Joint Integrating Concept for Combating Weapons of Mass Destruction

Version 1.0

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Executive Summary

General. The Combating Weapons of Mass Destruction (CWMD) Joint Integrating Concept (JIC) describes how a Joint Force Commander (JFC) with responsibility for a Joint Operations Area (JOA) will conduct future (2015-2027) operations to combat WMD development, proliferation, acquisition and employment. The JFC will employ capabilities enabling CWMD operations within a Joint, Interagency (IA), and Multinational context integrated with other key elements of national power: Diplomatic, Information, Military, Economic, Financial, Intelligence, and Law Enforcement (DIMEFIL) [1].

This broad scoped concept establishes a coherent framework to

- Synchronize execution of CWMD missions and strategic enablers against WMD network functions: Finance, Science and Technology, Logistics, Weapons Delivery, Intelligence, Surveillance and Reconnaissance, Command and Control

- Support Capabilities Based Assessments (CBAs) that will identify capability gaps, shortfalls, and overmatch

- Facilitate understanding of fluid CWMD mission relationships and support tradeoff analysis among the capabilities and across the mission areas and enablers

- Inform the efforts of Combatant Commanders (CCDRs) and others to improve current CWMD capabilities when potential near-term solutions are identified.

This JIC addresses the *National Security Strategy* essential task, "Prevent our enemies from threatening us, our allies, and our friends with weapons of mass destruction." It is consistent with strategic guidance and addresses integrated operations required to accomplish the endstates articulated in the *National Military Strategy to Combat Weapons of Mass Destruction* (*NMS-CWMD).*

Problem. Current projections for the geo-strategic environment in 2015-2027 indicate an unsettled and rapidly changing world. In this environment, the WMD danger will increase in both scope (variety of WMD) and scale[2] (number of WMD actors) primarily due to the rogue

[1] The *National Military Strategic Plan for the War on Terrorism,* 1 February 2006, presents the.DIMEFIL construct.

[2] *Mapping the Global Future*, Report of the National Intelligence Council's 2020 Project and *Combating WMD, Challenges for the Next 10 Years,* Center for the Study of WMD.

behavior of multiple networks of WMD seekers, possessors, and proliferators. These networks

- Are multifunctional and multidimensional
- Consist of state and, increasingly, independent non-state actors
- Are dynamic, adaptive and can be transnational
- Have differing motivations and desired endstates
- Operate in secrecy and in the realm of dual-use products and technology to avoid detection and counter-action.

The military problem is that the JFC lacks a full range of capabilities that can support Unified Action to proactively and comprehensively dissuade, defeat, deter or mitigate the rogue behavior of these multiple networks.

Solution. The *NMS-CWMD* specifies an active, layered defense-in-depth for the military component of the U.S. Government (USG) effort to combat WMD.

The strategic military framework to conduct these operations against rogue WMD capability seekers, proliferators and possessors consists of ends, ways, and means.

- **Ends:** The United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD.
- **Ways:** The JFC, in support of globally integrated Unified Action, will conduct a campaign to proactively and comprehensively dissuade, defeat, deter or mitigate the rogue behavior of multiple networks of state and non-state actors. The JFC focuses the military campaign against the decision-making calculus of the WMD actor. The JFC will influence this decision-making calculus through selective application of military capabilities across an expanded operational environment to impose costs or deny benefits or to influence the perception of costs, benefits, and value of restraint for any WMD related course of action. Key elements of success for the JFC's campaign are
  - Engaging early
  - Coping with uncertainty
  - Layering the approach
  - Establishing attribution

- **Means:** Fully integrated U.S. Armed Forces capabilities linked across components, echelons of command and elements of Unified Action and enabled by a common and collaborative information environment.

Risks. Risks incurred by implementing this concept are primarily in the areas of force management, future challenges, and operations. Force management risk includes lack of strategic management of the military instrument to combat WMD and management of high demand / low-density capabilities. Future challenges include, but are not limited to, the emergence of new threats and the time required to effectively respond with an appropriate DOTMLPF solution. Operations risk includes, but is not limited to, the inability to deal with uncertainty and the danger caused by a sustained U.S. focus on material aspects of WMD programs.

Implications. Implications of this concept span the range of DOTMLPF domains. In particular, the emphasis on shaping, IA requirements, fluid command and control relationships, and the necessity for agile forces will drive future requirements. Future joint concepts will also need to be examined in light of this JIC. There is no IA concept and the Battlespace Awareness Joint Functional Concept will need to address the discernment of WMD actor intent and increased analysis of enabling networks and their functions. This JIC also has implications for joint experimentation including the aspect of Unified Action, expanded intelligence efforts and the means of controlling CWMD operations in a Unified Action environment.

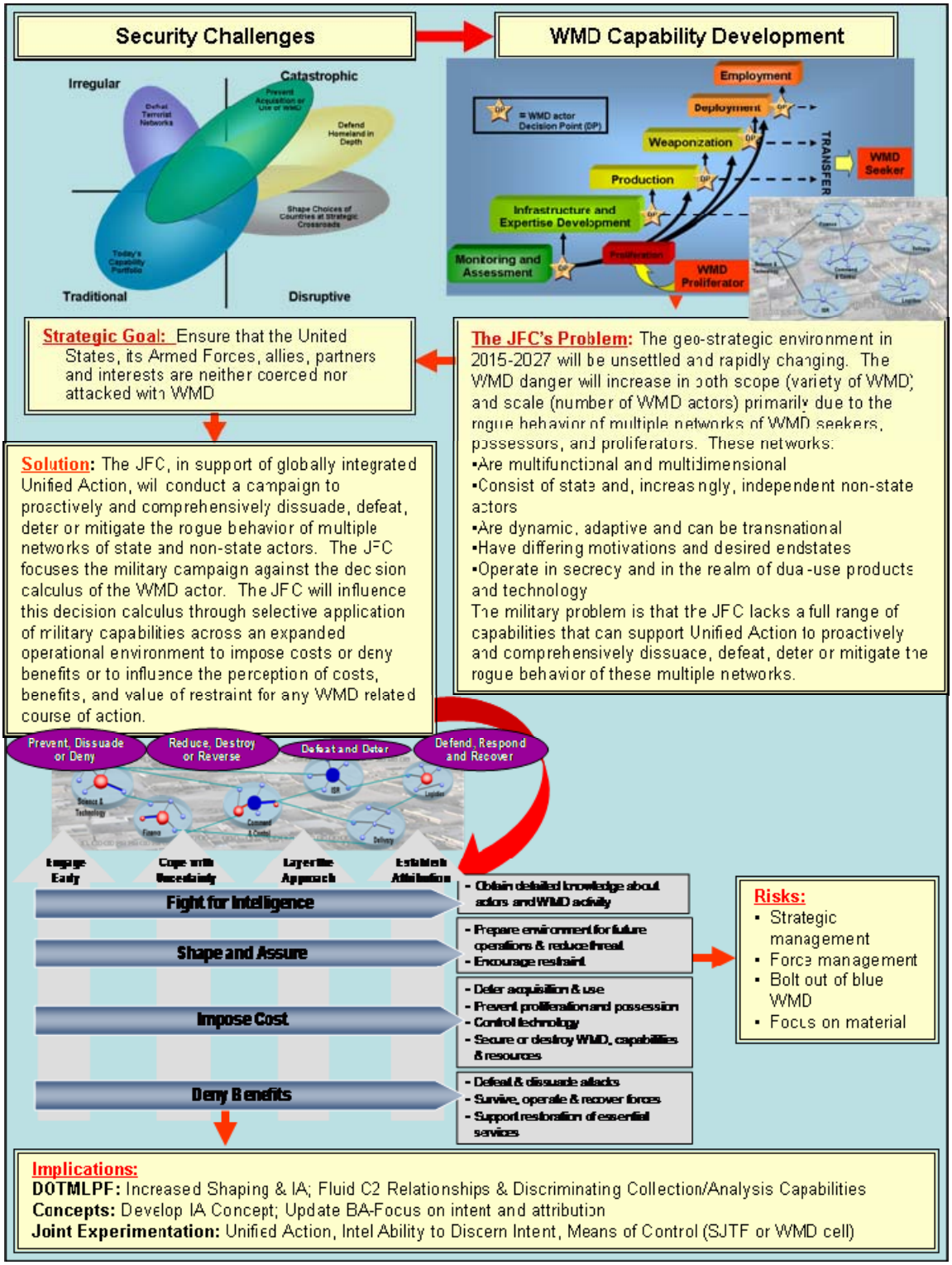

Figure I. CWMD Concept Logic Flow

1. Purpose. The CWMD JIC provides a common vision of future CWMD operations and will support CBAs in support of JCIDS and other capabilities based planning processes.

2. Scope.

a. Concept Definition. The CWMD JIC describes how a JFC, with responsibility for a JOA, will conduct future (2015-2027) operations to combat WMD development, proliferation, acquisition and employment. The JFC will employ capabilities enabling these CWMD operations in all operational environments within a Joint, IA, and Multinational context integrated with other elements of national power, DIMEFIL.

This broad concept establishes a coherent framework that can

- Synchronize execution of CWMD mission areas and strategic enablers against WMD network functions
  - Finance
  - Science and Technology
  - Logistics
  - Weapons delivery
  - Intelligence, surveillance and reconnaissance
  - Command and control
- Support CBAs that will identify capability gaps, shortfalls, and overmatch.
- Facilitate understanding of fluid CWMD mission relationships and support tradeoff analysis among the capabilities and across the missions and enablers.
- Inform the efforts of CCDRs and others to improve current CWMD capabilities when potential near-term solutions are identified.

b. Significant Aspects of the Concept. This concept describes military capabilities to address rogue behavior[3] of WMD actors. The concept also

[3] Behavior of state or non-state actors that exhibits traits of defying international laws and conventions, not adhering to treaties or conventions, striving to acquire WMD, disregarding internationally established basic human values and norms, and supporting, sponsoring, or conducting international terrorism (derived from 2002 and 2006 National Security Strategy).

addresses capabilities that the JFC uses to support operations that assist partners in securing or reducing their WMD and related capabilities. The JIC reduces these capabilities into an initial set of component tasks with appropriate conditions and standards that succeeding CBAs can expand. The concept identifies relevant CWMD relationships and effects from the elements of national power required to support the JFC (Appendix E). It also includes an illustrative vignette (Appendix L) that demonstrates a limited application of this CWMD concept. This concept uses the *National Military Strategy to Combat WMD* (*NMS-CWMD)* definition of WMD

> "Weapons that are capable of a high order of destruction and/or of being used in a manner so as to destroy large numbers of people. Weapons of mass destruction can be nuclear, biological, chemical, and radiological weapons, but exclude means of delivery of weapons where such means is a separable and divisible part of the weapon."

This JIC also addresses Toxic Industrial Chemicals (TIC), Toxic Industrial Material (TIM), delivery systems and other WMD related material, expertise, and technologies. This concept does not specifically address actions oriented at WMD capable state actors not engaged in rogue behavior.

c. Strategic Guidance. This joint concept is consistent with strategic guidance (Appendix C) and addresses integrated operations required to accomplish the endstates articulated in the *NMS-CWMD*.

(1) The *NMS-CWMD* amplifies the strategy outlined in the *National Security Strategy* (*NSS)* and provides the initial basis for this JIC. The *NMS-CWMD* provides an ends, ways and means framework for combating WMD, stating

(a) Ends. "Our military strategic goal is to ensure that the United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD."[4]

(b) Ways. The Military Strategic Objectives (MSOs) outlined below describe how the U.S. Armed Forces will accomplish their strategic goal.

1. MSO 1. "Prevent, dissuade or deny WMD proliferation or possession. The purpose of this objective is to keep WMD out of the hands of adversaries and potential adversaries, while simultaneously increasing ally and partner capability and support for combating WMD activities. To prevent, dissuade or deny adversaries or

[4] NMS-CWMD

potential adversaries from possessing or proliferating WMD, U.S. Armed Forces will be prepared to conduct offensive operations. The military must also support interdiction efforts, security cooperation, and nonproliferation efforts. In addition, we will take actions to assure allies and partners that they do not need to possess WMD."[5]

2. MSO 2. "Reduce, destroy or reverse WMD possession. The purpose of this objective is to destroy or secure WMD when there is an agreement to do so. Current and potential allies and partners might desire to give up possession of WMD or associated technology at any point on the development or deployment spectrum. To reverse WMD programs and reduce WMD and related material stockpiles, the U.S. Armed Forces will support threat reduction cooperation as well as be prepared to assist in cooperative stockpile destruction activities."[6]

3. MSO 3. "Defeat and deter WMD use and subsequent use. The purpose of this objective is to counter an adversary capable of and willing to use WMD. Our intent and actions should deter a potential adversary from considering the initial or subsequent use of WMD. Adversaries must believe they will suffer severe consequences and that their objectives will be denied if they threaten or resort to the use of WMD. Deterrence of WMD in the current era requires that U.S. Armed Forces possess a broad set of military capabilities to prevent an adversary from attacking with WMD and to protect against attacks. In order to deter an adversary's use of WMD and to defeat its WMD capability when deterrence fails, U.S. Armed Forces may be called upon to conduct offensive operations, elimination operations, interdiction operations, or active defense."[7]

4. MSO 4. "Defend, respond and recover from WMD use. The purpose of this objective is to respond to an adversary that has used WMD on the battlefield or against strategic U.S. interests. Although our primary focus is to minimize the effects of WMD on military operations, U.S. Armed Forces must be prepared to support the response to a WMD event in the homeland and, when directed, support allies and partners. Despite the best efforts of the United States, our allies, and partners, it is possible that our adversaries might successfully attack with WMD. To defend against and recover from WMD use, U.S. Armed forces will execute passive defense measures and be prepared to conduct WMD consequence management activities."[8]

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[5] Ibid
[6] Ibid
[7] Ibid
[8] Ibid

(c) Means. "The combatant commands, Military Departments, and combat support agencies are the means to accomplish MSOs. The combatant commands are primarily responsible for planning and execution; the Military Departments are primarily responsible for organizing, training, and equipping; and the combat support agencies support both the combatant commands and the Military Departments.

Commander, United States Strategic Command (CDRUSSTRATCOM) is the lead combatant commander for integrating and synchronizing DOD efforts in combating WMD. Consistent with this assignment, USSTRATCOM will integrate and synchronize applicable Department of Defense-wide efforts across the doctrine, organization, training, materiel, leadership and education, personnel, and facilities spectrum."[9]

(2) The *NMS-CWMD* identifies eight missions for the Armed Forces: offensive operations, elimination, interdiction, active defense, passive defense, WMD consequence management, security cooperation and partner activities, and threat reduction cooperation. This JIC builds upon these and other key elements of the *NMS-CWMD* (Figure 1) to develop a campaign framework. This framework integrates missions, enablers and principles with broader USG and allied/partner efforts (known as Unified Action[10]) to combat WMD.

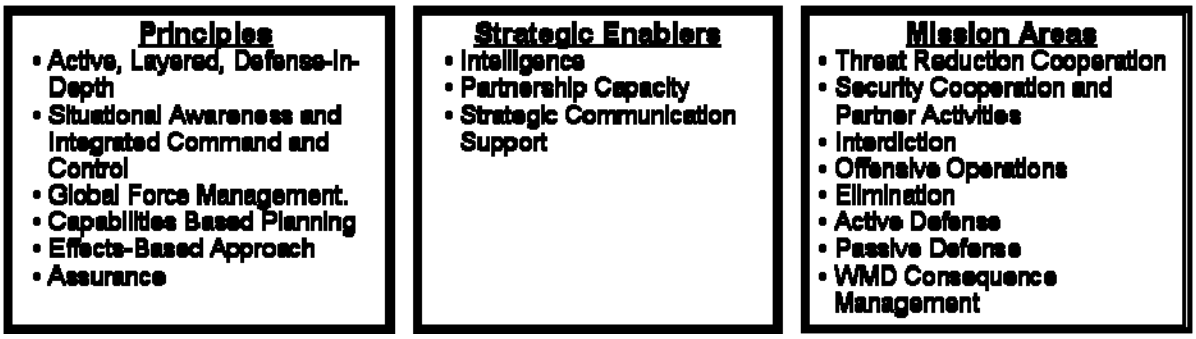

Figure 1. Key Elements of the NMS-CWMD

d. Assumptions. The CWMD JIC is predicated upon assumptions principally derived from the "*The Joint Operational Environment--The World Through 2030 and Beyond*" (JOE) and the "*Capstone Concept for Joint Operations*" (CCJO).

(1) Fundamental objectives of current national strategy will remain applicable in 2015-2027.

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[9] Ibid

[10] Unified action is the synergistic application of all instruments of national power and multinational power and includes the action of nonmilitary organizations as well as the military forces (JP 3-0).

(2) The United States will maintain a unilateral capability to act militarily to protect vital national interests, but when possible, the U.S. will act with other nations to provide a multinational approach to CWMD.

(3) The fundamental roles and responsibilities of DOD and other USG agencies will remain unchanged.

(4) The United States will have a fully integrated plan to combat WMD

- USSTRATCOM will integrate DOD CWMD efforts
- USSTRATCOM will coordinate, through the Joint Staff and the Office of the Secretary of Defense, CWMD efforts between DOD and other elements of national power to generate effects articulated in this concept
- Geographic CCDRs will execute CWMD operations within their Area of Responsibility in coordination with other CCDRs.

This concept may have to be reassessed for validity if these assumptions do not hold true.

e. Applicable Military Operations. This concept envisions combating WMD actions that span the entire range of military operations, from military engagement to crises response and major operations and campaigns. These CWMD operations may be oriented against rogue state or non-state actors and may constitute an individual campaign or an element of an overarching military effort in support of a broader USG campaign.

The *NMS-CWMD*'s guidance for developing CWMD capabilities focuses on application of missions and enablers across the CWMD continuum to achieve the MSOs. The combating WMD continuum is derived from these military operations and can be defined in terms of the spectrum of operational environments[11] identified in existing Joint Operations Concepts (JOCs) and span of JOA access.

[11] A composite of the conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit commander. Some examples are as follows. a. **permissive environment** — Operational environment in which host country military and law enforcement agencies have control as well as the intent and capability to assist operations that a unit intends to conduct. b. **uncertain environment** — Operational environment in which host government forces, whether opposed to or receptive to operations that a unit intends to conduct, do not have totally effective control of the territory and population in the intended operational area. c. **hostile environment** — Operational environment in which hostile forces have control

Aligning MSOs and missions on the CWMD continuum provides insights on the scope of CWMD operations (Figure 2). MSO 1, Prevent, Dissuade or Deny, is applicable across the entire range of operational environments and is supported by all missions. MSO 2, Reduce, Destroy or Reverse, is only applicable in permissive environments and is supported by all missions with the exception of elimination, offensive operations and active defense. MSOs 3 and 4 can occur in either uncertain or hostile operational environments and are directly supported by all missions except threat reduction cooperation and security cooperation operations.

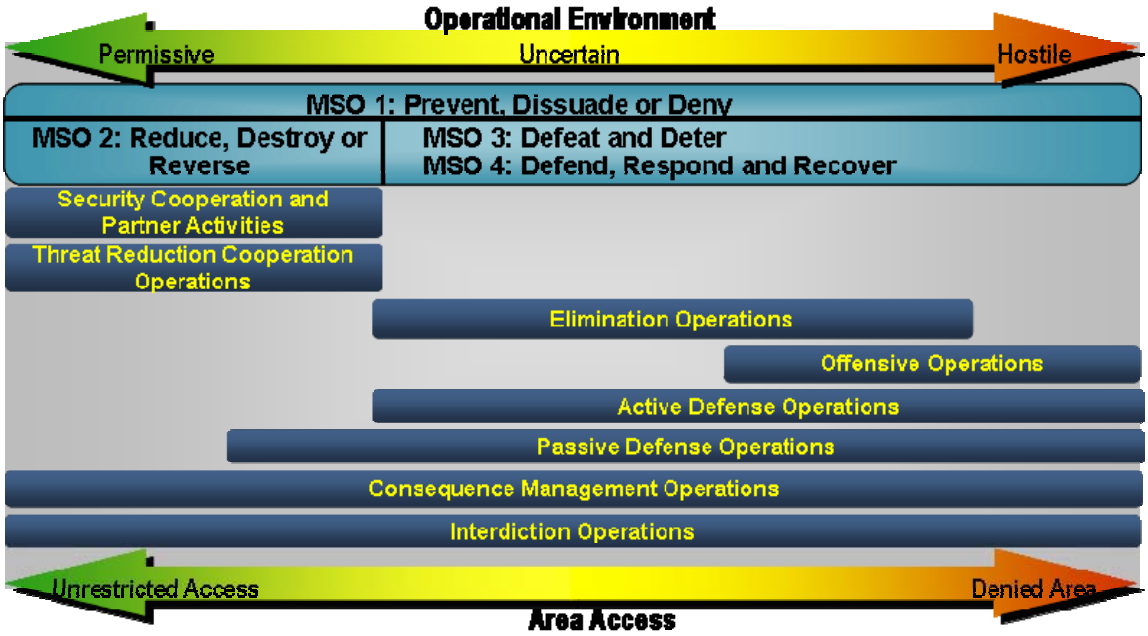

Figure 2. Missions across the CWMD Continuum

f. Relationship with Other Joint Concepts. The *JOE* and *CCJO* establish the future context for the CWMD JIC. These documents envision future military operations conducted within a national strategy that incorporates all instruments of national power. This JIC builds upon two concepts described in the CCJO: a systems view of the environment and fundamental joint actions through multiple dimensions across multiple domains (e.g., human, virtual, and physical).

The CWMD JIC puts into operational form ideas described in the *Deterrence Operations Joint Operating Concept* (*DO JOC*). The *DO JOC* provides the framework needed for deterrence activities tailored for rogue powers, terrorist networks, and near-peer competitors by providing a set of steps necessary to execute deterrence planning. It hypothesizes that deterrence operations convince adversaries not to take actions that

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as well as the intent and capability to effectively oppose or react to the operations a unit intends to conduct (JP 1-02).

threaten U.S. vital interests, allies, or friends by means of decisive influence over the three primary elements of decision-making calculus[12]. Decisive influence is achieved by credibly threatening to deny benefits and impose cost, while encouraging restraint by convincing the actor that restraint will result in an acceptable outcome.

Several existing JOCs (e.g., *Major Combat Operations (MCO), Military Support to Stabilization, Security, Transition and Reconstruction Operations (SSTR Operations), and Homeland Defense and Civil Support (HD/CS)*) describe the operational environments in which JFC will conduct CWMD operations. In the *MCO JOC*, CWMD operations are a supporting effort against a hostile state actor to "Deny use of and contain WMD and other critical capabilities." The *SSTR Operations JOC* describes operations in uncertain (foreign) environments that result from WMD employment or that foster WMD capability development and provides some of the conceptual basis for consequence management. The *HD/CS JOC* describes how DOD contributes to an active, layered defense designed to defeat threats as far from the Homeland as possible. This JOC also describes DOD support to civil authorities and provides some insights into consequence management requirements. The *Irregular Warfare JOC* also provided input, including engaging non-state actors and conducting counter-terrorist and unconventional warfare operations.

Several existing JICs describe specific capabilities required to execute CWMD operations. *Global Strike* provides the conceptual basis of offensive operations and for some aspects of elimination and active defense, while *Integrated Air & Missile Defense* provides the conceptual basis of active defense against air delivered WMD. The CWMD JIC is consistent with principles established in these concepts.

Existing joint functional concepts provide some initial insights into CWMD enabling capabilities. The Protection Joint Functional Concept provided some initial guidance for active and passive defense. In addition, several CBAs based on this joint functional concept, to include Passive Defense, Interdiction, and Elimination provided insights into required capabilities.

At the time this JIC was commissioned, no validated joint concepts addressed three major missions: interdiction, elimination, and

[12] Decision-making calculus refers to the reasoning process, to include biases and values, that leads an actor to selection of a particular course of action. It consists of three primary elements: perceived benefits of a course of action, perceived costs of a course of action, and perceived consequences of restraint (Derived from DO JOC).

consequence management. This JIC more fully develops these operations in Appendices I, J and K.

3. Military Problem. Current projections for the geo-strategic environment in 2015-2027 indicate an unsettled and rapidly changing world. In this environment, the WMD danger will increase in both scope (i.e., variety of WMD) and scale[13] (i.e., number of WMD actors), primarily due to the rogue behavior of multiple networks of WMD seekers, possessors, and proliferators. These networks

- Are multifunctional and multidimensional
- Consist of state and, increasingly, independent non-state actors
- Are dynamic, adaptive and can be transnational
- Have differing motivations and desired endstates
- Operate in secrecy and in the realm of dual-use products and technology to avoid detection and counter-action

The military problem is that the JFC lacks a full range of capabilities that can support Unified Action to proactively and comprehensively dissuade, defeat, deter or mitigate the rogue behavior of these multiple networks.

a. General. Friction, instability, and political uncertainty will characterize the geo-strategic environment in 2015-2027. These conditions will encourage cultural and sociological disruption. Urbanization, economic disparity, and the uneven quality of governance will generate population migrations and powerful ideological reactions and conflict as authorities, real or self-constituted, counter adverse trends where they can.

In this threatening landscape, WMD will remain a potentially high payoff weapon of choice for adversaries of the United States and its allies. WMD offer adversaries an asymmetric way to create substantial physical, psychological, and political effects that counter U.S. military superiority. The Strategic Planning Guidance recognizes this threat and overlays WMD on all four of the challenge quadrants: Irregular, Catastrophic, Disruptive, and Traditional. The 2006 Quadrennial Defense Review (QDR) report subsequently assessed the challenge area of "Preventing acquisition or use of WMD" as similarly overlying the other three challenge areas in each of these quadrants.

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[13] *Mapping the Global Future*, Report of the National Intelligence Council's 2020 Project and *Combating WMD, Challenges for the Next 10 Years,* Center for the Study of WMD.

The WMD threat to the United States and its allies will grow larger, more complex and more diverse (Figure 3) over time. Historically, the primary WMD threat has been state WMD development and rogue behavior, such as support to non-state actors pursuing WMD. In 2015-2027, this state pursuit of WMD will continue and the number of WMD capable States opposed to U.S. interests will likely grow. State support of non-state actor pursuit of WMD will also likely continue. In addition, non-state actors (terrorist, criminals, etc.) that are much more inclined towards rogue behavior will be more capable of pursuing and proliferating WMD, particularly biological agents, without state sponsorship.

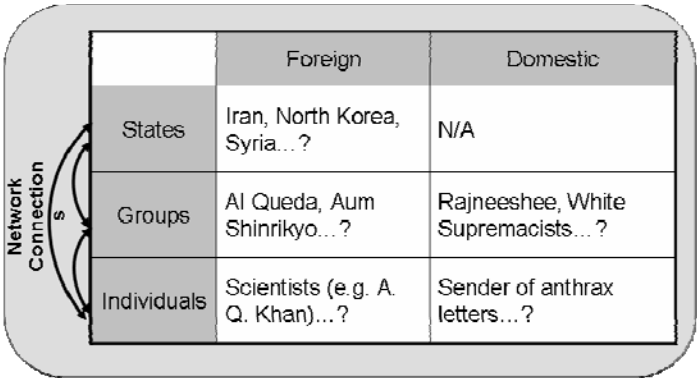

Figure 3. Actors with Rogue Behavior

Other future trends include

- Exponentially expanded information systems that
  - Increase the availability of WMD knowledge and expertise to the general population, substantially enlarging the pool of witting and unwitting actors capable of supporting the science and technology efforts
  - Allow private encryption of electronic communication and increase difficulty in detection.
  - Enable attacks of automatic control systems and subsequently create industrial events with WMD-like effects
- Technology and production breakthroughs that
  - Compress WMD development timelines and support distributed research and development, production, transportation, and weaponization nodes. This will complicate detection and significantly compress the production node window of vulnerability
  - Expand the type and increase the availability of the WMD threat (e.g., nanoscale and biological technology, advanced energy sources and materials, as well as radiological and chemical industrial bases)

- Increasingly blur the lines between clearly defined and dual use WMD technology and material. This will allow actors to conceal some types of WMD programs, will increase the difficulty of establishing attribution for WMD proliferation or development and could compromise proliferation control regimes

- Support development of advanced or non-traditional delivery means for which the United States has limited detection or defensive ability

These future trends will allow more actors to develop WMD, particularly non-nuclear WMD, capable of producing catastrophic effects (Figure 4). In particular, the rise of non-state actors and evolution of WMD types change the nature of prospective WMD targets and have tremendous implications for CWMD operations. State actors are nominally constrained by international conventions and tend to focus on WMD to produce battlefield effects, though they may exhibit rogue behavior in acquisition and proliferation. Non-state actors have different decision calculus and could consider military as well as soft, non-military targets as acceptable options for WMD targeting. These targets require less precise and less extensive effects. This reduces the quantity of required weapons and increases the difficulty in locating smaller WMD stocks.

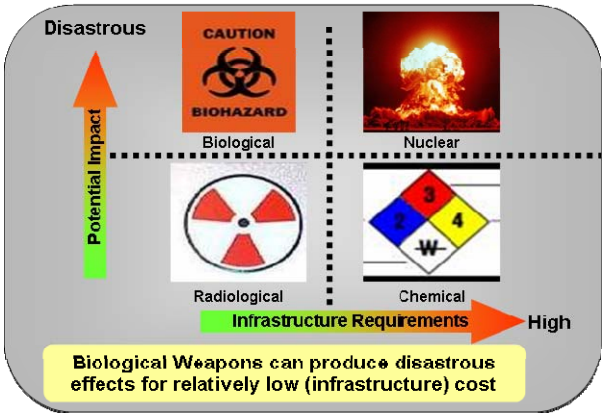

Figure 4. WMD Cost-Benefit Comparison

b. Developing a WMD Capability. Developing a WMD capability is a production process (Figure 5) that begins with the WMD actor monitoring his environment and deciding to acquire a capability through fabrication, purchase or theft. This process goes through numerous stages and can progress through the decision to employ a WMD. The steps in this process, regardless of whether the actor is state or non-state, have numerous supporting tasks that vary based upon WMD type and actor intent. These steps represent opportunities to influence the process if detected, properly assessed and engaged.

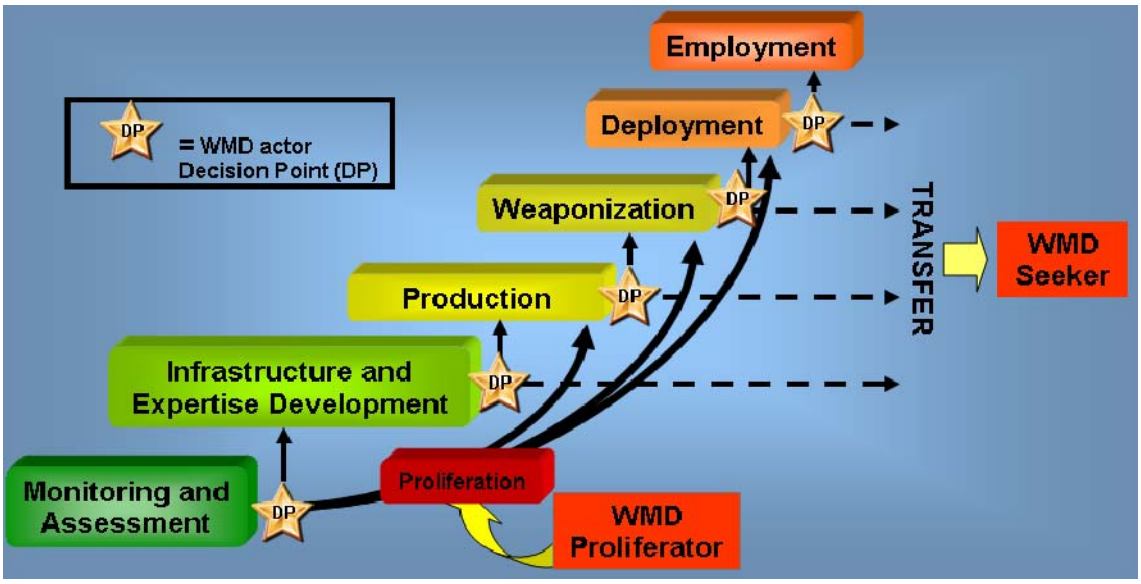

Figure 5. Stages of WMD Capability Development

Decisions by WMD actors and proliferators to forgo or pursue WMD offer one potential engagement opportunity. Actors in the WMD capability development process continuously monitor their political-military environment, assessing WMD program progress, threats and opportunities. These constant evaluations can produce seemingly random decisions to continue, adjust or terminate WMD efforts. The calculus of these decisions is subject to analysis and subsequent engagement through actions that influence the actor's perception of the benefits and costs of WMD acquisition, proliferation, use and restraint.

WMD development activities offer other potential engagement opportunities. However, U.S. efforts to detect, understand and engage specific WMD programs are complicated because specific activities and timelines vary.

(1) Proliferation of WMD and related material, technology, knowledge and expertise allows WMD capability seekers with sufficient money and appropriate contacts to make order of magnitude advances in their ability to acquire, produce, deploy or employ a WMD.

(2) The type of WMD (i.e., chemical, biological, radiological or nuclear) affects the perceptibility of the WMD development effort. Nuclear capabilities, for example, require substantially more infrastructure and expertise than chemical or biological capabilities.

(3) The WMD actor's intentions and desired endstate shape the scale and scope of the WMD effort. Some actors desire to inflict mass casualties. Some seek more narrowly focused effects for political or

psychological purposes. Other actors seek to gain prestige and status or to acquire the basis for deterrence, leverage or coercion.

- State actors can achieve many of their objectives without having to develop an employable capability
- Non-state actors may be more interested in acquiring a weapon than in developing a production capability
- Non-state actors also are much more likely to be in a use-lose situation because they lack the legitimacy of state actors. This puts them more at risk for being on the receiving end of U.S. and ally coercive action that can deprive them of the benefits of WMD ownership and use

WMD actor operations security (OPSEC) and deception measures further complicate U.S., allied, and partner efforts to detect, understand, and engage the WMD development and acquisition process. WMD pursuers typically employ aggressive denial and deception techniques to hamper intelligence collection, targeting, and international scrutiny. For example, non-state actors go to great lengths to conceal their leadership and have adapted decentralized decision making to counter targeting efforts. WMD pursuers may also seek to overstate their current capabilities in an attempt to influence U.S. actions (i.e. increase the USG perception of the cost of coercive action). Finally, WMD pursuers may also employ aggressive defenses to defeat intelligence collection efforts.

All of these factors make it difficult to discern and understand immature WMD programs. However, this immaturity makes it easier for the United States to engage and successfully influence the program without having to resort to coercive actions that impose such a cost upon the actor that the actions may be politically unacceptable. However, once the actor has made the decision, and moves toward developing a WMD capability, the capability becomes easier to discern because of increased infrastructure. This creates more potential points of vulnerability in the program, but the decisive commitment on the part of the actor could require substantial coercive action to reverse, raising political costs to the United States, its allies, and its partners.

As the WMD program matures, it becomes more perceptible, but is less susceptible to *outside influence*

c. Enabling WMD Networks. Interoperating, complex and adaptive networks enable WMD actors. These networks may be small (2-3 people for a non-state actor) or extremely large (e.g., tens of thousands for a state actor) and they can be transnational. Nodes and links in these

networks may specialize or may participate in multiple functions. One way to consider these networks is through examination of their ability to execute six major functions critical to WMD programs (Figure 6).

(1) Finance. These are activities to secure and transfer the financial resources to fund all aspects of a WMD program.

(2) Science and Technology. These are activities to provide the knowledge necessary to produce the WMD and related infrastructure (e.g., bases, test ranges, storage facilities). This function harnesses data and the expertise of scientists, researchers, and technicians necessary to support developing the capability.

- Logistics. These are activities to acquire, produce and transport the raw material, people, production materiel, and finished products. This function acquires missing components or technology, trains and recruits needed expertise and may support the theft of WMD technology, components, and weaponized WMD.

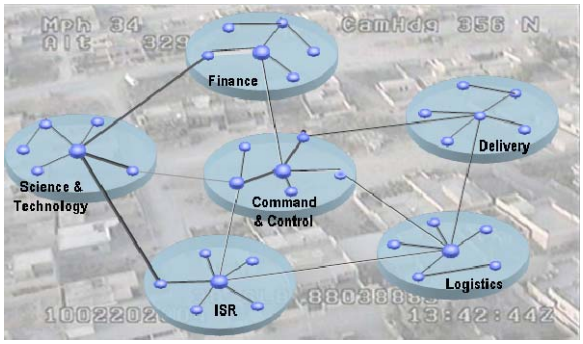

Figure 6. WMD Network Functions

(3) Intelligence, Surveillance and Reconnaissance (ISR). These are activities to acquire detailed target data; determine potential sources of WMD components, technology, and expertise; and protect the program.

(4) Command and Control. These are activities to provide motivation and the physical means to control activities of the WMD program. This includes providing strategic direction, coordinating the activities of other networks, facilitating the flow of information and resources throughout the networks, and providing the motivation to acquire WMD. This function may be state directed or may reflect ideological, financial, business or other concerns that motivate WMD proliferation or the acquisition of WMD capability.

(5) Weapons Delivery. These are activities to deliver the WMD to the target and direct its firing.

These enabling networks are adaptive, responding to changes in their environment, and learning, acquiring new knowledge through study. These networks are also selectively active, lying dormant when their support is not required and becoming active when the WMD development

process requires it (i.e., executing financial activities when buying expertise or knowledge or executing ISR activities when deploying a weapon). This adaptability and selective activation requires characteristics of connectivity and interoperability. These characteristics allow the network to function, but they also create vulnerabilities because the intersection of tasks creates risk of exposure.

4. Solution.

a. Introduction. The *NMS-CWMD* specifies an active, layered defense-in-depth for the military component of the USG effort to combat WMD. This defense calls for a comprehensive view of WMD actors that attempts to depict their decision-making calculus, motivations goals, modes of operation and prospective targets. This operational view should guide development and execution of a layered and wide-ranging campaign that integrates the JFC's capabilities with the other elements of Unified Action. The complexity of the problem, however, means the JFC must prepare for outcomes from actions that are based on a less than comprehensive view of the adversary. This will require that JFCs rely upon integrated application of offensive and defensive capabilities to mitigate risk.

b. Central Idea

Ends: The United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD.

Ways: The JFC, in support of globally integrated Unified Action, will conduct a campaign to proactively and comprehensively dissuade, defeat, deter or mitigate the rogue behavior of multiple networks of state and non-state actors. The JFC focuses the military campaign against the decision-making calculus of the WMD actor. The JFC will influence this decision-making calculus through selective application of military capabilities across an expanded operational environment to impose costs or deny benefits or to influence the perception of costs, benefits, and value of restraint for any WMD related course of action. Key elements of success for the JFC's campaign are:

- Engaging early
- Coping with uncertainty
- Layering the approach
- Establishing attribution

Means: Fully integrated U.S. Armed Forces capabilities linked across components, echelons of command and elements of Unified Action and enabled by a common and collaborative information environment.

c. Key Elements. The following are key elements of the JFC's application of this concept.

(1) Engaging Early. Early engagement of WMD actors is critical to successfully combating WMD. The limited investments inherent in an immature program, while more difficult to detect, also work in the favor of the USG and our allies in positively influencing the WMD actor's cost-benefit decision towards a rollback of the WMD program. During most of these early engagements, the JFC will be in a supporting role to the larger USG effort and his support must directly reinforce diplomatic and information strategies.

As the acquisition or development process advances, more resources are committed and less coercive means of engagement will become less effective. The JFC and the application of military capabilities will take more of a lead role.

Another aspect of early engagement concerns partners and allies. The success of combating WMD missions may be influenced to a significant degree by the cooperation and capabilities of like-minded states. In some cases, these states will need training, technical assistance and equipment to operate effectively as a coalition partner or in some other capacity. The JFC can help partners by providing the IA with information about capability needs that these states lack to effectively participate across the range of combating WMD missions expected of them.

(2) Coping with Uncertainty. This concept postulates that a critical sub-set of nodes and links, essential to the network functionality, exists within any WMD program. The nodes that constitute this critical path(s) are the optimal targets that Unified Action must engage in order to delay, disrupt, eliminate, or reverse a WMD program. The ability to determine this critical path and engage the links and nodes with the appropriate resources ultimately determines CWMD success. Because these WMD enabling networks operate in multiple domains (e.g., physical, virtual and human[14]), are adaptive and can be highly complex, there is great uncertainty involved in sensing and understanding the critical path(s). The fact that networks also exhibit unpredictable, surprising or uncontrollable behavior compounds this uncertainty. This makes the likelihood of an incomplete or incorrect understanding of the WMD actor's system framework entirely probable.

[14] Per the Capstone Concept for Joint Operations the domains are any potential operating space where the target can be influenced: physical-land, sea, air and space; virtual-information and cyber and human-cognitive, moral, and social.

Coping with uncertainty will require CWMD operations to leverage continuous network assessment and understanding from all elements of Unified Action. This will assist in identifying WMD actors and the critical sub-set of nodes and functions that enables the program. Frequently this will involve a "fight for intelligence," because advances in technology available to rogue actors and their secrecy requirements will likely limit our ability to perceive networks with great clarity. This "fight for intelligence" may drive a requirement for operations whose sole purpose is to generate some response from WMD networks in order to further the JFC's understanding.

Coping with uncertainty will mean the JFC will also have to deal with the short warning times and reduced windows of opportunity for action brought about by the clandestine nature of rogue actors. Some missions such as interdiction, offensive operations, active defense, passive defense and consequence management may be executed without preamble and with extreme precision and swiftness. To be effective in these reduced timeframes, the JFC must have access to all capabilities needed to prevent the transfer or employment of WMD resources and expertise and, if necessary, restore operations as quickly as possible.

The incomplete or incorrect understanding of WMD networks will also produce uncertainty about effects required to bring about the JFC's desired "ends." The resulting incorrect targeting assessment may produce unexpected outcomes at the targeted node or at an unanticipated node elsewhere in the network. Sometimes engagements may not produce any outcomes at all because the network may absorb outside actions with little or no change. Coping with this uncertainty will require operational flexibility to deal with unknown and unexpected nodes, links and events. It will also require commanders to adapt operations to incorporate increased understanding gained through current operations, and to evolve faster than the targeted WMD network.

(3) Layering the Approach. The JFC will support Unified Action to combat WMD through layered application of military capability in time, space and function in coordination with other elements of national power. This allows the JFC to direct actions at key nodes and links to produce a system shock that causes the targeted network, node or link to fail catastrophically, rendering it incapable or unwilling to perform its WMD enabling function.

The JFC may achieve these systemic results through integration of multiple operations to generate combinations of direct (i.e., first order or immediate) and indirect (i.e., delayed, secondary, or less observable) effects. Some nodes are vulnerable to direct actions. Others are not as vulnerable to direct engagement, involve too much risk or are critical to

post combat operations. In these cases, the JFC might initiate a sequence of actions or produce a chain of propagating effects to achieve the desired results. For example, the JFC might employ simultaneous interdiction and offensive operations focused on finance and technology functions to convince command and control nodes that the costs of WMD actions are too severe.

Multi-dimensional networks require the JFC to generate direct and indirect effects in the domain appropriate to the node and link of interest. For example, an unwitting actor in the network may be more vulnerable to engagement in the human domain, while a command and control node may best be engaged in both the virtual and physical domains. This requirement for a multiple domain approach mandates application of multiple lines of operations.

Layering the approach ensures leaders at all levels understand and have acknowledged operational risk created by incomplete or incorrect knowledge about WMD networks and eliminates single points of failure. For example, multiple types of offensive operation capabilities (e.g., kinetic and non-kinetic) may deter an actor from a particular path, and facilitate the success of other CWMD operations, such as elimination or threat reduction cooperation. In the event deterrence fails to dissuade an actor from a particular path, however, the layered application of CWMD operations will contribute to thinning out the threat (via offensive operations, interdiction, elimination and active defense), so that the effects of any employed residual WMD are minimal. Forces will survive and operate in Chemical, Biological, Radiological and Nuclear (CBRN) contaminated environments through the means of passive defense; and, other forces may be leveraged to respond to requests for consequence management assistance.

Layered operations also increase effectiveness against WMD actors that operate across multiple domains and are multi-functional. Currently, military CWMD operations often focus upon the material aspects of WMD capability: logistics and delivery systems networks. However, command and control, via human, virtual and physical domains, is the most decisive function an adversary uses. Unified Action via offensive operations and interdiction, for example, can influence an adversary's command and control function. Interdiction may dissuade an adversary from a particular path, while offensive operations may attack its physical and human domains via kinetic options, and may attack its virtual and human domain via non-kinetic options (information). Furthermore, the JFC might simultaneously employ influence operations to shape perceptions of the local populace or partner governments, interdiction operations to stop flows of money to WMD actors, and offensive operations to destroy key expertise and technology centers.

(4) Establishing Attribution. Attribution is the positive identification of the actors involved in WMD proliferation, development and use. The ability to accurately attribute WMD related activity will bolster deterrence, and can establish justification for subsequent CWMD activities. Although it may be difficult to deter some non-state actors from employing WMD, robust forensics capabilities may deter rogue state actors from developing and proliferating WMD. Furthermore, accurate attribution of intercepted WMD material at an earlier stage enables decision-makers more time to decide an appropriate response.

This attribution is required for all WMD related activity including WMD employment as well as transfer or development of knowledge, expertise, material, delivery systems, and infrastructure. This attribution will expand our knowledge of the WMD network and its key personnel, and will assist in gaining active support of partners and allies. It must be rapid to allow the JFC to act before the network can adapt or heal. It will also require a high degree of confidence in both sensing and understanding to influence partners and allies. Establishing attribution of the source of the WMD, expertise, enabling resources, and technology will also influence the decision-making calculus of these actors because it makes anonymity less likely, increasing the potential for cost imposition on the WMD actor.

Establishing attribution will require forensic collection and assessment appropriate to the node's operating domain and function. This expands the required collection, exploitation and analytical expertise to that outside of the JFC's control and reinforces the requirement for information sharing with elements of Unified Action and other JFCs. This sharing of attribution information will require a common and collaborative information environment that facilitates exchange, fusion and common understanding. As attribution is established, this common and collaborative information environment must expand beyond tracking the movement of WMD-related material. It must also include visibility on all network functions to include leadership and motivation, science and technology, logistics, financial, ISR and delivery systems.

d. Description of CWMD Operations. A JFC responsible for a JOA will most likely always be conducting some level of CWMD military activity in support of Unified Action to combat WMD. These CWMD operations will require the synchronized application of missions and enablers defined in strategic guidance. The specific activities, objectives and level of effort for each of these operations are determined by the U.S., ally and partner ability to perceive and understand the WMD network and by the JFC's mission analysis. Some of the missions are most always active in a generalized fashion; others require more focused direction.

Some cueing event in the operational environment normally prompts the decision to provide this focused direction. These cueing events could be a change in operational conditions that creates an unanticipated vulnerability in a known WMD network or it could be a change in rogue actor behavior or capability. The JFC's own surveillance and reconnaissance activities or strategic monitoring by a variety of means (DOD, non-DOD and non-USG agencies) can detect this cueing.

One of the key distinctions of CWMD operations is that many of the decisions normally made by the JFC are reserved for strategic level decision makers. Thus, leadership must assess the cueing event against strategic level decision criteria before initiating specific CWMD operations. This is particularly true once the WMD actor achieves or approaches weaponization of WMD because the risk of potentially catastrophic consequences of executing military operations increases substantially.

Once the JFC is directed to conduct CWMD operations, he orchestrates actions within a continuous operations cycle[15] of planning, preparing, executing, and assessing (Figure 7) while aligning the planning efforts within the ongoing USG CWMD campaign. Activities and tasks in this operations cycle are not sequential, but are both concurrent and recurring. Actions in one part of the cycle impact and are impacted by actions in the rest of the cycle. This operations cycle is not unique to CWMD, but CWMD does present some unique aspects such as due consideration of the consequences of execution of military actions.

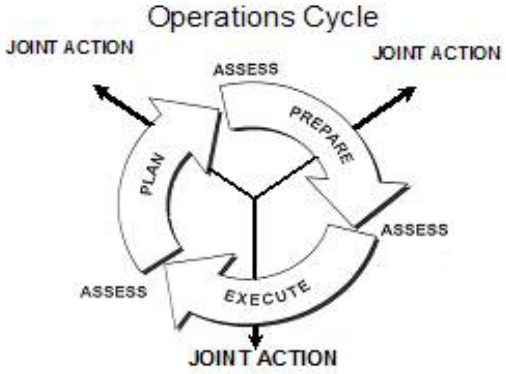

Figure 7. Operations Cycle

(1) Planning Phase. During this phase, the **Capability to Plan CWMD Operations**[16] allows the JFC and his staff to arrange CWMD capabilities in time, space and purpose in support of Unified Action to combat WMD development, proliferation and employment. Key to this capability is the integration of operational art and design that establishes the framework for planning and subsequent execution. Operational design (Figure 8) for CWMD involves understanding strategic guidance, identifying WMD actor strengths and weaknesses (critical factors) that align with the JFC's assigned objectives, and developing an operational

[15] This operations cycle is referenced in both the Capstone Concept for Joint Operations and JP 5-0.

[16] Bold phrases indicate required capabilities for CWMD.

construct that identifies desired effects on these critical factors and the ways to create them.

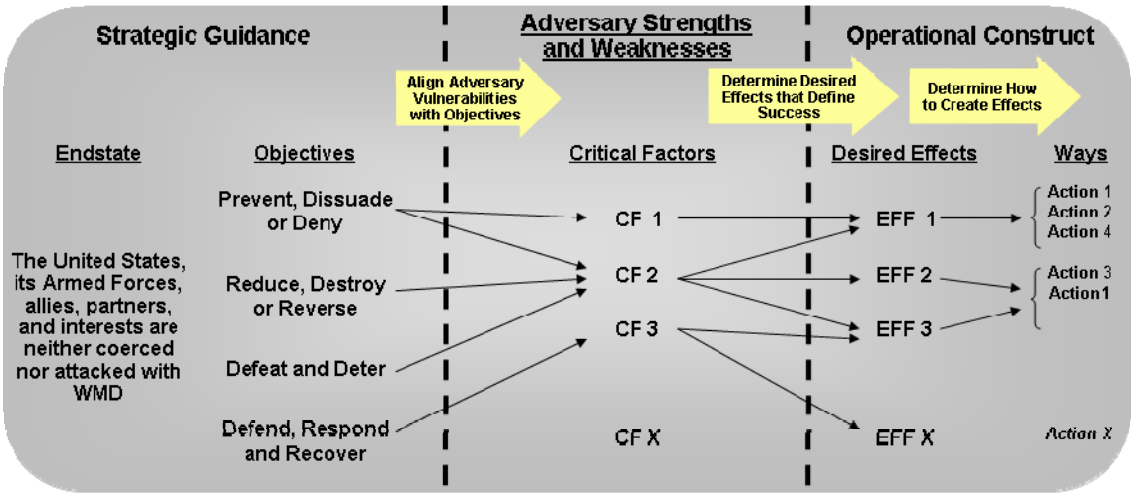

Figure 8. Operational Design Methodology

o Upon receiving strategic guidance, the JFC must *assess the operational situation*[17] to determine his own and the WMD adversary's strengths and weaknesses. This assessment is part of the Joint Intelligence Preparation of the Operational Environment (JIPOE) process and produces an initial estimate of the operational environment, the adversary's potential capabilities and the adversary's most likely and most dangerous courses of action. The most accurate assessment relies upon comprehensive information collection, fusion and sharing with all sources: IA, International Government Agencies (IGA) as well as open and multinational sources. The joint force bases this assessment upon a common view of a complex and adaptive WMD network that is capable of accessing technology and intelligent enough to avoid the strengths of U.S. military, IA, and multinational capabilities.

During the JIPOE, JFC must identify the critical factors (Table 1) of the WMD actor's network and begin formulating an engagement approach. The first factor, Centers of Gravity (COG), represents the set of characteristics, capabilities, and sources of power from which the WMD actor derives strength, freedom of action or will to act. At the operational level, the COGs are most often associated with the WMD actor's military capabilities[18]: the abilities to develop, proliferate, deploy or employ WMD. The selection of a center of gravity is situation dependent and may change based upon the WMD actor's status (where he is on the development pathway and the decisions he must make) and applicable MSO(s). For example, an actor in the WMD development phase may have

[17] Italicized phrases indicate supporting tasks to enable CWMD capabilities.
[18] JP 5-0

a COG of "ability to proliferate WMD technology" while an actor who has used WMD has a COG of "ability to employ WMD". (Table F-1 provides one example of relationships between actor status, MSOs, and COGs.)

Critical capabilities are the crucial enablers that allow the COG to function. The key WMD network functions (paragraph 3.c.) represent one way to describe these critical capabilities. In turn, each of these critical capabilities has a set of requirements necessary for the function to operate. The JFC must determine which aspects of these critical requirements are deficient or are vulnerable to engagement that can result in significant or decisive effects. In the context of Unified Action, these critical vulnerabilities may be tangible, such as exposed network elements, processes and links along the critical path or intangible, such as the cognitive functions of WMD actor decision-making calculus. In Unified Action, many of these critical vulnerabilities will be outside of the JFC's area of influence, but all are within his area of interest.

Table 1. Example of WMD Actor Critical Factors

Centers of Gravity	Critical Capabilities (Network Functions)	Critical Requirements (Essential conditions, resources, and means)	Critical Vulnerabilities
• Ability to proliferate WMD • Ability to develop/acquire WMD • Ability to deploy WMD • Ability to employ WMD	Finance	• Money • Financial Knowledge & Expertise	• Exposed network elements, processes and links • Decision-making calculus
	Science and Technology	• Sources of Info/material • Knowledge & Expertise	
	Logistics	• Manufacturing Facilities • Storage • Transportation • Recruiting • Training Facilities	
	Intelligence, Surveillance and Reconnaissance	• Sensors • Target data • Security	
	Command and Control	• Intent/Motivation/Will • Control Means	
	Weapons Delivery	• Delivery means • Material	

The JFC must also assess his own critical factors so that he can take steps to protect the joint force's critical vulnerabilities. These protective steps can include cost imposition actions (interdiction, elimination, and offensive operations) directed at adversary offensive capabilities or benefit denial actions (i.e., passive defense, active defense or increased consequence management) to minimize these vulnerabilities.

(a) Based upon the assessment of the WMD actor critical vulnerabilities, the JFC must then derive objectives and specific effects.

These changes to conditions, adversary and partner behaviors, or degrees of freedom define achievement of the strategic objective.

1. At the operational level, the JFC focuses his efforts upon the networks that enable the WMD program and its development, proliferation and use. The JFC achieves his MSOs by selecting, coordinating and integrating appropriate missions with complementary IA actions to engage tangible and intangible vulnerabilities along the network critical path and render these networks incapable or unwilling to fulfill their functions (e.g., Finance, S&T, Logistics, ISR, C2, and Weapons Delivery).

2. At the tactical level, the focus is upon the targeted node or link, its functionality and the operating domain (physical, virtual and human) that defines key vulnerabilities. The tactical objective is to influence, destroy, defeat or disrupt this node or link.

3. At the technical level, the focus is upon the specific characteristics of the node, link or material. There are two technical objectives: prevent and mitigate undesired effects resulting from actions against the node and exploit vulnerabilities based upon the node characteristics (e.g. finance, S&T, ISR etc.). The type of WMD becomes a paramount consideration at the technical level when engaging S&T and logistics nodes or links.

(b) Having derived objectives and specific effects, the JFC synchronizes campaign actions through the integration of operational art and design. Lines of Operations (LOOs) are one design element that the JFC may use to assist with this integration. JP 5-0, *Joint Operation Planning*, states that LOOs

> "…help visualize the intended progress of the joint force toward achieving operational and strategic objectives. LOOs define the orientation of the force in time and space or purpose in relation to an adversary or objective. Commanders may describe the operation along LOOs that are physical, logical, or both. Logical and physical LOOs are not mutually exclusive and JFCs often combine them. Normally, joint operations require commanders to synchronize activities along multiple and complementary LOOs working through a series of military strategic and operational objectives to attain the military end state."

One way the JFC might consider designing his LOOs is through application of the central idea of this JIC, that being to "impose costs or deny benefits or to influence the perception of costs, benefits, and value

of restraint for any WMD related course of action." In this construct, the JFC would derive four LOOs.

1. Fight for Intelligence. These directed military and non-military actions seek to obtain detailed knowledge about WMD actors, their actions, intentions, and their enabling networks. These "Fight for Intelligence" activities complement DOD and National Intelligence campaigns and may require the JFC to conduct overt, covert or clandestine actions specifically designed to provoke a response that illuminates the adversaries' networks, intentions, support activities, and personalities. These actions also seek overall situational awareness of all potential WMD actors, state or non-state, known, anticipated or unknown.

2. Shape and Assure. These actions prepare the operational environment for future operations by shaping the perceptions, influencing the behavior of WMD actors and promoting cooperation with CWMD allies in order to assure combating WMD success. The effects of singular actions or cumulative effects of multiple actions may be decisive, causing the WMD actor to forgo development, acquisition, or employment, or they may establish conditions with partners and allies that enable other LOOs to be decisive.

3. Impose Cost. These actions apply, or demonstrate the ability to apply, destructive and/or disruptive military capabilities against a WMD actor under conditions that range from uncertain to hostile. These actions produce both kinetic and non-kinetic effects and increase the political and resource costs to WMD actors. The JFC designs these actions to defeat a hostile actor's attempts to proliferate, gain, deploy, or employ WMD and to dissuade these hostile actors from future WMD related activities. The demonstrated ability to execute these actions may influence WMD actors' perception of potential costs for pursuing a particular course of action and thus may have a deterrent effect.

4. Deny Benefits. These are activities to defend, respond, and recover from WMD use or demonstrate the capability to do so. They include coordination, integration, synchronization and execution actions that reduce U.S., allied and partner vulnerabilities to WMD attack and that minimize the effects (i.e., physical and functional) of WMD use. This LOO denies or threatens to deny political or military benefits for WMD possession or use. The demonstrated ability to execute these actions may have a deterrent effect on WMD actors.

These four complementary LOOs would connect multiple and layered actions on nodes within the WMD network critical path; working towards a set of objectives that, in total, would achieve specific MSOs (Figure 9).

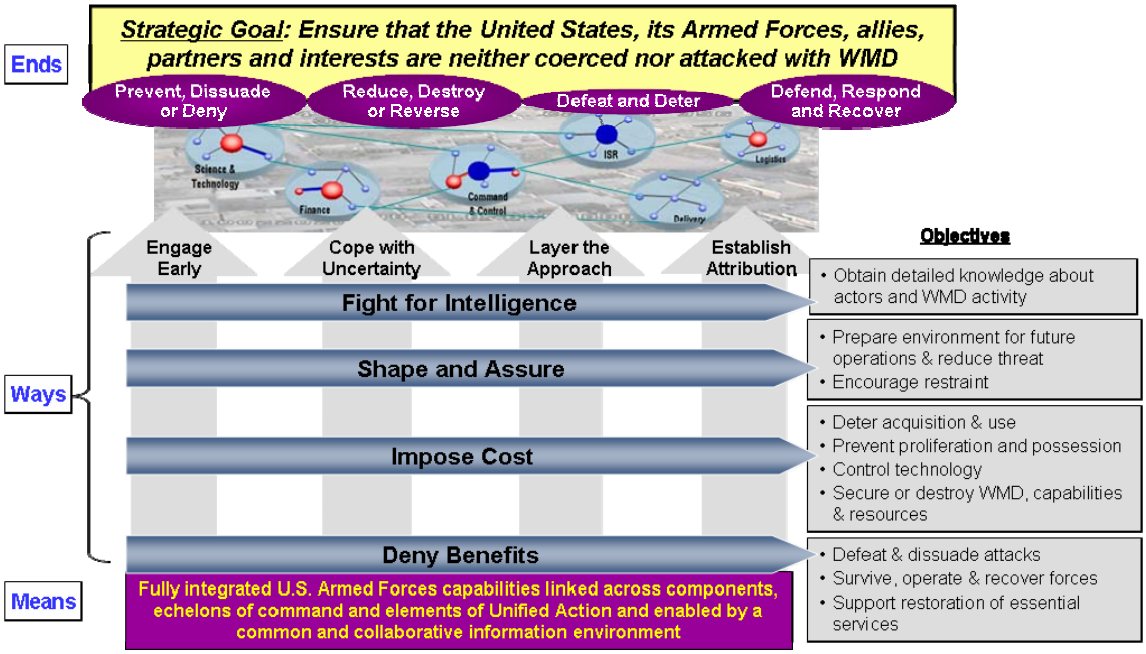

Figure 9. Combating WMD Operational View-1

(c) The JFC and the Unified Action partners must *conduct joint force targeting* to develop courses of action (COAs) that match specific actions along each LOO with adversary critical vulnerabilities (Appendix F, Table F-1). Depending on the applicable MSO and the critical vulnerabilities, each COA may execute actions along one or more LOOs in order to create desired operational effects. All COAs strive for a multidirectional approach that covers multiple operational domains. In some cases, these targets may reside outside of the JFC's area of influence and must be targeted and engaged by other JFCs or other elements of national or partner power.

Figure 10 below presents a simplified example LOO construct to demonstrate one possible COA for a JFC's campaign in support of MSO 1. In this campaign, the JFC and a local ally are attempting to defeat a state actor's attempt to acquire WMD material and more advanced manufacturing capabilities. Actions along the LOOs match exemplar missions, in time and in relation to other LOOs, against critical vulnerabilities in the WMD actor's networks.

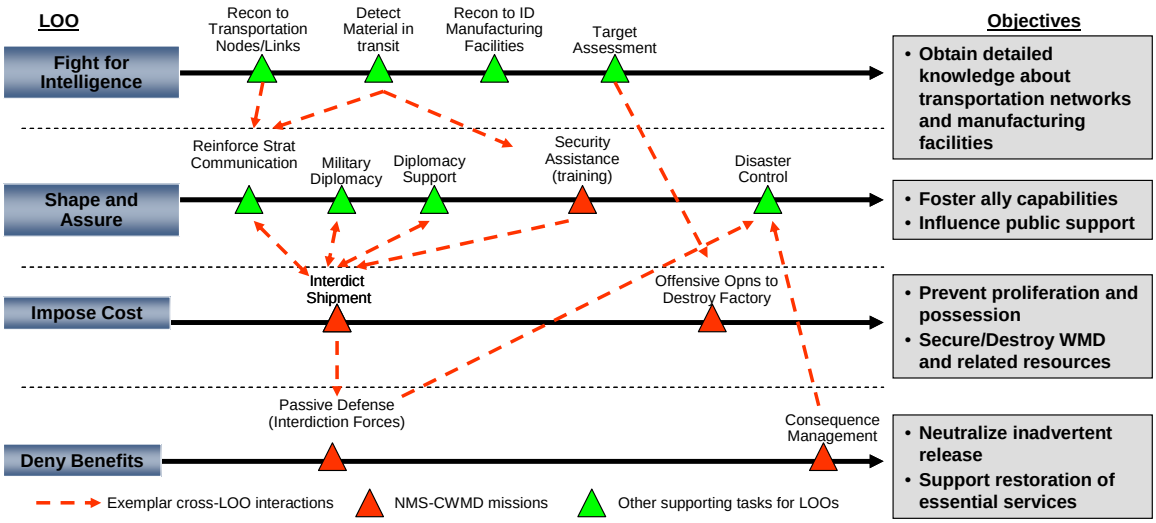

Figure 10. Example LOO COA for a Campaign in Support of MSO 1

(d) The JFC and his staff must analyze operational effectiveness and risk for each course of action. The JFC estimates the impact of the operations upon the adversary's decision-making calculus and considers the indirect effects upon other actors and networks that may be observing U.S. activities. The JFC must also *assess consequences of execution,* including the potential for inadvertent release of WMD material (and subsequent consequence management) or hazards and consideration of potentially imperfect perceptions of the adversary network because some consequences, particularly from lethal action, may adversely affect overarching U.S. goals.

(e) The Unified Action approach to CWMD mandates comprehensive and collaborative joint, IA, and multinational planning. The JFC must *coordinate and integrate Joint/Multinational and Interagency support* for the final campaign plan across all supporting/supported organizations. One means of coordinating and integrating is employment plan rehearsal and preparation.

(2) Preparation Phase. During this phase, the **Capability to Prepare for CWMD Operations** allows the JFC to posture capabilities and set the conditions for successful execution of CWMD LOOs across the physical, virtual, and human domains.

(a) Because many of the forces executing a CWMD campaign may include IA and multinational force elements, the JFC must *establish, organize and operate a Joint Force headquarters* designed to maximize mission effectiveness and minimize friction and "fog of war." This command and control structure must accommodate IA and non-USG element relationships that change based upon location; existing

treaties, agreements and laws; and force capabilities. To the extent practical, these relationships should be established beforehand to support rapid capability integration, facilitate rapidly changing lead responsibilities, and execute follow-up tasks for attribution.

(b) The JFC selects forces and assets for specific operations based on myriad factors including targeted node and link characteristics, desired effects, diplomatic considerations, and multinational involvement. This will require the JFC to *coordinate and integrate components, theater and other support* with allies and coalition partners; U.S. components; the geographic CCDR; and adjacent, subordinate, and supporting organizations. This coordination ensures cooperation and mutual support; a consistent effort; and a mutual understanding of the JFC's priorities, support requirements, concept and intent, and objectives.

(c) Some operations in the CWMD campaign may require minimum preparation time while others may require precise timing at some point in the future. Either type may require capabilities that originate from outside the JFC's JOA. The JFC must integrate these capabilities with in-place elements and *conduct operational maneuver and force positioning* to gain a position of advantage in the appropriate domain (e.g., human, virtual or physical). In many cases, decision makers at the national level must closely manage these "low density-high demand" capabilities in order to meet global requirements.

(d) In support of the JFC's campaign, collection assets continue to track and monitor nodes and links in the WMD network, *providing operational intelligence* including continuous situational awareness of WMD actors and network location/status updates. This continuous monitoring should provide indications of adversary vulnerabilities to support targeting and operational maneuver. It also facilitates the JFC's assessment of effects achieved and execution of dynamic tasking as the JFC exploits the reaction of the networks to the engagement. This allows the JFC to target newly exposed and vulnerable nodes, links, and networks.

The complexity of the WMD networks and the general level of secrecy they employ will limit our understanding of adversary actions, capabilities and intent. This uncertainty hinders, but does not prohibit CWMD efforts because not all CWMD missions require the same quantity or quality of intelligence about network nodes and links (Figure 11). In general, the more technical and hardware related the mission, the greater the intelligence requirements. Less technically focused missions will tend to have less stringent intelligence requirements.

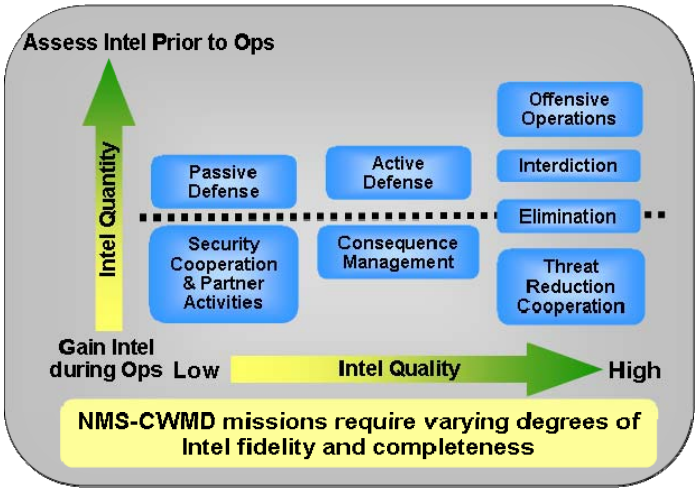

Figure 11. Intelligence Certainty Requirements

(e) The JFC must *command subordinate operational forces* in support of Unified Action. Many of the JFC's missions are supporting operations for diplomatic, informational, and economic and financial actions lead by IA or foreign partners. This support includes proactive engagement, surveillance and reconnaissance, theater shaping, and actions to build partner capability. The JFC may also direct military-to-military engagements, security assistance, security cooperation and exercises to demonstrate the ability to conduct counterforce, defense and consequence management operations. In a hostile or denied environment, the JFC will be the supported effort for many of the coercive missions: interdiction, elimination, offensive operations, and active defense. During the course of any CWMD operation or campaign, as the level of effort in any particular mission changes, the supported/supporting relationship may also change. The control structure must be able to accommodate these changes of lead agency.

For the JFC to exercise control, requisite global information sharing must be established to ensure comprehensive "sensor-to-decision maker-to-shooter" data flow. This also ensures positive command and control, to include communication with the supported and the supporting commands, agencies and IA elements.

(3) Execution Phase. During this phase, the JFC employs resources by layered application of missions and tasks across complementary lines of operations in support of Unified Action. The JFC seeks to direct actions at key vulnerabilities, both tangible and intangible, within the WMD network, combining direct and indirect effects to render the network incapable or unwilling to perform its WMD

enabling function. As the campaign progresses, the JFC must be prepared to execute other branches of his strategy as the WMD actor takes unexpected action or makes unanticipated advances in capability development and employment.

Execution with the actor must be done in a way that minimizes collateral damage and prevents of reduces the release of contaminant into the environment. This requires particular effort into selection of the right tool for the task.

The JFC does not execute his military operations in isolation. Unified Action requires an integrated USG, allied, and partner approach in which all the elements of national power mass effects upon WMD seekers, possessors, and proliferators. From the JFC's perspective, many of these effects (Appendix E) directly bear upon the joint force's ability to execute actions along the JFC's LOOs.

(a) Fight for Intelligence. This LOO consists of actions that the JFC directs to provide increased, operational-level understanding of the operational environment as well as the WMD actor's intent, decision-making calculus, enabling networks, and the critical sub-set of nodes that, when targeted and engaged, can generate the JFC's desired effects. It is continuously active to identify WMD activity and to provide the information that allows the JFC to integrate coherently all other CWMD LOOs. By reducing uncertainty and providing actionable intelligence, this LOO allows the JFC to effectively integrate actions along the other CWMD LOOs and facilitates early engagement. Actions along this LOO support and, in turn, are supported by other elements of Unified Action. The Intelligence strategic enabler[19] (per NMS-CWMD) directly supports this LOO.

The **Capability to Conduct Reconnaissance and Surveillance** is critical to this LOO. The tasks enabling this capability *gain access for reconnaissance* in the JOA. They also *detect WMD* and related material, expertise, technologies and infrastructure. These operations also support *target and threat assessments* to determine the most effective employment of capabilities against a particular target. Combinations of U.S., allied, and partner combat forces along with law enforcement and Intelligence Community (IC) members may be required to execute these operations due to the comprehensive nature of desired understanding.

During the conduct of actions along this LOO, the JFC must remain cognizant that the absence of Indications and Warnings that an actor is

[19] Intelligence is applicable across all LOOs and entails coordinating the activities of the U.S., allied, and partner combat forces, law enforcement, and Intelligence Community (IC) members to enable strategic-level planning and decision-making.

pursuing WMD does not equate to the absence of such a program. For example, an actor may clandestinely purchase a WMD or acquire TIC/TIM to create WMD-like effects. Engaging the actor to provoke a response could illuminate whether his activities or dual-use capabilities are intended for WMD purposes. Conversely, in not fully knowing the actor's perceptions or decision-making calculus, the JFC's actions to gain intelligence could push the actor to respond prematurely or in a manner incommensurate with the actor's original intention.

(b) Shape and Assure. This LOO, the primary means of early engagement, is also continuously active in order to prepare the operational environment for other LOOs. For partners and allies, this LOO seeks to bring about a unified approach and improved capabilities to influence and engage WMD actors. This reduces exploitable seams that allow these actors to continue their pursuit and proliferation of WMD and provides more weight towards the influence effort.

Against rogue WMD actors, this LOO would ideally cause an actor to divest his WMD capability, but this LOO can also persuade an actor to forgo, delay or halt his capability development. Against proliferators, this LOO can create an environment that is non-conducive for proliferation activities or that offers benefits to those who do not proliferate. For non-state actors, whose leadership may be difficult to identify and whose perception of costs and benefits will be difficult to ascertain, coercion and persuasion may have only limited effects.

Shaping and assurance actions also encourage adversaries to restrain from taking actions the United States seeks to deter. Encouraging adversary restraint involves convincing adversary decision-makers that not undertaking the WMD related action will result in an outcome acceptable to them (though not necessarily desired by them). Encouraging adversary restraint plays a critical role in CWMD because adversary decision-makers weigh the benefits and costs of acting (e.g., proliferating WMD, using WMD, attacking the U.S. homeland, etc.) in the context of their expectations of what will happen if they do not act (i.e., their perceived consequences of restraint). Thus, altering their perceptions of the consequences of restraint offers the United States additional ways to influence the decision calculus of potential adversaries.

The demonstrated ability to execute other LOOs (e.g., Fight for Intelligence, Impose Cost and Deny Benefits) provides another aspect of shaping and assurance. By actually imposing cost or denying benefit to a given actor, the JFC is also influencing the future WMD related decisions by other WMD actors, partners and allies. This means that the JFC must consider all LOOs to be mutually supporting.

Operations along this LOO include Security Cooperation and Partner Activities, Threat Reduction Cooperation support and other tasks such as **Politico-Military Support** and **Joint Shaping Operations.**

1. Security Cooperation and Partner Activities "support international efforts to combat WMD" and "promote improved partnership capacity to combat WMD" through military-military contact, *arms control* support[20] and other military support to treaties and agreements. These activities include operations and *exercises* intended to foster capability development in allied and partner abilities to execute the eight CWMD missions and include *security assistance*, common threat awareness, coalition building, and interoperability. The JFC may lead these actions or may provide *support to DOD and other government agencies*. These activities encourage partners and allies to address rogue behavior of WMD actors themselves and to support future USG efforts to combat WMD. They also influence adversary decisions about WMD through demonstration of U.S. and partner capabilities to impose cost or deny benefits of WMD development or use.

2. Threat Reduction Cooperation (TRC) is the desired successor to the integrated application of the JFC's LOOs that cause the WMD actor to secure, disable, reverse or even eliminate his WMD program. The USG conducts TRC with the consent of Host Nation (HN) authorities that could be former rogue actors, U.S. partners or allies. Once initiated, TRC activities[21] enhance physical security; emplace detection equipment; and reduce, dismantle, redirect and/or improve protection of a state's existing WMD programs, stockpiles, networks, capabilities and related expertise, materials, technologies.

TRC is not a primary CCDR responsibility. However, as a possible follow on task to military missions such as elimination[22], offensive operations and interdiction, the CCDR may be directed to support TRC. The transition from elimination to TRC is dictated by changes in political and military conditions within a former hostile territory or state. After this transition, the JFC could expect to transfer responsibility for any remaining WMD elimination or redirection of dual-use industries and expertise to another element of Unified Action. However, the JFC will maintain vigilance of the planning, transfer and execution of responsibilities, as well as render support, if required.

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[20] *National Military Strategy to Combat WMD,* February 2006

[21] These activities also include proactive prevention measures such as consolidating dangerous pathogen collections, enhancing capacity to conduct bio-surveillance, creating strategic partnerships through joint threat agent research, and building capacity for interdicting WMD traffic. Source: WMD Proliferation Initiative.

[22] *Joint Handbook for WMD-Elimination Operations*, May 2007

In some cases, a supporting JFC may provide **Politico-Military Support** to **Reduce Threat** operations that will eradicate the WMD networks and program. In other cases, the HN may only want assistance in securing its WMD programs. This may require the JFC to provide assistance in *securing* infrastructure, delivery means or WMD related material. The JFC might also provide *arms control support* or support to *remove* this material to isolate the targeted WMD program and ensure the actor does not resurrect it. The CCDR might also support the transition of long-term *destruction, redirection* and monitoring activities from the TRC authority to the HN. This transition assistance may include support to planning, security and transfer of reduction capabilities.

Regardless of the level of CCDR or subordinate JFC support, TRC activities can improve the CCDR's WMD situational awareness; and because these activities also affect other combatant command operations, the joint force must maintain visibility on these efforts.

3. Other actions to prepare the environment for future operations include forward presence as well as support to **Joint Shaping Operations** including *support to strategic communication*, *military diplomacy*, *diplomacy support, developing/providing public affairs,* and *information operations.*

These actions could also take the form of providing increased partner capability. In this case, actions (e.g., *support exercises*, *security assistance in the JOA* and *civil military operations in the JOA*) are oriented on demonstrating the benefits of participating in Unified Action to combat WMD and upon gaining freedom of action. The joint force can use these operations to justify the positioning of counterforce, defense or CM capabilities in a position of advantage for coercive operations.

(c) Impose Cost. Actions on this LOO apply or demonstrate the capability to apply destructive and/or disruptive military capabilities against a WMD actor. Operations along this LOO include interdiction, elimination and offensive operations.

1. Interdiction operations (Appendix I) increase the cost and time of WMD proliferation and acquisition. Some of these activities require President of the United States or Secretary of Defense (SecDef) specific authorization and others can be initiated by CCDRs in accordance with approved EXORDs when other actions are not successful in influencing adversaries to stop proliferating or acquiring WMD capabilities and related expertise, materials, and technologies. For these operations, the JFC can employ or support **Counterforce**

Operations[23] to stop the transit of WMD materiel, expertise or enabling resources and delay WMD development. The JFC may *attack operational targets (using lethal means)* (e.g., boarding, raids, strikes etc.)or *non-lethal means* (e.g., computer network attack). In the early stages of an adversary's capability development, this interdiction will likely be non-lethal and may be executed by IA, partners, or allies and supported by the JFC. The more mature a WMD program becomes the more physical manifestations it exhibits. This characteristic may lessen the effectiveness of many non-lethal capabilities and increase the requirement for lethal interdiction by the joint force to stop transiting material or technology etc. If such interdiction results in seizure of WMD or related material, interdiction may require the JFC to **Reduce the Threat** by *securing* and *removing* (i.e., neutralize or transport) the WMD and related material, expertise, technologies and infrastructure. If there is an accidental release of WMD in permissive or uncertain operational environment, the JFC may also have to execute **Consequence Management** operations.

2. In hostile or uncertain environments where interdiction efforts have not been successful in halting rogue behavior, the President of the United States or Secretary of Defense may direct offensive operations against the WMD network. In support of these missions, the JFC can execute **Counterforce Operations** to destroy the WMD network's ability to produce, deploy or employ WMD. These missions are military led and may be "kinetic (both conventional and nuclear) and/or non-kinetic" (e.g., space and information) operations[24]. They encompass the detection, identification, disruption, and destruction of an adversary's WMD assets, delivery means, associated facilities and other high value targets. In the event an adversary attempts to use WMD, offensive operations may help disrupt and weaken a WMD attack, increasing the effectiveness of other complementary elements of CWMD, such as active and passive defenses and consequence management. These missions require substantial refined intelligence and can impose substantial cost upon the WMD actor, but intelligence uncertainty hampers the ability to destroy a large WMD program. Exceptional and reliable knowledge of the enabling networks is more likely for smaller, more centralized WMD programs in which case offensive operations can destroy the program.

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[23] These are operations to positively identify and select WMD targets such as leadership, expertise, acquisition, weaponization, facility preparation, production, infrastructure, exportation, deployment and delivery systems. Further, it entails matching the means (i.e., lethal or non-lethal), conducting the attack, and assessing damages to include any consequences from collateral damage. (derived from CJCSM 3500.04D)

[24] *NMS-CWMD*

3. Elimination operations (Appendix J) systematically locate, characterize, secure, disable, and destroy a state or non-state actor's WMD programs and related capabilities in hostile or uncertain environments. Elimination operations focus on the nodes and links that constitute the WMD network's critical path(s). These operations employ many of the same **Counterforce Operations**' capabilities as offensive operations and interdiction operations. Elimination operations seek to reduce the immediate threat (i.e., *secure* and *destroy/remove* WMD and related material/resources) and to lay the groundwork to transition the long-term destruction, redirection and monitoring activities of any remaining elements of the WMD program to TRC. This transition assistance may include support to planning, security and transfer of reduction capabilities. Elimination operations also seek to locate, secure and exploit key personnel in the program. Since elimination requires some U.S. physical control of the infrastructure (to fully exploit the network and establish attribution), the JFC must provide **Passive Defense** and plan for consequence management in the event of inadvertent WMD release. The JFC also provides *arms control support* to Unified Action to isolate the targeted WMD program and ensure that the actor does not resurrect it.

(d) Deny Benefits. Activities on this LOO defend, respond, and recover from WMD use or demonstrate the ability to do so. Operations along this LOO include active defense, passive defense and consequence management.

1. The JFC employs **Active Defense** capabilities throughout the campaign. These are military led activities (e.g., missile defense, air defense, special operations, security operations, etc.) to "defend against conventionally and unconventionally delivered WMD." These activities also encompass support to IA security and law enforcement activities to prevent threats from engaging the United States, its deployed forces, allies and partners. Initially, these capabilities present benefit denial aspects to the WMD actor and can influence his decisions to pursue or employ WMD. These capabilities become more critical as the adversary develops a WMD employment capability. In conjunction with other capabilities, these capabilities also represent benefits to allies and partners and can influence their support.

2. Throughout the campaign, the JFC also employs **Passive Defense** capabilities to minimize or negate U.S. and partner vulnerabilities and minimize the effects of WMD use. Passive defense also protects U.S. military interests, installations, and critical infrastructure. Passive defense capabilities can demonstrate to adversaries the U.S. Armed Forces' ability to sustain operations in a

contaminated environment. These capabilities represent benefits to allies and partners and can influence their support.

3. In support of Unified Action to combat WMD, the JFC employs **Consequence Management** (Appendix K) capabilities to mitigate undesired effects of release of WMD related material (to include TIC and TIM) and to manage consequences of such unintended effects. By demonstrating the ability to deny the benefits of WMD use, consequence management capabilities can also influence adversary decisions to employ WMD.

Consequence management operations are oriented towards containing and mitigating the physical contamination as well as second and third order effects caused by WMD employment or release. These effects can be extremely destabilizing, causing some CM operations to have many characteristics of SSTR Operations. In some cases, particularly in support of major combat operations, a CM operation may be a component of SSTR Operations or it may transition into sustained SSTR Operations.

Specific objectives for each CM operation will vary depending upon its characterization and other factors, but the joint force may be tasked to execute **Politico-Military** and *disaster control support* operations that include

- Coordination/Integration with partners to coordinate immediate response and mitigation efforts to minimize WMD effects in the event of a WMD attack

- Rapid remediation and restoration of critical infrastructure and services to prevent instability

- Strategic communication to sustain assurance and dissuasion

In some cases, such as a CM in territory under the authority and effective control of U.S. Armed Forces where this is no civil authority, most likely during an MCO, the JFC will be the lead element. In domestic or foreign CM operations, however, he will normally provide *support to other USG agencies*. This requires the JFC to synchronize his actions with OGA partners with the desired objective of making as rapid and complete a transition as possible to appropriate civilian authority.

Although some incidents of WMD release may be small in scope, others may have significant geographical or societal impact, requiring the movement of substantial U.S. and partner mitigation capabilities in order to *isolate* the incident and to *remove* the hazard. This potential

requirement necessitates effective indicators and warnings focused on attack preparation and detection to provide early warning for response asset preparation.

Once an incident occurs, surveillance and reconnaissance assets must identify the nature, scope and magnitude of the contamination in order to inform JFC COAs. In addition, forces allocated for CM activities must be able to establish the extent and composition of a WMD incident and, through forensic analysis of an incident, provide attribution of the source of the WMD or WMD related material and delivery means.

(4) Assessment Phase. During this phase, the JFC measures progress of the joint force toward mission accomplishment. These activities are crucial because WMD present strategic and political challenges that require rapid and accurate assessments and the JFC's decisions for other operations may hinge on the outcome of CWMD operations (i.e., WMD represent a powerful anti-access capability).

The **Capability to Assess CWMD Operations** requires a deliberate effort to place sensors that can *collect information on effects and results of operations* (on WMD actors and networks). Assessing influences the JFC's protective measures to include risk communication, passive defense, and consequence management. Assessing, through *attribution* of the WMD capability source, also more clearly defines the networks supporting the acquisition of WMD capability and the relationships among the networks and the nodes of that network. Finally, it assists the evaluation of requirements for follow up actions and for assigning attribution for the WMD proliferation. Assessment completes the operations cycle, updating the JIPOE and providing information for revising objectives, guidance, and intent and supporting other lines of operations.

(a) The JFC must *assess the operational endstate*. An engagement that does not produce desired target effects may not mean mission failure and a successful attack may not mean mission success because the WMD network can adapt. This assessment depends upon an accurate determination of the effects on network nodes and links and their ability to enable WMD acquisition, development or use; and requires extensive coordination between operational and intelligence elements to produce accurate, complete, and timely feedback regarding battle damage and munitions' effectiveness.

(b) The JFC must then determine follow-on requirements. Information garnered during assessment must also support efforts aimed at assigning attribution for the proliferation so that decision makers can direct appropriate follow-on action and so that other WMD seekers,

possessors and proliferators realize that discovery and subsequent punishment is unavoidable.

e. Capabilities and Tasks. CJCSI 3010.02B defines a capability (Figure 12) as "the ability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks." This same document defines a task as "an action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization to provide a capability." Collectively, these supporting tasks, arranged in an appropriate sequence and generating desired effects, comprise the capability.

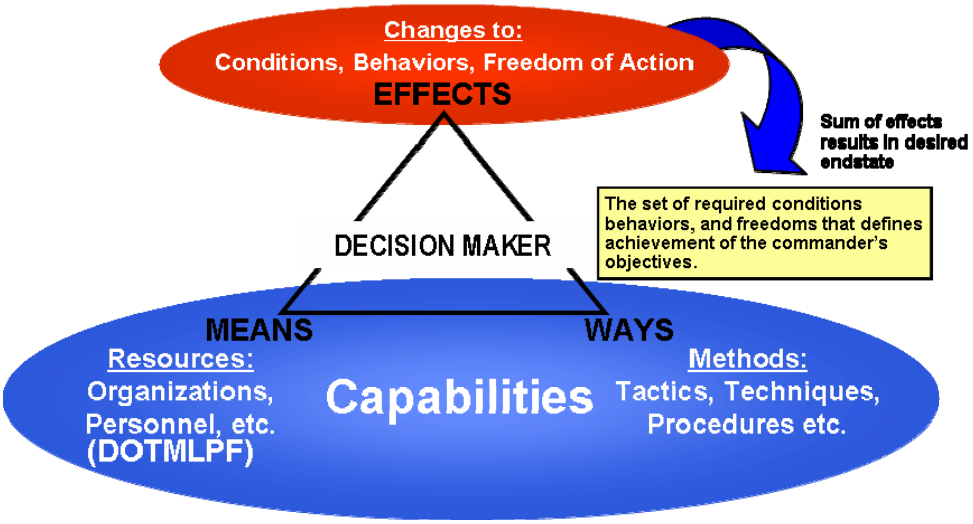

Figure 12. CJCSI 3010.02B Capability Construct

At the highest level, the *NMS-CWMD* defines the desired ends (sum of effects), "that the United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD." The *NMS-CWMD* further defines the ways as the four MSOs. At the first level of decomposition, the MSOs define desired effects and the LOOs and cross cutting activities identify the ways to generate these effects. One more level of decomposition provides useful resolution for supporting tasks required to enable the JFC's LOOs and cross cutting activities.

Task analysis captured in Appendix F, Capability Measures and Definitions identified the capabilities and tasks listed below. The taxonomy only lists tasks once although many of these tasks enable more than one LOO. These capabilities and tasks were selected based on criticality for mission success and uniqueness (by either condition or standard) for CWMD. Broad capabilities of the operations cycle defined

in the CCJO[25] organize the capabilities and tasks. This organizational construct, by implementing a broad sequencing of tasks, allowed for more comprehensive task identification and supports follow on CBAs by establishing a baseline for mission thread derivation. These tasks may require further decomposition in the development of Functional Area Analyses (FAA).

(1) CWMD-001C. The capability to plan CWMD operations. (This capability is common across all LOOs). The desired effect of this capability is that the joint force has a suitable, feasible and acceptable plan that achieves the MSO. Supporting tasks include

- CWMD-001T (OP 5.2). Assess the operational situation.
- CWMD-002T (OP 3.1). Conduct joint force targeting.
- CWMD-003T (New). Assess consequences of execution.
- CWMD-004T (OP 5.7). Coordinate and integrate Joint/Multinational and interagency support.

(2) CWMD-002C. The capability to prepare for CWMD operations. (This capability is common across all LOOs). The desired effect of this capability is the arrangement of capabilities in time and space to execute planned CWMD operations. Supporting tasks include

- CWMD-005T (OP 5.5). Establish, organize and operate a joint force headquarters.
- CWMD-006T (OP 5.4.5). Coordinate/integrate components, theater and other support.
- CWMD-007T (OP 1.2). Conduct operational maneuver and force positioning.
- CWMD-008T (OP 2). Provide operational intelligence.
- CWMD-009T (OP 5.4). Command subordinate operational forces.

(3) CWMD-003C. The capability to conduct reconnaissance and surveillance. The desired effect of this capability is that adversary

[25] The CCJO states that "the JFC orchestrates military actions within a continuous operations cycle of planning, preparing, executing, and assessing."

networks, support activities, and personalities are identified and characterized. Supporting tasks include

- CWMD-10T (New). Conduct reconnaissance.
- CWMD-011T (New). Conduct target and threat assessment.
- CWMD-012T (New). Detect WMD and WMD related materials, expertise, technology and infrastructure.
- CWMD-013T (New). Gain access for reconnaissance.

(4) CWMD-004C. The capability to reduce the threat cooperatively. The desired effect of this capability is that actors' WMD and WMD enabling capabilities are secured, reduced, redirected or destroyed. Supporting tasks include

- CWMD-014T (New). Secure WMD and related WMD materials, expertise, technologies and infrastructure.
- CWMD0-15T (New). Remove WMD.
- CWMD-016T (New). Redirect/Destroy WMD related materials, expertise, technologies and infrastructure.
- CWMD-017T (SN 9.3). Conduct arms control support activities.

(5) CWMD-005C. The capability to support joint shaping operations. The desired effects of this capability are increased capabilities and willingness of partners to combat WMD, conditions that allow the United States to combat WMD and dissuasion of WMD actors from participating in rogue behavior. Supporting tasks include

- CWMD-018T (New). Support strategic communication.
- CWMD-019T (New). Conduct military diplomacy.
- CWMD-020T (New). Provide diplomacy support.
- CWMD-021T (OP 5.8). Develop and provide public affairs.

(6) CWMD-006C. The capability to provide politico-military support to other nations, groups, and government agencies. The desired effects for this capability are increased government and popular support for the United States and its CWMD efforts and unity of effort for Political-Military support activities. Supporting tasks include

- CWMD-022T (OP 4.7.1). Provide security assistance in the JOA.
- CWMD-023T (OP 4.7.2). Conduct civil military operations in the JOA.
- CWMD-024T (SN 7.4.4). Support joint and coalition exercises.
- CWMD-025T (OP 4.7.3). Provide support to DOD and other government agencies.
- CWMD-026T (OP 4.7.8). Support disaster control operations.

(7) CWMD-007C. The capability to execute counterforce operations. The desired effect of counterforce operations is the defeat of WMD (and WMD materiel, knowledge, resources etc.) acquisition, proliferation, development and use. Another desired effect is the creation of the perception in the mind of WMD actors that the potential cost of WMD is too high for perceived gains. Supporting tasks include

- CWMD-027T (OP 3.2). Attack operational targets (using lethal means).
- CWMD-028T (OP 3.2.2). Attack operational targets using non-lethal means.
- CWMD-029T (ST 5.5). Conduct information operations (IO).

(8) CWMD-008C. The capability to execute active CBRN defense in the JOA. The effect of this capability is the demonstrated ability to defeat WMD attack(s) or, in the event of an attack, actual defeat of WMD delivery systems and prevention of WMD release upon U.S., partner and allied targets. The supporting task is

- CWMD-030T (OP 7.2). Conduct active CBRN defense in the JOA.

(9) CWMD-009C. The capability to coordinate passive CBRN defense in the JOA. The effect of this capability is the demonstrated ability to minimize vulnerabilities to WMD targeting and effects of WMD use or, in event of an attack, actual denial of any strategic, operational or tactical advantage to the adversary. The supporting task is

- CWMD-031T (OP 7.3). Provide passive CBRN defense in the JOA.

(10) CWMD-010C. The capability to execute CM in the JOA. The desired effect is the demonstrated ability to mitigate undesired effects from the release of WMD or, in event of an actual release, the denial of any strategic, operational, or tactical advantage to the adversary. Supporting tasks include

- CWMD-032T (OP 1.5.4). Isolate the JOA.
- CWMD-033T (OP 6.2.2). Remove operationally significant hazards.

(11) CWMD-011C. The capability to assess CWMD operations/campaign. (This capability is common across all LOOs). The desired effect of this capability is the effects on networks are discerned and appropriate follow-up actions are determined. Supporting tasks include

- CWMD-034T (OP 2.2.1). Collect information on effects and results of operations.
- CWMD-035T (New). Establish attribution for WMD and related material.
- CWMD-036T (OP 3.1.6). Conduct operational assessment.

f. Conditions. Appendix G lists the probable worst-case characterizations of Universal Joint Task List (UJTL) defined conditions that affect CWMD operations. Appendix F aligns these conditions against specific tasks.

5. Risks and Mitigation. Risks incurred by implementing this concept are primarily in the areas of force management, operations and future challenges. This section identifies high-level mitigation actions, but Section 6 (Implications) also identifies actions that might reduce risk.

a. Force Management Risk (Can DOD provide a trained and ready force?).

(2) Risk: Currently the catastrophic quadrant of the four WMD challenges is the only challenge area that lacks an execution roadmap. The risk is that DOD does not manage the military capabilities to combat WMD and fails to provide a trained and ready force. Mitigation: DOD should implement strategic management of the CWMD military instrument.

(3) Risk: A universally high demand upon low-density ISR assets may result in sub-optimal allocation of ISR to the JFC. Mitigation:

Potential strategies include network sharing of ISR; close joint, IA and combined coordination of ISR to minimize redundant missions; and development of new persistent, multi-task ISR capable of conducting multiple simultaneous missions.

(4) Risk: A universally high demand upon low-density specialized CWMD assets may result in sub-optimal allocation to the JFC. Mitigation: Make force elements with CWMD capabilities part of the Global Force Management system.

(5) Risk: DOD develops CWMD specialized forces that have little utility outside of CWMD operations at the expense of general-purpose forces. Mitigation: Determine the optimal mix of specialized forces and acceptable risk through studies such as Operational Availability.

b. Future Challenges Risk (How effectively is DOD anticipating future threats and adjusting capabilities to maintain a military advantage?).

(1) Risk: Science will produce a WMD about which the United States has no technological basis or understanding, leaving the United States, its allies and partners without any means to mitigate the effects of its use. This is most likely in the areas of biological, chemical, or nanotechnology, but may be a true "bolt out of the blue." Mitigation: Layered application of the LOOs to eliminate single points of failure best mitigates this risk. The active and passive defense missions, in concert with consequence management, properly integrated into the campaign, provide the necessary hedge against such risks. In addition, the United States should develop a focused intelligence effort to identify potential leap-ahead CBRN capabilities, establish close liaison with private sector research and development activities, and should develop doctrine and protocols to isolate and assess and mitigate effects from unknown agents.

(2) Risk: U.S. and multinational force sensor development and intelligence efforts prove inadequate to overcome adversary use of commercialization as well as technology and material advances to develop or transfer WMD capabilities. Mitigation: Develop protocols to assess new commercial technologies for the ability to facilitate WMD development or to enable proliferation.

(3) Risk: Expected developments in technology do not materialize when expected. Mitigation: Layered application of the LOOs to eliminate single points of failure best mitigates this risk.

(4) Risk: U.S. and multinational forces are unable to share information on enabling WMD networks and coordinate actions in a timely manner. Mitigation: Develop information sharing agreements and

collaboration tools with partners. Provide security assistance in the form of common data formats and information technology. U.S. forces should be prepared to act unilaterally if required.

(5) Risk: U.S. capabilities in computer network operations, IO, and strategic communication fail to adapt to the technology available to both state and non-state actors. Mitigation: Continue to develop and refine doctrine for influence operations.

(6) Risk: Unified Action is unable to generate the supporting integrated global effects from the other elements of national power. Mitigation: Develop regional IA CWMD plans (not just DOD plans) that incorporate all elements of national power.

(7) Risk: False domestic expectations could lead to the undermining of key CWMD capabilities. Mitigation: Develop a strong public affairs campaign.

(8) Risk: Accepted nuclear states may perceive this JIC as a threat. Mitigation: Develop a strategic communication campaign to assuage these countries.

c. Operations Risk (Are U.S. military and civilian personnel ready at all times to accomplish their mission(s)?).

(1) Risk: The JFC is unable to deal with uncertainty caused by the formidable challenges of discerning the true behavior and interactions of adversaries that are complex adaptive systems. Mitigation: Develop Tactics, Techniques and Procedures (TTPs) for conducting network analysis of the WMD enabling networks. As part of this network analysis, the JFC should incorporate formalized operational risk assessments.

(2) Risk: The intelligence, communications, and planning and coordination processes do not provide sufficient time for the command and control system between President and warfighter to take effective action. Mitigation: Develop TTPs for streamlining decision processes.

(3) Risk: The United States fails to develop non-lethal attack and information or influence capabilities to attack the decision-making calculus of either state or non-state actors. Mitigation: Develop supporting doctrine and capabilities for joint influence operations.

(4) Risk: The United States is unable to exploit lethal and non-lethal attacks to achieve better understanding of network adaptations to the attack and cannot operate within the decision cycle of the WMD actor. Mitigation: Develop and rehearse TTPs for these actions.

(5) Risk: CWMD operations will remain solely focused on WMD or WMD material. CWMD will only be successful if the JFC addresses the enabling network functionality in its totality and targets knowledge, enabling resources, technology, delivery systems and material. The leadership network is the critical network. Mitigation: Expand expertise available to the JFC so that he has capability to visualize and engage the totality of the network functions.

6. Implications. Implications listed below address previously identified risks.

a. Implications for DOTMLPF.

(1) Doctrine. The doctrinal aspects of JP 3-40 will require an expanded focus for the chapter V discussion of planning and execution to address the role of the Shaping actions in CWMD. JP 3-11, *Joint Doctrine for Operations in NBC Environments*, and JP 3-41, *Joint Doctrine for CBRNE Consequence Management*, will also need to be re-examined to determine their boundaries and the impact of capability requirements identified in this JIC and in the *SSTR Operations JOC*.

This concept also requires definition of the fluid nature of directive relationships within the CWMD enterprise. The supporting/supported relationships between CWMD elements will change during the campaign, during conduct of any particular line of operations and even during the tactical execution. This may create the need for the supported effort to have more directive authority, at the lowest possible organizational level, than currently exists over supporting agencies.

DOD will have to develop doctrine and policy to better synchronize all aspects of national and international power in support of combating WMD operations. This includes policy, TTPs and agreements to facilitate Change of Operational Control (CHOP) and information sharing across and between USG agencies and multinational partners. Doctrine will also have to be developed to better integrate non-lethal and non-kinetic means, including those that enable shaping, into current weapons mix across the domain space.

(2) Organization. Military support to CWMD operations may require a dedicated command and control element (i.e., Joint Task Force headquarters or staff element within a headquarters) which is capable of conducting sustained operations and that has directive authority over non-military elements when in a supported role. This element may be a component under a regional CCDR or may be a USSTRATCOM subordinate element. This element must be trained and equipped to execute rapid and dynamic CWMD operations in support of the

overarching campaign. These elements require representation from all participating force elements, DOD, non-DOD, and non-USG, and must be prepared to accept CHOP (or be CHOPped) to these other elements. Relationships with these disparate elements should be predefined and tailorable, able to adapt to various operational environments, make rapid decisions, and able to direct the actions of subordinate organizations.

The JTF headquarters may require access to expertise in each of the targeted network functions (i.e., financial, science and technology, logistics, intelligence and surveillance, command and control, and weapons delivery) and in each of the technical target sets (i.e., chemical, biological, radiological, and nuclear.) Much of this expertise lies outside the traditional military domain and will require IA organizational constructs to implement.

Traditional methods of concentrating IA operations in a separate staff section will probably be incapable of acting expeditiously. IA and allied/partner collaboration should be tightly imbedded within the various staff sections and subordinate organizations to achieve the synchronization and integration necessary to execute a comprehensive CWMD strategy exploiting the totality of U.S. and partner capabilities.

Future JFCs will require readily available CWMD capabilities because the secretive nature of rogue actors may provide the JFC only minimal warning about WMD related activities. This may result in an extremely narrow engagement window to interdict, activate active defense, assume passive defense or conduct consequence management. This narrow window may require the JFC to have access to forward deployed CWMD capabilities in addition to those based in the United States.

Future JFCs will employ integrated joint expeditionary force packages that fuse military operations and intelligence activities at the tactical level. This may require a new joint "combined arms" team that merges operational, intelligence and law enforcement elements. Domestically, the Joint Force may require the ability to execute multiple dispersed CM operations.

(3) Training. Frequently, Joint Task Forces (JTFs) executing CWMD operations may deploy with little or no notice as intelligence and political conditions evolve. Some of these JTFs may be formed by CCDRs and some may be deployable CONUS based elements specifically trained for specialized CWMD missions. Regardless, these short timelines require that the JTF be in a high state of readiness to execute mission within their capability. Habitual training relationships with probable force elements will be required to achieve this combat readiness and accompanying mutual trust. Resource constraints may limit full force

exercises, but JTFs can use simulations as training exercise drivers. More importantly, training with coalition partners will be essential to conduct operations of importance. The requirement to understand and counter dual-use technology creates a need for effective training in this area.

The successful engagement of the critical financial, science and technology, logistics, command and control, intelligence and surveillance, and weapons delivery network functions will require expertise not normally found in military organizations. While USG IA expertise may be available, the commanders, planners, and executors of CWMD operations will require substantial understanding of these networks. In addition, the exploitation of WMD nodes and networks will require investigative skills as well as broad linguistic and cultural expertise not commonly found in military organizations. This will require considerable training or the attachment of skilled investigators from USG or military criminal investigation organizations or a readily available core of WMD investigators.

The fusing of intelligence skills with WMD technical knowledge and network analysis is necessary to identify the WMD production process and the underlying functional networks that support the WMD capability. This requires detailed expertise in all aspects of WMD technology including dual-use technology, and the ability to integrate it into a complete view of the enterprise. This, in turn, allows the commander to determine the critical sub-set of network nodes that the joint force needs to eliminate to reverse the WMD capability.

Due to the limited number of units capable of detecting, analyzing and decontaminating WMD releases, CBRN trained personnel may need to be trained for an "all-hazards" approach similar to fire departments and civilian hazardous materials responders.

(4) Materiel. The joint capability areas of Battlespace Awareness, Command and Control, Protection and Force Application provide the organization for materiel implications for CWMD.

(a) Battlespace Awareness. CWMD operations require precision intelligence-high resolution, fast response, quick exploitation and dissemination, and accurate data.

1. Tasking. Intelligence assets at all levels will have to be responsive to meeting JFC intelligence requirements. Sensor systems will need to be capable of accepting cross component tasking and cross-agency and cross-nation sensor tasking will also need to be enabled. Given the multi-dimensional nature of the WMD network environment,

DOD must develop new and comprehensive means of cueing sensors (to include HUMINT) across the entire IC.

2. Collecting. Successful analysis of WMD networks requires the ability to gain and maintain access to uncertain and hostile environments to enable high fidelity detection and identification. This capability will also enable identification of the WMD or enabling resource so that the JFC can initiate appropriate action. In addition, sensors need day/night, all weather capabilities and the ability to overcome enemy camouflage, concealment and deception (CC&D) efforts and countermeasures. Sensors must be developed that will provide target information for non-lethal, non-kinetic attack means. Collecting information on commercial transactions will also be critical to successful CWMD operations. This is particularly difficult when addressing dual use technology and material. While HUMINT and SIGINT are particularly useful capabilities, open source intelligence such as business records, export-licensing transactions, international insurance etc., are also valuable. In addition, multipurpose, field rugged, analytical tools capable of detecting agents and their delivery vehicles, to include nontraditional means, may be needed. All of these solutions should be interoperable with CONUS civilian responders.

3. Exploitation and Analysis. The JFC requires knowledge of the suspected WMD program network's functions, links, nodes, and tasks. This requirement that the IC discern the intent of an actor to pursue WMD is difficult and requires insights into leadership decision-making. After determining intent, exploitation capability must define the networks and nodes that support the capability. This currently relies heavily upon HUMINT and SIGINT collection. Exploitation must also support predicting that a transit of WMD technology is taking place and attribute this capability to a given actor in sufficient time for the USG and the JFC to act. Analysis must also be capable of conducting social network analysis to determine the composition, characteristics, and vulnerability of the WMD enabling networks and expanding the analysis supporting current proliferation networks to the full scope of the WMD adversary.

CWMD also requires the rapid determination of precise target location (e.g., geo, cyber, or other). In addition, commanders will require timely and accurately fused data to facilitate understanding the operational environment, determine courses of action, and execute the resulting decisions. Fused data will also eliminate redundant tracks while providing visibility of data to enable a common, relevant situational awareness. Techniques such as target evidence accumulation using feeds from multiple types of sensors (e.g., imagery intelligence, measurement and signature intelligence, SIGINT, and HUMINT), can

provide high confidence, high payoff targets for attack. CWMD operations will also require the ability to assign attribution to the WMD proliferation with the additional requirement of having forensic capable intelligence.

4. Disseminating. JFCs will require accurate and timely information about critical nodes as well as the exchanges between these nodes. This will require a common reporting format and fused multi-sensor track data in a collaborative information environment. The Joint Force must be able to push and pull this information with its partners and its neighboring force elements. The Joint Force must also be capable of interacting in an IA/coalition environment. Therefore, procedures that facilitate multi-level security interfaces and still authorize access to relevant intelligence information will be required. The ubiquitous network envisioned in the Battlespace Awareness JFC will become essential.

(b) Command and Control. Flexible application of sensors and force elements from different agencies and nations requires speedy and extensive automated coordination enabled by reliable, sufficient communications links. A family of systems operating from common data and able to quickly produce shared outcomes is required to master the complexity of attacking emergent and planned targets with myriad assets across multiple domains.

(c) Force Application. Multi-dimensional and discriminate engagement capabilities should include reduced vulnerability to enemy detection, immediate response, automatic target recognition, battle damage indicator reporting, reduced vulnerability to countermeasures and weapons delivery in day/night, all weather conditions and in urban environments. Non-lethal attack capabilities will need more refinement to attack specific nodes and links within the WMD network with a focus on the human and virtual domain capabilities. The JFC should expect that use of lethal force would be constrained by restrictive rules of engagement and the high political risk of using lethal force in an international environment. Both lethal and non-lethal attack capabilities must minimize the effects of inadvertent release of WMD and toxic hazards. In accordance with the need for integrated intelligence capabilities, a JTF, when formed, will need the means to share common situational awareness to facilitate cross component, cross agency, and coalition coordination.

(d) Protection. The Joint Force needs to be able to operate within a WMD contaminated environment. The Joint Force must be able to apply its capabilities at the decisive time and place against the full spectrum of threats through the tailored selection and application of

multi-layered, active and passive, lethal and non-lethal, offensive and defensive measures, within all domains, across the range of military operations.

Advances in Shape, Shield, Sense and Sustain technology will be needed as forces train to adapt from detecting, protecting from and decontaminating traditional warfare agents to an "all hazards" approach that improve a commander's operational awareness of the environment.

(5) Leadership and Education. Across each proposed solution, decision-makers require problem-solving skills that allow them to determine what effects the force elements need to create and how to create them. Leaders must have wide depth of knowledge and insight into component, agency, and multinational capabilities. Leaders must also know how best to integrate these capabilities and when to delegate decision-making authority. Professional military education must include operational aspects of CWMD to include support to Unified Action.

(6) Personnel. Future CWMD operations will require trained and ready personnel (military and civilian) with skills in the sets of military capabilities previously identified. New military occupational skills may be required. In addition, future CWMD operations may require personnel trained for identification, quantification, characterization and attribution of agents outside of the traditional warfare agents.

(7) Facilities. Attribution may require forward positioning of forensic capabilities that provide detailed and timely analysis of WMD and related material. Forward positioning of facilities that can neutralize or contain WMD may also be required. Additionally, CWMD training requirements necessitate facilities to train forces to execute missions such as counterforce operations.

b. Policy Implications. Currently the catastrophic quadrant of the four WMD challenges is the only challenge area that lacks an execution roadmap. DOD should develop a policy to implement strategic management of the CWMD military instrument. In addition, the requirement for an integrated IA approach to CWMD means that DOD (and the USG) should examine ways to "power-down" the authority to plan and direct IA activities.

c. Implications for Other Joint Concepts. The requirement for attribution of WMD and WMD resource transfers will establish increased demands upon the Joint Battlespace Awareness capability area with possible revisions to the Battlespace Awareness Joint Functional Concept (BA JFC).

Successful CWMD operations will require the use of all the elements of national power. International approval and information sufficient to convince partners to pursue law enforcement action against WMD nodes within their sovereign territory will be paramount. The requirement for attribution of WMD activities to the respective state and non-state actors requires a level of precision and accuracy that approaches the legal levels of proof, calling for new standards of performance for the BA JFC.

In addition, there are currently no joint concepts for IA command and control. An IA working group should consider such an effort. The National Response Plan and National Incident Response Management System used in domestic consequence management situations could be a start point.

This joint concept places an increased premium upon non-lethal operations. These methods may be crucial to future success. Information operations across the spectrum should seek to influence state and non-state actors into foregoing development of WMD capability. Engagements on WMD networks and capabilities in the human and virtual domains, including strategic communication, information systems attack and exploitation, psychological operations, etc., rise to an unprecedented level of importance relative to attacks in the physical domain.

7. Plan for Assessment.

a. Experiments and Assessments Conducted During this Effort.

(1) From 8-9 November 2006, the USSTRATCOM Center for Combating WMD (SCC-WMD) sponsored an Exploratory Wargame to provide a forum for key stakeholders to further the development of the Combating WMD JIC, ensuring completeness and consistency. Appendix H presents a report on the wargame.

(2) In January 2007, The Defense Adaptive Red Team (DART) reviewed the CWMD JIC Version 0.3. The DART applauded the unified approach to CWMD, but found several areas that required further examination

- The JIC (V 0.3) did not discriminate between rogue and non-rogue WMD actors. JIC Version 0.5 narrowed the focus to rogue actors.

- The JIC (V 0.3) proposed a systems engineering approach to CWMD operations and the associated reliance upon exquisite intelligence, ignoring the necessity to fight for intelligence. JIC

Version 0.5 reintroduced the principles of coping with uncertainty and fighting for intelligence.

- The JIC (V 0.3) did not stress a layered approach to combat WMD. JIC Version 0.5 introduced the principle of layered application of military capabilities to CWMD networks.

(3) The Joint Requirements Office has completed a task list and architecture based upon CWMD mission FAAs completed to date including passive defense, interdiction, offensive operations and elimination. These FAAs, the *CWMD JIC*, and other evolving CWMD mission FAAs (Threat Reduction Cooperation, Consequence Management and Security Cooperation and Partner Activities) supported the capability and task analysis results presented in Appendix F.

b. Recommendations for Further Experimentation and Assessment.

(1) Further Experimentation. Key CWMD tasks and implications of this JIC offer several opportunities for joint experimentation.

(a) Conduct experimentation on DOTMLPF options to improve the JFC capability to *Coordinate and Integrate Joint/Multinational and Interagency Support.* Also, determine whether there is a need, in light of alternatives, to *Establish, Organize and Operate a Joint Force HQ* in support of Unified Action to combat WMD. Key stakeholders for this experimentation include USJFCOM, USSTRATCOM, other CCDRs, Services, and IA partners.

(b) Conduct experimentation on influencing the decision-making calculus of non-state WMD actors, particularly terrorists and criminal enterprises. Key stakeholders include USSTRATCOM, USJFCOM, USSOCOM, SCC-WMD, and DIA.

(c) Conduct experimentation on the ability of the JFC, in conjunction with the IC, to *Provide Operational Intelligence* by discerning intent, conducting network and nodal analysis, forecasting the transfer of WMD, resources (material, technology, expertise), and detecting WMD infrastructure. Key stakeholders include DIA, Services, USJFCOM, JFCC ISR, and the BA FCB.

(d) Conduct experimentation on the JFC's ability to *Conduct Attack on Operational Targets using Non-lethal Means*. USJFCOM is a key stakeholder for this experimentation.

(e) Conduct experimentation on the optimal modular construct (GPF, SOF and specialized forces) required to execute various

CWMD missions. Key stakeholders include USSTRATCOM, USJFCOM, USSOCOM, and the Services.

(2) Assessment Campaign. This assessment plan addresses two main purposes of the CWMD JIC, supporting CBAs and supporting tradeoff analysis among the capabilities and across the CWMD missions. The plan proposes a three phase CWMD CBA Campaign:

- Phase I: Complete the current set of CWMD CBAs (near-term).
- Phase II: Conduct a CBA to integrate the eight CWMD mission areas within a common framework (mid-term).
- Phase III: Sustained analysis on select CWMD capabilities, as required.

(a) General. Currently, USSTRATCOM has only limited authority (and funding) to sponsor acquisition or development of validated CWMD capabilities. Absence of sponsors who have robust Title 10 responsibilities to provide military capability reduces the likelihood that an Initial Capabilities Document (ICD) or DOTMLPF Change Recommendation (DCR) will transition to a fielded capability. Encouraging sponsorship requires close integration between USSTRATCOM, SCC-WMD, and other capability sponsors during the conduct of this CBA campaign.

The common template for all USSTRATCOM-led CBAs in this campaign consists of three stages with changing roles and responsibilities. The key to success for all of these stages will be socialization and participation with CWMD stakeholders. During the first stage of a CBA, USSTRATCOM will develop a study plan and terms of reference (TOR) for the CBA, submitting it to the JROC for validation as appropriate. The TOR will establish study scope, methodology, study team organization and governance. USSTRATCOM will socialize this TOR with the stakeholders. During the second stage, USSTRATCOM will lead the FAA and Functional Needs Analysis. This stage will end with the production of a Joint Capabilities Document (JCD) that will present prioritized capability gaps and shortfalls to the JROC for validation and sponsorship determination. The JCD will most likely serve as a framework to drive more than one Functional Solution Analysis (FSA). During the third stage, USSTRATCOM will co-lead the FSA with an appropriate capability sponsor(s). The product of this analysis will be an appropriate JCIDS document (Initial Capabilities Document (ICD) or DCR) that will present integrated solution sets for JROC validation. The CBA ends at this phase and USSTRATCOM will track sponsor implementation of the solution set.

(b) Phase I-Complete Current Set of CBAs. Currently, the eight missions identified in the NMS-CWMD provide the organizational construct for CWMD capabilities. Of these eight missions, only one, Active Defense, does not have an existing CBA. The Integrated Air and Missile Defense CBA provides some analysis, but this CBA does not address other operations to include special operations or security operations to defend against conventionally and unconventionally delivered WMD. The first phase of this CWMD CBA campaign address this shortfall, using the Integrated Air and Missile Defense (IAMD) construct as an initial framework for completing an active defense CBA.

(c) Phase II-Integrated Analysis across Missions. Each of the validated and ongoing CBAs has examined missions from unique viewpoints. These singular views do not provide a basis for comparison or prioritization across the CWMD mission set and makes it difficult to establish an integrated prioritized capability list. The USSTRATCOM-led CBA during this phase, which can be conducted concurrently with Phase I, will produce a JCD to serve as a common analytical framework to measure CWMD capabilities and support tradeoff analysis. This framework will place existing, ongoing, and future CBAs in a common perspective. This phase will likely generate multiple FSAs, with appropriate JCIDS documentation, based upon the current CWMD mission construct.

Use of MSOs, particularly MSO 3, Defeat and Deter, would best facilitate this integration. This approach would definitively address the four CWMD principles identified in the concept, would be applicable across a broad spectrum of operational environments, would address the broadest spectrum of military capabilities and is the one most likely to be assigned to a JFC as a supported commander.

This tradeoff analysis will primarily build upon completed and on-going CBAs that address CWMD. Additionally, there are related analyses critical to the CWMD mission that should be included since the capabilities described within are important to the CWMD mission set. These include CBAs for Active Defense, Global Strike, Hard and Deeply Buried Target Defeat, and Persistent-ISR as well as ongoing analyses such as the CWMD Capabilities Advocacy Document.

(d) Phase III-Sustained Analytical Effort. Once all eight missions have been assessed and initial integration of needs, gaps, shortfalls and overmatch across the mission set has been validated (and solutions determined), USSTRATCOM, or designated capability sponsor, will conduct sustained follow-on focused analyses to support CWMD capability advocacy and sponsorship. These analyses are envisioned to be narrowly focused (at a much lower level than the current eight

missions) upon high priority capability needs with the greatest payoff potential across the CWMD capability set. These analyses will scope existing and new FSA work into manageable efforts from a common perspective with an eye towards trades and new capabilities. USSTRATCOM will act as the integrator, if they are not the CBA sponsor, ensuring the CBA is synchronized with the principles and analytical framework established by the JIC.

8. Appendices

   A. References
   B. Glossary and Acronyms
   C. Strategic Guidance
   D. Applicable Joint Capability Areas
   E. Supporting Effects from other Elements of National Power
   F. Capability Definitions and Tables
   G. Conditions
   H. Exploratory Wargame
   I. Interdiction Operations
   J. Elimination Operations
   K. Consequence Management Operations
   L. Vignette (Classified and published as a separate document)

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Appendix B. Glossary and Acronyms

Part I. Abbreviations and Acronyms

AOI	Area of Interest
BA	Battlespace Awareness
BA JFC	Battlespace Awareness Joint Functional Concept
C2	Command and Control
CBA	Capability Based Assessment
CC&D	Camouflage, Concealment, and Deception
CCDR	Combatant Commander
CCIR	Commander's Critical Information Requirements
CCJO	Capstone Concept for Joint Operations
CHOP	Change of Operational Control
CNO	Computer Network Operations
COA	Course of Action
CONOPS	Concept of Operations
CONUS	Continental United States
CS	Civil Support
CWMD	Combating Weapons of Mass Destruction
DCR	Doctrine, Organization, Training, Material, Leadership, Personnel, and Facilities Change Recommendation
DOD	Department of Defense
DOS	Department of State
DOTMLPF	Doctrine, Organization, Training, Material, Leadership, Personnel, and Facilities
DPS	Defense Planning Scenario

DTRA	Defense Threat Reduction Agency
FAA	Functional Area Analysis
FNA	Functional Needs Analysis
HD	Homeland Defense
HN	Host Nation
HUMINT	Human Intelligence
IA	Interagency
IC	Intelligence Community
ICD	Initial Capabilities Document
IGA	International Government Agencies
IMINT	Imager Intelligence
ICD	Initial Capabilities Document
IO	Information Operations
ISR	Intelligence, Surveillance, and Reconnaissance
JCIDS	Joint Capabilities Integration and Development System
JCD	Joint Capabilities Document
JFC	Joint Force Commander
JIC	Joint Integrating Concept
JIPOE	Joint Intelligence Preparation of the Operational Environment
JOA	Joint Operations Area
JOC	Joint Operating Concept
JOE	Joint Operational Environment
LFA	Lead Federal Agency
MASINT	Measurement and Signature Intelligence

MCO	Major Combat Operation
MSO	Military Strategic Objective
NMS-CWMD	National Military Strategy for Combating WMD
OSINT	Open Source Intelligence
OGA	Other Government Agency
SIGINT	Signals Intelligence
USG	United States Government
WMD	Weapons of Mass Destruction

Part II. Terms and Definitions

Access. The ability to enter or use. (Global Strike JIC WG)

Area of Interest. That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. This area also includes areas occupied by enemy forces that could jeopardize the accomplishment of the mission. (JP 1-02)

Assess. Evaluate the effect of an engagement. (Global Strike JIC WG)

Attribute. A quantitative or qualitative characteristic of an element or its actions. (CJCSI 3010.01B)

Capability. The ability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks. (CJCSI 3010.01B)

Condition. Variable of the operational environment including scenario that affects task performance. (CJCSI 3010.01B) Conditions are those variables that are outside the control of the executing agency.

Connectivity. The ability to exchange information between major functional areas.

Counterforce. These are operations to positively identify and select WMD targets such as leadership, expertise, acquisition, weaponization, facility preparation, production, infrastructure, exportation, deployment and delivery systems. Further, it entails matching the means (lethal or non-lethal), conducting the attack, and assessing damages to include any consequences from collateral damage. (Derived from CJCSM 3500.04D)

Decision-Making Calculus. Decision-making calculus refers to the reasoning process (to include biases and values) that leads an actor to selection of a particular course of action. It consists of three primary elements: perceived benefits of a course of action, perceived costs of a course of action and perceived consequences of restraint. (Derived from Deterrence Operations JOC)

Direct Effects. A **direct effect** is the proximate, first-order consequence of an action (i.e., the destruction of a target by precision-guided munitions) which usually is immediate and easily recognizable. (JP 3-0)

Effect. Change to a condition, behaviors, or degree of freedom resulting from tasked actions. (CJCSI 3010.01B)

Endstate. The set of conditions, behaviors, and freedoms that defines achievement of the commander's mission. (CJCSI 3010.01B)

Engage. Strike the designated target (includes maneuver and interagency efforts to produce favorable effects on other actors' (state and non-state) capabilities or behavior).

Indirect Effect. An **indirect effect** is a delayed or displaced consequence associated with the action that caused the direct effect. Indirect effects often are less observable or recognizable than direct effects, particularly when they involve changes in an adversary's behavior. However, an indirect effect may be the one desired. (JP 3-0)

Interoperability. The ability of nodes to operate in synergy in the execution of assigned tasks

Lines of Operations. 1. A logical line that connects actions on nodes and/or decisive points related in time and purpose with an objective(s). 2. A physical line that defines the interior or exterior orientation of the force in relation to the enemy or that connects actions on nodes and/or decisive points related in time and space to an objective(s). Also called LOO.

Measure. Provides the basis for describing varying levels of task performance. (CJCSI 3010.01B)

Military Strategic Objective. The MSOs in the NMS-CWMD describe how the U.S. Armed Forces will accomplish its strategic goal, "to ensure that the United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD." (NMS-CWMD)

Non-lethal weapon. A weapon that is explicitly designed and primarily employed so as to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment. (JP 1-02)

Objective. 1. The clearly defined, decisive, and attainable goal toward which every operation is directed. 2. The specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander's plan, or, an enemy force or capability without regard to terrain features). (JP 1-02)

Occupied Territory. Territory under the authority and effective control of a belligerent armed force. The term is not applicable to territory being administered pursuant to peace terms, treaty, or other agreement, express or implied, with the civil authority of the territory. (JP 1-02)

Operational Art. The application of creative imagination by commanders and staffs — supported by their skill, knowledge, and experience — to design strategies, campaigns, and major operations and organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war. (JP 3_0)

Operational Design. The conception and construction of the framework that underpins a campaign or major operation plan and its subsequent execution. (JP 3-0)

Persistence. The period of time the potential to create or sustain an effect can be maintained. (Global Strike JIC WG)

Reconnaissance in Force. An offensive operation designed to discover and/or test the enemy's strength or to obtain other information. (JP 1-02)

Rogue Behavior. Behavior of state or non-state actors that exhibits traits of defying international laws and conventions, not adhering to treaties or conventions, striving to acquire WMD, disregarding internationally established basic human values and norms, and supporting, sponsoring, or conducting international terrorism. (Derived from 2002 National Security Strategy)

Standard. Quantitative or qualitative measures for [specifying] the levels of performance of a task. (CJCSI 3010.01B)

Strike. A lethal / non-lethal / kinetic / non-kinetic attack. (Global Strike JIC WG)

Target. (verb) Characterize and designate potential target for neutralization / destruction and matching appropriate response. (Global Strike JIC WG)

Task. An action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization to provide a capability. (CJCSI 3010.01B)

Track. Display or record the successive positions of a moving potential target and maintain awareness of a fixed potential target. (Global Strike JIC WG)

Uncertain Environment. Operational environment in which host government forces, whether opposed to or receptive to operations that a unit intends to conduct, do not have totally effective control of the territory and population in the intended operational area. (JP 1-02)

Unified Action. Unified action is the synergistic application of all instruments of national power and multinational power and includes the action of nonmilitary organizations as well as the military forces (JP 3-0).

Weapons of Mass Destruction (WMD). Weapons that are capable of a high order of destruction and/or of being used in a manner so as to destroy large numbers of people. Weapons of mass destruction can be nuclear, biological, chemical, and radiological weapons, but exclude means of delivery of weapons where such means is a separable and divisible part of the weapon. (NMS-CWMD)

Appendix C. Strategic Guidance

1. National Security Strategy. The *NSS* lists as one of its essential tasks, "Prevent our enemies from threatening us, our allies, and our friends with weapons of mass destruction." The *NSS* further directs an active strategy of both offensive and defensive action to deter state and non-state actors through denial of the objectives of their attacks and potential response with overwhelming force. The NSS calls for

> "strengthened nonproliferation efforts to deny these weapons of terror and related expertise to those seeking them; *proactive counterproliferation efforts* to defend against and defeat WMD and missile threats before they are unleashed; and *improved protection* to mitigate the consequences of WMD use …. Meeting WMD proliferation challenges also requires effective international action – and the international community is most engaged in such action when the United States leads."

2. National Strategy to Combat Weapons of Mass Destruction. The *National Strategy to Combat Weapons of Mass Destruction* articulates a proactive and comprehensive strategy built upon the three pillars of nonproliferation, counterproliferation, and consequence management to counter the WMD threat in all of its dimensions.

3. 2006 Quadrennial Defense Review Report. The 2006 *Quadrennial Defense Review Report* identifies combating WMD as one of four priorities: Defeat Terrorist Networks, Defend the Homeland, Shape Choices of Countries at Strategic Crossroads, and Prevent Acquisition or Use of WMD. The QDR Report further outlines a vision of future force

> "The future force will be organized, trained, equipped, and resourced to deal with all aspects of the threat posed by weapons of mass destruction. It will have capabilities to: detect WMD, including fissile material at stand-off ranges; locate and characterize threats; interdict WMD and related shipments whether on land, at sea, or in the air; sustain operations under WMD attack; and render safe or otherwise eliminate WMD before, during or after a conflict. The Department will develop new defensive capabilities in anticipation of the continued evolution of WMD threats… The Department will be prepared to respond to and help other agencies to mitigate the consequences of WMD attacks."

The QDR also identifies a force-planning construct to allow U.S. Forces to defend the homeland, to prevail in the war on terror and conduct irregular operations, and to conduct and win conventional campaigns. Under this construct, combating WMD capabilities are

required under both surge and steady state conditions for each of these efforts (Figure C-1).

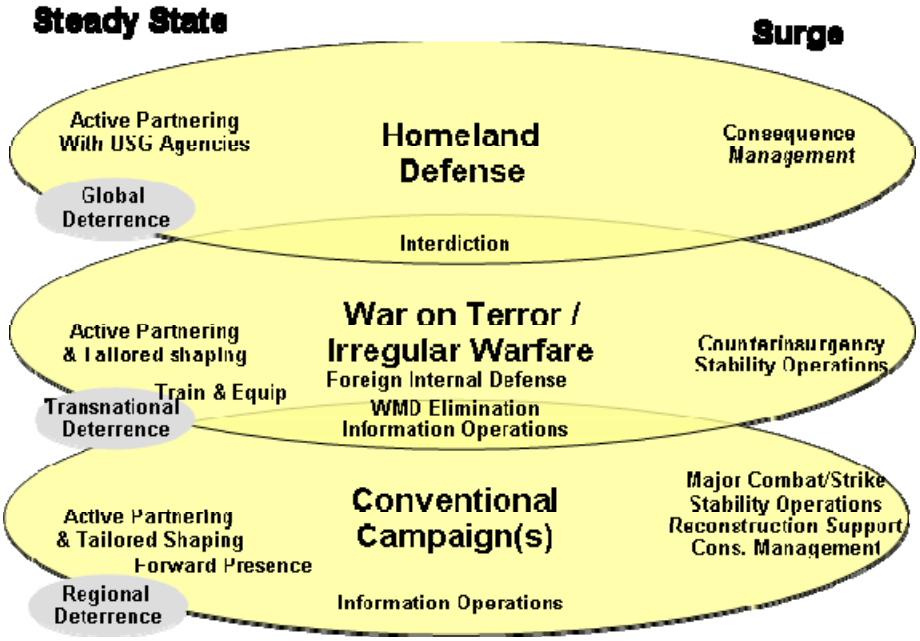

Figure C-1. QDR Force Planning Construct[26]

[26] 2006 QDR Report

Appendix D. Applicable Joint Capability Areas

The table below identifies the applicable Tier 1 Joint Capability Areas (JCA) for the capabilities that enable the CWMD lines of operations:

Table D-1. Joint Capability Areas

Capabilities	**Applicable Tier 1 JCA**
Plan CWMD Operations	Command and Control
Prepare for CWMD Operations	Command and Control, Logistics, Force Application, Force Support, Net-Centric
Conduct Reconnaissance and Surveillance	Force Application, Battlespace Awareness
Reduce Threat	Protection, Logistics
Execute Joint Shaping	Force Application, Influence, Logistics
Provide Pol-Mil Support	Influence, Logistics
Execute Counterforce Operations	Force Application, Influence, Protection
Execute Active Defense	Protection, Force Application, Net-Centric
Provide Passive Defense	Protection, Logistics
Conduct Consequence Management	Protection, Logistics
Assess CWMD Operations	Command and Control, Battlespace Awareness

Appendix E. Supporting Effects from the Elements of National Power

The table below identifies effects from the elements of national power required to enable the JFC to achieve his military strategic objective against rogue behavior of state and non-state actors. Military effects are those required by the JFC from adjacent or superior echelons to the JFC.

MSO	Element of National Power	Effects Required from the Elements of National Power to Enable the JFC
MSO 1--Prevent, dissuade or deny WMD proliferation or possession	Diplomatic	– State actors with WMD capability perceive that the diplomatic costs of proliferation outweigh the benefits – State actors without WMD capability sign, ratify and comply with non-proliferation treaties and agreements – State actors with WMD knowledge, technology, and delivery means sign, ratify and comply with non-proliferation treaties and agreements – Partners and allies sign and comply with access, basing, and over flight agreements in support of non-proliferation and counterproliferation activities – Partners and allies participate in activities designed to improve their non-proliferation, counterproliferation and consequence management capabilities – Partners and allies actively support U.S. and international sanctions designed to deny proliferation
	Information	– State actors and non-state actors with WMD capability perceive that the costs of proliferation outweigh the benefits – State and non-state actors perceive that United States, its allies and partners have ability to impose costs and deny benefits of use of WMD – Public perception is that WMD possession and proliferation is unacceptable behavior and not to be tolerated – State and non-state actors perceive the benefits of not having or proliferating a WMD capability – State and non-state actors are denied access to knowledge about WMD, WMD development or WMD enablers – Allies and partners have access to knowledge that enables their non-proliferation (NP), CP and CM capabilities – The United States, Allies and partners have access to information to enable NP/CP actions – State actors agree to WMD program transparency
	Military	– Strategic intelligence activities are integrated – Combatant commander's surveillance and reconnaissance requirements are supported – National strategic intelligence is integrated and disseminated – Global Command, Control, Communications, and Computers (C4) Services are provided – Coalitions or Alliances, Regional Relations and Security Assistance Activities are coordinated – Strategic attack is synchronized – Military activities within the intra-agency process are integrated on global level – DOD/government information operations are coordinated – DOD information operations are integrated

MSO	Element of National Power	Effects Required from the Elements of National Power to Enable the JFC
	Economic	– WMD proliferators and seekers perceive that economic benefits of restraint outweigh benefits of proliferation – Trade policy, tariffs etc. are established to impose costs on WMD proliferators and capability developers – Trade policy, trade agreements are established to reward State actors not proliferating – Trade policy, agreements etc. are established to identify and limit transfer of WMD related knowledge, technology, material, delivery means etc. – Development of recycling and fuel treatment technologies that are cleaner, more efficient, less waste-intensive, and more proliferation-resistant
	Financial	– Treaties and agreements are in place to enable identification, characterization of WMD enabling financial transactions – Financial structure supporting WMD proliferation and capability development is fully understood – Financial transactions supporting WMD proliferation and capability development are deterred or denied – Financial assets of WMD proliferators or developers are seized Aid is provided to encourage better security in exiting stockpiles or WMD related knowledge, technology etc.
	Intelligence	– The IC has a coherent strategy to locate, identify and characterize WMD actors, their enabling networks, and their decision-making calculus – The IC identifies emerging technologies that pose a potential WMD threat – The IC identifies emerging actors with WMD interests – The IC is able to establish attribution for transfers of knowledge, materiel, technology, and delivery means etc. – The IC is able to rapidly convey required information to the relevant actors whether military, OGA or partner
	Law Enforcement	– Investigative structure is developed to close down proliferation and quasi legal activity that supports proliferation – Actor transfer of WMD or WMD knowledge, technology, and delivery means is disrupted or denied – Actor development of WMD or WMD knowledge, technology, and delivery means is disrupted or denied
MSO 2--Reduce, destroy, and reverse WMD possession	Diplomatic	– State actors with WMD capability perceive that the costs of possession outweigh the benefits – State actors with WMD knowledge, technology, and delivery means sign, ratify and comply with WMD reduction treaties and agreements – Partners and allies sign and comply with access, basing, and over flight agreements in support of WMD reduction/destruction activities – Partners and allies with WMD knowledge, technology, and delivery means sign, ratify and comply WMD reduction treaties and agreements – State actors armed with WMD and \ or missile technology are reduced and conditions set through incentives and disincentives for "self" elimination (Examples: South Africa and Libya)

MSO	Element of National Power	Effects Required from the Elements of National Power to Enable the JFC
	Information	– State actors and non-state actors with WMD capability perceive that the costs of possession outweigh the benefits – State and non-state actors perceive that the United States, its allies and partners have the ability to impose costs and deny benefits of use of WMD – Public perception is that WMD possession is seen as unacceptable behavior and not to be tolerated – State and non-state actors perceive the benefits of destroying WMD – Partners and allies have knowledge to safely reduce their own stockpiles
	Military	– Strategic intelligence activities are integrated – Support Combatant commander's surveillance and reconnaissance requirements are supported – National strategic intelligence is integrated and disseminated – Global C4 Services are provided – Coalitions or Alliances, Regional Relations and Security Assistance Activities are coordinated – Military activities within the intra-agency process are integrated on global level – DOD/government information operations are coordinated – DOD information operations are integrated – DOD (including OSD, Service, and Defense Agency and Activity programs) security assistance, foreign military sales, and other assistance are consistent with security cooperation goals promoting allied and partner capability to CWMD
	Economic	– WMD proliferators and seekers perceive that economic benefits of stockpile reduction/destruction outweigh benefits of maintenance – Trade policy, trade agreements are established to reward state actors not proliferating – Transfer of U.S. technology are consistent with achieving CWMD national objectives
	Financial	– Treaties and agreements are in place to enable identification, characterization of WMD enabling financial transactions – Construct global / international financial structures to restrict and not reward financing of WMD research, proliferation, possession of WMD material, production. – Aid is provided to reduce WMD stockpiles and encourage better security
	Intelligence	– The IC has a coherent strategy to locate, identify and characterize WMD actors, their enabling networks, and their decision-making calculus – The IC is able to establish attribution for transfers of knowledge, materiel, technology, and delivery means etc. that enabled the WMD program – The IC is able to identify emerging WMD technologies to allow the development of active and passive defense capabilities and consequence management technical solutions – The IC is able to rapidly convey information to relevant military, OGA, partners and allies
	Law Enforcement	– Investigative structure is developed to close down proliferation and quasi legal activity that supports proliferation – Stockpiles are secure

MSO	Element of National Power	Effects Required from the Elements of National Power to Enable the JFC
MSO 3-Defeat and deter WMD use and subsequent use	Diplomatic	– State actors perceive the diplomatic costs of WMD use (or support of use) are unacceptable – State actor is isolated – Partners and allies sign and comply with access, basing, and over flight agreements in support of military actions to defeat and deter WMD use – Partners and allies participate with the United States in actions to defeat and deter WMD use
	Information	– WMD users perceive that the United States, its allies and partners have ability to impose costs and deny benefits of use of WMD – Public perception is that WMD use is unacceptable behavior and not to be tolerated – WMD users perceive that attack was ineffective
	Military	– Strategic intelligence activities are integrated – Combatant commander's surveillance and reconnaissance requirements are supported – National strategic intelligence is integrated and disseminated – Global C4 Services are provided – Coalitions or Alliances, Regional Relations and Security Assistance Activities are coordinated – Strategic attack is synchronized – Military activities within the intra-agency process are integrated on global level – DOD/government information operations are coordinated – DOD information operations are integrated
	Economic	– Policy and trade agreements are established to destroy the economic capability of the WMD user or State supporter to sustain a WMD program or conduct sustained military or terrorist operations
	Financial	– Treaties and agreements are in place to enable identification, characterization of WMD enabling financial transactions – Financial structure supporting WMD proliferation and capability development is fully understood – Financial transactions supporting WMD proliferation and capability development are denied – Financial assets of WMD proliferators or developers are seized Actions to facilitate recovery are initiated
	Intelligence	– The IC has a coherent strategy to locate, identify and characterize WMD actors, their enabling networks, and their decision-making calculus – The IC is able to determine critical U.S., allied, and partner vulnerabilities – The IC locates deployment/employment means – The IC identifies critical deployment/employment nodes and functions – The IC identifies the stockpiles, production facilities and targeting capabilities – The IC is able to establish attribution for transfers of knowledge, materiel, technology, and delivery means etc. that enabled the WMD program – The IC provided indications and warning of attack upon U.S., allied and partner interests sufficient to allow preemptive attack of adversary delivery systems – The IC is able to rapidly convey information to relevant military, OGA, partners and allies

MSO	Element of National Power	Effects Required from the Elements of National Power to Enable the JFC
	Law Enforcement	– Adversary deployment/employment means are destroyed or neutralized – Critical adversary deployment/employment activities are disrupted or denied – Adversary WMD stockpiles are destroyed or isolated – Adversary production capabilities are destroyed, disrupted, or isolated – Adversary targeting capabilities are neutralized or destroyed
MSO 4--Defend, respond and recover from WMD use	Diplomatic	– State actors perceive the diplomatic costs of WMD use (or support of use) are unacceptable-state actor is isolated – Partners and allies sign and comply with access, basing, and over flight agreements in support of military actions to defend, respond and recover from WMD use – Partners and allies participate with U.S. in actions to defend, respond and recover from WMD use
	Information	– State and non-state actors perceive that U.S., its allies and partners have ability to deny benefits of use of WMD – Public perception is that WMD use is unacceptable behavior and not to be tolerated – Public perception is the WMD effects are contained and neutralized
	Military	– Strategic intelligence activities are integrated – Combatant commander's surveillance and reconnaissance requirements are supported – National strategic intelligence is integrated and disseminated – Global C4 Services are provided – Coalitions or Alliances, Regional Relations and Security Assistance Activities are coordinated – Strategic attack is synchronized – Military activities within the intra-agency process are integrated on global level – DOD/government information operations are coordinated – DOD information operations are integrated
	Economic	– Policy and trade agreements established to destroy the economy of the WMD user or State supporter
	Financial	– Treaties and agreements are in place to enable identification, characterization of WMD enabling financial transactions – Financial structure supporting WMD proliferation and capability development is fully understood – Actions to facilitate recovery are initiated
	Intelligence	– The IC has a coherent strategy to locate, identify and characterize WMD actors, their enabling networks, and their decision-making calculus – The IC identifies extent of WMD effects – The IC identifies the WMD capability employed – The IC is able to attribute the WMD – The IC is able to rapidly convey information to relevant military, OGA, partners and allies
	Law Enforcement	– The United States and allies sustain security operations in WMD environment

Appendix F. Capability Measures and Definitions

1. General. This appendix defines required capabilities, decomposed into essential tasks, conditions and standards.

2. Task Derivation. CJCSI 3010.02B uses an effects-ways-means construct for capabilities. The NMS-CWMD employs a similar construct at the highest level, establishing the baseline for the CWMD JIC's capability and task derivation (Figure F-1). At the first level of task analysis (Table F-1), analysis of WMD actor critical factors and desired effects facilitated the alignment of LOOs (Tier 2 Ways) with supported MSOs (Tier 1 Ways). The desired effects of the LOOs were then assessed (Table F-2) in order to identify required capabilities (Tier 3 Ways). The desired effects of these capabilities were then assessed (Table F-3) to identify supporting tasks (Tier 4 Ways).

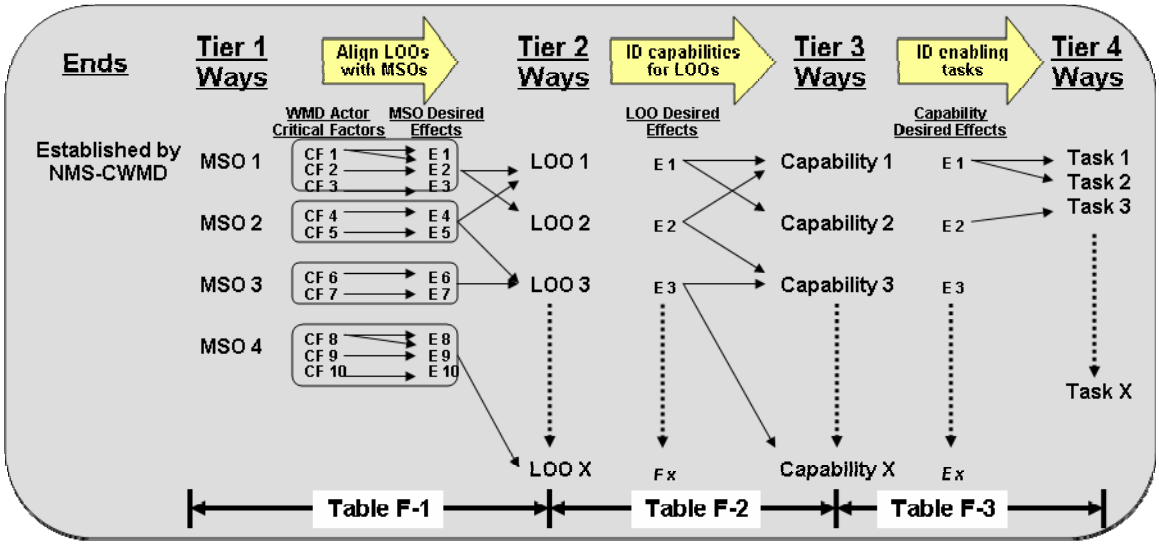

Figure F-1. Determining Required Tasks

a. NMS-CWMD.

(1) Ends: Our military strategic goal is to ensure that the United States, its Armed Forces, allies, partners, and interests are neither coerced nor attacked with WMD

(2) Ways (Tier 1):

- MSO 1. Prevent, dissuade or deny WMD proliferation or possession

- MSO 2. Reduce, destroy or reverse WMD possession

- MSO 3. Defeat and deter WMD use and subsequent use

- MSO 4. Defend, respond and recover from WMD use

(3) Means: The combatant commands, Military Departments, and combat support agencies

b. 1st Level Decomposition. At the first level of decomposition, the MSOs define desired ways (with associated endstates). Analysis of the WMD actor's critical factors assisted in identifying the effects that define achievement of these "ends." This set of required conditions, behaviors and freedoms builds upon the CONPLAN 8099 base set of effects, adding additional effects to identify the contributions of dealing with uncertainty, early engagement, layering applications, and establishing attribution.

Lines of operations identified in the main body of the JIC define the "ways" (Tier 2) to generate these effects, either directly or indirectly.

Table F-1. Aligning LOOs with Supported MSOs

Applicable MSO (Tier 1 Ways))	Actor Activity	Adversary Critical Factors			Effects (Required conditions, behaviors and freedoms)	LOOs (Tier 2 Ways)
		Center of Gravity	Critical Function	Critical Requirements		
MSO 1--Prevent, dissuade or deny WMD proliferation or possession	Deployment Weaponization Production Infrastructure and Expertise Development Monitoring and Assessment	Ability to proliferate WMD and related WMD resources	Finance	Money Financial Knowledge & Expertise	Actor perceives that the cost of transferring WMD or WMD knowledge, technology, and delivery means outweighs the benefits of such a transfer Actor divests WMD capability Actor has no intent to acquire WMD or WMD production or delivery means Actor has no intent to develop WMD or establish foundations for WMD capability Actor has no intent to transfer or facilitate transfer of WMD or WMD knowledge, technology, and delivery means Actor acquisition of WMD or WMD knowledge, technology, and delivery means is disrupted or denied Source of transferred knowledge, technology, an delivery means is determined Actor transfer of WMD or WMD knowledge, technology, and delivery means is disrupted or denied Actor development of WMD or WMD knowledge, technology, and delivery means is disrupted or denied Allies and partners do not seek acquisition of WMD or WMD knowledge, technology and delivery means Allies and partners assist in preventing, dissuasion and denial operations Allies and partners have increased capabilities to execute prevention, dissuasion and denial operations Allies and partners have increased capabilities to mitigate WMD effects	Fight for Intelligence Shape and Assure Impose Costs Deny Benefits
			Science and Technology	Knowledge & Expertise		
			Logistics	Manufacturing Facilities Transportation Storage Recruiting Training facilities		
			ISR	Security		
			Command and Control	Intent, Motivation &Will		
			Weapons Delivery	Delivery Means WMD Material & Precursors		

Applicable MSO (Tier 1 Ways))	Actor Activity	Adversary Critical Factors			Effects (Required conditions, behaviors and freedoms)	LOOs (Tier 2 Ways)
		Center of Gravity	Critical Function	Critical Requirements		
MSO 2--Reduce, destroy, or reverse WMD possession	Deployment Weaponization Production Infrastructure and Expertise Development	Ability to proliferate, employ and deploy WMD and related WMD resources	Science and Technology	Knowledge & Expertise	Actor perceives that the costs of a WMD or WMD production, deployment and employment capability outweighs the benefits Actor reduces WMD stocks and precursors (WMD is rendered safe) Actor secures WMD stocks and precursors Actor dismantles WMD infrastructure Actor dismantles or redirects WMD production capability Actor reduces and dismantles deployment and delivery means Actor secures and redirects WMD and WMD delivery means knowledge base Actor complies with treaties and agreements No accidental release of WMD or other hazards	Fight for Intelligence Shape and Assure Deny Benefits
			Logistics	Manufacturing Facilities Transportation Storage		
			Command and Control	Intent, Motivation &Will Control Means		
			Weapons Delivery	Delivery Means WMD Material & Precursors		
MSO 3-Defeat and deter WMD use and subsequent use	Employment Deployment	Ability to employ WMD	Finance	Money Knowledge & Expertise	Adversary perceives that the cost of a WMD attack outweighs the perceived benefits Adversary does not employ WMD Adversary deployment/employment means are destroyed or neutralized Critical adversary deployment/employment activities are disrupted or denied Adversary WMD stockpiles are destroyed or isolated Adversary production capabilities are destroyed, disrupted, or isolated Adversary targeting capabilities are neutralized or destroyed Undesired consequences are minimized	Fight for Intelligence Shape and Assure Impose Costs
			Science and Technology	Knowledge & Expertise Sources of Info/Material		
			Logistics	Manufacturing Facilities Storage Transportation Recruiting Training facilities		
			Command and Control	Intent, Motivation & Will Control Means		
			ISR	Sensors Target Data Security		
			Weapons Delivery	Delivery Means WMD Material & Precursors		
MSO 4--Defend, respond and recover from WMD use	Employment	Ability to employ WMD	ISR	Sensors Target Data	Adversary WMD attack methods are destroyed or neutralized Adversary WMD attack effects are contained and neutralized US and allies sustain current and projected military operations US and allies reconstitute combat power US and allies can act to contain and neutralize WMD attack effects (to include support to civilian authorities) US and allies sustain military operations in WMD environment US and allies attribute the source of the WMD	Fight for Intelligence Shape and Assure Deny Benefits
			Weapons Delivery	Delivery Means		

c. 2nd Level Decomposition. A second level of activity decomposition provides useful resolution in identifying capabilities (Tier 3 "ways") required to execute the four LOOs the JFC must integrate to successfully combat rogue behavior of WMD networks. Paragraph 4.d.(1)(c) of the CWMD JIC provides more detailed descriptions of the LOO "effects."

Table F-2. Required Capabilities for Individual LOOs

LOOs	Desired Effects	Required Capabilities "The ability to…"
Fight for Intelligence	• United States, partners and allies gain detailed knowledge about WMD actors and WMD activity	• Plan CWMD Operations • Prepare for CWMD Operations • Conduct Reconnaissance and Surveillance • Assess CWMD Operations
Shape and Assure	• Operational environment is prepared for future operations • Threat is reduced	• Plan CWMD Operations • Prepare for CWMD Operations • Support Joint Shaping • Reduce the Threat • Provide Politico-Military Support[27] • Assess CWMD Operations
Impose Costs	• Acquisition and use is deterred • Proliferation and possession is prevented • Technology is controlled • WMD and related capabilities and resources are secured or destroyed	• Plan CWMD Operations • Prepare for CWMD Operations • Execute Counterforce Operations[28] • Assess CWMD Operations
Deny Benefits	• Adversaries are dissuaded from attacking • Attacks are defeated • Forces survive, operate and are recovered • Essential services are restored	• Plan CWMD Operations • Prepare for CWMD Operations • Conduct Active Defense • Provide Passive Defense • Execute Consequence Management • Assess CWMD Operations

d. 3rd Level Decomposition. The third level of activity decomposition identifies essential tasks required to enable the previously identified capabilities. Definitions provided in the UJTL and existing JCAs, modified for CWMD specific effects[29], provide a basis for capability "effects". This third level decomposition (Table F-3) identifies the Tier 4 "ways", supporting tasks that enable CWMD operations. The list is not exhaustive of all tasks that could be required to deliver desired effects;

[27] Politico-Military support is a larger capability that includes Security Cooperation & Partner Activities tasks.

[28] Counterforce operations is the major capability underlying elimination, interdiction and offensive operations.

[29] Neither UJTL task definitions nor JCA capability definitions define specific effects required to combat WMD.

only directly contributing tasks are included. A broader treatment of the tasks addressing a higher level of detail or including implied tasks would be a part of a FAA that using this appendix as its primary source.

Table F-3. Supporting Tasks for Required Capabilities

Required Capabilities "The ability to…"	Desired Capability Effects	Supporting Tasks
Plan CWMD Operations	Suitable, feasible, and acceptable course of action is prepared, approved and issued	Assess Situation Conduct Targeting Assess Consequences of Execution Coordinate/Integrate Joint, multinational, and IA Support
Prepare for CWMD Operations	CWMD capabilities arranged in time and space to execute planned operations	• Establish Joint Force HQs • Integrate Components • Conduct Operational Maneuver • Provide Operational Intelligence • Command Subordinate Forces
Conduct Reconnaissance and Surveillance	Adversary networks, support activities, and personalities are identified and characterized	• Conduct Reconnaissance • Conduct Target and Threat Assessment • Detect WMD and WMD related resources • Gain Access for Reconnaissance
Reduce Threat	Actor WMD and WMD enabling capabilities are secured and eliminated	• Secure WMD/Resources • Remove WMD • Redirect/Destroy WMD Resources • Arms Control Support
Execute Joint Shaping	Adversaries are dissuaded and deterred; ally/partner cooperation is promoted	• Support Strategic Communication • Military Diplomacy • Provide Diplomacy Support • Develop and Provide Public Affairs
Provide Pol-Mil Support	HN government and popular support for the U.S. and its CWMD efforts and unity of effort for Political-Military support activities	• Provide Security Assistance • Conduct Civil Military Operations • Support Exercises • Support USG agencies • Support Disaster Control
Execute Counterforce Operations	Defeat of WMD (and WMD materiel, knowledge, resources etc.) acquisition, proliferation, development and use	• Attack (Lethal Means) • Attack (Non-Lethal Means) • Conduct IO

Required Capabilities "The ability to…"	Desired Capability Effects	Supporting Tasks
Conduct Active Defense	Defeat of a WMD attack(s) upon the United States or its allies	• Conduct Active Defense
Provide Passive Defense	Deterrence of a WMD capability or engagement, the demonstrated or actual denial of any strategic, operational or tactical advantage to the adversary from a WMD engagement, and the denial of the benefit of WMD use	• Provide Passive Defense
Execute Consequence Management	Damage from release of WMD or WMD related material is managed/mitigated	• Isolate the JOA • Remove Hazards
Assess CWMD Operations	Effects on networks are discerned, attribution established and appropriate follow-up actions are determined	• Collect Information on Operational Effects • Establish Attribution • Assess Operational Endstate

e. Taxonomy. The taxonomy below bins capabilities and tasks previously identified by means of the broad activities of the operations cycle defined in the CCJO. This organizational construct, by sequencing the tasks, allowed for more comprehensive task identification.

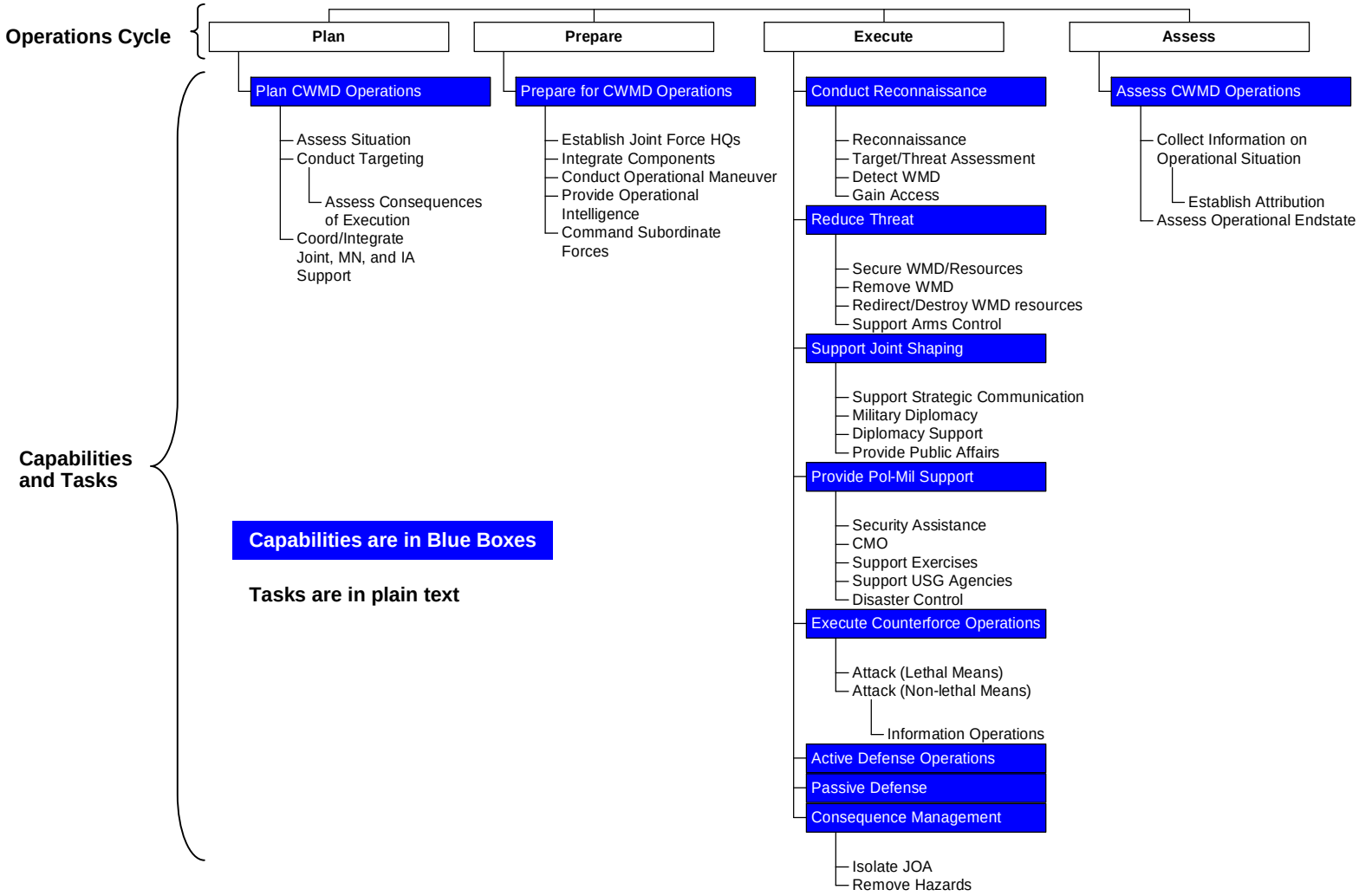

Figure F-2. CWMD Taxonomy

3. Standards. The tables that follow are organized in the hierarchical fashion depicted in Figure F-2. The table has multiple columns that address capabilities, essential tasks, purposes, attributes, standards and relevant conditions (Appendix G). Definitions of these terms and their use within this appendix are included in the glossary in Appendix B. Specific use of the terms within the tables appears in the paragraphs that follow.

a. Capability Effects. The effects for each capability reflect the desired change in condition, behavior or freedom that supports a particular LOO.

b. Task purpose. The purpose of each task is derived from the task description and indicates each individual task's contribution to the desired effect generated by each capability.

c. Attributes. Attributes capture the important characteristics of the task. Attributes are fully testable and measurable, and are tied to the measures to the description/purpose of each specified task. Attributes used in this JIC are defined below:

- Agility: Ability of capability to redirect (speed of effect, speed of redirection, discrimination of effect)
- Persistence: Ability of a capability to exist in the environment while delivering intended effects (robustness and reliability)
- Precision: Ability to generate accurate, relevant and appropriate effects
- Reach: Ability to employ a capability at a particular time and place
- Sharing. Ability to exchange information

c. Measures. Each task lists one or more measures to evaluate the level of success in performing the task. Although many measures could be considered in evaluating the tasks, the ones selected for this appendix are those most directly of use in determining the success or failure of task accomplishment, and retain the desired characteristics of being simple, relevant, measurable, and specific.

Measures and capabilities in the table below are derived from the following JOCS and JICs (the alphanumeric reference reflects the specific capability in the source JOC/JIC): Command Control Joint Integrating Concept Version 1.0, Global Strike Joint Integrating Concept V1.0 (GS 1.0-xxxC), Homeland Defense and Civil Support Joint Operating Concept V2.0 (HD/CS 2.0-xxxC), Major Combat Operations

Joint Operating Concept V 1.0 (MCO 1.o-x.x.x), Protection Joint Operating Concept V1.0 (P 1.xxxC), Deterrence Operations Joint Operating Concept V2.0 (DO 2.0-xxxc).

JIC Capability Number	**Capability and Desired Effects**	**Tasks (Title, Purpose, Attributes and Conditions)**	**Measures and Standards**	**Reference Concepts** (See bottom of table for capability definitions)
CWMD-001C	Ability to plan CWMD operations Effects: The joint force has a suitable, feasible and acceptable plan Conditions (Appendix G): 1-12,16,-18, 20-23	CWMD-001T (OP 5.2) Assess the operational situation Purpose: Accurate assessment of the operational situation based upon consideration of all available, pertinent information and to determine and fully understand the adversary deterrence decision-making calculus Attributes: Precision and Persistence Conditions (Appendix G): 1-12,16, 18, 20-23	CWMD-001S: 70% of the time... Decision-making calculus and decision making processes of WMD actors in the AOR are known and understood Desired endstate and effects of WMD actors in the AOR are understood WMD actor enabling networks are fully identified, characterized, and attributed Key actor nodes understood and traced (relationship between nodes, what moves between them, and how it moves) CWMD-002S: 98% of the time WMD threat is characterized CWMD-003S: 90% Friendly force capabilities understood CWMD-004S: 99% of the time, Cdr's assessment is updated in time to respond to changing situation CWMD 005S: 80% confidence level Where the decision-making calculus and decision making processes of WMD actors in the AOR are not known or understood, the Cdr has a confidence level in a viable working hypothesis …Where the desired endstates and effects of WMD actors in the AOR are not understood, the Cdr has a confidence level in a viable working hypothesis	P 1.0-002C MCO 1.0-4.b.4 DO 2.0-001C DO 2.0-002C C2-3.1 C2-1.10 C2-4.5 GS 4.1.1.1

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-002T (OP 3.1) Conduct joint force targeting Purpose: Appropriate targets and target sets, effects, force elements, and sequencing actions across the domain space are linked to prevent the WMD actors from gaining, deploying or employing WMD capability, or reverse WMD actors' decision to gain, deploy or employ WMD capability, or to reverse or rollback WMD actors' WMD capability Attributes: Precision Conditions (Appendix G): 2-7, 9, 11, 16-18, 20-22	CWMD-008S: 95% of target development is supported by the Intel dbase CWMD-009S: 90% of nominated targets (networks, nodes and links) have actionable intelligence CWMD-010S: 98% of the time sufficient targets nominated to achieve desired effects CWMD-011S: 90% of the time the desired effects achieved CWMD-012S: Joint force targeting is conducted in all domains (human, physical, and virtual) CWMD-013S: All domains (human, physical, and virtual) are within area of influence of assigned forces CWMD-014S: MOE developed to measure operations' success/failure CWMD-015S: International treaties and agreements have been considered	MCO 1.0-4.c.1 MCO 1.0-4.a.1 C2-3.1 C2-5.4 GS 4.1.1.2
		CWMD-003T (New) Assess consequences of execution Purpose: Acknowledgement and mitigation of potential undesired effects Attributes: Precision and Agility Conditions (Appendix G): 1,] 2, 20, 21, 22	CWMD-016S: 90% of the time assessment conducted in time to support operations CWMD-017S: Potential/Undesired effects assessed across three operating domains	C2-4.5

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-004T (OP 5.7) Coordinate and integrate Joint/Multinational and interagency support Purpose: Military activities of the allies, coalition partners and interagency participants are synchronized with their respective DIMEFIL activities toward and supportive of consistent ends of dissuading the WMD actor and defeating his attempts to gain, deploy, or employ WMD Attributes: Sharing and Precision Conditions (Appendix G):1, 6, 7, 8, 9, 10,11	CWMD-019S: Time to promulgate plan to all force elements meets requirements CWMD-018S: 90% of mission partners capable of collaborative planning CWMD-022S: 100% mission partners identified CWMD-023S: MOUs/MOAs in place with 90% of mission partners CWMD-024S: SOPs developed and exercised CWMD-025S: 90% of supporting/supported non-DOD agencies that participated in an exercise in the past 12 months CWMD-026S: 100% Information sharing agreements, equipment, and personnel in place CWMD-021S: 90% of mission partners with access to the COP	MCO 1.0-4.c.5 HD/CS 2.0-012C DO 2.0-002C DO 2.0-004C C2-5.1 GS 4.1.2.2 C2-1.7
CWMD-002C	Ability to prepare for CWMD operations Effects: CWMD capabilities arranged in time and space to execute planned operations Conditions (Appendix G): 1, 4, 6-15, 19-22, 25-25	CWMD-005T (OP 5.5) Establish, organize and operate a joint force headquarters Purpose: Organizations and staffs, comprised of DOD, USG agencies, and multinational partners, are formed and clearly understand their roles, responsibilities, and relationships Attributes: Agility Conditions (Appendix G): 1, 6-12	CWMD-032S: Personnel for key staff functions identified and trained CWMD-033S: TBD Time to establish and certify JF HQ (personnel/equipment/training) CWMD-034S: TBD Time to integrate allies/coalition/NGOs/ Agencies CWMD-035S: 100 % non-DOD agencies and forces identified in C2 annex	MCO 1.0-4.a.7 C2-2.0

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-006T (OP 5.4.5) Coordinate/integrate components, theater and other support Purpose: Cooperation and mutual support between forces (adjacent/ subordinate, higher, and supporting) Attributes: Sharing Conditions (Appendix G): 1, 6-12	CWMD-038S: 99% MOAs/MOUs address sustainment and C2 and supported/supporting relationships (Y/N) CWMD-021S: 90% of mission partners with access to the COP CWMD-018S: 90% of mission partners capable of collaborative planning	C2-2.0
		CWMD-007T OP 1.2 Conduct operational maneuver and force positioning Purpose: All CWMD elements have the position of advantage across the domain space and are positioned to execute their respective mission on order Attributes: Reach and Agility Conditions (Appendix G): 2-5, 8-12, 25	CWMD-047S: Force elements' areas of influence extend into target locations in JOA CWMD-028S: 99% of actions are IAW guidance (no boundary, sequence violations or timing violations) CWMD-048S: 100% decisive points under JTF control CWMD-049S: 99% of time, control of decisive points is maintained	MCO 1.0-4.c.3 HD/CS 2.0-001C DO 2.0-003C DO 2.0-005C C2-6.1 C2-6.4

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-008T Provide operational intelligence Purpose: Discern WMD actor intent and identify vulnerable WMD network nodes and links for engagement. Develop actionable intelligence about key nodes, links, and WMD related material and technology for targeting Attributes: Precision and Reach Conditions (Appendix G): 1, 3-7, 11, 13-24	CWMD-005S: 95% of Information Needs submitted are applicable and address: Nodes/links (Y/N) Actor intent Actor capability to produce, acquire or employ WMD Characterization of WMD threat Status/location of targets Characterization of WMD network functions Battle Damage Assessment Attribution CWMD-006S: 100% IN addressed by sensor or RFI CWMD-007S: 100% INs tasked to remainder of IC CWMD-040S: < 1 min to post raw information on COP CWMD-045S: Intel dbase updated CWMD-016S: 90% of the time assessment conducted in time to support operations CWMD-001S: 70% of the time... Decision-making calculus and decision making processes of WMD actors in the AOR are known and understood Desired endstate and effects of WMD actors in the AOR are understood WMD actor enabling networks are fully identified, characterized, and attributed Key actor nodes understood and traced (relationship between nodes, what moves between them, and how it moves) CWMD-036S: 99% of the time, all PIR answered when required CWMD-038S: 95% of the time there is sufficient characterization to conduct kinetic and non-kinetic targeting (node location, type of link, node functionality, and other linked nodes) (Y/N)	P 1.0-001C MCO 1.0-4.b.1 C2-3.1

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-009T (OP 5.4) Command subordinate operational forces Purpose: JFC has positive control over the entire spectrum of CWMD military actions Attributes Reach and Agility Conditions (Appendix G): 1, 6-12	CWMD-027S: 100% Orders/MOAs/MOUs address command relationships (Y/N) CWMD-028S: 99% of actions are IAW guidance (no boundary or sequence violations) CWMD-021S: 90% of mission partners with access to the COP CWMD-029S: Rehearsal conducted CWMD-030S: 100% METs rehearsed CWMD-031S: 95% mission partners conduct rehearsals	MCO 1.0-4.a.4 DO 2.0-002C C2-3.1 C2-6.1 C2-6.4
CWMD-003C	Ability to conduct reconnaissance and surveillance Effects: Adversary networks, support activities, and personalities are identified and characterized Conditions (Appendix G): 1-5, 7, 11-14, 19, 20. 22	CWMD-010T (New) Conduct Reconnaissance Purpose: Create WMD actor response that supports identification of WMD networks and the component nodes, links, and vulnerabilities Attributes: Precision and Reach Conditions (Appendix G): 1-5, 7, 11-14, 19, 20. 22 13-24	CWMD-092S: 95% of the time, source of WMD and related resources/technology is determined upon detection of WMD related activity CWMD-041S: 70% of the time WMD network nodes characterized WMD network links identified CWMD-042S: Status/location of WMD material/expertise etc. known CWMD-039S: Can collect sufficient information to conduct kinetic and non-kinetic targeting (node location, type of link, node functionality, and other linked nodes) (Y/N)	P 1.0-001C MCO 1.0-4.b.1 C2-3.1 DO 2.0-001C C2-3.1 C2-3.3 NCOE JIC-6.2
		CWMD-011T (New) Conduct target and threat assessment Purpose: Determine most effective ways and means of capability employment Attributes: Precision and Reach Conditions (Appendix G): 1-5, 7, 11-14, 19, 20. 22 13-24	CWMD-041S: 70% of the time WMD network nodes characterized WMD network links identified CWMD-039S: Can collect sufficient information to conduct kinetic and non-kinetic targeting (node location, type of link, node functionality, and other linked nodes) (Y/N)	P 1.0-001C MCO 1.0-4.b.1 C2-3.1 DO 2.0-001C C2-3.1 C2-3.3 NCOE JIC-6.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-012T (New). Detect WMD and WMD materials, expertise, technologies and infrastructure Purpose: Identify the presence of WMD, and WMD related materials, expertise, technologies and infrastructure Attributes: Precision and Reach Conditions (Appendix G): 1-5, 7, 11-14, 19, 20. 22 13-24	CWMD-094S: 70% of the time WMD is identified WMD related material is identified	P 1.0-001C MCO 1.0-4.b.1 C2-3.1 DO 2.0-001C C2-3.1 C2-3.3 NCOE JIC-6.2
		CWMD-013T (New). Gain access for reconnaissance Purpose: Position reconnaissance to detect required information Attributes: Precision and Reach Conditions (Appendix G): 1-5, 7, 11-14, 19, 20. 22 13-24	CWMD-100S: 70% of the time reconnaissance assets are positioned to sense WMD network targets	P 1.0-001C MCO 1.0-4.b.1 C2-3.1 DO 2.0-001C C2-3.1 C2-3.3 NCOE JIC-6.2
CWMD-004C	Ability to reduce the threat cooperatively Effects: WMD actors' WMD and WMD enabling capabilities (infrastructure, resources etc.) are secured, reduced, redirected or destroyed Conditions (Appendix	CWMD-014T (New) Secure WMD and related materials, expertise, technologies and infrastructure Purpose: Actor WMD and WMD enabling capabilities (infrastructure, resources etc.) are under U.S. or HN control and adversaries or other actors are prevented from acquiring or proliferating that material, expertise, or enabling capability	CWMD-050S: 95% WMD stockpiles/delivery means isolated and secured CWMD-051S: 95% WMD precursors secured CWMD-052S: 95% WMD infrastructure and expertise secured	C2-2.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
	G): 1-3, 5, 11, 19,	CWMD0-15T (New) Remove WMD Purpose: WMD and precursors are rendered safe, reduced, or removed for render safe operations Attributes: Precision and Reach Conditions (Appendix G): 1-3, 5, 11, 19,	CWMD-053S: 95% of the time, stockpile reduction completed IAW schedule CWMD-054S: 95% of stockpiles rendered safe and reduced	C2-2.2
		CWMD-016T (New) Redirect/destroy WMD related materials, expertise, technologies and infrastructure Purpose: WMD related material, technology and resources are destroyed, reduced, or redirected Attributes: Precision and Reach Conditions (Appendix G): 1-3, 5, 11, 19,	CWMD-054S: 95% of delivery means destroyed CWMD-055S: 95% of infrastructure and expertise redirected CWMD-056S: 95% of the time, destruction of WMD delivery means, infrastructure, and expertise completed IAW schedule	C2-2.2
		CWMD-017T (SN 9.3) Conduct arms control support activities Purpose: Prevention of a given state's witting or unwitting proliferation of WMD or WMD related capabilities Attributes: Precision Conditions (Appendix G): 1,2, 4, 5, 7-11, 13, 17, 20, 21, 22	CWMD-069S: 90% of on-site inspection requirements identified in sufficient time to meet operational objectives CWMD-061S: 95% requirements filled at desired time of execution CWMD-070S: 95% of the time suspected violations are verified	C2-6.5 C2-8.2 C2-2.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
CWMD-005C	Ability to support joint shaping Effects: Increased capabilities and willingness of partners to combat WMD, conditions that allow the U.S. to combat WMD and dissuasion of WMD actors from participating in rogue behavior Conditions (Appendix G): 1, 5, 6, 7, 8, 9, 11, 20, 21, 22	CWMD-018T (New) Support Strategic Communication Effects: Coordinated information, themes, plans, and programs, and actions that preserve conditions favorable to advance CWMD objectives Conditions (Appendix G): 1, 5, 6, 7, 8, 9, 11, 20, 21, 22	CWMD-059S: 95% actions visible/discernable to targeted actors of interest CWMD-060S: 90% of support requirements identified in sufficient time to meet operational objectives CWMD-096S: 100% Strategic Info Opns coordinated with operations/planning/PA etc CWMD-095S: 100% Strategic Info Opns coordinated with interagency	
		CWMD-019T (New) Conduct military diplomacy Purpose: Defense and coalition relationships developed with military, defense and government officials of another country Attributes: Precision and Sharing Conditions (Appendix G): 1, 5, 6, 7, 8, 9, 11, 20, 21, 22	CWMD-057S: 75% partners/allies participate in NP/CP/CM events (Real and Training) CWMD-058S: 75% of time partners support U.S. actions	HD/CS 2.0-010C C2-1.9
		CWMD-020T (New) Provide diplomacy support Purpose: Foreign audiences and opinion makers are understood, informed, and influenced by overt international public information activities Attributes: Precision and Sharing Conditions (Appendix G): 1, 5, 6, 7, 8, 9, 11, 20, 21, 22	CWMD-059S: 95% actions visible/discernable to targeted actors of interest CWMD-060S: 90% of support requirements identified in sufficient time to meet operational objectives CWMD-061S: 95% support requirements filled at desired time of execution	HD/CS 2.0-010C C2-1.9

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-021T (OP 5.8) Develop and provide public affairs Purpose: Accurate, timely (within adversary information cycles), and consistent information for public release consistent with and supportive of the JFC and the USG strategic communication goals, objectives, and execution efforts Attributes: Precision and Sharing Conditions (Appendix G): 1, 5, 6, 7, 8, 9, 11, 20, 21, 22	CWMD-062S: 100% PA guidance coordinated with operations/planning to ensure consistency the strategic plan CWMD-063S: 100% PA guidance coordinated with interagency to ensure consistency the strategic plan CWMD-064S: 100% PA releases directed to local/national/world media CWMD-065S: 100% PA releases published/broadcast in local/national/world media	HD/CS 2.0-010C C2-1.9
CWMD-006C	Ability to provide politico-military support to other nations, groups, and government agencies Effects: Government and popular support for the U.S. and its CWMD efforts and unity of effort for Political-Military support activities Conditions (Appendix G): 1,2, 5, 7, 8-11, 20,	CWMD-022T (OP 4.7.1) Provide security assistance in the JOA Purpose: Improved defense related CWMD capability of non-U.S. forces in the AOR in support to the JFC's shaping operations and improved coalition capability to CWMD and provide inducements to adversary restraint Attributes: Precision	CWMD-066S: 85% of mission partners have personnel enrolled in U.S. military training CWMD-067S: 95% of valid request for security assistance met when required	C2-6.5 C2-8.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
	21, 22	CWMD-023T (OP 4.7.2) Conduct civil military operations in the JOA Purpose: Government and local populace support for U.S. and coalition CWMD operations in or over territory of the nation Attributes: Precision Conditions (Appendix G): 1,2, 5, 7, 8-11, 20, 21, 22	CWMD-068S: 95% of the time CMOC is established in time to meet operational requirements CWMD-050S: 90% of support requirements identified in sufficient time to meet operational objectives CWMD-069S: 95% of the time there is transition from U.S. to HN control IAW schedule CWMD-061S: 95% requirements filled at desired time of execution	C2-6.5 C2-8.2
		CWMD-024T (SN 7.4.4) Support joint and coalition exercises CWMD Purpose: Increased partner capacity and capability to CWMD Attributes: Precision Conditions (Appendix G): 1,2, 7, 8-11, 20, 21, 22	CWMD-066S: 85% of mission partners have participated in CWMD exercise with in the previous 23 months	C2-6.5 C2-8.2
		CWMD-025T (OP 4.7.3) Provide support to DOD and other government agencies Purpose: Government and local populace support for U.S. and coalition CWMD operations in or over territory of the nation Attributes: Precision Conditions (Appendix G): 1,2, 5, 7, 8-11, 20, 21, 22	CWMD-050S: 90% of support requirements identified in sufficient time to meet operational objectives CWMD-061S: 95% requirements filled at desired time of execution	C2-6.5 C2-8.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-026T (OP 4.7.8) Support disaster control operations Purpose: Reduced probability of damage, minimization of Purpose, and initial recovery from a hostile action Attributes: Persistence and Agility Conditions (Appendix G): 1,2, 4, 5, 6, 7, 8-11, 20, 21, 22	CWMD-050S: 90% of support requirements identified in sufficient time to meet operational objectives CWMD-061S: 95% requirements filled at desired time of execution	C2-6.5 C2-8.2
CWMD-007C	Ability to execute counterforce operations in the JOA Effects: Defeat of WMD acquisition, proliferation, development and use and the perception in the mind of WMD actors that the potential cost of WMD is too high for perceived gains Conditions (Appendix G): 3, 4, 7, 8, 10, 11, 12, 16-22, 24	CWMD-027T (OP 3.2) Attack operational targets using lethal means Purpose: Defeat of a hostile actor's attempt to gain, proliferate, deploy, or employ WMD and the destruction or seizure of WMD related material, technology, expertise, delivery systems or other enabling capabilities/mechanisms Attributes: Reach, Persistence and Precision Conditions (Appendix G): 3, 4, 7, 8, 10, 11, 12, 16-19, 24	CWMD-071S: All domains covered by effective engagement means CWMD-072S: 95% planned engagements executed within time standards CWMD-073S: 95% executed engagements producing desired effects CWMD-074S: 95% engagements don't exceed projected losses CWMD-075S: Executed engagements produce undesired effects <5% of the time CWMD-076S: Targets not engaged less than 5% of the time	DO 2.0-008C MCO 1.0-4.c.8 MC) 1.0-4.c.10 HD/CS 2.0-002C C2-2.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-028T (OP 3.2.2) Attack operational targets using non-lethal means Purpose: Defeat of a hostile actor's attempt to gain, proliferate, deploy, or employ WMD and the destruction or seizure of WMD related material, technology, expertise, delivery systems or other enabling capabilities/mechanisms Attributes: Reach, Persistence and Precision Conditions (Appendix G): 3, 4, 7, 8, 10, 11, 12, 16-19, 24	CWMD-071S: All domains covered by effective engagement means CWMD-072S: 95% planned engagements executed within time standards CWMD-073S: 95% executed engagements producing desired effects CWMD-074S: 95% engagements don't exceed projected losses CWMD-075S: Executed engagements produce undesired effects <5% of the time CWMD-076S: Targets not engaged less than 5% of the time	DO 2.0-008C MCO 1.0-4.c.8 MCO 1.0-4.c.10 HD/CS 2.0-002C C2-2.2
		CWMD-029T (ST 5.5) Conduct information operations Purpose: Integrated approach and synchronized execution of shaping operations and to favorably impact the adversary decision-making calculus Attributes: Precision, Reach and Sharing Conditions (Appendix G): 3, 4, 7, 8, 10, 11, 12, 16-22, 24	CWMD-077S: 100% Strategic Info Opns coordinated with operations/planning/PA etc CWMD-078S: 100% Strategic Info Opns coordinated and consistent with interagency CWMD-079S: 95% actions visible/discernable to targeted actors of interest	MCO 1.0-4.c.6 DO 2.0-009C C2-1.9

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
CWMD-008C	Ability to execute active CBRN defense in the JOA Effects: Demonstrated ability to defeat WMD attack(s) or, in the event of an attack, actual defeat of delivery systems and prevention of WMD release upon U.S., partner and ally targets Conditions (Appendix G): 1-8, 11-12, 16-19	CWMD-030T (OP 7.2) Conduct active CBRN defense in the JOA Purpose: Defeat of a WMD engagement(s) upon the U.S. or its allies and the denial of the benefit of WMD use Attributes: Reach, Persistence and Precision Conditions (Appendix G): 1-8, 11-12, 16-19	CWMD-080S: 99% of attacks are detected CWMD-081S: 95% of attacks defeated CWMD-082S: U.S., partner and allied casualties are minimized CWMD-097S: Combat operations are restored with minimal disruption	P 1.0-004C MCO 1.0-4.e.1 HD/CS 2.0-009C, 011C DO 2.0-007C C2-3.3 C2-2.2
CWMD-009C	Ability to provide passive CBRN defense in the JOA Effects: Demonstrated ability to minimize vulnerabilities to WMD targeting and effects of use or, in event of an attack, actual denial of any strategic, operational or tactical advantage to the adversary Conditions (Appendix G): 2-6	CWMD-031T (OP 7.3) Provide passive CBRN defense in the JOA Purpose: Deterrence of a WMD capability or engagement, the demonstrated or actual denial of any strategic, operational or tactical advantage to the adversary from a WMD engagement, and the denial of the benefit of WMD use Attributes: Persistence and Precision Conditions (Appendix G): 2-6	CWMD-083S: 90% of force protection requirements identified in sufficient time to meet operational objectives CWMD-084S: Hostile actor actions affect security of force and means in joint operations area <5% of the time CWMD-085S: < 5% Planned friendly action not executed due to enemy action CWMD-086S: U.S., partner and allied casualties are minimized	P 1.0-004C MCO 1.0-4.e.1 HD/CS 2.0-004C, 005C, 006C, 007C DO 2.0-007C C2-3.3 C2-1.9 C2-2.2

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
CWMD-010C	Ability to execute CM in JOA Effects: Damage from release of WMD or WMD related material is managed/mitigated Conditions (Appendix G): 1-12, 20	CWMD-032T (OP 1.5.4) Isolate the JOA Purpose: To deny unauthorized personnel access to contaminated sectors of the operational area Attributes: Agility and Reach Conditions (Appendix G): 1-12, 20	CWMD-087S: Planning for CM conducted CWMD-088S: U.S. and HN suffers losses in < 5% of WMD/WMD related material release events CWMD-089S: Contaminated area is detected and identified in time to contain it in 99% of the time CWMD-090S: Contaminated area is isolated/contained/neutralized IAW the plan 99% of the time	P 1.0-005C HD/CS 2.0-011C C2-3.3 C2-1.9 C2-2.2
		CWMD-033T (OP 6.2.2) Remove operationally significant hazards Purpose: Operationally significant contamination is contained, removed or reduced Attributes: Agility and Reach Conditions (Appendix G): 1-12, 20	CWMD-087S: Planning for CM conducted CWMD-091S: 95% of the time there is transition from U.S. to HN control IAW schedule CWMD-090S: Contaminated area is contained/neutralized IAW the plan 99% of the time CWMD-98S: U.S. and HN CM efforts are mutually supportable 90% of the time	P 1.0-005C HD/CS 2.0-011C C2-3.3 C2-1.9 C2-2.2
CWMD-011C	Ability to assess CWMD operations/campaigns Effects: Understanding of the effects on the WMD networks and determination of appropriate follow-up actions. Conditions (Appendix G): 17, 19,	CWMD-034T (OP 2.2.1) Collect information on effects and results of operations Purpose: Information addressing intelligence requirements about WMD network nodes and links is gathered with sufficient detail and reliability to attribute the activity to specific networks and nodes to warrant the cooperation of the host nation or the international community and to determine the impact of the operations upon the deterrence decision-making calculus of the adversary Attributes: Precision and Reach	CWMD-006S: 100% IN addressed by sensor or RFI CWMD-007S: 100% INs tasked to remainder of IC CWMD-036S: 99% of the time, all PIR answered when required	P 1.0-001C DO 2.0-001C C2-3.1

JIC Capability Number	Capability and Desired Effects	Tasks (Title, Purpose, Attributes and Conditions)	Measures and Standards	Reference Concepts (See bottom of table for capability definitions)
		CWMD-035T (New) Establish attribution for WMD and related material, knowledge, technology etc. Purpose: Source of WMD and related material, knowledge, technology, delivery systems is determined Attributes: Precision and Sharing Conditions (Appendix G): 1, 3-7, 11, 13-24	CWMD-036S: 80%% of the time, all PIR answered when required CWMD-092S: 95% of the time, source of WMD and related resources/technology is determined upon detection of WMD related activity CWMD-93S: 75% of partners and allies concur with attribution assessment	P 1.0-001C DO 2.0-001C C2-3.1 C2-3.3 C2-2.4 C2-4.3
		CWMD-036T (OP 3.1.6) Conduct operational combat/military operations other than war assessment Purpose: Joint force has an understanding of effects of past and ongoing operations against the WMD network nodes/links as well as an understanding of the impact on the status of transiting material, technologies, and expertise, and to determine the impact of the operations upon the deterrence decision-making calculus of the adversary Attributes: Precision	CWMD-016S: 80% of the time assessment conducted in time to support operations CWMD-042S: Status/location of WMD material/expertise etc. known CWMD-043S: 90% of the time effects on targets (node, link, material/expertise etc.) known CWMD-099S: 95% of the time evidence for attribution established	P 1.0-001C C2-3.1 C2-3.3

Reference JOCs and JICS
Command Control Joint Integrating Concept Version 1.0 C2-1.2 Establish and promulgate ROE C2-1.7 Establish and cultivate relations with mission partners C2-1.9 Manage dissemination of information to the public; align public information dissemination with strategic communication objectives of higher authority C2-1.10 Assess operational readiness C2-2.0 Establish/adapt command structures and enable both global and regional collaboration C2-2.2 Establish/refine the joint task force component organization and integrate capabilities C2-2.3 Establish/refine command relationships to enable appropriate coordination relationships, including lines of authority and accountability C2-2.4 Identify collaboration requirements; establish the collaboration infrastructure requirements C2-3.1 Develop and maintain shared situational awareness and understanding C2-3.3 Access and integrate geospatial and environmental information and forecasts; collaboratively assess and share implications C2-4.5 Periodically update commander's intent and guidance and ensure it is understood C2-5.1 Form collaborative planning teams across components, missions, functions and geographies, and with mission partners C2-5.4 Collaboratively develop operational plans across the full ROMO, employing all appropriate joint capability areas C2-6.1 Communicate and disseminate plans and orders to all echelons and to mission partners C2-6.4 Synchronize operations with DOD agencies and coalition members C2-6.5 Coordinate operations with non-DOD national agencies and international organizations C2-8.2 Coordinate with mission partners to gain actionable commitment
Global Strike Joint Integrating Concept V1.0 GS 4.1.1.1 Monitor adversaries GS 4.1.1.2 Plan GS 4.1.2.2 Net-Centric operations
Homeland Defense and Civil Support Joint Operating Concept V2.0 HD/CS 2.0-001C Project power to defend the Homeland HD/CS 2.0-002C Detect, deter, prevent, (including through preemptive attack) or if necessary defeat potential threats to the Homeland as they arise in the forward regions and approaches HD/CS 2.0-004C Detect, deter, prevent, or if necessary defeat ballistic missile threats to the homeland HD/CS 2.0-005C Detect, deter, prevent, or if necessary defeat maritime threats to the homeland HD/CS 2.0-006C Detect, deter, prevent, or if necessary defeat airborne threats to the homeland HD/CS 2.0-007C Detect, deter, prevent, or if necessary defeat land missile threats to the homeland HD/CS 2.0-009C Collaborate with other federal, state, and local agencies; conduct or facilitate vulnerability assessment; and encourage risk management strategies to protect against and mitigate the effects against the DIB HD/CS 2.0-010C Support USG Strategic Communication to dissuade and deter adversaries from attacking the Homeland HD/CS 2.0-011C Prepare for and mitigate the effects of multiple, near-simultaneous CBRNE events HD/CS 2.0-012C Conduct HD and CS operations, and EP planning activities while operating as the Lead Federal Agency (LFA), providing support to another agency, and during transitions of responsibility.
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MCO 1.0-4.a.1 Clearly express a compelling and nested intent of what needs to be accomplished MCO 1.0-4.a.3 Express commander's intent that will achieve the overall strategic purpose, or the eventual political end state MCO 1.0-4.a.4 Facilitate both centralized and decentralized decision-making as appropriate MCO 1.0-4.a.7 Field and employ coherently joint, trained, and practiced headquarters elements MCO 1.0-4.b.1 Maintain persistent situational awareness and achieve shared understanding MCO 1.0-4.b.2 Conduct planning in a collaborative environment MCO 1.0-4.b.4 Comprehensively, expertly, and robustly analyze intelligence MCO 1.0-4.c.1 Fully integrate fires and maneuver MCO 1.0-4.c.3 Rapidly project force directly to the objective from strategic and operational distances MCO 1.0-4.c.5 Fully integrate joint, interagency, and coalition capabilities MCO 1.0-4.c.6 Empower commanders to conduct flexible and responsive operations to include IO, maneuver and precision engagement operations MCO 1.0-4.c.8 Conduct large-scale, simultaneous and distributed, multidimensional combat operations MCO 1.0-4.c.10 Provide multidimensional precision engagement MCO 1.0-4.e.2 Rapidly sense, detect, identify from standoff range, defend against, and recover the force from CBRNE attack
Protection Joint Functional Concept V1.0 P 1.0-001C Detect, The ability to collect timely and accurate data/information regarding adversary capabilities P 1.0-002C Assess, Develop an understanding of the situation and accurately identify adversary capabilities that can be used against friendly personnel, physical assets, and information and precisely derive probable enemy COA P 1.0-004C Defend, The ability to execute a selected COA to resist hostile actions directed against friendly personnel, physical assets and information P 1.0-005C Recover, Actions taken during, or after a hostile attack, to restore friendly personnel, physical assets, and information to full operational readiness
Deterrence Operations Joint Operating Concept V2.0 DO 2.0-001C Global Situational Awareness DO 2.0-002C Command and Control DO 2.0-003C Forward Presence DO 2.0-004C Security Cooperation and Military Integration and Interoperability DO 2.0-005C Force Projection DO 2.0-007C Active and Passive Defense DO 2.0-008C Global Strike DO 2.0-009C Strategic Communication

4. Capability definitions

a. The ability to plan CWMD operations.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Command and Control, Tier 2 JCA-Operational Planning
- CWMD Capability Requirements. The purpose of this capability is to formulate a method/scheme for executing CWMD operations and campaigns. This includes collecting information about the status of forces, the WMD threat and the operational environment, assessing capabilities; and conducting horizontally and vertically integrated planning, transitioning between supported and support efforts, and the transition of CWMD missions to and from other USG elements, allies, partners, and international organizations.
- Desired Effect. The desired effect of this capability is that the joint force has a suitable, feasible and acceptable plan that achieves the MSO.

(1) Assess the operational situation.

- Source UJTL Task. OP 5.2 Assess Operational Situation
- CWMD Capability Requirements. The purpose of this task is to evaluate information received through reports or the personal observations of the commander (commander's critical information requirements) on both the general and the WMD situation in the theater of operation and conduct of the CWMD campaign or major operation. In particular, this activity includes deciding whether different actions are required from those that would result from the most recent orders issued. This includes evaluating changes to the WMD networks and capabilities as well as the operational requirements of subordinate task forces and components.
- Desired Effect. The desired effect of this task is an accurate assessment of the operational situation based upon consideration of all available, pertinent information and to determine and fully understand the adversary deterrence decision-making calculus.

(2) Conduct joint force targeting.

- Source UJTL Task. OP 3.1 Conduct Joint Force Targeting
- CWMD Capability Requirements. The purpose of this task is to positively identify and select targets that decisively impact key WMD networks, nodes and links and to match these targets to appropriate joint, multinational, or interagency engagement systems. The term target is used in its broadest sense to include any individual, area,

complex, installation, force, equipment, capability, function, or behavior that comprises a key WMD network or node, enables a WMD network process, or comprises a network link (or link between networks). The adaptive nature of the supporting networks and actors require continuous assessment to ensure the actions contemplated will achieve the desired effects as those adaptations occur. Targeting also includes an assessment of the consequences of execution as well as an intelligence gain/loss analysis.

- Desired Effect. The desired effect is that appropriate targets and target sets, effects, force elements, and sequencing actions across the domain space are linked to prevent the WMD actors from gaining, deploying or employing WMD capability, or reverse WMD actors' decision to gain, deploy or employ WMD capability, or to reverse or rollback WMD actors' WMD capability.

(3) Assess Consequences of Execution.

- Source UJTL Task. ST 3.1.3 Conduct Theater Combat Assessment and SN 5.2 Assess Worldwide and Regional Strategic Impact
- CWMD Capability Requirements. The purpose of this task is to assess the CWMD strategic environment and situation and to compare the capabilities and possible courses of action of the Armed Forces of the United States and multinational forces against the potential risks (e.g., physical, political etc.) caused by military action against WMD networks. This includes the consequence analysis of the effects of attacks upon the WMD network nodes to determine the potential for collateral release of toxic or other hazardous material and the determination of the optimal attack methods to mitigate or eliminate this hazard. Because of the global implications of regional actions in a CWMD campaign, continuous assessment of the multitude of effects resulting not only from military actions, including shaping action, but also from all diplomatic, informational, economic, financial, intelligence and law enforcement actions is necessary to ensure the synchronized effects of supporting military actions.
- Desired Effect. The desired effect of this task is acknowledgement and mitigation of potential undesired effects.

(4) Coordinate and integrate Joint/Multinational and interagency support.

- Source UJTL Task. P 5.7 Coordinate and Integrate Joint/Multinational and Interagency Support

- CWMD Capability Requirements. The purpose of this task is to coordinate with elements of the joint force, allies/coalition partners, and other government agencies to ensure cooperation; mutual support and a mutual understanding of the JFC's priorities, support requirements, concept and intent. The ability to exchange accurate and pertinent information collaboratively across organizations as well as the existence of pre-established processes and relationships is overriding. In a CWMD effort, this task takes on added importance since the military commander acts in a mutually supporting effort with USG and partner DIMEFIL activities.
- Desired Effect. The desired effect of this task for CWMD is that the military activities of the allies, coalition partners and interagency participants are synchronized with their respective DIMEFIL activities toward and supportive of consistent ends of dissuading the WMD actor and defeating his attempts to gain, deploy, or employ WMD.

b. The ability to prepare for CWMD operations.

- Source JCA/UJTL Task. No existing Tier 1 or Tier 2 JCA addresses this capability.
- CWMD Capability Requirements. The purpose of this capability is to get ready to execute CWMD operations and campaigns. This includes sharing information among combating WMD elements as well as organizing and integrating the combating WMD capabilities and activities.
- Desired Effect. The desired effect is the arrangement of CWMD capabilities in time and space to execute planned operations.

(1) Establish, Organize, and Operate a Joint Force Headquarters.

- Source UJTL Task. OP 5.5 Establish, Organize, and Operate a Joint Force Headquarters
- CWMD Capability Requirements. The purpose of this task is to determine the requirement for and, if required, establish a structure for command and control of CWMD force elements, which includes the appropriate technical expertise to advise the commander of the peculiarities of WMD networks. This task includes assigning or establishing the range of responsibilities for the various boards, centers, cells, and bureaus that aid the commander in exercising command and control of a joint, coalition, multinational or non-USG force. The speed at which command and control can be designed, implemented, and made operational is fundamental to this task.

- Desired Effect. The desired effect of this task for CWMD is that organizations and staffs, comprised of DOD, USG agencies, and multinational partners with appropriate WMD expertise, are formed and clearly understand their roles, responsibilities, and relationships.

(2) Coordinate/integrate components, theater and other support.

- Source UJTL Task. OP 5.4.5 Coordinate/Integrate Components, Theater, and Other Support
- CWMD Capability Requirements. The purpose of this task is to coordinate with allies/coalition partners; U.S. component commands; the geographic CCDR; and adjacent, subordinate, higher, and supporting organizations to ensure cooperation and mutual support, a consistent effort, and a mutual understanding of the joint force commander's priorities, support requirements, concept and intent, and objectives. This task includes coordinating with ambassadors and Country Teams (as appropriate), other U.S. agencies, and leaders of supported nations. This activity includes but is not limited to coordinating concept development, sustainment support, and supporting component operation plans. Coordination of air, land, sea, space, and special operations support begins early in the process. The exchange of accurate and pertinent information across organizations and collaborative planning is essential.
- Desired Effect. The desired effect of this task for CWMD is cooperation and mutual support between all CWMD elements (adjacent, subordinate, higher, and supporting).

(3) Conduct operational maneuver and force positioning.

- Source UJTL Task. OP 1.2 Conduct Operational and Force Positioning
- CWMD Capability Requirements. The purpose of this task is to maneuver joint, interagency, and multinational operational forces to and from battle formations and to extend forces to operational depths to achieve a position of advantage over the enemy for accomplishing operational or strategic objectives. Force elements must be able to extend their area of influence into the JOA in a timely manner.
- Desired Effect. The desired effect of this task for CWMD is that force elements have the position of advantage across the domain space.

(4) Provide operational intelligence.

- Source UJTL Task. OP 2 Provide Operational Intelligence, Surveillance, and Reconnaissance

- CWMD Capability Requirements. The purpose of this task is to obtain operationally significant information on WMD actor force strengths and vulnerabilities, WMD actor operational doctrine, WMD actor intent and WMD networks and nodes across the three operational domains. WMD actors' networks include functionality in command and control, logistics, finance, science and technology, intelligence and surveillance, and weapons delivery. These actors also include those who, wittingly or unwittingly, are enabling the functionality of WMD networks. Collection entails collecting information on the nature and characteristics of the area of interest, including collecting battlefield damage assessment, munitions effects, lethal and non-lethal, medical assessments, and hazards such as CBRN contamination to conduct mission assessment. The nature and characteristics of the area include significant political, economic, industrial, geospatial (e.g., aeronautical, hydrographic, geodetic, topographic), demographic, medical, climatic, and cultural, as well as psychological profiles of the resident populations. Of particular importance to this task are the reach of sensors and the precision of the information collected and determining the actors' intent in the transit of dual-use technologies that support or could support a WMD capability.
- Desired Effect. The desired effects of this task are
  - Attribution is established with sufficient detail and reliability to garner the cooperation of the host nation or the international community.
  - Relationships between and among WMD networks and nodes is accurately identified.
  - Adversary perceptions of costs and benefits of pursuing or proliferating WMD capability are identified.
  - Blue force vulnerabilities are accurately determined.
  - Threats against the U.S. and its allies are identified in a timely manner.
  - Timely and actionable triggers and targeting information is provided.

(5) Command subordinate operational forces.

- Source UJTL Task. OP 5.4 Command Subordinate Operational Forces
- CWMD Capability Requirements. The purpose of this task is to promulgate the interrelated responsibilities between commanders and the authority of commanders in the chain of command. Clear

delineation of responsibility among commanders up, down, and laterally ensures unity of command and is a foundation for trust, coordination, and the teamwork necessary for unified military action. All lower echelon commanders must understand their mission (and communicate to their subordinates) their contribution to achievement of the commander's concept and intent, and their relationship to attainment of a higher or supported commander's operational objectives. The existence of pre-arranged command relationships between interagency and coalition partners coupled with the ability to direct forces across the JOA plays a key role in this task. This task includes approving plans, publishing ROE, synchronizing and integrating operations as coordinating support.

- Desired Effect. The desired effect of this task for CWMD is that the JFC has positive control over the entire spectrum of CWMD military actions.

c. The ability to conduct reconnaissance and surveillance.

- Source JCA/UJTL Task. Associated with former Tier 1 JCA-Joint Special Operations & Irregular Warfare; Tier 2 JCA-Special Reconnaissance (but inclusive of General Purpose Forces).
- CWMD Capability Requirements. The purpose of this capability is to conduct reconnaissance and surveillance actions in hostile, denied or politically sensitive environments to collect or verify information of strategic or operational significance. This includes directed military and non-military operations to obtain detailed knowledge about WMD actors and their enabling networks. This may require JFCs to conduct overt, low visibility or clandestine operations specifically designed to provoke a response that illuminates the adversaries' networks, support activities, and personalities.
- Desired Effect. The desired effects of this task are WMD actor responses that support identification of WMD networks and the component nodes, links, and vulnerabilities.

(1) Conduct Reconnaissance.

- Source UJTL Task. This task is from JP 3-05, *Doctrine for Joint Special Operations*.
- CWMD Capability Requirements. These are directed military and non-military operations to obtain detailed knowledge about WMD actors and their enabling networks. This may require JFCs to conduct overt, low visibility or clandestine operations specifically

designed to provoke a response that illuminates the adversaries' networks, support activities, and personalities.

- Desired Effect. The desired effect of this task is possession of sufficient data to support targeting.

(2) Conduct target and threat assessment.

- Source UJTL Task. This task is from JP 3-05, *Doctrine for Joint Special Operations*.
- CWMD Capability Requirements. These are operations conducted to detect, identify, locate, and assess a target to determine the most effective ways and means of employing capabilities. This type of operation might include the assessment of the potential effects (to include collateral damage) of a strike or an attack on a chemical, biological, radiological, nuclear, or toxic industrial material site.
- Desired Effect. The desired effect of this task is possession of sufficient data to support targeting.

(3) Detect WMD and WMD related material, expertise, technologies and infrastructure.

- Source UJTL Task. This task is from WMD-Interdiction Functional Area Analysis.
- CWMD Capability Requirements. These are operations to detect WMD, WMD-related material, delivery systems and related material, and technologies for the purposes of further identification and characterization.
- Desired Effect. The desired effect of this task is recognition of the presence of WMD and related material, systems, and technologies.

(4) Gain access for reconnaissance.

- Source UJTL Task. None, this task is from the Battlespace Awareness Joint Functional Concept.
- CWMD Capability Requirements. These are operations to give sensors (both human and technological) access to the required information. This ranges from penetration of enemy organizations to invasive sensing to operating outside of anti-access areas to gather the needed information. A key part of this activity is the ability to position existing sensors in addition to the creation of new sensing opportunities, e.g., recruiting human intelligence sources.
- Desired Effect. The desired effect of this task is that appropriate sensors are positioned to detect required information.

d. The ability to reduce the threat.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Protection; Tier 2 JCA-Threat Reduction and Cooperation.
- CWMD Capability Requirements. The purpose of this capability is to enhance physical security; emplace detection equipment; and reduce, dismantle, redirect, and/or improve protection of an actor's existing WMD programs, stockpiles and related capabilities, expertise, materials and technology with the consent, cooperation, and active protection of appropriate actors (either state or non state).
- Desired Effect. The desired effect of this task is that WMD actors' WMD and WMD enabling capabilities are secured, reduced, redirected and destroyed.

(1) Secure WMD and related WMD materials, expertise, technologies and infrastructure.

- Source UJTL Task. None.
- CWMD Capability Requirements. The purpose of this task is to assist host-nation governments to retain control over existing WMD and related facilities (such as those that support acquisition, weaponization, facility preparation, production, infrastructure, exportation, deployment and delivery systems). This task includes actions taken to isolate these stocks, facilities and related capabilities, expertise, and technology from both physical and virtual attack as well as those actions to reduce the vulnerabilities to the effects of the physical environment. This task also includes activities to reduce, dismantle, redirect, and/or improve protection of a state's existing WMD program, stockpiles, and capabilities.
- Desired Effect. The desired effect of this task in CWMD is that friendly forces are in possession of WMD actors' WMD material, expertise, or enabling capability, and adversaries or other actors are prevented from acquiring or proliferating that material, expertise, or enabling capability.

(2) Remove WMD.

- Source UJTL Task. None.
- CWMD Capability Requirements. The purpose of this task is to execute or assist host-nation governments in rendering safe, removing, or reducing existing WMD and other hazardous material.

- Desired Effect. The desired effect of this task in CWMD is that WMD, related facilities, expertise and delivery means are eliminated, rendered safe or made inoperable.

(3) Redirect/Destroy WMD related materials, expertise, technologies and infrastructure.

- Source UJTL Task. None.
- CWMD Capability Requirements. The purpose of this task is to execute or assist host-nation governments in reducing, removing, dismantling, or redirecting existing WMD related facilities (such as those that support acquisition, weaponization, facility preparation, production, infrastructure, exportation, deployment and delivery systems) and related capabilities, expertise, materials and technology
- Desired Effect. The desired effect of this task in CWMD is that WMD related facilities, expertise and delivery means are eliminated, rendered safe or made inoperable.

(4) The ability to conduct arms control support activities.

- Source JCA/UJTL Task. No JCA capability exists. Source UJTL is SN 9.3 Conduct Arms Control Support Activities.
- CWMD Capability Requirements. The purpose of this capability is to implement intrusive arms control inspections to fulfill treaty obligations. This includes conducting on-site inspections; monitoring operations; over flights to confirm accuracy of treaty-related declarations and weapons system reductions for WMD and conventional weapons; escorting foreign personnel conducting inspections, monitoring and over flights in the U.S. and outside the U.S. This also includes investing in treaty verification technologies and operational procedures; providing technical advice and assistance in support of the application of Confidence and Security Building Measures (CSBMs); ensuring all arms control equipment meet agreed treaty specifications and parameters; ensuring that teams within the combatant command area of responsibility are properly trained; and assisting installations/facilities in preparing for arms control inspections.
- Desired Effect. The desired effect of this task is the prevention of a given state's witting or unwitting proliferation of WMD or WMD related capabilities.

e. The ability to support Joint Shaping.

- Source UJTL Task. Tier 1 JCA-Joint Shaping.

- CWMD Capability Requirements. The ability to support Joint Force, interagency and Multinational operations - inclusive of normal and routine military activities – performed to dissuade or deter potential adversaries and to assure or solidify relationships with friends and allies. Shaping is executed continuously with the intent to enhance international legitimacy and gain multinational cooperation in support of defined military and national strategic objectives and national goals. These activities are designed to assure success by shaping perceptions and influencing behavior of both adversaries and allies. Each capability supporting Shaping Operations, to include Information Operations, must adapt to a particular theater and environment and may be executed in one theater in order to achieve effects in another. (Derived from 3 Jan 05/18 April OPSDEPs TANK on "Standardizing Campaign Phases and Terminology").
- Desired Effect. The desired effects of this capability are increased capabilities and willingness of partners to combat WMD, conditions that allow the U.S. to combat WMD and dissuasion of WMD actors from participating in rogue behavior.

(1) Support strategic communication.

- Source JCA/UJTL Task. NMS-CWMD definition for strategic communication provided the baseline definitions. Other sources included former Tier 1 JCA-Joint Shaping, Tier 2 JCA- Strategic Communication. ST 5.5 Conduct Theater Wide Information Operations and ST 5.6 Develop and Provide Public Affairs in Theater also provided information.
- CWMD Capability Requirements. The purpose of this task is to conduct Joint Force Command information and engagement activities and to coordinate Joint Force Commander and DOD information and engagement activities with those of other USG agencies, coalition partners, or allies to collaboratively shape the operational environment by engaging foreign audiences in order to achieve desired effects. Information and engagement activities are decentralized in DOD and across the Interagency; this coordination establishes shared situational awareness to achieve unity of effort and synergistic effects. These information and engagement activities shall be integrated into military planning and operations, synchronized with the elements of national power, and coordinated with Interagency and coalition partners. Effectively coordinating and de-conflicting activities is a capability multiplier for the Joint Force Commander and may include the activities of Defense Support to Public Diplomacy (DSPD), Military

Diplomacy (MD), Security Cooperation, Public Affairs (PA), Information Operations (IO), and Civil-Military Operations (CMO).

- Desired Effect. The desired effect of this task is coordinated information, themes, plans, programs and actions that preserve conditions favorable to advance CWMD objectives.

(2) Conduct Military Diplomacy.

- Source UJTL Task. None. Derived from March, 2004 National Military Strategic Plan for the War on Terrorism.
- CWMD Capability Requirements. The purpose of this task is to execute those activities and measures U.S. military leaders take to engage military, defense and government officials of another country to communicate USG policies and messages and build defense and coalition relationships.
- Desired Effect. The desired effect of this task is development of defense and coalition relationships officials of other countries.

(3) Provide Diplomacy Support.

- Source UJTL Task. None. Derived from Draft DSPD DoDD xxxx.x (still in Draft and unnumbered); IO EXCOM brief 27 Jun 05; NMSP-WOT Annex H Appx 1; and JP 1-02); OP 5.8 Provide Public Affairs in the Joint Operations Area.
- CWMD Capability Requirements. The ability to understand, engage, influence and inform key foreign audiences through words and actions to foster understanding of U.S. policy and advance U.S. interests, and to collaboratively shape the operational environment. This ability can include public information activities as well as information operations to assist selected host nations and the Department of State in reaching foreign target audiences through communication channels such as websites, radio, print, and television." DSPD comprises DOD's support to USG public diplomacy, which is defined as those overt international public information activities of the USG designed to promote U.S. foreign policy objectives by seeking to understand, inform, and influence foreign audiences and opinion makers, and by broadening the dialogue between American citizens and institutions and their counterparts abroad.
- Desired Effect. The desired effect of this task is positive influence over the perceptions and decisions of foreign audiences and opinion makers.

(4) Develop and provide public affairs.

- Source UJTL Task. OP 5.8 Provide Public Affairs in the Joint Operations Area.
- CWMD Capability Requirements. The purpose of this task is to advise and assist the commander in the JOA and coalition partners in telling the command's story to both internal and external audiences, by originating and assisting civilian news media in originating both print and broadcast news material and assisting with community relations projects. This task includes providing advice and assisting the commander on potential implications of policy and operational decisions on public perception. This task includes development of an integrated communication policy and strategies to support theater objectives. This task also includes establishment of a Joint Information Bureau (JIB) and support of the DOD National Media Pool until open media coverage is possible.
- Desired Effect. The desired effect of this task for CWMD is accurate, timely (within adversary information cycles), and consistent information for public release consistent with and supportive of the JFC and the USG strategic communication goals, objectives, and execution efforts.

f. The ability to provide politico-military support to other nations, groups, and government agencies.

- Source JCA/UJTL Task. No single JCA addresses the breadth of support defined in UJTL task OP 4.7 Provide Politico-Military Support to Other Nations, Groups, and Government Agencies
- CWMD Capability Requirements. The purpose of this capability is to provide assistance to other nations, groups, or government agencies that support strategic and operational goals within the JOA. This task includes security assistance, civil-military operations support (such as humanitarian assistance, environmental cleanup, disaster relief), and other assistance from military forces to civilian authorities and population. The assistance can be personnel, materiel, or services.
- Desired Effect. The desired effect for this task is increased government and popular support for the United States and its CWMD efforts and unity of effort for Political-Military support activities.

(1) Provide security assistance in the JOA.

- Source UJTL Task. OP 4.7.1 Provide Security Assistance in the Joint Operations Area (and JP 3-5, Civil-Military Operations)

- CWMD Capability Requirements. The purpose of this task is to provide friendly nations or groups with defense articles, military training, and other defense-related services by grant, loan, credit, or cash sales in furtherance of national policies and objectives within the JOA.
- Desired Effect. The desired effect of this action is improved defense related CWMD capability of non-U.S. Forces in the AOR in support of the JFC's shaping operations as well as improved coalition capability to combat WMD and provide inducements to adversary restraint..

(2) Conduct civil military operations in the JOA.

- Source UJTL Task. OP 4.7.2 Conduct Civil Military Operations in the Joint Operations Area
- CWMD Capability Requirements. The purpose of this task is to conduct activities in support of military operations in a JOA that foster the relationship between the military forces and civilian authorities and population, and that develop favorable emotions, attitudes, or behavior in neutral, friendly, or hostile groups. This task includes establishing a joint civil military operations center (CMOC). Types of CMO include Foreign Humanitarian Assistance (FHA), populace and resource control (PRC), nation assistance operations, military civic action (MCA), civil preparedness/emergency operations, civil administration (friendly and hostile/occupied territory), and domestic support operations.
- Desired Effect. The effect of this activity is government and local populace support for U.S. and coalition CWMD operations in or over territory of the nation.

(3) Support joint and coalition exercises.

- Source UJTL Task. SN 7.4.4 Conduct joint, multinational, interoperability, and interagency training of assigned forces
- CWMD Capability Requirements. The purpose of this task is to plan, execute and analyze joint multinational, interoperability, and interagency training for assigned forces to perform those tasks and capabilities, to specified conditions and standards, in support of the commander's requirements.
- Desired Effect. The effect of this activity is increased CWMD capacity and capability for Unified Action.

(4) Provide support to DOD and other government agencies.

- Source UJTL Task. OP 4.7.3 Provide Support to DOD and Other Government Agencies.
- CWMD Capability Requirements. The purpose of this task is to provide support to DOD, Joint Staff, other Services, DISA, DLA, DTRA, DOS, USAID, USIA, civil governments, and other related agencies. This task includes controlling civil disturbances, countering illegal drugs, combating terrorism, and conducting joint exercises and operations.
- Desired Effect. The effect of this activity is government and local populace support for U.S. and coalition CWMD operations in or over territory of the nation.

(5) Support disaster control operations.

- Source UJTL Task. OP 4.7.8 Establish Disaster Control Measures
- CWMD Capability Requirements. The purpose of this task is to take measures before, during, or after hostile action to reduce probability of damage, minimize its effects, and initiate recovery. This includes providing emergency services, supplies, evacuation etc.
- Desired Effect. The effect of this activity is minimization of effects of WMD employment and initial recovery from both direct and indirect effects.

g. The ability to execute counterforce operations.

- Source JCA/UJTL Task. No single JCA addresses this WMD specific capability. Source UJTL is OP 7.1 Coordinate Counterforce Operations in the Joint Operations Area.
- CWMD Capability Requirements. The purpose of this task is to positively identify and select WMD targets such as leadership, expertise, acquisition, weaponization, facility preparation, production, infrastructure, exportation, intelligence, surveillance, reconnaissance, deployment and delivery systems. Further, it entails matching the means (lethal or non-lethal), conducting the attack, and assessing damages to include any consequences from collateral damage.
- Desired Effect. The desired effect of counterforce operations is the defeat of WMD acquisition, proliferation, development and use and the perception in the mind of WMD actors that the potential cost of WMD is too high for perceived gains.

(1) Attack operational targets using lethal means.

- Source UJTL Task. OP 3.2 Attack Operational Targets.

- CWMD Capability Requirements. The purpose of this task is to engage WMD related targets with available Service, joint, and allied/coalition delivery means, delivering lethal ordnance to create both kinetic and non-kinetic effects. Lethal means may include conventional, unconventional, and nuclear operations in depth. This includes ground, naval, air, space, and SOF conventional and special munitions against land, air, and maritime (surface and subsurface) targets. The objective of such attacks may be to dissuade, delay, disrupt, defeat, seize, secure, destroy, or degrade enemy WMD related capabilities and/or to affect the enemy's will to produce, acquire, proliferate or use WMD. Alternatively, the objective may be to damage or destroy critical WMD related nodes/links or to delay, disrupt or degrade critical tasks, achieving strategic results. Under certain circumstances and limitations, this task may apply within the United States.
- Desired Effect. The desired effect of this task is the defeat of a hostile actor's attempt to gain, proliferate, deploy, or employ WMD and the destruction or seizure of WMD related material, technology, expertise, delivery systems or other enabling capabilities/mechanisms.

(2) Conduct attack on operational targets using non-lethal means.

- Source UJTL Task. OP 3.2.2 Conduct Attack on Operational Targets using Non-lethal Means.
- CWMD Capability Requirements. The purpose of this task is to engage operational targets with non-lethal joint and multinational means designed to degrade, impair, disrupt, or delay the performance of enemy operational forces, tasks, and facilities by creating kinetic or non-kinetic effects. The means include the use of psychological operations, special operations forces, electronic attack, computer network operations (attack), and other IO capabilities. Under certain circumstances and limitations, this task may apply within the United States.
- Desired Effect. The desired effect of this task is the defeat of a hostile actor's attempt to gain, deploy, or employ WMD and the destruction or seizure of WMD related material, technology, expertise, delivery systems or other enabling capabilities/mechanisms.

(3) Conduct Information Operations.

- Source UJTL Task. ST 5.5 Coordinate Worldwide Information Operations.

- CWMD Capability Requirements. The purpose of this task is to employ IO capabilities across the full spectrum of offensive and defensive operations simultaneously to accomplish the mission, increase force effectiveness, and protect organizations and systems. This task includes, but is not limited to, operations security military deception, psychological operations, electronic warfare, and computer network operations integrated with supporting and related capabilities. This task includes military support to attacking and defending information environment that supports national military, political, and economic power.
- Desired Effect. The desired effect of this task is the defeat of a hostile actor's attempt to gain, deploy, or employ WMD and the destruction or seizure of WMD related material, technology, expertise, delivery systems or other enabling capabilities/mechanisms.

h. The ability to conduct active CBRN defense operations.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Protection; Tier 2 JCA-Counterproliferation; Tier 3 JCA-Active Defense. OP 7.2 Coordinate Active CBRNE Defense in the Joint Operations Area.
- CWMD Capability Requirements. The purpose of this task is to coordinate, integrate, synchronize and execute actions (e.g. missile defense, air defense, special operations, security operations, etc.) that detect, divert, disrupt, delay, or destroy WMD that has launched or initiated movement toward its final target. This task includes disrupting the WMD delivery operations through an appropriate mix of mutually supportive detection, control and lethal/non-lethal force. Active defense also includes those actions taken to counter and defeat covert and clandestine delivery of CBRN weapons by terrorist and other groups.
- Desired Effect. The effect of this capability is the demonstrated ability to defeat WMD attack(s) or, in the event of an attack, actual defeat and prevention of WMD release upon U.S., partner and ally targets.

i. The ability to provide passive defense.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Protection; Tier 2 JCA-Counterproliferation; Tier 3 JCA-Passive Defense; OP 7.3 Coordinate Passive CBRNE Defense in the Joint Operations Area.
- CWMD Capability Requirements. The purpose of this task is to protect theater forces and means from CBRN attack and permit them to continue to operate in a contaminated environment (sense, shape, shield and respond).

- Desired Effect. The effect of this capability is the demonstrated ability to minimize vulnerabilities to WMD targeting and effects of use or, in event of an attack, actual denial of any strategic, operational or tactical advantage to the adversary.

j. The ability to execute consequence management.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Protection; OP 7.4 Coordinate Consequence Management in the Joint Operations Area
- CWMD Capability Requirements. The purpose of this task is to provide essential services and activities required to manage and mitigate damage resulting from the employment of CBRN weapons or release of toxic industrial materials and/or contaminants. Services and activities can include population evacuation, decontamination, transportation, communications, public works and engineering, fire fighting, information and planning, mass care, resource support, health and medical services, urban SAR, hazardous materials, food and energy. CM may occur during military operations, be required in support of friends and allies, or occur as part of DSCA within CONUS. OCONUS, when approved by the President, the USG may provide foreign CM support to a HN, to the extent allowed by law, either at the request of the HN or upon HN acceptance of a USG offer of assistance. Service providers can include DOD, IA, and MN organizations.
- Desired Effect. The desired effect is the demonstrated ability to mitigate undesired effects from the release of WMD or, in event of an actual release, the denial of any strategic, operational, or tactical advantage to the adversary.

(1) Isolate the JOA.

- Source UJTL Task. OP 1.5.4 Isolate the Joint Operations Area.
- CWMD Capability Requirements. The purpose of this task is to deny access to key sectors of the operational area and control movement of supplies and services by sea, land, and air from areas outside the operational area.
- Desired Effect. The desired effect of this task is controlled access to contaminated portions of the JOA.

(2) Remove hazards.

- Source UJTL Task. OP 6.2.2 Remove Operationally Significant Hazards.

- CWMD Capability Requirements. The purpose of this task is to eliminate or reduce hazards that adversely affect execution of the operational level.
- Desired Effect. The desired effect of this task is the containment, removal or reduction of contamination hazards in uncertain or hostile environments.

k. The ability to assess CWMD operations. The desired endstate of this task is the effects on networks are discerned and appropriate follow-up actions are determined.

- Source JCA/UJTL Task. Tier 1 JCA-Joint Command and Control; Tier 2 JCA-Monitor Execution, Assess Effects and Adapt Operations; OP 2.2.1 Collect Information on the Operational Situation.
- CWMD Capability Requirements. The purpose of these tasks is to determine the effects of the CWMD operation, the impact on various WMD actors, and the requirements for subsequent CWMD operations. These tasks include collecting information about combating WMD activities and conducting an assessment of operational effectiveness in order to update situational understanding and future planning activities.
- Desired Effect. The desired effect of this task is the effects on networks are discerned and appropriate follow-up actions are determined.

(1) Collect information on effects and results of operations.

- Source UJTL Task. OP 2.2.1 Collect Information on the Operational Situation.
- CWMD Capability Requirements. The purpose of this task is to obtain operationally significant information on battlefield damage assessment, munitions effects, lethal and non-lethal, medical assessments, and hazards such as CBRN contamination to conduct mission assessment. In particular, the JFC must obtain information on the reaction of the enabling WMD networks to the operations, to exploit the reaction of the network and nodes to support further operations, and establish how the network is adapting to the attack.
- Desired Effect. The desired effect of this task for CWMD is that attribution is established to warrant the cooperation of the host nation or the international community and to determine the impact of the operations upon the deterrence decision-making calculus of the adversary.

(2) Establish Attribution.

- Source UJTL Task. None (new task).
- CWMD Capability Requirements. The purpose of this task is to establish attribution of WMD and related activity including material, knowledge, technology etc. Attribution is the positive identification of the actors involved in the WMD process and an appreciation of responsibility and adversarial intent.
- Desired Effect. The desired effect of this task for CWMD is understanding of the source of the WMD and related material, knowledge, technology in order to more fully map the WMD network, establish relationships and support further action in pursuit of military strategic objectives.

(3) Conduct operational assessment.

- Source UJTL Task. OP 3.1.6 Conduct Operational combat/military Operations Other Than War Assessment.
- CWMD Capability Requirements. The purpose of this task is to determine the overall effectiveness of joint and multinational forces employed in the operational area, including force engagements, as it relates to strategic and operational objectives against WMD networks. Of particular importance is the precise understanding of the effects upon the WMD network and the fidelity with which the network can be further mapped.
- Desired Effect. The desired effect is that the joint force has an understanding of effects of past and ongoing operations against the WMD network nodes/links as well as an understanding of the impact on the status of transiting material, technologies, and expertise, and to determine the impact of the operations upon the deterrence decision-making calculus of the adversary.

Appendix G. Conditions

Conditions are those variables of an operational environment or situation in which a unit, system, or individual is expected to operate and may affect performance.[30] CJCSM 3500.04D identifies three broad categories of conditions: physical, military and civil.

This appendix does not identify physical condition descriptors because CWMD operations could occur anywhere in the world, which makes all physical condition descriptors potentially applicable. Identifying them would not add clarity to this document.

Conditions in the military and civil environments are unique and potentially have impact that is more significant for the JFC combating WMD. This appendix attempts to identify these military and civil environmental conditions using UJTL defined descriptors and the probable worst case characterizations of these conditions.

1. Pre-Existing Arrangements (C 2.1.1.2). (Those plans, organizations, relationships, and arrangements that existed before the present mission or tasking and that might influence execution of the concept of operations.) Partial to none. CWMD operations may be conducted under provision of international agreements such as the Proliferation Security Initiative where participating nations conduct detailed planning and training. In lieu of an arrangement, operations are conducted under conditions of no prior pre-existing arrangements, perhaps the most stressful type of operation.

2. Military Commitments from Other Nations (C 2.1.1.7). (The amount of commitment on the part of other nation to support mission.) Limited. The joint force commander will be expected to operate with a range of military commitments from other nations. Political considerations may drive the participation of less capable forces.

3. Theater Dimensions (C 2.1.4). (The location and the theater or sub-area of a theater and the time available for mission accomplishment). Small to Massive.

4. Location (C 2.1.4.1). (The location where the task must be performed.) CWMD operations may be executed ashore, afloat or airborne or within the virtual and human domains.

5. Lead Time (C 2.1.5.1). (The time from receipt of a warning or directive to initiation of military operations.) Minimal. There may be moderate time between the warning order and execution.

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6. Modern Information & Intelligence Processing Systems (C 2.2.5.2). (The availability of modern information systems in numbers and types.) Abundant (for USG). Coalition partners will have few such systems.

7. Interoperability (C 2.2.6). (The ability of systems, units, or forces to interact and operate effectively with other systems, units, or forces.) Full with other U.S. elements. Other coalition partners will have little to no interoperability capabilities.

8. Command Arrangements (C 2.3.1). (Type of relationships or procedures set up among forces and their staffs for the effective management of forces and accomplishment of the mission.) Ad hoc.

9. Joint Staff Integration (C 2.3.1.1). (The extent to which staffs of two or more forces or agencies of the same nation have integrated their doctrine, staff, force techniques and procedures, and training.) Partial. The staffs of interagency partners will likely be unfamiliar with joint force staffs.

10. Multinational Integration (C 2.3.1.2). (The extent to which staffs of two or more forces, or agencies of two or more nations, have integrated their senior command and staff billets, information and intelligence, doctrine and procedures, logistics, and training.) Partial to poor.

11. Information Exchange (C 2.3.1.8). (The freedom with which information (e.g., intelligence and logistic data and operations plans) can be distributed or released within a staff or to operating units, to include among allies or coalition partners.) Highly restricted. Political considerations and concern over protecting U.S. sources and methods will inhibit information exchange.

12. Command Relationships (C 2.3.1.10). (The complexity of command relationships required to train, organize and generate the force prior to transfer to the CCDR for employment.) Complex.

13. Intelligence Data Base (C 2.4.2). (The availability of intelligence data or threat assessments to support a mission or task.) Marginal.

14. Theater Intelligence Access (C 2.4.4). (The ability of intelligence gathering resources to penetrate and cover the AOR.) Easy to negligible.

15. Certitude of Data (C 2.4.6). (The degree of confidence in the accuracy of intelligence data.) Low.

16. Target Survivability (C.2.6.3.1). (The degree to which a target or set of targets is capable of defending itself against firepower attacks.) Moderate to High.

17. Target Mobility (C 2.6.5). (The ability of a potential target to relocate.) Target mobility depends upon the network and WMD capability. Biological target mobility is high while nuclear is very limited to nearly static. Once mated to a delivery means, target mobility can become HIGH.

18. Collateral Damage Potential (C 2.6.7). (The commander's estimate of the physical damage(s) and collateral effect(s) on noncombatant persons, property, and environment(s) occurring incidental to military operations given the applications of available methods to mitigate concerns in consideration of required military objectives.) High. While the collateral damage potential can be limited, the consequences of collateral damage are extremely high both in terms of impact upon the surrounding population and the international reaction to the interdiction.

19. Target Cooperativeness (C 2.6.11). (The degree to which a target presents itself to be detected and tracked by an attacking system or unit.) None to somewhat. Non-state actors are unlikely to cooperate, while state actors could be compelled.

20. Culture (C 3.2). (Those aspects of a people that relate to their language, history, customs, economics, religion, and character.) Non-western.

21. Language (C 3.2.1). (The spoken and written means of communication.) Other. It is most likely that the interdiction targets will not speak English.

22. Societal Openness (C 3.2.2.1). (The degree to which the population of a nation or an area is open to the presence of people from different nations or cultural backgrounds.) Limited.

23. Competing Apportionment (C 2.2.2). (The extent to which forces are distributed for planning, in that the same force may be apportioned simultaneously to more than one combatant commander (for planning).) Multiple.

24. Intelligence Dissemination and Receipt (C 2.4.7). (Proper communications paths, dissemination suite, receipt suite, and display suite between producers and customers are in place to allow timely transmission and receipt of information.) Partially exists.

25. Diplomatic Clearance (C 3.1.3.5). (For aircraft/ship entry through a foreign nation's sovereign territory or airspace, independent of HN support.) Pending.

Appendix H. Exploratory Wargame: Insights and Results

1. Purpose. The USSTRATCOM Center for Combating WMD sponsored an Exploratory Wargame from 8-9 November 2006 to provide a forum for key stakeholders to further the development of the Combating WMD JIC, ensuring completeness and consistency.

2. Objectives. The Exploratory Wargame sought to determine if the JIC is suitable for use by a JFC to combat WMD and to identify critical military capabilities for combating WMD including operational level tasks and metrics; critical interagency effects; and critical intelligence effects to implement the JIC.

3. Participants. Approximately 44 participants attended the Exploratory Wargame representing a range of organizations including:

- U.S. Air Force
- U.S. Army
- U.S. Marine Corps
- U.S. Navy
- USSTRATCOM

  –Center for Combating WMD (SCC-WMD)

  –J-852
- USCENTCOM
- USJFCOM
- USSOCOM
- USNORTHCOM/North American Aerospace Defense Command (NORAD)
- USSOUTHCOM
- USEUCOM
- Defense Threat Reduction Agency (DTRA)
- Office of the Secretary of Defense (OSD) Policy
- Joint Staff

–J-3 Deputy Directorate for Anti-Terrorism/Homeland Defense

–J-7 Joint Education, Training, and Concept Development

–J-8 Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense (JRO-CBRND)

- Department of Justice: Federal Bureau of Investigation

3. Approach. The purpose of the wargame was to discuss key issues that had relevance to the further development of the JIC. Specifically, the key issues identified include:

- How does a JFC prevent WMD capability acquisition, proliferation and use under restricted, peacetime rules of engagement?
- How does a JFC prevent WMD capability acquisition, proliferation and use under broad rules of engagement?
- How does a JFC defend, respond and recover from WMD use?
- What is unique about combating WMD at the operational level?

Participants formed three teams, each representing the same JFC. Each team conducted three moves, each addressing separate Military Strategic Objectives (as identified in the NMS-CWMD) and differing rules of engagement.

4. Scenario. The JIC focuses on the rogue behavior of WMD actors with the nexus between state and non-state actors being of particular interest. An adaptation of a validated Defense Planning Scenario met this need, allowing the writing team to explore more fully the central idea and key elements of the concept (early engagement, dealing with uncertainty etc.). This would not have been possible in a scenario with a peer competitor.

The scenario was set in the Middle East in 2015 and posited a range of actors, state and non-state, unfriendly to U.S. involvement in the Persian Gulf region. The scenario proposed that the unfriendly state had the capability and intent to use chemical, biological and radiological weapons. Threats also existed from non-state actors as they sought to acquire and weaponize chemical and biological agents.

a. In Move 1, teams were confronted with an increasing threat of WMD capability in the region. Teams were designated as the JFC for the region with the mission of preventing, dissuading, and denying

proliferation and employment of WMD. The teams operated under restricted or peacetime rules of engagement that included the right to self-defense but no overt operations in denied areas or offensive kinetic effects were allowed.

b. In Move 2, teams had to address a chemical attack on a U.S. cruise liner in the region while determining how to interdict and eliminate suspected development and weaponization of chemical and biological agents by a relatively new terrorist splinter group. Teams maintained the same JOA and their mission in Move 2 was to destroy WMD programs of the new terrorist organization and interdict/eliminate the flow of WMD capability. The teams operated under broad rules of engagement that allowed them to conduct overt offensive military operations with host nation approval and clandestine offensive military operations with Presidential approval.

c. In Move 3, teams found themselves in a position with confirmed movement and intent for hostile use of a new synthetic biological agent against U.S. interests in the region. Teams were tasked to defend against and prepare to respond and recover from imminent WMD attack against U.S. facilities and to destroy the WMD programs of the terrorist organization. Teams maintained the same rules of engagement as in Move 2 but with authorization to conduct offensive military operations against the new terrorist organization threatening the United States.

5. Key Observations

a. Observation #1. Synchronized interagency and multinational activities are vital to prevent, dissuade, and deny state and non-state actors from acquiring and proliferating WMD.

(1) Participants stressed the inherent limitations of military capabilities and the importance of interagency and multinational cooperation and engagement. In Move 1, an integrated approach was especially apparent when teams were tasked to prevent, dissuade, and deny acquisition, proliferation, and use of WMD under peacetime rules of engagement. In an environment short of open hostilities, there is significant reliance on capabilities across the U.S. Government such as diplomacy, strategic communication, and economic and trade sanctions to deter WMD actors. However, an effective strategy requires continued unity of effort throughout the USG, among partner nations that share U.S. objectives, and across multinational institutions. Implementing a unified strategy requires a shared awareness among stakeholders of the

threat environment. In doing so, stakeholders need to ensure that actions are coordinated and complementary to achieve maximum impact.

(2) There are inherent natural limitations that constrain the military within a region; however, capabilities such as Theater Security Cooperation Agreements and military-to-military arrangements can be leveraged to enhance state and non-state partner capacity to combat WMD. Looking toward the future, participants suggested that JFC be proactive within the interagency community and with multinational partners. A JFC must understand the interagency capabilities that reside in the JOA as well as the opportunities for reach back across the government. A future JFC should consider how to leverage the capabilities and competencies across the government by engaging with his interagency counterparts. Additionally, a JFC should examine opportunities to engage with regional counterparts to build relationships and enhance cooperation.

b. Observation #2. To combat WMD, a JFC needs to synchronize and integrate interagency activities from initial planning through execution. Participants proposed that the JFC apply an integrated approach to coordinate WMD efforts across USG agencies. To be effective, a culture change is required in which the best and brightest from across the government are integrated into a Joint Interagency Task Force (JIATF)-like forum and empowered to plan and make decisions on behalf of their agencies. An interagency element of the JFC's staff would serve to support a range of intelligence and information needs as well as advise the JFC on capabilities that reside within the U.S. Government.

c. Observation #3. A comprehensive strategic communication campaign is critical to deter and dissuade state and non-state actors from seeking, proliferating, and using WMD.

(1) Participants agreed that strategic communication is an essential capability that needs to be applied in a variety of means to deter and dissuade the acquisition, proliferation, and use of WMD. Developing a cogent message is required within the Department of Defense, within the USG, among partner nations, and within multinational institutions. Meanwhile, the message needs to be tailored in order to resonate with the target audiences, which include potential proliferators, the population that may support the proliferators, and the international community. More than just a media campaign, the strategic communication campaign should include diplomacy, public relations, psychological operations, deception operations, and information operations especially focused on the internet. Participants

viewed this as a critical element to deter and dissuade potential users, proliferators, or those seeking to acquire WMD; influence populations that support state and non-state WMD actors; and convince adversaries into believing that a WMD attack would not achieve their desired effect.

(2) While a comprehensive strategic communication campaign will guide activities, it should also serve as a means to orchestrate and synchronize a range of activities necessary to deter and dissuade both state and non-state actors from seeking and proliferating WMD. It is critical that activities such as diplomacy, military action, and trade sanctions are complementary and not contradictory. The impact of the strategic communication campaign should be assessed regularly to determine required adjustments or refinements.

d. Observation #4. A federated intelligence approach is necessary to characterize accurately a WMD network so it can be defeated.

(1) Participants highlighted the need to integrate the range of intelligence products as a critical element in combating WMD networks and programs. Cultural and doctrinal changes would be necessary to achieve the intent of integrating traditional intelligence with information that may reside outside the intelligence community such as law enforcement, tracking dual use technology licenses, network funding sources, and research and development of products and/or agents within industry and academia. Building a federated picture of the WMD network would serve as the foundation for combating the acquisition and proliferation of WMD.

(2) Two of the three teams emphasized the need for attribution of origin in combating WMD. To create this capability, persistent collection – both HUMINT and technical – and network analysis is required on priority targets. Persistent intelligence collection would allow the JFC to map accurately the WMD network to identify key nodes and network enablers, which may include both witting and unwitting actors. Additionally, a clear understanding of the network would allow the JFC to target accurately network nodes for retribution as well as to calculate unintended effects of joint force actions.

e. Observation #5. To combat WMD from 2015-2020, the JFC requires broader authorities, and specialized forces with optimal education, training, and equipment.

(1) Participants highlighted the need for “specialized expertise” to manage the range of threats from chemical, biological, radiological, and

nuclear agents and weapons. A participant noted that, in some cases, no expertise exists at all within the Department to address particular agents. Teams concluded that specialization would define CWMD future capabilities: a specialized force, specialized education and training, and specialized equipment. To consolidate the specialized expertise, one team proposed creating a tailorable, expeditionary unit with the critical expertise to support a JFC in combating WMD. Another team proposed that a specific WMD-oriented force is not necessary but rather the specialized capabilities and assets should be made available to the JFC through resident experts on staff and reach back capacity.

(2) Specific specialized capabilities that teams identified include the following:

- Specialized kinetic or non-kinetic weapons to minimize unintended damage
- Rapid capabilities for seizure or render safe
- Rapid/accurate identification/attribution of WMD materials (e.g., detection technology), especially the ability to identify unknown substances
- Rapid/accurate retribution capabilities in all domains (i.e., air/land/sea/cyber)
- Improved defeat tools (e.g., multi-use weapons: kinetic flexibility with agent defeat mechanism)
- Rapid/accurate identification/attribution of WMD materials (e.g., detection technology)
- Rapid/accurate/adaptive/predictive/streamlined modeling capabilities – enhancement of current modeling technologies as decision-making tool
- Predict hazards
- Enforce treaty compliance
- Creating new agreements under which military forces could operate

- Building partner capacity for combating WMD and consequence management

6. Team Insights on the JIC

a. Participants suggested more detail in the body of the document discussing "how" a JFC would combat WMD in the future. In the Military Problem section, "presumptive, confirmatory, and definitive analysis" needs to be defined. One team proposed that the JIC should expand its discussion to address protecting against dual-use toxic industrial chemicals/toxic industrial materials and processes (chemical plants).

b. There was debate among participants as to the level of detail the JIC should have with regard to interagency cooperation. While most participants agreed that combating WMD requires an integrated and cooperative interagency approach, other participants noted that the JIC was a military document for a JFC with no ability to task the rest of the USG. Regardless, participants recognized the need for the JIC to capture the JFC's interactions within the Department and the greater USG enterprise and proposed a graphic to depict those interactions. Additionally, one team proposed describing the different mechanisms for interagency cooperation such as JIATFs, joint interagency coordination groups (JIACGs), combatant command interagency representatives, country teams, and reach-back support. Essentially, participants recommended that it is important for the JIC to articulate who the key stakeholders are within the USG for combating WMD. One team recommended examining the USSOUTHCOM JIATF model for counter-narcotics activities.

c. Some participants recommended clarifying the distinction between "Deny Benefit" and "Change Behavior" effects since deny benefit can be a stand-alone effect rather than just subordinate to changing state behavior. ISR operations may not be an enabler, but rather its own mission area and captured as Persistent ISR. "Partnership Capacity" and "Strategic Communication" should not be combined as one joint enabler as they involve different capabilities. A team recommended highlighting in the JIC the unique collateral effects of WMD and why this should be addressed as a unique problem. One team questioned if the JIC could be applicable for both geographic combatant commanders and functional combatant commanders.

d. Participants proposed that it would be useful to provide an opportunity for the broader range of stakeholders to review and comment

on the JIC. Greater visibility on the concept would uncover hidden assumptions and resolve issues.

Appendix I. Interdiction Operations

1. Purpose. This appendix presents an expanded discussion of interdiction operations.

2. Central Idea.

Ends. Hostile actors' acquisition of WMD capabilities is prevented or defeated and WMD networks are revealed and disrupted.

Ways. (Figure I-1) Sustained and integrated unilateral and multi-lateral operations executed in a quick and responsive decision cycle to:

- Identify, characterize, and track WMD and related material, technologies, and expertise
- Analyze and assess key nodes and links in the enabling network
- Synchronize operations across multiple domains to disrupt networks, deny network links, and seize, divert, or destroy suspected WMD or material, expertise and resources
- Persistently monitor node/link remnants for subsequent activity

Means. Full spectrum capable collectors (both technical and human), command and control systems, and force elements (DOD, non-DOD, and multinational) linked across components and echelons of command.

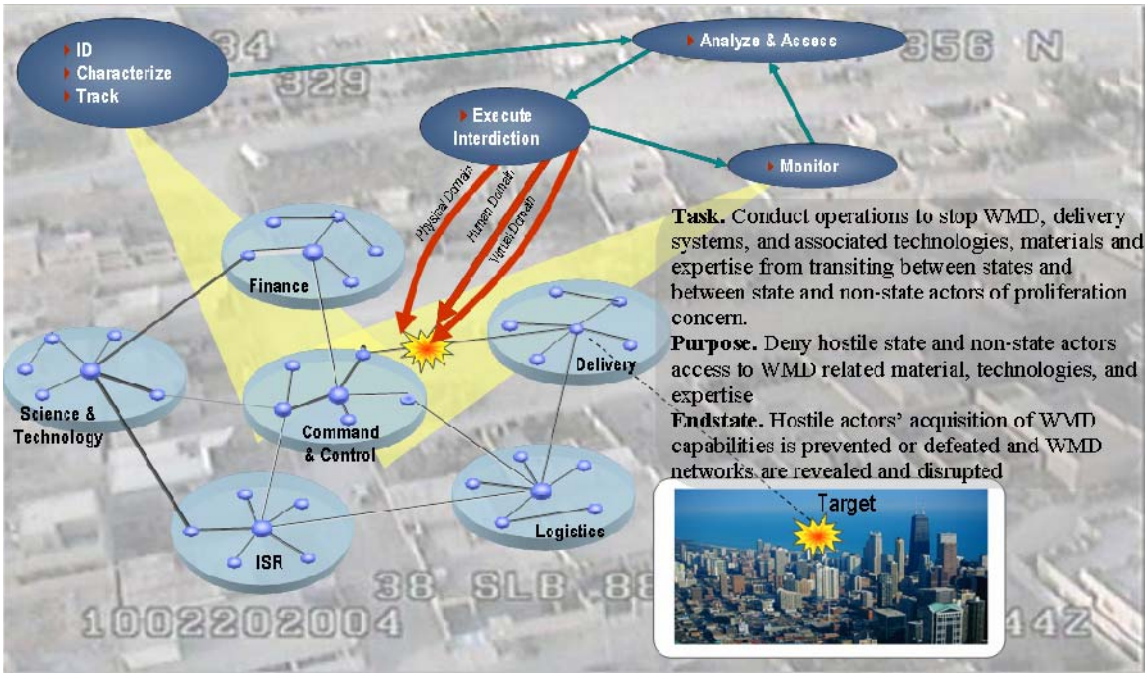

Figure I-1. Interdiction Central Idea

3. Principles of Interdiction. Sustained surveillance and analysis combined with periodic and precise decisive action characterize interdiction operations.

a. Expanded Operational Environment. Joint interdiction operations must be conducted across multiple dimensions, identifying and influencing targeted network links in any potential operating "space"—not only the domains of land, sea, air and space, but also the virtual (information and cyber) and human (cognitive, moral, and social) domains. It is critical to operate from multiple directions in multiple domains because most network systems are complex, redundant, and resilient, frequently able to survive the overload of any one variable.

b. Precise Engagements. This concept envisions actions directly aimed at perceived key links and processes in the target system in order to produce operational and strategic results. In many cases, these actions will occur in operational environments where lethal results are not required, create unacceptable risk of contamination or are inimical to U.S. goals. Precision in action and effect limits these risks.

The JFC may achieve systemic results through both direct and indirect means. Therefore, engagements must target those elements and processes that are expected to directly produce desired results, as well as those elements whose engagement can be expected to produce effects that propagate through the system toward the desired result.

Key system elements and processes may not be vulnerable to direct action. In these cases, it may be necessary to initiate a sequence of actions or produce a chain of propagating effects to achieve the desired results. In all events, the targeted networks, nodes, and links must be engaged with the appropriate and decisive level of kinetic and non-kinetic force that minimizes unintended consequences.

c. Integrated Operations. The idea of integrated actions applies to DOD and other elements—military coalition partners and nonmilitary agencies—coordinating closely with the joint interdiction force. Interdiction is part of a larger USG effort to disrupt an adversary's attempt to proliferate or acquire WMD. The DOD role in interdiction may be limited when other elements of national power are more effective. Specifically, DOD must be prepared to support other agencies in proactive engagement /theater shaping as well as post-crisis/conflict operations. Conversely, during combat operations, DOD will normally be the supported agency. Regardless of lead agent, USG entities must have the authority to work across agencies and operate with high levels of integration to bring the elements of DIMEFIL to bear in effectively interdicting WMD capabilities. Integrated and interdependent actions

leverage joint force capabilities in order to simultaneously and effectively counter multiple threats and challenges.

Of particular interest in interdiction operations is the requirement that the USG, as well as its constituent interagency elements, integrate and synchronize all aspects of diplomatic, strategic communication, and economic power to support the interdiction effort. The interdiction effort can incur high risk to a nation's political-military status based upon the perceived international legal, moral, and political authority to undertake such operations. As such, all elements of national power and influence must be synchronized to sanction the state or non-state actor being interdicted.

4. Description of Interdiction. The decision to initiate an interdiction operation is precipitated by some cueing event within a known WMD network that indicates that the actors of interest are seeking to acquire a new or improved WMD capability or are preparing to deliver a WMD or WMD related resource. This cueing event will be assessed in the context of the operational environment and compared against strategic level decision criteria before interdiction is directed. Within the context of a larger campaign, the JFC may execute interdiction operations within or across all campaign phases: Shape, Deter, Seize the Initiative, Dominate, Stabilize and Enable Civil Authority.

a. Planning Interdiction Operations. The multilateral and multidirectional approach to interdiction, causes **planning** to rely upon comprehensive joint, interagency, and multinational collaboration that enables shared understanding, timely and informed decision-making, and development of opportune and accurate products related to interdiction mission planning and execution. The joint force commander will establish a shared view of the WMD networks' operational systems, methods, and decision-making processes and will develop a comprehensive multidirectional attack that approaches the targeted WMD network across the physical, virtual, and human operating domains.

b. Preparing for Interdiction Operations. **Preparing** and posturing actions set the conditions for successful execution of interdiction operations across the physical, virtual, and human domains. Forces and assets for specific missions will be selected and assembled based on numerous factors to include the expertise required for interdicting the targeted network function (financial, science and technology, logistics, intelligence and surveillance, command and control, or weapons delivery) and technical expertise to address the WMD itself (chemical, biological, radiological, or nuclear). Use of these assets may complicate response and surprise challenges, reinforcing the need to conduct stealthy

operational maneuver. Some preparation and posturing actions will require a national level decision for execution.

c. Executing Interdiction Operations. Interdiction force elements must employ resources to disrupt the network, break the network links and seize/secure the WMD or WMD related material, expertise and technology.

- Forces will conduct *reconnaissance* to identify, characterize and track WMD as well as WMD related material, resources, knowledge and technology as it moves from node to node.

- Forces may conduct *threat and target assessments* to detect, identify, locate, and assess the WMD related material or link. *Joint targeting* will then determine the most effective ways and means of employing **counterforce** or other CWMD capabilities to divert, destroy, or delay the adversary's WMD or WMD related material, experts, or technology in a permissive or non-permissive environment. Some interdiction missions are likely to be executed in an operational environment or a political climate in which kinetic or lethal effects are unacceptable. This may lead to a decision to employ non-lethal means or to restrict heavily the use of lethal means.

  If the object of the interdiction is WMD or a hazardous precursor, this assessment will also require a determination of the need for mitigation or *hazard removal* actions. The assessment also determines the requirement for *attribution* so that source/destination of the WMD related material can be determined.

- Forces will execute the **counterforce** operation.

  – The JFC will engage the link in the appropriate domain: physical, human, or virtual. The JFC must coordinate the position of selected military means with other elements of DIMEFIL to secure advantage across multiple operating domains, using multiple directions to arrive at the right target, at the right time, and disrupting the WMD network throughout the depth of the operational environment in all operational conditions.

  – If the JFC employs lethal means and creates kinetic effects, force elements may have to employ **passive defense** capabilities to reduce vulnerabilities or threat **reduction cooperation capabilities** to remove the threat.

- In other than hostile territory, forces must also be prepared for **consequence management** operations to mitigate undesired effects such as the release of WMD related material.

- Forces will then exploit the interdicted link for information that further illuminates the WMD network's path of action and allows the JFC to initiate follow-on action.

d. Assessing Interdiction Operations. **Assessing** supports unplanned and unanticipated targets as well as future interdiction operations. Assessing also more clearly defines the networks supporting the acquisition of WMD capability and the relationships among the networks and the nodes of that network. Finally, it assists the evaluation of requirements for follow up actions and for assigning attribution for WMD proliferation. Assessment brings the operations cycle full circle, providing information for revising objectives, guidance, and intent and supporting other CWMD missions such as Military Support for Non-proliferation and Threat Reduction Cooperation.

- Interdiction force elements must assess the impact of actions on the overall interdiction objective.

- The interdiction force must then determine re-attack and other follow-on requirements. This assessment must address physical and functional damage to the network nodes and links and recommend the appropriate re-attack. Information garnered during assessment and battlefield surveillance should augment the commander's guidance and support efforts aimed at assigning attribution for the proliferation to support appropriate follow-on action.

Appendix J. Elimination Operations

1. Purpose. This appendix presents an expanded discussion of elimination operations.

2. Central Idea.

Ends. Threatening WMD programs are destroyed and redirected.

Ways. (Figure J-1) Sustained and focused operations to systematically characterize, locate, and destroy a WMD program and the supporting sub-systems.

- Decision: Determine and locate the critical sub-sets of nodes and links which, when successfully attacked, will eliminate the WMD capability
- Isolation: Isolate and secure this critical sub-set across the operational domain
- Exploitation: Exploit the nodes to establish attribution and support further elimination operations
- Destruction: Render safe, destroy, remove or redirect WMD and related resources
- Monitoring and Redirection: Continue persistent monitoring
- Sustainment: Leverage agreements and treaties, as well as other means to prevent and destroy emergent capabilities

Means. Full spectrum capable sensors, command and control systems, and force elements (DOD, non-DOD, and multinational) linked across components and echelons of command

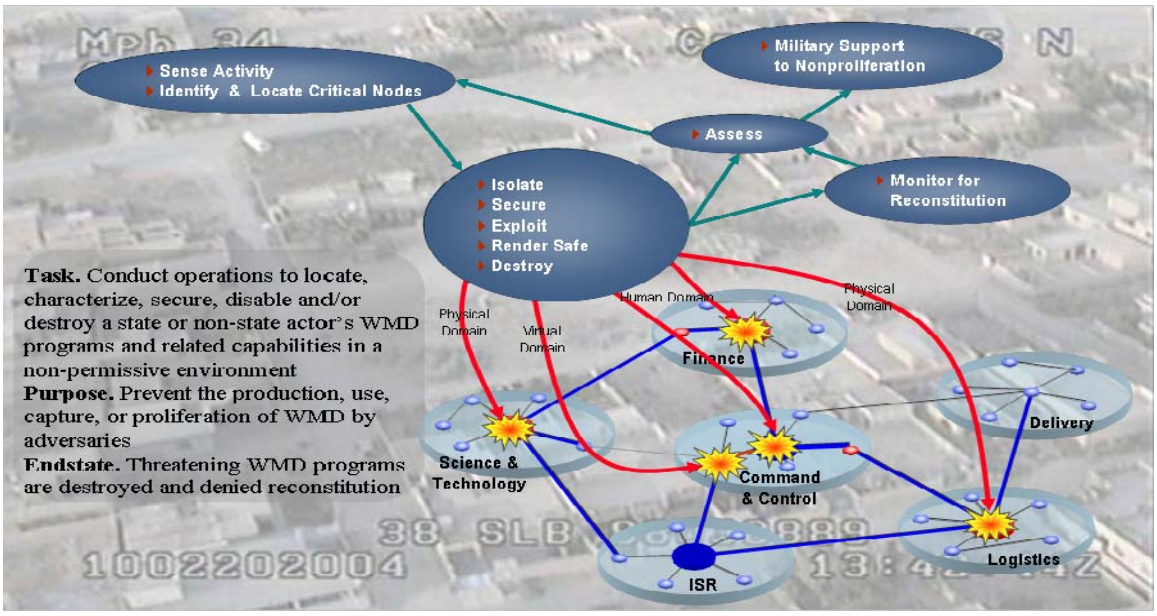

Figure J-1. Elimination Central Idea

3. Principles Essential to Applying the Concept.

a. Attribution. Attribution is the positive identification of the actors involved in the WMD process and an appreciation of responsibility and adversarial intent. In the planning and execution of WMD elimination operations, it is essential to have the knowledge of critical nodes and networks and the ability to attribute appropriate state and/or non-state actors. Aligning nodes, links, intent, and responsibility to a particular adversary or adversaries is essential to getting at the critical elements of production capability. Positive identification of actors and targets increases the probability of precise and effective elimination action and reduces the potential for collateral damage and unintended political consequences.

b. Expanded Operational Environment. Elimination operations require a critical and extensive understanding of all aspects of WMD network process (financial, science and technology, logistics, delivery, intelligence and surveillance, command and control). Joint elimination operations must be conducted across multiple dimensions, identifying and influencing targeted network systems in any potential operating "space"—not only the domains of land, sea, air and space, but also the virtual (information and cyber) and human (cognitive, moral, and social) domains.

c. Integrated Operations. The idea of integrated actions applies to DOD, USG IA elements, coalition partners and nonmilitary agencies—coordinating closely with the joint elimination force. DOD must be prepared to support other agencies in proactive engagement /theater

shaping as well as post-crisis or conflict operations. Conversely, during combat operations, DOD will normally be the supported agency. Regardless of lead agent, USG entities must have the authority to work across agencies and operate with high levels of integration to bring the elements of national power (diplomatic, informational, military, and economic) to bear in effectively eliminating WMD nodes, networks, and capabilities. Integrated and interdependent actions leverage joint force capabilities in order to simultaneously and effectively counter multiple threats and challenges.

Of particular interest in elimination operations is the requirement that the U.S. government and its constituent interagency elements integrate and synchronize all aspects of diplomatic, strategic communication, and economic power to support the elimination effort.

d. Precise Engagements. Accurately determining and characterizing the WMD program and acting directly upon key networks results in the elimination of WMD capability and denies reconstitution. Leveraging continuous network assessment and understanding of key network nodes to identify a critical sub-set of nodes upon which the actor's WMD capability rests maximizes results. It is essential that the JFC destroy or isolate critical aspects of the network in order to eliminate capability and deny reconstitution. The JFC need not destroy the entire production capability. In fact, the destruction of dual-use infrastructure may ultimately undermine the broader political objectives of reversing the actor's decision to acquire WMD. The JFC needs only to attack sufficient and critical nodes to deny WMD capability.

e. Tempo Control. By understanding adversary technology and pace of development, the JFC moves at a tempo that keeps the adversary "in the dark," enabling the joint force to counter the advantage of time often exploited by an adversary. It is important to deliberately sequence elimination operations based upon the exploitation of previously eliminated nodes or networks in order to set the conditions by which the subsequent nodes can be exploited for further information or isolation and elimination.

4. Application of Elimination within a Campaign Framework. A WMD elimination operation seeks to identify the critical path of action within the WMD network, the destruction of which will deny an adversary WMD capability. Once the JFC understands the critical sub-set of network targets that comprise the path, the joint force can analyze them for vulnerability, value, and pay-off. Successful engagement of this critical sub-set of targets, which constitute the essential features of the WMD capability, will destroy the ability of the process to operate along the

proliferation continuum. Therefore, a successful elimination operation does not require the destruction of every link and node in the network.

a. Planning Elimination Operations. If the JFC is operating within the broader context of a military campaign, mission requirements must be coordinated with those of the senior military commander. For example, within the context of a major contingency operation, the senior commander may desire to offensively strike and destroy certain WMD targets, such as delivery systems and stockpiles, to prevent their use against his forces. The JFC conducting elimination operations can gain important information from these sites through exploitation. JFCs should discuss potential conflicts over the means of elimination and decide appropriate actions within the broader strategic end state of the conflict. Similarly, since offensive forces may secure WMD sites and material before the JFC responsible for elimination can secure and isolate the material and technology, there must be clear guidance and sufficient capabilities to secure and isolate the sites and subsequent close coordination between the two commanders to ensure mutual mission success without unintended consequences from the acts of either party.

b. Preparing for Elimination Operations. **Preparing** and posturing actions set the conditions for successful execution of elimination operations across the physical, virtual, and human domains. Forces and assets for specific missions will be selected and assembled based on myriad factors to include the expertise required for interdicting the targeted network function (e.g., financial, science and technology, logistics, intelligence and surveillance, command and control, or weapons delivery) and technical expertise to address the WMD itself (e.g., chemical, biological, radiological, or nuclear). Use of these assets may complicate response and surprise challenges, reinforcing the need to conduct stealthy operational maneuver. Some preparation and posturing actions will require a national level decision for execution.

c. Executing Elimination Operations. WMD elimination requires the successful engagement of a critical sub-set of network targets to destroy the WMD capability and the subsequent integration of efforts to deny the reconstitution of that network. The JFC achieves the operational objective of engaging the critical path of the WMD network in concurrent, sequential, or phased approaches as required by time and circumstance. The objective of elimination is the disruption of the critical sub-set of targets through the orchestrated application of operational tasks against the critical sub-set of nodes as a whole.

(1) Forces will conduct **reconnaissance** to determine and locate the critical sub-sets of nodes and links which, when successfully

attacked, will eliminate the WMD capability. This may require threat and target assessments to detect, identify, locate, and assess the material, nodes and links. The exploitation of these WMD nodes and networks will require investigative skills not commonly found in military organizations and will require considerable training or the attachment of skilled investigators from USG or military criminal investigation organizations or a readily available core of WMD investigators.

(2) Forces will conduct *joint targeting* to determine the most effective ways and means of employing counterforce capabilities to eliminate the critical subset of nodes and links. This assessment requires a determination of the need for security, exploitation, **passive defense**, *hazard removal* and **consequence management** actions.

(3) Forces will employ **counterforce** capabilities to isolate and physically secure the critical sub-set of targets to prevent withdrawal or interference in the physical domain and to ensure the inability of the WMD process to function.

(4) Once sites are isolated and secured, forces will assess whether specialized technical capabilities (i.e., financial, logistical, or WMD specific) are required to exploit and render the critical node safe or inoperative. In this instance, specialized capabilities must deploy.

(5) Forces will then conduct intelligence operations that exploit the critical sub-set for information that further illuminates the WMD network and establishes *attribution* of the source/destination of the WMD and related expertise, knowledge, and technologies.

(6) Concurrently, the joint force will *reduce the threat* posed by the WMD and related resources. This may require neutralizing, shielding, removal or destruction of the WMD.

(7) Joint forces will then eliminate the critical sub-set of targets through destruction, dismantlement, removal or redirection, destroying its value and capacity for functioning.

(8) The elimination force will assess the effect of this action on the WMD elimination operation, the WMD network, and the campaign as a whole.

(9) The joint force will then support operations to deny the reconstitution of the eliminated program through support to treaties and agreements or through interdiction, offensive operations or elimination operations. Denial of reconstitution is the process of assessment, monitoring, and targeting the WMD program's critical supporting network activity. Denial of reconstitution must be persistent, adaptive,

and capable of a wide perspective that recognizes particular nodes and links as part of an adversarial system that will adopt, reorganize, or transition in response to new objectives and environments.

d. Assessing Elimination Operations. **Assessing** supports unplanned and unanticipated targets as well as future elimination operations. It brings the operations cycle full circle, providing information for revising objectives, guidance, and intent and supporting other CWMD mission areas such as Military Support for Non-proliferation and Threat Reduction Cooperation. Assessing requires a detailed exploitation of the WMD node in a systematic process approaching the investigation of a crime scene. The intent of this exploitation is to solidify the attribution of WMD capability and intent to specific state and non-state actors, increase the commander's understanding of the WMD capability and its underlying networks and nodes and their interdependencies, and identify subsequent or new networks or nodes for elimination.

Appendix K. Consequence Management Operations

1. Purpose. This appendix presents an expanded discussion of consequence management operations that serve to deny actors of concern the benefits of WMD use and mitigate the effects of any WMD incident.

2. Central Idea.

Ends. CBRN effects are neutralized, contained, and reduced across the physical, virtual, and human dimensions

Ways. (Figure K-1) Simultaneous and synchronized operations focused on containing and then mitigating WMD effects in the physical and human domains through security operations, reconnaissance and decontamination, provision of essential services and rapid transition to appropriate civilian authority. Key elements

- Coordination/Integration with partners to coordinate immediate response and mitigation efforts to minimize WMD effects in the event of a WMD attack
- Rapid remediation and restoration of critical infrastructure and services to prevent instability
- Strategic communication to sustain assurance and dissuasion

Means. Fully integrated U.S. and partner capabilities linked across components and echelons of command

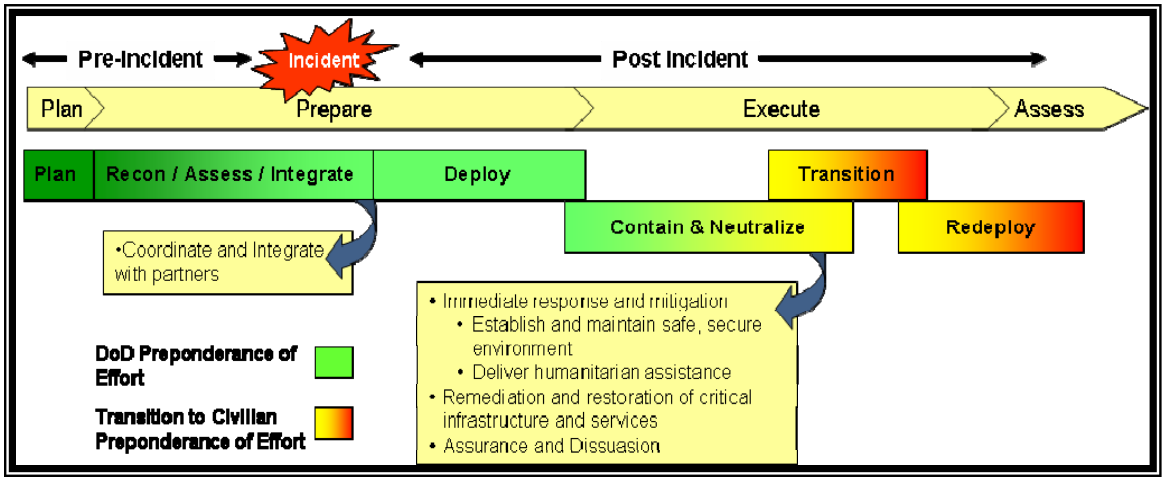

Figure K-1. CM Central Idea

3. Description of Consequence Management. CM is essential to the successful denial of the effective use of WMD through either mitigation of use, or demonstrated response capability to deter use or future use. The

development and execution of CM requires a comprehensive response operation that integrates all of the elements of national power of the USG, its allies and partners to effectively establish and maintain a secure environment.

a. Plan CM Operations. The JFC **plans** military support actions to save lives, isolate and contain the physical effects, assure security and provide essential services to foreign and domestic CM operations. If designated the lead, JFC will plan to transition operations to civilian capabilities (USG, HN, or Inter-governmental Organizations) as soon as practicable.

One of the most important tasks is to *coordinate and integrate joint/multinational and interagency* actions because the joint force is primarily a supporting element to the designated LFA. Assignment of LFA is normally determined by relationships with existing civil authorities.

(1) Domestically, military capabilities support lead coordinating agencies, normally state and local first responders or federal agencies (Department of Homeland Security or Department of Justice). This support is through USNORTHCOM or other Title 10 JTFs, Title 32 State JTFs or Dual Status commanders commanding Title 10 or Title 32 military forces. This could mandate a three-tiered approach in which military forces are operating under local, state and federal authority simultaneously.

(2) Foreign consequence management will normally require military capabilities to be placed in support of the broader USG response led by the Department of State. The magnitude of military response will depend upon the affected nation's capabilities, putting a premium on building partner capacity.

(3) In response to a WMD event on territory under the authority and effective control of U.S. forces where there is no civil authority, the JFC bears a legal responsibility under the Laws of War to restore and maintain public order and safety. This case is most likely occur during a Major Combat Operation. As a result, the JFC will normally be the lead, have significantly more responsibility and a greater magnitude of tasks, and must address the strategic and operational impacts of a WMD event upon the stability of the territory as well as coalition or allied partners.

Regardless, CM operations focus upon effectively combining the efforts of the U.S. military with USG agencies and its multi-national partners, therefore effective plans rely upon an in-depth assessment of partner

capabilities, needs, and proficiency to respond to a variety of WMD incidents.

b. Prepare for CM Operations. Preparing and posturing actions set the conditions for successful execution of CM operations across the physical, virtual, and human domains. Preparation activities happen both before and after the incident.

(1) Pre-incident, **reconnaissance** and surveillance, analysis and early warning are critical tasks in support of the JFC's CM operation. Designed to collect and analyze militarily significant information on the operational environment and the WMD actors' intent, they provide indicators and warnings focused on attack preparation and detection to provide early warning for response asset preparation and facilitating a rapid response to any use of WMD. Additional preparation tasks include:

(a) Directing intelligence activities to include provision of indicators and warning of WMD attack for non-domestic JOAs. Department of Defense will not conduct domestic reconnaissance and surveillance of U.S. citizens.

(b) Assessing and monitoring the operational situation. The JFC, along with DOD, and other USG/non-USG agencies involved, will need a collaborative information and planning environment to establish a shared view of the incident response.

(c) *Developing* and exercising *command and control* structures to integrate components (medical, logistics, engineering, security, C4), as well as Joint/Multinational and interagency support.

(d) *Integrating partner* capabilities (first responder equipment; training; personal decontamination supplies; healthcare facilities) to maximize effectiveness.

(e) Conducting rehearsals (Interagency, Multinational). The complicated aspect of changing lead federal agency responsibilities requires clearly defined decision points and rehearsals, enabling connectivity, training and doctrine. The relationships among DOD, non-DOD and non-USG force elements will change based upon location; existing treaties, agreements, and laws; and force capabilities. These relationships must be established beforehand to facilitate rapid execution of CM operations and to support follow-up tasks associated with reconstruction.

(f) Providing *passive defense* that will allow military forces to maintain the necessary operational tempo.

(2) Post-Incident, all sensors and intelligence assets must begin surveillance of the affected area across all domains for the detection, identification, characterization, attribution forensics, and analysis of the CBRN hazards. Once the hazard and contaminated "hot zones" are established, the joint force concentrates upon hazard prediction and attribution analysis. The JFC also focuses upon the prevention of further injury, death, illness, damage or loss of property/ equipment. Post incident operations include those designed to establish the extent and composition of a WMD incident and, through forensic analysis of an incident, provide attribution of the source of the WMD after use or WMD related material and delivery means.

c. Execute CM Operations. Supporting military forces must mitigate direct effects, undesired effects and unanticipated effects of WMD attacks.

(1) Immediate response and mitigation. These actions minimize the effects of WMD and seek to:

(a) Establish and maintain a safe and secure environment. The JFC may provide **politico-military support** (*security assistance, civil military operations, support to DOD and IA*) to establish a secure environment that allows for the delivery of assistance and the introduction of civilian relief resources for aid and reconstruction. A secure environment could include protection from the effects of WMD contaminants as well as protection from external threats that may destabilize the affected area. The JFC's operations focus immediately on surveillance and **reconnaissance** (CBRN reconnaissance and analysis) to identify the contaminants and affected area, isolation of the incident area to keep the local populace safe and to support exploitation, and casualty extraction. In addition, the JFC must develop and execute actions to control pollution and hazardous materials to avoid the spread of contamination and additional casualties.

(b) Deliver Humanitarian Assistance. Military disaster control capabilities support the provision of the essentials of life (e.g., water, food, sanitation, weatherproof shelter, medical care) to mitigate human suffering and lead to a return to stability. This includes JFC directed efforts to deliver humanitarian assistance, provide medical assistance and evacuate casualties.

(2) Remediate and restore critical infrastructure and services. Rapid restoration of essential services is critical to restoring stability, normality, and hope to the effected populace in the incident area. To support these objectives, the joint force might provide *disaster control support* to include restoration of essential services such as water, power,

sanitation and law enforcement; road and infrastructure repair; debris removal; mortuary affairs; transportation and logistics; medical (triage, USN ship hospital ships, medical evacuation, field hospitals). Selected critical infrastructure and service restoration will facilitate the rapid delivery of assistance and reconstruction aid and contributes to stability and rapid transition to civil authorities.

(3) Assure and Dissuade. The JFC, fully integrated and synchronized with the USG *strategic communication* strategy and focus, conveys to friends and allies the commitment of the United States to rapid recovery; and to adversaries the indecisive impact of the WMD incident on U.S. and partner efforts, highlighting a rapid, effective response and supporting the adversary's perception that the WMD incident was unsuccessful. Strategic communication has a critical role in shaping the perceptions of the populace once the response is underway in order to maintain the legitimacy of local authorities and U.S. action. Strategic communication must convey a persistent message by "word and action" of preparedness to respond and effectiveness of mitigation and remediation efforts to friends, partners, and adversaries.

(4) Transition and Redeploy. If designated to lead the USG response, the JFC begins the decision process for the redeployment of military CM capabilities, setting the conditions for civilian led reconstitution and reconstruction aid effort. The JFC transitions to a supporting role to the primary USG response agencies as quickly as the situation permits. Once transition to civil control is accomplished, military capabilities redeploy and reset for future operations.

(5) Integration and Focus Areas. Specific objectives and levels of effort for each CM operation will vary depending upon its characterization (CM in a territory with no existing civil authority, foreign CM or domestic CM) and other aspects of the operational environment.

(a) Domestic CM puts a premium on establishing a safe environment and saving lives of U.S. citizens. This will require a focus on specialized agent detection, identification and dispersion determination as well as mass casualty search, extraction, decontamination and triage under extremely constrained deployment timelines. The threat of multiple, simultaneous domestic events will also require multiple, dispersed CM capable elements.

(b) Foreign CM has inherent requirements for coordination with the HN and the positioning of supporting forces. This creates a longer deployment timeline for the JFC. As a result, foreign CM will have more emphasis on assisting the HN with restoration of essential services or delivering humanitarian assistance. Because of these factors, the JFC

will benefit from the preparation conducted with HN forces and CM capacity built in prior events, which should focus upon the local government ability to immediately respond and established a safe environment.

(c) In territory under the authority and effective control of U.S. forces where there is no civil authority, the JFC will normally incur full responsibility for CM. Under these conditions, it is likely that a WMD event will increase instability in the territory. A rapid response by the JFC, broader in size and scope than domestic CM, will be required and the JFC facing this situation will have to have pre-positioned CM forces in theater for this response. A rapid response to the WMD event will be essential, but the JFC must be prepared to transition rapidly to SSTR Operations as required.

d. Assessing CM Operations. The JFC assesses progress along each CM line of operations. The assessment facilitates the transition of response, remediation and restoration efforts to civil authorities as desired conditions are met. In addition, the assessment must consider forensic information to assist in establishing **attribution** for the incident to support appropriate follow-on action.