

UNCLASSIFIED

**Report to the Director
National Reconnaissance Office**

**Defining the Future of the NRO
for the 21st Century**

**Final Report
Executive Summary**

26 AUGUST 1996

CL BY: 125166
CL REASON: 1.5(c)
DECL ON: X1
DRV FROM: NRO SCG 4.0
14 October 1995

UNCLASSIFIED

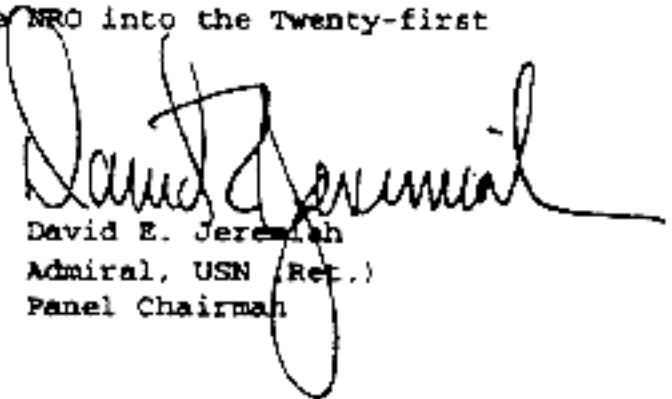
FOREWORD

The objective of the Panel review was to define the NRO of the Twenty-first Century. The NRO is a unique institution, critical to our national security. The NRO of the Twenty-first Century should continue to serve the country in the same capacity using the results of our study to clarify its mission and continue the improvement of its overall institutional performance.

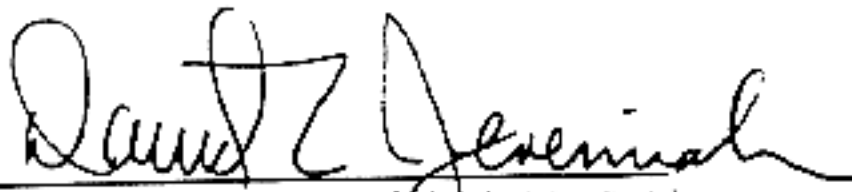
On behalf of the entire Panel, I would like to thank all those who have contributed their time supporting us during the course of the study. A special thanks goes to those in government and private industry who responded to our surveys and questionnaires and our requests for interviews. Their candid responses allowed us to fully understand the strengths of the NRO as well as opportunities for improvement.

We are particularly grateful to those government and private industry officials who spent many hours on one or more of our working groups, understanding the organization, identifying the issues, and drafting recommendations. A special thanks goes out to the working group chairman and administrative staff supporting our effort.

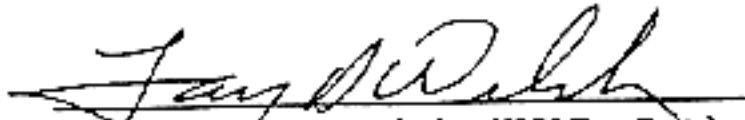
Finally, I want to personally thank Acting Director Keith R. Hall for all the support he and his organization provided the panel and its activities. We hope the recommendations will help guide the NRO into the Twenty-first Century.



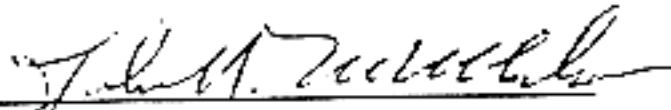
David E. Jeremiah
Admiral, USN (Ret.)
Panel Chairman



Adm David E. Jeremiah (USN, Ret)
Panel Chairman
Partner and President, Technology Strategies & Alliances
Former Vice Chairman, Joint Chiefs of Staff



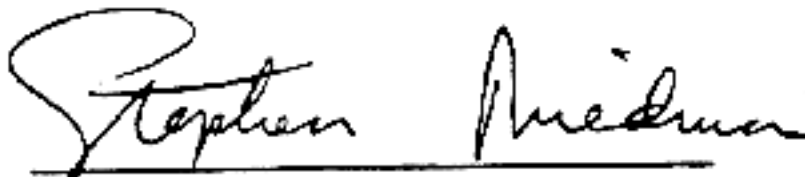
Gen Larry D. Welch (USAF, Ret)
President and CEO, Institute for Defense Analysis
Former Chief of Staff, United States Air Force



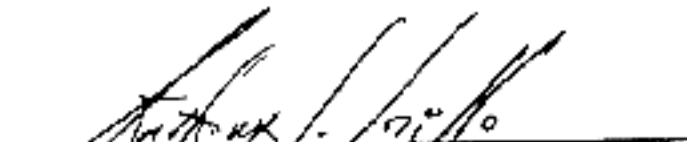
John N. McMahon
Former President and CEO, Lockheed Missiles and Space Company
Former Deputy Director of Central Intelligence



Mr Martin C. Faga
Senior Vice President and General Manager
Center for Integrated Intelligence Systems, Mitre Corporation
Former Director, National Reconnaissance Office



Mr Stephen Friedman
Senior Chairman and Limited Partner, Goldman Sachs & Co.
Former Member of the "Brown Commission" on Roles and
Responsibilities of the U.S. Intelligence Community



Mr Anthony J. Iorillo
Chairman of the Board of Directors, American Mobile Satellite Corp
Former Senior Vice President, Hughes Aircraft

TABLE OF CONTENTS

Foreword	i
I. Executive Summary	1-26
1. Introduction and Purpose	1
2. Principal Study Findings	3
3. Findings and Recommendations	5
Issue 1: Is there an alternative to the NRO?	6
Issue 2: What should be the mission of the NRO in the 21st Century?	7
Issue 3: Is the customer relationship satisfactory?	9
Issue 4: Is support to military operations satisfactory?	10
Issue 5: How should the NRO interact with DoD space organizations?	12
Issue 6: Are business practices of the NRO still appropriate?	13
Issue 7: Is the NRO still an innovative organization?	16
Issue 8: Should NRO systems engineering be strengthened?	18
Issue 9: What security system is appropriate?	19
Issue 10: Should NRO contractor relationships continue to be classified?	20
Issue 11: Do current military and civilian personnel practices adequately support the NRO?	21
Issue 12: Is the current NRO internal organization well matched to the future?	23
4. Conclusion	25
Appendix I-1: Jeremiah Panel Interviewees	26

I. EXECUTIVE SUMMARY

1. INTRODUCTION AND PURPOSE

This report summarizes the results of an extensive study of the National Reconnaissance Office (NRO) and makes recommendations for the NRO of the 21st Century. The study was directed by the Acting Director of the NRO. Admiral David Jeremiah (USN, Ret), former Vice Chairman, Joint Chiefs of Staff and currently Partner and President of Technology Strategies & Alliances Corp, served as study chairman. Other members of the Panel included: General Larry Welch (USAF, Ret), former United States Air Force Chief of Staff and currently President and CEO of The Institute for Defense Analyses; Mr. John McMahon, former Deputy Director of Central Intelligence (DDCI) and former President and CEO, Lockheed Missiles and Space Company; Mr. Martin Faga, former Director, NRO and currently Senior Vice President and General Manager, Center for Integrated Intelligence Systems at the Mitre Corporation; Mr. Stephen Friedman, Senior Chairman and Limited Partner of Goldman, Sachs & Co. who recently served on the Commission on the Roles and Capabilities of the U.S. Intelligence Community (also known as the Brown Commission); and Mr. Anthony Iorillo, former Senior Vice President, Hughes Aircraft and currently Chairman of the Board of Directors, American Mobile Satellite Corporation.

The study is timely. With the end of the Cold War, the nation is confronted with a series of new challenges that include dealing with both new and failing nation states; proliferation of nuclear, missile, chemical, and biological materials; and terrorism. The nation's intelligence assets must be developed to cope with the highest priority concerns including support to coalition partners. In addition, the U.S. Intelligence Community itself is undergoing great change. Both Houses of Congress have made recommendations for a sweeping Intelligence Community reorganization. The Clinton Administration also has proposals. The Intelligence Community must also adjust to new intelligence priorities and rapidly changing technology.

In addition to these issues, the NRO is in transition. Its budget is under greater pressure in both the Legislative and Executive branches. There is a desire for greater openness about NRO activities. The major transition to integrated systems has

increased the complexity of NRO development, launch, and operations. Finally, the industrial base supporting the NRO is downsizing and is in a period of consolidation and transition.

It is against this backdrop that the Jeremiah Panel was established to look at such major issues as:

- Is there a need for an NRO?
- What should be the mission of the NRO in the 21st Century?
- How should the NRO relate to new and changing organizations?
- In what ways should the NRO structure and processes change?

The Panel did not address programmatic, financial accounting and management, specific discipline architectures, ground station operations, nor the organization of the DoD and Intelligence Communities beyond their relationship with the NRO.

In an effort to comprehensively address the major issues, the Panel formed nine Working Groups:

- Mission and Strategic Vision
- Customers
- Relationships with New Organizations
- Business Practices
- Benchmarking
- Internal Organizational Structure
- Infrastructure
- Security
- Personnel and Career Development

The Working Groups were comprised of experts from both public and private sectors. To complement their expertise, data were gathered through interviews, questionnaires, facility visits, and briefings.

In addition to Working Group deliberations and recommendations, the Jeremiah Panel itself met weekly for three months and conducted approximately 20 interviews with various experts and authorities (see Appendix I-2).

This Executive Summary presents principal study findings and a set of major issues, each containing specific recommendations. The full report provides greater detail addressing the complete findings and recommendations of the Panel.

2. PRINCIPAL STUDY FINDINGS

Three principal assets define the United States as the preeminent World Power: economic prowess, military power, and intelligence capability. Each is underpinned by two assets: highly skilled and motivated people, and leading edge technology development.

Within this context, the Panel was of one mind in its belief that the future security of the nation depends on its ability to conduct surveillance from space. The NRO is truly a unique organization which is, simultaneously, an intelligence organization, a defense organization, and a space organization. The Venn diagram in Figure 1 depicts the NRO at the intersection of the realms of intelligence, defense, and space. It reports to two bosses, the Secretary of Defense (SECDEF) and the Director of Central Intelligence (DCI), each of whom is vitally interested in its success, and each of whom makes major contributions of people, funds, infrastructure and other support necessary to the continued success of the NRO. The SECDEF-DCI partnership to manage, fund, and man an organization for space-based reconnaissance to provide a major part of the collection front-end of the intelligence process for national and operational military users is the *raison d'être* of the NRO. After thoroughly examining a wide variety of alternatives, the Panel found that the NRO continues to be the right organizational answer to the nation's space reconnaissance needs in the future because it serves the national and military equities represented by the SECDEF and DCI.

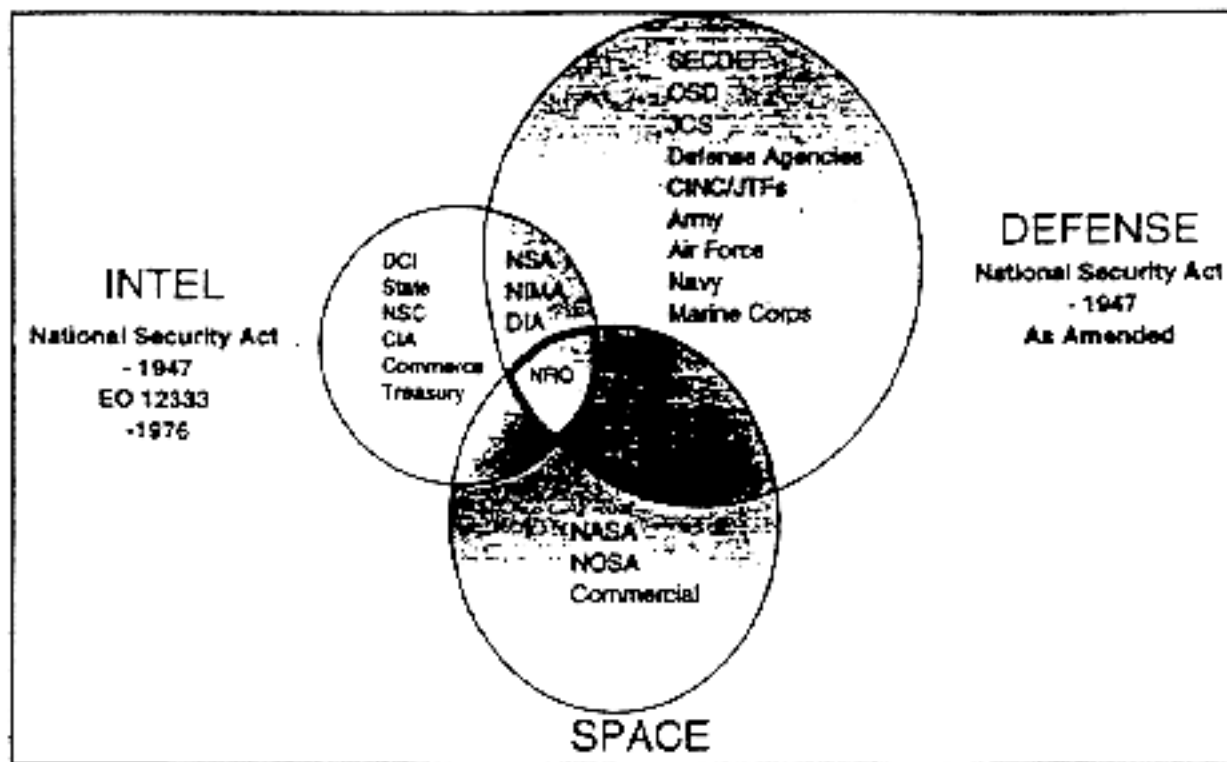


Figure 1. The NRO Joint Venture

The NRO today provides the U.S. with a preeminent national security advantage with its ability to conduct space surveillance and must continue to do so in the future. It has achieved its success through innovative technical achievements and generally efficient and effective management practices. Since the end of the Cold War, the NRO has continued to respond to the demands of the time. Changes dictated by an evolving world have required the NRO to modify its relationship with customers, to support military operations involving new coalition partners, to develop new integrated collection architectures, and to adjust its internal organization. The NRO continues to have an outstanding team of people from the Intelligence Community, the Department of Defense, and technical expertise and knowledge from the private sector. It should be maintained, as this capability will continue to be critical to the future of the United States.

While the Panel unanimously agreed on the importance of continuing the NRO, it nonetheless identified other major issues and provided recommendations for improvement. Taken in total, the Panel believes that these recommendations would lead to a streamlined and more effective NRO, enhancing its capability to support U.S. national security, foreign policy, and intelligence objectives in the 21st Century.

3. FINDINGS AND RECOMMENDATIONS

In the context of a constantly evolving and changing world in which the NRO must actively participate with, Figure 2 briefly summarizes the historical and future trends of NRO functional areas.

<i>ATTRIBUTE</i>	<i>PAST</i>	<i>PRESENT</i>	<i>21st CENTURY</i>
<i>Mission</i>	Denied Area Reconnaissance	Worldwide Intelligence	Information Superiority
<i>Systems</i>	Individual	Integrated	Fully Integrated
<i>Resources</i>	As Required	Budget Limitations	Increasing Budget Limitation
<i>Management</i>	Single Purpose	Integrated	Cost Effective
<i>Oversight</i>	Limited	Expanding	Joint SECDEF/DCI
<i>Acquisition</i>	Streamlined	Becoming Burdened	Best Practices
<i>Security</i>	Highly Compartmented	Greater Openness	Streamlined System
<i>Organization</i>	Air Force, CIA, Navy, Program Stovepipes	SIGINT, IMINT, COMM	Matched to Customers
<i>Requirements</i>	National Focus	+ Operational Focus	Near Continuous, Global Collection
<i>Customers</i>	Limited Set	Expanding Set	Continued Growth

Figure 2. NRO Changing World

Twelve issues are discussed in the Executive Summary. Five deal with the future mission of the NRO and how the organization deals with its customers, three deal with NRO business practices and how the NRO interacts with industry, two address internal NRO issues, and two are cross-cutting security proposals affecting the NRO's customers as well as private industry. Each is briefly addressed, along with appropriate findings and recommendations.

Issue 1: Is there an alternative to the NRO?

Findings: The Panel reviewed a wide range of alternative constructs for satisfying the current NRO mission. No other construct satisfied the political, organizational, functional or mission considerations as well as the joint venture relationship currently existing between the SECDEF and the DCI. Space reconnaissance will remain a vital component of U.S. foreign policy and intelligence activities because of the inherent and unique attributes of space-based collection. These attributes include, but are not limited to, real-time collection and reporting, denied area access, synoptic global coverage, and unintrusive access. As the nation continues to emphasize support to military operations, sensor-to-shooter applications will require unique space-based intelligence capabilities. At the same time, space reconnaissance will remain critical to national customers. The NRO's traditional performance in achieving system and architecture solutions that satisfy both national and military customers will remain an important national need for the future. After careful review and analysis, the Panel is convinced that, for both organizational and practical reasons, there is an imperative for an NRO of the future, but that the existing organization should be internally modified to continue to meet this need.

Recommendation: Although alternatives exist, none offer the same advantages as the current SECDEF-DCI arrangement. Continue the SECDEF-DCI NRO joint venture.

UNCLASSIFIED

Issue 2: What should be the mission of the NRO in the 21st Century?

Findings: The future mission of the NRO is to revolutionize space reconnaissance for a new level of intelligence support to enhance national security in the information age.

National security in the information age demands that the nation achieve and maintain global information superiority. Global information superiority will provide the strategic opportunity for better informed policy-making and for improved command and control of military operations. Information superiority can create opportunities for crisis avoidance by preemptive policy initiatives, as well as for decisive action up to and including combat operations, if conflict deterrence fails.

Global information superiority demands intelligence capabilities unimaginable just a few years ago. It will exist when there is nearly constant U.S. awareness of the ongoing activities and intentions of foreign principals and other international actions, and unambiguous early warning of threatening worldwide developments. Such a level of U.S. intelligence presence is possible with information age advances in both collection and analytical intelligence processes. Revolutionary advances in space reconnaissance are needed and these developments will shape the nation's 21st Century space reconnaissance needs.

NRO intelligence partners are already planning changes in their own mission objectives and business practices in response to the information age. These organizations are making major commitments to revolutionary new capabilities. All-source analysts will have direct access to enormous amounts of data, raw intelligence, finished intelligence, and worldwide open source materials of all kinds. The role of intelligence collection will fundamentally change to supporting globally integrated intelligence "data nets and/or warehouses" with quick response collection for special time-sensitive needs.

To enable U.S. global information superiority, space-based reconnaissance must provide affordable, near-continuous global coverage. National space reconnaissance of this order would provide constant global awareness, often allowing preemptive

action to contain threatening developments. It will also encompass the military needs for battlefield information dominance.

Recommendation: Adopt the following new mission statement for the NRO: Enable U.S. Government and military information superiority, during peace through war. The NRO is responsible for the unique technology, large scale systems engineering, development and acquisition, and operation of space reconnaissance systems and related intelligence activities needed to support global information superiority.

UNCLASSIFIED

Issue 3: Is the customer relationship satisfactory?

Findings: NRO customers generally fall under two categories: discipline managers (CIO, NSA, CMO) and consumers/users (DCI, DIA, CIA, SECDEF, White House, State, Energy, Unified Commands, military services, etc.). As a result, NRO customers come from a variety of backgrounds so customer understanding of system capabilities is relatively elementary and often confused by security and technology associated with NRO systems. For the most part, customers regard NRO products as "free goods" so that they do not consider cost and systems trades. In addition, the Gulf War marked a fundamental paradigm shift to coalition warfare and coalition partners have emerged as a new class of users who must also be satisfied. Even though the NRO is customer oriented and attempts to satisfy all its customers, its approach is fragmented, uneven, and lacking discipline for an ever-expanding user base.

Several NRO organizations are chartered to satisfy specific discipline requirements. NRO line units market new capabilities across the user spectrum sometimes without coordination with the appropriate disciplines. Practices are not always consistent. Efforts to satisfy end users may be at the perceived disadvantage of discipline managers having equities at stake. The result is often confusion that sometimes causes erosion of customer relationships.

Recommendation: Design an NRO customer support process that is inclusive, balanced, accountable in partnership with others who have legitimate equities, and is practiced with consistency. The process should be flexible, allowing for centralized management planning and oversight and decentralized execution. This process should identify lead responsibilities for managing customer support for current tasking and dissemination as well as future customer needs for new system designs, requirements, and architectures. Lead responsibilities for supporting national and military customers should be identified and carried out in coordination with discipline managers. There should be a provision for requirements/capability analysis and a strong emphasis on innovative and cost effective technical solutions to requirements.

Issue 4: Is support to military operations satisfactory?

Findings: An expanded role for space reconnaissance in support to military operations (SMO) was accepted by the Panel as a major factor in deriving the 21st Century mission of the NRO. This acknowledges the steady and expanding role of NRO support to military operations. The expanding role is a result of several factors including improved accuracy and timeliness of data collected, an understanding of the role of space intelligence in support of the warfighter, and other advances in information and weapons system technologies.

The Gulf War highlighted the achievements as well as the shortfalls in intelligence support to military operations. The Intelligence Community has addressed, but not completely resolved, many of these shortfalls and agree that dissemination of intelligence data and classification of data require continuing effort.

Defense Planning Guidance and other defense documentation characterize future operational military intelligence, surveillance, and reconnaissance (ISR) needs as battlespace information dominance. Two objectives are cited: dominant battlespace awareness with real-time, all-weather continuous coverage; and precision force capabilities with weaponry, situational awareness, knowledge (full-spectrum warfare), and sensor-to-shooter support. The exact implications of this vision of future military ISR needs for space reconnaissance are not totally clear because of uncertainties at this point over the relative roles of airborne reconnaissance systems, non-intelligence space surveillance systems, and space reconnaissance systems. Nevertheless, the space reconnaissance role will demand innovative technologies and robust architectures.

Recommendation: NRO SMO is satisfactory. However, the NRO must accommodate the functional needs of battlespace information dominance with near-continuous coverage architectures in partnerships with OSD, JCS, the Intelligence Community, and U.S. Space Command. With regard to security, the goal should be to downgrade classification and disseminate to SMO users the products essential to their operations. With respect to increasing an understanding of capabilities, the NRO should

UNCLASSIFIED

provide a DoD training program for Unified Commands on NRO systems capabilities and rate the CINCs on their use of NRO systems during exercises. Finally, in conjunction with other intelligence elements, the NRO should develop appropriate system simulations to support war fighting exercises.

UNCLASSIFIED

Issue 5: How should the NRO interact with DoD space organizations?

Findings: The NRO is first and foremost an intelligence organization with responsibilities to national and DoD customers. The NRO must integrate its activities into overall intelligence architectures. At the same time, there are important interrelationships between the NRO and DoD space activities in areas such as launch, technology, industrial base, communications, and the NRO need to use DoD systems such as the Global Positioning System as well as the DoD need to use products from NRO systems. The interrelationships work well at the operational and technical levels, but issues remain unresolved at the policy, architecture, and oversight levels. These issues include the degree of OSD oversight over the NRO, architectural integration of NRO systems into an overall national security space architecture, and the degree to which the NRO receives policy guidance from the DoD and Intelligence Community.

Recommendations: Refine and clarify the relationships between the NRO and DoD space organizations. For now, the construct of one architecture with two architects (NRO, DoD) should be continued, however, there must be assurance that cross-functional issues are worked appropriately. Clarify the relationship between DUSD(Space) and the NRO. Policy issues and specific architectural issues that cannot be resolved by the functional organizations can be addressed to the Joint Space Management Board. Develop additional interfaces with Air Force Materiel Command/Space and Missile Systems Center and closer relations with U.S. Space Command.

UNCLASSIFIED

Issue 6: Are business practices of the NRO still appropriate?

Findings: Since its inception, the NRO has used special business practices to increase the likelihood and speed of success. Those special business practices include:

- Streamlined management
- Empowered program manager
- Adequate and stable funding
- Flexible acquisition
- Dedicated support
- Internal competition
- Acceptability of failure
- Covertness
- Government-Industry partnership
- Top-quality personnel
- Cradle-to-grave management
- Objective specifications

These special business practices are not unique to the NRO. Other programs of extreme urgency and national importance, such as the Manhattan Project, Polaris, the F-117 Stealth Fighter, also used these special practices. While not unique, these practices have clearly been important to the success of the NRO.

In recent years, there has been an erosion of the benefits of special business practices. Management is far less streamlined with many new players in the process who can say "no" but not "yes." The program manager has far less latitude to make decisions. Funding priorities fluctuate markedly, and cancellation of at least a half dozen major programs in recent years testifies to a lack of long-term stability. To press on despite 11 failures before a first success--as the NRO did on the CORONA program--would be unthinkable today. Attracting and retaining the best people is very difficult if their home agencies view the NRO as out of their mainstream of personnel development.

The decrease in the use and effectiveness of special NRO business practices results, either directly or indirectly, in many of the shortcomings of the NRO evident today: reduced technical innovation, limitation to evolutionary vice revolutionary architectures, significant increase in staff and Contract Advisory and Assistance Services (CAAS), overly detailed

UNCLASSIFIED

specifications, proliferation of engineering change proposals (ECPs), increased costs, and erosion of confidence.

Business practices in the program specification phase tend to focus on "how" not "what." This focus generally leads to design refinement and constrains proposals to fit existing architectures. It also leads to increasingly detailed requirements and greater control of contractor reporting. Furthermore, this approach limits innovation by inhibiting competition. It often precludes the use of "best-of-breed" practices.

Erosion of business practices in the program development phase led to high costs and increased bureaucracy. The Government focus appears to be on contractor oversight and the configuration control process. Changing requirements have resulted in numerous ECPs instead of a focus on block changes. From a contractor perspective, the cumbersome oversight process has led to increased staff, slower reactions, and higher cost. Finally, contractors do not have an incentive to improve their processes or to reduce costs.

NRO products must interact with many more systems than in times past. This forces some degree of rigidity in systems specifications in order to comply with larger architectures. Nevertheless, the traditional business practices of the NRO are still appropriate today; they need to be strongly reinvigorated.

Recommendations: Reverse the decline in the NRO use of special business practices. Specifically:

- Use succinct statement of objectives (not detailed specifications) to promote increased competition and foster innovation.
- Reduce Government interfaces and increase contractor responsibility.
- Establish and empower Integrated Product Teams (IPTs) to conduct incremental tabletop reviews.
- Limit requirements for contractor-provided data and reports.

UNCLASSIFIED

- Give contractors incentive to identify value-added changes and cost reduction opportunities.

Finally, select a specific pilot program to be acquired under reinvigorated streamlined management practices. This pilot program should focus on a substantive intelligence need that meets the intent of the acquisition directives and is encumbered by only the bare minimum administrative, contracting, and oversight processes. Implement successes of the pilot program into mainline programs.

Issue 7: Is the NRO still an innovative organization?

Findings: The NRO has evolved from its beginnings in the 1960s, when everything it did was an innovative "first," to become a mature organization today with customers who expect and rely upon products for their success. While the current NRO architecture is the result of innovation 10 to 20 years ago, the architecture planned for the future is evolutionary in nature. This architecture reflects evolutionary innovation and is designed to assure delivery of critical products to "demand-pull" customers. The NRO must continue to provide those products.

Nevertheless, during the past decade the NRO has developed the enabling technology, systems concepts, engineering designs, and in some cases also flown the prototype hardware for very exciting, innovative new systems which could achieve revolutionary capabilities. The NRO pushed those new systems concepts through the budget process, but in the end at least half a dozen potentially revolutionary new systems were cancelled at the Intelligence Community and DoD decision forums. At these forums, customers prioritized continuation of current capabilities above risk-taking for revolutionary new systems. The DCI and SECDEF supported customer desires and the NRO complied.

But the not-yet-understood information superiority imperative of the next century will require, in addition to the continuation of expected service to today's customers, a revolutionary path to an entirely new innovative architecture. The current path, and the current process, will not get there. The imperatives for near-continuous global coverage, long dwell, and hard target characterization demand innovative solutions. As illustrated in Figure 3, those solutions must be worked on a new revolutionary path parallel with and additive to today's evolutionary path to continue to satisfy today's customers. Driven by risk aversion practices, the current acquisition process works well for evolutionary systems, but it limits competition. The evolutionary process will not satisfy the information superiority imperative which requires innovative solutions.

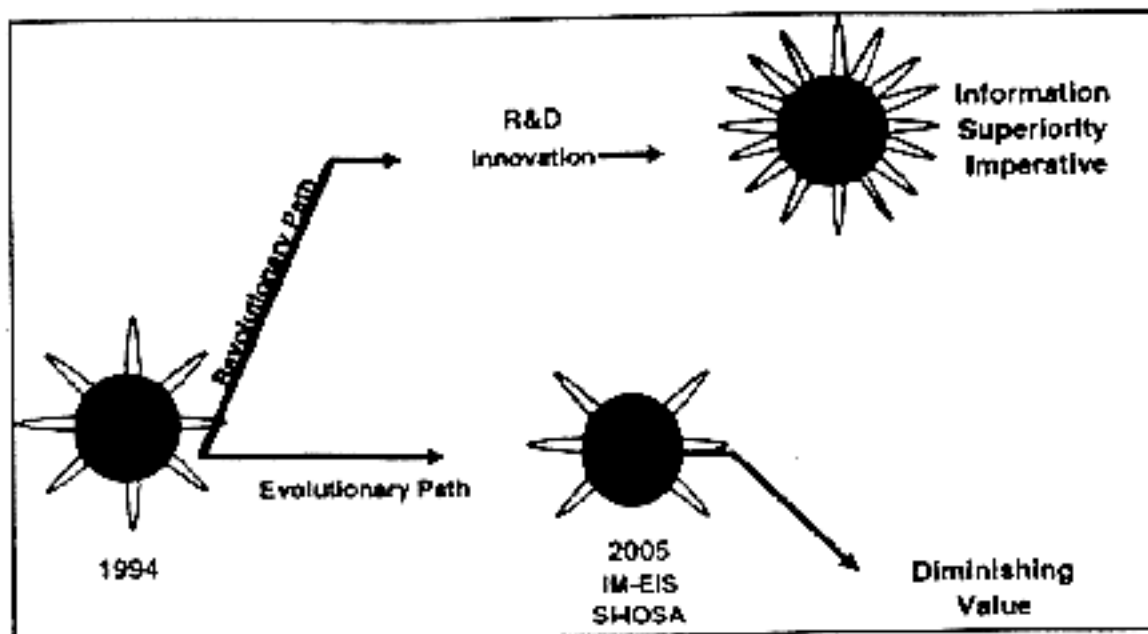


Figure 3. Revolutionary Path to an Innovative Architecture

The NRO needs a new approach if it is to successfully develop innovative new solutions with revolutionary capabilities. The NRO cannot wait for customers to produce the visionary requirements, to prioritize innovation, and to sacrifice current capability to chase a dream. Instead, the NRO must adopt and secure endorsement from the DCI and SECDEF for a major corporate commitment to innovation as a core element of its fundamental mission. The NRO should become the innovative technology engine for the Intelligence Community. No other element of the Community can fill that role.

Recommendations: To foster innovation as part of its core mission, the NRO should:

- Include a commitment to innovation as a core value and as part of its 21st Century mission.
- Reorganize to elevate the status, visibility, and power of the NRO organizational entity responsible for innovation.
- Increase funding for Reconnaissance Technology/Advanced Development (RT/AD) to focus on new concept development, demonstrations, prototypes, and flight tests.

Issue 8: Should NRO systems engineering be strengthened?

Findings: Systems engineering within the system project offices (SPOs) appears to be effective. Within individual SPOs as well as within the SIGINT, IMINT, and COMM Directorates, systems engineering is adequately accomplished. However, because the existing SPOs pursue evolutionary development, technology insertion and innovation are fragmented. There does not appear to be a strong, cross-organization systems engineering capability. Integration of NRO systems into an overall "system of systems" concept is lacking, yet will be required in the future. Top-down systems integration will provide future improvements in cross-queuing and is necessary to ensure future data relay capabilities satisfy both SIGINT and IMINT current and projected requirements.

The lack of integration across system assets also makes it difficult for users (and oversight forums) to understand all capabilities. As a result, it is difficult to make trades and to address requirements coherently. The Panel felt integrated systems engineering (NRO-level integration across Directorates as well as integration with non-NRO systems) should be enhanced. An NRO-level activity is needed to focus on technology insertion, NRO-level architectural development, and establishment of an NRO "system of systems" capability. This capability would also contribute to coherently coordinating the requirements process with users.

Recommendations: Establish a single NRO-level Systems Engineering Authority and an associated process for ensuring systems fit into the approved architecture. The focus of this position would be on a "system of systems" approach, to engineer across systems where logical and to advocate technology insertion into architectural alternatives.

The systems engineer would also serve as the NRO-level Architectural Authority. The office would be responsible for NRO top-level systems integration and for establishing architectural standards or "building codes" and focus on capabilities across the entire space architecture. In this sense, the Architectural Authority would be the lead NRO strategic planner. The position would also be the primary NRO interface for coordinating with DUSD(Space) and the DoD Space Architect.

UNCLASSIFIED

Issue 9: What security system is appropriate?

Findings: Fundamental to the NRO is its security system. A recent Joint CIA-DoD Inspectors General (IG) Report stated that there were "numerous examples of overclassification and use" of the compartment for management instead of security purposes. The panel heard evidence consistent with the conclusion of the IG report.

There have been several attempts in the past to scrub the NRO security system and reduce its scope and the amount of information covered, and there is some evidence of success in doing so. Still, the practice of using the NRO security system as something more than a security compartment continues. There remains a perception by many outside the NRO that the NRO security system is selective and arbitrarily restricting what is seen as legitimate access to NRO information.

Recommendation: Accelerate the pace at which planned security changes are being made. Dramatically shrink the current security system to safeguard the minimum amount of data that requires protection.

UNCLASSIFIED

Issue 10: Should NRO contractor relationships continue to be classified?

Findings: The fact of an NRO relationship with contractors has traditionally been classified in the NRO security system. There is no longer any reason to universally apply such a rule.

The protection of the NRO-corporate relationship in the NRO security system is a costly practice that limits legitimate communication across programs and restricts competition for NRO business. It has outlived its original purposes. Historically, the NRO protected its contractor relationships to protect technology advantages, conceal the breadth and scope of collection activities, and minimize threats from foreign intelligence services. In some cases, an added benefit has been reduced systems costs.

Recently, the Acting DNRO directed a thorough re-evaluation of this practice based on two primary criteria: (1) the ability to protect appropriate technology, organizations, and operations, and to preserve cover arrangements consistent with sources and methods techniques; and (2) the ability to preserve the full range of contracting options at the unclassified, classified, and compartmented levels.

The Panel solicited comments from companies currently eligible to do business with the NRO. Most companies would opt for an open relationship with the NRO. Some companies might want to maintain a covert relationship with the NRO for business or safety reasons. However, continued classified relationships must be based on national security considerations.

If NRO-corporate relationships are allowed to be overt, we believe that the number of companies which initially expressed a desire to have a covert relationship with the NRO would decline steadily over time.

Recommendation: Proceed on an accelerated basis to decompartment/declassify the NRO-corporate relationships. Exceptions should be on a limited case-by-case basis.

Issue 11: Do current military and civilian personnel practices adequately support the NRO?

Findings: The NRO personnel base is made up primarily of Navy and Air Force military personnel and Navy, Air Force and CIA civilians. Historically, the NRO has been the beneficiary of special treatment by their respective personnel systems. That situation is now being eroded.

In the past, Air Force and Naval officers entered at junior grades and were usually "by name" requested and/or recommended. They often stayed through promotion to O-6, an Air Force Colonel or Navy Captain. Recent assignment, rating, and promotion policies of both services increasingly require assignment outside the NRO for officers to be competitive for promotion. Furthermore, there appears to be significant benefit to both the military service and the NRO when career assignments include both Service-wide and NRO rotational assignments.

With respect to civilians, the NRO gains employees from three systems; CIA, Air Force, and Navy. The largest contiguous group is CIA civilians. Multiple personnel systems are difficult to administer within a single organization, and the DNRO has little control over the systems, policies, and practices that govern NRO's human resources. The Panel recognizes the potential benefits that come from the overall CIA manpower base, and was cautious not to alter the fundamental arrangement. The Panel also saw little benefit in moving personnel to a new appointing authority--especially mindful that there was not large-scale employee acceptance for such a move. The Panel recognizes the need to create additional Memoranda of Agreement concerning civilian personnel, such as are outlined in the NRO response to the recent Joint CIA-DoD IG Draft Inspection Report.

Recommendation: The NRO and the Services should select the appropriate policy medium and issue guidelines for personnel policies to support the NRO. Regarding civilians, the Panel recommends establishing Memoranda of Agreement (MOAs) between the DCI and the SECDEF as well as between the DNRO and the Executive Director of the CIA establishing the authorities and responsibilities of the DNRO with respect to civilian personnel management arrangements. These MOAs should focus on arrangements

UNCLASSIFIED

for DNRO oversight of all personnel and manpower actions affecting size, accessions, promotions, grievances, awards, reassignments, and separations from the workforce, and oversight of the NRO's equal employment opportunity (EEO) process. These MOAs should also provide for DNRO participation on applicable CIA Senior Intelligence Service promotion boards.

UNCLASSIFIED

UNCLASSIFIED

Issue 12: Is the current NRO internal organization well matched to the future?

Findings: The NRO organization experienced significant change in 1989 and again in 1992 to address issues such as internal competition, connection to intelligence customers and military operators, and the need for cost-effective integrated architectures. Those reorganizations succeeded in addressing and resolving the issues, and today the NRO is a mature organization, structured in parallel to its principal customer base, collocated in a central facility with integrated program offices, and largely rid of destructive internal competition.

But the environment continues to change in ways which demand review of the appropriateness of the current organizational structure. The dominance of large, expensive, ongoing programs, each of which carries a long operations and maintenance (O&M) tail, limits the flexibility to pursue new ideas. The customer base continues to grow with the SMO needs ever expanding. Integration of heretofore separate programs into an integrated "system of systems" has become, perhaps, the most critical task of all.

The environmental changes give rise to six distinct organizational issues that the Panel identified as impediments to accomplishing the 21st Century NRO mission:

- Lack of a clear organizational focus for large-scale systems engineering for integration of components into the "system of systems."
- Dispersion of customer support interfaces throughout many elements of the NRO.
- NRO is no longer universally accepted as being at the leading edge of technology.
- Organizational champions for innovation are either nonexistent or lacking influence.
- Increased staff and processes slow decision making.

UNCLASSIFIED

- The role of the Plans and Analysis (P&A) Office is unclear in the wake of the 1992 reorganization when integrated SIGINT, IMINT, and COMM planning went to the new Directorates.

Recommendation: To resolve those issues and establish an NRO organizational structure appropriate for its future, the Panel recommends the following steps be taken. A recommended organizational chart incorporating these changes is illustrated in Figure 3.

- Increase the visibility and stature of technology and innovation in the NRO by elevating those functions into a new Directorate of Future Technologies and Applications co-equal to the SIGINT, IMINT, and COMM Directorates.
- Reinvigorate the systems engineering function in P&A under the oversight of the NRO Technical Director to accomplish the integration of NRO systems into an integrated "system of systems." To reflect this reenergized responsibility, change the name of P&A to Systems Engineering, Plans, and Analysis.
- Clarify and enhance customer support with centralized guidance, planning, and oversight and decentralized execution.
- Establish a Senior Advisory Board to provide advice to the DNRO.
- Consolidate administrative, staff, and support functions into a Finance and Administration Office under the leadership of the Chief Financial Officer. This Office should include ROM, MS&O, and staff functions

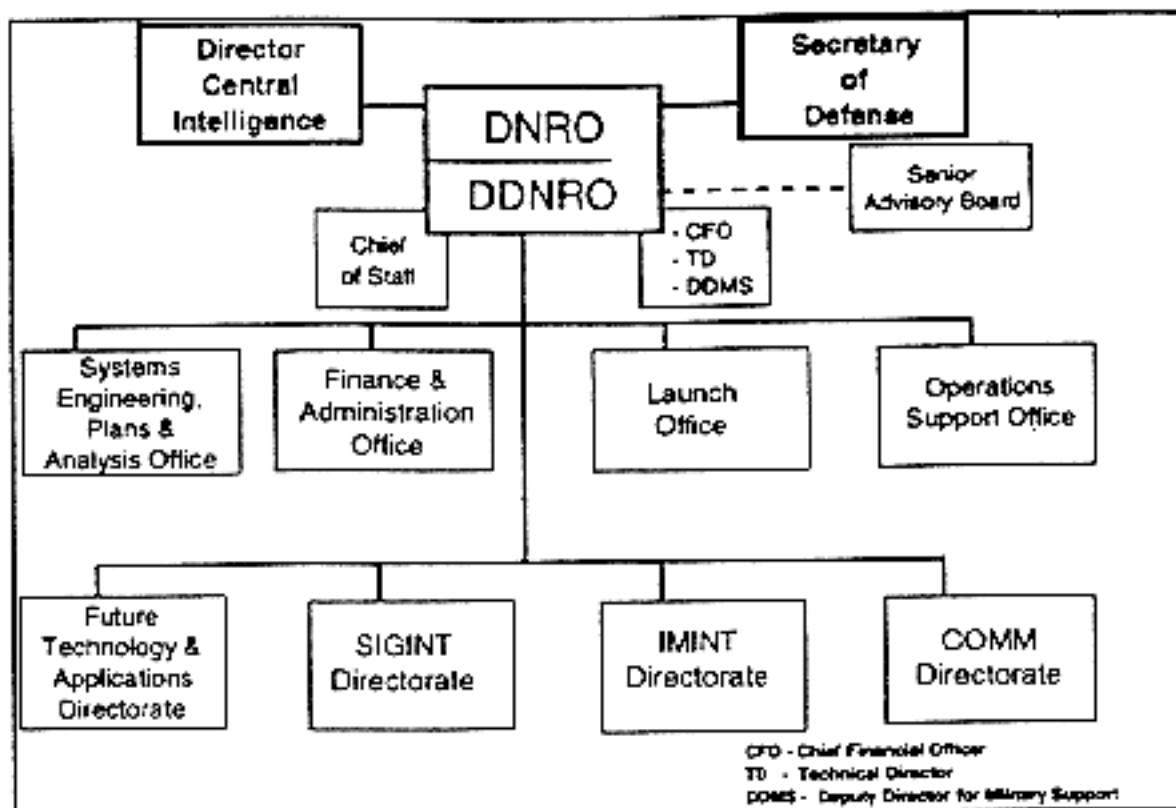


Figure 3. Recommended Organizational Chart

4. CONCLUSION

The Panel considers the NRO a valuable national asset and clearly the world leader in providing intelligence capabilities from space. NRO capabilities underpin the role the U.S. plays in world affairs and are critical elements in maintaining U.S. influence around the globe. Adaptability to change and the ability to deal positively with internal and external assessments are two keys to the continuing success of the NRO.

The Panel suggests its recommendations be discussed throughout the NRO so that personnel understand the recommendations and are encouraged to provide value-added feedback. The Panel feels implementation of its recommendations will go a long way toward sustaining the NRO's much needed contribution to information superiority into the 21st Century.

UNCLASSIFIED

APPENDIX I-1

JEREMIAH PANEL INTERVIEWEES
(in chronological order)

Hon Lynn Hansen	Director, National Intelligence Council
VADM David Frost (USN)	Deputy Commander in Chief, U.S. Space Command
Lt Gen James Clapper (USAF, Ret)	Former Director, DIA
Mr Jeffrey Harris	Former Director, NRO
Mr Robert Fuhrman	Former President and Chief Operating Officer, Lockheed Corp
Mr James Woolsey	Former Director of Central Intelligence
Dr Robert Hermann	Former Director, NRO
Mr Robert Davis	Deputy Undersecretary of Defense (Space)
Representative Larry Combest	Congress, Chairman of the HPSCI
Representative Norman Dicks	Congress, HPSCI member
Dr Vance Coffman	Vice-President, Lockheed-Martin Corp
Senator J. Robert Kerrey	Congress, SSCI member
Mr Duane Andrews	Former Assistant Secretary of Defense (C'I)
VADM Michael McConnell (USN, Ret)	Former Director, NSA
Mr Keith Hall	Acting Director, NRO
RADM Robert Geiger (USN, Ret)	Former Navy Program Director
Dr Larry Gershwin	National Intelligence Officer
Dr John Foster	Former Defense Director for Research and Engineering
Gen Thomas Moorman, Jr.	Vice Chief of Staff, USAF

UNCLASSIFIED