

Deterrence Operations

Joint Operating Concept



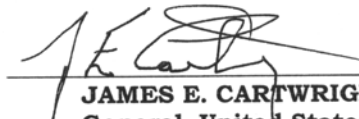
Version 2.0

December 2006

APPROVAL

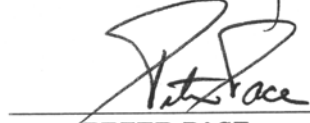
As the lead author, US Strategic Command matured this concept through the use of joint and Service operational lessons learned and experimentation to include co-sponsored joint wargames, seminars, workshops and other concept development venues. During the development of this concept each Service, combatant command, members of the Joint and OSD staffs, as well as multinational partners and selected non-DOD agencies made significant contributions. Also included throughout were a host of active and retired flag and junior officers, academics, and professional strategic thinkers. US Strategic Command will continue to use experimentation and lessons learned to refine this concept. The next revision period leading to Version 3.0 is expected to commence in the June 2008 timeframe.

APPROVED



JAMES E. CARTWRIGHT
General, United States Marine Corps
Commander, USSTRATCOM

APPROVED



PETER PACE
General, United States Marine Corps
Chairman, Joint Chiefs of Staff

APPROVED



DONALD H. RUMSFELD
Secretary of Defense

PREFACE

Why the concepts

The future Joint Force will operate in a complex and uncertain global security environment characterized by asymmetric threats from international organizations, nation states, rogue states, and terrorist organizations. A shift in the Joint Force's role and employment is required to respond in this new security environment.

What the concepts are

The Range of Military Operations (ROMO)¹, developed to reflect this changed security environment, identifies 43 activities for which the Joint Force must prepare. Joint Operations Concepts (JOpsC) identify future military problems and propose solutions for innovative ways to conduct operations. They are a visualization of future operations and describe how a commander, using military art and science, might employ capabilities necessary to meet future challenges. The Capstone Concept for Joint Operations (CCJO) is the overarching concept of the JOpsC family that guides the development of future joint capabilities by providing a broad description of how future joint forces are expected to operate across the ROMO. The Joint Operating Concept (JOC) applies the CCJO to describe how a Joint Force Commander (JFC), 8-20 years into the future, is expected to conduct operations within a military campaign.

What the concepts do

The family of joint concepts plays a central role in the capabilities-based methodology for Joint Force development. This concept paper focuses on the role of deterrence in achieving two of the Chairman's key strategic priorities: guiding Joint Force transformation and enhancing joint warfighting capabilities.

¹ Capstone Concept for Joint Operations, August 2005.

PREFACE.....	..
EXECUTIVE SUMMARY	3
DETERRENCE OPERATIONS	7
PURPOSE	7
Scope	8
Time Frame	9
Assumptions.....	11
Risks	11
MILITARY PROBLEM.....	12
Joint Operating Environment.....	13
Deterrence Challenges	15
Non-State Actor Challenge	18
CENTRAL IDEA.....	19
Figure 1: Deterrence Operations Joint Operating Concept	20
Figure 2: Core Concept: Exercising Decisive Influence (Example).....	22
End: Decisively Influencing the Adversary’s Decision Calculus	23
Ways: Methods to Achieve Deterrence	24
<i>Deterrence by Denying Benefits</i>	26
<i>Deterrence by Imposing Costs</i>	26
<i>Deterrence by Encouraging Adversary Restraint</i>	27
Means: Capabilities and Attributes.....	28
<i>Global Situational Awareness (ISR)</i>	29
<i>Command and Control (C2)</i>	32
<i>Forward Presence</i>	33
<i>Security Cooperation and Military Integration and Interoperability</i>	35
<i>Force Projection</i>	36
<i>Active and Passive Defenses</i>	37
<i>Global Strike</i>	39
<i>Strategic Communication</i>	42
DETERRENCE IMPLEMENTATION	44
RISKS AND MITIGATION	48
DETERRENCE ASSESSMENT	52
Metrics for Deterrence Assessment	53
Deterrence Experimentation	54
Strategic Deterrence Assessment Lab	55
SUMMARY AND CHALLENGES	56
Glossary	57
Bibliography	58
Appendix A: Illustrative Deterrence Example for State/Rogue State Actor.....	62
Appendix B: Illustrative Deterrence Example for Non-State Actor	65
Appendix C: Deterrence Effects	67
Appendix D: Linkages Between Deterrence & Other Key Defense Activities ...	70
Appendix E: Linkages to Joint Capability Areas	74

EXECUTIVE SUMMARY

“The new strategic environment requires new approaches to deterrence and defense. Our deterrence strategy no longer rests primarily on the grim premise of inflicting devastating consequences on potential foes. Both offenses and defenses are necessary to deter state and non-state actors, through denial of the objectives of their attacks and, if necessary, responding with overwhelming force.” US National Security Strategy²

Purpose

The challenges identified in the National Security Strategy require a new concept for “waging” deterrence paired with revised joint force capabilities that provide a wider range of military deterrent options. Deterrence requires a national strategy that integrates diplomatic, informational, military, and economic powers. DOD must develop strategies, plans and operations that are tailored to the perceptions, values, and interests of specific adversaries. Deterrence strategies and actions must span daily operations and must be developed for all phases of conflict planning.

Deterrence operations convince adversaries not to take actions that threaten US vital interests by means of decisive influence over their decision-making. Decisive influence is achieved by credibly threatening to deny benefits and/or impose costs, while encouraging restraint by convincing the actor that restraint will result in an acceptable outcome. Because of the uncertain future security environment, specific vital interests may arise that are identified by senior national leadership. Deterrence strategy and planning must be sufficiently robust and flexible to accommodate these changes when they occur. This Deterrence Operations Joint Operating Concept (DO JOC) describes how Joint Force Commanders (JFCs) will conduct deterrence operations through 2025. The DO JOC provides the conceptual framework needed to meet the 2006 Quadrennial Defense Review (QDR) requirements for deterrence activities tailored for rogue powers, terrorist networks and near-peer competitors. The DO JOC describes the impact of deterrence on other key activities – assuring allies and friends, dissuading potential adversaries, and defeating adversaries – that are necessary to execute the National Defense Strategy. It provides a set of steps necessary to operationalize deterrence planning that supports the National Military Strategy (NMS) objective of 'Prevent Conflict and Surprise Attacks' and the NMS requirement to develop a wider range of options that discourage aggression and coercion. It provides the operational context and conceptual basis for further concept development, capability based assessments (CBA), integrated architectures and experimentation.

² The National Security Strategy of the United States of America, 16 March 2006, pg 22.

Military Problem

In the future, joint force commanders will pursue deterrence objectives vis-à-vis both nation-states and non-state actors. The identity, nature and capabilities of adversaries will shift dramatically as the joint force faces a wider spectrum of contingencies throughout a complex battlespace. Deterrence operations must continue to deter attacks against US vital interests and provide an environment that allows the US to pursue constructive policy goals worldwide.³ Beyond 2012 our success in planning and executing deterrence strategy will depend largely on how well we address four key aspects of the military problem:

Wide Array of Potential Adversaries: The US will face an array of state and non-state adversaries, whose political, cultural, ideological, religious, and idiosyncratic values and goals differ from ours. These differences will complicate our efforts to understand and influence their perceptions. As we seek to deter hostile action, we must take into account the potential for mutual miscalculation and explicitly deal with that in forging strategies, plans and operations.

Asymmetry of Stakes vs. Asymmetry of Power: Some adversaries may perceive their stake in the outcome of the crisis/conflict to be great enough to act regardless of US military superiority. The differential between stakes in the outcome can undermine the effectiveness of deterrence. The US must provide the means to overcome imbalances of stake and power and bolster the credibility of US deterrence strategy and actions.

Technological Vulnerabilities of US Society and Forces: The US economy and military forces will have and use technological superiority that provides a competitive edge that also creates vulnerabilities that adversaries might exploit. Planners must address US vulnerabilities, identify ways of eliminating them where feasible, and compensate for them when necessary.

The emergence of a Multi-Polar World: During the Cold War, the world was bipolar with two super-powers: the Soviet Union and the US. After the collapse of the Soviet Union, there has been evolving security dynamics that will affect and may constrain US power. The management of our relationships with emerging nations presents a key challenge in shaping future strategies to assure our own security.

Certain non-state actors pose threats to US vital interests. There are key differences between state and non-state actors. Five major differences significantly affect the ways in which this JOC applies to non-state actors:

³ By itself, deterrence cannot achieve positive aims. However, successful deterrence sets conditions for other, positive actions to improve conditions and achieve desired endstates.

1. It can be far more difficult to identify the decision-makers we seek to deter.
2. There is generally greater uncertainty as to how these decision-makers perceive the benefits, costs, and consequences of restraint.
3. State and non-state actors often differ in their susceptibility to our efforts to credibly threaten cost imposition.
4. They may have different goals/objectives, different values, and they employ different means to achieve them.
5. In contrast to non-state actors, deterrence of state actors is facilitated by well-established means of communications between states.

Central Idea

The central idea of the DO JOC is to decisively influence the adversary's decision-making calculus in order to prevent hostile actions against US vital interests. This is the "end" or objective of joint operations designed to achieve deterrence.

An adversary's deterrence decision calculus focuses on their perception of three primary elements:

- The benefits of a course of action
- The costs of a course of action
- The consequences of restraint (i.e., costs and benefits of not taking the course of action we seek to deter)

Joint military operations and activities contribute to the "end" of deterrence by affecting the adversary's decision calculus elements in three "ways":

- Deny Benefits
- Impose Costs
- Encourage Adversary Restraint

The ways are a framework for implementing effective deterrence operations. These way" are closely linked in practice and often overlap in their application; however, it is useful to consider them conceptually separate for planning purposes. Military deterrence efforts must integrate all three ways across a variety of adversaries and deterrence objectives. Deterrence ways are not either/or propositions. Rather, when properly leveraged to convince an adversary his best option is not taking a course of action aimed against US vital interests, they are complementary and synergistic. Because future threats will be increasingly transnational, these military deterrence efforts will likely involve synchronized actions by multiple JFCs worldwide.

The central idea is implemented at the operational level by:

1. Tailoring Deterrence Operations to Specific Adversaries and Contexts
2. Dynamic Deterrence Assessment, Planning, and Operations
3. Deterring Multiple Decision-Makers at Multiple Levels
4. Characterizing, Reducing, and Managing Uncertainty

The specific military “means” required to credibly threaten benefit denial and cost imposition, or otherwise encourage adversary restraint will vary significantly by adversary and situation. Military objectives and means cannot be considered in isolation; these objectives may change over time and must be synchronized with the application of the other instruments of national power. Some aspects of these military means may contribute more directly to warfighting (i.e., defeat) than deterrence. However, it is possible to identify key joint capabilities (and deterrence-related attributes of those capabilities) that must be planned for regardless of their warfighting utility.

The military means of the DO JOC fall into two categories: those that directly and decisively influence an adversary’s decision calculus, and those that enable such decisive influence.

Direct means include:

- Force Projection
- Active and Passive Defenses
- Global Strike (nuclear, conventional, and non-kinetic)
- Strategic Communication

Enabling means include:

- Global Situational Awareness (ISR)
- Command and Control (C2)
- Forward Presence
- Security Cooperation and Military Integration and Interoperability
- Deterrence Assessment, Metrics, and Experimentation

Application

The DO JOC outlines the ways and means necessary to achieve the end of deterrence. It focuses deterrence on the adversary’s decision calculus and describes how an adversary’s decision-making can be decisively influenced by credibly threatening to deny benefits and impose costs, plus encouraging adversary restraint. It identifies those capabilities and associated attributes required to exercise such decisive influence. Further, it proposes a means of evaluating the effectiveness of alternative deterrence choices, making future experimentation and further concept development possible.

DETERRENCE OPERATIONS

The new strategic environment requires new approaches to deterrence and defense. Our deterrence strategy no longer rests primarily on the grim premise of inflicting devastating consequences on potential foes. Both offenses and defenses are necessary to deter state and non-state actors, through denial of the objectives of their attacks and, if necessary, responding with overwhelming force.

National Security Strategy of the United States of America, March 2006.

Today's threats are far more diverse and less predictable than those of the past. States hostile to the United States and to our friends and allies have demonstrated their willingness to take high risks to achieve their goals, and are aggressively pursuing WMD and their means of delivery as critical tools in this effort. As a consequence, we require new methods of deterrence.

National Strategy to Combat Weapons of Mass Destruction, December 2002.

PURPOSE

The purpose of the Deterrence Operations Joint Operating Concept (DO JOC) is to help guide the transformation of the joint force. While supporting the objectives of the 2006 Quadrennial Defense Review and the National Military Strategy, this concept will generate thought and discussion about new methods for waging deterrence in response to the full range of challenges faced by the future joint force.

In the future joint operating environment, deterrence must address a broader range of potential adversaries and situations than in any previous era of US history. Future deterrent success will be heavily influenced by how potential adversaries perceive US national will and resolve in the face of severe threats across all areas of responsibility (AORs) and the entire range of military operations (ROMO). Thus, deterrence requires a grand strategy that considers adversary-specific deterrence on a global scale, incorporates cross-AOR effects, and factors in second and third order effects. This deterrence strategy must be integrated within a national deterrence strategy that integrates and brings to bear all elements of national power: diplomatic, information, military, and economic. The military component of that strategy involves deterrence operations conducted in accordance with this JOC. Such deterrence operations must now work in concert with a reinvigorated homeland security posture and continuously evolving concepts of major combat and stability operations. These new deterrence challenges require revised joint force capabilities that provide a wider range of timely military options integrated with other elements of national power to discourage aggression or any form of coercion against the United States or its vital interests.

Deterrence operations convince adversaries not to take actions that threaten US vital interests by means of decisive influence over their decision-making. Decisive influence is achieved by credibly threatening to deny benefits and/or impose costs while encouraging restraint by convincing the actor that restraint will result in an acceptable outcome.

The National Security Strategy (NSS) describes national goals and objectives and the President's priorities in protecting and advancing US worldwide interests. Consistent with the NSS, enduring US vital interests include: maintaining the integrity of US territory; preserving basic political and societal integrity within the US; preventing mass casualties among the US population; securing critical US and international infrastructure (energy, telecommunications, water, essential services, etc.) that support our basic standard of living and economic viability; and supporting the defense of US friends and allies.

Because of the uncertain future security environment, additional vital interests may arise that are identified by senior national leadership. Deterrence strategy and planning must be sufficiently robust and flexible to accommodate these changes if and when they occur. Flexibility in our deterrence construct also hedges against the possibility that an adversary might incorrectly perceive their actions to be “below the radarscope” of US resolve and response.

The DO JOC also serves to guide the transformation of the joint force. This concept will generate thought and discussion about new methods for waging deterrence in response to current and emerging military threats. This joint concept will provide the basis for military experiments and exercises and will lead to capability development efforts that could result in changes to doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) and policy.

SCOPE

This DO JOC describes how a joint force commander, 8-20 years into the future, may conduct deterrence operations in order to convince adversaries not to take actions that threaten US vital interests. It contributes to the conduct of other key defense activities such as assuring allies, dissuading potential adversaries and defeating our enemies (see Appendix B). The DO JOC applies the Capstone Concept for Joint Operations (CCJO), and is mutually supportive of other DOD missions to include, but not limited to those described in other Joint Operations Concepts (JOpsC).

Time Frame

The intended timeframe of the DO JOC is current-day through 2025.⁴

JOpsC Relationship

The DO JOC offers a strategy and operational design for accomplishing the deterrence line of effort as part of the campaign framework for future joint operations: shape, deter, seize initiative, dominate, stabilize and enable civil authority. Moreover, it applies the five elements of the CCJO solution within the context of unified action in order to confront the full range of traditional, disruptive, catastrophic and irregular challenges. Finally, deterrence operations support and enhance the ability of a joint force commander to defend the homeland and conduct major combat and stabilization operations as articulated in other JOCs.

In terms of the CCJO central idea, deterrence operations are planned and executed across all domains in concert with other elements of national and international power in order to achieve strategic objectives. Deterrence is most likely to be effective when the actions and capabilities of the joint force are integrated with those of the interagency and as necessary, non-state and multinational partners. A systems approach to understanding the adversary and the operating environment underpins deterrence operations. Decisions and associated behaviors reflect the constraints and opportunities afforded by a complex, dynamic environment as well as the complexity inherent to any social organization. For example, terrorist organizations consist of multiple agents with unique decision-making calculus and interdependent preferences. Moreover, the decision-making calculus varies over time as a consequence of changes in the operating environment and the actions of other stakeholders to include the joint force commander. Deterrence operations are dependent on the ability of the joint force to manage perceptions and act directly and discriminately through multiple domains on the decision-making calculus of adversaries. Finally, successful deterrence is knowledge-dependent and requires the ability to establish and secure communication access to adversaries in order to generate the desired decision outcomes.

The Deterrence Operations JOC supports and is directly related with the other JOCs. Successful deterrence operations require many of the same capabilities needed to conduct military operations in accordance with other joint operating concepts—(Major Combat Operations, Stability, Security, Transition and

⁴ Although acquisition of some complex systems may not be feasible before 2025, many of the non-materiel organizing concepts discussed in this paper could be implemented in the near-term.

Reconstruction Operations, and Homeland Defense and Civil Support).⁵ Additionally, this concept highlights functional capabilities and attributes that are uniquely required to conduct deterrence operations in support of key defense activities and national objectives.

While the DO JOC attempts to deter an action, if deterrence fails, the US must be prepared to respond as appropriate up to and including Major Combat Operations (MCO). Some of the means employed for deterrence directly support preparations for MCO. Conversely, preparations for MCO may enhance deterrence by credibly threatening to impose costs or deny benefits. In some cases, rapid preparations for MCO may cause the adversary to act more quickly to accomplish his desired action and end state prior to the US building up sufficient forces for MCO. Additionally, the US must deter attack elsewhere in the world while engaged in MCO (e.g., deterring North Korea from attacking while the US is engaged in Operation IRAQI FREEDOM). This interrelated nature of MCO and DO must be understood and appreciated by the JFC prior to taking action.

While many of the means used for deterrence operations may not overlap significantly with those employed for Stability, Security, Transition, and Reconstruction Operations (SSTR), the two JOCs are nonetheless interrelated. The US will have to effectively deter attack against the nation that the U.S is helping stabilize or rebuild and/or deter attacks elsewhere in the world while significant numbers of US forces are employed in SSTR (e.g., deterring Iran from attacking Iraq, while the coalition conducts SSTR).

Deterrence operations are closely linked to DOD's Homeland Defense mission. Deterring attack against the US is a vital interest and the primary focus of the DO JOC. Both the direct means (Force Projection, Active and Passive Defenses, Global Strike, Strategic Communication) and enabling means (Global Situational Awareness, Command and Control, Forward Presence, Security Cooperation and Military Integration and Interoperability) contribute to the goal of deterring attacks against the Homeland through decisive influence on the adversary's decision calculus to attack.

⁵ Not all activities and functions conducted by the Joint Force support deterrence. Some Joint Force capabilities exist that benefit the security of the US through their warfighting application but may conflict with the deterrence methods outlined herein. For example, in some situations an adversary leadership's perception of the consequences of restraint might be negatively affected by American military capabilities that pose a credible threat of a disarming first strike (i.e., such capabilities might put an adversary leadership in a severe "use or lose" situation vis-à-vis certain forces that are critical to their success, or even survival). Additionally, some capabilities have complementary characteristics that support both deterrence and warfighting aims. Capabilities common to multiple JOCs are noted throughout this document.

Assumptions

- The United States is aware that an adversary (state or non-state) may be capable of an attack that threatens its vital interests.
- Actions to be deterred result from deliberate and intentional adversary decisions to act (i.e., not from automatic responses or unintended/accidental events).
- Decisions to act are based on actors' calculations regarding alternative courses of action and actors' perceptions of the values and probabilities of alternative outcomes associated with those courses of action.
- At least some adversary values and perceptions relevant to their decision-making can be identified, assessed, and influenced through action (or inaction) by others.⁶
- Some actors (both state and non-state) will be extremely difficult to deter, given their worldview and the resulting content of their decision-making calculus.
- Truly irrational actors are extremely rare. Such actors make decisions in a manner other than that described above (e.g., randomly, without reference to anticipated outcomes, without consideration of alternative courses of action to include inaction, etc.).

Risks

- Uncertainties regarding the nature and content of adversary values, perceptions, and decision-making processes could prevent development of a sufficiently accurate and detailed understanding of adversary decision calculations to support effective deterrence strategy and plan development and execution.
- The DO JOC is explicitly designed to focus our deterrence operations on discerning and influencing key adversary perceptions. Despite this fact, the US could unintentionally "mirror image" certain aspects of an adversary's decision calculations, undermining deterrence effectiveness.
- The US could miscalculate an adversary's reaction to our policies and actions, in spite of determined efforts to avoid such an outcome.
- US deterrence efforts focused on one potential adversary may have undesired and unforeseen second and third order effects on our assurance, dissuasion, and deterrence efforts focused on other actors. For example, third parties (both state and non-state) could learn lessons

⁶ Such values and perceptions are influenced by historical, cultural, religious, ideological, political, military, informational, organizational, bureaucratic, personal, and other factors.

from US deterrence efforts focused on others, and attempt to develop strategies to avoid being deterred themselves.

- The US may lack critical capabilities required to effectively influence a specific adversary's decision calculations under certain conditions. Because the perceptions and capabilities of potential adversaries vary, the means required to influence them may vary significantly.
- Deterrence effectiveness is critically dependent on adversary perceptions of US national will and political resolve. Events, circumstances, or decisions outside the purview of the Department of Defense that negatively influence such perceptions could undermine the effectiveness of deterrence operations being conducted in accordance with this joint operating concept.
- The US military may not have sufficient capability to deter, thus a strategy that primarily relies upon military means or is not sufficiently integrated with other elements of national power risks failure.
- The US may be unable to determine what specific deterrence actions successfully deterred an adversary from taking a specific course of action, or even whether adversary restraint indicated deterrence success. This could hamper efforts to learn from past successes, or lead to false confidence in certain past deterrence actions or approaches.
- An adversary's deterrence calculations are dynamic, changing over time as the strategic context and operational situation changes. The US may fail to anticipate or detect significant shifts in an adversary's decision calculus, and in turn fail to adjust our deterrence strategy and actions to counter such a shift, thus potentially resulting in deterrence failure.
- An adversary's perceptions of the nature of US military capabilities, and the impacts of US military operations, may make the communication of deterrence messages difficult or impossible in severe crisis or conflict as adversary leadership seeks to protect itself from detection and attack. These factors may severely limit our ability to apply the joint operating concept effectively and make effective pre-crisis deterrence operations more important.

MILITARY PROBLEM

The United States faces a wide array of potential adversaries that can threaten its vital interests. These adversaries range from established nation states to networks of non-state actors who may not be influenced by traditional ways and means of deterrence. In a fluid political-military environment that will be increasingly difficult to forecast, the US military must contribute to deterrence of these adversaries.

Joint Operating Environment

The military problem addressed by the DO JOC may change profoundly over the 2012-2025 timeframe. To reflect this potential for significant change as addressed in detail in various DOD documents including the National Security Strategy (NSS), the Quadrennial Defense Review (QDR), and the Nuclear Posture Review (NPR), the following description of the political-military environment divides this timeframe into two periods. Significant change is not anticipated in the near-term (present day-2012), but such change is possible in the mid-term (2012-2025). The DO JOC is explicitly designed to be effective across both periods, regardless of the potential for profound uncertainty in the mid-term.

Near-term (Present day-2012): The near-term environment is a complex web of regional, cultural, and political competitions and conflicts, marked by US military preeminence. In this time frame no single state or non-state actor will be capable of winning a comprehensive, global political-military competition with the US. However, numerous threats to US vital interests will persist through 2012, making the near-term environment increasingly complex in terms of both the number of potential state and non-state adversaries and their interrelationships. During this period, the US faces a complex international security environment in which deterrence of nation-state threats plays an important, but not preeminent, role in US national security policy.

The potential remains for serious interstate conflict that could threaten US vital interests in the Middle East, South Asia, and Northeast and East Asia. These interstate conflicts could involve one or more countries armed with nuclear weapons or other weapons of mass destruction (WMD), and pose threats to the survival of US allies and friends. Deterrence of both the initial and intra-war (escalatory) use of WMD will remain important since it enables the joint force to leverage US preeminence in large-scale, combined-arms operations. However, JFCs must recognize that deterring adversary use of WMD while defeating his forces may prove to be impossible.

The near-term environment will also be marked by threats to US vital interests posed by a variety of non-state actors, primarily in the form of transnational terrorism. To deter and defend against such threats, the US will work with other nations to identify and disrupt terrorist networks that seek WMD capabilities, and seeks to deny them access to materials needed to make these weapons, particularly nuclear. Therefore, US strategy focuses on controlling fissile material with two priority objectives: first, to keep rogue states from acquiring the capability to produce fissile material suitable for making nuclear weapons; and second, to deter, interdict, or prevent any transfer of such material or weapons from states that have this capability to rogue states and non-state actors.

In this period, crisis and conflict will primarily take the form of asymmetric struggles characterized by adversary attempts to exploit niche advantages against an otherwise dominant US military. Because of uncertainty regarding who, where, and over which issues we might fight, JFCs will face a paradigm shift from optimized planning against well known, specific adversaries to more adaptive, capabilities-based planning, explicitly designed to cope with a wider spectrum of actors and contingencies. Continued proliferation of WMD and associated delivery means, as well as the emergence of additional actors who are able and willing to conduct other forms of irregular warfare (e.g., commercial/private aircraft, maritime vessels, and other non-traditional weapons), underscore the need of US joint forces to continue improving capabilities for power projection and homeland defense.

Mid-Term (2012-2025): In the mid-term, it is difficult to predict the nature and shape of the joint operating environment. Foreseeing the shape of longer-term international political alignments and power relationships is challenging. For example, the political-military environment of 1930 compared to 1950 (or 1980 to 2000) illustrates how radically the global security situation can change. Anomalous events or profound shocks to the international system may dramatically shift the relative power or strategic outlook of major actors. China could become a near-peer competitor. The long-term course of the Global War on Terrorism, the ongoing conflicts in Iraq and Afghanistan, and the Israeli-Palestinian dispute will fundamentally shape the future of US relations with the Islamic world. Increasing individual empowerment and association with transnational or nongovernmental interest groups may weaken traditional nation-state relationships and interactions.

Accurate projection of longer-term economic developments is also difficult, and no less important, as economic strengths, weaknesses, and vulnerabilities shape international power balances and political relationships. For example, it is unclear how energy needs and access to food and water rights will impact the global economy in the 2012-2025 timeframe. Increasing demand for limited resources due to rapid economic development in major states such as China and India could worsen future security problems, creating international tensions that do not exist today. Alternatively, revolutionary advances in energy or desalination technologies could make competition for resources a far less prominent source of international tension than it is today.

These challenges are exacerbated in the 21st century by the accelerating rate of technological advancement and its diffusion, which can change a nation's military capabilities or potential nearly overnight. Analysis of mid-term capability suggests we will face a world with one to three additional nuclear-capable states plus a substantial number of potential adversaries with WMD and missile delivery capability. Conversely, an increasingly effective US ballistic missile defense may force shifts in adversary WMD delivery mechanisms.

Successful deterrence in the near-term may drive adversaries to adapt in the mid-term with new strategies based on lessons learned from the Global War on Terrorism, Operation ENDURING FREEDOM, Operation IRAQI FREEDOM, and other US military operations. Adversary anti-access and area denial capabilities will increase. In order to maintain a credible deterrent, the US must work to maintain and expand access to basing and the ability to reassure friends and allies with effective integrated defenses. As a hedge and to enhance deterrence, the US should reduce dependence on such basing (e.g., Global Strike and Sea Basing can be an effective deterrent to an adversary's anti-access strategy).

The proliferation of commercial dual-use technology, including the addition of satellite-assisted precision-guided weapons, will make this adaptation more feasible for a wider variety of potential adversaries. Additionally, commercially available information and cyber services (many enabled through common space systems) will provide an element of global reach for actors once limited to exerting only regional influence. The emergence of advanced capabilities and technologies such as computer network attack or directed energy weapons may permit future adversaries to achieve objectives once attainable only via the use of WMD.

Future "arms" races will focus on predicting the emergence of (and providing integrated plans for thwarting) next generation adversary capabilities. These capabilities may not be military in the traditional sense, but they will be enabled through the prevalence of Information Age technologies, organizations, and actors in societies of all levels of technological sophistication. Deterrence operations must continue to deter attack against US vital interests and provide an environment that allows the US to pursue constructive policy goals worldwide.

Deterrence Challenges

Both the near- and mid-term security environments described above are marked by certain characteristics having profound implications for US deterrence strategy and operations, including: the wide array of potential adversaries; an asymmetry of stakes versus asymmetry of power; the vulnerability of US society and forces; and some unique characteristics of non-state actors.

Wide Array of Potential Adversaries to Deter: For the foreseeable future, the US will continue to face an array of potential adversaries, both state and non-state actors whose political, cultural, ideological, religious, and idiosyncratic differences will complicate our efforts both to understand and to influence their perceptions for deterrent purposes. Not only will this range of potential adversaries challenge our ability to gain sufficient understanding of them, but

they will almost certainly have problems understanding US perceptions, commitments, capabilities, and intentions as well. This increases the likelihood of unilateral or mutual misperception, threatening to undercut deterrence if not addressed through deterrence-focused intelligence efforts, effective information strategies and operations, and deterrence-enhancing transparency efforts (e.g., overt demonstration to adversary of US capabilities).

The multiplicity of potential adversaries to deter presents three key challenges to US deterrence operations related to uncertainty, capability requirements, and adversary diversity.

1. Uncertainty as an Enduring Condition: An enduring feature of the military problem addressed by this JOC is likely to be uncertainty regarding important factors that influence the decision-making calculations of potential adversaries. Such uncertainties may include the identities of key decision-makers themselves, the roles those decision-makers play in determining decision outcomes, the variables they consider important when making decisions, and their perceptions of those variables. The specific uncertainties encountered, and their extent, are likely to vary from adversary to adversary. For example, while it may be more difficult to determine precisely which individuals are involved in what aspects of attack decision-making in a networked non-state actor, the nature of the variables they consider important may be quite clear. On the other hand, there may be very little uncertainty regarding who is making the decisions of interest in a totalitarian state actor regime, but considerable uncertainty regarding how specific individuals perceive relevant variables. Future US deterrence operations must be planned and conducted in ways that take such uncertainties into account.

2. Different Adversaries will Require Different US Deterrent Means: Because the content of adversaries' decision calculations differ from adversary to adversary, the deterrent means required to influence those calculations differ as well. As might be expected, some differences in US means will result from variations in adversary military capabilities. But other differences in the capabilities required to decisively influence adversaries' decision calculations are the result of variation in what various adversaries value, what they seek to gain, and what they fear. Thus, the range of required means to effectively deter extends beyond those available to the Department of Defense (DOD) alone and reaches into other executive departments and across to our international partners.

3. Widely Varying Risk-Taking Propensity: A broad array of potential adversaries means that our deterrence operations must successfully address a similarly broad array of adversary risk-taking propensities. An adversary's risk-taking behavior can profoundly influence both his perception of a situation and the best means of influencing those perceptions. For example, the US emerged from its Cold War experience with an assumption that instilling

uncertainty in an adversary's mind (regarding how the US would respond to deterrence failure) would enhance deterrence by complicating the adversary's decision-making. Risk-averse adversaries view uncertainty as threatening because it makes careful, prudent calculation difficult or impossible, thus increasing their risk. However, this assumption is only appropriate vis-à-vis adversaries who are relatively risk-averse. An adversary with a greater propensity to take risks might well perceive the same uncertainty as an opportunity to be exploited (rather than as a threat to be avoided). Deterrence operations need to be sufficiently flexible to address both risk-averse and risk-taking adversaries, and provide means to exploit both adversary characteristics to enhance deterrence.

Asymmetry of Stakes vs. Asymmetry of Power: US military supremacy alone is not a guarantee of successful deterrence. Despite the fact that the United States is almost certain to be militarily dominant over its adversaries in future deterrence scenarios, those adversaries may believe that they have an asymmetrically higher stake in the outcome of the crisis or conflict. The differential between stakes in the outcome of a crisis or conflict can undermine deterrence effectiveness. If an adversary perceives that his stake in the confrontation is extremely high (e.g., regime preservation or fulfillment of a religious duty), while the US stake in the crisis is not commensurate with the possible cost to the US of American military involvement, the adversary may find the threat of US military action non-credible. This asymmetry of stakes can also work in the opposite direction. If the US alone perceives its own outcome stake is incommensurate with the potential costs of involvement or escalation, the result could be "self-deterrence".

The challenge for deterrence operations is finding ways of overcoming potential imbalances of stakes versus power that bolster the credibility of US capabilities. Military capabilities that limit the damage an adversary can do to US/allied forces and populations (e.g., Integrated Missile Defense and Consequence Management activities) or limit collateral damage from US/allied strikes can increase the credibility of US attack and counter the asymmetry of stakes. Through the reduction of potential conflict costs to the US and its allies, these capabilities help mitigate the negative effects of an asymmetry of stakes that would otherwise threaten to undermine deterrence.

Vulnerabilities of US Society and Forces: Free and open societies are uniquely vulnerable to terrorist tactics. Both the US economy and US military forces are increasingly dependent on advanced technologies for their significant competitive advantages. While this technological superiority yields tremendous capabilities it also creates potential vulnerabilities that adversaries might exploit. Advanced cyberspace warfare capabilities, capabilities to disable space systems, and electromagnetic pulse weapons could all provide adversaries means of undermining potentially decisive US advantages. In addition, both state and non-state actors will have significant abilities to conduct devastating

covert attacks on the US population, infrastructure, forces, and overseas interests. US deterrence strategy needs to take these potential US vulnerabilities fully into account, eliminating them where feasible, and compensating for them when necessary.

Non-State Actor Challenge

Because some non-state actors are now able to pose threats to US vital interests, they are an essential element of the deterrence challenge. There are many differences in how state and non-state actors are constituted and organized, in what they value, in what ends they pursue, in the means at their disposal and in the ways they operate. However, five key differences between state and non-state actors significantly impact deterrence operations.

The first key difference is that *it can be far more difficult to determine who are the important non-state actor decision-makers we seek to deter*. Such decision-makers often strive to remain anonymous due to the illicit nature of their activities. In addition, some non-state actors have developed distributed networks that devolve decisions regarding what, when, whether, and how to attack to the leaders of regional or local cells.

Second, *there is generally greater uncertainty regarding how non-state actor decision-makers perceive the benefits, costs, and consequences of restraint regarding actions we seek to deter*. The primary implication of this greater uncertainty is a greater need to explicitly identify the nature of such uncertainties and to develop deterrence strategies that hedge against them. There are exceptions to this difference. Because certain non-state actors' objectives and strategies force them to openly articulate their goals and spread their ideology we sometimes have greater insight into certain aspects of their perceptions than we do with regard to some states.

Third, *state and non-state actors often differ in their susceptibility to our efforts to credibly threaten cost imposition*. While states have territory and extensive physical assets and personnel to protect, non-state actors, by their very nature, generally have fewer identifiable high value assets that can be held at risk by the United States. In addition, non-state actor attacks on US interests can be difficult to attribute to those responsible, potentially undermining the credibility of threatened cost imposition. Finally, credibly threatening to impose additional cost on a non-state actor against whom the US is already waging a global war (e.g., Al-Qaeda and the Global War on Terror) can be difficult. Such an actor may well perceive that the US is already doing everything under its power to impose costs on them, whether they take the additional action we seek to deter, or not.

The fourth key factor that differentiates state from non-state actors involves *the manner in which they value things: they have different goals/objectives, and they employ different means to achieve them.* Because they value goals, objectives, and means differently than state actors, non-state actors may perceive benefits, costs, and consequences of restraint differently. For example, because non-state actors recruit new members, elicit financial support, seek to spread and grow their cause, and depend on public support (or at least acquiescence) in ways different from state actors; their perceptions of costs and benefits from acting or not acting may be very different from state actors. The primary implication of this difference is that the US has less understanding and experience influencing some aspects of what non-state actors value.

Finally, *in contrast to non-state actors, deterrence of state actors is facilitated by well-established means of communications between states.* Due in part to the illicit nature of the activities of violent non-state actors, such well-established means of communication are usually not available. This complicates effective communication and the implementation of deterrence operations. Direct communication with non-state actor leaders is not necessarily required. Rather, the US will have to develop new and innovative means of sending and receiving messages to and from non-state actors to more effectively deter them.

CENTRAL IDEA

The central idea of the DO JOC is to decisively influence the adversary's decision-making calculus in order to prevent hostile action against US vital interests. This is the "end" or objective of joint operations designed to achieve deterrence. The DO JOC describes how a JFC will plan, prepare, deploy, employ, and sustain a joint force to achieve deterrence objectives set forth by the national leadership of the United States. In order to achieve these objectives (ends), joint forces must be able to employ various capabilities (means) to undertake operations and activities (ways) that can decisively influence the decision-making calculus of key adversary decision-makers (Figure 1).⁷

Such adversary decision makers (and their decision-making calculus) may reside at multiple levels within both state and non-state actors. For example, deterrence operations against a state actor might focus on both the decision calculus of the national leadership (possibly an individual or a group) and the decision calculus of others who might implement the national leadership's

⁷ Note that "key adversary decision makers" refers to a spectrum of decision making units from large and relatively cohesive bureaucratic processes through small and/or decentralized groups as typical of state leaderships, and units with highly segmented decisions roles (e.g., ideological leaders wholly separated from operational decision makers), and extremely decentralized (e.g., cell-based) decision units for non-state adversaries.

decision to act (possibly a military unit commander at the operational or tactical level of war). Similarly, deterrence operations against a non-state actor might focus on the leaders of the organization who might order an attack, others who might critically enable or facilitate the action to be deterred (e.g., those who provide financial or logistical support), and the terrorist “foot soldier” who actually conducts the attack (and who, in a highly decentralized, networked organization, may make decisions regarding targeting and attack timing and execution as well).

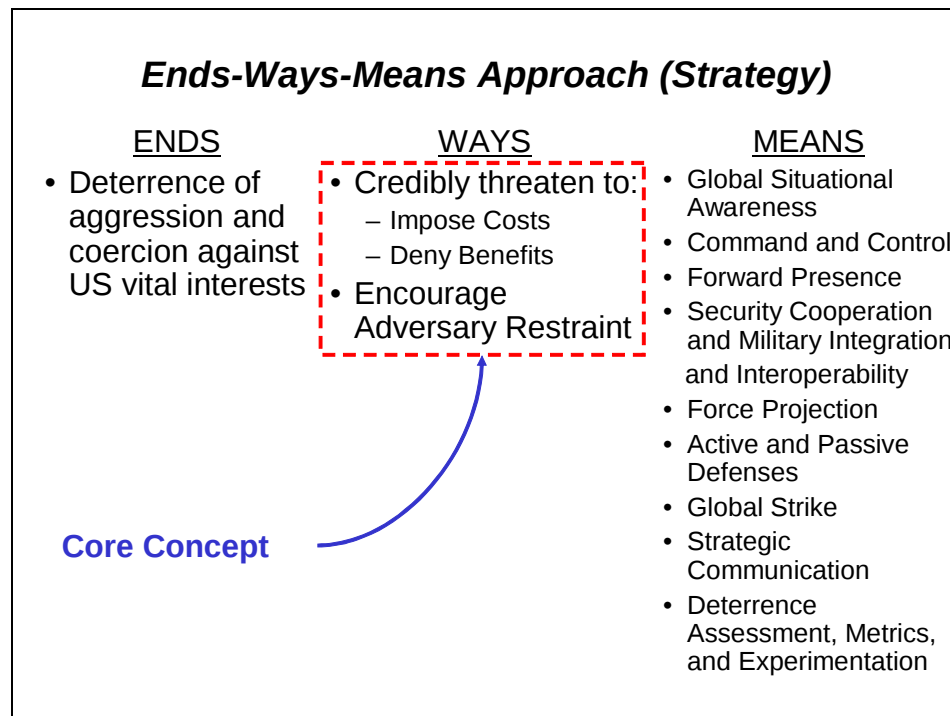


Figure 1: Deterrence Operations Joint Operating Concept

Adversaries’ deterrence decision calculus contains three primary variables:

1. Their perception of the benefits of a Course of Action (COA).
2. Their perception of the costs of a COA.
3. Their perception of the consequences of restraint or inaction (i.e., the benefits and costs of not taking the COA in question).

Understanding how these factors are interrelated is critically important to determining how best to influence the decision-making calculus of our adversaries. Deterrence success is not solely a function of whether adversaries perceive the costs of a given COA as outweighing the benefits.⁸ Rather,

⁸ This is a stylized view of deterrence often associated with rational choice/expected utility deterrence models of the Cold War era. The DO JOC expands upon rational choice

adversaries weigh the perceived benefits and costs of a given course of action in the context of their perceived consequences of restraint or inaction. Thus deterrence can fail even when the adversary perceives the costs of acting as outweighing the benefits of acting if he believes the costs of inaction are even higher still.

As an example, the Japanese prior to World War II saw their loss of international stature, caused by the denial of access to raw materials to feed their industrial base, as a greater evil than a prolonged conflict with the US. This was despite the fact that numerous senior military leaders were well aware of the likelihood of ultimate defeat. For these reasons, the actions taken to encourage adversary restraint may be comparable in importance to credibly threatening to impose cost or deny benefits.

The perceived benefits and costs of a given COA (and of restraint) have two essential elements that influence adversary decision-making. First, each benefit and cost has some relative value to the adversary, (i.e., how much does he perceive he will gain by reaping a given benefit or how much does he perceive he will lose by incurring a particular cost). Second, each benefit and cost has a relative probability estimate associated with it in the mind of the adversary; i.e., how likely does he believe it is that he will reap a given benefit or incur a particular cost by acting or not acting. For example, Admiral Kimmel's decision to group all his ships at Pearl Harbor for force protection from sabotage rather than dispersing them increased the probability estimate that the Japanese would reap a benefit from attacking.

One additional factor profoundly influences an adversary's decision calculus: his risk-taking propensity. An adversary's risk-taking propensity affects the relationship between values and probabilities of benefits and costs when in the process of reaching a decision. Risk-averse adversaries will see very low probability, but severe costs as a powerful deterrent, while risk acceptant adversaries will discount costs in their pursuit of significant gains. Therefore, national leadership and the JFC need to understand the adversary's risk-taking propensity before formulating a set of joint operations and activities designed to achieve effective deterrence.

considerations and incorporates elements of prospect theory in its approach. See Chapter 2, "US Regional Deterrence Strategies" by Watman and Wilkening, RAND Corporation, 1995.

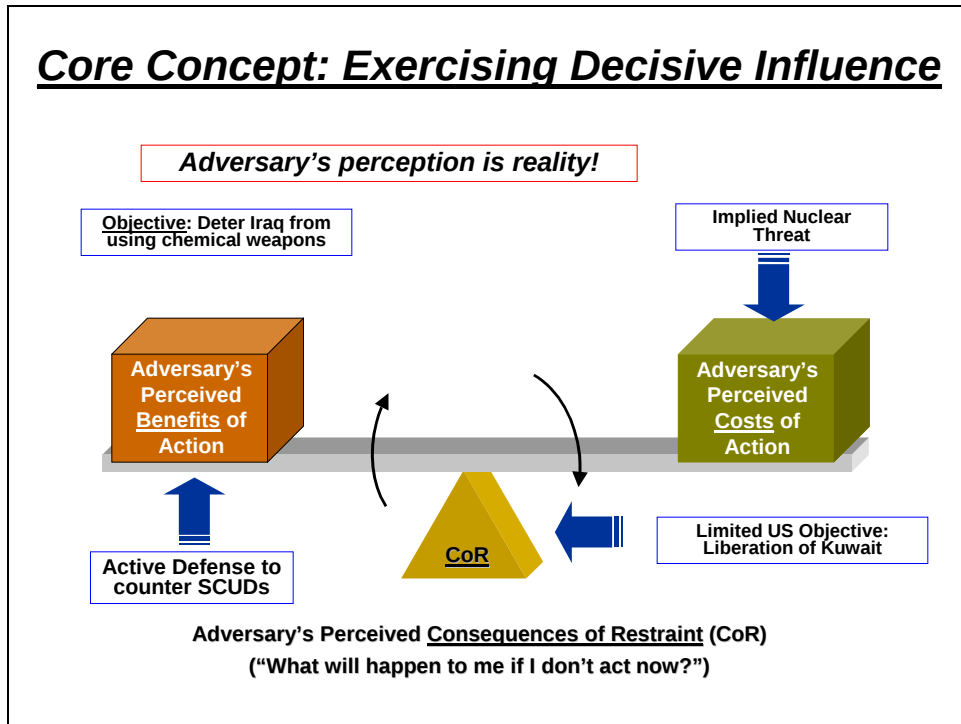


Figure 2: Core Concept: Exercising Decisive Influence (Example)

Figure 2 illustrates the dynamic interaction of these three categories of variables. It graphically depicts how adversary decision-makers weigh the benefits and costs of taking an action we seek to deter in the context of their perception of the consequences of restraint (the benefits and costs of not acting). A simple historical example helps clarify how this dynamic interaction works: our 1991 efforts to deter Saddam Hussein from ordering the use of chemical weapons against coalition forces liberating Kuwait.

Saddam arguably perceived a number of potentially significant benefits from chemical weapons use. Given the role Iraqi use of chemical weapons played in preventing a Iranian victory in the Iran-Iraq war, he likely saw chemical weapons use as a means of slowing coalition offensive operations, increasing the number of casualties suffered by Coalition forces, and possibly coercing one or more states out of the coalition altogether. His perception of the net benefit associated with chemical weapons use is depicted by the orange box labeled "Adversary's Perceived Benefits of Action" on the left of the scale in Figure 2. The US took several actions aimed in part at influencing Saddam's perception of the probability that he would reap such benefits through chemical weapons use. One of these benefit denial measures, the deployment of active defenses to counter Iraqi SCUD missiles, is depicted in Figure 2 as reducing the perceived benefits of chemical weapons use.

Saddam recognized that certain costs could be associated with his initiation of chemical warfare against the coalition. The coalition might escalate its war aims in response, or retaliate against Iraqi assets that were not already under attack. Saddam's perception of the net cost associated with chemical weapons use is depicted by the green box labeled "Adversary's Perceived Costs of Action" on the right of the scale in Figure 2. The United States made a deliberate effort to influence Saddam's perception of such costs further. President George H. W. Bush had a letter for Saddam delivered to the Iraqi Foreign Minister in which he warned that if Iraq used chemical weapons in the coming conflict "the American people will demand the strongest possible response." Many observers, including possibly Saddam Hussein himself, saw this as an implied threat of nuclear retaliation, depicted in Figure 2 as increasing the perceived costs of chemical weapons use.

Finally, US deterrence efforts also sought to address Saddam's perception of the consequences of chemical weapons restraint by making it clear that the coalition's war aim was limited to the liberation of Kuwait. This is represented in Figure 2 by the arrow indicating the limited US objective as moving the fulcrum of the scale (representing Saddam's net assessment of the consequences of restraint) to the left. In our graphic depiction, this would have the effect of changing the relative weights of the perceived benefits and costs of initiating chemical warfare against the Coalition, increasing the relative weight of the costs of chemical use, and decreasing the relative weight of the benefits. Thus, by helping to convince Saddam that the net value of chemical weapons restraint was greater than the net value of chemical weapons use, our declaration of limited war aims enhanced deterrence.

End: Decisively Influencing the Adversary's Decision Calculus

The end or objective of joint operations designed to achieve deterrence is to decisively influence the adversary's decision-making calculus. Adversaries decide among alternative COAs based on their perceptions of the alternative, interdependent outcomes that may result and choose the course of action believed to best serve their interests, as they define them.⁹ The objective of deterrence is to convince potential adversaries that courses of action that threaten US vital interests will result in outcomes that are decisively worse than they could achieve through alternative courses of action available to them.

⁹ Note that interdependence implies that adversary decision makers are calculating two sets of costs and benefits associated with any course of action reflected in: 1) their own (subjective) preferences over outcomes; and, 2) the preferences they attribute to the US/other which may or may not be correct in an objective sense. The latter condition how they expect the US to respond to their planned action and thus the net value of that COA.

Ways: Methods to Achieve Deterrence

Effectively exercising decisive influence over adversaries' decision-making calculus in peacetime, crisis, and in war to achieve deterrence is best achieved by integrated, systematic efforts.¹⁰ A "portfolio" approach, involving the use of three ways to influence an adversary's decision making, reduces the likelihood of deterrence failure and decreases the severity of consequences should a failure occur. These ways are closely linked in practice and often overlap in their application; however, it is useful to consider them conceptually distinct for assessment and planning purposes. The *first* is to credibly threaten to deny them the benefits or gains sought. The *second* is to credibly threaten to impose costs that are viewed as too painful to incur. The *third* is to encourage adversary restraint by convincing the adversary that not undertaking the action we seek to deter will result in an outcome acceptable to him (i.e., influence his perception of the consequences of restraint).¹¹

For maximum effectiveness, deterrence must incorporate all three of these ways of deterring threats to US vital interests in an integrated manner. These ways of deterrence are thus not either/or propositions; rather these three ways of deterrence must be integrated in a mutually reinforcing manner to maximize our prospects of success across the full range of adversaries.

Deterrent success will be heavily influenced by how potential adversaries perceive US national will and resolve in the face of severe threats to ourselves and our allies across all AORs. Thus, deterrence requires a national strategy that considers adversary-specific deterrence on a global scale, taking into account cross-regional impacts, and factoring in potential second and third order effects. This national deterrence strategy must bring to bear all elements of national power, including military deterrence operations conducted in accordance with this JOC. Thus, US national deterrence strategy and the military component of that strategy must present all potential adversaries (capable of posing a strategic threat to US vital interests) with an overarching American deterrence posture. That posture must convince adversary decision-makers that in taking an action the US seeks to deter they will:

1. Fail to achieve their objectives/reap the benefits they seek
2. Incur severe costs that outweigh perceived benefits

¹⁰ For an illustrative example of systematic integration of these "ways" see Appendix A.

¹¹ Costs and benefits, as described herein, may equate broadly to an adversary's net assessment of potential outcomes when considering a given course of action. This assessment can incorporate a wide range of political, economic, military, and even personal factors. Deterrence can be successful when the outcome of not taking an action is perceived as preferable (from the adversary's perspective) when compared to the outcome of taking the action. The assessment associated with an adversary's decision-making calculus includes not only his contentment with the current situation, but also his evaluation of his future prospects. See Watman and Wilkening, Chapter 2.

3. Suffer a worse outcome than had they opted not to take action.

Because the perceptions and resulting decision calculus of specific adversaries in specific circumstances are fundamentally different, our deterrence efforts must also be tailored in character and emphasis to address those differences directly.¹² Effective deterrence results from tailoring and orchestrating available ways and means against a specific adversary's decision-makers to achieve specific ends in a specific strategic context. The end of a joint deterrence operation is the achievement of decisive influence over the adversary's decision calculus. The military means of a joint deterrence operation are the panoply of joint military capabilities and activities available in peacetime, crisis, and war. The ways of deterrence operations, however, are the core of the DO JOC.

Military deterrence operations extend from peacetime activities designed to shape the conditions for both peace and war, through crisis, armed conflict, escalation/de-escalation, war termination, and post-hostilities activities. While the primary focus of deterrence operations will be specific adversary's key decision-makers, there may be overlapping deterrence objectives vis-à-vis the same adversary. For example, deterrence operations regarding a regional adversary might seek to deter: the invasion of a US ally; use of WMD at the outset of such an invasion (if the primary objective is not achieved); escalation to the use of WMD during subsequent phases of the conflict; and the adversary exporting WMD before, during or after the conflict. Additional deterrence operations aimed at other adversaries can also occur during a specific crisis or conflict. For example, in the regional war outlined above, measures intended to: deter third parties from intervening in the conflict (or instigating a separate conflict); and, deter aggression by other regional adversaries could readily take place in combination with the deterrence operations aimed at the primary belligerent. Thus, deterrence often spans both time (including the various situations of peace, crisis, and war) and geographic space (encompassing multiple AORs simultaneously).

This JOC applies equally to deterring both state and non-state actors. It is based on the assumption that rational decision-makers choose among alternative COAs based on their own perceptions of the potential outcomes that may result. However, there are likely to be profound differences in the content of state and non-state actors' decision-making calculations, differences that (in some cases) make non-state actors more difficult to deter, especially with the

¹² Deterrence by credibly threatening Cost Imposition, Benefit Denial, and Encouraging Adversary Restraint are presented as 'pure' types for illustration. Real-world applications must incorporate elements of all to varying degrees, depending on how each influences a given adversary's decision-making calculus. It is useful to consider the three 'ways' separately, however, when considering the required capabilities needed to implement each.

means traditionally used to deter state actor aggression.¹³ While there is some overlap of the specific means used to influence both state and non-state actor decision-making, there will be significant differences as well. Such differences are called out in the capabilities section of this document, where appropriate.

Deterrence by Denying Benefits

Deterrence by denying benefits involves convincing adversary decision-makers that the benefits they perceive are of little value and/or are unlikely to be achieved by taking the COA the US seeks to deter. Denying benefits can include both defensive and offensive capabilities and activities. For example, ballistic missile defenses successfully intercepting adversary missiles are an example of an operational capability that helps provide deterrence by credibly threatening to deny future benefits. Another example is having the capability to sustain continuity of effective military or economic operations in the midst or wake of a major enemy attack on the US homeland.¹⁴ This capability reduces the prospect that an adversary could cripple the US ability to execute effective military operations.¹⁵

In circumstances marked by a pronounced asymmetry of stakes (such as often pertain between the US and a regional power) and confrontation with highly risk-acceptant adversaries (which is frequently the case in dealing with non-state actors) denying benefits takes on increased importance. Such adversaries tend to discount the severity and/or the likelihood of the costs the US might impose. This makes deterrence by denying benefits increasingly important in both the near-term and mid-term security environments discussed earlier.

Deterrence by Imposing Costs

Deterrence by cost imposition involves convincing adversary decision-makers that the costs incurred in response to or as a result of their attack will be both severe and highly likely to occur. Cost imposition includes the full array of offensive operations including kinetic and non-kinetic options. US and allied active and passive defenses can serve to enhance the perceived probability of severe cost imposition, because such defenses will increase the confidence of US leaders in their ability to limit damage to the United States and its allies.

¹³ For example, non-state actors may: 1) see benefit in violent action in and of itself, 2) likely have few overt, high value assets to hold at risk, and 3) often perceive the continuation of the status quo as intolerably costly (as opposed to merely less desirable than achieving their objective).

¹⁴ This capability is discussed under the “Emergency Preparedness” mission set in the Homeland Defense and Civil Support JOC.

¹⁵ Offensive operations that contribute to deterrence by denying benefits include counterforce attacks on adversary WMD stocks and means of delivery that prevent him from achieving military objectives through the procurement (or actual use) of WMD.

The key challenge to improving the effectiveness of deterrence by cost imposition is to overcome adversary perceptions that they can successfully deter US attack, or that the US will be self-deterred. Improved offensive and defensive damage limitation capabilities for the US homeland, allies, non-combatants, and forward-deployed forces are essential to addressing this challenge.

Deterrence by Encouraging Adversary Restraint

Encouraging adversary restraint is the way in which US actions can influence adversary decision-makers' perceptions of the benefits and costs of not taking an action we seek to deter. Thus, encouraging adversary restraint involves convincing adversary decision-makers that not undertaking the action we seek to deter will result in an outcome acceptable to them (though not necessarily desired by them). Encouraging adversary restraint plays a critical role in deterrence operations because adversary decision-makers weigh the benefits and costs of acting (e.g., invading their neighbor, using WMD, attacking the US homeland) *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 US additional ways to influence the decision calculus of potential adversaries.

Encouraging adversary restraint can be done in two ways. First, the US can take actions that convince adversary decision-makers that there are benefits to continued restraint. Obviously, efforts to influence adversary decision-makers' perceptions of the benefits of restraint must take into account broader US interests in peacetime or crisis, and US war aims (and postwar US interests) in conflict. In many cases it may be possible to identify perceived adversary benefits of restraint that have little or no impact on important US or allied interests and objectives.

An example from the strategic relationship between India and Pakistan illustrates this concept. By declaring a no first use of nuclear weapons policy India has in effect "provided a benefit of restraint" to Pakistan. If Pakistan does not initiate nuclear use, India will not use nuclear weapons. At the same time, India's no first use declaration has little or no negative impact on important Indian interests or objectives. Indian defense strategy does not require nuclear first use to succeed. Additionally, it may be possible to identify and influence the perceived benefits of restraint that apply only to some specific decision-makers, or influence unit commanders at certain levels of decision-making (e.g., those unit commanders responsible of executing orders to initiate use of WMD), that do not compromise US interests.

Second, the US can take actions that mitigate the costs of restraint perceived by adversary decision-makers. The objective in such cases is to ensure that deterrence does not fail because adversary decision-makers perceive that they

will lose less by acting than by not acting. For example, US joint doctrine might call for theater operations to be conducted in a manner that could inadvertently mislead an adversary about the nature of US objectives in the conflict, or that might impose unintended and unnecessary severe costs on the adversary. Either of these circumstances could result in adversary decision-makers choosing to escalate a conflict that might otherwise have remained limited in scope and means. A JFC could alter the way in which his forces operate under such circumstances in order to avoid making undesirable adversary escalation the adversary's "least bad alternative." In such circumstances adversary decision-makers could be helped to understand that US forces could be doing more harm to him than is taking place, and that those operations currently ongoing are not simply a precursor to broader operations with more ambitious objectives. It is crucial that such mitigation actions are clearly communicated to (and understood by) adversary decision-makers, as well as other relevant parties to the conflict.

The nature of US interests or war aims may at times be fundamentally inconsistent with encouraging adversary restraint by convincing them that inaction will result in an outcome acceptable to them, and the adversary's perceived consequences of restraint will make deterrence success unlikely. In such instances the role of deterrence operations in an integrated US national security strategy may be significantly diminished, or eliminated altogether.

Means: Capabilities and Attributes

Military capabilities are the means by which the JFC implements the JOC.¹⁶ These capabilities must deter a range of potential adversaries, state and non-state actors, across the ROMO. They must be credible to adversary decision-makers, in terms of their ability to both deny perceived benefits and impose perceived costs in a manner the US is seen as willing to implement. Effective military capabilities require that they be visible to and known by the adversary. The ability to communicate US intent, resolve, and associated military capabilities in ways that can be received and understood by adversary decision-makers is vital. Effective deterrence combines military and non-military means. In some cases, military capabilities may not be an effective tool to deter a particular adversary's action, making other instruments of power the primary deterrent. Additionally, coalition support should be integrated to enhance deterrence credibility, but deterrence also must be viable as a unilateral strategy.

US joint forces and interagency partners must be capable of successfully carrying out benefit denial, cost imposition, and activities to encourage restraint, while simultaneously communicating appropriate national resolve to

¹⁶ See Appendix E for the linkages of means mentioned in the DO JOC to the Joint Capability Areas (JCA).

a wide range of potential adversaries. US joint forces must be able to defend against unprovoked attacks from both state and non-state adversaries. Should deterrence fail, these forces and interagency personnel must be prepared to move seamlessly to support strike, combat and/or homeland defense operations, as well as synchronize with other major combat, homeland defense, and/or stability operations.

Direct capabilities required for deterrence include the ability to carry out: force projection operations, including the capability to decisively defeat regional aggression; kinetic and non-kinetic global strike operations, including the possible employment of nuclear weapons; active and passive defense operations; and Strategic Communication. All of these efforts are enabled by global situational awareness, command and control, forward presence, security cooperation and military integration, plus deterrence assessment and experimentation. Because these enabling capabilities underpin the more direct capabilities required for deterrence, they are discussed first. It should be noted that the levels of these various capabilities required for effective deterrence operations may be higher or lower than that required to conduct effective combat operations of various types.

Global Situational Awareness

Global situational awareness is the foundation of deterrence and includes two forms of intelligence, surveillance and reconnaissance (ISR). The first is the underlying knowledge regarding adversary decision-makers' perceptions of benefits, costs, and consequences of restraint on which deterrence strategies are based. The second is the operational intelligence information about adversary assets, capabilities, and vulnerabilities required to conduct credible and effective deterrence operations.

Improved understanding of adversary decision-makers' value structures and perceptions (beyond what is typically provided to US decision-makers today) will enhance our ability to tailor deterrence operations against specific adversaries under varying scenarios. The JFC, in coordination with the interagency, must profile adversary decision-makers to identify adversary value structures, as well as the decision-making structures and processes through which those decision-makers receive and process information, and interact while making decisions. Particularly vital is the need to understand and characterize the decision-making of networked, non-hierarchical non-state actors. Data already possessed by DOD, interagency, and allied/coalition entities must be mined and analyzed in producing these deterrence analyses. The ability to translate foreign language open source media and web-based chatter, as well as concealed information (electronic or hardcopy), in near-real time is imperative for improving US capabilities to assess the decision-making of both state and non-state adversaries. Because deterrence operations constitute a continuous effort conducted predominantly in peacetime, many

crucial elements necessary to characterize potential adversaries decision-making need to be given a higher collection priority than has been traditionally associated with non-crisis periods.

The ultimate goal of this intelligence collection and analysis is to develop actor-specific analyses of adversary decision-making that describe an adversary's values, culture, decision calculus, risk propensity, and capacity for situational awareness to the maximum extent possible. Our efforts must also seek to identify the adversary's potential attack means (which must be defeated or countered to deny the benefits the adversary seeks) and the most appropriate targets for attack (to impose relevant costs). Assets (military, economic, political, and social, etc.) highly valued by adversary leaders need to be identified, catalogued, targeted, weaponized, and maintained for strike planning. Where information gaps exist, full-spectrum ISR seeks to provide persistent surveillance of leadership figures, facilities, proliferation mechanisms and high-value forces, and do so in the face of increasingly sophisticated adversary denial and deception efforts in a complex operating environment.

ISR efforts must be persistent across time, scalable from the global to local level, seamless across key geographic regions, shared across US government and multinational partners, and optimized to leverage the full spectrum of traditional and not-traditional collection capabilities within and beyond DOD. Human intelligence (HUMINT) must focus on gaining access and insights into the most difficult "targets," (e.g., terrorist cells, hard and deeply buried targets, underground facilities, closed regimes, WMD development efforts, and employment plans). HUMINT is essential in seeking to understand an adversary's values, culture, decision calculus, risk propensity, and capacity for situational awareness as well as obtaining other information required for effective deterrence. HUMINT reporting must be integrated into situational awareness displays that provide joint forces with battlespace visualization. Interagency and multinational cooperation is key to achieving success in these efforts. It requires creation of a collaborative environment that incorporates intelligence community, diplomatic, law enforcement, military, and multinational inputs to achieve true global situational awareness for deterrence. Since various organizations and entities can interpret events and situations differently, this collaborative environment must include mechanisms to resolve such differences, or mitigate and manage uncertainties.

Because WMD play an important role in adversary strategies, our ability to identify their location, specific nature, origin, ownership, supporting capabilities, and the source of their employment is crucial for deterrence. Attribution is particularly important for deterring state sponsorship of WMD terrorism and possible covert attacks by nation-states. Technical capabilities to support attribution are required for nuclear, chemical, biological,

radiological and explosive weapons as well as attacks on space systems and computer networks.

Successful deterrence also requires much improved understanding of our own capabilities, limitations, and current situation (blue force tracking and force status, to include our allies and interagency partners). Such understanding is achieved through exploiting shared information, awareness, and understanding of the situation across a networked infrastructure by means of a collaborative information environment. Highly networked forces will increase the commander's flexibility to choose from widely varying types of capabilities to achieve the desired deterrence effect. Additionally, the high demand for many ISR assets necessitates flexible and creative approaches to managing high demand assets, in order to manage both deterrence and operational risk on a global scale.

Contributions to Denying Benefits: Global situational awareness of adversaries' perceptions identifies the key benefits adversaries seek to gain from courses of action we intend to deter. Additionally, this intelligence provides insight into how to convince adversary decision-makers that the US has the capability and will to deny them those benefits with high confidence. Global situational awareness improves our ability to defeat adversaries' critical capabilities and operations. An example is US global situational awareness sufficient to convince an adversary that his chances of achieving strategic or tactical surprise are extremely low.

Contributions to Imposing Costs: Global situational awareness of adversaries' perceptions identifies key costs that our adversaries fear incurring, and provides insights into how to convince them it is highly likely that the US can (and will) impose such costs. In the face of increasingly sophisticated adversary efforts to conceal and protect key assets and capabilities from US operations, improved global situational awareness is absolutely essential to improve our ability to credibly threaten cost imposition, and thus is essential to effective deterrence operations. This is a particularly acute deterrence challenge vis-à-vis holding adversary WMD and national leadership assets credibly at risk.

Contributions to Encouraging Adversary Restraint: Global situational awareness capabilities have two distinct impacts here. In the case of state actors, failure to detect and accurately assess adversary decision-makers' perception of the consequences of restraint (i.e., of being deterred) is a potentially serious cause of deterrence failure. We cannot mitigate a critical adversary concern of which we are unaware, that we underestimate, or that we inadvertently and unnecessarily create. Therefore, accurate situational awareness regarding an adversary's perceived consequences of his own restraint in peacetime, in an unfolding crisis, and throughout the course of a conflict is required. Such knowledge enables US planners to identify how we

might encourage adversary restraint, convincing adversary decision-makers that choosing to “be deterred” will result in an acceptable outcome. Second, global situational awareness provides the JFC with information regarding an adversary’s ability to understand the current situation. This allows the JFC to shape US deterrent actions to ensure they do not unnecessarily deny adversary decision-makers the ability to accurately assess their situation or pose unintended threats to key adversary interests.

Command and Control (C2)

All military capabilities supporting deterrence operations rely on robust, reliable, secure, survivable, timely, unambiguous and sustainable DOD-wide net-centric environment to enable command and control. A horizontally and vertically integrated distributed network is required to provide key leadership (e.g., President, Secretary of Defense, Chairman of the Joint Chiefs of Staff (CJCS), Combatant Commanders, Service Chiefs, and JFCs) with an effective command and control capability. This network must be resilient and agile, providing the environment for secure collaboration and real-time decision-making. It must support planning, tasking and dynamic control for the efficient conduct of deterrence operations. This capability requires a redundant, reliable, and robust system of multi-domain communications technologies to convince adversary decision-makers they cannot easily disrupt or deny US command and control. The C2 system must be enabled by secure, wideband communications that will degrade gracefully to a survivable thin-line backbone--providing connectivity to decision-makers under the most severe circumstances. Additionally, senior US leadership may require the ability to directly communicate with fielded forces or initiate weapons employment without support from intermediate levels of command.

In addition to physical net-centric C2 systems, today’s organizational C2 constructs may prove inadequate for the Joint Force of 2025. Today’s joint forces, operating in complex environments from over the horizon in often highly charged political situations, must act in concert with interagency and coalition partners. Improving the C2 process is as critical as increasing bandwidth, especially as increased bandwidth leads to increased quantities of data transmitted to diverse users. Today, dispersed groups across the DOD and interagency coordinate independent actions to achieve overall objectives, but not in a truly integrated fashion. National strategic unity of effort encompasses elements of national power beyond military force, to include diplomatic, information and economic tools. JFC mission accomplishment increasingly relies upon unified action through the successful integration of enhanced joint, interagency and coalition capabilities outside his direct control. Therefore, JFCs must incorporate synchronized, collaborative decision-making and decision support environments with unique theater knowledge to leverage a

shared Commander's Intent.¹⁷ Providing integrated C2 capability enables unity of effort when implementing deterrent activities.

Contributions to Denying Benefits: Without robust, reliable, secure, survivable, timely, unambiguous and sustainable net-centric systems supporting C2 capabilities, an adversary might perceive a decisive asymmetric advantage in launching a surprise attack. This would permit him to attain his key benefits while US forces were rendered temporarily incapable of counteraction or response. Therefore, C2 capabilities contribute to denying benefits by ensuring no adversary believes he can prevent US forces from being brought to bear in the effective and timely manner intended by the American national leadership.

Contributions to Imposing Costs: Similarly, the C2 capabilities outlined above are an essential enabler of credible American threats to impose unacceptable costs on potential adversaries. If adversary decision-makers perceive an opportunity to significantly disrupt or delay a decisive American response to their aggression or coercion, they may convince themselves they can escape such a response altogether. In addition, such C2 capabilities are essential to make full and effective use of the global situational awareness capabilities described above to credibly impose carefully-tailored costs on the adversary. This is particularly true of holding at risk targets about which intelligence may emerge unexpectedly, and our opportunity to strike them may be fleeting (e.g., non-state actor leadership or state actor WMD component or weapon transfers).

Contributions to Encouraging Adversary Restraint: Conducting deterrence operations that achieve US objectives without inadvertently crossing key adversary thresholds requires sophisticated C2 capabilities to exploit global situational awareness. For example, convincing adversary decision-makers that US war aims are limited through exercise of positive C2 over ongoing military operations could be essential to encouraging adversary restraint.

Forward Presence

US capabilities resident in forward-stationed and forward-deployed multi-purpose combat and expeditionary forces enhance deterrence by improving our ability to act rapidly around the globe. Forward presence strengthens the role of partners and expands joint and multinational capabilities. Our presence

¹⁷ The command and control requirements for conducting future Global Strike missions provide an example of this. Global Strike may lead to relationship changes between functional and geographic combatant commanders to meet the overarching needs of national leadership. Successfully striking critical, time-sensitive targets may require expedited coordination with the regional combatant commander in whose AOR the strike is being conducted. The solution to this command and control challenge must achieve a balance between the need for coordination and integration and the need for speed and security.

conveys a credible message that the United States remains committed to preventing conflict and demonstrates commitment to the defense of US and allied vital interests. Forward presence also enhances US global situational awareness by providing forward-based ISR assets that significantly augment national technical means. This presence enables security cooperation, military integration and force projection operations.

Contributions to Denying Benefits: Forward presence of US forces has several powerful impacts on adversary perceptions. It reduces the likelihood of an adversary achieving strategic or tactical surprise, thus helping to prevent adversary decision-makers from concluding they might achieve a military fait accompli that could be extremely costly for the US to reverse by force. By reducing the probability that US allies will rapidly capitulate in the face of coercion or attack, US forward presence makes it more likely that they will resist coercion and fight alongside American forces if necessary. In those cases where a key perceived adversary benefit is the reduction or elimination of US overseas presence (e.g., al Qaeda), the continued forward basing of US forces in itself serves to convince the adversary (and/or potential supporters and recruits) that he cannot achieve his objectives through aggression or coercion. Proper force protection measures are critical, as is an understanding of host nation perceptions of the US presence. This helps ensure the presence does not provide “targets” for adversaries, and our presence is properly situated so as not to antagonize local populations.

Contributions to Imposing Costs: Forward presence demonstrates US political will and resolve to oppose potential adversary aggression and coercion in a region, particularly with reference to formal alliance and security relationships. This in turn makes US threats to impose key costs more credible to adversary decision-makers. Forward presence can both enable preemptive use of force and reduce the perceived response time of the joint force. This can be a decisive factor in some crisis and conflict situations. Such presence also provides the JFC with an established set of basing and logistical infrastructure enabling rapid reinforcement, improved force projection, and more effective and more sustainable Global Strike operations. Forward presence, in some cases extends the US nuclear deterrent over both forward-based forces and regional allies, significantly increasing an adversary’s perceptions of the potential costs involved in taking courses of action that could elicit an American nuclear response.

Contributions to Encouraging Adversary Restraint: The value of forward presence in encouraging adversary restraint goes far beyond winning on the battlefield. Employing forces in instances short of war demonstrates the United States’ willingness to lead and encourages others to help defend, preserve and extend the peace. Without forward presence, a US decision to deploy major combat forces to a region in anticipation of (or in response to) adversary coercion or aggression could be seen as a more threatening American

response than the alert or reinforcement of forward-based forces. Thus, it provides American national leadership a more measured, and potentially less provocative, set of deterrent options.

Security Cooperation and Military Integration and Interoperability

US vital interests are increasingly intertwined with those of US friends and allies. As a result, deterrence is enhanced through security cooperation and military integration and interoperability with allied forces and partner nations; building trust and confidence between the US and its partners. The deterrent impact of such cooperation and integration is both political and military in nature. The political impacts are primarily derived from: 1) the effects that coalition-based responses have on adversary decision-makers' perception of US and allied political will, and 2) the potentially long-lasting, harmful post-conflict political and economic effects of taking on a US-led international coalition. The military impacts are derived from improvements in both US and partner capabilities to defeat adversary military operations. Allied and partner contributions to the joint fight are significant. For example, they can provide host nation security, fly additional combat and support sorties, supplement naval presence, provide additional maneuver forces, conduct maritime and ground mine clearing operations, to name just a few. These actions contribute significantly to force protection and overall operational success.

Contributions to Denying Benefits: Security cooperation and military integration create a shared political security burden and an improved ability to limit the damage an adversary can inflict. This undercuts an adversary's ability to coerce the US and its partners. It also reduces the potential benefits to be reaped from a surprise attack before US forces are fully deployed in theater. In many cases, partner cooperation and integration provides US forces the basing and logistical support needed to accelerate reinforcement and force projection, making adversary gains less likely. These activities encourage partner nations to develop, modernize and transform their own capabilities to help themselves. In some instances, partners can provide force capabilities essential to deterrence by denying benefits that would be difficult or costly for the US to match (e.g., extensive ground forces). There are even cases where focused partner military cooperation and integration allows a partner to deter on its own through denying benefits without US involvement in combat operations.

Contributions to Imposing Costs: Security cooperation and military integration can have a tremendous impact on adversary decision-makers' perception of the political will of the US and its allies. These activities thus increase the perceived probability that an adversary will incur severe costs should they take actions contrary to US or allied vital interests. Such costs include, but are not limited to: US military intervention itself; the loss of critical military and economic capabilities or assets; longer-term political and economic costs

associated with becoming a “pariah” state (as a result of conflict with a US-led coalition); and even regime destruction at the hands of an internationally sanctioned military campaign. Most of the military impacts of security cooperation and integration that contribute to denying benefits contribute to cost imposition efforts as well. An additional significant cost imposition impact is the potential for US and partner force synergies that free up US military assets to focus on imposing costs, rather than only denying benefits. An example of this would be allied/partner air forces providing air defense, freeing US air assets to be employed primarily in strike operations.

Contributions to Encouraging Adversary Restraint: A potential impact of these activities is to convince an adversary that US allies and partners will exercise increased restraining influence over American war aims and associated military operations, or vice versa. Additional contributions of security cooperation and military integration are provided by dissuading potential adversaries from adopting courses of action that threaten stability and security, while reducing the underlying conditions that foment extremism and set the conditions for future success.

Force Projection

The capability to project US military power globally and conduct operational maneuver from strategic distances provides an important capability to deter adversaries. Force projection enhances the JFC’s capacity to use all three ways of influencing adversaries’ decision-making. US force projection capabilities need to be responsive, sustainable, and executable in the face of anti-access strategies, WMD employment, terrorism at home or abroad, and other means of asymmetric warfare. For deterrence it is especially critical that force projection operations be executable in a manner that enables us to limit the damage an adversary can inflict—on US forces, partners and potentially their own civilian populace. Force projection includes the capability to conduct interdiction operations against the transfer of WMD components, materials, finished weapons, or delivery systems unilaterally, or in conjunction with allies and partners.

Contributions to Denying Benefits: Force projection capabilities provide the means to deny a broad range of perceived benefits that adversaries might seek through aggression and coercion. These perceived benefits could include (but are not limited to): seizure and occupation of allied/partner territory; destruction of (or damage to) key allied/partner political, military and/or economic assets; closure or interference with geographic choke points of strategic significance; coercive threat or use of force against US allies/partners; deterrence of US intervention in a regional conflict; or coercive limitation of US war aims in such a conflict; or the proliferation of WMD and associated delivery systems.

Contributions to Imposing Costs: Force projection capabilities also provide the JFC with the means to impose a set of critical costs on adversaries. These include, but are not limited to: seizure/occupation of high-value adversary territory; interdiction of adversary access to international air and sea lines of communication or WMD components or assets; destruction of highly valued political, military, and/or economic assets; destruction/disruption of the adversary's internal political control; and forcible regime change. The same force projection attributes delineated above are required for imposing costs.

Contributions to Encouraging Adversary Restraint: Finally, our force projection capabilities can encourage adversary restraint prior to (or in the midst of) a conflict only if they can be employed in a selective and highly controlled manner that permits adversaries to discern US restraint and the potential for this restraint to be lifted (should deterrence fail and escalation occur). For example, in a scenario in which US war aims are limited, the JFC should have the ability to project force in a way that communicates the limited nature of his objectives, and does not render the adversary incapable of discerning whether current operations are merely a precursor to a more ambitious set of US aims. In this deterrence context, disabling a regional state's entire political-military command and control system (when US military objectives do not require such a strategic effect) could profoundly undermine deterrence. However, the ability to quickly project force may cause an adversary to seek to more rapidly accomplish his war aims before sufficient US and allied forces build up to counter adversary aggression.

Active and Passive Defenses

The development and deployment of effective active and passive defenses contributes significantly to deterrence, particularly in the areas of deterring adversary WMD use or attacks on US population and critical US military and civilian infrastructure.

Ballistic and cruise missile active defenses are likely to be a critical element of US military capabilities in the future as adversaries obtain the capability to strike with increased precision, lethality (WMD), and long-range systems. Integrated air and missile (IAMD) defenses will be layered and networked, incorporating land-, sea-, air-, and space-based elements, and use both kinetic and non-kinetic means to achieve target destruction and/or negation. Regionally oriented defenses will protect fielded US forces, allies, and partners and will seamlessly integrate with homeland defenses to provide overlapping and complementary global protection. Additionally, the ISR and C2 elements of active missile defenses will enable a robust offense/defense integration, to include long- or very-long range counter-battery fires aimed at destroying the adversary's missile launch capabilities. The ability to thwart adversary missile attacks prior to launch as well as negate missiles in flight is key to achieving effective deterrence (primarily via benefit denial).

Near-peer nation-state adversaries may seek to defeat such active defenses in order to hold the American homeland hostage and constrain US freedom of action. Passive defenses complement active defenses, reducing the effectiveness of attacks that active defenses fail to defeat. They consist of measures taken to reduce the probability of (and to minimize the effects of) damage caused by hostile action. Examples include WMD force protection measures that reduce the vulnerability of US force projection capabilities, homeland security and homeland defense measures (e.g., consequence management) that limit the potential damage done by WMD attacks, and critical infrastructure protection measures that make such infrastructure more resilient in the event of attack.

The increasingly net-centric joint force of the 21st Century will capitalize on passive defense achieved through widely dispersed forces. While still able to achieve operational objectives through their ability to more efficiently communicate, maneuver, and share a common operating picture, net-centric forces will present a less lucrative target for an adversary's WMD. However, because adversaries are more likely to use weapons capable of wide area effects (e.g., Electromagnetic Pulse EMP) to attempt asymmetric defeat of technologically superior US forces, improved weapons-effects hardening/survivability will be required for a broader range of joint force systems than required today. Effective interoperability, robustness, and functional redundancy between joint force units (particularly in the areas of ISR and C2) will reduce the potential for single points of failure within complex systems and organizations, and ensure that critical C2 capabilities degrade gracefully. Information assurance for net-centric forces will ensure only trusted data are shared among users. Camouflage, concealment, and deception increase in importance, as adversaries become increasingly sophisticated users of widely available global information sources.

Contributions to Denying Benefits: Both active and passive defenses clearly contribute to deterrence by denying benefits. Such defenses reduce an adversary's probability of achieving benefits from attacks (or threats of attacks) on the US, its forces, and its allies. When focused on reducing US asymmetric vulnerabilities, such defenses enhance the benefit denial contributions of other force elements. Defenses have particularly important effects on adversary decision-makers' perceptions of the coercive political benefits they can derive from WMD capabilities. Active and passive defenses not only reduce the damage such capabilities can inflict--they also indicate US willingness to invest in defenses required to retain the freedom of action necessary to defend its vital interests.

Contributions to Imposing Costs: When combined with US force projection and Global Strike capabilities, active and passive defenses have a synergistic effect on deterrence by enhancing the credibility of US threats to impose costs. By

reducing US vulnerability to a wide range of asymmetric attacks, active and passive defenses increase adversaries' perceived probability of incurring costs from counterstrikes on key assets. In other words, effectively integrating offensive and defensive operations can powerfully influence an adversary's perception of the likelihood of their aggression or coercion will elicit an extremely costly military response.

Contributions to Encouraging Adversary Restraint: Active and passive defenses have little or no ability to encourage adversary restraint. In fact, because they have the synergistic impact on our perceived willingness to impose costs described above, they have the potential to increase adversary concerns regarding preemption. Such concerns, in certain circumstances, could worsen an adversary's perception of the consequences of restraint. Deterrence planning and operations need to account for this possibility.

Global Strike

Global Strike is the ability to rapidly plan and deliver limited-duration and extended-range attacks to achieve precision effects against highly valued adversary assets. Effects-based targeting, analysis, planning, and execution are combined to support attacks on high-payoff/high-value targets. These targets may include WMD production, storage, and delivery systems, adversary decision-makers, critical command and control facilities, and adversary leadership power bases.

US leadership could use Global Strike capabilities both to impose costs and to deny benefits to an adversary in a highly customized manner appropriate to the future security environment. Global Strike capabilities must be capable of defeating anti-access strategies imposed by distance, physical hardening or active and passive defenses and be able to operate in an environment where friendly forces may not have battlefield dominance. Because of the potentially urgent employment timelines, Global Strike will primarily rely upon long-range, high-speed, kinetic (advanced conventional and nuclear) and non-kinetic effects, unmanned systems, cyber systems, and/or small numbers of special operations forces employed over extended distances. In-theater capabilities will supplement these forces if available and appropriate, but the defining characteristic of Global Strike will be its unique blend of high-end and low-end military capabilities.

Within Global Strike, US nuclear forces contribute uniquely and fundamentally to deterrence—through their ability to threaten to impose costs and deny benefits to an adversary in an exceedingly rapid and devastating manner. Nuclear weapons provide the President with the ultimate means to terminate conflict promptly on terms favorable to the US. They cast a lengthy shadow over rational adversaries' decision calculus when considering coercion, aggression, WMD employment, and escalatory courses of action. Nuclear

weapons threaten destruction of an adversary's most highly valued assets, including adversary WMD capabilities, critical industries, key resources, and means of political organization and control (including the adversary leadership itself). This includes destruction of targets otherwise invulnerable to conventional attack, e.g., hard and deeply buried facilities, "location uncertainty" targets, etc. Nuclear weapons reduce adversary decision-makers' confidence in their ability to control wartime escalation.

The use (or threatened use) of nuclear weapons can also reestablish deterrence of further adversary WMD employment. Alternatively, nuclear weapons can constrain an adversary's WMD employment through US counterforce strikes aimed at destroying adversary escalatory options. Nuclear weapons provide the US with proportionate and disproportionate response options that an adversary cannot counter. They can also help deter intervention by adversary allies in an ongoing conflict.

Advances in conventional kinetic and non-kinetic means (e.g., cyberspace warfare, High Energy Radio Frequency (HERF) and directed energy (DE), etc.) may supplement US nuclear capabilities by 2015, nuclear weapons that are reliable, accurate, and flexible will retain a qualitative advantage in their ability to demonstrate US resolve on the world stage. Improving our capability to integrate nuclear and non-nuclear strike operations should further enhance these capabilities. Providing the President an enhanced range of options for both limiting collateral damage and denying adversaries sanctuary from attack will increase the credibility of US nuclear threats, thus enhancing deterrence and making the actual use of nuclear weapons less likely. Additionally, nuclear weapons allow the US to rapidly accomplish the wholesale disruption of an adversary nation-state with limited US national resources.

Global Strike normally will be conducted with an abbreviated logistics footprint and have limited objectives and rapid execution timelines (minutes to hours). Because adversaries will continue to pursue anti-access strategies, Global Strike must allow for independent operations anywhere in the world with minimal, if any, support from overseas forces and facilities. In many cases, senior national leadership will want to delay a Global Strike execution decision until the last possible minute. Future Global Strike missions may use weapons possessing two-way secure communications that allow for real-time command, targeting, retargeting, disarm, and disablement from launch/release until weapons impact. Since most Global Strike targets will be well protected, future forces must leverage stealth, speed, and low probability of intercept (e.g., ballistic) attack profiles to ensure arrival on target. Threatened use of Global Strike will be more effective to the degree that both US and adversary decision-makers believe the effects can be achieved without inflicting significant collateral damage.

Our ability to create intended effects increases the credibility of our deterrent threats. Effects can be achieved through either kinetic or non-kinetic means, and may be massive or limited depending upon specific objectives. In some cases, the ability to credibly threaten rapid execution against time-sensitive targets (such as mobile missile launchers or adversary decision-maker convoys) will be needed to create desired effects.

Because many Global Strike scenarios involve threatened (or actual) preemptive attacks on very-high value targets that will only be exposed for brief periods, Global Strike capabilities must also be highly reliable. Simultaneous attacks against all the major targets in a given category (e.g., all division headquarters, all WMD facilities) may be required against more capable adversaries, although the total scope and duration of operations will remain dramatically less than those associated with major combat.

Key elements of Global Strike capabilities should be periodically demonstrated openly on the world stage--to ensure adversary decision-makers fully comprehend the credible threats they face. However, in all scenarios, it will be highly desirable to conduct strike operations without alerting in advance the adversary, who, if warned, might employ certain capabilities (e.g., WMD) rather than lose them. A “black” or covert component within an otherwise highly visible Global Strike capability is highly desirable. This capability could assure allies without provoking an adversary. If subsequently revealed, this capability will serve to deter third parties by reminding them of their inability to fully characterize the United States’ capability to wage war.

Contributions to Denying Benefits: Global strike capabilities contribute to denying benefits by providing credible and effective preemption and response options in the event of impending (or ongoing) adversary aggression or coercion. These capabilities can either supplement or supplant force projection options under a wide variety of circumstances, including strategic/tactical surprise, adversary use of WMD or other asymmetric attacks on theater forces and allies, and other rapidly developing threats. The ability to rapidly and precisely bring decisive strike capabilities to bear anywhere around the world, followed by sustained operations if required, significantly reduces adversary temptations to conduct asymmetric operations aimed at countering US or allied theater capabilities.

Contributions to Imposing costs: The ability to rapidly and precisely accomplish Global Strike operations also serves to convince potential adversaries that the costs of aggression or coercion are likely to be severe. Global Strike capabilities could provide options to rapidly escalate attacks on strategic centers of gravity without lengthy preparatory theater operations.

Contributions to Encouraging Adversary Restraint: The ability to conduct preemption or response to adversary aggression/coercion (without reliance on

large scale, forward deployed theater forces) could have important impacts on encouraging adversary restraint. In many cases where the adversary is convinced that the cost of aggression or coercion will be a response using nuclear Global Strike, other considerations tend to pale in comparison. However, when an adversary perceives truly severe consequences of restraint, and doubts US willingness to use nuclear weapons, deterrence could fail despite our nuclear capabilities. Global Strike capabilities may not be perceived as posing the same kind of regime destruction threat that major theater combat operations present. Under certain circumstances, this could prove critically important to deterrence success.

Strategic Communication

Strategic Communication constitutes focused United States Government (USG) efforts to understand and engage key audiences in order to create, strengthen, or preserve conditions favorable for the advancement of USG interests, policies, and objectives through the use of coordinated programs, plans, themes, messages, and products synchronized with the actions of all elements of national power.¹⁸

For effective deterrence operations DOD Strategic Communication efforts must be part of a government-wide approach to develop and implement a robust strategic communication capability. DOD must support and participate in USG strategic communication activities to understand, inform, and influence all foreign audiences whose perceptions may influence our deterrent success. Such activities include security cooperation and integration, military forward presence, and stability operations. It is critical that the intent behind these actions be made clear to potential adversaries by communicating through words, images, actions and posture, profile and positioning of military capabilities and forces. This is supported by the primary communication supporting capabilities of Public Affairs (PA) and Information Operations (IO), including Psychological Operations (PSYOP); and the activities of Military Diplomacy (MD) and Defense Support to Public Diplomacy (DPSD).

Information Operations coordinate and synchronize the employment of the five core capabilities in support of deterrence operations.¹⁹ Five supporting capabilities (Information Assurance, physical security, physical attack, Counterintelligence, and Combat Camera) and three related capabilities (PA, Civil-Military Operations (CMO), and DSPD) also contribute to the achievement of desired deterrent effects on adversary decision-making.²⁰ Because deterrence

¹⁸ JP 3-13 page I-10.

¹⁹ As listed in JP 3-13, pg x. There may be host nation sensitivity to using PSYOP in Phases 0 and 1. Deterrence Operations are not limited to Phase 0 and Phase 1, but are relevant across all phases of warfare (to include intrawar deterrence).

²⁰ JP 3-13 page II-1.

is in the mind of the adversary, successful information operations must reliably communicate to adversary decision-makers the messages (coordinated with actions) necessary to deter. This includes the ability to inform adversaries explicitly of US national interests and intentions, show US resolve, communicate our confidence in our ability to limit damage to ourselves and our allies, reveal their vulnerability to US attack through a wide range of capabilities, provide terms and conditions for adversary compliance, and affect other elites or centers of power to influence adversary decision-makers in a variety of ways. This communication may be direct or indirect, transmitted through a variety of sources, including, friends, allies, and other third parties. Successful information operations must leverage the full range of communications means available today and in the future, and allow for both one- and two-way communications with adversary decision-makers at a variety of levels. Examples include television/radio broadcasts, email, text messaging, voice, leaflet drops, and other direct and indirect lines and means of communication yet to be developed. Because deterrence is about decisively influencing adversary decision-making, the ability to efficiently and effectively communicate in the adversary's native language as well as in a format they will receive, accept and understand is imperative. Therefore, the "how" of communication is just as vital as the "what." Care must be taken to determine and leverage delivery methods and message formats the intended target pays attention to and trusts.

The operational role of deterrence information operations focuses on psychological operations, cyberspace warfare operations, deception, and electronic warfare capabilities that can affect adversary morale and unit cohesion, decision-making, lines of communication (LOCs), logistics, command and control (C2), and other key adversary functions. Simultaneously, it is essential that we are able to protect similar friendly capabilities and activities through advanced network security, information assurance and OPSEC capabilities. Continued advances in these direct and indirect IO areas will enhance deterrence significantly.

Contributions to Denying Benefits: Information operations that communicate US and allied/coalition capabilities and deny an adversary the benefits of aggression or coercion can take many forms. They include efforts to convince adversary decision-makers that the US stake in a crisis or conflict is high, that the US can and will deploy forces capable of denying enemy objectives, and publicizing of military exercises and weapons tests that demonstrate capabilities to defeat an adversary attack. Information operations such as cyberspace warfare also undermine adversary decision-makers' confidence in their ability to use force to their advantage. For example, network defense capabilities that convince such adversaries that their attacks on US computer-based networks will likely fail could play an important role in the success of deterrence operations.

Contributions to Imposing Costs: Deterrence information operations can favorably influence adversary decision-makers' perceptions of the costs they may incur in a wide variety of ways. For example, they can be designed to convince such adversaries that US will to intervene (and resolve to persevere) in the face of escalation is high; that the US is likely to escalate its war aims in response to certain adversary actions; that the US is willing to use nuclear weapons under certain circumstances, etc. In its more operational form, computer network attack and electronic warfare capabilities can help convince adversary decision-makers that the US can rapidly suppress air defenses, disrupt, deceive, or terminate command and control, disrupt or damage vital production, etc. Finally, computer network defense capabilities can favorably influence adversaries' perception of US willingness to impose costs by US capabilities to defeat asymmetric attack.

Contributions to Encouraging Adversary Restraint: The capability to implement an integrated strategic information strategy is essential to efforts to alter adversary decision-makers' perceptions of the consequences of restraint. For example, convincing adversary decision-makers that there is an acceptable outcome available if they choose to "be deterred" could be achieved by finding creative means of offering them exile in a third country. Alternatively, means of communicating with lower level decision-makers of interest (such as operational commanders in charge of WMD forces) might be found that could convince them that restraint on their part would result in favorable postwar treatment by the US and its allies.

DETERRENCE IMPLEMENTATION

Implementation of the ends, ways and means of deterrence operations involves four supporting ideas applied during deterrence planning and execution. The Four supporting ideas address challenges associated with implementing the Central Idea in the current and future security environment.

1. Tailoring Deterrence Operations to Specific Adversaries in Specific Strategic Contexts: Exercising decisive influence over the decision calculations of adversary decision-makers requires an understanding of their unique and distinct identities, values, perceptions, and decision-making processes, and of how these factors are likely to manifest themselves in specific strategic contexts of importance to the US and its allies. Specific state and non-state adversaries thus require deterrence strategies and operations tailored to address their unique decision-making attributes and characteristics under a variety of strategically relevant circumstances. Such tailored deterrence strategies and operations should be developed, planned, and implemented with reference to specific deterrence objectives that identify who we seek to deter from taking what action(s), under what conditions (i.e., Deter adversary X from taking action Y, under Z circumstances).

2. Dynamic Deterrence Assessment, Planning, and Operations: The decision calculus of adversary decision-makers is dynamic; shifting over time with changes in adversary perceptions of the situation in which they find themselves. Thus, a static deterrence posture risks failure because an adversary's decision calculus may shift. Tailored deterrence plans and operations must anticipate such shifts and adapt to them.

3. Deterring Multiple Decision-Makers at Multiple Levels: The DO JOC does not assume that either states or non-state entities are unitary actors. It recognizes that there may be multiple decision-makers that it would be beneficial to influence favorably, and that those decision-makers may reside at different levels of an adversary's organization. JFCs are encouraged to develop and conduct deterrence operations explicitly designed to take this into account. In doing so, it is important to consider the potential effects on one level of adversary decision-making of the knowledge that we are seeking to affect decision-making at another level.

4. Characterizing, Reducing, and Managing Uncertainty: Because the adversary's decision-making calculus is his center of gravity, an inherent challenge in planning and implementing deterrence operations is characterizing, reducing, and managing uncertainties regarding key aspects of that calculus. Uncertainties regarding the content of an adversary's decision calculations can take several forms, and each form requires a different characterization, reduction or management approach.

A balance must be struck between oversimplifying an adversary's decision calculus and presuming a greater understanding of an adversary's calculus than is realistically achievable.²¹ A critical element of successful deterrence operations is to identify and manage key uncertainties. Such uncertainties will always exist, and US deterrence operations must be planned and conducted so as to take these inevitable uncertainties into account.²² Key deterrence uncertainties take three forms.

First is US uncertainty as to who the key adversary decision-makers are and by what process they make decisions relevant to our deterrence objectives. While this form of uncertainty sometimes pertains to state actors, it is much more prevalent for non-state actors. Uncertainty regarding the identities of key decision-makers can be addressed in part by developing a more general understanding of the ideology, objectives, and perceptions of a nation's elites or

²¹ This issue is of particular importance in analyzing the decision making of non-state actors where even the organization as well as its decision processes may be concealed.

²² While managing these uncertainties, strategic deterrence operations must also recognize the role Clausewitzian "friction" can play in deterrence failure. Our deterrence efforts must seek to so decisively influence adversary decision-making that these frictional effects are overcome. However, friction could cause deterrence to fail despite our best efforts, necessitating combat operations to protect/further US interests.

a non-state actor's leadership cadre. It is even possible to develop deterrence strategies and operations designed to influence the decision-making of unknown terrorist cell members with such an approach. Obviously, however, deterrence operations based on less detailed information regarding the adversary's decision calculus will be less effective. But that does not mean such operations cannot or will not succeed.

Second is US uncertainty as to key adversary perceptions, the core ingredient in an adversary's decision calculus. As an example, before the 9/11 attacks, how did the Al Qaeda leadership perceive the potential costs of carrying their terror campaign to US territory? Such perceptions cannot be fully known with high confidence. The extent of our uncertainty will vary significantly across adversaries. However, considerable insight into the critical content of adversary decision calculations can be developed through dedicated analytical effort and intelligence collection. There is much room for improvement in this area. Our planning must explicitly recognize that it is critically important to determine what "we know we don't know." We may be unable to resolve some key uncertainties regarding adversary perceptions, but still be able to develop deterrence strategies that creatively hedge against such uncertainties, and identify deterrence COAs that take such uncertainties into account. In some cases it may be possible to take actions that serve to narrow or eliminate the uncertainties themselves through careful observation of adversary responses.

Third is adversary decision-makers' uncertainty regarding their own assessment of alternative COA outcomes. For example, a key uncertainty influencing Imperial Japanese calculations (regarding whether to attack the United States in 1941) was how the US would respond to an attack. Again, our strategic deterrence operations must be developed and conducted with these adversary uncertainties in mind, increasing or reducing them as our deterrence strategy (and our assessment of the adversary's risk-taking propensity) dictates.

The operationalization of this JOC further requires the integration of deterrence into military planning. What follows is a generic description of the functional steps that must be integrated into planning processes in order to fully address the JOC's central idea and supporting concepts.

Step 1: Specify the Deterrence Objective(s) and Strategic Context

Deterrence operations planning and execution must begin with a clear and concise specification of who we seek to deter (X), from taking what action or actions (Y), under what conditions (Z). This is necessary because adversary decision-makers' calculations are profoundly COA and scenario dependent (i.e., the content of a national leadership's decision calculus regarding the use of chemical weapons at the outset of a conflict is profoundly different from the content of their decision calculus regarding the use of nuclear weapons late in

a conflict which they are losing). The form the specification of deterrence objectives and strategic context should take is thus “Deter adversary X from taking action Y under conditions Z.”²³ The actual content of such specifications of objectives and context must be derived from national level guidance.

Step 2: Assess the Decision Calculus of Adversary Decision-Makers

A prerequisite for planning and executing deterrence operations is a rigorous assessment of the content of their decision calculus of adversary decision-makers and the processes by which they make and execute decisions. This assessment should, at a minimum, address three aspects of the deterrence operations problem. First, it should develop an in-depth understanding of all factors that influence how adversary decision-makers perceive the benefits, costs, and consequences of restraint associated with the US deterrence objectives and strategic context. Second, it should develop a detailed understanding of both how adversary decision-makers perceive the relevant benefits, costs, and consequences of restraint, and why they perceive them as they do. This should identify to the extent possible critical factors (including other state and non-state actors) that influence these adversary perceptions. Finally, the assessment should identify and characterize key uncertainties regarding the adversary decision-makers’ perceptions of their decision calculus. If necessary, the impact of alternative schools of thought regarding these key uncertainties on the adversary decision-makers’ calculus should be assessed as well. Finally, resolving key uncertainties should be highlighted as high priority intelligence requirements.

Step 3: Identify Desired Deterrence Effects on Adversary Decision Calculus

Based on the decision calculus assessment conducted in Step 2, planners must determine what variables in the adversary decision-makers’ calculus would be most beneficial to influence. Take, for example, US deterrence operations aimed at deterring adversary escalation in the context of a theater campaign in which US objectives are limited. US planners might conclude that the highest leverage deterrence effects vis-à-vis a specific adversary would be to increase the adversary’s perceived probability of the US pursuing regime change, if they take the escalatory action we seek to deter, while simultaneously mitigating the perceived probability of US-imposed regime change, if the adversary chooses to exercise continued restraint. Note that this step does not address how to achieve such effects. Rather, it is focused solely on identifying a combination of effects on the adversary decision-makers’ calculations that will significantly enhance deterrence. To the extent possible,

²³ Critical to the evaluation is identifying those others who have a stake in the outcome or course of action. Mastering this will permit leveraging potential third-party contributions and minimizing risks for conflict with competing objectives.

potential measures of effectiveness should be developed for the desired deterrence effects as well.

Step 4: Develop and Assess Tailored COAs Designed to Achieve Desired Deterrence Effects

Utilizing the set of desired deterrence effects identified in Step 3, planners next identify US (and possibly allied) COAs to decisively influence adversary decision-making. Such COAs consist of sets of actions that will, in the minds of the adversary, deny them the benefits they seek, impose costs they fear, and encourage adversary restraint by presenting them with an acceptable alternative outcome. The development of deterrence COAs must include a rigorous assessment of their potential impact across the subject adversary's decision calculus, as well as on other potential adversaries' calculations now and in the future. Inevitably, US deterrent actions that are outside the purview of the Department of Defense will be identified. Such actions, and the analysis supporting their potential deterrence impact, should be brought to the attention of senior DOD officials for possible consideration in the interagency process.

Step 5: Execute Deterrence COAs and Monitor and Assess Adversary Responses

Deterrence operations are not only crisis and conflict operations. They are also continuously conducted, day-to-day activities designed to decisively influence adversary decision-making in peacetime, and in crisis and war. Regardless of whether specific deterrence COAs are implemented in "Phase Zero," crisis, or war provision should be made to monitor adversary responses to those COAs, with emphasis placed on evaluating the measures of effectiveness developed in Step 3. This monitoring and assessment is likely to generate new intelligence requirements as well. The results of the effectiveness assessment should be rolled back into the decision calculus assessment conducted in Step 2. This may result in a reassessment if necessary, and begin a new round of the deterrence operations planning and execution process.

RISKS and MITIGATION

The following risks could invalidate or undermine the effectiveness of this concept. Each is followed by proposed means of mitigating the respective risk.

- Risk: Uncertainties regarding the nature and content of adversary values, perceptions, and decision-making processes could prevent us from developing a sufficiently accurate and detailed understanding of adversary decision calculations to support effective deterrence strategy and plan development and execution.
 - o Means of Mitigation: Conduct deterrence analysis that identifies critical uncertainties regarding an adversary's decision-making, thus aiding in the improvement of intelligence collection and analysis that may narrow or eliminate such uncertainties in the course of ongoing deterrence operations. Develop "hedging strategies" that take such critical uncertainties into account, and focus deterrence operations on those aspects of an adversary's decision calculus that we do understand with confidence. In some instances such uncertainties may result in a finding that a deterrence strategy is insufficiently reliable to pursue with confidence, and that other approaches to the threat are required (e.g., preemption, defense, etc.).
- Risk: The US could unintentionally “mirror image” certain aspects of an adversary’s decision calculations, despite the fact that the Deterrence Operations JOC is explicitly designed to focus our deterrence operations on discerning and influencing key adversary perceptions.
 - o Means of Mitigation: Require analysts and planners to make explicit their assumptions and logic in both assessing adversary perceptions and developing plans to affect them. Include analysis of post-deterrence operations execution that tests underlying assumptions and results in revision of deterrence analysis and planning as necessary.
- Risk: The US could miscalculate an adversary’s reaction to our policies and actions.
 - o Means of Mitigation: Assess the potential impacts of proposed deterrence operations, and of other proposed relevant US actions, on an adversary's decision calculus. Assess the impacts of executed deterrence operations on an adversary's perceptions relevant to deterrence, with an emphasis on detecting unanticipated effects. Ensure that deterrence operations do not seriously compromise the ability of US or coalition forces to protect our interests in the event of an unanticipated adversary response.
- Risk: US deterrence efforts focused on one potential adversary may have undesired and unforeseen second and third order effects on our

assurance, dissuasion, and deterrence efforts focused on other actors. For example, third parties (both state and non-state) could learn lessons from US deterrence efforts focused on others, and attempt to develop strategies to avoid being deterred themselves.

- o Means of Mitigation: Assess the potential impacts of proposed deterrence operations vis-à-vis one adversary on the perceptions of other actors. Take such potential impacts into account in planning and conducting deterrence operations, shaping such operations to mitigate or take advantage of such second and third order effects.
- Risk: The US may lack critical capabilities required to effectively influence a specific adversary's decision calculations under certain conditions. Because the perceptions and capabilities of potential adversaries vary, the means required to influence them may vary significantly.
 - o Means of Mitigation: Incorporate the identification of new deterrence capability requirements into the deterrence operations planning process and provide such requirements as inputs to the Joint Capabilities Integration and Development System (JCIDS). Identify allied or coalition capabilities that can fill gaps in American capabilities to influence specific adversary calculations. Recognize capability-derived limitations on US deterrence operations vis-à-vis certain adversary's under certain conditions, and hedge against those limitations in devising deterrence strategies.
- Risk: Deterrence effectiveness is critically dependent on adversary perceptions of US national will and political resolve. Events, circumstances, or decisions outside the purview of the Department of Defense that negatively influence such perceptions could undermine the effectiveness of deterrence operations being conducted in accordance with this joint operating concept.
 - o Means of Mitigation: Identify specific conditions and US actions (or inaction) that may deleteriously affect specific deterrence strategies and operations, and make senior level decision-makers aware of them so they can be addressed through interagency planning processes.
- Risk: The US military may not have sufficient capability to deter, thus a strategy that primarily relies upon military means or is not sufficiently integrated with other elements of national power risks failure.

- o Means of Mitigation: Incorporate into the deterrence operations planning and execution process analysis that addresses the roles of all elements of national power in deterrence success, and incorporate them in US deterrence strategy as appropriate.
- Risk: The US may be unable to determine what specific deterrence actions successfully deterred an adversary from taking a specific course of action, or even whether adversary restraint indicated deterrence success. This could hamper efforts to learn from past successes, or lead to false confidence in certain past deterrence actions or approaches.
 - o Means of Mitigation: Develop to the extent feasible specific deterrence-related measures of effectiveness (MOEs), and monitor the impacts of ongoing deterrence operations in accordance with these MOEs. Identify and test our assumptions regarding past deterrence successes.
- Risk: An adversary's deterrence calculations are dynamic, changing over time as the strategic context and operational situation changes. The US may fail to anticipate or detect significant shifts in an adversary's decision calculus, and in turn fail to adjust our deterrence strategy and actions to counter such a shift, thus potentially resulting in deterrence failure.
 - o Means of Mitigation: Analyze the potential impacts on an adversary's deterrence calculations of both planned and unplanned changes in the strategic context and operational situation. Focus such analysis on identifying those points in a crisis or conflict at which significant shifts in an adversary's decision calculus can be expected. Plan and conduct multi-phase deterrence operations designed to influence the potential shifts in the adversary's calculations at points in the future.
- Risk: An adversary's perceptions of the nature of US military capabilities, and the impacts of US military operations, may make the communication of deterrence messages difficult or impossible in severe crisis or conflict as adversary leadership seeks to protect itself from detection and attack. These factors may severely limit our ability to apply the joint operating concept effectively and make effective pre-crisis deterrence operations more important.
 - o Means of Mitigation: Identify those situations in which this risk may manifest itself. Take this risk into account when planning defend/defeat operations. Develop means of continued

communication with potential adversaries that pose little or no risk to adversary leaderships in crisis or conflict. Emphasize Phase 0 deterrence operations against adversary's for whom this is a significant risk.

DETERRENCE ASSESSMENT

The focus of the DO JOC is ultimately on influencing adversary decision-making, an activity that is inherently difficult to accomplish, as well as analyze and measure. While other kinds of military activity deal largely with the application of capabilities that are quantifiable to achieve effects that are measurable, success in deterrent activities is often indicated by the absence of a measurable event. Furthermore, assigning a cause and effect relationship between our deterrent actions and the hoped-for outcome of “no event” is problematic at best.

Because the inner workings of an adversary's mind are not readily amenable to external measurement, analysts must develop innovative methods to objectively assess strategic deterrence operations. These methods must address the difficulties of gauging human intention and perception, and measuring the degree of influence required or achieved. Deterrence activities occur and interact at all levels: strategic, operational and tactical. For example, tactical actions may have strategic impacts, and vice-versa. Deterrence actions taken against one adversary will not only be perceived differently by other adversaries, they may even be perceived differently by the targeted adversary under different circumstances.

The central idea of the Deterrence Operations JOC provides an objective framework with which to assess an inherently subjective circumstance (the adversary's decision-making process). For a specific deterrence objective (e.g., Deter actor X from action Y in situation Z), developing deterrent actions and determining the effectiveness of those actions generally requires three broad analytic steps:

- Develop an in-depth understanding of adversaries' decision calculations.
- Develop and assess tailored, adversary-specific deterrent COAs.
- Implement and monitor the impacts of tailored deterrent COAs.

Operationalization of this JOC requires a rigorous deterrence assessment capability that meets these tough analytical challenges. Because it is virtually impossible to identify with confidence the “threshold values” of key variables (i.e., the net valuation of perceived benefits, costs, and consequences of restraint) at which deterrence will fail, the required deterrence assessment need not (and should not) seek to predict an adversary's behavior. Instead, the required deterrence assessment should strive to identify the most promising

means by which an adversary's decision calculus is moved toward deterrence and away from coercive action or attack. In addition to this expected main effect, such assessments should account for 2nd and 3rd order effects, including impacts on other deterrence objectives with the same adversary, and impacts on neighboring, regional, and global actors.

Depending on the analytic requirements, each of these steps may involve multiple sub-steps. This analytic process should be repeated for different deterrence objectives to build a deterrence effectiveness portfolio that facilitates identification and prioritization of high-leverage deterrence capabilities, attributes, and operations.

Deterrence assessment includes integrating recommended COAs into plans and monitoring the execution of those plans. This applies both to day-to-day (Phase 0) deterrence operations as well as operations undertaken in response to crisis. The monitoring of adversary reaction to deterrent actions feeds back into future assessments.

Metrics for Deterrence Assessment

Innovative metrics are needed to both evaluate and improve this deterrence concept and conduct the deterrence assessments outlined above. While a detailed list of specific measures can only be built for a specific adversary regarding a specific deterrence objective, deterrence metrics are generally required to:

- Assess alternative deterrence strategies, postures, and courses of action.
 - o Identify and measure variables of importance to adversary's decision calculus.
 - o Measure the expected impact of particular deterrent COAs on adversary decision calculus.
 - o Measure expected 2nd and 3rd order impacts of deterrent COA packages.
 - o Measure impact of deterrent actions (cost/benefit) on the US and its allies.
- Assess effectiveness of deterrent actions during and after execution (diagnostic feedback for plan and system improvement).
 - o Measure adversary response to deterrent actions.
 - o Measure expected and unexpected 2nd and 3rd order impacts.
 - o Measure uncertainty and update risk management plan.
- Assess effectiveness of existing deterrent capabilities.

- o Measure trends over time.
- o Identify and measure capability gaps.
- o Identify intelligence shortfalls.

Deterrence Experimentation

Experimentation serves several important roles in deterrence activities, including to: exercise and improve the concept; develop and refine deterrence scenarios; vet deterrence assessments; help determine and measure 2nd and 3rd order effects (including interactions across actors and regions); and help characterize and manage uncertainty. These roles will continue to be filled by experimentation (as opposed to strictly simulation or empirical means) for some time because of the complex and human-natured aspects of the problem. Although each event will certainly differ in content, experiments to support deterrence assessment have several common general characteristics:

- Deterrence objectives may be assessed in experiments focused solely on deterrence or may be included as an initiative within a broader experimentation venue; however, deterrence experimentation initiatives must be allowed to succeed or fail on their own merits (without a predetermined road to war) in order to effectively assess the deterrence objectives.
- Deterrence experiments will use a real-world adversary and therefore be conducted in a classified environment.
- Deterrence experiments will involve different sets of players from traditional warfighting experiments. Participants on the Blue side will usually include significant interagency and think-tank participation, while the Red team will include human factors analysts and academic experts. Participants should also include allies and other coalition partners when appropriate.
- Experiments that focus solely on deterrence are typically small events that occur frequently and build on previous experimentation results.

Of the three broad analytic steps presented above (understand the adversary's decision calculus; develop and assess deterrent COAs; and implement and monitor deterrent COAs), only the first step can largely be validated outside of experimentation (through interaction with the intelligence community). Deterrence experimentation will directly support validation of the second and third steps. The interaction of expert human participants is particularly well suited to understanding deterrent COAs and measuring their impact on an adversary's decision calculus.

Strategic Deterrence Assessment Lab

Effective implementation of this approach to assessment, metrics and experimentation requires a dedicated, long-term assessment capability. Individual assessments generally take weeks to months to perform and the expertise to conduct such assessments is only developed over years of application. The recent establishment of a “Strategic Deterrence Assessment Lab” (SDAL) at USSTRATCOM serves to focus DOD deterrence activities and create a national asset for strategic deterrence effectiveness assessment.

The SDAL’s mission is to develop and assess US deterrent, dissuasive, and assurant actions in support of DOD policy and combatant command plans and operations. Although a DOD asset, the SDAL addresses all elements of national power (diplomatic, information, military, economic), as well as the full range of military operations. In these activities, the SDAL supports deterrence concept development, deterrence experimentation, and both deliberate and crisis action planning.

SUMMARY AND CHALLENGES

The dawn of the 21st Century presents multiple, diverse and difficult strategic deterrence challenges for the United States. Some observers contend these challenges are so difficult that they put in question the relevance of deterrence to our security policy and posture. The techniques of deterrence are not obsolete, however. Deterrence will continue to be a critical element of an overarching American national security strategy--a first (but by no means last) line of defense against adversaries that threaten our vital interests or our national survival.

Our national approach to deterrence, including this DOD concept for conducting deterrence operations, must adapt to meet the changes of the 21st Century. As highlighted in this document, such adaptation will (in some instances) require new or enhanced capabilities. Our understanding of how deterrence works must undoubtedly mature beyond our previous concepts.

Deterrence is ultimately in the eye of the beholder: the adversary decision-maker. Adversaries' perceptions are the focus of all our deterrence efforts. As a result, effective deterrence involves far more than just DOD capabilities, operations, and activities. Rather, it demands a national level effort involving extensive interagency (and in some cases, intra-alliance) integration and coordination. Our future deterrence success will be a function of how well we bring all our capabilities and resources to bear to achieve decisive influence over adversary decision-making. This Deterrence Operations Joint Operating Concept offers a description of the DOD role in achieving this.

In summary, this joint operating concept outlines a new approach to understanding the ways and means necessary to achieve the end of deterrence. It focuses deterrence on the adversary's decision calculus and describes how adversary decision-making can be decisively influenced through denying benefits, imposing costs, and encouraging adversary restraint. Further, the JOC identifies a set of capabilities and associated attributes required to achieve such decisive influence. Finally it proposes a means of evaluating the effectiveness of alternative deterrence options, making future experimentation and further concept development possible. The DO JOC Version 2.0 is an important step in improving our understanding of deterrence as applied to the security challenges of the 21st Century.

Glossary

AOR	area of responsibility
C2	command and control
C4I	command, control, communications, computers and intelligence
CBRNE	chemical, biological, radiological, nuclear, and/or high-yield explosive
CJCSI	Joint Chiefs of Staff Instruction
CMO	civil-military operations
COA	course(s) of action
DO	Deterrence Operations
DOD	Department of Defense
DSPD	defense support to public diplomacy
EMP	electromagnetic pulse
EW	electronic warfare
GWOT	Global War on Terror
HQ	headquarters
IO	Information Operations
ISR	intelligence, surveillance and reconnaissance
JCIDS	Joint Capabilities Integration and Development System
JFC	joint force commander
JOC	joint operating concept
JOpsC	joint operations concepts
JP	joint publication
JTF	joint task force
LOC	lines of communication
MCO	major combat operation
MILDEC	military deception
NMS	national military strategy
NSS	national security strategy
PA	public affairs
PSYOP	psychological operations
OIF	Operation IRAQI FREEDOM
OPSEC	Operations Security
POTUS	President of the United States
QDR	Quadrennial Defense Review
ROMO	range of military operations
SecDef	Secretary of Defense
SME	subject matter expert
UCP	unified command plan
USG	United States Government
WMD	weapons of mass destruction

Bibliography

Achen, Christopher and Duncan Snidal. "*Rational Deterrence Theory and Comparative Case Studies.*" *World Politics*, 41, 143-169, 1989.

Allison, Graham. *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little, Brown 1971.

Berejikian, Jeffrey D. *A Cognitive Theory of Deterrence*. *Journal of Peace Research*, Vol. 39-2, 2002.

Capstone Concept for Joint Operations Version 2.0. Office of the Secretary of Defense, Washington, DC: August 2005.

CJCS Strategic Deterrence Joint Warfighting Capabilities Analysis Final Report. Joint Staff Directorate for Strategic Plans and Policy (J-5). Washington DC: 2003.

"*Combating Terrorism in a Globalized World.*" National War College, May 2002.

Dauber, Cori Elizabeth. *Cold War Analytical Structures and the Post Post-War World: A Critique of Deterrence Theory*. Westport, CT: Praeger, 1993.

Ellsberg, Daniel. *The Crude Analysis of Strategic Choices*. P-2183, Santa Monica: Rand, December 1960.

Farnham, Barbara. *Avoiding Losses/Taking Risks: Prospect Theory and International Conflict*. University of Michigan, 1995.

Freedman, Lawrence. *Deterrence (Themes for the 21st Century)*. Polity Press, 2004.

George, Alexander and Richard Smoke. *Deterrence in American Foreign Policy: Theory and Practice*. New York: Columbia University Press, 1974.

Giles, Greg, Dan Chiu, Jim Miller. *Defense Adaptive Red Team Assessment of USSTRATCOM's Strategic Deterrence Assessment Lab: Challenges & Opportunities*. Hicks and Associates, Inc., for the DUSD (AS&C) Joint Warfighting Program. February 2006.

Gray, Colin S., *Maintaining Effective Deterrence*. Strategic Studies Institute, August 2003.

Jervis, Robert. *Perception and Misperception in International Politics*. Princeton: Princeton University Press, 1976.

Jervis, Robert, Richard Lebow and Janice Stein. *Psychology and Deterrence*. Baltimore: Johns Hopkins University Press, 1985.

Joint Publication 3-13, Information Operations. CJCS, 2006.

Joseph, Robert G. and John F. Reichart. *Deterrence and Defense in a Nuclear Biological, and Chemical Environment*. National Defense University, 1999.

Kissinger, Henry. *Nuclear Weapons and Foreign Policy*. New York: Harper, 1957.

Levy, Jack S. "Prospect Theory, Rational Choice, and International Relations." *International Studies Quarterly*, 41, 87-112, 1997.

Maxwell, Stephen. *Rationality in Deterrence*. London: International Institute for Strategic Studies, 1968.

McIvor, Morgan, et. al., "Rethinking the Principles of War." US Naval Institute Proceedings, 34-38, October 2003.

Mearsheimer, John J. *Conventional Deterrence*. Ithaca, NY: Cornell University Press, 1983.

Mesquita, Bruce Bueno de, *The War Trap*. Yale University Press, 1981.

Morgan, Patrick M. *Deterrence Now*. Cambridge University Press, 2003.

National Military Strategic Plan for the War on Terrorism, Chairman of the Joint Chiefs of Staff, Washington DC, March 2005.

National Defense Strategy, Office of the Secretary of Defense, Washington DC, March 2005.

National Military Strategy, Chairman of the Joint Chiefs of Staff, Washington, DC, March 2005.

National Security Strategy, The White House, March 2006.

National Strategy to Combat Weapons of Mass Destruction, The White House, December 2002.

Nuclear Posture Review, Office of the Secretary of Defense, Washington DC, 2001.

Payne, Keith B. *Deterrence in the Second Nuclear Age*. University of Kentucky Press, 1996.

Payne, Keith B. *The Fallacies of Cold War Deterrence and a New Direction*. University of Kentucky Press, 2001.

“*Post-Cold War Conflict Deterrence*.” Naval Studies Board, National Research Council National Academy Press, 1997.

Quadrennial Defense Review Report. Office of the Secretary of Defense, Washington, DC, 6 February 2006.

Riker, William H. and Peter C. Ordeshook, *An Introduction to Positive Political Theory*, Prentice-Hall, 1973.

Schelling, Thomas C. *The Strategy of Conflict*. Harvard University Press, 1960.

Schelling, Thomas C. *Arms and Influence*. Yale University Press, 1966.

Schelling, Thomas C. *Choice and Consequence*. Harvard University Press, 1984.

Schmitt, John F. *DART Paper - A Practical Guide for Developing and Writing Military Concepts*. December 2002.

Security Cooperation Guidance, Office of the Secretary of Defense, Washington, DC, November 2005.

Snyder, Glenn. *Deterrence and Defense: Toward a Theory of National Security*. Princeton: Princeton University Press, 1961.

Steinbruner, John. “*Beyond Rational Deterrence: The Struggle for New Conceptions*.” *World Politics* 28, 1976.

Strategic Deterrence Joint Operating Concept, Version 1, Office of the Secretary of Defense, Washington, DC: February 2004.

Thomas, Troy S., Stephen D. Kiser, and William D. Casebeer. *Warlords Rising: Confronting Violent Non-state Actors*. Lexington Books, 2005.

Transformation Planning Guidance. Office of the Secretary of Defense, Washington, DC: April 2003.

Watman, Kenneth and Dean Wilkening. *US Regional Deterrence Strategies*. RAND 94-24372, 1995.

Welch, Commander John J. USN. *"Nuclear Deterrence is Here to Stay."* US Army War College Strategy Research Project, Carlisle Barracks, PA: 7 April 2003.

Whiteneck, Daniel. *"Deterring Terrorists: Thoughts on a Framework."* The Washington Quarterly Vol 28, Num 3, The Center for Strategic and International Studies and the Massachusetts Institute of Technology, Washington, DC: 2005.

Appendix A: Illustrative Deterrence Example for State/Rogue State Actor

The following illustrative example explores deterrence challenges the JFC must consider in the timeframe covered by this JOC (present-day to 2025). The unprecedented degree of global joint force collaboration required shows why no single regional or functional commander can approach deterrence actions independently. Deterrence must be integrated across regions, organizations, DOD activities, and be considered in the context of other key defense activities and instruments of national power.

The scenario starts with detection of a terrorist conversation (Adversary X) discussing plans to rapidly procure a portfolio of capabilities (computer network attack, WMD, ballistic and cruise missiles) aimed at inflicting mass casualties and economic disruption within US borders. The conversation is traced to one specific country in a regional combatant commander's area of responsibility (AOR) (AOR [A]). In another country/AOR (B), apparently unrelated activities by rogue nation-state actors (Adversary Y) to sell highly-prized capabilities/weapon(s) are detected by human intelligence sources and corroborated by persistent surveillance (national technical means). Effective global situational awareness (specifically in this case, automated database mining conducted against standing requests for information) allows these events to be identified and correlated. Combatant commanders, in conjunction with the Joint Staff, defense agencies, and other essential federal organizations collaboratively determine the next sequence of required events. This includes decisions on what, if any, additional global ISR assets, capabilities, or legal authorization is needed to develop a better understanding of this possible threat. Decision-support tools and common operating pictures incorporating deterrence intelligence enhance the commander's battlespace awareness, highlight "possible emerging" crises early, and show/predict interrelationships with not only potential adversaries, but also allies and non-committed actors.

Information from additional sources is received [that by itself, due to sources and collection methods, would not stand alone] indicating that efforts to lease a cargo ship through a third party, in a third AOR(C), are in progress. The individuals involved are using aliases and accounts linked to known terrorist profiles operating in AORs A and B. Similarly, federal homeland security agencies add yet another seemingly unrelated piece to the puzzle that provides indications and warning of a larger plan to attack critical infrastructure installations in the US and Canada. These attacks are recognized by the US as an opening prelude to Country Y's planned invasion of its neighbor (a US ally) with the intent of undermining US national resolve and diverting attention/resources towards the US homeland. Specific attacks planned by Adversary X include a biological weapon attack on a major US metropolitan area, a radiological attack on a major US seaport serving both commercial and military traffic, and a computer network attack aimed at the main satellite and fiber-optic telecommunications links connecting the US to overseas financial markets.

Adversary Y attempts to covertly move air, land, and sea forces towards the border of the US ally. US and allied persistent, intrusive ISR assets monitor these movements. Adversary Y is equipped with WMD and possesses both short-range delivery systems as well as a handful of long-range missiles capable of reaching the US homeland. Adversary Y also operates a single optical remote sensing satellite that also provides meteorological data to third-party users when overflying their respective countries.

At this time enough credible information is available that the CJCS informs senior national leadership on this emerging threat. All relevant elements of the joint force have already been alerted through robust collaborative networks. Effective interagency cooperation allows a range of options involving all instruments of national power to be presented to the President during initial strategy formulation. Since the perceived military threat involves 3-4 AORs and 4-5 different agencies/departments, the SecDef tasks a single combatant commander to rapidly integrate and coordinate DOD global efforts supporting deterrence. The resulting COAs are presented to the SecDef by CJCS and integrated with other federal agency efforts to develop a range of crisis responses for the President. Aboard Air Force One, the President assembles (via secure video teleconferencing) the SecDef, CJCS and combatant commanders. The President selects deterrence COAs and directs their execution by the integrating combatant commander and supporting commanders. Deterrence efforts are also integrated with DOD homeland defense and emergency preparedness activities as well as preparations for possible major combat operations in defense of the threatened ally.

Deterrence activities must be aimed at the decision calculus of both Adversary X and Adversary Y. The efforts aim to deter the following adversary COAs:

- Adversary X use of WMD against the US homeland
- Adversary Y attack against our regional ally
- Adversary Y use of WMD on the theater battlefield
- Adversary Y use of WMD against the US homeland
- Continued sanctuary/support of Adversary X within Country A

Potential military deterrence actions by the US could include:

- Moving theater ballistic missile defenses to protect our ally from Adversary Y (denying benefits)
- Increasing the level of persistent, intrusive ISR visible to Adversary Y decision-makers to improve our ability to respond to aggression and demonstrate awareness of ongoing adversary actions (denying benefits)
- Increase public visibility of US declaratory policy regarding US responses to the use of WMD against the US or its allies, to include the potential use of all of our options. (denying benefits and imposing costs)

- Alerting in-theater US forces and preparing for embarkation, deployment, and arrival of additional expeditionary US forces (denying benefits and imposing costs)
- Conducting kinetic and/or non-kinetic Global Strike on transshipment activities associated with Adversary X efforts to assemble and mate WMD and associated delivery means (denying benefits)
- Denying (but not degrading) Adversary Y's satellite with a laser dazzler so it cannot be used to monitor US force deployments in support of the regional ally, yet still be available for legitimate third-party peaceful purposes (denying benefits)
- Conduct robust information operations against Adversary Y military personnel responsible for WMD use, convincing them not to follow WMD employment orders (Encouraging adversary restraint)
- Conduct demonstration of long-range precision Global Strike capabilities as a reminder of the joint force capability to credibly threaten adversary decision-makers with destruction or to preempt fielded WMD delivery systems (imposing costs/denying benefits)
- In coordination with the other instruments of national power, conduct information operations to deter the WMD arms sale or ship leasing. (denying benefits)
- Conduct CYBERSPACE WARFARE to sabotage [e.g., discredit financial data] systems associated with Adversary X's WMD acquisition activities and undermine their support relationships with other third-party actors. (denying benefits)
- Publicize CONUS exercise of joint force consequence management resources and critical infrastructure protection in HLS support role (denying benefits)
- Communicate to Adversary Y decision-makers the fact of US knowledge of support for Adversary X, as well as threaten to expand US war aims should open conflict occur (Encouraging adversary restraint)
- In coordination with the other instruments of national power, conduct operations directed at curtailing Country A's support of Adversary X (denying benefits/encouraging adversary restraint)

COAs would be collaboratively coordinated to include all combatant commanders and defense agencies so that deterrence actions in one AOR are understood and planned for in all AORs.

Appendix B: Illustrative Deterrence Example for Non-State Actor

Scenario: The Joint Force Commander may be in the midst of conducting Stability Operations and wants to deter terrorist group A from attacking US/allied base while continuing to conduct ongoing operations. Local law enforcement may or may not be very effective, or may be unwilling to effectively work with coalition forces.

Either the characteristics of the group or the actual decision-makers contemplating such an attack must be known to some degree. At least the general characteristics and methods should be studied and understood. Ideally, a strategic profile of those decision makers and a deterrence decision calculus has been created. Without such knowledge of what influences a non-state actor, deterrence will be even more difficult, if not virtually impossible.

Based on the decision calculus/assessment, here are some considerations:

Imposing Costs:

- The most effective means of imposing costs may be via economic means, cutting off their funding or financial support.
- Locating the cell's decision makers, weapons, field operatives, and their supply chain is likely the most critical piece of effectively being able to effectively impose costs. This requires effective ISR through HUMINT and non-traditional means. The challenge is that the non-state actor must know that he (or his support network) is vulnerable to US attack. Means of constantly surveying a location and being able to trace personnel back to their safe houses is critical.
- As an actor increases the scale and support for an attack, he increases the risk that he may be discovered.
- Additionally, once he realizes that his network is at risk, he may alter his methods and delay his attack until some later time. This is at least a partial deterrence success, but requires constant vigilance on studying and deterring the non-state actor, especially as their organization changes as well as their methods.
- New means, especially those with low collateral damage and employed in conjunction with law enforcement, are critical to imposing costs on his network.
- If the nodes/cells of the network are strongly linked and interdependent, threatening to impose costs (via military or economic means) on another piece of the network may be sufficient to deter an attack.
- A well-distributed, non-state actor may use electronic means or the internet to communicate, which may be susceptible to network attack.
- Communicating any potential costs may be particularly challenging since a direct means of communication may not exist, thus third parties may have to be used.

Denying Benefits:

- Denying benefit may be the most effective deterrent means available, especially if the non-state actor's organization is small and/or well distributed.
- Understanding the means the actor may use to attack is critical to being able to effectively construct defenses and threaten to deny the benefit of his attack. Additionally, effective defenses must be constantly updated and adapted to potential new means of attack . . . defenses can never be static, because the enemy will adapt.
- Hardening or distributing critical systems may aid in denying benefit
- A thwarted attack that is well publicized may deter other attacks and diminish financial or material support of the non-state actor.
- Combining passive defenses with active defenses is critical. So the design of any facility (redundancy, distribution of critical systems, etc.) should be considered to minimize the effectiveness of attack on any one part. While the attack may appear successful, it may cause little to no damage, which should be well publicized.

Encouraging Restraint:

- Consideration of the costs and benefits of restraint are difficult and can deal with politically sensitive issues.
- The cost of restraint for the non-state actor may be the loss of support, but he must perceive that this loss is less than the loss he will suffer should he accomplish an embarrassing, ineffective attack.
- The benefits of restraint may be legitimacy in local politics or at least being able to present grievances to the local government without fear of retribution.
- Providing a benefit to a non-state actor may also be well outside of the military's means, but should be considered in a robust US government approach to the problem.
- Provide an alternative to the adversary to further his cause or provide him personal gain (vs. group gain).

These means must be integrated into a coherent strategy for deterrence based upon the deterrence decision calculus. An adversary's decision calculus will change over time and with significant events. No single way or means is likely to be sufficiently effective to deter attack by a non-state actor. US and coalition forces must not be complacent, rather they should always be searching for new adversary means of attack.

An extensive study of the non-state actor may yield the conclusion that he already perceives you are fully engaged in an all-out war with him, thus you have no further means of stopping him or escalating the fight. If such a perception exists, it must be quickly countered to deter an attack. In the end, the non-state actor may be so driven that he will stop at virtually nothing. Deterrence, in this case, must consist of benefit denial through adequate

coalition defenses. Denying benefits may be nothing more than deterring the attack for long enough to find and destroy the enemy.

Appendix C: Deterrence Effects

The end state for all deterrence operations is decisive influence over the adversary's decision calculus in order to deter aggression and coercion against US vital interests. The end state is achieved by denying benefits, imposing costs and/or encouraging adversary restraint. Each of the three ways can be used by the joint force commander to structure objectives, the effects required to achieve the objectives, and the capabilities required to generate the effects. Since deterrence is tailored to the adversary within a specific context, it is not feasible to establish a comprehensive set of operational effects. However, it is possible to offer several examples of the kinds of deterrence effects the joint force commander might seek to achieve in pursuit of two generic deterrence objectives: catastrophic terrorist attack by a non-state actor and a rogue state WMD attack on the United States.

1. **End State:** Deter Catastrophic Terrorist Attack by a Non-State Actor

OBJECTIVES	EFFECTS
Deny Benefits	High value targets perceived as secure and/or inaccessible Large numbers of casualties perceived as unlikely Chosen mode of attack seen as unlikely to succeed Decreased terrorist recruiting as result of perceived lack of successful attack Attackers convinced they will not be seen as martyrs for their cause
Impose Costs	Key leaders perceived as likely to be killed in response Loss of terrorists' support infrastructure seen as likely Sanctuary for group seen as likely to be denied Financial support seen as likely to decrease Terrorists/supporters seen as dishonored by attack
Encourage Restraint	Certain targets no longer considered justifiable by sanctioning authorities recognized by terrorists Potential to achieve political objective remains Security of defectors ensured Supporters see efficacy in non-violent struggle

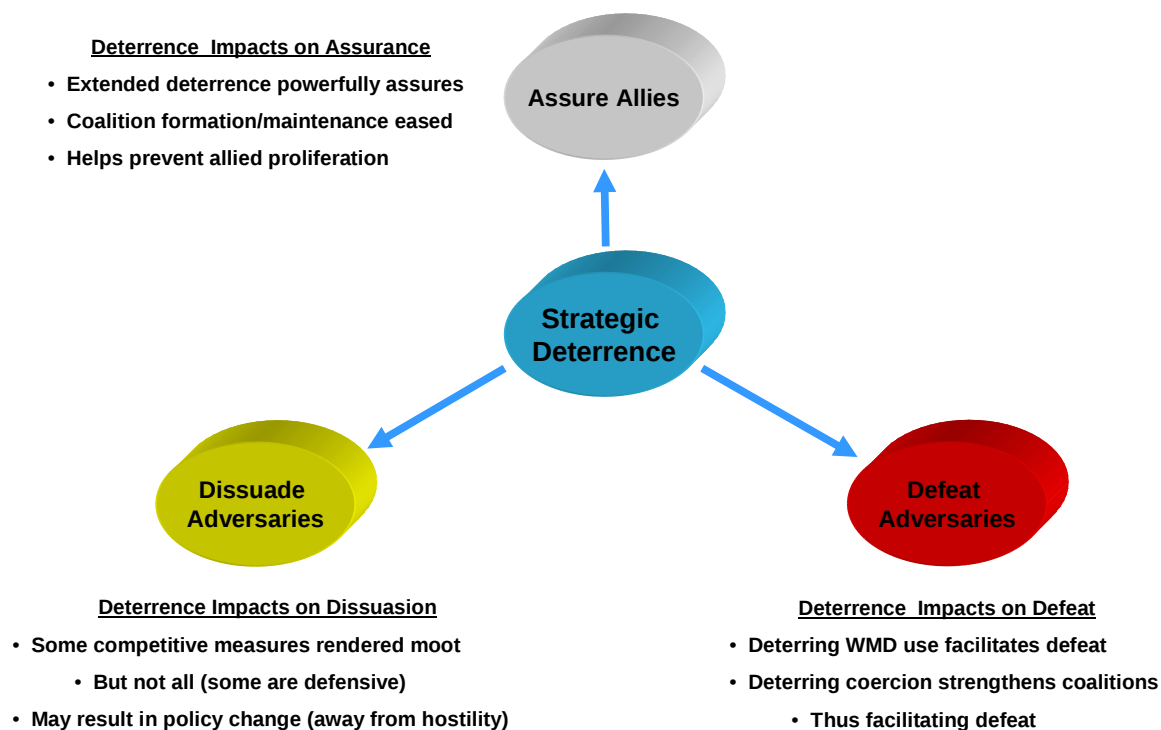
2. **End State:** Deter WMD Attack on the United States by a Rogue State

OBJECTIVES	EFFECTS
Deny Benefits	Desired political effects on US seen as unlikely Active defense of targets seen as highly effective Preparation for attack seen as likely to be detected, preempted by US Desired intervention of third party seen as unlikely
Impose Costs	US seen as likely to escalate its war aims in response Loss of remaining WMD capabilities seen as likely US coalition seen as likely to grow via additional states intervening in conflict Rogue state leadership perceives threat to their personal survival due to US retaliation
Encourage Restraint	Potential for an acceptable outcome seen as still viable, but only if WMD attack on US not undertaken US war aims perceived to be limited Situational awareness maintained by rogue leadership

Appendix D: Linkages Between Deterrence & Other Key Defense Activities

The DO JOC outlines the ways a JFC will bring US military capabilities to bear in deterring threats to US vital interests under a wide variety of current and future circumstances. However, deterrence is not “waged” in a vacuum. Rather, the US constantly conducts other key defense activities that have impacts on, and are impacted by, the goal of deterrence. This appendix provides a high level overview of the nature of those impacts.

Deterrence Impact on other Key Defense Activities



Deterrence Impacts on Assure, Dissuade, and Defeat (Figure 1)

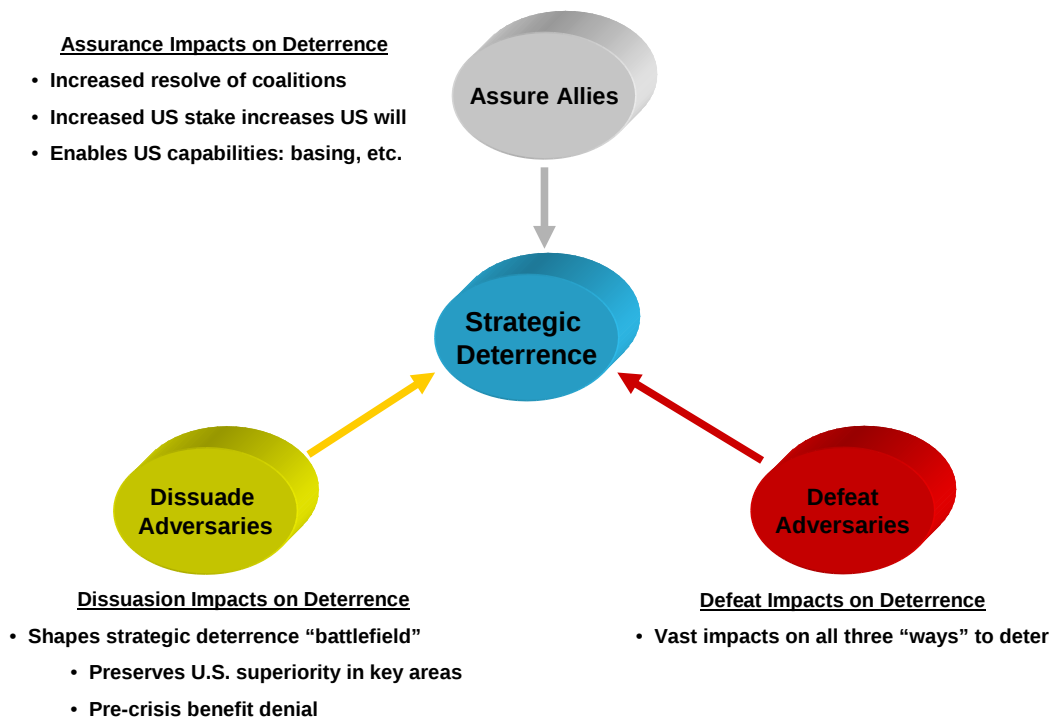
Assure. Effective deterrence has three primary impacts on the assurance of US allies. Through political commitments to defend our allies, the deterrent effect of US capabilities is extended to our friends by assuring their security needs will be met. This central assurance impact of extended deterrence has two important secondary effects. First, allied perception that extended deterrence will be effective tends to ease the formation and maintenance of US-led coalitions. Second, effective extended deterrence encourages allies to forgo indigenous development or procurement of duplicative military capabilities, thereby enhancing US counterproliferation efforts.

Dissuade. Adversaries that perceive US deterrence efforts and operations as effective may also be dissuaded from militarily competing with us in certain areas. For example, if US deterrence efforts are successful, some adversaries may view the acquisition or maintenance of certain threatening capabilities as superfluous and excessively expensive. As an example, effective ballistic missile defenses minimize an adversary's benefits and reduce incentives for acquiring ballistic missiles. Defenses also magnify an adversary's financial burdens, since the adversary that continues to pursue missile development must develop better (and more expensive) countermeasures when attempting to overcome defenses.

It should be noted that effective deterrence might not always have this effect. Some potentially threatening capabilities may still be attractive because an adversary believes they are essential to their own deterrence efforts aimed at the US or at other regional competitors or adversaries. Effective deterrence may even result in adversaries changing their policy vis-à-vis the US and its allies, opting for a less hostile or competitive approach given the futility of military competition.

Defeat. Finally, effective deterrence can powerfully enhance the pursuit of the "defeat" defense policy goal if necessary. First and foremost, deterring adversary use of WMD enables the US to bring its overwhelming conventional supremacy to bear (without being deterred ourselves), thereby facilitating adversary compliance on US terms. Deterrence of adversary coercion efforts against US allies also can facilitate adversary defeat by strengthening US-led coalitions and ensuring allied/coalition participation in (and support of) defeat-focused operations.

Key Defense Activities: Impacts on Deterrence



Dissuade. The deterrence impact of effective dissuasion efforts is derived primarily from a “shaping the deterrence battlespace” effect. Adversaries that opt not to compete with us in certain areas of military capability indirectly enhance our own deterrence by bolstering perceived US credibility. Dissuasion preserves our military supremacy in areas critical to effective deterrence, and aids in convincing adversaries that we can and will deny them the benefits of contemplated aggression in the pre-crisis, day-to-day peacetime period.

Defeat. The cost, method, and speed of defeat of other adversaries will have critical impact on the perception of U.S vis-à-vis other adversaries. The JFC must take these potential impacts into account (and explicitly plan to exploit them) as he plans and conducts adversary defeat operations.

Appendix E: Linkages to Joint Capability Areas

This appendix (cross-references the broad Deterrence capabilities from Part I to the extant Tier 1 and 2 JCAs as described in the Refined Joint Capability Areas Tier 1 and Supporting Tier 2 Lexicon dated 24 August 2005. It describes, where applicable, how the deterrence capabilities expand upon or deviate from the existing JCAs.

Deterrent Operations Broad Capability (2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
1	Global Situational Awareness	Joint Battlespace Awareness (BA)	Observation and Collection (All Domains)	JCAs do not adequately describe the need to characterize potential adversaries.
			Processing and Exploitation	These JCAs adequately cover the requirements.
		Joint Command and Control (C2)	Develop & Maintain a Shared Situational Awareness & Understanding; Access/Share Info on Adversary/Neutral; Employ Blue Force Tracking; Display Tailored, Relevant SA info	These JCAs adequately cover the requirements.
2	Command and Control	Joint C2	Establish/Adapt Command Structures and Enable both Global and Regional Collaboration; Refine Command Relationships; Establish/Identify Collaboration Mechanisms	These JCAs adequately cover the requirements.
			Communicate Commander's Intent and Guidance; Direct Action through Mission-Type Orders	These JCAs adequately cover the requirements.
			Synchronize Execution Across all Domains; Synch Operations w/MSN Partners & other Agencies; Synch Execution Between/Across Phases	JCA's do not sufficiently address supporting environments with unique theater knowledge to leverage a shared Commander's intent.
3	Forward Presence	Joint BA	Observation and Collection (All Domains)	These JCAs adequately cover the requirements.
		Joint Force Management	Global Posture	These JCAs adequately cover the requirements.
		Joint C2	Leverage Mission Partners; Coordinate with MSN Partners to Gain Actionable Commitment	These JCAs adequately cover the requirements.
		Joint Access & Access Denial Operations	Contingency Basing	May include permanent US-led multinational HQs when mutually beneficial to the U.S and supporting countries.
		Joint Global Deterrence	Force Projection	These JCAs adequately cover the requirements.

Deterrent Operations Broad Capability (2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
4	Security Cooperation and Military Integration	Joint C2	Leverage Mission Partners; Coordinate with MSN Partners to Gain Actionable Commitment	The JCAs do not address that host nation may be required to provide the predominance of security and/or certain forces (e.g. mine clearing).
		Joint Access & Access Denial Operations	Contingency Basing	JCA's fail to mention that provision (construction) of permanent facilities may be for required for limited duration use.
		Joint Public Affairs Operations	Community Relations	These JCAs adequately cover the requirements.
		Joint Shaping	Military Diplomacy Security Cooperation; Building Military Partner Capability/Capacity; Regional Security Initiatives	These JCAs adequately cover the requirements.
5	Active and Passive Defenses	Joint BA	Dissemination & Integration; Enable Real-Time Intel for Warfighter	JCAs do not address the very short timelines an active defense requires this information in.
		Joint C2	Develop & Maintain a Shared Situational Awareness & Understanding; Access/Share Info on Adversary	JCAs do not address the very short timelines necessary for active defense.
		Joint Homeland Defense	Air & Space Defense	JCAs do not address the very short timelines necessary for active defense
			Critical Infrastructure Protection	These JCAs adequately cover the requirements.
		Joint Protection	WMD Threat; Consequence Management	Does not sufficiently discuss the complicated interagency relationships that must be coordinated.
		Defense Support of Civil Operations	Emergency Preparedness	These JCAs adequately cover the requirements
		Joint Global Deterrence	Global Defense; Global Missile Defense	These JCAs adequately cover the requirements
6	Global Strike	Joint C2	Synchronize Execution Across all Domains; Synch Ops w/MSN Partners & Other Agencies; Synch Execution Between/Across Phases; Validate Targets	These JCAs adequately cover the requirements
		Joint BA	Observation & Collection (All Domains)	These JCAs adequately cover the requirements
		Joint Air Operations	Strategic Attack; Conventional, Kinetic Attack	These JCAs adequately cover the requirements
			Theater Air & Missile Defense; Theater Ballistic Missile Defense	

Deterrent Operations Broad Capability (2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
		Joint Space Operations	Space Force Application	These JCAs adequately cover the requirements
		Joint Access & Access Denial Operations	Contingency Basing	These JCAs adequately cover the requirements
		Joint Information Operations	Electronic Warfare	This JCA does not adequately cover the emerging cyberspace warfare requirements
			Computer Network Operations	This JCA does not adequately cover the emerging cyberspace warfare requirements
		Joint Protection	Conventional Weapons Threat; Platform Protection	These JCAs adequately cover the requirements
		Joint Special Operations & Irregular Operations	Direct Action	These JCAs adequately cover the requirements
7	Strategic Communication and Information Operations	Joint Public Affairs Operations	Public Affairs Operational Planning; Communication Assessment and Evaluation	These JCAs do not adequately cover the emerging cyberspace warfare requirements
			Public Information; Media relations; Visual Information Activities; Public Websites	
			Command/Internal Information	
			Community Relations	
		Joint Shaping	Military Diplomacy	
			Defense Support to Public Diplomacy	
			Strategic Information & Engagement Coordination; Analytical Support and Assessment	
			Security Cooperation	
		Joint Information Operations	Computer Network Operations	
			Operations Security	
			Military Deception	
8	Information Operations (IO)	Joint Information Operations	-----	IO is a Tier 1 JCA
9	Deterrence Assessment	Joint BA	Observation & Collection (All Domains)	JCA's do not address the need for adversary specific in-depth analysis/characterization of potential adversaries for deterrence operations.
			Analysis & Production: Current Intelligence; General Military Intelligence; Predictive Analysis	
			Evaluation & Feedback	



Office of Primary Responsibility:

Director, Plans and Policy
United States Strategic Command
901 SAC Blvd, Offutt AFB NE 68113-6500

Available at www.dtic.mil/futurejointwarfare