

CHARTING A PATH TO THOUGHTFUL ALLIED SPACE POWER

ALLIED BY DESIGN



Recent U.S. strategy documents have stressed clearly and consistently that close cooperation with allies is central to U.S. strategy, especially in space. However, allies have grown increasingly vocal about a “say-do gap” between what the United States says in high-level policy statements and what it does to make tangible progress toward allied space cooperation. This gap has created a perception among some allies that such cooperation is an afterthought rather than a consciously planned activity undertaken “by design.”

RAND Project AIR FORCE researchers examined how to improve integration in the space domain between the U.S. Department of Defense (DoD) and the allies identified in U.S. strategy documents. The RAND team evaluated the incoherence of U.S. allied space policy, including that of U.S. information disclosure policy, and the space-related goals, organizations, and activities of six allies: Australia, Canada, France, Germany, Japan, and the United Kingdom. The team also conducted case studies of allied integration in three other domains: nuclear weapons cooperation, a combined operations center at the U.S. Special Operations Command (USSOCOM), and allied intelligence sharing with the U.S. intelligence community (IC).

Drawing from these assessments, the RAND team reached six key findings:

- Entities across the DoD space enterprise—including the U.S. Space Force (USSF), the U.S. Air Force, the U.S. Space Command (USSPACECOM), and the Office of the Secretary of Defense for Policy (OSD(P))—lack a consistent vision and desired end state for partnering with allies.
- DoD space enterprise roles and responsibilities remain ambiguous and disputed. Separate entities develop separate allied space cooperation approaches with separate engagement activities.
- DoD regulations, processes, and infrastructure limit the feasibility of integration with allies. Without changes, U.S.-allied “integration” is unlikely in the next two to five years.
- The United States and its allies lack adequate, interoperable communications standards and infrastructure across all levels of classification.
- Continued U.S. inefficiencies and a “say-do gap” between what the United States says and does regarding space integration risk weakening the allied space coalition.
- Efforts to articulate a vision for cooperation and to improve overall coordination across the DoD space enterprise are nascent and insufficient.

This research brief discusses these findings and proposes an approach to space cooperation that is *allied by design*, meaning that it reflects U.S. and allied interests and capabilities, incorporates allies from the start, and considers allies at all stages.

DoD Incoherence in Setting Space Policy with Allies

At least four DoD organizations—OSD(P); USSPACECOM; the Office of the Secretary of the Air Force, International Affairs (SAF/IA); and the USSF—appear to be vying for the

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lead in setting priorities for space engagement with allies and in undertaking such engagement. More than a dozen additional DoD organizations (shown in Figure 1) claim a role in coordinating space cooperation with allies, and each of these organizations prioritizes allies and topics differently. This situation produces incoherence in identifying priorities.

Within DoD, the Secretary of Defense exercises ultimate authority and direction over all subordinate organizations, and the Under Secretary of Defense for Policy oversees space-related international cooperation activities.

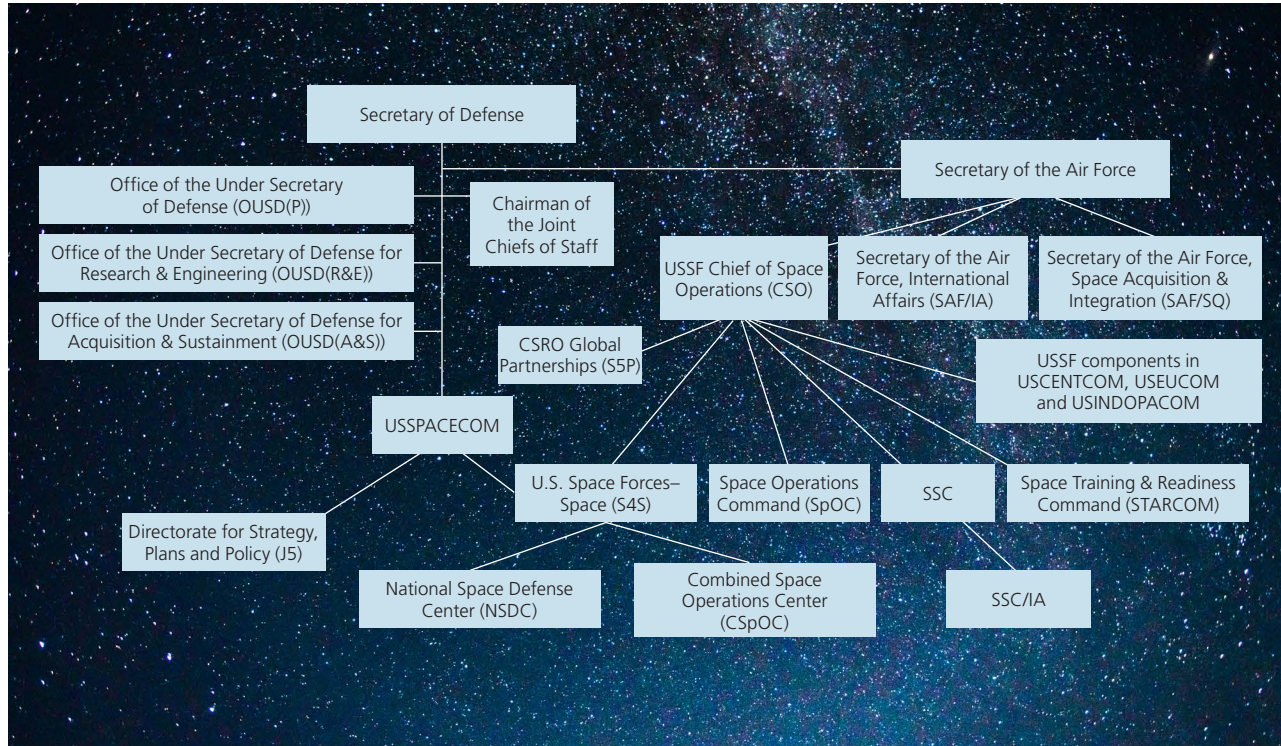
Operational control of U.S. forces and capabilities anywhere more than 100 kilometers above sea level—and more than 100 kilometers above every country—is assigned to USSPACECOM. USSPACECOM’s Directorate for Strategy, Plans, and Policy (J5) bears responsibility for coordinating with allies on strategy, space operations planning, and policy.

Yet the responsibility for organizing, training, and equipping space forces continues to reside in the Department of the Air Force (DAF). SAF/IA, led by a Deputy Under Secretary of the Air Force, maintains responsibility for allied activities in air and space, including management of international agreements and foreign exchange officers.

Also within the DAF, the USSF has primary responsibility for providing ready and equipped personnel for space operations. One USSF field command, the Space Systems Command (SSC), has an International Affairs office (SSC/IA) that executes the SSC’s allied by design strategy, which aims to integrate allied space assets (satellites and related intelligence systems) with those of the DoD space enterprise. The U.S. Army, U.S. Navy, and U.S. Marine

FIGURE 1

DoD Space Enterprise: Where Should an Ally Begin to Collaborate?



NOTE: This is a simplified chart; not all organizations or command relationships are shown. CSRO = Chief Strategy and Resourcing Officer; USCENTCOM = U.S. Central Command; USEUCOM = U.S. European Command; USINDOPACOM = U.S. Indo-Pacific Command.

Corps also maintain operational commands that contribute to (or, in some cases, have operational accountability for) space missions, although some of these activities are being shifted to the USSF.

Vexing Challenges Posed by U.S. Disclosure Policies

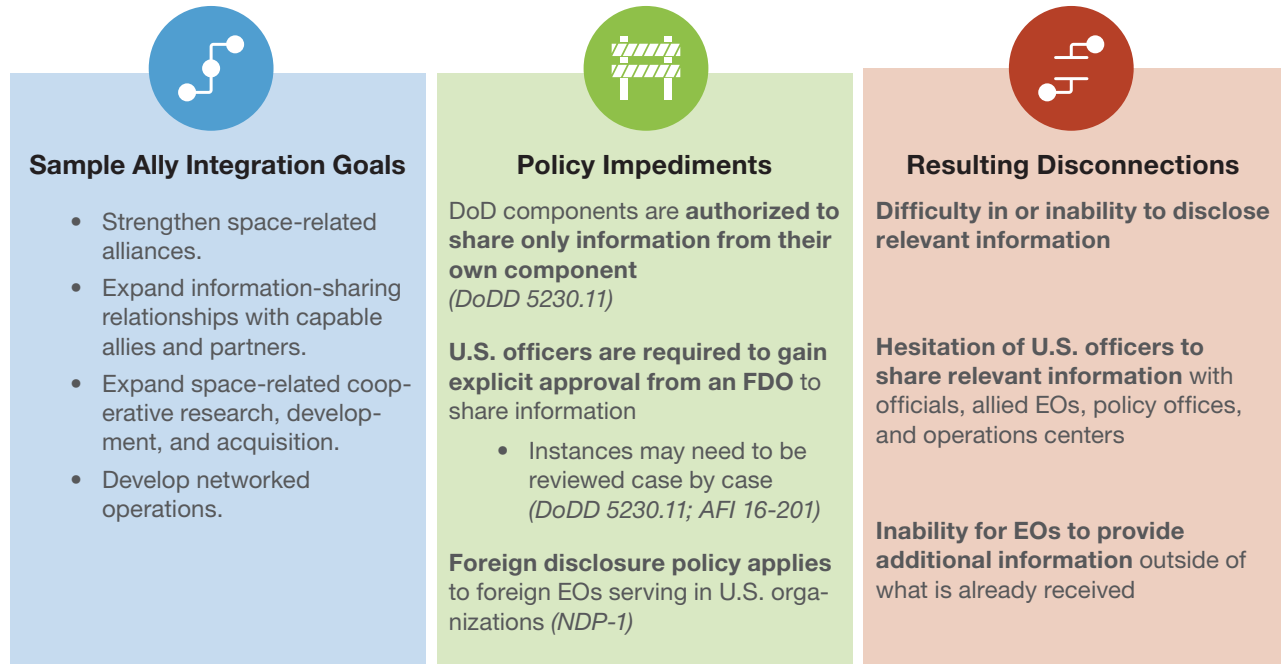
One particularly prohibitive barrier to U.S. space cooperation with allies is the set of inconsistent, if not contradictory, U.S. policies on disclosing classified information. The DoD space enterprise struggles to disclose classified information to allies because of limitations and restrictions that are written into government policies, often for understandable reasons.

However, U.S. regulations for disclosure differ for DoD and the IC. DoD regulations require approval by the same DoD organization that originates an item of classified information. Military service-level regulations also require approval by foreign disclosure officers (FDOs) who must review each disclosure request based on criteria specified in national-level documents. In contrast, non-originating organizations of the IC explicitly have the authority to disclose information if one of several conditions is met, such as the information is already marked as releasable to specific countries. This arrangement facilitates intelligence

sharing and exchanges among entities outside DoD and foreign governments. In interviews with the RAND team, DoD space officials shared their perceptions that they face a greater barrier to share and exchange information.

DoD and the IC also have different policies for using the Not Releasable to Foreign Nationals (NOFORN) caveat, which can follow a SECRET or TOP SECRET designation (e.g., SECRET//NOFORN). DoD regulations authorize the use of NOFORN only for intelligence and intelligence-related information with a few limited exceptions. Instead, DoD regulations encourage the common use of a no-caveat marking (e.g., just CONFIDENTIAL, SECRET, or TOP SECRET). Information marked in this way is not yet approved for release, but it could be evaluated for release in the future. Quite the opposite applies to IC personnel, who are directed to use releasability caveats, such as NOFORN, as soon as practicable. The common use of NOFORN in the IC may lead to the inappropriate use of this caveat in DoD documents. The persistent “misuse” of the NOFORN caveat, which prevents DoD from sharing classified information with U.S. allies, was repeatedly cited as an issue in interviews with both U.S. and foreign officials. Yet even when information is “properly” marked for release, DoD still struggles to release information in a timely manner or at all, further inhibiting allied space cooperation.

FIGURE 2
How Space Cooperation Goals Hit Disclosure Policy Walls



NOTE: AFI = Air Force Instruction; DoDD = Department of Defense Directive; EOs = exchange officers; NDP = National Disclosure Policy.

These complex disclosure policies constrain the relationships that the DoD space enterprise can develop with allies. These policies also limit the level of integration that foreign exchange officers from trusted nations can acquire while embedded within the DoD space enterprise. Figure 2 summarizes how U.S. policies impede timely information-sharing with allies even when high-level policy documents call for greater cooperation.

U.S. Space Relationships with Six Allies

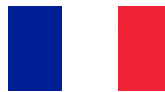
The RAND team examined the current space relationships between the United States and six key allies as follows:



AUSTRALIA historically has relied heavily on U.S. space services but is now prioritizing sovereign capabilities. Its strategic documents identify goals of stability, security, and sovereignty. Australian officials have described space acquisition as “stove-piped” because each nation’s capabilities are developed by its own domestic industry. Australian officials have identified NOFORN and Missile Technology Control Regime restrictions as bureaucratic impediments to interoperability.



CANADA has significant capabilities for intelligence, surveillance, and reconnaissance (ISR); satellite communications (SATCOM); and space situational awareness (SSA)—all of which are integrated in some form with U.S. space capabilities. Canadian officials prioritize maintaining a close relationship with the United States and access to U.S. space capabilities. One priority is that Canada should continue to be a good partner despite domestic constraints on defense spending.



FRANCE has perhaps the broadest range of capabilities, including SATCOM, ISR, and space domain awareness (SDA).

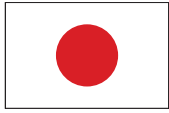
France has recently stood up a new Space Command and has spoken most publicly about developing capabilities for the protect-and-defend mission. France also values its autonomy while recognizing that it has limited capabilities and capacity—and therefore has become more amenable to partnering to enhance its resiliency in select areas.



GERMANY is gradually transitioning from investing in space for civil purposes to viewing space as a security domain.

Germany has adopted a measured approach, preferring to work in alliances, such as the North Atlantic Treaty Organization (NATO) and the European Union. German officials have applauded U.S.-led efforts, such as the multinational

Combined Space Operations (CSpO) Initiative and the multinational annual Schriever space wargame, for helping Germany to develop desired norms of behavior and its space operations command and control (C2).



JAPAN has several mature capabilities—in launch; in positioning, navigation, and timing; in ISR; and in SATCOM—and is developing capabilities in SSA and space

operations C2. Japan’s space capabilities have generally remained within civilian organizations, but its *2020 Basic Plan on Space Policy* and its standup of a Space Operations Group represent an important shift toward engaging in military space operations.



THE UNITED KINGDOM is one of the United States’ closest allies in the space domain and comes the closest to “integration” of the six allies studied. Recent UK strategy documents place a new emphasis on space. Changes include the standup of the UK Space Command, the establishment of the Ministry of Defense Space Directorate, and plans for investing an additional \$1.7 billion in space operations (expanding beyond SATCOM and missile warning to new ISR, SDA, and protect-and-defend capabilities).

Collectively, the overarching perspectives of these six allies can be distilled as follows:

- Allied officials describe U.S. space capabilities as dramatically greater than their own, recognize the United States as the intellectual leader on space issues, and appreciate the training and exercise venues provided by the United States.
- Allies seek deeper cooperation within the CSpO initiative and within Operation Olympic Defender, which is “a multinational effort led by U.S. Space Command to enhance the resilience of space systems, deter hostile acts in space and reduce the spread of orbital debris,” according to a 2020 USSPACECOM news release. At the same time, allies worry that adding new members to these organizations may dilute their potential.
- Allies face their own policy and resource constraints to integration. Many of the countries have only nascent space organizations that are short-staffed and are still working to flesh out their policy objectives.
- Allied officials perceive diverse or unclear positions among U.S. space organizations, having received different responses from U.S. personnel in different organizations. Officials from one country noted, “It never seems like all U.S. organizations are in sync.”
- Allies describe a variety of issues within U.S. organizations that make it difficult to rise to the desired

level of cooperation, including the use of the NOFORN caveat, insufficient information technology (IT) infrastructure, and policy limitations on foreign exchange officers and foreign liaison officers in the United States.

Lessons from Other Domains

The case studies from three other domains shed light on the challenges of, and potential for, deeper cooperation in space.

Nuclear Weapons Cooperation

In the mid-1950s, the United States had exceptional capabilities in a new technology domain: nuclear weapons. The Soviet Union was gaining its own nuclear capabilities, and the United Kingdom and other allies either possessed such capabilities or were interested in developing their own.

President Dwight D. Eisenhower sought to increase nuclear cooperation among U.S.

allies but faced significant legal and regulatory hurdles. The Atomic Energy Act of 1946 had banned the sharing of classified “nuclear weapons design and production information” with other nations. Sharing became further stymied by the discovery that the Soviet Union had gained knowledge of atomic secrets by having compromised UK personnel.

But after 1953, when the Soviet Union conducted a thermonuclear test, and again after the 1957 launch of Sputnik, U.S. panic regarding the Soviet Union’s growing strategic capabilities sparked new opportunities. In 1958, the US–UK Mutual Defense Agreement was signed, permitting unprecedented sharing of nuclear materials, technology, and information between the two allies. Subsequent cooperation built on this agreement, including the 1963 Polaris Sales Agreement, which established a uniquely integrated arrangement for nuclear submarines.

The United States was considering whether to increase sharing with other allies. It sought to educate allies about the importance of nuclear weapons and, instead of build-



ing bilateral nuclear sharing relationships, to incorporate them into NATO's overall strategy. Some allies—namely, Germany and Italy—generally welcomed the deployment of U.S. nuclear weapons on their soil. Although Eisenhower wanted “nuclear roles for [NATO] allies,” he said that “[the United States] must and will retain the freedom to initiate use of these weapons.”¹

Combined Operations Center for Special Operations

In August 2011, when ADM William H. McRaven assumed leadership of USSOCOM, he initiated a review of the organization's overall posture. The review led to a goal of building a global special operations forces (SOF) network for collaborative relationships with foreign allies and partners. In interviews with the RAND team, McRaven's staff recall him frequently saying, “You can't surge trust.” Admiral McRaven espoused that frequent interactions among allies and partners in peacetime would enable SOF organizations to work together better when called upon in crisis.

McRaven and other U.S. SOF leaders drew inspiration for a collaborative allied SOF operations center from their experiences in Afghanistan, where the NATO SOF Coordination Center had been established in 2006. But when McRaven sought to establish a multinational operations center on U.S. soil, USSOCOM faced bureaucratic restrictions and risk-averse behavior by career personnel.

One challenge was to establish a physical operations center within a sensitive compartmented information facility (SCIF), to which foreign officers would have access. To protect both U.S. and foreign information within the command, McRaven's team constructed a “SCIF within a SCIF.” This facility established security protocols that enabled foreign SOF to enter and exit the facility without needing escort by U.S. personnel.

Another challenge was to establish access to foreign national classified systems from inside the facility. For this challenge, USSOCOM engineered a three-tiered solution. First, on the main operations floor, workstations allowed all (not just NATO) officers to gain access to the Battlefield Information Collection and Exploitation System-Extended network, which would serve as a common computer network for users in the facility and could connect to other users around the world. Second, while U.S. personnel used the U.S. SECRET Internet Protocol Router (SIPR) system, other Five Eyes (FVEY) personnel—from Australia, Canada, New Zealand, and the United Kingdom—gained access to the SIPR-Releasable system. Third, positioned around the facility were isolated “SCIF-lets”: small, controlled-access rooms where foreign personnel had access to their own national classified systems to “reach

back” to their national authorities, receive guidance, and identify information that might be shared with other members of the multinational collective.

Allied Intelligence Sharing with the U.S. Intelligence Community

The modern era's evolution of intelligence sharing began during World War II, when U.S. military and political leaders knew the war could not be won without intelligence sharing across the Allied alliance. The most consequential multinational intelligence partnership has been the FVEY relationship, which dates back to the 1940s. More recently, the Joint Analysis Center, located at Royal Air Force Molesworth in the United Kingdom, has been essential for sharing U.S. and UK intelligence for the Global War on Terror and NATO operations.

Allied ministries of defense already partner with elements of the U.S. IC on space projects. For example, on May 10, 2022, the UK Ministry of Defence announced a collaboration with the U.S. National Reconnaissance Office on the launch of two CubeSats, which are smaller and cheaper satellites than those that have historically been launched. This type of cooperation highlights how allied militaries may see U.S. IC organizations as desirable partners on some matters instead of, or in addition to, cooperation with non-intelligence DoD space organizations.

Until the United States can address its constraints on sharing classified information with allies, the IC and the DoD space enterprise will offer differing abilities for space cooperation. In the meantime, the DoD space enterprise should look to the IC as an important collaborator, seeking to take advantage of its complimentary authorities, capabilities, and relationships.

The three case studies, collectively, suggest broader lessons for allied space cooperation:

- High-level leadership and a willingness to challenge procedures may be necessary to integrate allied officers into U.S. space initiatives.
- Special legal arrangements, in some cases with congressional support, may be necessary to share the most sensitive information with close allies.
- Deeper collaboration is more practical with one or a few select allies than with larger organizations, such as NATO.
- Decisions on how much information or technology to share with allies require an understanding of allied capabilities and benefits from sharing.

Recommendations

Across the DoD space enterprise, the United States should be forthright, consistent, and clear with allies when and where cooperation and information-sharing are possible. It may not be desirable or feasible for allies to become fully integrated with the DoD space enterprise, but lower levels of cooperation may be more realistic. To address the “say-do” gap between broad U.S. policy pronouncements promoting integration and the reality of what the U.S. system will allow, U.S. leaders need to be forthright with allies about what exactly can be integrated.

DoD should build on early efforts to create a department-wide approach to space-related activities, including allied space cooperation. DoD has made progress in addressing its overlapping and ambiguous roles and responsibilities and in better articulating the vision and realistic desired end states for allied cooperation, but work remains. This work should be led by a working group chaired by the Deputy Secretary of Defense. The group should include key DoD and IC stakeholders. The group should be chartered to meet regularly for at least two years.

DoD should coordinate on the operational analyses of relevant functional areas and the elements and levels of allied relationships desired in each area. The functional areas should include the following (with the recommended offices of primary responsibility in parentheses):

- personnel interchanges (USSPACECOM, SAF/IA, USSF)
- training and exercises (USSPACECOM and USSF)
- force design (Space Warfighting Analysis Center and SSC)
- SDA and space operations C2 (USSPACECOM and SSC)
- interoperable IT systems (Office of the Secretary of Defense [OSD], USSPACECOM, SSC)
- facilities (USSPACECOM and USSF).

The United States should consider a range of options to address regulatory and practical constraints on sharing classified information with allies. These recommendations appear in descending order of a hierarchy of options, from interagency policies down to field-command actions (with the recommended offices of primary responsibility in parentheses):

- Consider a Space Mutual Defense Agreement with select allies (National Security Council).
- Revise DoD and DAF regulations to grant DoD organizations greater disclosure authority (OSD, Defense Technology Security Administration [DTSA], SAF/IA).
- Expand authorities for sharing information under Operation Olympic Defender (USSPACECOM).
- Revise DoD and DAF regulations to allow foreign exchange officers greater access to classified DoD information (OSD, DTSA, SAF/IA).
- Review security classification guides (USSPACECOM and USSF).
- Update annual security training (all DoD space enterprise units).
- Add more FDOs (USSPACECOM and all USSF field commands).

It is unlikely that the United States will be able to implement all these recommendations within the next two to five years, but it should try to implement as many as possible in that time. The DoD space enterprise is working hard to cooperate with allies. Recent events, including the 2022 revised Space Policy directive and coordination efforts between USSPACECOM and the USSF, are encouraging. The United States can increase the effectiveness of coalition space operations by strategically and thoughtfully developing an enterprise-wide approach to allied space power. Failure to act now may risk a weaker allied space coalition in the future when the emerging threat indicates the need for it is greatest.



Abbreviations

C2	command and control
CSpO	Combined Space Operations
DAF	Department of the Air Force
DoD	U.S. Department of Defense
FDO	foreign disclosure officer
FVEY	Five Eyes
IC	intelligence community
ISR	intelligence, surveillance, and reconnaissance
IT	information technology
NATO	North Atlantic Treaty Organization
NOFORN	Not Releasable to Foreign Nationals
OSD	Office of the Secretary of Defense
OSD(P)	Office of the Secretary of Defense for Policy
SAF/IA	Secretary of the Air Force, International Affairs
SATCOM	satellite communications
SCIF	sensitive compartmented information facility
SDA	space domain awareness
SOF	special operations forces
SSA	space situational awareness
SSC	Space Systems Command
SSC/IA	Space Systems Command, International Affairs
UK	United Kingdom
USSF	U.S. Space Force
USSOCOM	U.S. Special Operations Command
USSPACECOM	U.S. Space Command

Note

¹ William Burr, “The U.S. Nuclear Presence in Western Europe, 1954–1962, Part I,” National Security Archive, July 21, 2020.



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