycle enables the JFC to use RSTA assets more effectively. RSTA operations are linked to all five steps of the cycle and are particularly important to the planning and collection steps.

a. Planning and Direction. The intelligence cycle is geared to support the commander directly in the formulation of an Estimate of the Situation, a Concept of Operations, and an Operation Plan (OPLAN) or a Campaign Plan. The process of planning RSTA operations must include identifying, prioritizing, and validating the need for the operation.

(1) First, a requirement for information must be identified. Before hostilities, the JFC's direction and guidance establishes baseline intelligence requirements. This also includes MC&G requirements. The most critical of these requirements are identified by the JFC as his essential elements of information (EEI). The designation of EEIs help to ensure the reconnaissance and surveillance effort is focused on the most critical information needs to support the operational effort. Once hostilities begin and as they continue, new direction and guidance evolve creating new requirements or modifying existing requirements.

(2) Once a requirement is established, it must be prioritized among the other requests for information. Again, the JFC's guidance and direction are the driving factors. As intelligence needs are aligned against collection capabilities, factors such as the enemy threat to RSTA assets, timeliness of RSTA response, availability of RSTA assets, and the impacts of terrain, range, and sensor capabilities will affect how RSTA assets are selected and employed.

(3) The information requirement must then be validated. Does it meet the JFC's concept of operations and the concepts of the supporting subordinate commanders? Has the information been acquired but not distributed to the requester? Are there other operations ongoing that might satisfy the intelligence requirement? If either of the latter conditions are met, the requested RSTA operation may be unnecessary.

OPSEC and OPDEC planning guidance must be examined to ensure RSTA operations do not compromise the commander's intentions and ongoing deception operations. This process requires close and effective coordination between the J-3 operations planner and the J-2 intelligence collection manager. The JFC operational concept and plan of operations establish baseline intelligence requirements.

b. Collection. This step includes not only the actual physical collection of information, but also in some cases, the transfer of that information to processing and production facilities. This requires close coordination between operations planners and intelligence collection managers. The J-2 establishes collection requirements to meet the JFC's operational objectives, while the J-3 determines how to employ assigned RSTA systems available to satisfy the collection requirements. If assigned assets cannot meet the CINC's objectives, then external RSTA support may be required. Also, different types of collection capabilities may be needed to validate information acquired from another source. Furthermore, collection capabilities need redundancy so the loss or failure of one system can be compensated for by another collection capability. Collection capabilities (or systems) must also be interoperable so that the information collected can be integrated and correlated into an all-source analysis. The collection architecture must be in place and the procedures exercised during

peacetime in order to implement a collection plan effectively at the beginning of hostilities.

c. Processing and Production. Although past RSTA operations have not participated in the processing and production steps of the intelligence cycle, advances in modern technology are changing the way in which information is processed and produced into intelligence. Some RSTA assets possess an onboard data processing capability allowing the data to be processed into raw intelligence. Further processing may be necessary to produce a finished intelligence product. For example, Joint STARS can process the data it obtains either onboard and data link it to the requester or data link the data directly to specific ground stations where the processing is completed. In either case, the information can be sent directly to the user in NRT.

d. Dissemination. This final step in the intelligence cycle also is being greatly affected by advances in technology. Some RSTA assets are capable of disseminating collected information to consumers on a real or near-real-time basis, vastly increasing their speed and responsiveness in meeting the commander’s needs. This is especially critical for those RSTA operations supporting ongoing military operations, in which the situation may be evolving rapidly and perishable information could lose its usefulness within a matter of minutes or even seconds. This expanding capability of RSTA systems makes interoperability, commonality, and connectivity all the more important because a real-time planning and targeting system depends on these capabilities. The dissemination process requires continuous management. Without effective management, communications paths can become saturated by information from single sources being retransmitted by many intermediate collection agencies. This well-intentioned data flow can exceed the users’ RSTA data processing capability.

3. Command Relationships. Command relationships delineate the degree of authority a JFC can exercise over RSTA units. Combatant commanders exercise combatant command (command authority)(COCOM) over assigned RSTA forces. Subordinate JFCs exercise operational control (OPCON) over assigned or attached RSTA forces through the commanders of subordinate organizations; normally this authority is exercised through Service component commanders. The JFC normally designates a joint force air component commander (JFACC). The JFACC’s responsibilities normally include planning, coordinating,

allocating, and tasking of appropriate airborne RSTA assets made available, based on the JFC's apportionment decision. Following the JFC's guidance, and in coordination with other Service component commanders and other assigned or supported commanders, the JFACC will recommend to the JFC apportionment of air sorties to various missions and geographical areas. For short-term arrangements, RSTA forces may also be attached to a subordinate command to which tactical control (TACON) authority has been delegated for local control and direction. Some national-level and other RSTA assets may not be placed under a JFC's OPCON. These assets may operate in direct support of the JFC, either full time or available on call, but may be shared with other commands. In cases where required assets are assigned to another (supporting) CINC, supported commanders will normally identify their RSTA requirements to the supporting commanders through their functionally related staff element. For unified command staffs, this is normally the J-3 Operations Directorate. The supporting CINC, upon request, will provide liaison teams to the supported CINC. These teams will normally be the point of contact for coordinating their specific RSTA resources and requirements. The JFC should be fully aware of all available RSTA assets and integrate their capabilities into the operational concept.

4. Planning RSTA Operations. Planning requires the integration of several complex elements.

a. Force Disposition. The JFC must determine the best way to employ RSTA forces that allows maximum effectiveness while weighing the risks. The JFC must determine if it is better to deploy the assets near the area of primary interest where the C3 facilities and processing facilities are located, or in the case of aerial assets, near the maintenance facilities. Both have advantages and disadvantages that must be considered before executing the mission. For example, if the joint force is primarily conducting land operations, the JFC may wish to position aerial reconnaissance systems at an optimum location to ensure maximum responsiveness in support of ground operations. If the enemy poses a significant threat to the forces, the JFC may need to disperse the assets to improve overall force survivability. If the threat increases while the RSTA operation is ongoing, it may be necessary to fall back to positions out of the threat's range. RSTA planners must consider the tradeoffs of survivability and information acquisition. The intelligence information may not become available if the RSTA asset is destroyed, captured, or isolated and unable to exploit, process, and disseminate

the acquired information. If the campaign is conducted in a maritime environment, the JFC may position land-based RSTA forces to operate beyond the range of sea-based reconnaissance forces.

b. Force Composition. The JFC must determine information requirements and then identify available RSTA capabilities. This analysis begins by defining command relationships to determine what assets are assigned to the JFC. RSTA assets may be tasked directly (if assigned) or indirectly through other supporting commanders or agencies. The JFC's staff must then assess the operational parameters of available RSTA assets--range, endurance, survivability, and their collection, processing, and dissemination capabilities. The blend of objectives and guidance, threats, force capabilities, and system availability is exceedingly complicated and requires thorough analysis and effective coordination among all elements of RSTA planning to meet the JFC's needs.

c. Prioritization. The JFC should establish priorities for RSTA operations before the onset of hostilities, knowing these priorities may change as the situation develops. The priorities should generally conform to the military objectives; for example, the most capable RSTA assets support the most critical objectives. The JFC must determine the enemy's centers of gravity and may employ RSTA assets to monitor these centers of gravity. Experience has shown that combat operations seldom go as planned, with the fog and friction of war causing operations to evolve in unanticipated directions. Therefore, prioritization of RSTA requirements is critical. RSTA planners must be prepared to adjust priorities to support new requirements. Also, the JFC's requirements may conflict with other requirements, such as MC&G requirements. Although it is important to attempt to satisfy all user requests, the reality of many requests against limited resources dictates judicious and prudent use of RSTA assets.

5. Tasking RSTA Operations. RSTA assets are tasked in essentially the same manner during peacetime and combat operations, except for tailoring the approval and execution process in accordance with the scope of the operations. As operations transition from routine peacetime operations toward combat operations, additional RSTA forces may be reassigned to, or placed in support of, the JFC as validated intelligence requirements dictate the transition from reconnaissance, to surveillance, to the inclusion of

additional dedicated target acquisition support assets and operations.

a. During peacetime, certain RSTA operations and procedures against designated sensitive areas are covered by SM 401-87, "Peacetime Application of Reconnaissance Programs (PARPRO)." RSTA requests undergo a coordination and final approval process providing a monthly schedule of routine worldwide PARPRO missions and activities. Out-of-cycle and urgent requests per SM 401-87 can be accommodated within approximately 48 hours.

b. In combat, the JFC will very likely have assigned, attached, or dedicated support RSTA forces for tasking. Once a requirement has been identified, validated, prioritized, and coordinated between J-2, J-3, joint force components, and other appropriate agencies (if required), a RSTA unit is tasked to carry out the mission. This is normally done through a tasking order or tasking message (varies from component to component) and contains information to plan and execute the mission. It also contains the requester's identification so that the information acquired can be made available to him.

6. RSTA Coordination. The J-2 and J-3 will normally work with the components and the JFACC, if assigned, to coordinate national and theater reconnaissance objectives effectively.

a. The Service or functional component commanders manage their assigned collection assets. Each component commander will seek to satisfy his own requirements by using these assets. Based on the JFC's objectives, they prioritize and submit outstanding collection requirements for collection by theater and national assets to the J-2 collection management staff. The J-2 reviews, validates, and prioritizes the outstanding intelligence requirements. The J-3 coordinates and tasks assigned theater collection assets to ensure maximum use of these critical resources. The J-2 also submits outstanding priorities for use of nonassigned or national-level RSTA assets.

b. The joint reconnaissance center (JRC) is within the J-3. The JRC's function is to monitor the assigned RSTA assets that are available to conduct operations, establish priorities among them to support current or new requirements, assign missions to available RSTA systems, coordinate and deconflict RSTA missions with other operations within the AOR, assess the risks versus

intelligence gain, and monitor ongoing operations. Outstanding requirements that exceed the capabilities of assigned RSTA assets will be identified to the J-2 for satisfaction by other means.

c. In some cases, the assigned assets are not sufficient to accomplish the mission because of target type, threats, technical capabilities, or distance to the objective. In such cases, the JFC may request national or other external support capable of accomplishing the mission. Requests for national collection systems from the J-2 collection management office are forwarded to the Defense Collection Coordination Center (DCCC). The DCCC will validate and prioritize the requests and determine if they can be met. Competing priorities, physical status of the assets, and desired response time of the JFC's requests are considered in processing the collection requirement.

7. RSTA Execution. Tactical-level commanders normally have the responsibility to accomplish the mission. They must evaluate the risks (tactics, weather, safety, logistics, etc.) involved to complete the mission successfully. The JFC is the final authority on whether or not mission needs outweigh the risks involved. The executing unit's commander normally provides inputs in the decisionmaking process as to what these risks are.

(INTENTIONALLY BLANK)

CHAPTER IV

TARGETING

1. Overview. This chapter focuses on the targeting process. The targeting accomplished at the tactical level is too detailed for the purposes of this publication. Therefore, a generic discussion on the targeting process is presented, followed by how RSTA assets support this process.

2. Targeting Objectives. The objective of targeting is to affect, change, modify, or impede enemy activity through destruction, damage, deception, or neutralization. Targeting responds to guidance and objectives that originate at the national level as broad concepts. Commanders refine and provide additional guidance and objectives that become specific plans of action. Targeting integrates intelligence on the threat, target system, and target characteristics with operations data on force posture, capabilities, weapons effects, objectives, rules of engagement (ROE), and doctrine. Targeting matches objectives and guidance with inputs from intelligence, operations, and other functional areas, such as logistics and communications, to identify the forces necessary to achieve the objectives. Targeting examines all lethal and nonlethal applications of force and spans not only nuclear and conventional force application, but also electronic warfare, space, and special operations. To be effective, targeting must identify the best weapon for the intended target with appropriate timing to meet the objectives established by the commander.

3. The Target. A target is a geographical area, complex, installation or system, and its contents or other manmade features, against which military action is planned. Military action can range from destruction through disruption, degradation, seizure, neutralization, and exploitation, commensurate with the guidance and objectives. In general, targets are classified as military, political, or economic.

   a. A target must contribute to the attainment of a military objective before it can become a legitimate object of military attack. In this context, military objectives are those objectives that make an effective contribution to military action, or whose destruction, capture, or neutralization offers a definite military advantage. The key is whether the objective contributes to the enemy’s warfighting capabilities. However, a potential target does not become a target until military action is planned against it.

b. Military targets may be further classified as strategic, operational, and tactical. Actions that influence the overall war effort or political objectives are classified as strategic. This type of targeting is directed against an enemy's will to fight and capacity to sustain war. Operational targets are those targets deemed critical to the enemy's capability to conduct successful campaigns. Actions that produce immediate or near-term effects on the battlefield or to current operations are classified as tactical. This type of targeting is directed against the enemy's forces, lines of communications, and C2 structures that have an immediate or near-term effect on the outcome of the operation. It is important to note that geographical areas, operating environments, delivery vehicles, or type of munitions do not dictate the classification of a target. Therefore, the classification of a target as strategic, operational or tactical may change as rapidly as operations shift or objectives change.

4. Target Development. This portion of the targeting process is the systematic evaluation of potential target systems and their components to determine which elements of the target system(s) military action should, or could, be taken against to achieve the given objectives. All sources of intelligence are reviewed and potential target systems and components are selected for consideration. Potential targeted systems and their components are then analyzed for their military, economic, and political importance; priority of attack; and weapon systems required to determine the required level of disruption, destruction, neutralization, or exploitation. Targeteers must identify key target systems that are relevant to objectives and guidance and suitable for disruption, degradation, neutralization, or destruction. To accomplish this task, targeteers must understand target system characteristics, target linkage, and interdependence. In addition, targeteers must identify critical nodes, prepare preliminary documentation, validate the target, identify recommended aim points for attack, and develop a potential prioritized target list. This list is then used for weaponeering assessment.

a. Targeted systems have a number of characteristics. First, a targeted system is oriented toward a goal, objective, or purpose that is achieved through the system's components. These components are interdependent; a change in one causes a change in one or

more of the other components. Second, each targeted system is a component of another more inclusive system.

b. Target linkage is the connection between targets performing identical, similar, or complementary activities or functions. Target interdependence is the mutual relationships among targets where the activity of one is contingent, influenced, controlled, or determined by another.

c. Targeted system activities are those actions or functions performed by target system components in pursuit of system goals. This is the area where targeteers should focus their efforts. Once enemy activities that must be modified or defeated have been identified, targeteers can identify key activities of the targeted system or components that should be attacked, degraded, or exploited to produce the desired effect.

d. Target development focuses on identifying critical nodes within key target systems that will satisfy targeting objectives and conform to JFC guidance. Critical nodes are points within a targeted system that will produce a cascading destructive, disruptive, or crippling effect on the targeted system.

e. Preliminary documentation includes identification of prohibited targets, incorporation of targets directed by higher headquarters, verification of targets recommended by components or other agencies, and identification of targets suitable for attack by specialized systems.

f. Targets are validated by evaluating and approving candidate targets. Certain questions need to be considered during this portion of the target development process: Does the targeting process meet JFC objectives and guidance received? Does the target contribute to the enemy’s capability and will to wage war? Is the target significant, operationally, or politically sensitive? What psychological impact will operations against the target have on the enemy? Have all applicable laws of armed conflict (LOAC) or ROE been considered?

g. The end product of the target development process is an unconstrained prioritized list of potential targets. It reflects relative importance of targets to the enemy’s ability to wage war. This list is the basis for the weaponeering assessment phase.

5. Weaponeering Assessment. This phase determines the quantity, type, and mix of lethal and nonlethal weapons required to achieve a specific level of target damage. Considerations are as follows:

a. Target vulnerability.

b. Weapons effects.

c. Munitions delivery errors.

d. Damage criteria.

e. Probability of kill.

f. Weapon reliability.

6. Force Application Planning. The fusion of target nominations with the optimum mix of lethal and nonlethal force is the basis of force application planning. Enemy forces are analyzed to determine likely results to be achieved against target sets and their activities. The intelligence, operations, and plans staffs work closely to optimize the joint force necessary in light of operational realities. The result of this phase should be a jointly coordinated force application nomination for the commander's approval.

7. Execution Planning. Once the force application nomination has been approved, actions are taken to prepare to employ forces. The JFC will issue operation orders directing subordinate commanders to execute the operation.

8. Battle Damage Assessment. This phase examines mission results. It compares the results of the operations to the objectives and guidance to determine success or failure. Based on the results of this assessment, a determination is made whether further operations are required or if a modification of the objectives is needed. Components of this phase include physical damage assessment, functional damage assessment, target system assessment, munitions effectiveness assessment, and restrike recommendation.

9. Mission Cycle. Targeting plays a key role in the commander's decision to employ forces. This decisionmaking process is commonly called the mission cycle. The cycle consists of six steps: detection, location, identification, decision, execution, and assessment. RSTA operations play a prominent role in four of these steps: detection, location, identification, and assessment.

a. Detection. This step involves the use of RSTA assets to detect new potential targets or significant changes to existing targets. This step is an ongoing process, being conducted before, during, and after military operations. During peacetime, requirements must be established for target reconnaissance or surveillance, crisis monitoring, and combat support. During hostilities other than war and war, RSTA collection priorities may need to be adjusted as the situation or objectives change. This step initiates action for the remaining steps.

b. Location. Once detected, a target must be positioned accurately within a designated reference system to support the identification, decision, and execution steps that follow. Mobile targets pose significant problems during this step because their data are so perishable, and current data are essential to target analysis and later to target acquisition.

c. Identification. This step involves recognizing and classifying targets in sufficient detail to allow decisions to be made. Because of limitations in sensor system capabilities, multiple RSTA operations may be necessary to identify and verify the target. Frequently, the information from one RSTA source can be used as a cue to initiate other RSTA operations. The amount of information required and the type of RSTA sensors to be used will vary depending on target characteristics, location, and circumstances of its detection.

d. Decision. At this point, a course of action is decided upon. Analysis determines the target significance in light of available weapon system resources. Intelligence, operations, communications, and logistic staffs work closely together to provide the support required by the commander. Flexibility is required because relative priorities may change before or during military operations.

(1) Operational activities plan, supervise, and execute the military operations.

(2) Intelligence activities validate target nominations and analyze the enemy’s order of battle, capabilities, and intentions.

(3) Communications activities transmit the situation and the target decisions.

(4) Logistic activities support the above three activities with the resources necessary to conduct and continue the operations.

e. Execution. During this step, action is carried out.

f. Assessment. Throughout the mission cycle and especially during this step, assets monitor the impact of operations on enemy facilities, forces, capabilities, and activities and provides recommendations to operational decisionmakers.

10. Coordination

a. The JFC may elect to establish a Joint Targeting Coordination Board (JTCB). It is a joint activity comprised of members of the JFC's staff, the components, and, if required, their subordinate units. The JTCB reviews target information, develops targeting guidance and priorities, and may prepare and refine the joint target list (JTL). The JTCB recommends additions or changes to the JTL, recommends modifications to the JFC's targeting strategy, and disseminates summaries of the daily BDA reports received from component and supporting forces. This information is provided to the components and supporting forces.

b. If the JFC elects not to establish a JTCB, then the JFC must establish procedures to coordinate and deconflict target requirements.

APPENDIX A

REFERENCES

1. DOD Publication. DOD Directive 5100.1, 25 September 1987, "Functions of the Department of Defense and Its Major Components."

2. Joint Pubs

   a. Joint Pub 0-2, 1 December 1986, "Unified Action Armed Forces (UNAAF)."

   b. Joint Pub 1-01, 30 July 1992, "Joint Publication System, Joint Doctrine and Joint Tactics, Techniques, and Procedures Development Program."

   c. Joint Pub 1-02, 1 December 1989, "DOD Dictionary of Military and Associated Terms."

   d. Joint Test Pub 2-0, 30 June 1991, "Doctrine for Intelligence Support to Joint Operations."

   e. Joint Pub 2-01, (in development), "Joint Tactics, Techniques, and Procedures for Intelligence Support to Joint Operations."

   f. Joint Pub 2-03, (in development), "Doctrine and Tactics, Techniques, and Procedures for Counterintelligence Support to Joint Operations."

   g. Joint Pub 2-04, (in development), "Joint Doctrine for Battle Damage Assessment."

   h. Joint Test Pub 3-0, 1 January 1990, "Doctrine for Joint Operations."

   i. Joint Pub 3-14, (in development), "Joint Doctrine; Tactics, Techniques, and Procedures (TTP) for Space Operations."

   j. Joint Pub 3-54, 21 August 1991, "Joint Doctrine for Operations Security."

   k. Joint Pub 3-55.1, (in development), "Joint Tactics, Techniques, and Procedures for Unmanned Aerial Vehicles."

   l. Joint Pub 3-58, (in development), "Joint Doctrine for Operational Deception."

m. Joint Test Pub 5-0, 26 July 1991, "Doctrine for Planning Joint Operations."

n. Joint Pub 6-0, 3 June 1992, "Doctrine for C4 Systems Support to Joint Operations."

APPENDIX B

USERS EVALUATION REPORT
ON JOINT PUB 3-55

1. Users in the field are highly encouraged to directly submit comments on this pub. Please fill out and send in the following: Users' POC, unit address, and phone (DSN) number.

_____
_____

2. Content

a. Does the pub provide a conceptual framework for the topic? _____
_____
_____

b. Is the information provided accurate? What needs to be updated? _____
_____

c. Is the information provided useful? If not, how can it be improved? _____
_____

d. Is this pub consistent with other joint pubs?
_____
_____

e. Can this pub be better organized for the best understanding of the doctrine and/or JTTP? How?
_____
_____

3. Writing and Appearance

a. Where does the pub need some revision to make the writing clear and concise? What words would you use?
_____
_____

b. Are the charts and figures clear and understandable? How would you revise them? _____
_____

4. Recommended urgent change(s) (if any). _____
_____

5. Other _____
_____

6. Please fold and mail comments to the Joint Doctrine Center (additional pages may be attached if desired) or FAX to DSN 564-3990 or COMM (804) 444-3990.

(FOLD)

FROM:

JOINT DOCTRINE CENTER
BLDG R-52,
1283 CV TOWWAY STE 100
NORFOLK, VA 23511-2491

(FOLD)

APPENDIX B

USERS EVALUATION REPORT
ON JOINT PUB 3-55

1. Users in the field are highly encouraged to directly submit comments on this pub. Please fill out and send in the following: Users' POC, unit address, and phone (DSN) number.

_____
_____

2. Content

a. Does the pub provide a conceptual framework for the topic? _____
_____
_____

b. Is the information provided accurate? What needs to be updated? _____
_____

c. Is the information provided useful? If not, how can it be improved? _____
_____

d. Is this pub consistent with other joint pubs?
_____
_____

e. Can this pub be better organized for the best understanding of the doctrine and/or JTTP? How?
_____
_____

3. Writing and Appearance

a. Where does the pub need some revision to make the writing clear and concise? What words would you use?
_____
_____

b. Are the charts and figures clear and understandable? How would you revise them? _____
_____

4. Recommended urgent change(s) (if any). _____
_____

5. Other _____
_____

6. Please fold and mail comments to the Joint Doctrine Center (additional pages may be attached if desired) or FAX to DSN 564-3990 or COMM (804) 444-3990.

(FOLD)

FROM:

JOINT DOCTRINE CENTER
BLDG R-52,
1283 CV TOWWAY STE 100
NORFOLK, VA 23511-2491

(FOLD)

APPENDIX B

USERS EVALUATION REPORT
ON JOINT PUB 3-55

1. Users in the field are highly encouraged to directly submit comments on this pub. Please fill out and send in the following: Users' POC, unit address, and phone (DSN) number.

_____
_____

2. Content

a. Does the pub provide a conceptual framework for the topic? _____
_____
_____

b. Is the information provided accurate? What needs to be updated? _____
_____

c. Is the information provided useful? If not, how can it be improved? _____
_____

d. Is this pub consistent with other joint pubs?
_____
_____

e. Can this pub be better organized for the best understanding of the doctrine and/or JTTP? How?
_____
_____

3. Writing and Appearance

a. Where does the pub need some revision to make the writing clear and concise? What words would you use?
_____
_____

b. Are the charts and figures clear and understandable? How would you revise them? _____
_____

4. Recommended urgent change(s) (if any). _____
_____

5. Other _____
_____

6. Please fold and mail comments to the Joint Doctrine Center (additional pages may be attached if desired) or FAX to DSN 564-3990 or COMM (804) 444-3990.

(FOLD)

FROM:

JOINT DOCTRINE CENTER
BLDG R-52,
1283 CV TOWWAY STE 100
NORFOLK, VA 23511-2491

(FOLD)

APPENDIX B

USERS EVALUATION REPORT
ON JOINT PUB 3-55

1. Users in the field are highly encouraged to directly submit comments on this pub. Please fill out and send in the following: Users' POC, unit address, and phone (DSN) number.

_____
_____

2. Content

a. Does the pub provide a conceptual framework for the topic? _____
_____
_____

b. Is the information provided accurate? What needs to be updated? _____
_____

c. Is the information provided useful? If not, how can it be improved? _____
_____

d. Is this pub consistent with other joint pubs?
_____
_____

e. Can this pub be better organized for the best understanding of the doctrine and/or JTTP? How?
_____
_____

3. Writing and Appearance

a. Where does the pub need some revision to make the writing clear and concise? What words would you use?
_____
_____

b. Are the charts and figures clear and understandable? How would you revise them? _____
_____

4. Recommended urgent change(s) (if any). _____
_____

5. Other _____
_____

6. Please fold and mail comments to the Joint Doctrine Center (additional pages may be attached if desired) or FAX to DSN 564-3990 or COMM (804) 444-3990.

(FOLD)

FROM:

JOINT DOCTRINE CENTER
BLDG R-52,
1283 CV TOWWAY STE 100
NORFOLK, VA 23511-2491

(FOLD)

APPENDIX B

USERS EVALUATION REPORT
ON JOINT PUB 3-55

1. Users in the field are highly encouraged to directly submit comments on this pub. Please fill out and send in the following: Users' POC, unit address, and phone (DSN) number.

_____
_____

2. Content

a. Does the pub provide a conceptual framework for the topic? _____
_____
_____

b. Is the information provided accurate? What needs to be updated? _____
_____

c. Is the information provided useful? If not, how can it be improved? _____
_____

d. Is this pub consistent with other joint pubs?
_____
_____

e. Can this pub be better organized for the best understanding of the doctrine and/or JTTP? How?
_____
_____

3. Writing and Appearance

a. Where does the pub need some revision to make the writing clear and concise? What words would you use?
_____
_____

b. Are the charts and figures clear and understandable? How would you revise them? _____
_____

4. Recommended urgent change(s) (if any). _____
_____

5. Other _____
_____

6. Please fold and mail comments to the Joint Doctrine Center (additional pages may be attached if desired) or FAX to DSN 564-3990 or COMM (804) 444-3990.

(FOLD)

FROM:

JOINT DOCTRINE CENTER
BLDG R-52,
1283 CV TOWWAY STE 100
NORFOLK, VA 23511-2491

(FOLD)

GLOSSARY

PART I--ABBREVIATIONS AND ACRONYMS

ACINT	acoustic intelligence
ADP	automatic data processing
AOR	area of responsibility
BDA	battle damage assessment
C2	command and control
C3	command, control, and communications
C3I	command, control, communications, and intelligence
CI	counterintelligence
CINC	commander of a combatant command, commander in chief
COCOM	combatant command (command authority)
COMINT	communications intelligence
CR-UAV	close-range unmanned aerial vehicle
DCCC	Defense Collection Coordination Center
DMA	Defense Mapping Agency
EEI	essential elements of information
ELINT	electronics intelligence
EO-IR	electro-optical-infrared
FISINT	foreign instrumentation signals intelligence
FLOT	forward line of own troops
HUMINT	human resources intelligence
I&W	indications and warning
IMINT	imagery intelligence
IRINT	infrared intelligence
JFACC	joint force air component commander
JFC	joint force commander
Joint STARS	joint surveillance, target attack radar system
JRC	joint reconnaissance center
JSCP	Joint Strategic Capabilities Plan
JTCB	Joint Targeting Coordination Board
JTL	joint target list
KM	kilometer
LAO	limited attack option
LASINT	laser intelligence

LOAC	laws of armed conflict
MASINT	measurement and signature intelligence
MC&G	mapping, charting, and geodesy
MOP	memorandum of policy
MR-UAV	medium-range unmanned aerial vehicle
NCA	National Command Authorities
NRT	near-real-time
NTB	National target base
NUCINT	nuclear intelligence
OPCON	operational control
OPDEC	operational deception
OPLAN	operation plan
OPSEC	operations security
OPTINT	optical intelligence
PARPRO	peacetime application of reconnaissance programs
PHOTINT	photographic intelligence
RADINT	radar intelligence
RINT	unintentional radiation intelligence
ROE	rules of engagement
RSTA	reconnaissance, surveillance, and target acquisition
SAR	synthetic aperture radar
SCUD	surface-to-surface missile system
SIGINT	signals intelligence
SIOP	Single Integrated Operational Plan
SOF	special operations forces
SR	special reconnaissance
SR-UAV	short-range unmanned aerial vehicle
TACON	tactical control
TENCAP	Tactical Exploitation of National Capabilities Program
UAV	unmanned aerial vehicle
UCP	Unified Command Plan

acoustic intelligence. Intelligence derived from the collection and processing of acoustic phenomena. Also called ACINT. (Joint Pub 1-02)

battle damage assessment. The timely and accurate estimate of damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective. Battle damage assessment can
be applied to the employment of all types of weapon systems (air, ground, naval, and special forces weapon systems) throughout the spectrum of conflict. Battle damage assessment is primarily an intelligence responsibility with required inputs and coordination from the operators. Battle damage assessment is composed of physical damage assessment, functional damage assessment, and target system assessment. Also called BDA. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 2-0)

Combatant Command (command authority). Non-transferable command authority established by title 10, United States Code, section 164, exercised only by commanders of unified or specified combatant commands. Combatant Command (command authority) is the authority of a Combatant Commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant Command (command authority) should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service component commander. Combatant Command (command authority) provides full authority to organize and employ commands and forces as the CINC considers necessary to accomplish assigned missions. Also called COCOM. (Joint Pub 1-02)

communications intelligence. Technical and intelligence information derived from foreign communications by other than the intended *ecipients. Also called COMINT. (Joint Pub 1-02)

counterintelligence. Information gathered and activities conducted to protect against espionage, other intelligence activities, sabotage, or assassinations conducted by or on behalf of foreign governments or elements thereof, foreign organizations, or foreign persons, or international terrorist

activities. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 2-03)

electronics intelligence. Technical and intelligence information derived from foreign non-communications electromagnetic radiations emanating from other than nuclear detonations or radioactive sources. Also called ELINT. (Joint Pub 1-02)

foreign instrumentation signals intelligence. Technical information and intelligence information derived from the intercept of foreign instrumentation signals by other than the intended recipients. Foreign instrumentation signals intelligence is a category of signals intelligence. Note: Foreign instrumentation signals include but are not limited to signals from telemetry, beaconry, electronic interrogators, tracking/fusing/arming/firing command systems, and video data links. Also called FISINT. (Joint Pub 1-02)

human resources intelligence. The intelligence information derived from the intelligence collection discipline that uses human beings as both sources and collectors, and where the human being is the primary collection instrument. Also called HUMINT. (Joint Pub 1-02)

imagery intelligence. Intelligence information derived from the exploitation of collection by visual photography, infrared sensors, lasers, electro-optics and radar sensors such as synthetic aperture radar wherein images of objects are reproduced optically or electronically on film, electronic display devices or other media. Also called IMINT. (Joint Pub 1-02)

indications and warning. Those intelligence activities intended to detect and report time-sensitive intelligence information on foreign developments that could involve a threat to the United States or allied military, political, or economic interests or to US citizens abroad. It includes forewarning of enemy actions or intentions; the imminence of hostilities; insurgency; nuclear/non-nuclear attack on the United States, its overseas forces, or allied nations; hostile reactions to United States reconnaissance activities; terrorists' attacks; and other similar events. (Joint Pub 1-02) Also called I&W.

Infrared intelligence. Intelligence information (other than signal intelligence) associated with emitted or reflected energy (both active and passive non-imaging) derived from monitoring the electromagnetic infrared spectrum. Also

called IRINT. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 2-0)

intelligence cycle. The steps by which information is converted into intelligence and made available to users. There are five steps in the cycle:

a. planning and direction-Determination of intelligence requirements, preparation of a collection plan, issuance of orders and requests to information collection agencies, and a continuous check on the productivity of collection agencies.

b. collection-Acquisition of information and the provision of this information to processing and/or production elements.

c. processing-Conversion of collected information into a form suitable to the production of intelligence.

d. production-Conversion of information into intelligence through the integration, analysis, evaluation, and interpretation of all source data and the preparation of intelligence products in support of known or anticipated user requirements.

e. dissemination-Conveyance of intelligence to users in a suitable form. (Joint Pub 1-02)

interoperablity. 1. The ability of systems, units or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together. 2. The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (Joint Pub 1-02)

joint force air component commander. The joint force air component commander derives his authority from the joint force commander who has the authority to exercise operational control, assign missions, direct coordination among his subordinate commanders, redirect and organize his forces to ensure unity of effort in the accomplishment of his overall mission. The joint force commander will normally designate a joint force air component commander. The joint force air component commander’s responsibilities will be assigned by

the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation and tasking based on the joint force commander's apportionment decision). Using the joint force commander's guidance and authority, and in coordination with other Service component commanders and other assigned or supporting commanders, the joint force air component commander will recommend to the joint force commander apportionment of air sorties to various missions or geographic areas. Also called JFACC. (Joint Pub 1-02)

joint force commander. A general term applied to a commander authorized to exercise Combatant Command (command authority) or operational control over a joint force. Also called JFC. (Joint Pub 1-02)

joint target list. A consolidated list of selected targets considered to have military significance in the joint operations area. (Joint Pub 1-02) Also called JTL.

laser intelligence. Technical and intelligence information derived from laser systems; a subcategory of electro-optical intelligence. Also called LASINT. (Joint Pub 1-02)

law of armed conflict. See law of war.

law of war. That part of international law that regulates the conduct of armed hostilities. It is often termed the law of armed conflict. (Joint Pub 1-02)

measurement and signature intelligence. Scientific and technical intelligence information obtained by quantitative and qualitative analysis of data (metric, angle, spatial, wavelength, time dependence, modulation, plasma, and hydromagnetic) derived from specific technical sensors for the purpose of identifying any distinctive features associated with the source, emitter, or sender and to facilitate subsequent identification and/or measurement of the same. Also called MASINT. (Joint Pub 1-02)

mission cycle. The mission cycle, as it pertains to targeting, is a decisionmaking process used by commanders to employ forces. Within the cycle there are six general mission steps: detection, location, identification, decision, execution, and assessment. (Approved for inclusion in the next edition of Joint Pub 1-02)

multi-spectral imagery. The image of an object obtained simultaneously in a number of discrete spectral bands. (Joint Pub 1-02)

near real time. Delay caused by automated processing and display between the occurrence of an event and reception of the data at some other location. (Joint Pub 1-02)

nuclear intelligence. Intelligence information derived from the collection and analysis of radiation and other effects resulting from radioactive sources. Also called NUCINT. (Joint Pub 1-02)

operational control. Transferable command authority which may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in Combatant Command (command authority) and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. (Joint Pub 1-02)

operational deception. Military deception conducted by commanders of combatant commands and joint task forces in support of overall campaign objectives. Also called OPDEC. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 3-58)

operation plan. A plan for a single or series of connected operations to be carried out simultaneously or in succession. It is usually based upon stated assumptions and is the form of directive employed by higher authority to permit subordinate commanders to prepare supporting plans and orders. The designation "plan" is usually used instead of "order" in preparing for operations well in advance. An operation plan may be put into effect at a prescribed time, or on signal, and then becomes the operation order. (Joint Pub 1-02) Also called OPLAN.

operations security. A process of identifying critical information and subsequently analyzing friendly actions attendant to military operations and other activities to:

a. Identify those actions that can be observed by adversary intelligence systems.

b. Determine indicators adversary intelligence systems might obtain that could be interpreted or pieced together to derive critical information in time to be useful to adversaries.

c. Select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation. Also called OPSEC. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 3-07.2)

optical intelligence. Intelligence information derived from radiometric and spectroscopic exploitation of optical energy (ultraviolet, visible, and near-infrared) resulting in spatial, temporal, or spectral signature of targets. Also called OPINT. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 2-0)

order of battle. The identification, strength, command structure, and disposition of the personnel, units, and equipment of any military force. (Joint Pub 1-02)

photographic intelligence. The collected products of photographic interpretation, classified and evaluated for intelligence use. Also called PHOTINT. (Joint Pub 1-02)

radar intelligence. Intelligence information derived from data collected by radar. Also called RADINT. (Joint Pub 1-02)

real time. The absence of delay, except for the time required for the transmission by electromagnetic energy, between the occurrence of the event or the transmission of data, and the knowledge of an event, or reception of the data at some other location. (Joint Pub 1-02)

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. (Joint Pub 1-02)

rules of engagement. Directives issued by competent military authority which delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. Also called ROE. (Joint Pub 1-02)

signals intelligence. A category of intelligence information comprising either individually or in combination all communications intelligence, electronics intelligence, and foreign instrumentation signals intelligence, however transmitted. Also called SIGINT. (Joint Pub 1-02)

special reconnaissance operations. Reconnaissance and surveillance actions conducted by special operations forces to obtain or verify, by visual observation or other collection methods, information concerning the capabilities, intentions, and activities of an actual or potential enemy, or to secure data concerning the meteorological, hydrographic, geographic, or demographic characteristics of a particular area. These operations include target acquisition, area assessment, and poststrike reconnaissance. Also called SR. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 3-05.5)

surveillance. The systematic observation of aerospace, surface or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means. (Joint Pub 1-02)

tactical control. The detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Also called TACON. (Joint Pub 1-02)

target. 1. A geographical area, complex, or installation planned for capture or destruction by military forces. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst which hits the target. (Joint Pub 1-02)

target acquisition. The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. (Joint Pub 1-02)

target analysis. An examination of potential targets to determine military importance, priority of attack, and weapons required to obtain a desired level of damage or casualties. (Joint Pub 1-02)

targeting. The process of selecting targets and matching the appropriate response to them taking account of operational requirements and capabilities. (Joint Pub 1-02)

target system. 1. All the targets situated in a particular geographic area and functionally related. 2. A group of targets which are so related that their destruction will produce some particular effect desired by the attacker. (Joint Pub 1-02)

target system component. A set of targets belonging to one or more groups of industries and basic utilities required to produce component parts of an end product such as periscopes, or one type of a series of interrelated commodities, such as aviation gasoline. (Joint Pub 1-02)

unintentional radiation intelligence. Intelligence derived from the collection and analysis of non-information-bearing elements extracted from the electromagnetic energy unintentionally emanated by foreign devices, equipment, and systems, excluding those generated by the detonation of atomic or nuclear weapons. Also called RINT. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 2-0)

unmanned aerial vehicle. A powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload. Also called UAV. Ballistic or semi-ballistic vehicles, cruise missiles, and artillery projectiles are not considered UAVs. (This definition is provided for information and is proposed for inclusion into Joint Pub 1-02 by Joint Pub 3-55.1)