Information-Based Public Outreach
Winning the Pacific in an Era of Austerity

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China's rise highlights the importance of maintaining U.S. influence and strategic access in the Asia-Pacific region. With a shrinking budget, however, the U.S. Department of Defense faces a dilemma: reduce public humanitarian assistance or divert scarce resources from other programs to pay for outreach efforts.

This report introduces Information-Based Public Outreach, a third option in which the U.S. military leverages its expertise in information technology to provide low-cost public goods to the Asia-Pacific region. For example, the U.S. Air Force could provide cell sites and wireless internet pods mounted on unmanned aerial vehicles in the initial days of disaster relief operations to enable communication among locals, government officials, and international relief organizations. Such technology provides an inexpensive alternative to traditional disaster relief, while also building goodwill and partner capacity in the Asia-Pacific region.

Rise of China and U.S. Interests in the Asia-Pacific Region

China's economic, military, and political presence has grown over the past two decades. Home to nearly a fifth of the world's population, China is currently responsible for 18 percent of global net capital exports.[1] China's GDP is expected to reach $123 trillion by 2040, nearly three times the total global economic output in 2000.[2] Its research and development spending already exceeds that of the United States.[3]

Beijing is simultaneously modernizing and preparing its military for long-range and information-centric war. With a defense budget of roughly $150 billion and 2.3 million service personnel, the People's Liberation Army has become the second largest military in the world.[4]

This economic and military growth has expanded China's influence in Southeast Asia. China promotes economic development and financial stability in regional forums such as the Association of Southeastern Asian Nations (ASEAN) Plus Three.[5] The creation of the China and ASEAN Free Trade Area in 2010 helped increase its favorability in Southeast Asia by nine percent in 2011.[6] China has also funded regional Confucius Institute language schools and provided significant financial aid to neighbors such as Laos and the Philippines.[7]

China's rise increases the Asia-Pacific region's strategic importance to the United States. In October 2011, the Obama administration launched a comprehensive pivot to Asia focused on "strengthening bilateral security alliances, deepening our working relationships with emerging powers…expanding trade and investment; forging a broad-based military presence; and advancing democracy and human rights."[8] Since then, the

administration has launched a Strategic and Economic Dialogue with China, joined the East Asia Summit, participated in negotiations on the Trans-Pacific Partnership, and increased troop levels in the Pacific.[9] The United States, however, is unlikely to achieve its diverse regional goals without the support of citizens in the region.

Garnering Public Goodwill in an Era of Austerity

Amid declining resources, the U.S. Department of Defense (DoD) confronts significant fiscal challenges. To address shrinking resources, the Pentagon faces two options: (1) eliminate or reduce public diplomacy efforts, or (2) divert funding from programs related to its primary mission of deterring and defeating aggression.

Declining Resources

Since 2010, DoD has reduced its annual budget by $77 billion because of political concerns about federal debt and the drawdown of forces in Iraq and Afghanistan.[10] The sequester, which took effect in March 2013, will reduce defense spending by an estimated $85.4 billion.[11] The fiscal year (FY) 2013 budget proposes cuts of $5.2 billion from the base budget and $26.2 billion from Overseas Contingency Operations.[12]

DoD strategies also reflect the necessities of fiscal restraint. The January 2012 release on the pivot to Asia states: "[W]e developed a defense strategy that transitions our defense enterprise from an emphasis on today's wars to preparing for future challenges…and supports the national imperative of deficit reduction through a lower level of defense spending."[13]

Budget cuts are not limited to DoD, which has the largest budget of the executive departments.[14] The Pentagon requested $613.9 billion for FY 2013. The Department of State requested $51.6 billion for FY 2013, a $182 million reduction from the previous year.[15]

Current Engagement Activities and Costs

DoD has bolstered its international outreach efforts since the end of the Cold War, but in recent years these projects have been limited by financial constraints. The U.S. Air Force (USAF) has numerous outreach programs aimed at education and training, personnel exchanges, and humanitarian initiatives (see Table 1).

Table 1: Cost of Current USAF Engagement Programs

Category	Programs[16]	Sample Costs
Education and Training	Aviation Leadership Program Defense Institute for Medical Operations Int'l Military Education and Training Defense Language Institute Inter-American Air Forces Academy Mobile Training Teams	The Defense Language Institute English Language Center, $54.5 million annually.[17]
Personnel Exchanges and Engagements	Defense Intelligence Personnel Exchanges Military Personnel Exchange Program Cross-Cultural Competence Familiarization Capability Assessments International Air Shows	The Thunderbirds Demonstration Team, $34.6 million annually.[18]
Humanitarian Initiatives	Disaster Response Expeditionary Medical Support Medical, Dental, Engineering and Veterinarian Civil Action Programs	2011 Japan Tsunami Disaster relief, $90 million.[19]

Most training and exchange programs, however, are limited to military-military interaction. While these programs may survive budget cuts, they do little to improve public goodwill toward the United States in foreign countries. Public outreach in these nations has taken the form of humanitarian initiatives such as disaster response, medical support, and civic-assistance projects.

Recent efforts to reduce the budget have reversed the trend of growing humanitarian spending. From 2006 to 2010, a study by Global Humanitarian Assistance found the annual amount of official humanitarian, disaster, and civic aid delivered by the U.S. military increased from $161.5 million to $528.2 million.[20] Since 2010, however, there has been a steady decline in foreign disaster relief and humanitarian assistance (see Figure 1).

Figure 1: Department of Defense Overseas Disaster and Humanitarian Aid[21]
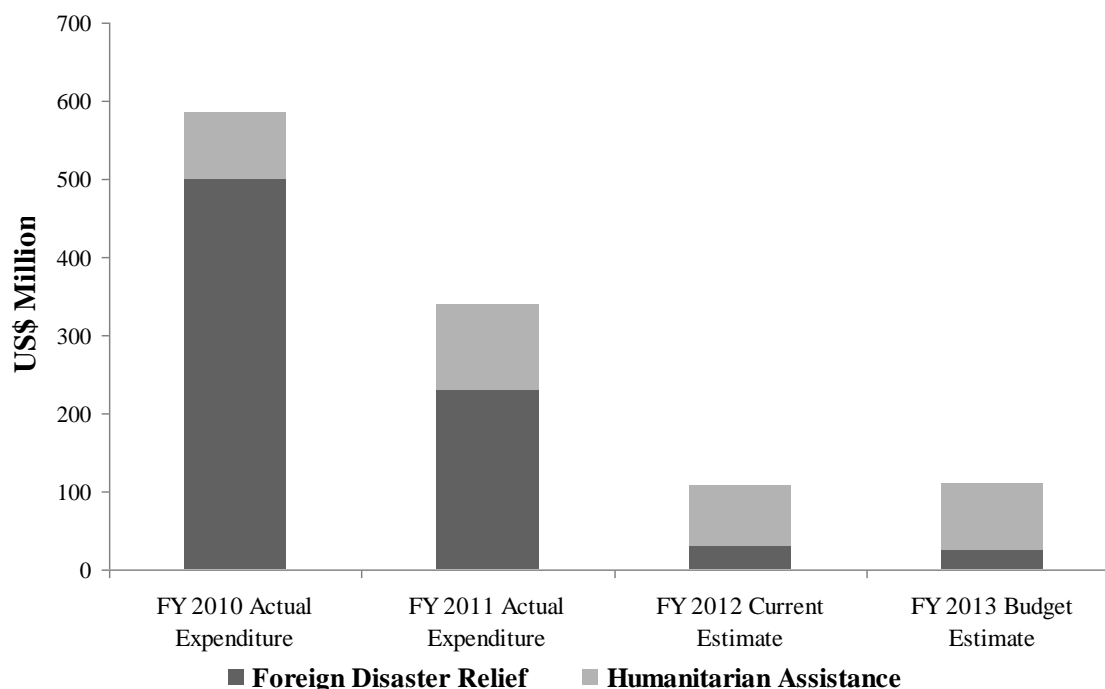
Options and Concerns

Given reduced defense spending, DoD must make difficult financial decisions in the next decade. Most existing cost-saving proposals concentrate on cuts from the U.S. Army and U.S. Marine Corps budgets, civilian staffing payrolls, and large weapons programs.[22] But meeting ambitious budgetary goals also will require a major rethinking of humanitarian missions. Given this reality, two possible options are:

1. *Eliminate or reduce the military's role in humanitarian operations and public outreach.* Those who dismiss foreign aid as a peripheral interest have suggested this approach. For instance, Representative Kay Granger (R-TX) denounced disaster relief to Pakistan in 2010, saying: "I think that's bad policy and bad politics. What are you going to say to people in the United States who are having flooding?"[23]

2. *Divert funds from warfighting programs to pay for humanitarian operations.* To maintain traditional logistics-oriented humanitarian missions, budget cuts may force DoD to divert resources from other aspects of the military budget, which could include combat-oriented programs. A March 2013 Center for Strategic and International Studies report on the U.S. Navy advocates the expansion and integration of traditional humanitarian programs into the DoD budget.[24]

Both options are flawed. The first overlooks importance and strategic benefits of generating international public goodwill. The second could detract from DoD's primary mission of maintaining military superiority.

New Way Forward: Leveraging Military Technologies for Assistance

This report argues there is a third option available to DoD to increase public goodwill in Asia-Pacific during an era of austerity. DoD can use existing military information technologies to provide cheap public goods to citizens of the region.[25] These technology-based operations are hereafter classified as Information-Based Public Outreach (IPO). A few examples include the use of telemedicine to provide medical training and care, online education courses to provide foreign officer training, and social media networks to provide the public with information such as air quality indexes in states where government do not release such information.[26] This paper focuses on another example: the use of USAF aircraft to provide temporary communications networks during disaster relief operations.

Importance of the U.S. Air Force

All branches of the military should seek to use information technology to provide public goods in the Asia-Pacific region. Nonetheless, two of USAF's core competencies uniquely position it to engage in technology-based operations.

1. *Rapid global mobility* allows USAF to cover long distances over land or sea. USAF prides itself on "being able to respond quickly and decisively anywhere [it's] needed."[27] With large numbers of cargo aircraft and mid-air fueling capabilities, its range and speed are unmatched.[28]

2. *Information superiority* gives USAF an expansive toolkit for providing public goods. Its command, control, communications, and computers (C^4) capabilities best position USAF to restore information networks in the days following a natural disaster. Simply put, USAF's technological expertise allows it to take advantage of the fact that electrons are cheap.[29]

Disaster Relief

This report argues USAF should use disaster relief operations to showcase its mobility and communications superiority by providing temporary airborne cellular and wireless internet networks to civilians immediately after a natural disaster. Such networks, even if provided for only a couple days, will improve the effectiveness of disaster response by

allowing civilians to communicate needs to their governments and disaster relief organizations.

The high concentration of natural disasters in the Asia-Pacific region makes it conducive to information-centric relief operations.[30] In 2012, Asia reported 83 natural disasters, causing 3,100 deaths and $15 billion in damages.[31] Furthermore, climate change and urbanization are expected to increase the pace and mortality of natural disasters in coming decades.[32] The United Nations (UN) Office for Disaster Risk Reduction estimates the number of people living in flood-prone urban areas in East Asia may reach 67 million by 2060.[33]

Military support following natural disasters has also become common in recent years—especially from the United States. USAF responded to the 2004 tsunami in Southeast Asia, the 2005 earthquake in Pakistan, the 2008 Tropical Cyclone in Burma, the 2008 earthquake in China, and the 2011 tsunami in Japan.[34]

Effectiveness of Military Disaster Relief

In addition to saving lives, military disaster relief generates goodwill toward the United States. David Caprara of the Brookings Institute writes that disaster relief "serves the self-interest of the U.S. and other donor countries by substantially improving public attitudes about the giving nation, justifying such help in an era of growing budgetary constraints."[35]

Public opinion data demonstrate that disaster relief enhances regional support for the United States. When DoD provided aid to Indonesia following the 2004 Indian Ocean tsunami, public favorability toward the United States jumped from 15 to 38 percent. Seventy-nine percent of Indonesians said U.S. post-tsunami aid improved their impression of the United States.[36]

Even smaller operations have improved U.S. image and influence. Military relief missions in Bangladesh following Cyclone Sadir in 2007 were "an important diplomatic step, especially at a time when American standing among Muslim countries around the world was at a low."[37]

Survey data from Japan corroborate the trend in Indonesia. Prior to 2011, about two-thirds of Japanese held a favorable opinion of the United States. After providing tsunami relief in 2011, this measure climbed to 85 percent.[38] Another survey conducted by the Japanese Cabinet Office found 82 percent of Japanese expressed a "friendly feeling" toward the United States in 2011, the highest percentage since the annual poll began in 1978.[39]

Empirical data suggest that disaster relief is most effective in countries without entrenched animosity toward the United States.[40] Because this condition exists throughout much of the Asia-Pacific region, disaster relief operations could improve or

maintain public goodwill toward the U.S. in the region—especially relative to a rising China.[41]

Logistics-Focused Approach to Disaster Relief

Recently, the U.S. government has relied on logistics-focused disaster relief aimed primarily at moving large quantities of supplies. This approach involves search and rescue operations, medical support, training, and supply drops. USAF specializes in air deliveries, which were used in recent disasters in Japan, Afghanistan, and Nicaragua. It also provides evacuation support, medical care, and supplies.[42] But while rescue missions and supply drops are valuable, they may be prohibitively costly under a reduced budget.

Communications-Focused Approach to Disaster Relief

USAF can make a meaningful but less costly contribution to disaster response by leveraging its communications expertise. A communications-focused approach would involve providing temporary internet and cell phone coverage to areas where the existing communication network was damaged.

Following a disaster, a deluge of responders arrive including local officials, security forces, international organizations, non-governmental organizations (NGOs), and foreign military personnel. Logistical challenges such as linguistic and cultural barriers frequently impede relief efforts.[43] A study of post-tsunami aid in Aceh, Indonesia concluded that "[r]obust information systems are vital and should be in place from the start of the reconstruction process to ensure effective coordination."[44]

Coordination between actors can be improved by deploying unmanned aerial vehicles (UAVs) or manned aircraft equipped with communication pods providing cellular and internet networks.

- *Theater*. The most likely theater for the deployment of airborne cell sites and Wi-Fi networks would be an area with significant infrastructural damage in the aftermath of a natural disaster. The size of the disaster would determine the number of aircraft needed to respond.

- *Communications Pod*. USAF would use portable communication pods, which provide cellular service and wireless internet access. Real-time phone conversations are the quickest and simplest way to share information. Internet access helps coordinate between relief actors and can be used in conjunction with crowdsourcing platforms to help trapped private citizens signal their location to relief workers.

  A variety of communications pods with cellular and wireless internet capabilities already exist.[45] One such system is Forward Airborne Secure Transmissions and

Communications (FASTCOM). This pod can be integrated with existing technologies and commercial, off-the-shelf equipment to provide 3G and 4G networks. By communicating with a data terminal and cellular server on the ground, it provides local cell service. To reach long-distance phone networks, FASTCOM relies on satellite based communication, but most calls in a disaster relief scenario will be between local parties. To prevent signal interference with extant functional cellular towers, the pods would operate on different frequencies. If the cellular network becomes unavailable, it automatically switches to Wi-Fi services.[46]

- *Carrier*. The pod would be mounted on a UAV or manned aircraft to circle above the affected region. While the pod could also be placed on a make-shift tower or tethered blimp, there are four benefits to placement on an aircraft. First, the pod would arrive at the disaster site quickly and require minimal ground setup.[47] Second, the pod-equipped aircraft can move freely to where coverage is most needed. Third, aircraft can fly higher than towers and most blimps, allowing for a greater line-of-sight range. Fourth, aircraft are less vulnerable than ground stations to looting or attack and can fly back to bases to be refueled and repaired. Tethered blimps or towers would require logistical support to protect and supply them with electricity.

  While pods are aircraft agnostic, one potential UAV is the General Atomics MQ-9 Reaper, which is well-suited for a communications role. It has a range of 1,150 miles, a ceiling of 50,000 feet, and a payload of 3,750 pounds.[48] The MQ-9 is also ideal for its ability to remain in the air for as long as 42 hours.[49]

  An alternative would be the Northrop Grumman RQ-4 Global Hawk. This aircraft operates in a variety of weather conditions with a range of 8,700 miles, a ceiling of 60,000 feet, and a payload of 3,000 pounds.[50] The RQ-4 has already been considered for this role. According to *Aviation Week & Space Technology*, "[i]f an earthquake hits Los Angeles, for example, a Global Hawk equipped with a cell phone relay payload could provide communications for first responders."[51]

- *Cost*. The total cost of preparing and deploying airborne cell sites would be minimal. The communication pod itself would be inexpensive, as the technology is off-the-shelf and mature. One estimate for a pod similar to the FASTCOM system is $300,000.[52] Compared to the number and types of aircraft used in traditional logistics-based relief operations, the cost of flying UAVs is minimal. The cost per flying hour of an MQ-9 is $3,250, compared to $24,474 for an HH-60G Pave Hawk Helicopter or $83,256 for a CV-22B Osprey Tilt-Rotor.[53]

Case Study: Aceh Province, 2004 Indian Ocean Tsunami

This section provides a case study of Aceh Province, Indonesia in the aftermath of the 2004 Indian Ocean tsunami. It describes how the situation unfolded and how a communications-focused response by USAF could have improved the relief effort.

Initial Damage

The epicenter of the 9.1-magnitude earthquake which struck on December 26, 2004 was about 150 km west of the Indonesian coast. Of the roughly 230,000 total casualties, close to 130,000 were in Aceh Province. More than 500,000 people lost their homes and 800 km of coastline were flattened.[54]

Indonesian President Susilo Bambang Yudhoyono declared a national disaster and assigned an existing government emergency mechanism, the National Coordinating Board for Disaster Management (PBP) to deploy all its resources to Aceh.[55] The Indonesian government accepted all foreign military aid offers under a 90-day time limit. In these three months, Aceh received personnel from 16 foreign governments, 14 UN agencies, 38 local humanitarian groups, and 195 foreign or international humanitarian organizations.[56]

U.S. Military Support

U.S. Pacific Command launched Operation Unified Assistance on December 28, 2004 and established its command-and-control center at Utapao Naval Air Base in Thailand. Its priorities were to provide "'macro-level distribution of aid' and to support the host nations and the 'detail-level expertise' of relief agencies."[57] The U.S. Navy dispatched Carrier Strike Group Nine out of Hong Kong to provide support to Aceh.[58]

USAF helicopters flew more than 100 missions a day focusing on supply drops and evacuations.[59] The 615th Contingency Response Wing of Air Mobility Command assisted with the safe movement of 6,685 passengers, 5,444 cargo tons of relief supplies and medical aid on 817 airlift missions.[60]

Coordination Challenges

Foreign relief actors poured into Indonesia as soon as they were granted access to the region.[61] The influx of aid workers caused congestion at the local airport. Collapsed bridges and blocked roads further obstructed access to damaged shorelines.[62]

The effectiveness of foreign military assets was hampered by a lack of coordination. The Indonesian military official in charge of coordinating foreign military assets did not have universal command-and-control procedures. The different services also lacked a common

military language and sense of camaraderie necessary to facilitate military-military teamwork. [63]

Similarly, there were communication failures between security forces and their civilian counterparts. The PBP made most of its decisions ad hoc. Humanitarian groups conducted needs assessments but were unable to reach supplies distributed by military personnel. An inability to communicate also created competition among NGOs. While global media coverage brought in record donations of supplies, the absence of coordination meant aid disproportionately favored some districts, which led to resentment among locals. [64]

The joint Indonesia-United Nations report on the lessons learned from the tsunami relief operation found that: "[T]here appeared to be no clear, unique attribution of roles and responsibilities among various components of the public administration. Ad hoc decrees …creat[ed] structures with uncertain power and [resources] which were sometimes duplicative of what already existed." [65] Better communications is one factor that would have improved disaster response.

How IPO Would Have Improved the Response

The 2004 tsunami caused significant damage to communications infrastructure in the Aceh province. [66] In the initial minutes of the disaster, many citizens took temporary safety in boats, trees, and house roofs. [67] But without an information network, these victims were unable to communicate their location to first responders.

Within eight hours of the onset of the disaster, airborne communication nodes—cell and wireless emitters attached to the undersides of drones—would be sent to areas with significant damage to cell phone towers. These communication pods would provide temporary coverage for the first 72 hours until the ground-based communication infrastructure had been repaired.

An airborne cell site and Wi-Fi network would have allowed disaster victims to use crowdsourcing platforms or social media to communicate their location to regional rescue workers. One such crowdsourcing technology is Ushahidi, which was used after the 2010 earthquake in Haiti and 2011 earthquake in Chile to create a "crisis map" to help rescue workers locate victims. [68] Likewise, relief workers could have provided information to victims regarding their extraction. In addition, the presence of an airborne network would have improved coordination of personnel, supplies, and funding between military and civilian relief actors. This would have not only saved lives, but provided visible aid to generate goodwill toward the United States and build partner capacity in the region.

Advantages

Beyond saving lives and winning the hearts and minds of international populations, using technologies to provide public goods through IPO concept has four primary advantages.

1. *IPO is highly cost-effective*. Faced with austerity, the Pentagon must find inexpensive programs which maximize impact. IPO projects that use information technologies such as an airborne communications pods can have tremendous impact for a minuscule fraction of the Pentagon's current budget.[69]

2. *IPO generates goodwill which builds partner capacity and provides strategic access*. A crucial component of the administration's pivot to Asia is the development of regional alliances. Peacetime military assistance creates positive impressions of the United States among foreign citizens and governments. This engagement builds collaborative partnerships and political capital which will help expand U.S. access and influence.[70]

3. *IPO improves troop readiness*. Recently, top military leaders warned that budget cuts undermine troop preparedness.[71] Communications-focused disaster operations give USAF technicians experience reviving communications networks amidst destruction. This training is an important component to the information-centric warfare envisioned by AirSea Battle concept.[72] Technology-focused humanitarian operations do not distract from warfighting capabilities but complement them.

4. *IPO will be effective regardless of China's future intentions*. It remains to be seen how China will use its growing power. If China rises peacefully and becomes a responsible global leader, building popular goodwill towards the United States will contribute to strong relationship between the United States and China. If China uses its newfound power for less benign purposes, then IPO will lay a foundation for containing the powerful adversary.

Possible Objections

There are several potential critiques to the military's adoption of technology-based aid.

- *Possible Objection:* Providing public goods to the international community is not part of DoD's core mission.

   Response: While the Pentagon is responsible for defending the country against aggression, political leaders routinely ask DoD to respond to natural disasters. Building U.S. soft power also is a key tenant of the 2010 National Security Strategy. Given the history of disaster relief operations and the executive's desire to build soft power, it is likely that providing international public goods is a

mission DoD cannot avoid. Information-Based Public Outreach provides DoD with a low-cost and highly impactful option to suggest to political leaders seeking to build public goodwill.

- *Possible Objection:* DoD lacks funding and resources for these projects. IPO operations constrain officers' valuable time and equipment.

  Response: Information-based operations will rely on mature commercial communications technology or require minor modifications to existing DoD systems. Moreover, the costs of purchasing such equipment for conducting information-based disaster relief are small compared to traditional logistics-focused disaster relief, which involves moving vast amounts of supplies and equipment. IPO also will likely require the commitment of fewer personnel than logistics-focused disaster relief.

- *Possible Objection:* Providing cell and internet service will have a smaller impact on local or international public opinion than traditional approaches to disaster relief.

  Response: Information-based disaster relief will provide needed services to a large number of people. Natural disasters cripple communications networks, preventing locals from calling first responders. Providing cell phone and Wi-Fi access allows local to communicate their needs to authorities. Such access will be accompanied by a public service message indicating that cell phone and Wi-Fi signals are being provided by the U.S. military.

Conclusion

Projecting U.S. influence in the Asia-Pacific region is a strategic priority, even at a time when austerity will force the U.S. military to make careful choices about resource allocation. This report argues the military can generate goodwill and build partner capacity at a minimal cost by using existing technologies to provide public goods in humanitarian missions. USAF is specifically well-suited for these missions—categorized as Information-Based Public Outreach (IPO)—due to its global mobility and information superiority.

One example of IPO is the use of USAF communication systems to revamp disaster relief operations. Information networks would not only increase coordination between relief actors, but also allow for victims themselves to interact with rescuers quickly and efficiently. This communications-focused approach is cost-effective, provides valuable strategic access, and will improve troop readiness by complementing warfighting capabilities.

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[25] If more resources become available, IPO could expand to include more logistics-focused projects such as on-the-ground healthcare provision and infrastructure construction.

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[72] AirSea Battle is a military doctrine designed to preserve U.S. power-projection capabilities by overcoming Anti-Access/Area Denial challenges. At the strategic level in the Pacific, AirSea Battle involves defending allies, protecting U.S. territories, monitoring seaborne commerce, and maintaining superiority over Chinese military forces. Jan van Tol et al., "AirSea Battle: A Point-of-Departure Operational Concept," *Center for Strategic and Budgetary Assessments*, May 18, 2010.