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# ---EU CP 1NC Shell---

## 1NC Shell

### CP Text: The EU should offer to <insert plan> through joint-production with the United States. If the U.S. refuses the EU will still do the plan

### Solvency is empirically proven- mutual interdependence has characterized the relationship between NASA and the ESA for the past 20 years

Sadeh 02- Eligar Sadeh, Professor of Space Studies, University of North Dakota, 2002, “International Space Cooperation,” chapter 14 of *Space Politics and Policy*, accessed online at http://www.springerlink.com/content/x0766u7783857128/fulltext.pdf

Lastly, cooperation from 1989 to the present deals with the emergence of Europe as an “equal” partner in its cooperative relationships with NASA. An equal partnership indicates symmetry in European technological capabilities, interdependent cooperation outcomes in terms of contributions to critical path technologies and infrastructure components, participation in systems and technical management, and project leadership roles. By the late 1980s, Europe’s capabilities in ELV technology, and space science, telecommunications, and remote sensing satellites were not only comparable to that of NASA and the US, but from a commercial standpoint were more successful.38 In its relations with Europe, the US was faced with prospects of both cooperation and economic competition. This shifted the balance of power between the US and European space programs to one more characterized by mutual interdependence.

The realization of interdependent relations is exemplified by US- European cooperation on both ISS and the Cassini mission to Saturn and its moon Titan. In the ISS case, ASI’s mini-pressurized logistics modules and ESA’s planned support for propellant resupply and orbital reboost are critical to the program. ESA also became more of an equal partner with respect to the management and decision-making structures of ISS.39 One example of this surrounds the 1993 redesign of the space station that led to the current ISS. Europe participated in the review process for redesign through a Multilateral Program Coordination Committee, and in the decision that led to the inclusion of the Russians into the program. For Cassini, ESA developed the robotic probe and instrumentation that are both critical in this mission to explore Titan.

Additionally, ESA played a role as lead agency within IACG. The mission concept put forward by IACG to study Halley’s comet revolved around complimenting ESA ’ s Giotto probe encounter with the comet. In similar fashion, ESA plays a project leadership role in IACG’s coordination of ISTP . ESA ’ s ability to take such a leading role in cooperative space ventures speaks for the degree of mutual interdependence that has developed between ESA and NASA.

### The CP is necessary to maintain US-European space relations

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

The United States will continue to derive comparative advantages from space, based on its strategic requirements and its decades-long investment and experience in using space for military and national security purposes. However, the five programs examined here clearly reflect increased European appreciation for the security and economic value of space as well as Europe’s willingness to take in- dependent action. Thus, U.S.-European space relations appear to be at a crossroads—with important ramifications for future cooperation

or competition, and any attendant benefits or damages to in- teroperability and security relations.

Because the United States retains advantages of architecture in space, not to mention unparalleled investment and experience, the United States should be able to shape European partnerships (whether within or outside of NATO) in a way that benefits both U.S. and NATO allies’ security interests. But because of the size of the trade space, this will require considerable thought about a strategy that invariably involves cooperation, competition, and some contin- ued U.S. dominance. The U.S. Air Force needs to play an active role in such activities. In particular, it can contribute to the broader realm of policy and operations that relates to information-sharing practices—both products and services derived from space assets— for use in U.S. and NATO allies’ coalition operations.

### US-European space cooperation enhances US competitiveness and security

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

MOTIVES AND METHODS FOR SPACE COOPERATION

U.S.-European space cooperation is not without precedent. European countries—especially France and the United Kingdom— rank prominently on the list of countries with which the United States has international agreements in remote sensing for civil and scientific purposes.3 Meteorology, wildlife tracking, climate change,

atmospheric science, ocean science, land use, and mapping are among the themes covered in these agreements.

There are a number of additional motives for the United States to consider cooperation with its European allies in space:

• U.S. National Space Policy (PDD-49) encourages cooperation in space-related activities for achievement of scientific, foreign policy, economic, or national security benefits for the nation.

• The U.S. Policy on Foreign Access to Remote Sensing Space Systems (PDD-23) and its related Commerce Department regu- lations recognize increased foreign interest in space systems as well as the opportunity to enhance U.S. industrial competitive- ness and security through foreign access to remote sensing data and technology.

• U.S. Space Command, in support of the warfighter, envisions growth in partnerships with foreign militaries.

• The interests of DoD and the intelligence community dictate cooperation in space and space-related areas, such as (1) pro- motion of bilateral ties and Alliance cohesion, (2) promotion of doctrine, operations, and equipment interoperability, and (3) information and intelligence sharing.

Space cooperation, according to the new DoD Space Policy, is to be undertaken when mutual, tangible benefits are available in support of the strategic enabling function of space.4 Given its own investments, its expertise in space operations, and its use of space- derived information, the U.S. Air Force—in collaboration with other DoD and U.S. government agencies—should help shape space cooperation with the U.S. European allies.

Competitiveness prevents great power war --- now is key

Sanjaya Baru 2009 is a Professor at the Lee Kuan Yew School in Singapore Geopolitical Implications of the Current Global Financial Crisis, Strategic Analysis, Volume 33, Issue 2 March 2009 , pages 163 - 168

Hence, economic policies and performance do have **strategic consequences.**2 In the modern era, the idea that strong economic performance is the **foundation of power** was argued most persuasively by historian Paul Kennedy. 'Victory (in war)', Kennedy claimed, 'has repeatedly gone to the side with more flourishing productive base'.3 Drawing attention to the interrelationships between economic **wealth, technological innovation, and the ability of states to** efficiently **mobilize economic and technological resources for power projection and national defence**, Kennedy argued that nations that were able to better combine military and economic strength scored over others. 'The fact remains', Kennedy argued, 'that all of the major shifts in the world's military-power balance have followed alterations in the productive balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the **major Great Power wars**, where victory has always gone to the side with the greatest material resources'.4 In Kennedy's view, the geopolitical consequences of an economic crisis, or even decline, would be transmitted through a nation's inability to find adequate financial resources to simultaneously sustain economic growth and **military power**. The classic 'guns versus butter' dilemma. Apart from such fiscal disempowerment of the State, economic under-performance would also reduce a nation's attraction as a market, as a source of capital and technology, and as a 'knowledge power'. As power shifted from Europe to America, so did the knowledge base of the global economy. As China's power rises, so does its profile as a 'knowledge economy'. Impressed by such arguments, the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China's political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.5 While China's impressive economic performance, and the consequent rise in China's global profile, has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington, DC. We must expect a revival of interest in Kennedy's arguments in the current context. A historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the 'square of power' as the tax bureaucracy, the parliament, the national debt, and the central bank. These four institutions of 'fiscal empowerment' of the state enable nations to project power by mobilizing and deploying financial resources to that end.6 Ferguson shows how vital sound economic management is to strategic policy and **national power**. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet Empires and that of the United States. In an early comment on the present financial crisis, Ferguson wrote: We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US. … It remains to be seen how quickly today's financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America's quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors. … as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient oriental empires (not only the Ottoman but also the Persian and Chinese) to western Europe. Today the shift is from the US - and other western financial centres - to the autocracies of the Middle East and East Asia. …7 An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union, the financial crunch caused by the Afghan War came on top of years of economic under-performance and the loss of political legitimacy of the Soviet State. In a democratic society like the United States, the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet State was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it. Hence, one must not become an economic determinist, and historic parallels need not always be relevant. Politics can **intervene and offer solutions**. Political economy and politics, in the form of Keynesian economics and the 'New Deal' did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today's America remains to be seen.

# ---EU CP Solvency---

## Colonization Aff

### The CP is a pre-requisite to the aff international cooperation is a precondition for space development

Sadeh 97 -- . P. LESTER and W. Z. SADEH Center for Engineering Infrastructure and Sciences in Space (CEISS), Colorado State University, Fort Collins, Colorado 80523-1372, U.S.A. MODELING INTERNATIONAL COOPERATION IN HUMAN SPACE EXPLORATION FOR THE TWENTY-FIRST CENTURY

The optimistic scenario entails a balanced and interdependent distribution of state capabilities. It is forecast that the current political and economic patterns of interdependence and cooperation evi- dent in international relations intensify and are strengthened. International cooperation is envi- sioned as a prerequisite for human space explora- tion whereby spacefaring states extend their space endeavors to human planetary exploration and space settlement. Political actors that play decision- making roles encompass states, their respective national space agencies and epistemic communities. The values these actors place on initial condition dynamics include symmetric power patterns, inter- national and transnational interests, coordination and interdependent policy preferences; and moder- ate and maximum knowledge patterns.

In this scenario, human space exploration advances international cooperation and o􏰀ers politi- cal and economic incentives important for political support. The design and establishment of a human- tended lunar base and human missions to Mars are dependent upon international cooperation where both political and technological costs and responsi- bilities are equally shared [19].||Cooperation is based on equal partnerships that capitalize on pol- itical, legal and technical interdependence such as those evident in the second phase of ISS nego- tiations. More broadly, human space exploration is justi®ed on the basis of how it advances the lot of all states (absolute gains) as opposed to individual states (relative gains).

### Getting off the rock will require joint cooperation- finances limit both sides ability to explore mars

Lawler 9- Can a Shotgun Wedding Help NASA And ESA Explore the Red Planet? Andrew Lawler Science 27 March 2009: Vol. 323 no. 5922 pp. 1666-1667 DOI: 10.1126/science.323.5922.1666

Did Mars ever harbor life? The multibillion-dollar quest to find out faces an uncertain future on both sides of the Atlantic. The European Space Agency (ESA) lacks the money to carry out its ambitious blueprint for putting a sophisticated lander and rover on Mars's surface in 2016. And NASA is grappling with major cost increases and delays in its Mars Science Laboratory (MSL) that are eating up funding for future missions.

To avoid hanging separately, say scientists and managers in the United States and Europe, the two agencies must agree to hang together in an unprecedented partnership. This summer they intend to unveil a sweeping plan for a decade of collaboration that could kick off with a joint 2016 mission and culminate a decade later in the return of a martian sample to Earth. “This is a big change,” says David Southwood, ESA science chief. “But we have to think about Mars differently.” Adds his counterpart at NASA, Edward Weiler: “We've got to do this together.”

The financial motivation for the new strategy is obvious. A sample return mission alone could run between $6 billion and $8 billion, far beyond the means of either agency. But the two agencies and scientific communities will first need to overcome a host of political, cultural, and technical challenges. Some Americans fear ESA is not yet ready to oversee complex missions on the martian surface. Europeans worry about being tied to NASA's annual budget wrangles. And both sides want the glory of landing rovers on Earth's neighbor.

### Efforts toward mars colonization will require joint efforts- recent events prove

Lawler 9- Can a Shotgun Wedding Help NASA And ESA Explore the Red Planet? Andrew Lawler Science 27 March 2009: Vol. 323 no. 5922 pp. 1666-1667 DOI: 10.1126/science.323.5922.1666

Cooperation between NASA and ESA is nothing new, of course. ESA has long been part of the international space station, and it provided the Huygens probe that plunged into Titan's atmosphere after riding on NASA's Cassini spacecraft to the Saturn system. Likewise, NASA is slated to pay for two important instruments aboard a 2016 ESA mission called ExoMars. But none of these projects is truly a joint effort. Instead, one agency—usually better-funded NASA—has had the final say, and the other agency's science has literally gone along for the ride. For the joint efforts now being discussed, each agency would take turns. For example, ESA and NASA are likely to alternate putting a lander on the surface, with the other providing a less expensive and technically challenging orbiter or related hardware.

The travails of ExoMars help to explain ESA's interest in a joint effort. Last year, the 17 nations that make up ESA approved $1.1 billion for ExoMars, some $195 million less than agency officials had requested (Science, 5 December 2008, p. 1447). The lander, which would open like a flower to reveal a 270-kg rover, would drill down 2 m to examine organics and conduct geochemical studies on whether life ever evolved and prospered on the planet. ESA's only other Mars mission, Mars Express, was a far more modest venture, and although its orbiter was a success after arriving in 2003, its U.K.-built Beagle 2 lander failed to survive the descent.

But the weight and complexity of ExoMars's planned scientific payload has grown alarmingly. The estimated weight of a geophysical package called Humboldt, for example, has tripled. Lifting additional weight requires extra fuel and a roomier spacecraft, which increase costs. “There is not enough [money] to fully realize Exo-Mars as planned,” said Jorge Vago, ESA's ExoMars project scientist, at a meeting earlier this month near Washington, D.C., and “no mechanism for financial shortfalls.” As a result, he says, scaling back the $1.56 billion project as well as bringing in U.S. participation “is unavoidable.”

That effort is well under way. Last week, European engineers and scientists met in the Netherlands to decide the fate of 23 instruments, two of which would be NASA contributions. At the same time, Southwood is loath to scale it back too much. The ability to establish a presence on the Mars surface, he says, will allow ESA to “stand shoulder to shoulder with Uncle Sam.”

But some U.S. scientists worry that ESA lacks the experience to carry out such a difficult mission. “They have never successfully landed on Msars,” notes G. Scott Hubbard, a former NASA official and now a physicist at Stanford University in Palo Alto, California. “And ExoMars is more complex than MSL.”

### ESA and NASA cooperation is vital for any effort to explore other planets

Lawler 9- Can a Shotgun Wedding Help NASA And ESA Explore the Red Planet? Andrew Lawler Science 27 March 2009: Vol. 323 no. 5922 pp. 1666-1667 DOI: 10.1126/science.323.5922.1666

NASA has long ruled the roost on solar system missions beyond Earth orbit, having a 3-decade-long track record of landing robots on Mars. But these days it needs a shoulder to lean on. Technical troubles and a $400 million cost increase for MSL recently forced Weiler to postpone the launch of the 900-kg rover by 2 years (Science, 12 December 2008, p. 1618). The overrun will eat into future Mars projects, endangering the agency's decade-old plan to send a probe to Mars every 2 years.

That strategy was meant to capitalize on a 1996 paper in which scientists presented possible evidence of fossilized life in a Mars meteorite—evidence that has since largely been discounted. The failure of two probes in 1999 led NASA to revamp that schedule, however, and last year then-NASA science chief S. Alan Stern put forward yet another plan to streamline Mars missions and speed up a sample return mission. Scientists said the plan was unrealistic, however, and Stern resigned shortly thereafter in a funding dispute with the NASA administrator.

Now NASA has decreed that future Mars missions must fit into the more constrained budget. The U.S. agency still plans to send an orbiter to Mars in 2016. One of the scientific instruments aboard the Mars Science Orbiter (MSO) would monitor trace gases such as methane while cameras would provide data on future landing sites. In addition, a communications package would beam information from future U.S. and ESA landers back to Earth.

However, overruns on MSL have left NASA managers with only $700 million for the mission, far less than needed. NASA has also pledged to fund two U.S.-built ExoMars instruments, and the $50 million growth in the initial $80 million budget for them would come out of the 2016 mission. To fit a mission into that amount of money, NASA has proposed limiting the number of instruments. But planetary scientists say the current MSO budget is unrealistic. “What can you do with $500 million?” asks John Mustard, a planetary scientist at Brown University and chair of NASA's Mars advisory panel. “Not much.”

Given the dire budget situation, U.S. scientists seem to agree that cooperation with ESA is vital. But exactly how that will be done remains unclear. Some engineers and scientists favor a combined 2016 mission in which a U.S., European, or Russian rocket launches a NASA orbiter to Mars, which then drops ExoMars to the surface. In 2018, the two agencies would switch roles, with an ESA orbiter dropping NASA's proposed $1.3 billion to $1.6 billion Mars Prospector Rover. A network of landers designed to monitor Mars's geophysical health could follow in 2020. The first portion of a sample return mission would leave Earth in 2022, with the second half following in 2024. NASA would likely be responsible for getting the Mars sample into orbit, with an ESA craft bringing the sample home to Earth 2 years later.

## Asteroids Aff

### **Asteroids need to be solved internationally. It’s an international problem**

Barrett 06- Scott Professor and Director of International Policy, School of Advanced International Studies, Johns Hopkins University and Distinguished Visiting Fellow, Center for the Study of Globalization, Yale University, Winter 2006 “ ARTICLE: SYMPOSIUM: CATASTROPHE: The Problem of Averting Global Catastrophe”, The University of Chicago Chicago Journal of International Law Winter, 2006 6 Chi. J. Int'l L. 527

 Is US leadership in asteroid defense enough? Posner believes it is not. "The problem is not free riding," he says, "it is that asteroids are not yet perceived to be a significant enemy." n46 If US perceptions about its own interests were wrong, or if domestic political economy failures prevented the US from supplying this global public good, then US leadership plainly would not suffice. Indeed, the Task Force on Potentially Hazardous Near Earth Objects, established by the British Government, concluded that the world should do more. To the Task Force, asteroid defense is a global problem requiring an international response.

The United States's strong unilateral incentive to protect the Earth from asteroids makes provision of this global public good relatively easy. However, the rest of the world should not complacently rely on the US to act in its best [\*539] interest. Since the consequences of the actions that are taken or not taken will be shared, the responsibility for deciding which actions to take or not take should also be shared.

There are two possible futures. In one, the United States would take the lead, but other countries would contribute materially to a joint effort, and share in the decision-making (an arrangement akin to the International Space Station). In the other, countries with strong incentives to supply this global public good unilaterally would develop initiatives of their own. The latter outcome is already developing. The European Space Agency, for example, is planning to deploy a spacecraft intended to alter an asteroid's orbit. n47

## Military Affs

### Now is the key time for the US to cooperate with the EU on space security programs

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

While the US has been focused on the rise of China as a space power, another space power quietly emerged. The European Union (EU) took its place as a space power on 1 December 2009 when the EU Treaty of Lisbon took effect. In- deed, over the last decade, the EU has been developing signifi- cant space capabilities even though it lacked a coherent space policy, a dedicated space budget, or a space program. The EU Treaty of Lisbon addressed these deficiencies and moves the center of gravity for collective European space activities from the European Space Agency (ESA) to the EU. And the relative indifference to security space that characterized Europe’s col- lective space efforts in the past has disappeared over the last few years. With US budgets constrained and US security space programs lagging, now is the time to partner with the EU in security space. Moreover, with deficiencies looming in two critical US security space capabilities: Earth observation and space situational awareness (SSA); now is the time to partner with the EU to narrow these gaps. Most importantly, unless we move quickly to develop a robust partnership there is some danger that European technologies and satellite architectures will evolve in ways that are incompatible with US systems— creating technological and institutional divides that deprive the US of access to important information and preclude partnership in the future. Now is the time to partner with the EU so that the US can influence EU space technology, satellite architectures, and security space institutional structures in ways which will benefit American national security for decades into the future. And the time is now for the EU as well. In the 1960s Euro- pean space policy decision-makers decided Europe must have independent space capabilities as a prerequisite for cooperation with the US as an equal partner. Europe’s independent devel- opment of a space launch capability (Ariane), its independent development of telecommunication satellites, weather satel- lites, and now navigation satellites (Galileo) bears this out. Now the EU is on the cusp of independently developing the two security space capabilities which the US could use the most, significant Earth observation capabilities, and SSA capabilities. If the historic trend holds, that is, the European preference to first develop an independent space capability and then to begin cooperation with US, now is the time to engage the EU in dis- cussions on cooperation in these programs.

### The Treaty of Lisbon has significantly strengthened EU space power- now is a key time for cooperation on dual use technology

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

What Changed?

The Treaty of Lisbon significantly strengthens the EU’s abil- ity to act as a global power.

The treaty is also a watershed event for the European space community. The treaty mandates the creation of an EU space program and it provides a dedicated EU budget line for space. It cements the EU’s commitment to space at the highest political level, and establishes civil, commercial, and security space ac- tivities as important means for achieving EU political, econom- ic, social, and security goals, both domestically and globally.1

Over the last 10 years, the EU has demonstrated growing confidence as a player in space—as the EU’s Galileo posi- tioning, navigation, and timing system demonstrates. Galileo proved that the EU is determined to deploy advanced dual-use space systems with significant security space capabilities, in- cluding militarily useful applications. But Galileo is just the first “flagship” dual-use EU space effort. The second is an Earth observation system called the GMES constellation and it is about to go operational. In addition, the 2007 Chinese anti- satellite weapon test spurred the EU to start the development of a third potential flagship EU space program—an autonomous EU SSA system. There is strong impetus behind all three of these efforts.

Historically, ESA led collective European space efforts. The EU was a bit player. But ESA lacks political clout in Europe, whereas EU political power mushroomed in the 1990s along with its interest in space. The EU recognized that a vigorous space program was vital to its economic and security interests. To remain relevant, ESA had to make itself pertinent to achiev- ing EU goals. It did. Today, ESA acts as the prime contractor for the development of EU space capabilities, including space capabilities with military applications. It is said that the EU provides the “demand” for space services and ESA provides the “supply.” The result has been Galileo, GMES, and the Eu- ropean SSA program.

More recently, the joint 2007 EU-ESA European space pol- icy gave policy direction to EU and ESA space efforts. But two things were lacking: a dedicated space budget and a space program to give substance to that policy. The EU funded its space activities primarily through the EU transportation bud- gets, research budgets, even unused EU Common Agricultural Program funds, and co-funding with ESA. Now, the Lisbon Treaty will provide the EU with a dedicated budget line for space and an EU space program. The impetus the treaty gives to the EU’s collective space efforts will accelerate the emer- gence of the EU as a major space power with the potential to be a reliable partner for the US in the realm of security space. The Lisbon Treaty signals that now is the time for the US to explore new opportunities for security space cooperation with the EU.

### Failure to cooperate on military space capabilities now forgoes any future opportunities for cooperation

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

Opportunity or Opportunity Missed?

In the past, many Americans, including some within the US national security establishment, have been dismissive of the EU’s growing internal cohesiveness and strength as a global ac- tor. This attitude, among other things, led the US to underesti- mate the EU’s will to develop Galileo. Today some may believe the EU is developing only civil space systems and therefore conclude that the EU is uninterested or incapable of engaging with the US in security space cooperation. That would be the wrong conclusion. First, the US military already relies upon European, civil meteorological satellites for operational me- teorological and environmental data in Iraq and Afghanistan.2 Second, although the EU has developed these capabilities as civil dual-use space programs because of EU political realities and budget constraints, they have significant security space ap- plications that the EU intends to use for defense purposes and which the US security space community should not overlook.

Why now? Because the EU is perfectly willing to develop its dual-use security space capabilities, architectures, and in- stitutional structures without US involvement—as they proved in the Galileo case. If this happens, the risk is that incompat- ible technology and architectures may be developed and mis- matched institutional structures and processes established that will create lasting dissonance between US and EU security space activities. Far better for the US to engage with the EU and have the chance to shape the development of the EU secu- rity space sector. The alternative is to remain on the outside, miss the opportunity for the EU to supplement US capabilities now, and even more so in the future.

## Moon Affs

### Moon solvency

**Sadeh 97** -- . P. LESTER and W. Z. SADEH Center for Engineering Infrastructure and Sciences in Space (CEISS), Colorado State University,

Fort Collins, Colorado 80523-1372, U.S.A. MODELING INTERNATIONAL COOPERATION IN HUMAN SPACE EXPLORATION FOR THE TWENTY-FIRST CENTURY

Knowledge is viewed as playing an important role in human space exploration. First, it is recognized that many scientific questions regarding the physiological effects of weightlessness on human physiology must be answered to ensure the health and safety of human explorers on the Moon and Mars. Second, scientific investigations are seen as the central objectives of human exploration. As a result, critical enabling technologies and information databases needed for human space exploration in an internationally cooperative environment are developed

## Generic

### the CP is necessary to maintain US-European space relations

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

The United States will continue to derive comparative advantages from space, based on its strategic requirements and its decades-long investment and experience in using space for military and national security purposes. However, the five programs examined here clearly reflect increased European appreciation for the security and economic value of space as well as Europe’s willingness to take in- dependent action. Thus, U.S.-European space relations appear to be at a crossroads—with important ramifications for future cooperation

or competition, and any attendant benefits or damages to in- teroperability and security relations.

Because the United States retains advantages of architecture in space, not to mention unparalleled investment and experience, the United States should be able to shape European partnerships (whether within or outside of NATO) in a way that benefits both U.S. and NATO allies’ security interests. But because of the size of the trade space, this will require considerable thought about a strategy that invariably involves cooperation, competition, and some contin- ued U.S. dominance. The U.S. Air Force needs to play an active role in such activities. In particular, it can contribute to the broader realm of policy and operations that relates to information-sharing practices—both products and services derived from space assets— for use in U.S. and NATO allies’ coalition operations.

### **The U.S. Should consider US-EU cooperation**

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

Historically, the predominance of U.S. investment in and experience with space systems has minimized the consideration of space as an area with real or potential interoperability problems. Whether with select allies or within a broader Alliance framework, the United States has provided the bulk of products or services derived from space assets, especially satellite reconnaissance data to support military coalition operations. The development of the Global Positioning System (GPS) has also allowed the United States to dominate space-based positioning, navigation, and timing.

Yet while U.S. sharing of space-based data has increased over time, some European allies are dissatisfied with the nature of the informa- tion shared (in terms of volume and levels of analysis) as well as with the lack of European input into tasking mechanisms. Moreover, the Europeans have ever greater expectations about the value of space, whether for civil resource management or defense purposes.

These factors and the proliferation of space and space-related tech- nologies have created new incentives for the development of new space capabilities, especially within Europe. While the United States will continue to dominate space for some years to come, European space developments may provide important opportunities to im- prove the security advantage of the United States and/or its allies.

### Solvency advocate

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

 The United States needs to seriously consider the existing and planned slate of European space capabilities—and their associated ground segments—for their potential contribution to coalition oper- ations, taking into account interoperability considerations. This in- volves consideration not only of the interests and capabilities of individual nations but also of developments within European space cooperation. And space, as it increasingly becomes valuable as a source of diverse kinds of information, must be considered in the broader context of information sharing, not only among U.S. gov- ernment agencies but also with allies in a range of military opera- tions.

## Tech Sharing Good

### Sharing good—general

NASA 10 – NASA summary report, of the Review of U.S. Human Space Flight Plans Committee, http://www.nasa.gov/pdf/384767main\_SUMMARY%20REPORT%20-%20FINAL.pdf

First, space exploration has become a global enterprise. Many nations have aspirations in space, and the combined annual budgets of their space programs are comparable to NASA's. If the United States is willing to lead a global program of exploration, sharing both the burden and benefit of space exploration in a meaningful way, significant benefits could follow. Actively engaging international partners in a manner adapted to today’s multi-polar world could strengthen geopolitical relationships, leverage global resources, and enhance the exploration enterprise.

### Current Programs fail

NASA 10 – NASA summary report, of the Review of U.S. Human Space Flight Plans Committee, http://www.nasa.gov/pdf/384767main\_SUMMARY%20REPORT%20-%20FINAL.pdf

The U.S. human spaceflight program appears to be on an unsustainable trajectory. It is perpetuating the perilous practice of pursuing goals that do not match allocated resources. Space operations are among the most complex and unforgiving pursuits ever undertaken by humans. It really *is* rocket science. Space operations become all the more difficult when means do not match aspirations. Such is the case today.

The nation is facing important decisions on the future of human spaceflight. Will we leave the close proximity of low-Earth orbit, where astronauts have circled since 1972, and explore the solar system, charting a path for the eventual expansion of human civilization into space? If so, how will we ensure that our exploration delivers the greatest benefit to the nation? Can we explore with reasonable assurances of human safety? And, can the nation marshal the resources to embark on the mission?

Whatever space program is ultimately selected, it must be matched with the resources needed for its execution. How can we marshal the necessary resources? There are actually more options available today than in 1961 when President Kennedy challenged NASA and the nation to “land a man on the Moon by the end of the decade.”

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### Causes exploration spill over

NASA 10 – NASA summary report, of the Review of U.S. Human Space Flight Plans Committee, http://www.nasa.gov/pdf/384767main\_SUMMARY%20REPORT%20-%20FINAL.pdf

 The strong and tested working relationship among international partners is perhaps the most important outcome of the ISS program. The partnership expresses a “first among equals” U.S. leadership style adapted to today’s multi-polar world. That leadership could extend to exploration, as the ISS partners could engage at an early stage if aspects of exploration beyond low-Earth orbit were included in the goals of the partnership agreement.

## Will for Cooperation now

### Trend towards cooperation

Sadeh 2 – Eligar Sadeh, Space politics and policy: an evolutionary perspective, Chapter 14: International Space Cooperation

The future of international space cooperation will be based not only on the policy and functional preferences of states as discussed herein, but also on market factors. Space cooperation is evolving to include significant cooperative commercial space relations.133 Future research on international space cooperation will undoubtedly have to explicitly consider market factors and globalization processes. These aspects are represented today by the emergence of a multinational and transnational space industry that was discussed in the previous chapters on Space Commerce and Space Business.

Carl Sagan made the case that global cooperation is an essential precondition for the survival of planet Earth.134

Ironically, what began in deadly competition, Apollo and the space race, has given way to both a political and commercial paradigm of cooperation. Today and in the future, it is hard to imagine that a major governmental or commercial space program could be undertaken without international space cooperation.

### Uniqueness evidence

**Zimmerman 9** – James V., National Research Council, “Approaches to Future Space Cooperation and Competition in a Globalizing World: Summary of a Workshop,” The national Academies Press, http://books.nap.edu/catalog.php?record\_id=12694#toc

With the end of the Cold War, space and Earth science research and space exploration were no longer dominated by competition between two superpowers. Numerous countries and regions now have very active space programs, and the number is increasing. These maturing capabilities around the world create a plethora of potential partners for cooperative space endeavors, while at the same time heightening competitiveness in the international space arena. In assessing the effectiveness of specific past and present cooperation or coordination mechanisms and in seeking to determine how best to proceed in the future, it is important to recognize that the world has become more globalized.

International cooperation and coordination on both a bilateral and multilateral basis have played a significant role in civil space activities since the beginning of the space age. Generally speaking, cooperation involves two or more countries working together, each contributing to the execution of a single mission. Coordination involves two or more countries that keep each other apprised of their activities in order to minimize duplication of effort and to obtain the maximum return through complementary activities. International cooperation and coordination have occurred extensively in Earth and space science research, Earth applications from space, human spaceflight and microgravity science, and to a lesser extent satellite telecommunications, satellite navigation, and launchers.

Currently, most space-faring nations have space-related aspirations that exceed the resources available to them individually. At the same time, more countries are working to enter the field. Thus, it is appropriate to review the models for international cooperation and coordination that have or have not worked in the past to identify the most effective approaches for the future, including how best to involve nations with an emerging space capability. There are also lessons to be learned from the competitive space arena that may have relevance to developing future modes of cooperation.

# ---EU CP Net Benefits---

## Relations Net Benefit

### The CP is necessary to maintain US-European space relations

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

The United States will continue to derive comparative advantages from space, based on its strategic requirements and its decades-long investment and experience in using space for military and national security purposes. However, the five programs examined here clearly reflect increased European appreciation for the security and economic value of space as well as Europe’s willingness to take in- dependent action. Thus, U.S.-European space relations appear to be at a crossroads—with important ramifications for future cooperation

or competition, and any attendant benefits or damages to in- teroperability and security relations.

Because the United States retains advantages of architecture in space, not to mention unparalleled investment and experience, the United States should be able to shape European partnerships (whether within or outside of NATO) in a way that benefits both U.S. and NATO allies’ security interests. But because of the size of the trade space, this will require considerable thought about a strategy that invariably involves cooperation, competition, and some contin- ued U.S. dominance. The U.S. Air Force needs to play an active role in such activities. In particular, it can contribute to the broader realm of policy and operations that relates to information-sharing practices—both products and services derived from space assets— for use in U.S. and NATO allies’ coalition operations.

### International space cooperation obviates conflict

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

 International engagement. International cooperation on space activities presents a unique opportunity to develop dependencies among nations that may obviate conflict. Such cooperation may foster the understanding, and, indeed, friendship, that can reduce the perceived need to prepare for doomsday scenarios where one imagines or projects the technologies that an adversary could develop, regardless of the technical merit or reality of the paranoia.

International cooperation now extends to a whole range of scientific endeavors. This sharing and cooperation among space programs harkens back to the best spirit and intentions of the Outer Space Treaty, in which the preamble calls for space to be used for ―peaceful purposes.‖16

This objective has been the hope expressed by many nations since the beginnings of the space era.

The full realization of cooperation’s promise began to be more fully realized with the end of the Cold War. Space and Earth science research and space exploration activities were no longer bound and subjugated by an overarching competition between two superpowers. Capitalizing on the opportunities and leveraging the expertise of other nations, the global scientific community rushed into the new post-Cold War, multi-polar world creating numerous international space alliances and partnerships.17

The United States is continuing this trend by reaching out to large global space (and nuclear) powers like India and China, both growing economic and engineering powerhouses, in the hope such engagement shapes their future space and engineering activities in positive directions. Reflecting on the growing spirit of collaboration, U.S. President Barack Obama and India Prime Minister Mammohan Singh agreed November 24, 2009 to expand cooperation to civil space, less than a week after Obama returned from Beijing, where he and Chinese President Hu Jintao pledged to expand dialogue between U.S. and Chinese space agencies.

## U.S. Political Stability Net Benefit

### Political Sustainability

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

International cooperation provides a wonderful capacity to increase a nation’s political will to

sustain and fund space programs and associated budgets. As noted, cooperation provides a space-faring state the basis to draw on additional resources when its own are not adequate to achieve desired space goals and visions. Cooperation also enables a space programs to hunker down and increase chances to survive attempts to be reined in even when faced with contentious and devastating cost-growth or budget realities (something nearly all space programs invariably face). Thus, within the United States, a civil space program can usually win a bit of sanctuary from cancellation threats or significant budget reductions to the extent that Congress and the administration feel compelled to not break, stretch, or withdraw from international agreements the program is associated with.

Significant political good will is often generated by funding these programs. To find an example of the power of this good will, one only need look to the politics surrounding NASA’s manned programs. Money has continued to be allocated to the program even when the perceived justification for a substantial or expansive manned program has collapsed. Similarly, some argue the political and diplomatic integration of Russia into the ISS program may well have saved the ISS and Space Shuttle programs from cancellation.19The pressure to continue international cooperative efforts is often tremendous:

Political Sustainability

**Broniatowski et al 6** -- D. A. Broniatowski, G. Ryan Faith, and Vincent G. Sabathier, CSIS International Space Exploration Update, “The Case for Managed International Cooperation in Space Exploration, http://csis.org/files/media/csis/pubs/060918\_managed\_international\_cooperation.pdf

International cooperation is valuable to a given nation in that it tends to increase political sustainability. Within the United States, a program is made safer from cancellation to the extent that Congress and the administration are not willing to break international agreements. Indeed, the integration of Russia into the ISS program may well have saved the program from cancellation (consider that the year before Russia was introduced as a partner, the ISS was saved by one vote in Congress). Once cooperation has commenced, canceling a program becomes inconsistent with political sustainability as long as the utility cost associated with the loss of diplomatic benefits and the negative effects on reputation of terminating an international agreement is larger in magnitude than the utility cost that must be paid to maintain the system. In the case of the ISS, international cooperation does provide a rationale for sustaining the pro- gram, because canceling the program would result in a net loss in utility. The corollary to this is that there is a high cost to be paid by any nation that chooses to unilaterally withdraw from an existing cooperative endeavor. This cost comes in the form of damage to the departing nation’s reputation or credibility. In general, any unilateral action sends a signal that the actor is an unpredictable and therefore an unreliable and possibly disrespectful partner. This tends to sabotage the possibility of future cooperation. As such, there is a long-term benefit to maintaining cooperation, even when the immediate cost may seem to call for terminating it. If cooperation has never occurred (as is the case be- tween China and the United States), the advent of cooperation is a significant event, likely delivering a lot of diplo- matic utility. On the other hand, if cooperation is the norm (as is the case between Canada and the United States), it is to be expected. The diplomatic utility of maintaining this cooperation is often not recognized. Nevertheless, the dip- lomatic utility cost of terminating this cooperation is large, because it would alienate a key ally. If it were necessary to cease cooperation, a mutual choice to do so would likely mitigate many of the negative reputation effects, because there would be no unilateral actor to whom one could assign blame. Indeed, if both parties choose to cease cooperat- ing simultaneously, this would mitigate the negative-reputation effect—rather, there would be a “mutual divorce.” Such a mutual decision would be significantly more tenable, in a diplomatic sense, because each party might outline a set of grievances and conditions for the termination of cooperation. Furthermore, since the agreement would be termi- nated in a spirit of mutual understanding, the possibility of future beneficial cooperation would be more likely.

If the ISS were unilaterally terminated, the result would be a blow to the credibility of the United States, concomitant with the loss of trust of the foreign partners. A U.S. withdrawal could send the message that the purpose of the pro- gram is simply to divert resources from other nations’ space goals in order to prevent competition. This, in turn, would have a profoundly negative effect on any future U.S. leadership in space exploration. If possible, international cooperation must be terminated in such a way as to avoid portraying the terminating nation’s actions as unreliable, disrespectful, or malicious. As such, if the ISS is to be terminated, such a termination should be phrased as a joint de- cision made among all partners, in such a way as to leave open the possibility of future cooperation.

## Spending Net Benefit

### Uniqueness- US currently outspending the EU

Lindstrom 5 – Gustav Lindstrom, “EU-US burdensharing: who does what?” http://ftp.infoeuropa.eurocid.pt/database/000034001-000035000/000034779.pdf

The United States continues to outspend the EU in terms of defence spending and military Research and Development.

␣ At $453.6 billion, the US national defence outlay for FY04 was more than twice the combined EU-25 defence budget for 2004.

␣ ‘Fair share’ calculations confirm that the United States ded- icates substantially more funds than EU member states. Its ‘fair share’ average for 2000-2004 was 1.36 versus 0.56 for EU member states.

### Cooperation saves money

**Broniatowski et al 6** -- D. A. Broniatowski, G. Ryan Faith, and Vincent G. Sabathier, CSIS International Space Exploration Update, “The Case for Managed International Cooperation in Space Exploration, http://csis.org/files/media/csis/pubs/060918\_managed\_international\_cooperation.pdf

It is common knowledge that international cooperation in space exploration has the potential to reduce a partner’s costs by spreading the burden to other nations. Although additional overhead costs increase the overall cost of any international cooperative endeavor, these costs are spread among partners. As per-partner cost decreases, per-partner utility increases. Space exploration has proven to be an expensive activity. Indeed, the more that any given admini- stration and Congress must spend to maintain and/or expand the functionality of a program like the ISS, the less util- ity will be derived. Therefore, a nation will have an incentive to engage in international cooperation when doing so can reduce that nation’s costs. This is particularly true for nations whose space exploration budget is insufficient to execute their space exploration goals. Aside from the United States, and possibly China, international cooperation is necessary for all other space-faring nations simply due to the large costs involved.

### Good US-EU relations are key to the world economy

Bergsten 3 – Fred, Director of the Institute for International Economics and He former Assistant Secretary of the Treasury for International Affairs and Assistant for International Economic Affairs to the National Security Council, Peterson Institute for International Economics Op-ed, Restoring the Transatlantic Alliance

We therefore propose that the European Union and the United States constitute an informal but far-reaching "G2 caucus", which would function as an informal steering committee to manage their own economic relationship and to provide leadership for the world economy.

The EU and the US are the world's only economic superpowers, as Japan has faded and China is still some time away from global pre-eminence. They inevitably bear responsibility for the effective functioning of the world economy. They cannot provide such leadership if they are battling against each other. They need to construct much more intensive mechanisms for consulting and co-operating on a wide range of global economic topics that will enable them to address both their bilateral problems and common international challenges.

## Diplomacy Net Benefit

### Diplomatic Prestige

**Broniatowski et al 6** -- D. A. Broniatowski, G. Ryan Faith, and Vincent G. Sabathier, CSIS International Space Exploration Update, “The Case for Managed International Cooperation in Space Exploration, http://csis.org/files/media/csis/pubs/060918\_managed\_international\_cooperation.pdf

The ISS program, along with most international civil space endeavors, carries with it an element of diplomatic cachet and control. The participation of other nations in the program increases the diplomatic influence of participating na- tions and, therefore, the diplomatic utility derived from cooperation. In general, the more countries participate, the higher will be the utility. Nevertheless, not all countries are equal, and their individual utility value depends on world politics. For example, the utility of having Russia join the ISS program increased significantly after the breakup of the Soviet Union, when relations with a new Russia were at the forefront of United States foreign policy. To the extent that a symbol of cooperation with a given nation is valuable, utility will be delivered. As such, Indian participation in joint space exploration would send a strong signal to the world of good U.S.-Indian relations. This would simultane- ously increase Indian prestige by demonstrating their technological prowess. Similarly, Chinese participation in joint space exploration would signal growing cooperation between the two nations. The use of the ISS for a partnership between either of these nations would drastically increase its utility to those who support friendly relations. On the other hand, those who oppose closer U.S. relations with India or China are likely to oppose their entrance into the ISS program or into any other joint space exploration program. These diplomatic incentives may come at a cost for the cooperating nations; for example, China would likely have to make concessions in the form of more stringent tech- nology export controls and/or better observance of human rights standards. If space exploration is successfully used as a diplomatic tool to exert such “soft power,” its utility increases in proportion to the degree that it is successful in implementing a policymaker’s agenda. Similarly, the departure of a particular nation (or, if the United States chooses to cease participating, of all nations) will reduce U.S. utility to the extent that the aggregate symbol of cooperation is valued.

## Workforce Net Benefit

### Workforce Stability

**Broniatowski et al 6** -- D. A. Broniatowski, G. Ryan Faith, and Vincent G. Sabathier, CSIS International Space Exploration Update, “The Case for Managed International Cooperation in Space Exploration, http://csis.org/files/media/csis/pubs/060918\_managed\_international\_cooperation.pdf

 One way politicians measure the benefit of a large program is in terms of the number of jobs and amount of revenue brought to their constituency. As such, the politician’s perception of change in these sorts of benefits is of the utmost importance. For example, both the Space Shuttle and ISS programs employ workers across the country and serve as a source of revenue to the districts of many members of Congress. The program also employs enough people to attract the attention of the president. The loss of these jobs and revenue streams would constitute a large loss in utility for both the administration and Congress; nevertheless, the aerospace industry must continually engage in advocacy ac- tivities to ensure that politicians are made aware of this fact. Similarly, simply continuing a program is unlikely to in- crease its utility for any of the stakeholders, because the jobs and revenue streams already exist. It is only when these benefits are put under threat that political salience is achieved. As such, if either the Space Shuttle or ISS programs were to grow to employ more people, an increase in the perceived utility lost in the event of a cancellation of the pro- gram would only result if the growth were significant enough to attract political attention. This is different from an expected utility gain; a proposal to grow the program prior to its execution is unlikely to increase utility as much, be- cause future employees will not engage in advocacy to keep jobs that do not currently exist. This means that estab- lished programs are more sustainable than are programs that have not yet begun. In addition, the incumbent advantage means that members of Congress are generally satisfied with the status quo. If it should happen that a program is ap- proved and seems likely to be implemented in a particular district, individual members of Congress may lend their support in the expectation that they will gain utility. Thus, positive utility for programmatic expansion only exists when a supporting coalition may be identified. As such, additional employment does not strictly deliver positive util- ity; rather it can increase the perception of utility loss in the event of program cancellation. Similarly, once jobs are lost and utility is decreased, there is no additional positive utility to be gained from reinstating those jobs. Rather, the threat of the loss of utility inherent in the loss of employment can only serve as a deterrent. Such employment pro- grams therefore act in a manner similar to an addiction, wherein the removal of employees causes “withdrawal symp- toms” manifested as a loss of utility. Nevertheless, when the metaphoric addict becomes accustomed to the additional employment, the prospect of a marginal increase does not increase utility. On first analysis, international cooperation might seem to decrease employment in the United States, because foreign

nations are building components that might otherwise be constructed in the United States. In practice, those who are employed may see more stability in their jobs due to the twin utility losses associated with employment termination and diplomatic prestige loss. In effect, employment has no impact on utility unless it changes. The stability provided by international cooperation will ensure that the associated utility is at least less likely to decrease.

## Burden Sharing Net Benefit

### Burden sharing uniqueness

**Appathurai 2** – James, NATO Review, Closing the capabilities gaphttp://www.nato.int/docu/review/2002/issue3/english/art1.html

To those who have followed NATO over the long term, the current discussion about the capabilities gap between the United States and its Allies might appear but the latest chapter in a never-ending story. After all, NATO has struggled throughout its history with questions of interoperability and burden-sharing, and yet the Alliance has flourished. Why should the current concern about the capabilities gap be any different?  The answer is simple: because this time it is more serious. During the Cold War, interoperability and burden-sharing problems had limited practical effects, because the transatlantic community had no choice but to share the same strategic goal and methods, in the face of a single and existential threat.  Today, the situation is very different. At the practical level, NATO forces are working together in robust, complex and difficult missions, but the US lead in military technology makes working together difficult for deployed forces. At the political level, the desire among Allies to work together is hamstrung by the growing complexity of doing so. At the strategic level, a growing transatlantic divergence in capabilities can perpetuate both legitimate grievances and unfair stereotypes over burden-sharing and influence.

### Precedent for cooperation but things haven’t been worked out

**Appathurai 2** – James, NATO Review, Closing the capabilities gaphttp://www.nato.int/docu/review/2002/issue3/english/art1.html

 Dordain did not say how Esa would work with the US space agency (Nasa) but the precedents for extended future cooperation on the Red Planet are well established.

The European Mars Express orbiter is taking pictures of the American rover Spirit's landing site in order to assist the six-wheeled vehicle's geology "field trip". And it was the US orbiter Mars Odyssey which acted as the initial communications relay for the lost European Beagle 2 lander.

Away from Mars, however, Europe will want clarification and agreement with the US on the future of the International Space Station (ISS)

### Solvency- burden sharing

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

As well, the need for the US to engage in a multilateral ap- proach with Europe is to recognize some hard realities. The costs of security space activities keep rising and no one imag- ines that budget allocations will keep pace. In such an environ- ment, cost sharing makes sense. Already, many US security space programs such as Space Radar, the Future Imagery Archi- tecture, and the Transformational Satellite have foundered for lack of funds. Associated procurement debacles threaten gaps in these US security space capabilities. US SSA capabilities are also inadequate given the growing crowding of orbital space and the dawn of “contested space.” As the center of gravity for Europe’s collective space efforts shifts to the EU, and with emerging EU dual-use space capabilities such as GMES and SSA—now is the time for an open-minded appraisal of what the EU has to offer.

### Benefit- Resource and risk sharing

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

Cost motivations dominate the calculus on whether a state or commercial entity should

engage in international space efforts. Why? Most space endeavors are terribly expensive and capital intensive, and as a result, are highly debated, especially the returns on investment, except in the most authoritarian states. International cooperation offers the potential to reduce the burdens to gain access to space by even the poorest of nations.

With cooperation, a space fairing state can draw in outside resources.

Given the large costs involved in accessing the space domain—satellite system research, concept development and system design, manufacture, launch and operation—cooperation is needed by all but the largest space-faring nations. Cooperation spreads the resource investments and expenditures among nations and entities. Cooperation also reduces exposure by spreading the risk of failure. Per-partner utility of international cooperation invariably increases as per-partner costs decrease.9 There is therefore a strong incentive to engage in cooperative activities when they provide this savings and leverage. This is especially compelling for nations whose resources are insufficient to achieve any substantial space operational and technical goals. As an example of this reality, even ESA has engaged the United States and Japan to join them in what were previously traditional European-only science missions as a way to rescue the European mission portfolio from increased cost growth

### Efficiency- both sides benefit, India mission to the moon proves

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

 International cooperation offers the opportunity to improve the efficacy of expenditures, which is a significant cost consideration. With cooperation, resources can be rationalized, standardized, and made interoperable to bring about the best and most efficient use of research, development, procurement, support, and production resources. Cooperation can also foster more effective operations. Thus, if a hypothetical space partnership involves two nations, one with sophisticated remote sensing engineering capabilities, and the other, spacelift, a rational approach would allocate program activities in accord with these strengths. As an example of this allocation, the two primary instruments to help locate water and other resources, onboard Chandraayan, India’s first satellite to the Moon, were contributed by the United States. Incredibly, the U.S. payloads cost more than what India spent building and integrating the launch vehicle and the balance of the spacecraft. Still, the United States benefited because it saved on its launch costs and was able to join in India’s scientific mission to the Moon.

## Heg Net Benefit

### U.s. cant sustain unilateral action

Sloan 3 – Stanley, Director of the Atlantic Community Initiative and Associate of the European Consulting Firm Strategic Consulting Partners and Associates, 2003, NATO, the European Union, and the Atlantic Community: the Transatlantic Bargain Reconsidered

It is my belief that a healthy transatlantic relationship remains vital to the interests of the United States and the nations of Europe. The United States is currently the only true “global power” and is capable of taking on demanding military missions with little assistance from other powers. But it still needs allies. It cannot afford, financially or politically, to be the world’s policeman. The American people will not stand for it. Other countries must share the responsibility for maintaining international stability. Moreover, the war on terrorism requires international collaboration that goes well beyond unilateral use of force. This war will be won by good intelligence, appropriate strategy and diplomacy, and effective international policy and financial collaboration and with progress toward resolution of the global problems that fill the coffers of terrorist organizations and create pools of recruits ready to sacrifice their lives for the cause. The cooperation of European and other allies is essential to such a campaign. Military force will be an element, but a successful overall strategy will use the credible threat to deploy force to dissuade countries from hosting terrorist operations combined with discrete military operations against specific terrorist targets.

# ---EU CP Neg Answers---

Different types of cooperation

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

Figure 6.1 depicts a conceptual spectrum of the different ways that governments might choose to cooperate in space programs. Cooperation can range from the sharing of data at the lower end of the spectrum to coproduction and codevelopment of space systems and their associated ground infrastructure at the higher end of the spectrum. Each of these methods carries political, technical, and security benefits and risks.

## AT: Cooperation Bad

### Co-op good laundry list

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

The case for cooperation is strong and powerful. Each nation engages in international cooperative activities because they are in their best national interests to do so. Cooperation enables states to leverage resources and reduce risk; achieve efficiencies; improve global diplomatic and other engagement; and enhance diplomatic prestige, political sustainability and workforce stability. Given these benefits, space leaders must organize their programs to allow for cooperation following some of the recommendations in Table 4.

## A2 Theory

### The CP is a relevant question- cooperation with foreign countries is part of the US’s space policy

Crook 09, Jason A. Crook, Chairman of the House Committee on Science and Technology, 2009, “NATIONAL INSECURITY: ITAR AND THE TECHNOLOGICAL IMPAIRMENT OF U.S. NATIONAL SPACE POLICY,” 74 Journal of Air Law and Commerce 505

Such an emphasis on international cooperation still remains an overriding theme in U.S. space policy. In the 2004 report of the President's Commission on Implementation of United States Space Exploration Policy, the Commission observed that "international talents and technologies will be of significant value in successfully implementing the space exploration vision," with the recommendation that "NASA pursue international partnerships based upon an architecture that would encourage global investment in support of the vision." [n51](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n51) Two years later in President Bush's August 31, 2006 declaration of U.S. National Space Policy, the United States further committed itself to "seek to cooperate with other nations in the peaceful use of outer space to extend the benefits of space, enhance space exploration, and to protect and promote freedom around the world," while also working to "encourage international cooperation with foreign nations and/or consortia on space activities that are of mutual benefit and that further the peaceful exploration and use of space, as well as to advance national security, homeland security, and foreign policy objectives." [n52](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n52) To accomplish these goals, the Secretary of State was directed to take the lead in "carrying out diplomatic and public diplomacy efforts ... to encourage the use of U.S. space capabilities and systems by friends and allies." [n53](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n53)

### The most recent MOU between ESA and NASA solves previous complications

Sadeh 02- Eligar Sadeh, Professor of Space Studies, University of North Dakota, 2002, “International Space Cooperation,” chapter 14 of *Space Politics and Policy*, accessed online at http://www.springerlink.com/content/x0766u7783857128/fulltext.pdf

The political fall-out over Ulysses resulted in a decade passing (1979 to 1989) before the next MOU between ESA and NASA was concluded in space sciences (e.g., ISTP). One striking feature of the ISTP MOU is the degree of detail it enters as compared to past MOU agreements. This denotes not only a sign of caution being exercised, but also a measure of European autonomy in authority and decision-making.56 The ISTP MOU addresses funding difficulties, obliges the parties to consult with each other before making any decisions that could affect the project, and allows for joint contingency planning that is “for the benefit of the program as a whole.”57

### Structural differences between NASA and ESA make them more interdependent

Sadeh 02- Eligar Sadeh, Professor of Space Studies, University of North Dakota, 2002, “International Space Cooperation,” chapter 14 of *Space Politics and Policy*, accessed online at http://www.springerlink.com/content/x0766u7783857128/fulltext.pdf

In the US, IGAs and MOUs are not legally binding in domestic law. They are executive agreements that cannot legally bind Congress and in particular, cannot take precedence over statutory requirements for annual budget legislation related to NASA’s appropriation bills. In Europe, IGAs and MOUs are equivalent to international treaties that prevail over domestic laws in that they are systematically ratified by national parliamentary systems. For ESA, these types of agreements are binding international agreements sanctioned by all its member states pursuant to ESA’s Convention.51

Linked to these legal interpretations are differences in budgetary politics. In contrast to the annual budget cycles in the US, ESA’s mandatory programs in space science enjoy five-year budget cycles.53 Clashing legal interpretations and funding procedures have established an imbalance in the level of political commitment to cooperation between the US and Europe.54 Paradoxically, it is this imbalance that sparked the emergence of more mutually interdependent US-European cooperative space relations.

## A2 Europe would say no

### The EU would cooperate with the US because of budgetary problems and our technological capabilities

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

Still, budgetary problems exist in Europe as well as the US, our capabilities are incomparably greater, European conscious- ness of potential threats to space assets is growing, and the EU recognizes space as a critical component in their quest to be- come a global power. The basis for security space cooperation therefore exists.

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One approach in the literature considers how political actors cooperate to realize their policy preferences.128 International space cooperation is a reflection of both symbolic and functional preferences. Symbolic preferences are political in character, encompassing a range of domestic and foreign policy concerns such as prestige, propaganda, policy legitimization, enhanced policy influence over other actors, international accountability, world leadership, and national security. Functional preferences pertain to economics, technology, and science. Economic interests include maximizing national economic benefits, promoting industrial autonomy, enhancing economic competitiveness, and realizing economic savings through cost burden sharing with other political actors. Technological and scientific interests deal with enhanced capabilities and knowledge gains that can be realized through cooperation.

The political actors that act upon these preferences range from state governments, their respective national space agencies, and IOs, which include nongovernmental groups like epistemic (i.e., knowledge-based) communities of scientists or engineers. There are three responses for political action: national response where states (i.e., national space agencies) seek to conclude bilateral or multilateral cooperative arrangements outside any institutional or organizational framework; institutional response where IOs are formed on the basis of some type of multilateral agreement; and mixed response involving both national and institutional responses.

 A second approach characterizes four types of space cooperation outcomes.129 These types include: coordination, augmentation, interdependence, and integration. Coordination involves separate but shared programs. Shared programs imply that separate projects with independent capabilities are coordinated technically and scientifically in some complementary manner. Augmentation is signified by functional enhancements of capabilities through contributions to a national project, which are not on the technological critical path for the mission as a whole. Interdependence entails cooperation that is functionally enabling for a particular project. This implies cooperation on technological critical path and infrastructural systems. Integration denotes joint and shared R&D with the pooling of financial resources.

A third approach specifies how political actors bargain and negotiate (i.e., strategically interact) to realize international space cooperation.130 Strategic interactions are described by structural conditioning, convergence of norms, institutional bargaining, and epistemic community models. “Structural conditioning” happens when a powerful state-government entity (e.g., national space agency) extends cooperative benefits to others. This process is “structurally” generated because a dominant national space agency influences others, on the basis of an asymmetric distribution of resources (institutional capabilities) and knowledge (science and technology) in its favor, to adopt cooperative policies that are congruent with its preferences. “Convergence of norms” represents an emergence of compatible preferences between political actors as a result of changes that take place in national or international policy milieus. “Institutional bargaining” is a factor of functional interdependence between state-governments. This interdependence is managed through institutions or regimes that establish principles, rules, or conventions. An “epistemic community” model focuses on collaboration between groups of scientists. Space science and Earth science missions are uniquely suited to such cooperative patterns due to their scientific context. This can result in the acquiescence of national decision-makers to epistemic communities in the cooperative policy process.

## AT Free Riding

### Uniqueness- Nations are free riding in NATO now

Abbas 7-13-11 Mohammed Abbas, Reuters staff writer, “UK criticizes some NATO members as Libya pressure mounts,” http://www.trust.org/alertnet/news/uk-criticises-some-nato-members-as-libya-pressure-mounts/

Some European NATO members are not pulling their weight in the Libyan air campaign, Britain's defence minister said on Wednesday in one of his strongest attacks yet on the alliance.

Defence Secretary Liam Fox said Britain's military was being stretched by the near four-month-old United Nations mandated Libya campaign and that he would seek to shift more of the strain to others in the 28-member NATO alliance.

"The United States is willing to spend on defence, Britain is willing to spend on defence and deploy. Far too (many) of our European partners inside NATO are still trying to get a free ride, and they should regard Libya as a wake up call," Fox said, labelling some NATO members' contributions "pathetic".

"If they want the insurance policy, they should perhaps think about paying the premiums," Fox added, speaking at the Royal United Services Institute defence thinktank in London.

Fox's comments echo those of former U.S. Defense Secretary Robert Gates, who in a valedictory speech in June said European NATO members risked "collective military irrelevance" if they did not deepen their commitment and boost spending.

NATO air strikes to protect Libyan civilians from Muammar Gaddafi's forces have strained the budgets of participating countries, many of which are trying to tackle budget deficits by reining in defence spending.

The strain had raised media speculation over Britain's commitment to the campaign. Fox reiterated that the country would stay the course, but would seek to shift more of the heavy lifting to other countries.

## Coop Now

### Cooperating in the status quo

European Commission 8 – Space, International Cooperation with the US, 5-28-8, http://ec.europa.eu/enterprise/policies/space/esp/international-cooperation/usa/index\_en.htm

At the EU-U.S. Summit of June 2005 it was agreed that the European Union and the United States would initiate a “dialogue on civil space cooperation”. This dialogue would, inter alia, promote cooperation in space applications in key areas such as earth observation, satellite navigation, space science and exploration. The first EU-U.S. meeting of this dialogue took place in March 2006.

More recently discussion has also extended to cooperation in space situational awareness i.e. protection of critical space infrastructure through tracking of space debris and monitoring of space weather. Chaired by representatives of the European Commission and the U.S. Department of State, these dialogues bring together the key Government departments and agencies active in the space domain. These include the European Space Agency and EUMESTSAT (European Organisation for the Exploitation of Meteorological Satellites) on the European side and NASA (National Aeronautics and Space Administration), NOAA (National Ocean and Atmospheric Administration) and USGS (U.S. Geological Survey) on the U.S. side. Four working groups and an annual plenary meeting have been set up on satellite navigation to address in particular radio frequency compatibility and interoperability, trade and civil applications, cooperation on the next generation of civil satellite-based navigation and timing systems, security issues relating to GPS and GALILEO.

In April 2010 a meeting of the EU-U.S. dialogue took place in Washington. Areas discussed include: EU-U.S. cooperation in Earth observation (EO) both bilaterally and through international organizations; the need to promote full and open exchange of civil EO data and geospatial information; possible expansion of existing ESA and NASA cooperation in space exploration and space science. At the April 2010 space dialogue, it was agreed to organize an EU - U.S. workshop to identify areas for EU and U.S. cooperation in the use of space infrastructure and applications to combat climate change. This meeting will take place in spring 2011. It is anticipated that a subsequent meeting of the space dialogue will identify the priority areas addressed at the workshop and endorse a roadmap for their implementation. For satellite navigation systems, U.S.-E.U. cooperation is based on the Agreement signed on 26 June 2004 between the Government of the United States of America and the European Community on the promotion, provision and use of Galileo and GPS satellite-based navigation systems and related applications . Since 2006, meetings of high level EU and U.S. space officials have taken place at least once per year to review and prioritise actual and potential areas of cooperation between the EU and the United States in all areas of civil space cooperation.

Uniqueness- moving towards cooperation now

Rendleman and Faulconer 10 – James Rendleman, Secure World Foundation Deputy Director, Walter Faulconer, business area executive for Civilian Space, “Perspectives on Improving United States International Space Cooperation” http://strategicspacesolutions.com/Public-papers/IAC-10B38-E775.pdf

Interest in international cooperation on space missions is not new. Successful elements of international collaboration have been around since the beginning of the space age. This sentiment to support international cooperation and collaboration is growing. The factors driving a desire for international cooperation are shown in Table 1. Reflecting the desire, the new United States National Space Policy declares international cooperation to be among its key goals, stating in pertinent part:

*[T]he United States will pursue the following... in its national space programs:...*

*Expand international cooperation on mutually beneficial space activities to: broaden and extend the benefits of space; further the peaceful use of space; and enhance collection and partnership in sharing of space-derived information.*1

The new National Space Policy is striking—it expresses strong interest in cooperation throughout the document, and more so than in past policy declarations. As we will discuss, there is considerable justification for this emphasis. The hope and desire in international projects is that one plus one will equal three—that the diverse resources, skills, and technologies of the partners will achieve synergy, adding up to more than the sum of their parts.

# NATO

## Solvency---cooperation

### The plan can be used as leverage with our NATO allies

Hura 00- Myron Hura, a member of Rand Corporation Project Air Force, 2000, Interoperability: a continuing challenge in coalition air operations, chapter 6, http://www.rand.org/content/dam/rand/pubs/monograph\_reports/MR1235/MR1235.chap6.pdf

OBSERVATIONS AND SUGGESTED ACTIONS

The U.S. trade space with regard to space cooperation with Europe is multidimensional. U.S. options and strategies for space cooperation include bilateral and multilateral agreements, commercial and government activities, and cooperation along a spectrum from the sharing of space-derived data to joint development of space systems. The costs and benefits of any one of these arrangements should be weighed in light of its overall impact on U.S. objectives. This means that space cooperation dominated by U.S. contributions may provide the leverage to gain other non-space-related contributions from its NATO allies in coalition operations, i.e., access to airspace and infrastructure. NATO—a logical venue for some of these discussions—appears to be absent from most major discussions about space issues, especially within the broader context of interoperability.

Within this case study, we have attempted to discuss the broad di- mensions of U.S.-European space cooperation with a view toward enhancing interoperability (or at least identifying areas of potential progress or conflict related to interoperability) in coalition opera- tions. Aspirations of European space actors like France (the domi- nant player) or Italy and Germany (emerging players) could provide opportunities to improve interoperability, especially to the extent that U.S. and European decisionmakers develop standards and methods for cooperation in space-related capabilities to support

military coalition operations. A good first step, especially in the case of France, would be to improve data-sharing protocols; this would precede any greater collaboration in space system development.

## Solvency---NATO space office

### Establishing a NATO space office gives Nations a mechanism to cooperate

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Gap 19: Lack of comprehensive management for interoperability of current and future Space systems remote sensing data, such as small ISR satellites and Space surveillance data. Recommendation 23: Engage with the Nations, EU, ESA and the EDA to define security and defence requirements for existing and planned Space systems. Establishing a NATO Space Office will enable the Alliance to engage with other organizations. Because there is no office responsible for Space in NATO, the Nations, EU, ESA and EDA have no mechanism to interact, other than in functional mission areas. This is not an adequate approach. For example, there are several programmes trying to connect various databases and insure the widest dissemination of intelligence data. NATO should have a common database for commercial satellite imagery and other products. If NATO were to develop its own small satellite capability or receive data supplied from the Nations or other sources, the data must be readily available and releasable to its forces. Efforts must continue to allow greater information exchange and better dissemination of intelligence. Increasing fiscal constraints demand increased cooperation to create synergy, reduce duplication of effort and ensure interoperability. We cannot afford to make critical acquisition mistakes and fail to deliver the required capabilities to our soldiers, sailors and airmen.

### A NATO office needs to be created responsible for space capabilities and operations

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Leadership and an Holistic Approach

5.4. It has been observed that there is a lack of an holistic approach for Space operations. This includes the need for leadership at all levels to address the requirement to better integrate Space capability, particularly for ISR and expeditionary operations. NATO staffs do not have robust Space expertise; therefore, champions are needed at all levels to give the appropriate emphasis to Space operations. Commanders must encourage Space personnel to do their jobs to develop Space Power. Because Space touches so many mission areas and can be used for civil and military operations, an holistic approach is essential for Space operations. Commanders should have renewed vigour in determining warfighter capability requirements for Space operations and providing a long term plan for Space.

Gap 2: Lack of oversight and holistic approach to Space operations. Recommendation 2: Establish a Space Office at NATO HQ. Establishing a NATO Space Office should be the number one priority of all the recommendations in this Assessment, as it will make important and long-lasting impacts on NATO Transformation. Figure 2 shows an holistic approach to Space to provide capabilities and effects to the warfighter. It has become clear that what is needed for NATO is a single office responsible for oversight of Space personnel and programs for the Alliance. In order to engage with international organizations and the Nations, to establish Space policy and positions, and to develop long range planning, and a Space architecture for NATO, a Space Office should be established at NATO HQ. This office should have 8 positions: a Director and Deputy Director and two branches of three personnel each. One branch should be responsible for planning, programming and architectures while the other branch would be focused on current operations and the integration of existing capabilities. There should be a mix of military and civilian personnel for continuity and expertise. This office should be established immediately, and then could be given the overall responsibility to implement the recommendations of this Assessment.

### Developing a long term space strategy for NATO directs how nations should collaborate and contribute

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Governance

5.5. NATO has very well established governance and doctrine for most mission areas. Governance and doctrine form the foundation of military planning and execution. Without overarching guidance, commanders and planners are left on their own to determine how to integrate and use Space. Governance also provides direction to the Alliance and member Nations. Nations should provide Space capability based on a long term Alliance Space strategy. Governance provides direction to ensure Alliance security and defence missions, while also avoiding needless duplication of effort. There is a distinct lack of governance for Space operations, from the highest level of strategic guidance down to TTPs.

Gap 4: Lack of governance to include the need for a Space Policy, Military Space Strategy, Concept of Employment, Concept of Operations and appropriate Space doctrine. Recommendation 4: Develop a NATO Space Policy and Military Space Strategy. Nations must decide to address Space in an Alliance context. A key step will be the development of a Space Policy, from which the military staff can develop a strategy. Without these vital documents, using Space in truly transformational ways will be limited. To begin the debate, the JAPCC has prepared a separate paper titled ‘Considerations for a NATO Space Policy’, included at Annex H and ‘Tenets of a Military Space Strategy’ are included at Annex I. This should serve as a starting point for discussions. Subsequently, a Concept of Employment and a Concept of Operations should be developed. Establishment of doctrine and TTPs are also crucial. Work should begin immediately on an Allied Joint Publication for Space Operations and an Allied Joint Tactics Publication.

### Creating a NATO space office would develop a core of space specialists and increase cooperation between the US and ESA

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Recommendation 9: Develop a core of Space specialists. Initially, Nations could probably contribute a few of their Space operations personnel to fill new NATO staff positions. However, since there are so few Space experts in most of the Nations, NATO would have to grow an organic Space expertise. Personnel with operational, intelligence, communications or other areas of expertise with the ability to learn a technical mission area, could be selected for a 3 year Space operations special duty posting. NATO would have to create a training pipeline, but could leverage existing NATO and national training courses. With some fundamental training and education, these officers would ‘learn by doing’ and perform Space planning duties. Manning should be Joint and multi-national, NOT just USAF Space operations personnel. The added benefit is that these officers would return to their National forces, further increasing Space expertise in the Alliance. Additionally, since the United States has over 4500 Space operators, NATO and European nations should investigate increased exchange officer opportunities. Since the Air domain has matured over the last decades, one possibility may be to change existing exchange officers from pilots to Space officers. Furthermore, it is highly recommended to establish a United States Strategic Command Joint Functional Component Command Space (JFCC- Space) Liaison at SHAPE, as well as EDA and ESA Liaison positions in ACT to better cooperate on, and integrate Space activities.

### Better integrated space capabilities would use exiting expertise from member nations

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Gap 10: Lack of adequate integration and planning at all levels. Recommendation 12: Currently assigned Space operations personnel should be better utilized. NATO Space specialists should be actively pursuing Space integration and better utilization of Space capabilities, not other duties. Furthermore, since NATO does not have adequate Space operations doctrine, these specialists should address issues such as: fully developing the concept of a Space Coordinating Authority (SCA) and what is the proper construct for Space personnel in an expeditionary force or Combined Joint Operations Centre (CJOC)? Space supports all the components; therefore, requests for Space support must be consolidated at the Joint level. Typically, an Air Component Commander will be assigned responsibility for Space; therefore, it is recommended that NATO assign Space Planners to each of the planned CAOCs, with the first priority being the Interim Deployable CAOCs (IDCAOC). However, there remains a need for someone at the Joint level to be assigned overall responsibility for Space. For example, Space capabilities can be utilized for FFT, Missile Warning, support to Personnel Recovery, conducting counter-narcotic and Counter-Improvised Explosive Device (C-IED) operations. Space personnel should be focused on delivering value to the warfighter. The NATO CAOCs should build relationships with United States CAOCs which have Space personnel assigned to them. In light of the recent NATO Summit, where its members recognized the emerging need to protect NATO (and Europe in particular) from Missile Attack, the value of a reliable Ballistic Missile Warning and Tracking System based on space-based sensors to achieve this goal should be stressed in order to trigger and promote NATO activities in that area.Gap 11: Lack of integration and planning to support expeditionary operations. Recommendation 13: Conduct an assessment of Space operations in the ISAF and the NRF to provide specific recommendations on how Space Power can be better integrated into NATO Expeditionary Operations. NATO must leverage existing Space expertise and capabilities to more effectively plan, integrate and support expeditionary forces and out of area operations. The NRF and groups such as the Expeditionary Operations ICDT do not have Space expertise. It is essential that Space expertise from other organizations is leveraged to the maximum extent possible. Expeditionary Operations planners should continue to leverage Space- related expertise in missile defence, ISR, communications, etc. An assessment of ISAF and NRF Space needs is critical to identifying valid capability requirements and to then incorporate them into the existing requirements processes.

### A NATO space office would issue standards on space tech so NATO members can cooperate

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

5.0. For all Allied military systems, there is a need for robust standards and interoperability for Space systems. Member Nations will continue to develop their own Space capability; it is critical for NATO to issue standards so that in the future, data may be easily exchanged in a network-enabled environment. There are many organizations involved with standardization and interoperability of Space related capabilities, but more work must be completed. Developing technologies, such as missile defence, FFT, and SpSA must receive the appropriate level of standards to ensure interoperability of data, information and systems. NATO has focused significant efforts on standardization and interoperability of C4ISR systems, some of which are Space systems. Efforts should continue to have high emphasis placed on C4ISR systems as they are the backbone to all operations. NATO should continue to establish formal agreements to share and exchange information from Space based systems.

### NATO can be a forum for members to cooperate on space projects

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

6.7. Need for Increased Cooperation. No Nation can afford to go it alone. There are more requirements for Space capabilities than resources. However, there are already a lot of Space capabilities available to NATO. Nations, as well as commercial Space service companies, have the existing capability to provide much of what NATO may need for communications, ISR and other mission areas. Moreover, there are emerging mission areas, such as the need to assure and protect our Space capabilities, the need to improve SpSA and the need to begin conducting CSO. Furthermore, the development of small satellite technology offers the opportunity for many more Nations to become involved in the Space business. In order to best utilize existing capabilities, to reduce duplication of effort on future systems and to ensure interoperability of Space services and products, there must be increased cooperation on Space between the Nations, NATO and other organizations. NATO must engage with the Nations, EU, ESA and the EDA to define security and defence requirements for existing and planned Space systems.

## Solvency---SSA

### Establishing a NATO Space Operations Coordination Centre would create a forum to cooperate on space situational awareness

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

Recommendation 16: Establish a NATO Space Operations Coordination Centre (NSpOCC). The NSpOCC would provide a single point of contact, around the clock, where any NATO force could reach back for Space support. SpSA is required for assuring the Space domain. Efforts should be made to establish closer ties with the United States Joint Space Operations Center (JSpOC) and the various European Space and satellite centres. This allows a ‘one stop shop for Space’ that would support many customers and operations at the same time and be a force multiplier for the warfighter. A key step will be to identify the necessary tools and systems that will be required for the NSpOCC. The Nations and commercial operators would provide data feeds for NSpOCC; not operating the satellites. Responsibilities would include coordination of National Space assets, Space intelligence and analysis, status monitoring and other Space specific tasks. Low cost and near-term capability could be obtained by establishing a Space cell at an existing CAOC or other operations centre. One possibility could be in Kalkar/Uedem Germany, where the JAPCC, CAOC2/ IDCAOC, the German national Air Policing Centre and in the near future, the German Space Situational Awareness Centre. Other options include collocating it with the Intelligence Fusion Centre in the United Kingdom or the EU Satellite Centre in Spain. A NSpOCC would most certainly leverage existing facilities and capabilities. The NSpOCC would provide NATO the ability to have a Space Order of Battle and to maintain strategic SpSA.

## Solvency--- R&D

### Creating a NATO space office provides oversight and guidance for research and development cooperation

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

5.9. Some Space mission areas such as SATCOM are mature and mission requirements are well understood. However, NATO must understand and prioritize how to best utilize Space Power. Space-related activities may take place in C2 of forces, theatre missile warning and tracking and defence, PNT, global situational awareness, FFT, and intelligence and operations planning. However, NATO has not adequately determined what its requirements for Space capabilities are, nor provided oversight on Space research and technology development. Since there is little oversight of Space operations, NATO must better determine its operational requirements for future capabilities. Challenges with cost overruns, programme delays, political agendas, and rapidly changing technology make programme management seem very daunting. Leadership, oversight and clear capability requirements are essential.

Gap 15: Insufficient understanding of Space capabilities and lack of prioritization of Space operations capability requirements. Recommendation 19: Develop a Space Road Map. An holistic, rigorous, and structured approach is required for Space operations, which should include a road map or other long term plan for Space. Emerging Space technology, such as constellations of small satellites, must be assessed for military utility for NATO. There must be a close dialogue between Nations developing their own systems.

SpSA and SC capabilities are required by NATO. However, these capabilities must be evaluated and prioritized against many competing demands. Warfighters clearly need capabilities provided by Space Power. NATO must deliver the best possible capabilities to those in harms way. A Space Road Map would establish the long-term priorities and goals for the Alliance.

Gap 16: Lack of oversight for Space research and technology programmes. Recommendation 20: Establish permanent oversight for Space research, technology and development. The RTO is challenged by a small staff trying to provide oversight to many research areas. Since the Space Science and Technology Advisory Group (SSTAG) expired, there is a gap in NATO’s oversight and management of Space research and technology. Options include a Space Operations Steering Committee, a Working Group, or some other formal body. NATO spends resources on Space research, and therefore should optimally manage those funds and personnel. A Space Strategy and other high level guidance would also help to provide direction to researchers and programme managers.

## Net Benefit

### Solvency/Net benefit- Space operation are essential for NATO war capabilities- governance solves

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

The world we live in today is very different from 40 years ago. The Cold War has ended. Threats and the security environment have changed. NATO forces are expeditionary. As Land and Maritime Power matured over the centuries, Air Power likewise developed over the last several decades. Warfare in the 20th Century proved that Air Power was decisive in operations and that efforts must be made to take and maintain control of the Air. The coming century will most likely show that Space Power and control of Space will also be decisive.

NATO will need to place the appropriate level of emphasis on developing Space Power. It is time for the Alliance to break the paradigms of the past and develop the Space operations mission area. The top priority is to establish a Space Office and issue appropriate governance. Without governance, NATO cannot maximize the integration of essential Space capabilities to support the warfighter. With an eye towards transformation and the challenges that may lay ahead for the Alliance, this Chapter outlines gaps and recommendations in NATO Space operations.

Space Power is Essential 5.3. At the foundation of this Assessment is the tenet that Space Power is absolutely as vital to operations as Land, Maritime and Air Power. In fact, Space capabilities are a key enabler to ALL operations in every domain: from a small ground operation, a naval engagement on the open seas, or a single aircraft flying a resupply mission. Space capabilities are used in all operations; big or small, near or far. Therefore, Transformation to an expeditionary, network enabled Joint military force must occur with modern Space capabilities. This Assessment has provided background information and outlined the importance of Space to operations. NATO must recognize that Space is absolutely essential for operations. Until the last few years, there were many reasons why NATO did not have to address Space operations, but it is imperative for security and defence that Space is now addressed.

Gap 1: Space Power is not addressed at the same level as Land, Maritime, and Air Power. Recommendation 1: Issue a Bi-SC long-term vision statement on Space Power. Space Power is essential to NATO and the mission area should be expanded and matured. From the highest levels in the Alliance, it must be made clear that Space is vital to operations and a secure future. A proposed Vision for NATO Space Power could be: ‘To ensure that Space capabilities contribute to network enabled Joint expeditionary military forces, to better achieve desired effects.’ Additionally, to increase awareness of Space capabilities and the importance of Space Power, NATO should develop a short Executive-level Space seminar to be briefed at the highest levels within NATO and the member Nations.

### Net benefit- NATO military success is dependent on its space capabilities

Single 09- Major Thomas Single, USAF, January 2009, “JAPCC NATO Space Operations Assessment,” https://transnet.act.nato.int/WISE/NATOSpaceO/file/\_WFS/NATO%20Space%20Ops%20Assessment%20Jan%2009.pdf

6.4. Space Has Become ‘Ordinary’. Many Nations are operating their own satellites and ALL of those Nations rely strategically, militarily and commercially upon information and services from Space. NATO began flying its own communication satellites in 1970, almost 40 years ago. Once available to only a few nations, those ‘highly classified state secret’ capabilities and products are now widely available from commercial Space service companies. Space has become quite ordinary and it is time to break the paradigm that Space capabilities are veiled in secrecy, are strategic in nature only or are too politically sensitive to discuss in an Alliance forum. As responsible military leaders, we need to recognize that Space is just another mission area and

it is long past time to develop Space Power. Space-based capabilities and services are so important to today’s operations that NATO cannot afford not to address this mission area.

6.5. Space is a Critical Enabler. Space is vital to expeditionary and out of area operations. In performing its core missions, NATO’s operations are entirely dependent on Space, possibly even non-functional without Space support, yet NATO has no holistic approach to Space operations. Globalization demands Space capability as a requisite enabler of NATO’s transformation as an expeditionary, network-enabled force. Space provides those joint enabling capabilities that we’ve become reliant upon for global situational awareness, decision superiority and precision engagement. Consequently, the United States military often refers to Operation Desert Storm in 1991 as the ‘first Space war’ because almost every aspect of operations was dependent to some extent on support from space-based systems. Today, NATO is faced with its ‘first Space war’ in Afghanistan. We must focus on how to use Space assets to enhance our capability and to generate desired effects. This requires a well thought out approach.

## NATO

NATO uniqueness

Stearns 6-11-11 – Scott Stearns, USA Voice of America staff writer, “Clinton Backs Gates on NATO Burden-Sharing, http://www.voanews.com/english/news/usa/Clinton-Backs-Gates-on-NATO-Burden-Sharing-123686254.html

U.S. Secretary of State Hillary Clinton is backing Defense Secretary Robert Gates' warning to the NATO alliance that all member states must pay their fair share and participate in their own defense. Secretary Clinton took part in a forum on U.S. trade preferences.  In his last major policy speech as defense secretary, Gates warned of a dwindling appetite among U.S. lawmakers to subsidize NATO members who, he says, “are apparently unwilling to devote the necessary resources or make the necessary changes to be serious and capable partners in their own defense.”  In Libya, for example, Gates says all 28 NATO members voted for the mission against Libyan leader Moammar Gadhafi, but fewer than a third are taking part in those strikes. He says it is not that most of those members are unwilling, but that they no longer have the resources.

Clinton says Gates' remarks underscore how NATO must never be complacent. “We all have to step up and share the burdens that we face in responding to 21st century threats. And many members are doing just that. Every country in the alliance, including of course our own, is under financial pressure. We are being asked to cut spending on national security at a time when we are living in an increasingly unpredictable world,” she said.  Clinton said she fully agrees with the defense secretary that all nations bear the responsibility to ensure the safety and security of their citizens, which requires an adequate investment in defense.

# Aff

### The EU is unwilling to cooperate with the US on space programs

Gleason 10- Lt Col Michael Gleason, PhD in International Relations at George Washington University, USAF Core Division Chief, Department of Political Science, US Air Force Academy, Colorado, February 2010, “Shaping the Future with a New Space Power: Now is the Time,” *High Frontier*, Volume 6, Number 2, http://www.afspc.af.mil/shared/media/document/AFD-100226-085.pdf

Obstacles

But will the EU want to cooperate with the US? It would be unwise of the US to conclude that the EU is so eager for greater cooperation that we can set the terms. The past record of space cooperation between Europe and the US—for example, the In- ternational Space Station and US efforts to discourage develop- ment of Galileo—have not always been positive. In addition, a growing sense of their own capability has made many in Eu- rope skeptical about cooperation with the US. The Eisenhower Center for Space and Defense Studies has hosted two work- shops with a cross section of Europeans on the prospects for cooperation. The over-riding sentiment from the European side has been skepticism, both in the good intentions of Washington and, increasingly, in the necessity (and even the advisability) of cooperating with us to achieve their goals in space.

We must also recognize the European perspective on secu- rity space differs from ours. European militaries are less reliant on space than the US military. And Europeans tend to see better SSA as necessary for better spaceflight safety, for regulating the space environment, and for allowing the more efficient com- mercial exploitation of space. They do not share our military’s view of SSA as a primary means to detect and counter potential threats to space capabilities and as an enabler of space control. That means, among other things, they perceive less need for SSA data secrecy than the US does.

Nor do many Europeans share the sense of some in the US security community that China constitutes a potential emerg- ing threat, although the 2007 Chinese antisatellite weapon test did shock European decision-makers and catalyze their sudden interest in expanding indigenous SSA capabilities. In short, Europe is more capable now, but also more skeptical of coop- eration with the US, and more wary about creating an asym- metric vulnerability in space. They are also more convinced than many in the US that space—instead of being “contested” and a likely venue of future conflict—will likely continue to be characterized by the sort of grudging and sometimes tacit cooperation that has marked the domain since the dawn of the space age.

Finally, even if there is common conceptual ground for greater security space cooperation, the International Traffic in Arms Regulations (ITAR) will stand in the way. As long as ITAR exists, the breadth and depth of security space coopera- tion with Europe will of necessity be limited.

### ITAR makes other countries unwilling to buy space technologies from the US and hurts US space leadership

Crook 09, Jason A. Crook, Chairman of the House Committee on Science and Technology, 2009, “NATIONAL INSECURITY: ITAR AND THE TECHNOLOGICAL IMPAIRMENT OF U.S. NATIONAL SPACE POLICY,” 74 Journal of Air Law and Commerce 505

In a survey conducted by the Space Foundation in 2007 asking U.S. companies whether ITAR in its present form protected the national security interests of the United States, only ten percent of respondents believed that it did not. [n40](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n40) As the Space Foundation's report noted, "this corresponds closely with a 2006 survey of executives in the broader aerospace and defense community, which revealed that two out of three believed that the export control system effectively protected U.S. national security interests." [n41](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n41) In this same survey, however, nearly seventy percent of respondents indicated that ITAR was responsible for some amount of delay in technical assistance and support and nearly seventy-five percent reported similar delays for marketing and sales. [n42](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n42) While the majority of the U.S. space industry appears to recognize that "there are valid national security concerns with regard to space technology that ITAR is trying to protect," these same businesses also maintain that the export control process "is not fully protecting the interests of the United States because it is damaging the health of the space industrial base." [n43](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n43) Because "foreign firms do not have to deal with  [\*513]  an equivalent set of export regulations," many businesses believe that "[ITAR] gives [foreign businesses] a competitive advantage in the global marketplace" which American companies simply cannot match. [n44](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n44) These businesses argue that this regulatory disparity potentially "reduces the competitiveness of [the U.S.] space industry in the global market and potentially harms the domestic innovation processes that enable U.S. space leadership."[n45](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n45)

### ITAR regulations make the ESA unwilling to cooperate with the US

Crook 09, Jason A. Crook, Chairman of the House Committee on Science and Technology, 2009, “NATIONAL INSECURITY: ITAR AND THE TECHNOLOGICAL IMPAIRMENT OF U.S. NATIONAL SPACE POLICY,” 74 Journal of Air Law and Commerce 505

IV. CASE STUDIES
In a clear example of how one aspect of national policy can quickly impede another, talks between the United States and the governments comprising the European Space Agency (ESA) recently broke down due to European concerns that U.S. technology transfer laws would prove too restrictive to effectively permit a Mars rover joint-development program to succeed. [n56](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n56) As Daniel Sacotte, head of ESA's Human Spaceflight program, was quoted as saying, "it's a shame, but it's not for me to comment on U.S. law, only to note its effects, and for the rover,  [\*516]  ITAR would have made cooperation too complicated to be feasible." [n57](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n57) The article also notes that the ESA "is gradually coming to the conclusion that the U.S. legal regime known as ITAR ... will foreclose whole categories of trans-Atlantic cooperative efforts in space exploration." [n58](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n58)

As chilling as this effect on international cooperation in the particular instance might be, there is an additional danger that the ITAR regime will preclude the United States from engaging in other nationally-beneficial ventures. Quoting Sacotte, "we are now obliged to develop our autonomy in various areas, which is no bad thing. We are fully capable in Europe of developing these technologies. We may also find partners besides NASA." [n59](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n59) In the context of future developments, many European officials believe that Europe cannot limit [itself] to subcontractor work by one or another company that may or may not continue through development... NASA has always excluded international partners from significant work shares on a program like the Crew Exploration Vehicle. We expect that to remain the case. That is why we are looking toward Russia and Japan [instead] for a joint program." [n60](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n60)

### ESA is collaborating with other nations because of ITAR

Crook 09, Jason A. Crook, Chairman of the House Committee on Science and Technology, 2009, “NATIONAL INSECURITY: ITAR AND THE TECHNOLOGICAL IMPAIRMENT OF U.S. NATIONAL SPACE POLICY,” 74 Journal of Air Law and Commerce 505

Left unchecked, "the Pentagon fears it may have to start buying satellite components overseas" simply because ITAR will have financially crippled America's innovative science and technology base. [n75](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n75)

Perhaps the most unsettling aspect of ITAR's current model and method of implementation is the cumulative effect this regime might have on the United States' national security objectives. In a hearing conducted by the Senate Subcommittee on Space, Aeronautics, and Related Sciences, Dr. Frederick A. Tarantino of the Universities Space Research Association testified:
Space is strategic for many nations, and we are in the midst of a massive internationalization of it. In 2005, China became the third nation to fly a human in space. European Space Agency nations, Japan, China, Russia, and India are all resourcing and planning major long-range space science programs, including lunar and planetary missions. China is developing a robotic nuclear-powered lunar rover as the second phase of their lunar program. Japan and China sent probes (Kaguya and Chang'e-1) to the moon in 2007, and India's launch of Chadrayaan-1 is scheduled for 2008. While the U.S. scientific community is restricted in its foreign collaborations under International Traffic in Arms Regulations (ITAR), ESA is collaborating extensively with China, India, and Japan in their lunar explorations. A hesitant approach to exploration will cede U.S. supremacy in space to other nations. [n76](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n76)
 [\*520]  Given the explicit policy recognition that "in this new century, those who effectively utilize space will enjoy added prosperity and security and will hold a substantial advantage over those who do not" and that "in order to increase knowledge, discovery, economic prosperity, and to enhance National security, the United States must have robust, effective, and efficient space capabilities," [n77](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n77) a "hesitant approach" that "cedes U.S. supremacy in space to other nations" may very well cost the United States its technological lead while also jeopardizing its security. [n78](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n78) As the National Academics' Committee on Prospering in the Global Economy of the 21st Century wrote, "We fear the abruptness with which a lead in science and technology can be lost - and the difficulty of recovering a lead once lost, if indeed it can be regained at all." [n79](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n79)

### ITAR incentivizes the ESA to develop space technology independently instead of cooperating with the US

Crook 09, Jason A. Crook, Chairman of the House Committee on Science and Technology, 2009, “NATIONAL INSECURITY: ITAR AND THE TECHNOLOGICAL IMPAIRMENT OF U.S. NATIONAL SPACE POLICY,” 74 Journal of Air Law and Commerce 505

The second important development that American policymakers must acknowledge is the increase in the number of countries which have developed - or are rapidly developing - an indigenous space industrial community. As Daniel Sacotte of the European Space Agency remarked in the aftermath of the collapse of the Mars rover joint-development negotiations, "we are now obliged to develop our autonomy in various areas, which is no bad thing. We are fully capable in Europe of developing these technologies. We may also find partners besides NASA." [n84](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n84) Rather than fostering an environment in which NASA and American businesses can work to satisfy the needs of foreign partners, ITAR has instead created a strong incentive for foreign nations to develop their own industries at America's expense. As Abbey and Lane observed in their report:
In the past, U.S. companies frequently prevailed in international competition, as the international industry considered American technologies superior and American satellites more reliable than those manufactured by other nations. Today, because of export control regulations, U.S. companies find themselves at a serious competitive disadvantage ... . Based on Satellite Industry Association data, the U.S. share of global satellite sales plummeted from 64 percent of the $ 12.4 billion market in 1998 to 36 percent  [\*522]  in 2002. Foreign customers, even from allied nations, are unwilling to purchase satellites from U.S. manufacturers when they face restrictions on the acquisition of technical and test data and operating information on their purchased satellite, as well as significant delays in obtaining approvals. Indeed the costs, delays, and complications that accompany the use of U.S. components in satellites built by other companies in other nations are so notorious that certain European manufacturers have begun advertising their products as "ITAR free" to attract customers. [n85](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n85) In one of the clearest examples of ITAR's counterproductive incentives, the report notes that "ESA and CNES [(Centre National d'Etudes Spatiales)] have also embarked on a $ 33.4 million program called the European Component Initiative, which will develop production lines for systems that are critical to satellites and currently available only from U.S. companies." [n86](http://www.lexisnexis.com.turing.library.northwestern.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1311438549416&returnToKey=20_T12404146229&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.952575.7300518833" \l "n86)