**NATIONAL RECONNAISSANCE OFFICE**
14675 Lee Road
Chantilly, VA 20151-1715

6 February 2012

Mr. John Greenewald
[redacted]

Dear Mr. Greenewald:

This is in response to your e-mail dated 02 June 2009, received in the Information Management Services Center of the National Reconnaissance Office (NRO) on 03 June 2009. Pursuant to the Freedom of Information Act (FOIA), you are requesting a copy of "*...the full Jeremiah report, assumedly titled, 'Report to the Director, National Reconnaissance Office, Defining the Future of the NRO for the 21st Century. Final Report'...*"

Your request has been processed in accordance with the FOIA, 5 U.S.C. § 552, as amended, and the NRO Operational File Exemption, 50 U.S.C. § 432a.

A thorough search of our records and databases located one document consisting of 205 pages responsive to your request. This document is being released to you in part.

Material redacted is denied pursuant to FOIA exemptions:

(b)(1) as properly classified information under Executive Order 13526, Sections 1.4(c)and (g); and (b)(3) which applies to information specifically exempt by statute, specifically 50 U.S.C. § 403-1, which protects intelligence sources and methods from unauthorized disclosure

(b)(3) which applies to information specifically exempt by statutes; 10 U.S.C. § 424 which states: "Except as required by the President or as provided in subsection (c), no provision of law shall be construed to require the disclosure of (1) The organization or any function...(2) ... number of persons employed by or assigned or detailed to any such organization or the name, official title, occupational series, grade, or salary of any such person...

(b) Covered Organizations...the National Reconnaissance Office"; the Central Intelligence Agency Act of 1949, 50 U.S.C. § 403, as amended, e.g. Section 6, which exempts from disclosure information pertaining to the organization, functions, including those related to the protection of intelligence sources and methods, names, official titles....of personnel employed by the Agency; and PL 86-36, which applies to the organization or any function of the National Security Agency,..or the names, titles, salaries...of the persons employed by such agency...; and

(b)(6) Which applies to records which, if released, would constitute a clearly unwarranted invasion of the personal privacy of individuals.

The FOIA authorizes federal agencies to assess fees for record services. Based upon the information provided, you have been placed in the "educational/scientific/media" category of requesters, which means you are responsible for duplication fees (.15 per page) exceeding 100 pages. In this case, the assessable fees of $15.75 for duplication of 105 pages do not meet our minimum billing threshold of $25.00; therefore, all fees are being waived. Additional information about fees can be found on our website at www.nro.gov.

You have the right to appeal this determination by addressing your appeal to the NRO Appeal Authority, 14675 Lee Road, Chantilly, VA 20151-1715 within 60 days of the above date. Should you decide to do this, please explain the basis of your appeal.

If you have any questions, please call the Requester Service Center at (703) 227-9326 and reference case number F09-0086.

Sincerely,

Stephen R. Glenn
Chief, Information Access
and Release Team

Attachment: *Report to the Director, National Reconnaissance Office, Defining the Future of the NRO for the 21st Century, Final Report*

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# Report to the Director

# National Reconnaissance Office

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

# Final Report

## 26 AUGUST 1996

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# 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 M. 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





NRO APPROVED FOR RELEASE 6 FEBRUARY 2012

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# I. EXECUTIVE SUMMARY

## 1. INTRODUCTION AND PURPOSE

(U) 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.

(U) 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.

(U) 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.

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

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

The Panel did not address programmatics, 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.

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

- (U) Mission and Strategic Vision
- (U) Customers
- (U) Relationships with New Organizations
- (U) Business Practices
- (U) Benchmarking
- (U) Internal Organizational Structure
- (U) Infrastructure
- (U) Security
- (U) 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.

(U) 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).

(U) This Executive Summary presents principal study findings

## 2. PRINCIPAL STUDY FINDINGS

(U) 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.

(U) 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'etre 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.

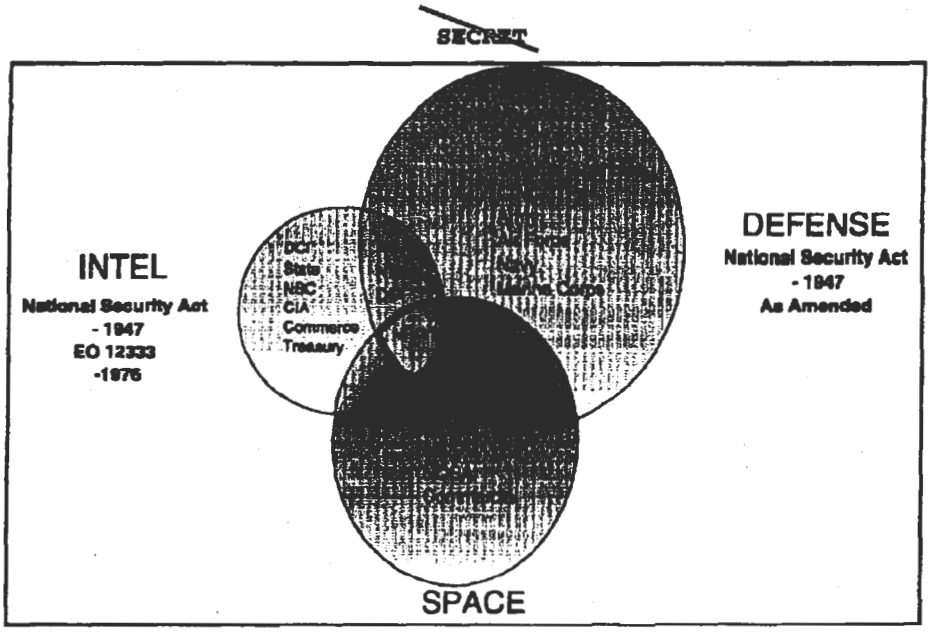


**Figure 1.** (U) The NRO Joint Venture

(U) 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.

(U) 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

(U) 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.

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

**Figure 2.** (U) NRO Changing World

(U) 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:** (U) Is there an alternative to the NRO?

**Findings:** (U) 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 un-intrusive 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:** (U) Although alternatives exist, none offer the same advantages as the current SECDEF-DCI arrangement. Continue the SECDEF-DCI NRO joint venture.

**Issue 2:** (U) What should be the mission of the NRO in the 21st Century?

**Findings:** (U) 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.

(U) 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.

(U) 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 ac tions, 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.

(U) 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.

(U) 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:** (U) 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 and innovative technology, large scale systems engineering, development and acquisition, and operation of space reconnaissance systems and related intelligence activities needed to support global information superiority.

**Issue 3:** (U) Is the customer relationship satisfactory?

**Findings:** (U) NRO customers generally fall under two categories: discipline managers (CIO/NIMA, 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.

(U) 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:** (U) 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:** (U) Is support to military operations satisfactory?

**Findings:** (U) 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.

(U) 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.

(U) 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:** (U) NRO support to military operations (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 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.

**Issue 5:** (U) How should the NRO interact with DoD space organizations?

**Findings:** (U) 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:** (U) 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.

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.

**Issue 6:** (U) Are business practices of the NRO still appropriate?

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

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

(U) 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.

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

(U) 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.

(U) 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.

(U) 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:** (U) Reverse the decline in the NRO use of special business practices. Specifically:

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

- (U) Limit requirements for contractor-provided data and reports.

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

(U) 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:** (U) Is the NRO still an innovative organization?

**Findings:** (U) 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.

(U) 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.

(U) 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.

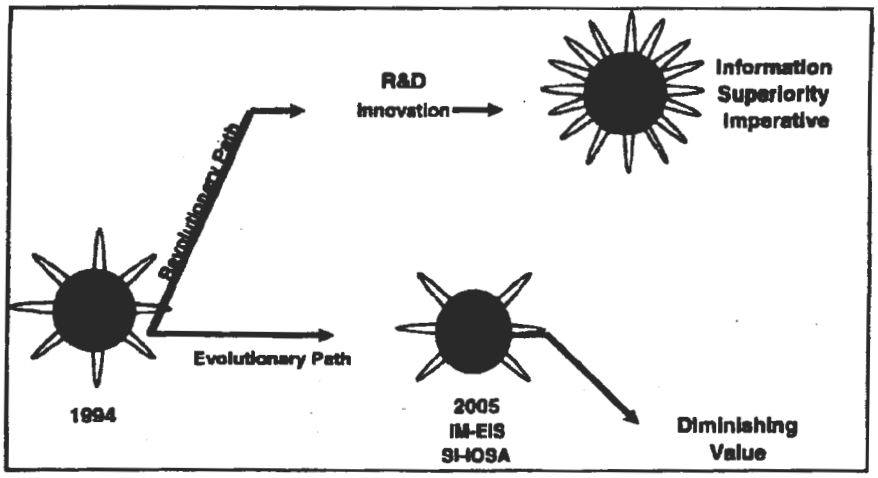


**Figure 3.** (U) Revolutionary Path to an Innovative Architecture

(U) 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:** (U) To foster innovation as part of its core mission, the NRO should:

- (U) Include a commitment to innovation as a core value and as part of its 21st Century mission.

- (U) Reorganize to elevate the status, visibility, and power of the NRO organizational entity responsible for innovation.

- (U) Increase funding for Reconnaissance Technology/Advanced Development (RT/AD) to focus on new concept development, demonstrations, prototypes, and flight tests.

**Issue 8:** (U) Should NRO systems engineering be strengthened?

**Findings:** (U) 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.

(U) 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:** (U) 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.

(U) 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.

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**Issue 9:** (U) What security system is appropriate?

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

(U) 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:** (U) 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.

**Issue 10:** (U) Should NRO contractor relationships continue to be classified?

**Findings:** (U) 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.

(U) 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.

(U) 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.

(U) 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.

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

**Issue 11:** (U) Do current military and civilian personnel practices adequately support the NRO?

**Findings:** (U) 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.

(U) 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.

(U) 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:** (U) 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

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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.

**Issue 12:** (U) Is the current NRO internal organization well matched to the future?

**Findings:** (U) 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.

(U) 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.

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

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

- (U) 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:** (U) 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.

- (U) 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.

- (U) 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 re-energized responsibility, change the name of P&A to Systems Engineering, Plans, and Analysis.

- (U) Clarify and enhance customer support with centralized guidance, planning, and oversight and decentralized execution.

- (U) Establish a Senior Advisory Board to provide advice to the DNRO.

- (U) 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

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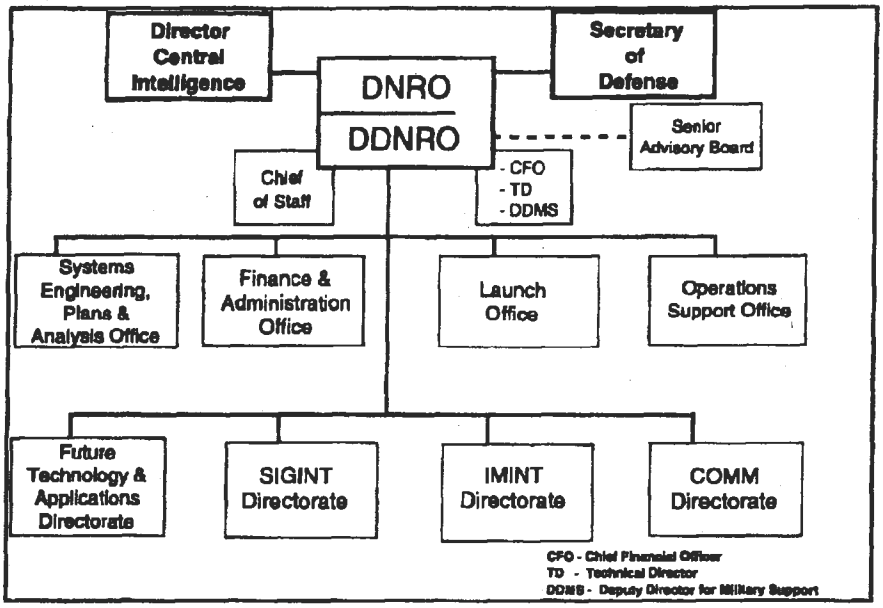


**Figure 3.** (U) Recommended Organizational Chart

## 4. CONCLUSION

(U) 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.

(U) 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.

## APPENDIX I-1

## (U) 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(C³I) |
| 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 |

# II. MISSION AND STRATEGIC VISION

## 1. INTRODUCTION

(U) As the first of the nine Jeremiah Panel Working Groups formed, the Mission and Strategic Vision Working Group conducted a top-level review to address the continued need for an NRO-like organization and to define its mission into the 21st Century. The Panel addressed the mission issue first in order to provide direction and purpose not only to the organization as a whole, but also to the other Working Groups in particular for their immediate tasks at hand. The Working Group conducted a top-down approach in which the nation's future need for space reconnaissance was the primary consideration in determining a new course for the NRO. Space reconnaissance was regarded as the imperative; the current responsibilities of the NRO were not. In fact, the imperative for the continued existence of the NRO in the 21st Century was examined in great detail with no *a priori* conclusion in mind.

(U) The Working Group membership comprised those experienced individuals who could interact real-time on the issues, positions, and rationales held by various Government organizations, particularly those who are, in any way, stakeholders in the future mission and responsibilities of the NRO. Government organizations internal and external to the NRO were represented. The members who actively participated and the organizations they represented are listed in Appendix II-1.

## 2. METHODOLOGY

(U) The Working Group's effort to understand if the NRO would remain a national imperative in the 21st Century required several iterative clarification sessions with the Panel, which identified this question as the first mission issue to be resolved. Next, the Working Group explored several alternatives to a mission and vision for the NRO. Although the operative NRO mission was used as a baseline, the Working Group essentially took a "blank-page" approach to explore mission issues.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The Panel was of one mind in its belief that the future security of the nation depends on its ability to conduct reconnaissance from space. The NRO is truly unique organization in that it 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 staff 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'etre 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.

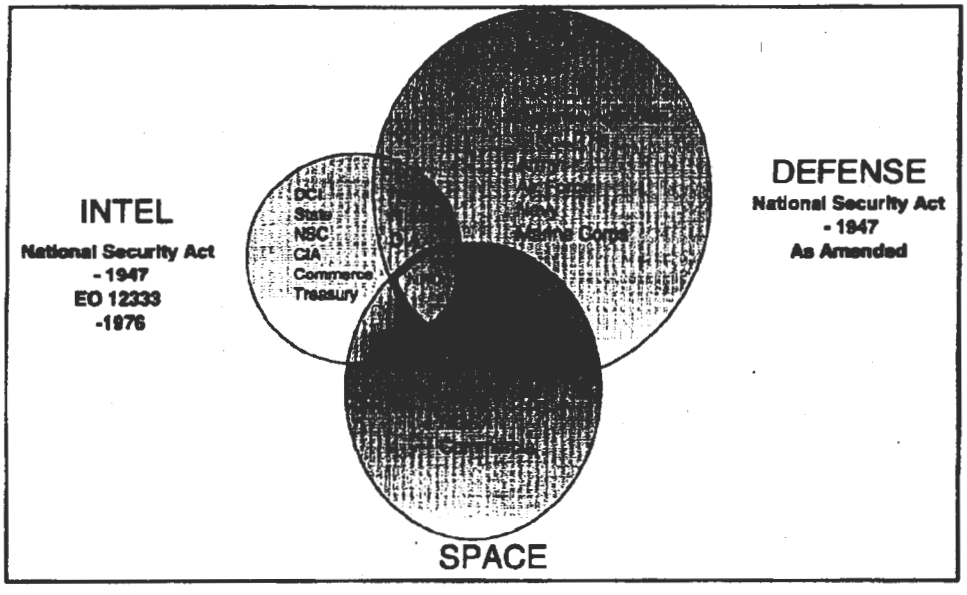


**Figure 1.** (U) The NRO Joint Venture

(U) Given the imperative to continue the existence of the NRO as the Nation's space reconnaissance organization, the Panel then examined the current NRO mission and developed several alternatives to change the mission including both limiting it and expanding it. After receipt of several important internal inputs, extensive review of options with the Working Group, and considerable debate, the Panel agrees that the mission of the NRO must change as follows.

(U) The Panel recommends that the mission of the NRO in the 21st Century should be **to enable U.S. Government and military information superiority, during peace through war. The NRO is responsible for the unique and innovative technology, large scale systems engineering, development and acquisition, and operation of space reconnaissance systems and related intelligence activities needed to support global information superiority.** In this vein, the Panel also recommends that the strategic vision of the NRO in the 21st Century should be **to revolutionize space reconnaissance to enable U.S. global information superiority.**

## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) Is there an imperative for an NRO-like organization to conduct space reconnaissance into the 21st Century?

**Findings:** (U) Several false starts on the issue of whether the NRO would remain a national imperative in the 21st Century had to do with associating the NRO's traditional successful performance with its uniqueness. The Panel findings exposed and documented the fact that the military services and other agencies, for priority projects, have set up black program offices, empowered them with "streamlined" acquisition practices, and enriched them with sufficient resources to weather failures in solving high risk technology problems. And all achieved remarkable successes. The NRO is not unique, nor an imperative, solely because of its streamlined business practices.

(U) The Panel finding on why the NRO will remain a national imperative lies in the joint venture relationship between the SECDEF and DCI, who essentially co-sponsor the NRO. The NRO is an imperative because national security requires a national organization that attracts and retains a work force highly skilled in both space systems and intelligence disciplines; manages the development, acquisition and operation of space systems for long-term intelligence mission objectives; establishes stable relationships and mutual confidence with industry; and, simultaneously and in balance, contributes to the statutory responsibilities of the SECDEF and DCI to provide responsive intelligence to the official constituents of each. The Panel could find no other reasonable organizational solution for meeting all of these needs in an efficient and effective way. (The Venn diagram in Figure 1 highlights the NRO's unique and imperative mission.)

(U) The current NRO mission statement--developed by a DCI Task Force chaired by Mr. Robert Fuhrman in 1992--defines the NRO mission first in terms of its space intelligence collection mission and second in terms of the responsibilities of the NRO. The Panel accepted the two-level NRO mission as a model for the proposed mission statement. The two-level model also served as a framework for research and deliberations and became the basis for this section of the report.

(U) Since 1992, the operative mission of the NRO has been: "Ensure the U.S. has the technology and overhead assets it needs to acquire superior world-wide intelligence in war and peace. To this end, the NRO is responsible for conducting research and development and for acquiring and operating overhead systems for collection of intelligence". At the start, the Panel accepted the need to change the mission of the NRO in view of the monumental geopolitical, technology, and national policy changes that have occurred even since 1992. The Panel regarded forecasting the nation's priority space reconnaissance need for the 21st Century as a major part of the effort and a major challenge. In particular, the Panel thought it was necessary to understand the demand for innovative technology and radically new architectures from what is now programmed by the NRO. In recommending a new mission for the NRO, the Panel thought it was important to understand whether the next generation space reconnaissance solutions should be about *evolutionary* or *revolutionary* technology management.

(U) At the outset of this effort, it was not clear whether all of the baseline NRO responsibilities should continue to be exclusive NRO responsibilities, should no longer be NRO responsibilities, or if new responsibilities should be added. Following determination of the nation's need for space reconnaissance in the future, and in context with this finding, the Panel focused on several issues of organizational responsibility:

- (U) The implications of diverging military intelligence needs and national intelligence needs on NRO acquisition practices.
- (U) The NRO's apparent slowdown in fostering innovative technology.
- (U) The need for the NRO to continue to operate mature space programs.
- (U) The need for the NRO business practice of cradle-to-grave program management.
- ~~(S/B)~~ Sanctioning data exfiltration as an NRO responsibility.

• (U) Expanding the NRO's mission to become the Intelligence Community's end-to-end architect.

(U) The Panel believed that forecasting the nation's space reconnaissance need to support enhanced national security in the 21st Century was critical to its assignment and, therefore, devoted considerable time to this issue. It was accepted, after exploring alternatives, that the mission of the NRO should remain, above all, space reconnaissance. The Panel felt the key to understanding the nation's future space reconnaissance need was to understand the 21st Century total reconnaissance mission.

(U) The 21st Century intelligence mission is currently a very active subject with change offerings from Government-commissioned study groups, Congress, and public interest groups, and from within the Intelligence Community itself. The observations and recommendations of these efforts were reviewed and are selectively addressed in this report.

(U) In addition to reviewing the many studies on the future mission of intelligence, the Panel attempted to project the implications of several on-going trends in intelligence and technology that were deemed relevant to the future space reconnaissance mission. Specifically, the Panel explored the implications of the National Security Council's redirection of national intelligence as specified in the 1995 Presidential Decision Directive on intelligence priorities (PDD-35); the expanding role of intelligence, particularly space and airborne reconnaissance, in support of military operations (SMO); and the information age revolution.

(U) PDD-35 and subsequent DCI amplifying guidance define the intelligence mission in terms of three sets of objectives:

• ~~(S)~~ [redacted] b1

• ~~(S)~~ [redacted] b1

• ~~(S)~~ [redacted] b1 b3

~~(C)~~ While these intelligence needs will likely be priority needs well into the next century, the Panel did not accept them as the 21st Century core space reconnaissance need. These intelligence needs are associated with the evolutionary space reconnaissance enhancements now programmed rather than drivers for new innovative space systems or alternative architectures.

(U) The Panel accepted an expanded role for space reconnaissance for SMO at the outset as being a major factor for deriving the 21st Century NRO mission. In view of this development, the Panel explored in some detail the question of whether divergence in required system capabilities would prohibit common system solutions for national and military intelligence needs. If so, the SECDEF-DCI joint venture would come into question. It would raise the issue of whether the NRO mission should be bifurcated, possibly transferring the SMO mission to the Defense Department. As will be explained, the finding is that this likely will not be the case; rather, on a functional level future national and military space reconnaissance needs will coalesce.

~~(S)~~ Joint Staff documentation explains that the nature of future military operational intelligence, surveillance, and reconnaissance (ISR) needs are characterized as battlespace information dominance with two objectives: [redacted] b1 the relative roles of surface systems, airborne systems, non-intelligence space surveillance systems, and space reconnaissance systems are uncertain at this point. Nevertheless, the space reconnaissance role will be major and demand innovative technologies and robust architectures.

~~(C)~~ The national security implication of the information age revolution is the nation's need for global information superiority. Global information superiority will provide the strategic opportunity to make security and stability more attainable through better informed policymaking, and to render U.S. reactions to adverse international developments less dependent on the traditional use of force. Information superiority can create opportunities for crisis avoidance by

preemptive policy initiatives, as well as for decisive combat operations if conflict avoidance fails.

(S) The global information superiority focus is on intelligence capabilities unimaginable a few years ago. It exists when [redacted] b1 [redacted] The Panel believes these developments are the most important shaping factors for the nation's 21st Century space reconnaissance need.

(S) Revolutionary implications of the information age on the intelligence mission are already evident in several cases and will continue in dynamic fashion. The Panel was greatly influenced by the planned changes in mission objectives and business practices [redacted] b1 [redacted]

(S) Information age based advances in intelligence analytical processes will be major. Inexpensive mass storage, powerful information management tools, and even more robust information processors will allow analysts direct access to enormous amounts of data, raw intelligence, finished intelligence, and worldwide open-source materials of all types. In this era, the role of intelligence collection will fundamentally change to support globally integrated intelligence "data warehouses" and direct response collection for special time-sensitive needs.

(C) [redacted] b1 [redacted]

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[redacted] b1

[redacted] b1

**Recommendation:** (U) The Panel believes that there is an imperative for an NRO in the 21st Century based on the needs of both the SECDEF and the DCI for affordable near-continuous global coverage to enable U.S. global information superiority. Further, the Panel believes the Nation can afford only one space reconnaissance activity, and to be successful that activity must have the support, leadership, and resources of both the SECDEF and the DCI. The NRO should continue as a joint venture between the SECDEF and the DCI.

**Issue 2:** (U) What should be the mission and responsibilities of the NRO in the 21st Century?

**Findings:**

**** Responsibility for Unique and Innovative Technology***

(S) The Panel accepted the necessity for the NRO to continue its traditional responsibility of advancing technology in support of the overall mission of developing, acquiring, and operating reconnaissance spacecraft. However, the modifier "unique" was added to reflect radical changes in the space technology environment over the last decade. [redacted] b1

[redacted]

(S) The Panel addressed the issue of the NRO's apparent slowdown in fostering innovative technology for alternative capabilities to established programs. Several Panel members speculated this slowdown is a result of the distraction and resource burden of operations. This premise opened the mission issue of whether operations aspects of mature programs should be transferred to others in favor of an increased focus on systems and technology development.

(S) The Panel noted early on that all NRO architectures now under development are essentially evolutionary technology designs and that, at a system level, no revolutionary alternatives are programmed. The Panel agreed that innovative technology development is not now a major NRO agenda at a program level. However, the finding on the cause of the NRO innovative technology "slump" was not a fundamental conflict between the technology and operations missions, but rather a series of external circumstances and internal management cultural biases.

(S) The Panel believes the evolutionary designs of the b1 [redacted] architectures now under development result from the dominance of "user needs" in acquisition decisions and from budget constraints that prohibit serious investment in

competitive solutions. Designing to user validated needs always results in evolutionary advances. However, the Panel also believes that the management culture of the major programs has matured to the point at which risk avoidance dominates over innovation.

(C) However, there is a more fundamental reason for the NRO innovative technology slowdown: lack of a national awareness--thus lack of a mandate--for revolutionary space reconnaissance systems and architectures. This prevailing circumstance underlies the budget constraints and conservative demands of users. It justifies risk avoidance program management. This situation will change, in time, with the [redacted] b1

[redacted]

**** Responsibility for Systems Engineering***

(U) The growing importance of systems engineering was highlighted repeatedly in both Working Group and Panel deliberations. This point was also made forcefully by several guest interviewees. NRO systems are growing in complexity. The NRO is committed to consolidate and integrate "like" systems, and to extend and integrate NRO systems with select operational user systems when enhanced services are required. The NRO now is in the business of engineering a "system of systems." The Panel considered this significant and included systems engineering in the NRO's responsibilities statement in order to emphasize that this traditional task of the NRO should be a major business line.

(U) Because the NRO is highly skilled and experienced in systems engineering, the Panel considered expanding the NRO's mission to become the Intelligence Community's end-to-end architect. Arguments on the pro side, in addition to the NRO's expertise, included the points that: the Intelligence Community lacks such an agent; the Intelligence Community needs to integrate across programs; and the NRO is "purple" in terms of "INTs" and all-source producers. The dominant argument on the con side was the observation that the void is to be filled,

albeit in a "stovepipe" fashion, by the collection discipline managers. This approach is reinforced with the establishment of NIMA and, on the advice in several studies on Intelligence Community change that call for discipline managers to play the leading role in end-to-end architectures across ground, air, and space platforms. The Panel supported the Working Group's exploration of the NRO mission expansion to become the end-to-end intelligence architect and endorsed the Working Group's subsequent recommendation that it not be added to the NRO mission statement.

**** Responsibility for the Development and Acquisition of Space Reconnaissance Systems***

(U) The Panel did not consider any alternatives to this traditional NRO core mission. However, the Panel believes the innovative technology slowdown issue addressed above does carry over to the development and acquisition mission as well as to the proposed mission of ensuring global information superiority. The Panel recognizes that the systems and architectures required to achieve near-continuous global coverage, with affordable designs, are not achievable through evolutionary improvements to systems now under development. Further, the management culture of the major program offices--with the responsibility and constraint of developing and delivering new systems on time, within specifications, and within cost--is not conducive to risk taking nor fully supportive of innovative competing programs. While the Panel recognizes that an information superiority architecture is a long way off, we also recognize that the technology challenge of near-continuous coverage is so great that dedicated research programs need to be established in the near term, independent of ongoing development programs. The dual-track strategy envisioned for transferring to more revolutionary systems and architectures in the 2020+ time frame is presented in Figure 2.

b1

* ***Responsibility for the Operation of Space Reconnaissance Systems***

(C) The repetition of this traditional NRO mission in the recommended 21st Century mission is meant to convey that operations of space systems should remain a primary NRO mission. But this responsibility need not be an exclusive NRO responsibility for all time. For the reason explained earlier, the Panel explored options for transferring operations to others. This evoked the response that to do so would "break" cradle-to-grave program management, which would be unthinkable. The Panel then researched the NRO practice of cradle-to-grave program management as a mission issue.

(C) Although cradle-to-grave management does result in important operational benefits, it need not preclude transferring operations to a second party at a mature stage of a program. Since much of the legacy expertise needed to affect cradle-to-grave benefits resides with system contractors, virtual cradle-to-grave management could be maintained through the life cycle of a program through contract transfers and innovative incentive fees. This is not to suggest that transferring operations of NRO systems should become routine. Situations could arise in which it makes sense to do so, in which case early contract planning is

advised. However, since the Panel does not believe the innovative technology slowdown would be remedied by transferring the operations mission, we see no mission-effectiveness advantage to do so.

**** Responsible for Related Intelligence Activities***

~~(S/B)~~ The primary motive for the Panel's introduction of this responsibility into the NRO's mission is to sanction [redacted] b1 [redacted] as a routine responsibility of the NRO. In the

b1 [redacted]

**Recommendations:** (U) The Panel recommends that the mission of the NRO in the 21st Century be: To enable U.S. Government and military information superiority, during peace through war. The NRO is responsible for the unique and innovative technology, large scale systems engineering, development and acquisition, and operation of space reconnaissance systems and related intelligence activities needed to support global information superiority.

(U) Further, the Panel recommends the following strategic vision for the NRO: Revolutionize space reconnaissance to enable U.S. global information superiority.

~~(S)~~ Within the context of this mission, the Panel recommends that the NRO should adopt a dual acquisition strategy with respect to future architectures. The first track should follow an evolutionary path to maintain reconnaissance capabilities until a second track of revolutionary systems can come on line.

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# Appendix II-1

## (S~~/~~B) MISSION AND STRATEGIC VISION WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Gordon Negus (Chairman) | Aerospace |
| William Savage (Vice-Chairman) | TASC |
| Dennis Adams | NRO/SI |
| Dr Frederick Berko | NSA |
| Dr Louis Blackwell | NRO/COMM |
| Joseph Bozzay | NRO/IM |
| David Broadhurst | CIO |
| Col Robert Cox | ASAF(Space) |
| Lt Col William Doyle | USSPACECOM |
| Kawana Hutson | NRO/OSO |
| Jose Jimenez | Welkin Associates (for DoD/OSA) |
| Allen Krum | NRO/IM |
| Col John Landon | DUSD(S) |
| CAPT Matthew Rogers | DoD/OSA |
| Rick Shackelford | TASC |
| Col Eric Sundberg | NRO/OSA |
| Col Christopher Waln | AFMC/SMC |
| b3 [redacted] | CIA |
| James Wilson | Aerospace (for NRO/P&A) |



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# III. CUSTOMERS-DEFINITION AND RELATIONSHIP

## 1. INTRODUCTION

(U) The Customer Working Group assessed relationships between the NRO and its many customers in the 21st Century by addressing three questions:

- Who are the current customers of the NRO and who should they be in the 21st Century?
- What are the key products and services that the NRO will provide in the 21st Century?
- What will be the interactions and processes between the NRO and its customers in the future?

(U) Customer Working Group members are listed in Appendix III-1.

## 2. METHODOLOGY

(U) The Working Group developed a questionnaire (Appendix III-2) which was distributed initially to all organizations represented by Working Group members and also to all the Unified Commands. Subsequently, the Working Group briefed the nature of the Jeremiah Panel's work to the Civil Applications Committee, where representatives of many non-Intelligence Community agencies and departments such as NASA and the Departments of Interior and Agriculture received questionnaires. Additionally, the Working Group sent questionnaires to the State Department and to three National Laboratories. Respondents to the questionnaire included CIA, NSA, CIO/NIMA, DIA, JCS, Unified Commands (ACOM, CENTCOM, EUCOM, PACOM, SOCOM, SOUTHCOM, SPACECOM, STRATCOM, TRANSCOM), Department of State (INR), and Los Alamos National Laboratory[1].

[1] The Los Alamos response (via telephone) conveyed their desire to be a supplier (of high technology) to the NRO, *not* a customer.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

***Customer Survey Results***

(U) In response to the survey, four of Unified Commands rated NRO support as Excellent; none rated it lower than Fair to Good. A similar spread in ratings was observed in the CIA and Mission Partner responses. CIA's ratings of the NRO ranged from Excellent to Poor; however, many of those rating the NRO's support low occupied positions in which they typically would not have personal contact with the NRO. Nevertheless, this spectrum of responses caused the Panel to look more closely and try to see what might have prompted such a wide range of ratings. This analysis resulted in the Panel's only issue.

~~(S/TK)~~ Among the issues identified in responses to our questionnaire were concerns related to security, future systems, and the requirements processes. Several respondents lamented the confusing and, in their eyes, inconsistent security rules and policies. For the most part, operational and tactical users do not wish to deal with BYEMAN or TK information; they wish to have imagery and signals intelligence (particularly ELINT, but some COMINT as well) provided at the SECRET levels. These thoughts were echoed in responses to a questionnaire distributed by the Security Working Group and were addressed there.

~~(C)~~ Several CIA respondents, as well as many of the CINC responses, reflected a general sense of frustration with the requirements processes, both for future systems as well as for daily operations. Analysis of these responses suggests that there is sufficient confusion among users, both "within the beltway" as well as those more distant from Washington, to warrant some remedial action. The NRO should not bear the entire burden of educating the IMINT, SIGINT, and MASINT user community on the various national requirements processes. Appropriate agencies and elements of the intelligence community (Community Management Staff, NIMA, NSA, and CMO) and the Defense Department (DIA, the Joint Staff) should ensure that the processes for submitting long-term needs for overhead-collected information and for ensuring daily collection requirements are adequately and clearly explained, promulgated, and followed.

(S) There was an interesting, but not entirely unexpected, conflict in some responses in regard to "NRO responsiveness" (see question 4 of the questionnaire, Appendix III-2). Some of the military respondents felt there was an insufficient NRO commitment to satisfying their needs. Some within the Intelligence Community felt that overhead systems are used, and future systems were designed, primarily for tactical users *to the detriment of national users*. As with the requirements issue noted above, we felt the NRO should not bear the major burden of clarifying national policy on current and future use of satellite assets for intelligence collection and reconnaissance needs. As noted in the Mission and Strategic Vision section, NRO systems are best compromise solutions to simultaneously address both national intelligence and operational military needs and are designed to do both. The decisions about what systems to build, what capabilities they should have, and how to task them operationally, are not, however, made by the NRO. Those decisions are made in forums where elements of both the national intelligence community and the operational military are represented. The fact that both parties sometimes feel the other has more influence may be evidence that the "best compromise" is close to a balanced position.

***Definition of Customer Relationships***

(U) The Working Group itself wrestled with the term *customer*, and the Panel selected four terms that more accurately characterize the functional relationships between the NRO and other elements of the Government: User, Stakeholder, Processor, and Mission Partner. All four are customers.

(U) ***Users***. Every member agency of the Intelligence Community is a user, as are the JCS, the CINCs, and Major Commands in the Defense Community. Additionally, the White House and the State Department, many civil agencies, and the Congress are all users. Even as we fight crises abroad, new users emerge regularly.

(S) With respect to support to military operations (SMO), the Persian Gulf War marked a paradigm shift from fighting alone, or with few long-term allies, to a new "coalition warfare" wherein coalition partnerships are arranged for the crisis at hand. Syria and Egypt in the Gulf War and Russia in the Bosnian conflict are good examples of coalition partners. During the

crisis or conflict, these coalition partners become users of NRO systems and must be supported while, and at the same time, certain details of NRO systems and capabilities must be protected. The NRO's Operational Support Office (OSO) has an ongoing, productive effort to work with the military users and others who need to learn how to use the products collected by NRO assets, particularly in real-time or near-real-time.

(U) ***Stakeholders***. Many of these same user entities are, or should be, stakeholders in the NRO and its programs. With vested interest in the continued viability of the NRO's reconnaissance programs, these agencies should assume an active advocacy role for NRO programs. NSA and CIO, as well as CIA and DIA, have long advocated the NRO and its programs, and the leaders of these organizations often accompany the DNRO when he testifies before Congressional oversight committees. In the past 10 years, the CJCS and/or VCJCS and several high-profile military commanders such as General Schwartzkopf have also assumed an advocacy role and have spoken to the Congress about the NRO. The NRO outreach program, reemphasized with the issuance of NRO Directive 14, has resulted in continued growth in the senior military advocacy group.

(U) ***Processors***. Processors are principally the NSA (for SIGINT), CIO/NIMA (for IMINT), and CMO (for MASINT). Additional processors include the Services' science and technology centers and several military and civilian agencies. Generally, most processors take essentially raw data from NRO collection systems and convert these into "information" which, in the 21st Century era of information superiority, will continuously pour into the "data warehouses" of the future.

(U) ***Mission Partners***. Mission Partners are the fewest in number but should have the closest working relationships with the NRO. This group consists of the three "INT" managers: NSA, CIO/NIMA, and CMO. These Mission Partners, while responsible for the viability of their respective "INTs", should form a special, tightly coupled relationship with the NRO. As users, stakeholders, and processors, they should serve as the NRO's "Board of Partners" providing advice and guidance in the "INT," or vertical, dimension while the DNRO and his managers do the same across all NRO programs--the horizontal dimension.

(U) In this partnership, the Mission Partners would collect needs and requirements within their disciplines and present them as a coherent, appropriately ranked, per DCI and SECDEF guidance, package to the NRO. In concert with the Mission Partners, the DNRO should structure his programs to optimize the U.S. space intelligence collection program. As partners with the DNRO, the Directors of NSA, CIO/NIMA, and CMO should continue to provide joint advocacy for the NRO programs.

## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) How can NRO customer interaction achieve consistency?

**Findings:** (U) Several major customers, including NSA and CIA, described dealing with the NRO as a highly inconsistent relationship. They noted that the NRO "speaks with many, sometimes conflicting voices" and lamented the lack of a recognized single focal point or office and adherence by the NRO and its Core/Mission Partners to a mutually accepted set of procedures to ensure that the right information is passed to the appropriate focal points.

(U) NRO/OSO Program Management Review (PMR) Guidance dated 9 May 1996 describes the NRO/OSO view of their role, mission, and performance as follows:

(U) *"Military customers have faced an increase in multi-national and contingency operations. The Intelligence Community is facing major restructuring and an increased emphasis on coordinated activities. An increase in interest for our products from non-traditional customers, such as law enforcement agencies and environmental concerns, has been noted. All customers are experiencing an increased awareness of the NRO and its products. At the same time, the NRO internal environment is changing. Over the past year the NRO has faced: increased customer support demands, a formalization of responsibilities for coordinating customer support within and external to the NRO, and an increase in oversight. As NRO customer support evolves, the internal infrastructure and processes that manage that support take on greater importance."*

(U) *"Based on these factors, and the DDMS' guidance..., the NRO will have both internal and external areas of emphasis for customer support. The NRO's primary external customer support focus will be on: multi-national operations, coordinated crisis response planning, coordinated support to exercises, civil applications, end-to-end combat systems integration and distance training support (e.g., Computer-Based-Training, training the trainers, etc.). NRO projects that maximize the customer's benefit from using NRO data will be selected for implementation.*

(U) *The OSO will emphasize strengthening formal processes and infrastructure needed to better manage customer support. The accent will be on processes that can capitalize on the synergistic effect of relying on the resources of all of the NRO and on the formal processes that provide feedback to/from customers on satisfaction and needs."*

(U) This OSO PMR Guidance supports the notion, received from several of the NRO's customers, that they receive from the NRO inconsistent (at best) and duplicative and/or conflicting (at worst) messages. Most of the Unified Commands and the Department of State are extremely pleased with the support they receive (or will receive) from the NRO, particularly from OSO. The NRO's Theater Support Representatives (TSRs) serving these users have a well-deserved reputation for providing knowledgeable support, excellent training on the use of space-derived information, and good general support related to entering into the appropriate systems current requirements and longer-term needs. However, the NRO's Mission Partners deal primarily with the NRO's SIGINT, IMINT, and COMM Directorates rather than OSO.

(S) The SIGINT Directorate's relationships with NSA, and the corresponding IMINT Directorate's relationships with the NIMA, are inconsistent. While the directors of NSA and NIMA are confident they are working in concert with the NRO as Mission Partners, the organizations themselves do not always seem to share this view. Official points of contact are well established within NSA to promulgate long-term SIGINT needs to the SIGINT Directorate. Daily SIGINT spacecraft tasking is handled well, in consonance with mission guidance and priorities from the SIGINT Overhead Reconnaissance Subcommittee; the efficacy of this process is not in question here. However, despite the longevity and codification of the NRO-NSA interaction through Director-to-Director Memoranda of Understanding, there is a perception that entrepreneurs within the NRO SIGINT Directorate continue to probe within NSA for supporters for new space collection capabilities they have developed or propose to develop. This perceived "ambulance chasing" is often done without SIGINT Director knowledge and may be a vestige of the rivalries between former NRO organizations. Nevertheless, some NRO SPO directors and program managers may use this technique to garner additional requirements--outside of established, approved mechanisms--perhaps hoping to secure additional funding and/or authorization to proceed on new or tangential programs.

(U) NSA and NIMA also expressed concerns about the NRO's ability to fly representatives to distant locales seemingly overnight, while their own travel budgets allow them to send their customer support personnel to distant locations only three or four times per year. This often results in the perception by a military command that only the NRO will come when beckoned, and that it will bring enough equipment and persons to resolve their problems or to educate them. NSA has Cryptologic Support Groups (CSGs) and National Cryptologic Representatives (NCRs) permanently assigned to all CINCs and Major Commands. Many personnel (military and civilian) assigned to CSGs and NCRs possess limited knowledge on overhead SIGINT systems. Even if they initially report to their CSG or NCR assignment very knowledgeable on overhead SIGINT, their information becomes rapidly dated unless they interact frequently with overhead SIGINT organizations in NSA headquarters or with NRO personnel. Teaming between Cryptologic Support Group staff, who supply great breadth of SIGINT expertise, and NRO personnel, who bring a wealth of knowledge about space systems, can provide the serviced CINC or Major Command with a better balanced and much more complete information suite than either can supply alone. This teaming arrangement would be educational as well for the CSG and NRO personnel and could ease demands on NSA's travel budget.

**Recommendations**: (U) 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. To foster closer teaming with its Mission Partners and provide a unified interface to the many users of NRO products, NRO should specifically:

- (U) Reemphasize the need for a central authority for all customer support and provide this authority the means to set policy, integrate planning, and conduct oversight.

- (U) Clarify the individual Directorate and Office responsibilities for decentralized execution of customer interfaces such as IMINT and SIGINT direct interaction with the Mission Partners, P&A interface with all-source national users, and OSO interface with DIA and the CINCs.

- (U) Convene an annual customer conference with the central customer authority as chair and with presentations on overall SIGINT, IMINT, and MASINT architectures by the Mission Partners.

- (U) Identify the organizations with lead responsibilities for managing future and current needs statements, as well as dealing with national and military operational needs, to significantly enhance NRO corporate relationships and interactions.

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# APPENDIX III-1

## (U) CUSTOMER WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| [redacted] b3 (Chairman) | NSA |
| Maj John Boylan, USAF (Vice-Chairman) | NIMA |
| [redacted] b3 | NSA |
| Lt Col William Doyle, USAF | USSPACECOM |
| [redacted] b3 b6 | NRO/OSO |
| Neal O'Leary | DIA and JCS |
| [redacted] b3 | CIA |



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## APPENDIX III-2

## (U) CUSTOMER WORKING GROUP QUESTIONNAIRE FOR CUSTOMERS

1. (U) Does the following NRO mission statement for the 21st Century make sense to you?

The mission of the National Reconnaissance Office is to continue to ensure that the U.S. has the technology, systems engineering, assets, and operational capabilities it needs to perform space collection and related activities from peace through war for U.S. global information superiority.

2. (U) How should the NRO be focused to meet your 21st Century needs?

3. (U) What products and services should the NRO provide your organization?

4. (U) How can the NRO be more responsive to your organization?

5. (U) How does the NRO receive requirements from your organization today? How should this process be changed to meet the requirements of the 21st Century?

6. (U) What should be unique about the NRO in terms of products and services provided to your organization?

7. (U) How would you characterize support to your organization from the NRO today? Excellent? Good? Reasonably Good? Fair? Poor? If required, what must change?

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# IV. RELATIONS WITH NEW ORGANIZATIONS

## 1. INTRODUCTION

(U) The Relations with New Organizations Working Group addressed how the NRO relates or should relate to new or evolving organizations--those organizations with vector changes or changed relationships that might affect the NRO. It characterized what these relationships should be or recommended courses of action to determine the appropriate interaction. It also covered the challenge of how to develop relationships with space organizations while emphasizing the National Intelligence and Support to Military Operations functions, which are the primary reason for having NRO management oversight shared between the DCI and SECDEF. For each organization or entity considered, if changes to the NRO are required, these are shown as each one is discussed.

(U) To ensure the Panel received appropriate information about who these new or evolving organizations are and what their relationships with the NRO should be, the Working Group included representation from *all* appropriate organizations. Appendix IV-1 lists the Working Group members and their organizations.

(U) Internal Intelligence Community organizations/agencies, such as NIMA, NSA, CIA, DIA, etc., were not considered by this Working Group since they were covered by the Customer Working Group.

## 2. METHODOLOGY

(U) The approach the Working Group took was to hear briefings by or have discussions with both outside organizations and internal NRO elements, and then to formulate either a recommended course of action or to lay out alternatives from which the Panel could select a course of action.

(U) The following new or evolving organizations/entities were considered by the Working Group:

New
- Deputy Under Secretary of Defense for Space (DUSD(Space))
- DoD Space Architect (DoD/OSA)
- Joint Space Management Board (JSMB)

Evolving
- Air Force Headquarters
- Air Force Materiel Command/Space and Missile Systems Center (AFMC/SMC)
- Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD/$C^3$I)
- Defense Advanced Research Projects Agency (DARPA)
- Defense Airborne Reconnaissance Office (DARO)
- Defense Support Project Office (DSPO)
- Defense Information Systems Agency (DISA)
- Joints Chiefs of Staff/Director for Operations (JCS/J-3)/Joint Requirements Oversight Council (JROC)
- National Aeronautics and Space Administration (NASA)
- Office of Secretary of Defense for Program Analysis and Evaluation (OSD/PA&E)
- Under Secretary of Defense (Comptroller)
- U.S. Space Command (USSPACECOM)

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The NRO serves both the DCI for National Intelligence and the SECDEF for Operational Military Intelligence Support. As such, it has broad interaction with a multiplicity of organizations. Overall, the Panel found the NRO has been purposefully making organizational changes to better support the customer and has been actively engaged with organizations both within and outside the Intelligence Community to improve relationships.

(U) While changes to the processes with some organizations are needed, the majority of the relationships are good and are evolving and expanding. The areas that must be coordinated more fully are support to the military customer, which is ongoing, and relationships with non-NFIP (National Foreign Intelligence Program) space organizations.

## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) How should the NRO evolve to ensure support to the military?

**Findings:** (U) In this section, the J-3 of the Joint Chiefs of Staff, the Joint Requirements Oversight Council (JROC), U.S. Space Command (USSPACECOM), and the Defense Support Project Office (DSPO) are considered. The entire NRO structure supporting these entities is also discussed.

(U) Since the late 1980s, and particularly after Desert Storm, the NRO and the entire Intelligence Community have moved rapidly to provide better support to both the major combatant commands and their components. In 1990, the NRO established a senior position to recognize this important relationship. That position, titled Deputy Director for Military Support (DDMS), is triple hatted to ensure the NRO maintains close functional ties to the military and OSD. The DDMS is the number three person in the NRO leadership structure, is the J-35 on the Joint Staff, and is Deputy Director of the DSPO. In addition, under NRO Directive 14 (June 1995), the DDMS is in charge of *all* customer support for the NRO.

(U) To specifically serve the military, the NRO also created the Operational Support Office (OSO), a group comprising approximately 230 military and contractor personnel who work not only in Washington, D.C., but also are assigned to many military commands. Personnel assigned to a command or component are called Theater Support Representatives (TSRs)/Liaison Officers (LNOs), depending on whether they are contractor or government employees. OSO supports military exercises, provides training on NRO systems, and supports real-world needs daily.

(U) When the Working Group explored options for modifying NRO military support, it considered not only the Intelligence Community, but also the relationship with USSPACECOM. In the broadest sense, during crisis and war the commanders/commands being supported have three primary needs: (1) intelligence/ information; (2) knowledge of what sensors/systems are likely to be available for intelligence collection; and (3) status of forces (sensors/systems)--that is, their operational readiness.

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(U) The Intelligence Community provides the primary support to meet these needs. USSPACECOM is not a major player, except as a supporting CINC, in fact USSPACECOM

devised whereby the NRO can receive military needs (these can vary from requirements to systems, or systems support) through the Intelligence Community in a timely manner. The JROC also must validate system requirements for the military on shorter time lines than in the past.

• (U) ***USSPACECOM***. Although much of what the NRO does is operational military intelligence support, there are clearly areas in which the NRO and USSPACECOM need to work together. There is an ongoing DNRO/CINCSPACE initiative to define these areas. The Panel recommendation is to let the details of the NRO/USSPACECOM relationship be defined under that initiative.

• (U) ***DSPO***. The DSPO was created in 1980 to provide a staff to administer the Defense Reconnaissance Support Program (DRSP) budget and to ensure defense needs were being served by the NRO. The DSPO performed that role well; but with the transfer of much of the DRSP budget for satellite systems to the NRP in 1994, along with the transfer of exercise support and training responsibilities from DSPO to OSO, the existence of DSPO was questioned. The conclusion was that the DSPO should be retained because there is still a DRSP budget that must be prepared and shepherded through the DoD budget process; the DSPO performs this function. The DSPO is also the conduit the NRO uses to work user support issues within the Pentagon and with the services.

• (U) ***NRO***. Having one person, the DDMS, responsible for all customer support is good; however, it must be done right. More work in this area is required, but it does not demand that all customer interfaces be done from a single organization.

• (U) ***Unified Commands***. The NRO is well-served by the TSRs/LNOs who are deployed to the commands; however, they must stay closely linked to both the operations and intelligence sides of the commands. The TSRs/LNOs should work with the NRO and the Unified Commands to increase war fighter knowledge of NRO systems and to integrate NRO system involvement in exercises.

(U) Given that operational customer support is a major priority of the NRO--and it is--OSO is about the right size. It must ensure close interface with the rest of the Intelligence Community. The OSO is not responsible for requirements--this should be done by P&A and the Intelligence Community. It is also not responsible for day-to-day tasking.

What OSO must do is day-to-day on-site technical support at the commands for NRO systems, exercise support in conjunction with the rest of the Community, and training--again in conjunction with the principal discipline partners (NSA, NIMA, CMO), all-source agencies (DIA, CIA), and others (USSPACECOM, DoD).

(U) The NRO is *not* responsible for ultimate delivery of the intelligence product to the final customer. This is left to the services, defense agencies, and discipline managers (e.g., CIO/ NIMA, NSA, etc.). If this function were to transfer to the NRO, additional resources would be needed to properly execute this mission.

**Recommendation:** (U) 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. The Panel recommends a combination of options 2 and 4 (see Figure 2) to best satisfy customer needs. In this concept, the NRO provides

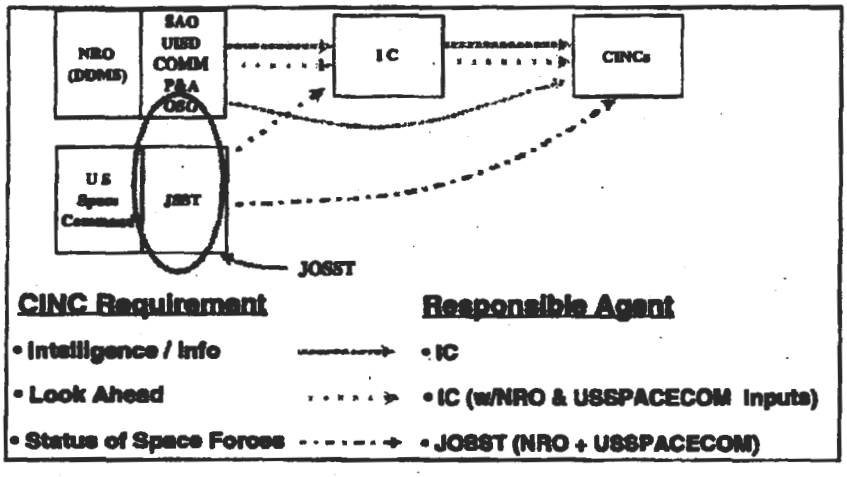


**Figure 2.** (U) Recommendation for SMO

customer support primarily through the Intelligence Community, with some support directly from the NRO to the CINCs. The DDMS has overall responsibility for all SMO, without combining all the internal customer elements of the NRO into a single fusion center. At the same time the NRO, using OSO, should work more closely with USSPACECOM in a Joint Operational Space Support Team

(JOSST) to provide improved reporting of NRO operational assets as a first step in expanding this relationship. Part of this expanded relationship should include the creation of DoD training programs for the Unified Commands on the use of NRO assets, the use of system simulations to support the war fighting exercises, and the subsequent rating of the Unified Commands on their use of NRO systems during exercises. All of this must be done ensuring not only support to U.S. forces, but also coalition partners in conjunction with the rest of the Intelligence Community and DoD.

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**Issue 2:** (U) How should the NRO interface with the DoD Space Architect?

**Findings:** (U) The DoD Space Architect was established in 1995 "to consolidate the responsibilities for DoD Space Missions and System Architecture Development into a single organization that shall integrate space architectures and systems, eliminate unnecessary vertical "stovepiping" of programs, achieve efficiencies in acquisition and future operations through program integration, and thereby improve space support to Military Operations. The architect is responsible for developing space architectures across the range of DoD space mission areas to include...space-related areas of tactical intelligence...." The NRO, in concert with the DCI, remains responsible for National Intelligence space architectures. The JSMB in its charter (paragraph 2c) is charged with establishing the integration of Defense and intelligence space architectures under a single National Security Space Architect.

(U) The Panel charged the Working Group to provide a recommendation on the question of whether the U.S. Government should have a single architecture under a single architect, or a single architecture with two architects (NRO and DoD).

(U) The Panel concluded that an integrated space architecture is needed, but that this can be accomplished without moving to a single architect. Both the NRO and DoD have many aspects of space architecture independent of each other, so it makes sense to keep two architects reporting separately--so long as any cross-architecture issues are addressed when needed. In fact, the NRO architects are now working very closely with DoD on some of these issues.

**Recommendation:** (U) The Panel recommends the NRO specifically assign responsibility to interface with the DoD Space Architect to an office within the NRO to ensure cross-functional issues are identified and assigned to the appropriate Directorate within the NRO.

*Note: On 20 May 1996, the Acting DNRO and DUSD(Space), acting as Co-Executive Secretaries of the JSMB, directed the NRO/P&A and the DoD Space Architect to identify the issues associated with, and potential pathways for, standing up a single National Security Space Architect. An interim report is due to the Co-Executive Secretaries by 30 September 1996 who, in turn, will provide a final report to the JSMB in December 1996.*

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**Issue 3:** (U) How should the NRO interface with DUSD(Space)?

**Findings:** (U) The Deputy Under Secretary of Defense for Space position was established in December 1994 to provide "oversight of all DoD space acquisition and technology programs, development, coordination, and implementation oversight of DoD policy for space and space intelligence activities and principal staff support to the Joint Space Management Board. OSD responsibility for certain space-related responsibilities and functions will be shared between the DUSD(Space), the Assistant Secretary of Defense for Command, Control, Communications and Intelligence ASD/C³I and...." With respect to policy, the DUSD(Space) will be responsible for DoD policy for space activities (including non-intelligence uses of National space systems), while the ASD/C³I will remain responsible for DoD policy for functional C³I activities. With respect to architectures, "the DUSD(Space) will oversee the 'community planning' function of space missions and systems architectures; that is, the development and integration of DoD space mission...architectures into an overall "system of systems" architecture, while the ASD/C³I will remain responsible for the DoD's functional C³I architecture."

(U) As stated above, the DUSD(Space) responsibility is oversight of space systems and, together with the ASD/C³I, assuring that DoD space systems fit into the overall C³I architecture. The DNRO continues to report jointly to the DCI and SECDEF. There is a need, however, to coordinate with the DUSD(Space) organization. This relationship is improving with scheduled meetings between the ADNRO and the DUSD(Space) and normal staff interaction, but further enhancements can be made.

**Recommendation:** (U) Clarify the relationship between DUSD(Space) and the NRO. Specifically:

- (U) Invite open participation by both sides in applicable studies and development of joint projects.
- (U) Further normalize day-to-day activity.
- (U) Assign detailees to DUSD(Space) and the NRO by their respective organizations.

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- (U) Establish electronic connectivity (NRO secure computer network and NRO secure phones). *In fact, NRO secure computer connectivity to DUSD(Space) and the DoD Space Architect has been approved by the ADNRO and planning is under way as this report is written.*

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**Issue 4:** (U) How should the NRO interface with the Air Force including the Air Force Materiel Command/Space and Missile Systems Center?

**Findings:** (U) The Panel reviewed the relationship between the NRO and Air Force Headquarters and found no changes were needed. The DNRO is dual-hatted as the Assistant Secretary of the Air Force for Space. This position along with the NRO's long enduring relationship with the Air Force assures close interaction; thus no changes are required.

(U) The relationship with Air Force Materiel Command/Space and Missile Systems Center (AFMC/SMC), which has been ongoing for some time, does need to be further reinforced. There are some ways to better leverage technical investment opportunities and share engineering challenges. These fall in the areas of concept development, technical planning, subsystems engineering, configuration control, modeling, and simulation and analysis.

**Recommendations:**

- (U) No change to the relationship with HQ Air Force required.

- (U) To complement and reinforce the ongoing interaction between NRO and SMC:

  - (U) Increase physical presence by both organizations in the partnership. To fully determine how many positions and in which elements they should be placed as well as what responsibilities each will have, form a joint NRO-SMC team to work the details.

  - (U) Develop a program to cross-flow personnel between the NRO and SMC on a reassignment basis (nominally three years) with a guaranteed return to their respective organizations. The objective is to take top people from each organization and allow them to gain a broadening experience which they could then bring back to their parent organizations to help link the institutional cultures.

  - (U) Increase mutual use of decision support products/tools to improve NRO visibility to the warfighter and to correlate NRO and SMC activities more effectively. Also increase/improve computer and secure phone connectivity.

**Issue 5:** (U) How should the NRO interface with other Government technology organizations?

**Findings:** (S) There are a number of organizations outside the NRO conducting R&D and advanced technology that might benefit the NRO or to which the NRO could contribute its technology expertise. These include, but are not limited to, DoD (Phillips Lab/SMC, Office of Naval Research, Naval Research Lab, Defense Advanced Research Projects Agency), NASA, DOE (Sandia, Lawrence Livermore, and Los Alamos laboratories), NSA, and CIA.

(U) The level of coordination of technology programs with these organizations varies considerably. Some have longstanding close relationships with the NRO, while others have only limited interaction.

**Recommendations:** (U) Accomplish better coordination through the relatively new federated technical enterprise being led by the Advanced Technology Programs (ATP) Group of Office of Systems Applications (OSA). This technical enterprise process involves all NRO elements engaged in R&D/technology development and would require no structural changes to the NRO.

(U) This would allow the NRO to engage each entity more fully and define the partnership and process for each in a relatively timely manner.

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**Issue 6:** (U) How should the NRO interface with DISA?

**Findings:** (U) The NRO has had a long relationship with DISA as a supplier of terrestrial communications. This role should be continued as long as DISA is able to meet the NRO requirements in a cost-effective manner. The NRO should continue to provide communications requirements to DISA through the newly established Communications Panels and Working Groups within the Intelligence Community as well as the new Intelligence Community Executive Agent for COMM, which is NSA, to consolidate overall requirements for submission to DISA.

U) This process will work because both the NRO (COMM Directorate) and DISA (D5) are represented on the appropriate panels and groups.

**Recommendation:** (U) Continue to use the Intelligence Community process for requirements. No changes are required.

**Issue 7:** U) How should the NRO interface with ASD/$C^3I$?

**Findings:** (U) Although much of the focus for space has shifted from $C^3I$ to DUSD(Space), $C^3I$ is still responsible for the $C^4I$ functional interface which, as discussed earlier, is the key element in carrying out the intelligence mission. The NRO has a longstanding relationship with $C^3I$ which must continue for both architectural and budget/program issues.

**Recommendation:** (U) No changes are required.

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**Issue 8:** (U) How should the NRO interface with the OSD Comptroller?

**Findings:** (U) With the additional financial oversight of the NRO recently given to the OSD Comptroller, this is an evolving relationship. The OSD Comptroller's office and the NRO's Chief Financial Officer are working closely together to define what is needed to satisfy the requirements.

**Recommendations:** (U) No changes are required.

**Issue 9:** (U) How should the NRO interface with OSD/PA&E?

**Findings:** (U) Although the NRO and other Intelligence Community elements have long worked with PA&E during the program review cycle, a new Information Surveillance and Reconnaissance Division is being formed within PA&E, per DEPSECDEF direction, to focus more attention on this area. Conversations with PA&E indicate that it is well supported during the program review cycle by the NRO and that PA&E is comfortable with the relationship.

**Recommendation:** (U) No changes are required.

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**Issue 10:** (U) How should the NRO interface with DARO?

**Findings:** (U) Although the DARO is still a relatively new organization, it has worked with the NRO since its inception. This relationship is enhanced through periodic leadership meetings, IMINT and SIGINT General Officer Steering Groups, and day-to-day staff interaction including a full time NRO person at DARO, as well as collocation of offices (DARO Headquarters shares NRO spaces in the Pentagon and the DARO Director for Technology is at Westfields).

**Recommendation:** (U) No other full-time liaisons or other adjustments have to be made. However, because of the increasing interdependencies of DoD on space and airborne assets, this partnership must be continued along with appropriate DoD and Intelligence Community elements to assure the best mix of support from both.

**Issue 11:** (U) How should the NRO interface with the JSMB?

**Findings:** (U) The JSMB was established in December 1995 by the SECDEF and DCI to ensure that defense and intelligence needs for space systems (including associated terrestrial-based subsystems) are comprehensively satisfied within available resources, using integrated architectures to the maximum extent possible. The JSMB is co-chaired by the Under Secretary of Defense for Acquisition and Technology and the Deputy Director of Central Intelligence.

(U) The NRO is a member of the JSMB and is one of the two Executive Secretaries of the JSMB (DUSD(Space) is the other). Having the NRO as a member of the JSMB and the DNRO as one of the Executive Secretaries assures NRO inputs to the process. The NRO also participates in overarching integrated product teams as required.

**Recommendation:** (U) Use the JSMB to resolve policy and specific architectural issues.



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# V. BUSINESS PRACTICES

## 1. INTRODUCTION

(U) The Business Practices Working Group examined the NRO contracting, acquisition, research and development (R&D), and procurement practices. Additionally, seven questions were asked and answered as follows:

- Are these practices efficient? *(No, in many cases)*
- Is the NRO effectively leveraging commercial technology? *(Yes, in most cases)*
- Is the NRO continuing to avoid bureaucracy? *(No)*
- Do the NRO practices foster innovation? *(No)*
- Are the practices effective? *(Yes)*
- Are there clear lines of responsibility, authority, and accountability? *(Not in all cases)*
- What practices should change to make the NRO-Contractor team more effective? *(Several)*

(U) The Working Group membership is listed in Appendix V-1.

## 2. METHODOLOGY

(U) The Working Group reached early agreement on a data collection technique using questionnaires, sent to internal NRO organizations and to industry, with follow-up interviews. The NRO recipients of the internal questionnaire are shown in Appendix V-2. The inquiries focused on what works, what doesn't work, what needs to change; and welcomed new ideas. Categories of topics provided to recipients included: program office organization, policies, and changes; span of control and interfaces; decision process and level; NRO business standards and ability to tailor; use of specifications, baselines, and configuration control boards (CCBs); security impacts, constraints and recent changes; technology insertion; commercial and "best of breed" practices; and "anything else you want to say." Appendix V-3 contains the specific questions asked of the NRO offices.

(S/B) The NRO contractors selected to receive a questionnaire represent a cross-section of the NRO industrial base--prime contractors, subcontractors, and contract advisory and assistance services (CAAS) contractors. Contractors receiving questionnaires included:

| | | | |
|---|---|---|---|
| TRW | AEROSPACE | BOEING | IBM |
| HUGHES | HARRIS | WESTINGHOUSE | TASC |
| EASTMAN KODAK | BAH | COLLINS | MRJ |
| E-SYSTEMS | LORAL | MOTOROLA | AT&T |
| LOCKHEED MARTIN | | | |

TRW, Boeing, Hughes, TASC, E-Systems, Loral and Lockheed-Martin were also involved in follow-up interviews.

(U) Once again, the inquiries focused on what works, what doesn't work, what needs to change; and welcomed new ideas. Categories of topics provided to the recipients included: NRO contracting regulations and practices; price vs. cost contracting and other approaches; competition and contractor-friendly concerns; risk, innovation and technology infusion; commercial and "best of breed" practices; NRO organization and personnel qualifications; cycle times of engineering change proposals (ECPs), development and decisions; use of CAAS [Scientific and Engineering Technical Assistance (SETAs), Federally Funded Research and Development Centers (FFRDCs), Systems Integrators SIs)]; processes (reviews, specifications, configuration control, documentation); and "anything else you want to tell us." A copy of the specific questions asked of industry are listed in Appendix V-4.

(U) After studying the responses to the questionnaire, the Working Group quickly reached consensus on several issues along with changes that would improve the efficiency of the NRO.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) In its early years, the NRO was a lean, agile, fast-moving organization with a high-priority national mission. It was protected by a charter which ensured it received little outside interference. The NRO pushed the technology envelope and, with industry's help, built satellites with remarkable capabilities. It continues that tradition today.

(U) The NRO must seek ways to satisfy its mission and customers' needs by employing acquisition techniques that will field new capabilities faster, cheaper, and better than can be obtained today. One way is to increase the opportunity for industry to participate in the concept definition and specification development phase. Companies should be encouraged to identify new and better ways of satisfying requirements. When appropriate, competition should be pursued using RFPs with statements of objectives, *not* detailed specifications. This practice will allow freedom to propose innovative solutions. While the RFP should permit contractors great latitude in identifying new processes and methods for accomplishing the effort, contractors must substantiate the value to be added and associated cost benefits to be realized.

(U) Today, the set of contractors which can compete in most NRO procurements is limited to those with NRO-controlled security clearances. While that might have been an appropriate practice when the NRO was truly leading the world in technology development, today that practice prevents some leading edge commercial technology companies from bidding on NRO work. As a result, the NRO may have built barriers to obtaining the very technologies from the commercial sector which it needs to succeed in the information age. The NRO should find a way to allow any company with innovative solutions and new technologies to successfully bid on NRO contracts.

(U) The current system acquisition approach produces complex systems with many intricate interfaces. If one piece of the system is late or fails to work properly, the impact is typically widespread. Therefore, risk-taking to obtain a significant payoff is discouraged. To change this practice, the NRO needs to identify the high payoff areas for a program, the expected return, and associated risk and costs. If the perceived benefit is worth the risk, it should be allowed and a schedule developed with adequate margin (cost and schedule) to accommodate implementation problems. Rewards for success should be given to involved Government and industry team members.

(U) While the NRO's approach to R&D management is sound, the challenge is how best to capitalize on technology developments (both commercial and Government) to effectively meet the evolutionary needs of the programs without mortgaging revolutionary initiatives whose benefits may not be realized for

several years. Existing or emerging technologies in the commercial marketplace have one common characteristic--they have a very short life-cycle. To effectively incorporate these technologies, the NRO must alter its development cycle to allow introduction of selected technologies without major disruption.

(U) Shortening the development cycle will have other benefits as well. Today, to maintain long-term utility of its system, the NRO's development programs accommodate many ECPs, partially in an attempt to stay ahead of the technology push. These ECPs tend to increase program costs because of design changes and possible new integration requirements. The current NRO acquisition philosophy is to incorporate these ECPs into the article under development. As part of the development cycle modifications, the NRO must address changes to operational life requirements. Short development cycles to allow rapid deployment means that satellites will be replaced frequently (with respect to today's lifetimes); therefore, the complexity needed for long-endurance operations can be reduced. Less complexity normally results in less weight, which often means smaller boosters. More frequent launches can yield production economies. The nation could reap the benefits of less cost to orbit while being able to afford more systems to address the distributed target geographies and evolving collection requirements of the future.

(U) The NRO's ever-expanding cycle of detailing program specifications encourages establishment of even more extensive contractor specifications, and Contract Data Requirements List (CDRL) reports describing technical, process, and, in particular, cost attributes and status. An adjunct to the overspecification issue is the cost substantiation requirement. On competitive proposals, the NRO wants cost data at ever-increasing levels of detail and provided in a variety of formats--all of which take time, a limited commodity during proposal preparations. Industry fails to see the value added from these different forms of source data and accordingly questions their associated costs, which are ultimately borne by the Government.

(U) Another way to achieve the "faster, better, cheaper" goal is to structure the program with the least number of internal interfaces possible: make the segments being contracted for as large as practical--functional entities instead of segments. This approach will place the burden of functionality on the development contractor and allow issues to be solved

internally, with minimal Government involvement, lower associated costs, and fewer time delays. The role of the NRO would shift from supervisor of the contractor, as is the case today, to program manager. Accordingly, requirements for CDRLs can be reduced to provide the NRO the data it needs for insight into the development effort.

(U) Success in modifying this phase of the acquisition process requires management commitment to its implementation and leadership willing to change the culture.

**Recommendations:**

- (U) Foster innovation in future NRO systems and architectures through increased competition during the concept definition phase:

  - (U) Increase funding for Reconnaissance Technology/Advanced Development (RT/AD) to focus on new concept development, demonstrations, prototypes, and flight tests.

  - (U) Use a succinct statement of objectives ("what") vice detailed specifications ("how") in RFPs to allow new contractors with new ideas to compete.

  - (U) Create and actively promote a process that permits companies without security clearances, or with too few people cleared, to compete in the NRO and bring innovative new ideas and technologies.

  - (U) Adopt a new risk management paradigm to replace risk avoidance with creative approaches based on smart designs using "best of breed" practices and less stressing architectures.

  - (U) Shorten the development cycle to encourage technology insertion.

- (U) Limit reporting requirements to essentials, including cost data.

- (U) Reduce system complexities and decrease Government controlled interfaces by acquiring large functional entities from the contractor, whose responsibility would include system integration.

**Issue 2:** (U) Does the program execution phase of the NRO acquisition process need improvement?

**Findings:** (U) For 35 years, the NRO has successfully provided and operated highly robust and capable satellite systems. Because of their long time on-orbit, their capabilities have been successfully exploited to meet requirements above and beyond those they were originally designed to address. While these successes have been beneficial to the nation, and continued successes are required in the future, the approach to achieving them needs to be examined. The current process is perceived to be expensive, time consuming, and bureaucratic. Three specific areas need to be addressed:

- (U) Simplify the program execution process by shifting more responsibility to development contractors.
- (U) Establish Integrated Product Teams (IPTs) as the work group responsible for addressing technical development issues.
- (U) Streamline design reviews and user communications.

(U) A key to improving execution is to transfer more responsibility to industry. Underscoring this belief is the premise that the industry that builds space systems has matured. Space is a business area for industry and no longer the exclusive province of the Government. As such, industry wants to build systems for its customers, including the NRO, without extensive customer involvement. Industry knows how to integrate subsystems into functional systems. Government involvement should focus on ensuring the delivery of a system that satisfies its objectives. The time has come for the NRO to relinquish more control and responsibility to its contractors, and they to their subcontractors.

(U) Consequently, the NRO should establish its objectives and then allow its contractors the freedom to satisfy them, that is, manage but not supervise its contractors. Transferring responsibility to industry should result in a reduction of Government-managed interfaces. This will ultimately result in a reduced number of design reviews and a corresponding drop in the amount of required contractor provided data and reports. Ensuring contractor responsibility should also mitigate to some degree the NRO practice of risk aversion during program development. By

specifying "how" instead of "what" in acquisition development--by specifying in too much detail--the NRO practices a risk aversion development philosophy. Unfortunately, systems designed using this philosophy cost more, take longer to build, and, because of their conservative design, may not be as effective as available technology would allow.

(U) Systems reflect risk aversion philosophy by employing redundant subsystems, rigorous testing, strong Government configuration control of segments and interfaces, and vast Government oversight. Since space is now a business area for industry, transferring some responsibility (accountability and authority) to prime contractors for system success offers efficiencies and may not add risk to successful operations. In fact, it may lessen risk. For example, if a single contractor has responsibility for both sides of an interface, that contractor must ensure a successful interface exists. The NRO could also transfer a large portion of system configuration management to the contractor who is accountable for system success, keeping control of only those aspects of the program for which it must retain responsibility.

(U) Transferring more responsibility to industry must be accompanied by increasing industry incentives to improve cost, schedule, and performance through the use of innovation and competition. The current NRO acquisition processes need to place more emphasis on incentives. The program reward system penalizes overruns without rewarding completion under target cost or value-added improvements within cost and schedule. Under this system, contractors have little incentive to implement more efficient, "best of breed" processes since the end result to the contractors could be diminished profit.

(U) Continued Government responsibility would primarily be exercised through the use of IPTs and streamlined design reviews. IPTs should be established to work technical issues at the factory. The IPT membership should consist of appropriate contractor, NRO, and CAAS personnel as well as other contributors as required. Implicit in this concept is the active involvement of trusted SPO personnel--they need not reside at the factory but must be present when needed.

(U) These IPTs should be empowered to work issues and identify and implement solutions subject to the configuration control processes. Incremental reviews such as subsystem preliminary design reviews (PDRs) could be conducted by the IPT as tabletop sessions, retaining only the formality necessary to ensure a thorough review was conducted and to document actions from the review. Such an approach continues Government involvement but minimizes the burden on the contractors, thereby saving time and money.

(U) By employing incremental reviews, any required major program reviews will become summary reviews focusing on system closure, schedule, and issues. Senior management attention can be applied where it is needed, in contrast to providing "shows" to large audiences. Today, reviews have become system tutorials. Large numbers of attendees--most of whom come to reviews to gain information and not to contribute to the review--generate questions that must be answered, even when they are irrelevant to the review itself. Accommodating those individuals detracts from the timely execution of the development. Reviews should cease being the source of information to customers about program progress and status. Instead, they should receive that information in semi-annual community awareness sessions conducted by the NRO Directorates and Offices. These sessions should include legislative and executive department NRO customers.

(U) Additionally, annual industry awareness sessions should be conducted by the NRO to advise industry of its plans. The insight gained will encourage industry to make investments and prepare for future competitions with more innovative solutions.

**Recommendations:**

- (U) Reduce the number of Government-managed interfaces; transition integration responsibility to contractor control.

- (U) Limit required contractor-provided data and reports.

- (U) Encourage and incentivize contractors to identify value-added and cost-reduction changes.

- (U) Shift configuration control to development contractors to the maximum extent possible.

• (U) Establish joint Government-contractor Integrated Product Teams (IPTs), staff them only with the people necessary to do the job, and empower them; hold informal, incremental table-top reviews at the IPT level. Consider use of SPO in-plant representatives.

• (U) Use limited attendance management reviews to gauge progress, address system closure, and resolve issues.

• (U) Hold periodic awareness sessions with community stakeholders to provide insight and conduct planning.

• (U) Conduct annual industry awareness sessions.

**Issue 3:** (U) Do NRO management practices and processes need further refinement?

**Findings:** (U) During the past 35 years the NRO has had to adapt existing management practices and develop new ones to respond to a changing political and international environment. The NRO has responded to this challenge while continuing to acquire and operate highly effective and successful space and associated ground systems.

(U) The NRO has a multitude of processes in place to maintain its accountability, control, and oversight responsibilities and to satisfy continuously increasing demands for information about how it conducts its business. While it should be lauded for maintaining its focus and still accommodating these new interests, streamlined management as once practiced is no longer a fundamental characteristic of the organization. Some concerns are listed below:

- (U) Different controls and accounting systems remain in effect--consistency and accuracy suffer.
- (U) "Stovepipes" still exist--some new (SIGINT, IMINT, COMM), some old (Programs A, B, C).
- (U) Crisp decision-making is adversely affected by internal and external complexities (for example, coupled CCBs and multi-hatted directors).
- (U) Directive 7 implementation is perceived as inefficient--duplication of effort, second-guessing, and incursion into Program Manager's areas of responsibilities.
- (U) Different approaches and extent of CAAS use for both technical and administrative support and related access to information.
- (U) Increased staff and bureaucracy have led to a process-dominated organization.
- (U) Extensive, internally-mandated reporting requirements and measures of effectiveness divert management attention and provide misleading information.



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(U) The current NRO lacks consistent business practices. The merger of Programs A, B, and C is yet to be fully actualized. There are different controls and accounting systems in place from program to program which, in many cases, are direct carryovers from Programs A, B, and C. The perception is that stovepipes still exist, although they are now discipline-oriented. Leadership assignments within the SPOs continue to retain organizational heritages--CIA people replace other CIA people, and USAF personnel replace other USAF personnel. These residual practices contribute significantly to lack of consistency across the organization.

(U) Internal and external sources can impede crisp decision making and impede program execution. System-to-system interfaces at times hold one program's progress hostage to another, and cross-coupled configuration control boards (CCBs) can hinder each program involved. The resolution of many issues is slowed while waiting for action by other affected programs or agencies.

(U) NRO Directive 7 was established as a substitute for DoD review of NRO programs using the DoD 5000 series acquisition regulations. It is intended to provide objective assessments and advice to the DNRO regarding new programs and initiatives. However, as implemented it drains program office resources by requiring personnel to duplicate their efforts. The "second-guessing" that it fosters often does not take into account programmatic constraints and imperatives. The process should be reviewed to make it more streamlined and less taxing on the SPOs while providing the DNRO with information necessary to make informed decisions.

(U) Across the organization there is inconsistency in the application of CAAS personnel. CAAS personnel are used in varying degrees for technical expertise, as well as for performing administrative tasks, data gathering, and sorting. The number of CAAS personnel, their level of responsibility, types of functions they perform, and level of accountability is inconsistent and needs critical review.

(U) The NRO has become increasingly bureaucratic. As it attempts to streamline, it must guard against adding excessive management controls through reporting processes. Further, it must evaluate its current processes and eliminate those which fail to add value. Excessive, internally mandated reporting requirements can divert a program manager's attention from managing the program.

(U) While the NRO can shed unnecessary bureaucracy and establish a more streamlined management style, it cannot revert to the past because too much has changed. The integrated NRO--vice the old Program A, B, C, Staff, and DSPO--provides a great opportunity for synergy and efficiency. It should be managed as an organization rather than as a loose confederation. It should establish processes and practices that create the culture of a Government-industry team and jettison those that fail to contribute to efficient accomplishment of its mission.

(U) Many of the concerns listed above have been addressed by the NRO and improvement efforts are already underway.

(U) Centralized financial management is a good step in this direction. Implementation of a single NRO (not USAF, DoD, or CIA) Financial Management System (FMS) is necessary to determine the organization's financial posture and to allay existing concerns. The NRO FMS should provide information that supports the NRO's way of doing business--financial performance of incrementally funded programs--to provide internal fiscal insight, demonstrate fiscal responsibility to external organizations, and support overall management of the NRP. These actions should preclude repetition of the recent fiscal confusion that has been the subject of much discussion.

(U) Another example of progress is the NRO Acquisition Manual (NAM). Initial responses to the NAM from both Government and industry have been positive. Under the NAM, acquisition responsibilities will continue to reside within the business units which will execute their acquisition responsibilities in a standardized fashion. Industry can now expect consistency from NRO contracting officers. The entire NRO Government and industry team will benefit from the NAM, especially if a concerted effort is made to revise and update it as situations warrant.

(U) The NRO has a wealth of talent in its people. However, its people do not see the broad NRO. Instead, they see the NRO from where they work--thus perpetuating "stovepipes." A major step toward eliminating the barriers imposed by the stovepipes is to rotate people among Offices and Directorates. By systemically moving people internally, knowledge of different ways of doing business becomes available and the NRO becomes more homogeneous and better integrated.

~~(S/B)~~ The NRO now operates at the common program security level of BYEMAN. This situation, along with the collocation of nearly all NRO headquarters elements in the Westfields complex, affords a great opportunity to become a "family." Exploit it by improving internal communications.

(U) The NRO can improve communications with its industrial partners through periodic team-building sessions with industry. They can be augmented by use of a classified bulletin board* accessible through a management information system that uses standardized hardware, operating systems, and applications. When the NRO migrates from the NeXT, it should seek a solution compatible with the investments industry has already made in office automation. This approach will afford ease of operation and also minimize costs.

(U) The NRO should reevaluate the role and responsibilities of P&A. P&A performs worthwhile studies, works issues of common concern, and provides a necessary checks-and-balances function for the organization. However, many offices question the value of P&A's quality assurance charter. P&A's role in the Directive 7 process is perceived to be an impediment to successful program execution. Because questions and assertions from P&A cannot be ignored, addressing them is seen as a distraction from the SPO's job of building systems. The DNRO should continue to use P&A in a streamlined checks-and-balances function but should also consider assigning P&A the role of the NRO system of system engineer (see below). As system complexities and interdependencies increase, architectural and intersystems interfaces require increased emphasis. P&A may be uniquely suited to shoulder this responsibility because of its independent "cross-organizational" charter.

(U) The NRO is organized into Offices and Directorates. Both are unique business units into which like functions have been aggregated. However, Offices tend to be staff functions whereas the three Directorates are primarily line activities. The NRO has a large number of personnel performing staff functions necessary to

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*(U) INTELINK is unacceptable because it is an operational support system, not generally available to industry. Furthermore, it operates at the TALENT-KEYHOLE security level.

sustain the organization. However, staffs tend to grow and can burden the people they should be supporting with excessive requests for information and status. The NRO should look at the number of staff functions and the number of people it has in those roles.

(U) The Directorates have acquisition and operations responsibilities for NRO systems. Each Directorate is organized to accomplish its mission** and has instituted the associated processes that support its accomplishment. However, a common characteristic of the Directorates is highly centralized decision-making.

(U) Within SIGINT, the SPO directors have configuration management (CM), budget, and programmatic authorities for their respective areas, and multiprogram issues are elevated to the Director of SIGINT for CM disposition. In contrast, within the IMINT Directorate, a single budget authority and CM process reside at the Director level. For the Systems Operations and R&D Sectors, budget authority has been delegated to those Sector Chiefs, and they have CM authority within their respective areas of responsibility.

(U) Additional attention should continue to be applied within the Directorates and SPOs to push decision making to lower levels with the aim of avoiding centralized decision making except when necessary. One way to accomplish this goal is to simplify program structure by reducing the number of Government-managed interfaces.

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(U) The "system of systems" architectures require more centralized decision making. Within IMINT, SIGINT, and COMM, the directors resolve those issues if no organizations external to themselves are affected. If external organizations are involved, then the DNRO is in charge and consensus often needs to be reached. This process is time-consuming and expensive since the issues are worked separately by each organization. Since the "system of systems" concept is here to stay, improvements in managing it are required.

(U) Someone needs to be placed in charge of intersystem interfaces. Within the Directorates, there are systems engineering and systems integration functions separate from the segments, which focus on interfaces. A similar function should exist for the NRO to address intersystem interfaces. The establishment of an NRO systems engineering function to manage the overall NRO architecture and interfaces between systems will be a major step in improving the process. The appropriate office may be P&A. The charter must be well-defined to allow establishment of binding standards and processes for management of interfaces between systems and to preclude the NRO systems engineering function from involvement in internal program matters. That function properly belongs within the Directorates and SPOs.

(U) The NRO has had a long-standing relationship with contractors for both development and CAAS. While the need for development contractors changes as programs move through various stages in their life cycle, NRO-wide CAAS support has continued to increase. The NRO needs CAAS support to provide assistance in working infrastructure matters and to augment the Government technical arm. These contractor personnel provide independent systems engineering, integration, and analysis support. They are also a source of technological insight and applicability as well as historical perspective. However, the value-added provided to the programs they support is not constant because the degree of support required varies as the programs move through their various phases.

(U) CAAS support is most beneficial in the early phases of a program (concept definition, requirements definition, and preliminary design) and in the later phases (factory test, demonstration, and initialization); during these periods it should be employed to the extent needed. In other phases and on mature, stable programs, the utility of CAAS can be significantly

less, in which case CAAS support should be reduced. Increased demands for information, from existing and potential customers, including the Administration and Congress, about NRO systems and technical issues have heightened the dependency on CAAS. However, the NRO should be cautious about becoming over-reliant on CAAS support. Under such circumstances, NRO personnel can cease to be technical leaders who make knowledgeable assessments, recommendations, and decisions. Instead, they can devolve to being managers of CAAS, focusing on administrative matters and forwarding inputs from the CAAS to higher levels for review.

(U) Although the NRO should continue to use CAAS, the practice should be judiciously managed and defendable. Part of that management should be periodic evaluations of the performance of all CAAS personnel, including FFRDCs, for quality and value-added. In addition, the NRO should periodically conduct an organization-wide validation of CAAS support requirements as a means to control "creep."

**Recommendations:**

- (U) Continue implementation of an integrated budget and accounting system to support financial management requirements.

- (U) Refine and adhere to the NRO Acquisition Manual.

- (U) Increase internal harmony and decrease stovepipes through education and personnel exchanges.

- (U) Implement DNRO-led internal NRO team-building sessions to foster communication and cooperation.

- (U) Increase communication with industry regarding NRO plans through team-building sessions and a classified bulletin board.

- (U) Reevaluate the scope of the P&A office responsibilities to achieve required checks and balances and studies of common concern.

- (U) Review size of staff.

- (U) Reevaluate architectural and organizational constructs for improved control and decision making.

- (U) Establish an NRO-level systems engineer.

- (U) Reevaluate where, why, and how CAAS are used. Ensure CAAS fill only positions that demand their application and introduce a performance accountability system.

**Recommendations:** (U) The DNRO should direct an internal review of the business practices of each NRO program office, support function, mission ground station, and other staff functions. Areas to consider in improving business practices include:

- (U) Streamline policies, practices, and procedures
- (U) Simplify operations for improved efficiency and effectiveness
- (U) Reduce functions/Government personnel/CAAS
- (U) Improve customer satisfaction

**Issue 5:** (U) Should the NRO establish a pilot program to foster innovative systems development?

**Findings:** (U) Yes. The NRO needs to identify an important intelligence problem area that is not satisfied completely. It should develop an innovative and simple approach to acquire that system, allowing rapid deployment. A new SPO should be formed, staffed with technically and managerially competent personnel who will remain on the project until their responsibilities in fielding the capability are complete.

(U) With rapid deployment in less than three years as a criterion, a streamlined acquisition should be undertaken drawing on the recommendations made for Issues 1, 2, and 3 of this Business Practices report section. Additionally, review time lines must be met and the Directive 7 gates must be aligned to support it. The contractor must be allowed maximum use of the window allocated to development, launch, and acceptance. At acceptance, the contractor should be rewarded for satisfying the objective within the prescribed time lines or penalized if not met, unless the Government is the cause.

(U) Streamlined acquisitions aimed at providing systems better, faster, and cheaper should become the NRO norm. Changes by the Directorates to their acquisition paradigms will not be based on a single acquisition. Consequently, consideration should be given to applying this recommendation to several initiatives to gain confidence in this approach.

**Recommendation:** (U) 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. The pilot program should be unencumbered by normal Directorate/SPO processes but compliant with the intent of Directive 7. This initiative can cover the full spectrum of a Directorate/Office's requirements or can be a system that complements existing assets. Implement successes of the pilot program into mainline programs.

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# APPENDIX V-1

## (S//B) BUSINESS PRACTICES WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Dennis Fitzgerald (Co-Chairman) | NRO/OSA |
| Randy Randazzo (Co-Chairman) | Consultant |
| b3 b6 [redacted] | NRO/COMM |
| Mark Albrecht | SAIC |
| Bob Boan | Harris |
| Jon Bryson | Aerospace |
| Jim Church | Boeing |
| b3 b6 [redacted] | NRO/Staff/Contracts |
| b3 b6 [redacted] | NRO/IM |
| Pamela Henderson | TASC |
| b3 b6 [redacted] | NRO/OSO |
| b3 b6 [redacted] | NRO/P&A |
| b3 b6 [redacted] | NRO/ROM |
| b3 b6 [redacted] | NRO/SI |
| Dean Rakoskie | SAIC |
| b3 b6 [redacted] | NRO/OSA |

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## (U) APPENDIX V-2

## NRO DIRECTORATES/OFFICES RECEIVING QUESTIONNAIRE AND DATA COLLECTION REQUEST (All Interviewed)

**DIRECTORATES**

IMINT

SIGINT

COMM

**OFFICES**

Office of Systems Applications (OSA)

Operational Support Office (OSO)

Plans & Analysis (P&A)

Resource Oversight & Management (ROM)

Management Services & Operations (MS&O)

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## APPENDIX V-3

## (U) BUSINESS PRACTICES QUESTIONNAIRE TO NRO DIRECTORATES AND OFFICES

1. (U) Is program office functionally organized?

2. (U) Is authority spread to functional chiefs?

3. (U) What decisions are principally reserved for the program manager?

4. (U) Are detailed specifications used for baselines?

5. (U) How much autonomy does the prime contractor have (and seeks) to change design and baseline?

6. (U) Does program use CCB? How many? Who chairs? Who votes?

7. (U) Is the program business conducted to a set of NRO-imposed standards or is your program free to adopt procedures and practices which are tailored for your program?

8. (U) As the program manager, do you control all major elements of your program or must you negotiate with others for support (e.g., operations, launch, security support)?

9. (U) List any major changes that you would like to see implemented in the manner in which your program conducts its business and identify the added value.

10. (U) In what facets of your program do you consider security helpful in permitting you to do your job? In what facets is security restrictive?

11. (U) Could you operate effectively with little or no security constraints?

12. (U) Do you consider the recent security changes beneficial to the way in which your program does or can conduct its business and operational practices?



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**Issue 4:** (U) How should the NRO systematically review its business practices?

**Findings:** (U) While the Working Group investigation uncovered some business practices which the Panel believes should be modified, the examination was limited in time and scope. Only the acquisition program offices and a few support functions were queried and only at a top-level. A more exhaustive review of operating policies, practices, and procedures needs to be accomplished. The review objectives will be to streamline and simplify operations, ensure manning equals requirements and improve customer satisfaction. The review should include the mission ground stations and all staff functions. It should also address reporting requirements. The objective is not to arrive at a single set of business practices but to maximize efficiency and effectiveness. Whether the reviews are independently performed by someone external to the office or by a senior person within the office is best left to the DNRO. However, the investigation should be performed against a set of specified standards and questions to uncover practice inconsistencies and bureaucratic layers of management. Feedback from these internal reviews should be addressed at a DNRO management forum so each NRO manager can assess his organization's practices/policies in concert with those of other organizations. The DNRO would have the benefit of the review and the corresponding recommendations for change. It would also allow managers the opportunity to defend those practices they believe are essential to retain but that may run counter to those of other organizations. The review should also focus on the number of people supporting each office and staff function (Government-military and civilian, plus CAAS) with goal of reducing support levels as appropriate.***

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*** (U) In early June, the Acting DNRO tasked the Human Resources Management Group to conduct a zero-based analysis to determine NRO manpower requirements. That effort is currently under way. Its results should be available to the Directorate and Office managers to support their presentations at the next DNRO management forum.

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**Issue 12:** (U) How should the NRO relate to non-NFIP space organizations?

**Findings:** (U) The issue of how to improve coordination of NRO intelligence space activities with defense space activities, while still supporting the main NRO mission of intelligence (including intelligence support to the military), has been the focus of much of this chapter. This section summarizes recommended changes in this area.

**Recommendations:**

- (U) Ensure NRO architects and DoD space architect coordinate on integrated architecture where appropriate.
- (U) Increase coordination between the NRO and DUSD(Space).
- (U) Improve interface between the NRO and SMC.
- (U) Ensure integration into overall C⁴I architecture (including other disciplines' non-space architectures).
- (U) Improve interface between the NRO and USSPACECOM.

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# APPENDIX IV-1

## (~~S~~/B) RELATIONS WITH NEW ORGANIZATIONS WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Rick Shackelford (Chairman) | TASC |
| William Savage (Vice Chairman) | TASC |
| b3 b6 [redacted] | NRO/SI |
| Brett Anderson | CIO |
| b3 b6 [redacted] | NRO/COMM |
| Col Robert Cox, USAF | ASAF(Space) |
| Lt Col William Doyle, USAF | USSPACECOM |
| Robert Fitch | TRACOR |
| Col Joseph Garbrous, USMC | DoD Space Architect |
| Maj Mike Garrell, USAF | JCS/J-3 |
| b3 b6 [redacted] | b1 b3 [redacted] |
| b3 b6 [redacted] | NRO/OSO |
| b3 b6 [redacted] | NRO/IM |
| Col John Landon, USAF | DUSD(Space) |
| b3 b6 [redacted] | NRO/P&A |
| Col Allen Payne, USAF | JCS/J-3 |
| Michelle Permann | CMS |
| CAPT John Roberts, USN | DARPA |
| John Seely | ASD/C³I |
| b3 b6 [redacted] | DSPO |
| b3 b6 [redacted] | NRO/OSA |
| Col Chris Waln, USAF | AFMC/SMC |
| Dwight Williams | DARO |
| b3 b6 [redacted] | NRO/SI |



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13. (U) What organizations are involved in implementing configuration changes? What is the flow and time line from initiation to implementation? How are changes tracked and documented? Who is accountable?

14. (U) How do you plan for technology insertion? How is it broadcast to industry and NRO offices?

15. (U) Have the organizational realignments facilitated the management of your areas of responsibility? What adjustments would you recommend?

16. (U) Is there anything else you want to tell us?

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## APPENDIX V-4

## (U) BUSINESS PRACTICES QUESTIONNAIRE TO INDUSTRY

1. (U) Do you consider the NRO's contracting regulations and practices efficient and/or effective? What should it stop doing? What should it start doing?

2. (U) Do current contract requirements, specifications, and baselines prohibit or constrain your ability to provide more effective and efficient systems support to the NRO? Are the NRO requirements for configuration control, quality assurance, progress reports, property administration, and cost accounting a cost driver in your business relationships? Can these requirements be relaxed with an attendant beneficial result and can you quantify the benefit?

3. (U) From your experience on major NRO systems developments, what is the average time spent on major design reviews (from document preparation, through the review meetings, and including the clean-up process)? Does this process take longer today than it used to take? How does the NRO process compare to the DoD, NASA, or commercial process time required? How can this process be simplified and what steps in the process could/should be eliminated?

4. (U) From your past NRO experience, how long does it take to complete the engineering change proposal (ECP) process (from initiation to approval of the contract change)? Has this process become more time consuming? How does the NRO process compare to the DoD, NASA, or commercial process time required? How can the process be simplified?

5. (U) Please give us an estimate of the number of ECPs that can be expected during the system development process for a major satellite system from contract start to first vehicle launch. A ballpark estimate per year or per major cycle is sufficient. Of the total number, how many would you categorize as major ECPs?

6. (U) Do you consider the documentation requirements for NRO-developed systems to be adequate, sparse, or excessive? What, if any, changes do you recommend?

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7. (U) Do you have the flexibility to properly organize your total NRO support infrastructure across the NRO programs which you support? Are there changes which you would recommend to improve multiple program support efficiency and effectiveness?

8. (U) Do you have the flexibility to cross-fertilize among NRO and non-NRO systems development? If not, what advantages would this offer to your company and the NRO?

9. (U) What portion of your facilities that are dedicated to NRO support would have no current application to other government or commercial applications (i.e., unique to NRO requirements)?

10. (U) Do you believe that current NRO business practices constrain adequate competition for system and support services? If so, what changes would you recommend?

11. (U) What management and procurement judgements do you use when deciding to stay with a current subcontractor, supplier, or vendor or to seek competitive quotes or proposals from multiple potential sources? How do you balance the need for stable relationships with suppliers vis-a-vis the need to ensure you are gaining access to the best technologies at a potentially lower price?

12. (U) Do you believe the current NRO business practices for system integration, system engineering, and technical assistance support to be inadequate, adequate, or excessive? What changes would you recommend?

13. (U) Do you believe the NRO properly applies its FFRDC and SETA support contractors? What is your assessment of the level and quality of SETA and FFRDC support? What changes would you recommend?

14. (U) Do current NRO business practices foster innovation in your support to the NRO? How could the NRO take advantage of the creativity of industry?

15. (U) Do the current technical, contractual, or management business practices of the NRO serve to de-motivate industry from reasonable risk-taking? If so, please identify what could/should be changed and what you think the benefit would be.

16. (U) Can the NRO better capitalize on the application of existing and emerging technologies development within the commercial marketplace? If so, how can this best be accomplished? How can the NRO better apply its R&D budgets to assist in commercially development technologies?

17. (U) What processes do you employ to ensure that you have access to the best and cost-competitive technologies? Do security constraints diminish your ability to get access to the best technologies? Can you use open as opposed to closed competition?

18. (U) What are the issues with implementing commercial practices? What are the advantages and disadvantages?

19. (U) What, if any, bureaucratic changes to the NRO would you recommend to make the NRO more contractor friendly and the joint NRO-industry products and capabilities more effective?

20. (U) Have the recent NRO organizational realignments over the past few years had any positive or negative effect on your business relationships with your NRO customers? If so, please identify the effects. Are there any changes you would recommend?

21. (U) Are the NRO personnel with which you deal (management level to action officer) properly qualified to perform their job? If not, what recommendations would you offer regarding training, experience, or certification?

22. (U) Do you believe it to be worthwhile for the NRO to consider the use of unclassified contracts to the maximum extent possible? Would this make your support easier and/or more efficient?

23. (U) Do you consider your NRO contracts to permit you to use "best of breed" practices among your NRO, DoD, NASA, and commercial enterprises? If not, how can these best practices be better employed?

24. (U) Within the current sphere of NRO responsibilities and development activities. which areas do you consider amenable to the adaptation of commercial practices? How would you suggest that the NRO proceed and what actions are necessary?

25. (U) Would you prefer the use of contracts which permit the contractor full responsibility for meeting contract requirements for mission and operations data support wherein the contractor is fully responsible for all system specifications and product baselines? For instance, the NRO would specify and control all mission and operations requirements. The contractor would be responsible for providing a system of his design that meets the NRO requirements. Your incentives would involve cost, schedule, and system performance; and while the NRO would provide oversight of your activities, design, practices, and processes, its involvement and control of those activities would be considerably reduced and in many cases eliminated.

26. (U) Has the NRO been timely in accounts payable? Are contract closeouts efficiently handles?

27. (U) Can/Should the NRO shift its focus from cost-based to price-based contracts?

28. (U) In some commercial enterprises, the procuring entity buys the space capability delivered "on-orbit" from the developing contractor or leases the support over time. Has the maturity of NRO systems advanced to the state that these are viable procurement options for NRO consideration?

29. (U) What specific recommendations would you offer to reduce the development cycle time for major NRO system developments? If your recommendations were to be adopted, what positive/negatives could be expected and what do you think the cycle time would be?

30. (U) Do you believe it would be worthwhile for the NRO to initiate an experimental development program under very streamlined management principles and simplified practices and processes? If so, what should that program be and against what time line?

31. (U) We invite you to submit any recommendations for our considerations reference to specific NRO business practices which you believe would improve your business, contractual, or interface relationships with the NRO. Any responses should have a brief statement of the existing practice, you recommended change(s), and address the perceived benefits.

32. (U) Recommendations which fall outside the scope of the above questions are invited.



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# VI. BENCHMARKING

## 1. INTRODUCTION

(U) The Benchmarking Working Group of the Jeremiah Panel was established to develop benchmarks against which to measure NRO performance. To do this, the group determined that the following steps were necessary:

- Identify the key processes/functions critical to NRO success
- Identify other organizations which performed similar processes
- Compare other organizations' processes with those of the NRO
- Determine the best practices associated with these processes
- Identify areas in which NRO practices might be improved

(U) The Working Group membership is listed in Appendix 1.

## 2. METHODOLOGY

(U) In identifying possible areas for benchmarking, the Working Group first tried to identify those processes which impacted cost or schedule of fielded capabilities or those processes that impacted customer satisfaction. Action Groups were formed in the areas of innovation, acquisitions, software development, ground support operations, customer relations, Congressional relations, future requirements system, collection management and tasking, and joint Request for Change management. Using these basic selection criteria, and understanding the time constraints associated within the overall Jeremiah Panel effort, the Working Group determined that the functions/processes which characterize NRO programs from their inception (cradle) through operations and their ultimate deorbit (grave) and which largely determine user satisfaction would be benchmarked:

- Innovation
- Acquisition
- Software Development
- Ground Support Operations
- Customer Relations
- Congressional Relations

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## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The Jeremiah Panel concluded that the currently planned and funded NRO architectures are but *evolutionary* paths which reach a point of diminishing intelligence value in the year 2020. To meet future challenges, the NRO must also build a set of *revolutionary* capabilities which take advantage of innovative technologies for achieve cost efficiencies and to satisfy customers needs in a vastly changed world of new threats and new demands.

(U) To achieve that revitalized mission, the Panel found that a revitalized NRO must focus in three areas:

- ~~(C)~~ Revolutionary space capabilities--to address the hardest, most intractable national security intelligence needs.

- (U) Cost efficiency in current, evolutionary systems--with possibly constrained performance improvements.

- (U) Greater and more aggressive communications--with the Congress, other partners, customers, and users.



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## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) Is the NRO a world-class organization placing appropriate emphasis on innovation?

**Findings:** (U) The NRO's technology approach and management style were compared to a series of academically acknowledged "world-class" approaches, as shown in Figure VI-1.

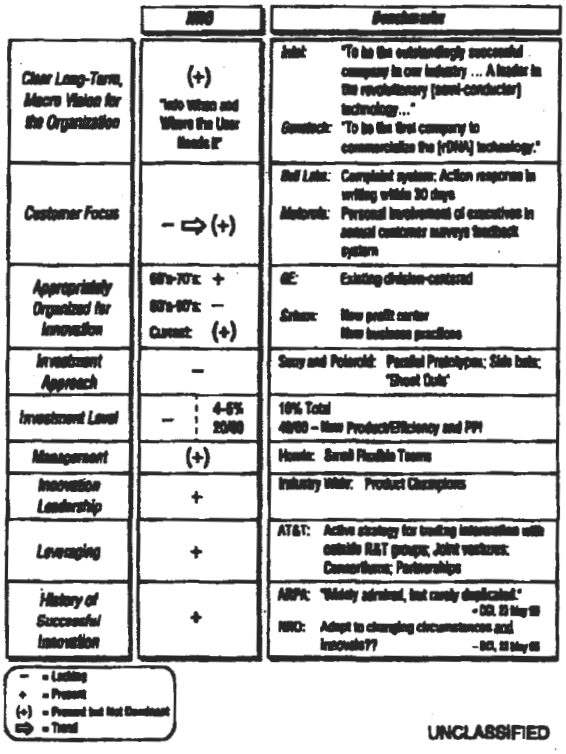


**Figure VI-1.** (U) Summary Comparison of Technology Approach and Management Style

(U) The summary findings of the Panel were:

• (U) Most truly innovation-focused companies use the GM-Saturn model to develop and implement radically new technologies, i.e.,

new technologies are born and nurtured in a corporate-sponsored R&D organization ("nursery"), then fully developed and implemented in a new product division devoted exclusively to that new product.

- (U) The NRO, on the other hand, develops most of its technologies in its current main product divisions, which tends to cause the growth of evolutionary (to the current systems) technologies and technologies for efficiency. For revolutionary new technologies, the tendency has been to develop some of them in OSA, the NRO's primary new technology spawning ground, but to then fully develop and implement them in the main current product divisions.

- (U) Forward-looking companies interested in developing new technologies spend about 10 percent of the corporate budget on R&D, of which the split is about 20 percent evolutionary and efficiency driven technology efforts and about 80 percent revolutionary new technologies.

- (U) The NRO spends about 4-5 percent of its budget on R&D of which the about 40 percent is evolutionary and 60 percent revolutionary. The net result is that at most only about 2 percent of the NRP is applied to the serious technology challenges that it will face in the 21st Century.

**Recommendation**: (U) The NRO should establish a quick reaction demonstration "pilot program" focused on a contemporary, hard intelligence collection problem, with a clear mandate to field a solution in as timely a fashion as possible. The program needs to focus on innovation, using the technology approach and management style identified with world-class organizations.

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**Issue 2:** (U) How does the acquisition decision process of the NRO compare to that of DoD and NASA?

**Findings:** (U) The acquisition decision process of the NRO was compared to that of DoD and NASA. The acquisition decision process of the NRO was compared to that of the DoD using time to reach a decision review and the amount of documentation required for such reviews as metrics to measure bureaucratic inertia as impediments to speedy decision making. Time interval from award of contract (or authority to proceed) to availability of satellites for launch was also compared among DoD, NRO, NASA, and commercial entities. Finally, satellite cost per pound as a function of total satellite weight between DoD and NRO systems was examined to see if there was a discernible difference in cost of satellites. The commonly accepted acquisition subprocesses such as contracting, use of commercial products, number of ECPs, RFP/proposal preparation time, etc., were not specifically examined because these constitute business practices and are addressed in that section.

(U) The summary findings were as follows:

- (U) For first-of-their-kind satellites and follow-on block modification satellites, there is no significant difference between satellites built in the DoD and those of the NRO with respect to the time required from authority to proceed to launch availability. In addition, both DoD and NRO time frames are longer than their commercial and NASA counterparts. This is probably due to the growing complexity of DoD/NRO satellites as compared to relatively more simple, single mission commercial satellites.

- (U) Compared to earlier eras, the time to develop and have satellites available for launch in the NRO is lengthening, as it is in the DoD--again most likely due to growing complexity, not to mention expanded oversight and greater aversion to risk taking in both organizations.

- (U) The time required for acquisition decisions and the amount of documentation required is clearly less in the NRO than in the DoD.

- (U) The number of documents and the actual page count is considerably less in the NRO (on average about 55 pages total) than in the DoD (on average 500 to 1,000 total pages) for major Defense acquisition programs--and these reflect only documentation prepared by the government for the government.

- (U) For satellites of similar weight *class*, using log-log regression analysis techniques, there is no statistically significant difference in cost per pound between DoD and NRO systems.

**Recommendation**: (U) The NRO must remain vigilant in evaluating its acquisition decision process to ensure it is as efficient and effective as possible. Periodic chartering of IPTs to review the process would satisfy this requirement.

**Issue 3:** (U) Are operations at the NRO ground stations as cost-effective and efficient as possible?

**Findings:** (U) Comparisons were made on the number of personnel assigned to ground station operations and the dollars expended for such an activity by the NRO, DoD, and commercial entities such as Intelsat, COMSAT, etc. Owing to the wide variety of commercial ground station operational concepts and the inability of commercial entities to provide exact numbers in a timely fashion, the summary findings for commercial companies are rough estimates.

- (U) The Air Force and the NRO have about the same gross number of personnel assigned to ground station operations functions, but both are considerably higher than the more automated commercial companies.

- (U) The Air Force spends approximately 75 percent of the amount spent by the NRO on ground operations. Both the Air Force and the NRO spend considerably more than commercial companies for ground station activities. The disparity between the Air Force and the NRO is likely a function of the kinds of personnel assigned: the Air Force is increasingly using enlisted personnel, who are inherently less expensive than the contractor personnel used by the NRO. This difference in kinds of personnel also underscores the difficulty in using apparently valid metrics such as "commands sent" to distinguish between and among ground stations--the Air Force sends commands as training mechanisms for its high turnover personnel, whereas the more experienced contractor base of the NRO does not need this training. Commercial companies send only the minimum commands to maintain control.

- (U) Both the Air Force and commercial investment in ground station operations is decreasing--commercial enterprises to maximize profits, and the Air Force in response to mandated force structure cuts. However, the NRO's Operations and Maintenance (O&M) dollars allocated for ground operations are growing in both real and relative terms.

**Recommendation:** (U) The NRO, in concert with CIO, NSA, and industry, should conduct a zero-based review of ground station operations to assess appropriate levels of manning; opportunities for organizational or industrial integration; and other opportunities for cost savings or improvements in efficiency.

**Issue 4:** (U) Is the software developed under NRO contracts cost effective?

**Findings.** (U) The five levels used by the Software Engineering Institute (SEI) to describe the level of maturity/quality in an activity's software development efforts were the basis of comparisons in this area. These five levels are described in Figure VI-2.

| LEVEL | FOCUS | KEY PROCESS AREAS |
|---|---|---|
| 5 Optimizing | *Continuous Process Improvement* | Process Change Management<br>Technology Innovation<br>Defect Prevention |
| 4 Managed | *Quantitative Management* | Process Management & Analysis<br>Quality Management |
| 3 Defined | *Development Processes and Organizational Support* | Training Program<br>Peer Reviews<br>Integrated Software Management<br>Software Product Engineering<br>Org Process Defn and Improvement |
| 2 Repeatable | *Project Management Processes* | Software Configuration Management<br>Software Subcontract Management<br>Evaluation<br>SW Project Tracking and Oversight<br>Software Quality Assurance<br>Requirements<br>Software Project Planning |
| 1 Initial | *Competent People and Heroics* | |


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**Figure VI-2.** (U) SEI Maturity/Quality Levels of Software Development

(U) The impact of these varying levels is shown in Figures VI-3 through VI-5. As a company, in this case Motorola, moves from SEI Level 1 to Level 5, increasing levels of quality (reduced rework) are realized, time to complete a given assignment is greatly reduced, and as a result the costs of software development are reduced (reduced rework + reduced initial time = reduced overall cost).

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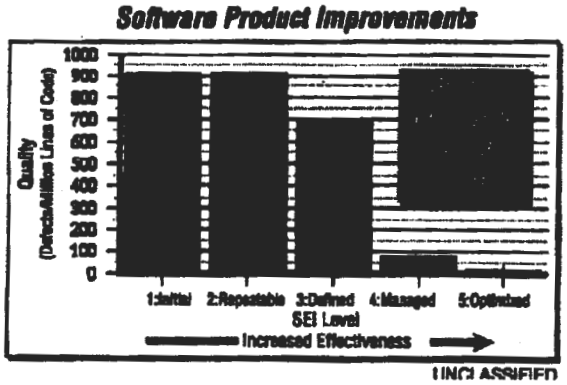


**Figure VI-3.** (U) Software Product Improvements

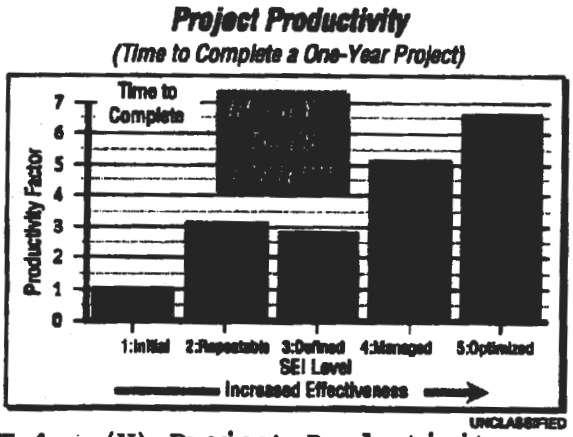


**Figure VI-4.** (U) Project Productivity

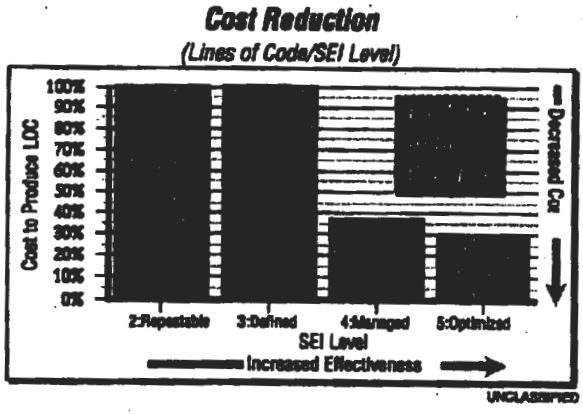


**Figure VI-5.** (U) Cost Reduction



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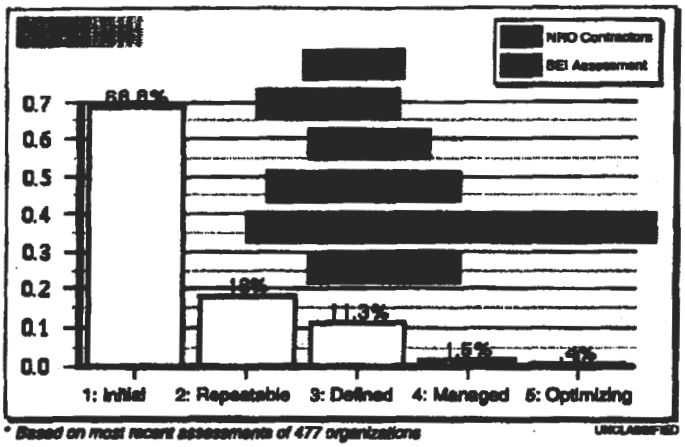
(U) With this brief introduction to the metric used, Figure VI-6 shows the distribution of the current SEI levels of nearly 500 companies independently assessed by the SEI. Above the vertical bars showing these SEI-assessed companies are horizontal bars showing where NRO primary contractors fall in relation to SEI levels. Note that there is a range associated with each company, vice a discrete point; this is because SEI levels will vary across projects, divisions, etc., within the same company.




*The one NRO company represented by the bar in the upper left-hand corner was questioned but not rated.

**Figure VI-6.** (U) Distribution of Current SEI Levels

(U) The summary findings were:

- (U) The majority of NRO companies have SEI levels higher than those of almost 70 percent of the companies rated by SEI.

- (U) NRO-wide there is room for improvement because truly significant savings associated with software development do not occur until SEI Level 4 or higher.

- (U) There is no concerted Government management attention paid to the quality, or lack thereof, of NRO contractor produced software.

(U) Data was also gathered concerning the cost per line of software code (LOC) for Air Force and NRO systems (commercial data was either not available or not obtainable as proprietary). In general, these findings were:

- (U) Cost per LOC for ground segments is *significantly* less expensive than for space segments.

- (U) Generally speaking, the NRO falls at the low end or middle of the various Air Force ranges for cost per LOC by type project.

- (U) The complexities and interactivity of issues such as type of code used, amount of software reuse (which produces counter-intuitively higher costs due to test and integration), and purpose of the software make "apples to apples" comparison of cost per LOC extremely difficult.

(U) Software development and maintenance costs contribute substantially to the development and life-cycle costs of NRO satellites and ground stations. As also noted, the cost per LOC is affected by whether it is ground or satellite code, what software language is being used, the amount of re-use (which drives the costs of integrating and testing new and legacy code), etc. As important as this area is as a cost driver and potential source of savings, the Panel could not find anyone in the NRO responsible for software--software seems to be an area left exclusively to the SPOs and their prime contractors.

**Recommendations:** (U) The NRO should establish and implement a software development policy outlining general objectives for software development and identifying contract incentives for their achievement. Implementation of the policy should be decentralized and managed within each Directorate and applicable Office. Directorates and Offices should:

- (U) Assess and report both their own and principal contractors software processes.

- (U) Explore ways to incentivize NRO software development contractors to: (1) evaluate and improve their own software development, (2) develop new tools for software improved development, and (3) lower defect rates in delivered systems.

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- (U) Include major software development activities in senior management reporting along with other critical management indicators.

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**Issue 5:** (U) Are NRO Congressional relations as effective as possible?

**Findings:** (U) A broad range of metrics was used to examine how agencies with a reputation for excellent Congressional relations conducted their affairs. Comments from senior legislative liaison personnel in the NASA, NSA, and HQ USMC were solicited against a set of metrics, and the results found are summarized in Figure VI-7.

| | NRO | NSA | NASA | USMC |
|---|---|---|---|---|
| • Desired Relationship | TBD | Open | Survival | Credible |
| • Clear Organizational Mission Statement | TBD | ✓ | ✓ | ✓ |
| • Commitment of Director | + | ✓ | + | ✓ |
| • Senior Leadership Commitment | ✓ | ✓ | ✓ | ✓ |
| • Written LL Action Plans | No | + | ✓ | ✓ |
| • LL Feedback | ✓ | + | + | ✓ |
| • Seniority of LL Director | GS-15 | SCEA-1 | Political | BGen |
| • Reporting Relationship | DNRO | DIRNSA | Administrator | Commandant |
| • Size of LL Staff | 6-7 | 20 | 30 | 17 |
| • Proactivity | No | + | + | ✓ |
| • Staff/Member Interaction | ✓ | + | + | ✓ |
| • Close Relationship with Key Staffers | + | + | + | + |
| • Director/Member Interactions (per year) | 7 | 74 | 285 | 7 |
| • "Farm System" | (✓) | + | ✓ | ✓ |
| • OFRs | 350 | 400 | 1,000 | 500+ |
| • Budget/Year | | [redacted] | | |

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Legend: ✓ = Exhibits/Practices Attribute; + = Greater Degree than "✓"; (✓) = Lesser Degree than "✓"

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**Figure VI-7.** (U) Summary of Congressional Relations Interfaces

Taken together, these metrics indicate the degree to which the Panel found the surveyed agencies to be organizationally committed to, and proactive in, their relations with the Congress. Some of the entries bear further comment:

- (U) NSA had extensive written legislative liaison action plans that described the Director's goals on various issues, the strategy for reaching those goals, detailed implementation instructions, etc. Both NASA and the USMC on occasion used some form of written action, whereas the NRO did not have a written plan to coordinate activities with the Congress.

• (U) With the exception of the NRO, the Directors of the Legislative Liaison offices were flag rank or equivalent.

• (U) While all the organizations had good relations with the staffers on their oversight committees, both NASA and NSA made extraordinary efforts to form relationships with other Members and Staffers.

• (U) The entry on "Farm System" is an interesting one: it describes the degree to which the agencies use available Congressional fellowship or other similar programs to groom and educate their legislative liaison staffs. Both the Marine Corps and NASA use fellowship or Presidential Management Intern (PMI) programs; the NRO has used Air Force billets in Congressional fellows programs in the past but has no personnel currently in a program. NSA, on the other hand, not only uses all available fellows programs administered by the DoD or other activities, but it has also sponsored its own fellows programs in order to assure a steady supply of legislative liaison staff candidates who are well versed, from personal experience, on Congressional activities as actually practiced in the Congress.

• (U) Proactivity is the degree to which the organizations appeared to seek out opportunities to interact with and educate Members and Staff, to assure that Members and Staff understand what the activity is doing or planning and why, rather than merely responding the Congressional initiatives. Both NASA and NSA made extensive and successful efforts in this regard, with Marine Corps efforts less centrally organized yet no less effective in getting the organizations' message(s) to key Members and Staff.

(U) Lest this matrix and text be misinterpreted, a word of caution is in order: for many years, the NRO was a highly covert organization with only a few selected Members and Staff fully aware of its existence and programs. Only recently has the declassification of the NRO caused a spotlight to be thrust upon its activities--a spotlight which unfortunately has not been particularly favorable in areas that do not reflect in any way upon its ability to successfully discharge its assigned missions. As with the customer satisfaction area noted above, however, availing itself of every opportunity to educate Members and

Staff, including those not on its oversight committees, can only serve the NRO well in the future. The summary findings of the Panel are:

- (U) The existing relationship with the Congress clearly needs improvement.

- (U) Even with a new, more proactive approach to legislative liaison, it will still take some time to greatly improve relations.

**Recommendations**: (U) Expand NRO legislative liaison activities. Start with a legislative action plan articulating the direction of legislative emphasis as identified by senior leadership. The plan should emphasize proactivity at every opportunity. Further:

- (U) Increase the size of the legislative liaison staff, to include bright, knowledgeable, aggressive, articulate people, with experience in Congressional fellows or media relations programs.

- (U) Establish an NRO Congressional Fellows Program, similar to that of the NSA, as a "farm club" for future LL staff.

- (U) Develop definitive, DNRO-approved action plans for educating not only key oversight committee members and staff, but also the public (as security allows) and other interested Congressional Members and Staff as well.

- (U) Increase the exposure of both the DNRO and his senior management team on Capitol Hill.

- (U) Establish tools for informing all NRO employees on legislative issues and events critical to the organization ("Today on The Hill").

**Issue 6:** (U) Should NRO customer/user relations be improved?

**Findings:** (U) The results of a Baldridge Award-like self-assessment conducted by NRO senior managers at the Program Managers Quarterly Forum in April 1996, as well as the findings contained in an extensive survey of NRO customers and users conducted in 1994, were used to address this issue. The results of the NRO self-assessment are shown in Figure VI-8.

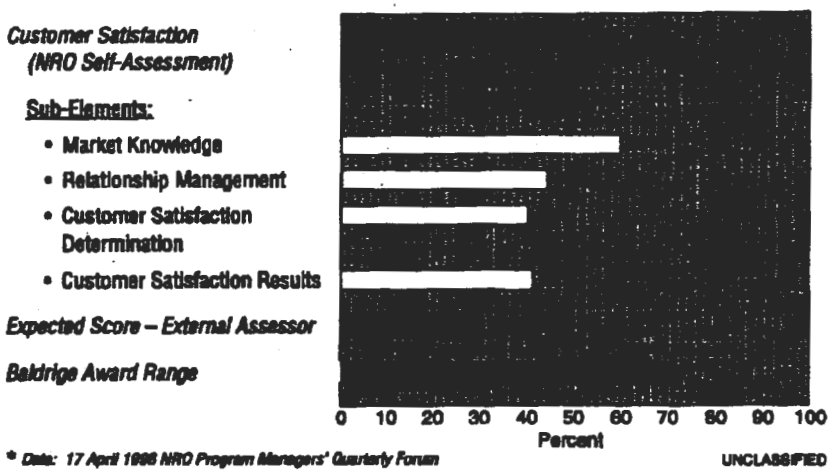


**Figure VI-8.** (U) NRO Self-Assessment on Customer Satisfaction

(U) At the bottom of the chart, we see that the typical Baldridge Award winner would expect a score of about 70 percent (customer satisfaction is 25 percent of the entire Baldridge Award rating scheme), whereas NRO senior management (Colonels/GS-15s and above) rated itself only about 45 percent in satisfying customer needs. Further examination of the results leads to the conclusion that NRO managers believe they understand their customers fairly well, but perceive that relations with those customers are not well managed. In addition, NRO managers did not feel that there was a particularly satisfactory mechanism in place for gauging customer satisfaction, thus promoting the feeling that the NRO probably is not satisfying its customers as well as it might. These results seem to substantiate one of the conclusions of the 1994 user survey, which found that the widely held opinion that the NRO "doesn't care about nor listen to users."

(U) However, it is also interesting to note that the same 1994 survey found that areas of greatest concern to users were product dissemination and tasking feedback...*neither of which is the responsibility of the NRO!* Prioritizing target requests and actually tasking missions to the collection satellites is a function of the Intelligence Community, not the NRO. Similarly, disseminating information/intelligence products to users is the responsibility of the analyzing activities and agencies, again, not the NRO. Thus, the NRO finds itself being held accountable for shortfalls for which it has no chartered responsibility and over which it has little control. In this instance, perhaps better management of customer relations (education on roles and responsibilities) might serve the NRO very well.

(U) The summary findings of the Panel were:

- (U) NRO customer satisfaction is not world class.
- (U) The NRO has recognized and is working the issue.

**Recommendation**: (U) The NRO should develop a coherent, cohesive customer support action plan. The plan should emphasize future support to all customers with centralized development, management, and oversight along with decentralized operations. The Panel further recommends expanding the use of tools for measuring and reporting customer satisfaction.

(U) The Panel believes that the P&A/OSO-sponsored INTELINK customer survey tool is an excellent start at gauging the feelings of may of the NRO's customers and users. However, the Panel feels that inclusion of only intelligence users of NRO products and services (because the tool uses INTELINK) overly constrains the views provided to NRO senior management--the voices of "operators" and "warfighters," from which communities most theater CINCs emerge, may not be heard. To assure that not just intelligence concerns are raised, the Panel recommends the NRO investigate ways to expand the scope of the survey to include these "operators," perhaps through putting the tools on the Global Command and Control System (GCCS).

**Issue 7:** (U) Should the NRO establish a permanent benchmarking activity?

**Findings:** (U) Although there was success in identifying processes for benchmarking, the limited time (60 days) allotted to define a methodology, gather and analyze data, and write a report was constraining. Classic benchmarking is a very time consuming process owing to the measured pace at which data must be gathered and analyzed. Throughout the benchmarking efforts, the Panel found that there was not an explicit effort or process in place within the NRO to constantly provide senior management with information on what the organization was doing right and what the organization could be doing better--against a set of standards that both NRO senior management and its employees could agree were meaningful and measurable. In the spirit of a revitalized NRO poised to accept and meet the challenges of the 21st Century, the Panel agreed that "you cannot manage what you cannot measure." Such measurement, however, should have two focuses.

(U) One focus is benchmarking key NRO processes, much as the Benchmarking Working Group attempted to do but in a more measured pace. Within the task, key processes identified might include:

- Innovation
- Acquisition
- Spacecraft Operations
- Customer Satisfaction

The office tasked to actually conduct benchmarking would then identify the critical functions within each process, the metrics to be used for data collection and analysis, and other organizations against which to compare the NRO.

(U) The second focus would be at a higher level, concentrating on how well the NRO was performing activities aimed at achieving it's vision and missions. These would be what are commonly referred to as management indicators and could be likened to the organization's "report card." Here, indicators or criteria might be derived from the NRO's macro-strategy, such as:

- (U) Degree of investment in future technologies while accepting near-term risk.
- (U) Increase in support to military operations.
- (U) Reinvigorated, streamlined acquisition process.
- (U) Improvement in on-orbit capabilities and/or flow of information.
- (U) Financial execution.

**Recommendation**: (U) The NRO should establish a benchmarking activity under the NRO Chief of Staff to eliminate any possible organizational conflict of interest (real or perceived).

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# APPENDIX VI-1

## (S~~/~~B) BENCHMARKING WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| b3 b6 [redacted] (Chairman) | NRO/P&A |
| b3 b6 [redacted] | NRO/SIGINT |
| Jon Bryson | Aerospace |
| Tom Burke | TRW |
| Cordell Burnham | E-Systems |
| b3 b6 [redacted] | NRO/Contracts |
| Craig Childress | TASC |
| Art Decker | TASC |
| MGen Roger DeKok | USSPACECOM |
| Frank Eppler | Aerospace |
| b3 b6 [redacted] | NRO/COMM |
| Ken Kobayashi | Hughes |
| b3 b6 [redacted] | NRO/IMINT |
| Frank Loch | STEL |
| Tom Maultsby | GRC |
| b3 b6 [redacted] | NRO/ROM |
| Ken Peters | Lockheed-Martin |
| Col Rick Skinner | SAF/AQS |
| Glenn Whited | Motorola |

NRO Action Groups and Chairpersons

Innovation . . . . . [redacted]
Acquisition . . . . . [redacted]
Software Development . . . . . [redacted]
Ground Operations . . . . . [redacted]
Congressional Relations. . . . . [redacted]
Customer Relations . . . . . [redacted]
Future Requirements System . . . . . [redacted]
Collection Management/Tasking. . [redacted]
Joint "Request For Change" Management . . [redacted]

b3 b6



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# VII. INTERNAL ORGANIZATIONAL STRUCTURE

## 1. INTRODUCTION

(U) The Internal Organizational Structure Working Group was chartered to provide advice and recommendations to the Jeremiah Panel on organizational structure and effectiveness. The group developed and evaluated six major sets of issues and made recommendations for organizational and functional changes to mitigate these issues. The Working Group membership is listed in Appendix VII-1.

## 2. METHODOLOGY

(U) The Working Group collected information by means of:

- Briefings from the major NRO organizations.
- Interviews with the directors of these organizations.
- Interviews with a variety of external Government executives, judged to be current or previous stakeholders in the NRO.
- The industry questionnaire developed by the Business Practices Working Group.

(U) Appendix VII-2 contains a list of those individuals interviewed. An unattributed summary of their comments appears in Appendix VII-3.

(U) The Working Group analyzed the information received in the briefings and interviews and developed a set of six issues that appeared to have recurring emphasis in the data and which appeared amenable to resolution by organizational change. Suggested organizational modifications were postulated and examined to determine the extent to which they mitigated the issue set. Conclusions and recommendations were then formulated and presented to the Panel for endorsement and discussion.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The internal organization of the NRO is transitioning from one of separate program and agency "stovepipes" with minimal customer participation to one focused on developing a "system of systems" for national reconnaissance with integrated agency participation and improved customer support. The NRO organizational design at this time could be better matched to the future NRO mission in a new world of customers, threats, and technology.

(U) The NRO is recognized within industry and Government for superior systems engineering and system acquisition capabilities. The strength of the NRO in these crucial functions is founded on the excellence of contractor and Government work forces, streamlined work processes, and cohesive Government-industry program teams. However, the impact of cumulative changes, especially over the past five years, indicates a need to optimize the NRO organization.

(U) The NRO is now a mature organization. It is collocated for the first time and is integrating heretofore separate components into a more unified structure. Technological change is accelerating, driven by robust commercial applications and demand. The NRO now has a considerable stake in the operation and maintenance (O&M) of reconnaissance systems and large sunk costs in its baseline programs. The large invested capital base makes it difficult to innovate or to introduce radical new concepts. Moreover, accessing "best of breed" technologies for NRO applications is becoming more difficult, and this is exacerbated by a constrained major contractor base. The realignment of that base through infusion of "nontraditional" NRO suppliers as well as by the transformation of major aerospace primes poses unique system development and management problems for the NRO.

(U) Finally, the NRO customer base is becoming more complex and dynamic, reflecting the new challenges to U.S. national security. Included in this changing customer focus is the steeply growing significance of the NRO's support to military operations, which is driven by the new defense missions unfolding at a rapid pace and by the advancing technical capabilities of NRO systems enabling unprecedented near real-time field support.

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(U) The Panel recommends the following changes in the internal organization of the NRO:

~~(S/B)~~ Give technology in the NRO more visibility and stature in order to obtain maximum payoff from the NRO b1 annual [redacted] investment, to achieve more coherent coupling with industrial R&D, and to attain credibility for innovative system endeavors. Establish within the NRO a fourth directorate, Future Technology and Applications Directorate for this purpose. This organization should have a monitoring role of all NRO R&D and technology activities and an execution role for those not specific to any existing system. This directorate should also perform and foster demonstrations and test beds to encourage the growth of new concepts into mature systems. The Panel recommends promotion of the existing Office of Systems Applications to be the nucleus of this new Directorate.

(U) The Office of Plans and Analysis (P&A) is not well matched to important functions within the NRO. This office-level component should be strongly reoriented to systems engineering work across programs and be concerned with the "system of systems." This "system of systems" effort should focus on issues of cross-program compatibility and interprogram operability. As the systems become more inter-dependent, interfaces with the NRO communications network will become more complex. The systems engineering activities associated with these interdependencies should fall within the charter of this office. In addition, this component should continue to integrate strategic planning, development of system tools, and requirements and analysis work. Oversight of this office should be provided by the Technical Director as determined by the DNRO. The Panel recommends a name change to reflect this new emphasis on systems engineering: Systems Engineering, Plans and Analysis Office.

(U) Customer support is currently provided in five different components in the NRO. Given the importance of customer support, this function should be centrally managed. This central authority should also coordinate all customer support activities accomplished in other parts of the NRO.



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Customer participation in future system developments in the longer range will be provided through the new Systems Engineering, Plans and Analysis Office.

(U) A high-level advisory board should be established to provide the DNRO objective program review and assure the promotion of competitive technologies and systems development in the NRO. The board should be broadly represented by nationally recognized contributors from industry, academia, and independent research organizations. The board should be attached directly to the DNRO's office.

(U) A new Finance and Administration Office should be established to consolidate the ROM, MS&O, and major staff functions under the direction of the Chief Financial Officer.

(U) A recommended organization chart which incorporates these changes is included in Appendix VII-4.

(U) These five recommendations are designed to permit expeditious action on the major internal organizational issues surfaced during this review. They involve a minimum of dislocation and almost no impact on the NRO business core--the SIGINT, IMINT, and COMM Directorates. They may be viewed as the lowest organizational option that would have an effect justifying the changes. The question remains whether enough impetus is given to advanced technologies, the opportunity to innovate is sufficiently improved, customer support is coherently provided, and a structure to deliver a satellite reconnaissance "system of systems" is established.

(U) Finally, it is recommended that the DNRO establish an on-going activity to develop a more extensive reorganization with the goal of enabling optimization of investment in total system engineering, research and development, and new systems innovation and acquisition. This new organization would also be designed to reduce real or apparent conflicts between acquisition and operations. It should also focus all near-real-time operations support, improve SMO, and enable easier networking and economies of scale.

## 4. SPECIFIED FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) Do there appear to be inefficiencies and shortcomings in the system engineering processes, especially those addressing cross-program/cross-discipline interfaces?

**Findings:** (U) A recurring theme that the Panel heard from outside the NRO was that it was in danger of losing its cutting-edge excellence in systems engineering. Within the NRO the Panel heard a fervent refutation of this charge. The Panel examined systems engineering practices and policies and drew the following conclusions: There are no top-down, NRO-wide practices or policies for the conduct of systems engineering. In one sense this is good, inasmuch as each of the program offices has developed internal practices closely aligned to and responsive to its programs. A shortcoming of this approach, however, is its inconsistency with the new consolidated structure of the NRO -- for example communications support is now in the Communications Directorate vice the Imagery Directorate. It is also inconsistent with the NRO's public statements about providing greater capability at reduced cost by operating a synergistic "system of systems." Both of these changes imply increased complexity of interfaces and more complex bureaucratic processes for resolving interface issues. These "fact of life" changes will be exacerbated in the future as the NRO moves further toward integrating its programs and emphasizing its military support role.

(U) This is an area where cautious change is in order. The internal systems engineering activities of the program offices continue to produce results which are good to excellent. Any top-level systems engineering function introduced should not supplant or disrupt the program-level activities but *supplement* them in order to tie together the NRO "system of systems."

(U) In 1989, P&A was originally chartered to have top-level systems engineering. In 1992, there was a brief attempt to address this responsibility when a NRO Systems Engineering Office was formed. It lasted only a short time and dissolved after its director was promoted to run the Imagery Directorate. Subsequently, the systems engineering function was reestablished in P&A but has not been executed with much vigor.

(U) The Panel felt strongly that while the need for a top-level systems engineering function is just now emerging and is not well understood internally, it is time for the DNRO to reemphasize this function.

**Recommendations:** (U) Recommend the NRO establish a top-level systems engineering function. This function would provide the DNRO with top-down systems engineering expertise to address cross-organizational, "system of systems" engineering issues. The function would address integration issues and provide NRO-level standards or building codes to facilitate inter-system integration.

(U) 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.

**Issue 2:** (U) Is the NRO customer support program coherent, cohesive, and related to NRO's mission and vision?

**Findings:** (U) Previous to collocation of the three NRO program components and the headquarters element, customer relations were pursued separately in each. One of the principal functions of P&A was to provide much improved customer/user visibility and participation in the evolution of NRO programs. Today, vestiges of prior customer service units exist along with P&A and the new Operations Support Office. The relationships among DDMS, DSPO, and OSO are not clearly stated and thus not well understood outside the NRO. Directive 14 assigns responsibility for all "customer and user support to the DDMS"; OSO purports to serve all users on operational interfaces.

(U) In reality, customer support is not well organized and the NRO customer set is poorly defined. The recent Joint CIA-DoD IG Draft Inspection Report on the NRO cites inconsistency in informing CIA, DIA and NSA about changes in NRO programs. It also cites a "conflict" between NRO Directives 7 and 14 which, while more apparent than real, nevertheless highlights a lack of clarity in this area. As a result, some national customers sense a continuing decrease in their understanding and involvement in NRO programs evolution which are largely driven by product improvements for those very customers.

**Recommendations:** (U) Recommend the NRO develop a customer support process to provide more coherent, cohesive support to all its customers. The process would call for centralized management, planning, and oversight along with decentralized operations. The central office would focus on issues and services affecting a wide variety of customers. Further recommend the management and oversight responsibility for customer support be centralized with responsibility for execution distributed among the Directorates and Offices.

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**Issue 3:** (U) Is the NRO still on the leading edge of technology?

**Findings:** ~~(S/TK)~~ The annual NRO budget for research and
b1 technology is almost [redacted] It is centrally planned and decentrally executed by the three directorates and Office of Systems Applications. There is, however, no group in the top-level organization chart with "technology" or "research" in its title. This is not a semantic question. The Panel perceived too much rigidity in the bottom-up build process for R&D. There is a lack of R&D investment strategy at the top and a concomitant lack of accountability for determining coherent return on investment. Opportunities for joint ventures with industry may be lost since industry has little insight into the NRO's overall technology activities.

(U) The decentralized execution of R&D into a number of distinct activities makes it difficult for industry to coordinate its Independent Research and Development (IR&D) investments. Characteristically, significant new NRO technical endeavors are initiated and funded by Congress.

**Recommendations:** (U) Recommend the NRO increase its emphasis on research and development activities. Steps taken to vest central management of R&D in OSA are good but incomplete. R&D should be a Directorate-level activity at the NRO--accorded the same organizational level and importance as the other major business areas (SIGINT, IMINT, and COMM).

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**Issue 4:** (U) Does the NRO still have the ability to innovate advanced reconnaissance systems?

**Findings:** (U) The perceived lack of innovation in the NRO today derives from several sources. First, the NRO is a mature organization. It has a large investment in satellite assets and a steadily growing O&M account. Changes to or evolution of reconnaissance systems are largely requirements driven. These factors tend to squeeze available funding as well as limit opportunities for NRO people to conceive and nurture new approaches.

(U) Second, the pace of development of some important commercial technologies tends to inhibit the timely infusion of new technologies. NRO staff cannot keep current, especially if "nontraditional" NRO contractors are the source of the new technology. Moreover, the constrained NRO industrial base, even if vertically integrated, is no match for the broad range of technology advances.

(U) Third, the NRO currently lacks the leadership of and corporate commitment to innovation as a corporate value. This absence is crucial in a maturing organization with an innate bias against innovation. As previously noted, Congress now initiates significant new activities in the NRO.

**Recommendations:** (U) Recommend the NRO place increased emphasis on fostering innovation and the use of commercial technologies. Steps to improve the NRO's posture regarding innovation include:

- (U) Emphasize innovation in all NRO office-level functions and with industry.
- (U) Raise NRO-level innovation responsibilities to the same organizational level as IMINT, SIGINT and COMM.
- (U) Establish an NRO Senior Advisory Board to assist the DNRO in focusing commercial technologies and innovation most germane to space intelligence collection and dissemination.
- (U) Improve NRO ties with national, defense, and commercial technology laboratories.



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**Issue 5:** (U) Does the role of P&A need to be updated and focused more on current NRO problems?

**Findings:** (U) The role and mission of P&A were determined in the late 1980s and early 1990s. They were largely influenced by the desire to moderate the corrosive competition between Programs A, B, and C. One of their primary functions was to police the program "baseline contracts" between the DNRO and the program managers. This was instituted as a damping influence on the entrepreneurial practices of the programs as they vied with one another for money and constituencies. The need for vigorous enforcement of these contracts has probably abated with the breakup of A, B, and C and realignment into noncompetitive product lines.

(U) Overlap and ambiguity were observed in the areas related to advanced systems and policy support. The cases of advanced imaging (where P&A took the lead) and foreign space systems policy (where OSA leads) staffing are two examples. P&A's role in architecture is judged to be uneven across the disciplines. While they have played a strong role in IMINT, they are less involved in SIGINT.

(U) The original expectation that P&A would be co-equal to the program offices and exert great leverage on them has never been realized. As a result, one original objective--to have the overarching systems engineering function reside in P&A--has never occurred.

**Recommendations:** (U) Recommend the charter of the P&A organization by reemphasized from the highest levels to focus on "system of systems" engineering along with current responsibilities. Suggest oversight of this office be placed under the Technical Director with a name change to Office of Systems Engineering, Plans, and Analysis.

**Issue 6:** (U) Is the current NRO internal organization well matched to the future?

**Findings:** (U) 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.

(U) 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.

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

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

- (U) 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:** (U) Consider reorganizing the NRO to focus on improving the following functions:

- (U) Customer support
- (U) "System of systems" developmental engineering
- (U) Research and development
- (U) Innovation and technology application
- (U) Streamlined administrative management

(U) A notional reorganization can be found at Appendix VII-4. This structure, if implemented, would address many of the concerns noted by the Panel report and posture the NRO to accomplish its primary responsibilities in the 21st Century.

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# APPENDIX VII-1

## (S/B) INTERNAL ORGANIZATIONAL STRUCTURE WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Jon H. Bryson (Co-Chairman) | Aerospace |
| James V. Hirsch (Co-Chairman) | Consultant |
| Dr Robert Butterworth | Aries Analytics |
| John Devine | Consultant |
| Dr Phil Eckman | Jet Propulsion Labs |
| Maj Gen Don Hard (USAF, Ret) | Logicon |
| Dr Jack Keliher | Consultant |

# APPENDIX VII-2

## (U) INTERNAL ORGANIZATIONAL STRUCTURE WORKING GROUP SENIOR INTERVIEWEES

### NATIONAL SECURITY AGENCY

| | |
|---|---|
| Lt Gen Kenneth Minihan, USAF | Director |
| Dr Robert Mueller | Deputy Director, Technology & Systems |
| Mr Ed Benz | Assistant Deputy Director, Technology & Systems |
| Mr Rod Sorkin | Chief, Collection Systems Group |
| Mr Pat Clark | Deputy Director, SIGINT (NRO) |
| Mr Frank Saus | Chief, Processing SPO (NRO) & Chief, K5 (NSA) |

### U.S. AIR FORCE

| | |
|---|---|
| Gen Charles Horner (USAF, Ret) | Former CINCSPACE |
| Gen Lawrence Skantz (USAF, Ret) | Former Commander, Air Force Systems Command |
| Lt Gen Les Lyles | Commander, Space and Missile Systems Center |
| Maj Gen Roger DeKok (representing Gen Ashy) | J-3 U.S. Space Command |
| Maj Gen Robert Dickman | DoD Space Architect |
| Col Rick Skinner | Deputy Director, Office of Space Systems Acquisition (SAF/AQS) |

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CENTRAL INTELLIGENCE AGENCY

| | |
|---|---|
| Mr John Gannon | Deputy Director for Intelligence |
| Mr Richard Calder | Deputy Director for Administration |
| Dr Ruth David | Deputy Director for Science and Technology |

NIMA TRANSITION TEAM

Mr Leo Hazelwood

CONGRESS

Several staff members of the House and Senate Select Committees on Intelligence

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## APPENDIX VII-3

## (U) SUMMARY OF COMMENTS FROM EXTERNAL INTERVIEWEES

GENERAL AND UNIVERSAL THEMES

- (U) NRO not structured to encourage or develop technology breakthroughs.

- (U) Technology efforts are fragmented, leading to suppression of new ideas.

- (U) Systems engineering, while growing in strength, is still absent.

- (U) NRO has become bureaucratic.

- (U) The NRO needs to become more of a team player with the military forces. Future conflicts will mandate the inclusion of NRO systems/products in the commander's tool kit. NRO should begin now to establish a more co-operative "team player" spirit.

- (U) The DNRO should establish a top-level scientific advisory panel. This group should be selected from the best technical minds in the country. They would provide insight to the DNRO on technical realism and where he should "test the envelope" with high-risk technical ventures.

- (U) The NRO is now a mature organization refining what it does best, polishing the programs, and progressing incrementally. Radical new ideas face formidable hurdles.

- (U) The NRO lacks a balanced and systematic program to take maximum advantage of commercial technology and focus NRO resources where commercial technology is inferior or nonexistent.

- (U) The NRO needs a closer relationship to the military operators/joint exercises.

- (U) NRO needs to work architectural issues at a higher level. Not only within collection disciplines but across other

functional areas as well.

- (U) NRO needs to emphasize external interface definition rather than internal program trades.

COMMENTS FROM HOUSE AND SENATE INTELLIGENCE COMMITTEE STAFFS

- (U) The NRO is valuable and is not broken, but some things need correcting. (both)

- (U) The NRO should get its management house in order. (Senate)

- (U) The NRO needs a new mission statement and effective financial, personnel, and acquisition procedures. (Senate)

- (U) The NRO must decide whether to remain a hybrid organization or become a solely DoD organization. We prefer the hybrid model. (Senate)

- (U) The NRO should remain in operations but not take over launch functions now done by the Air Force. (Senate)

- (U) The NRO has lost its edge and become dull and bureaucratic. (House)

- (U) The NRO focuses too much on operations. (House)

- (U) The current NRO organization is protective of the present and detrimental to new technology development. (House)

- (U) The NRO needs to look to the future (repeatedly stressed). (House)

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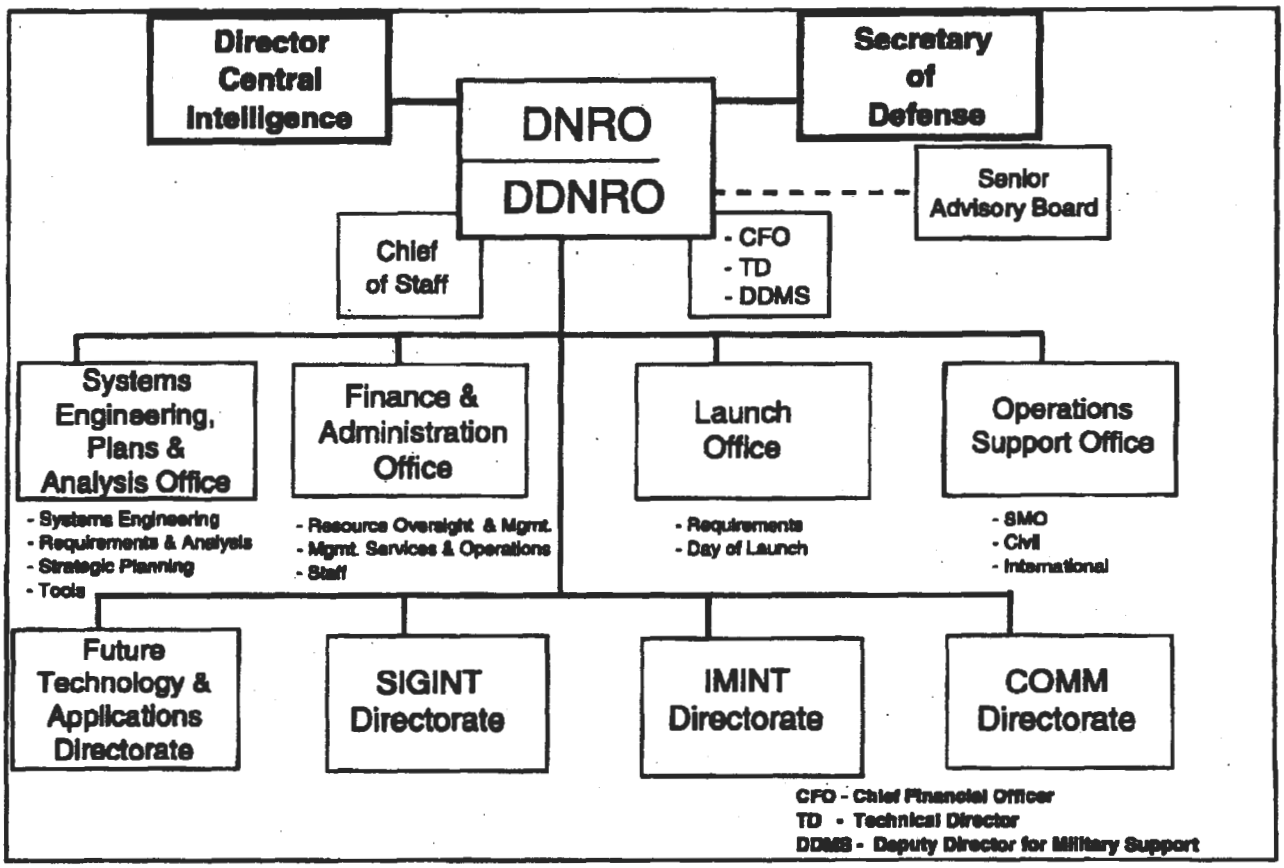
## APPENDIX VII-4

## (U) RECOMMENDED ORGANIZATIONAL STRUCTURE



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# VIII. INFRASTRUCTURE

## 1. INTRODUCTION

(U) The Infrastructure Working Group was established to assess administrative and support operations and to compare the infrastructure burden--the NRO overhead--with that of other organizations. The focus of the Working Group was circumscribed to exclude finance, security, and personnel issues which other groups addressed. The Working Group did attempt, however, to make burden comparisons with other organizations which included the costs of finance, security, and personnel. It also attempted to identify practices or initiatives that should be commended or put in place.

(U) The Working Group members who assisted in the analysis are listed in Appendix VIII-1. The organizations and individuals who so helpfully provided data and insights to the Working Group are listed in Appendix VIII-2.

(S) To appreciate the challenges of calculating the NRO infrastructure burden, it is important to understand that the NRO is not an agency by normal standards. It is a joint activity of the SECDEF and DCI established for the collection of intelligence through overhead reconnaissance. The NRO has been, from its inception until just recently, a covert organization. Its procedures were designed to maintain its anonymity. Its original authority came from a 1961 letter from the Deputy Secretary of Defense to the DCI. A series of agreements during the 1960s, culminating in the 11 August 1965 "Agreement for the Reorganization of the National Reconnaissance Program," established the NRO as a "separate operating agency of the DoD...jointly staffed."

(U) According to the Joint CIA-DoD IG Draft Inspection Report dated 16 April 1996, "The charter documents are written in such vague and general terms that the NRO's responsibilities, its relationships with those providing oversight and support, and its administrative authorities are subject to varied interpretations." Moreover, the Inspectors General note that "there is no DCI Directive (DCID) or CIA

Headquarters Regulation comparable to the DoD Directive that addresses the NRO's status and responsibilities within the Intelligence Community, its use of CIA authorities, or its relationship with the CIA." Thus, the organizational status of the NRO is unique in how it relates to participating departments and agencies, and it is vague. This was deliberate at its inception and helped to hide the scope and nature of NRO activities. As a result, CIA, NSA, DoD, and the military services contributed personnel, facilities, and supporting services to the NRO on a non-attribution basis while the NRO funded acquisition and mission operating costs from a classified "black" budget. In this regard, a complete NRO enterprise budget has never been compiled.

~~(S)~~ The reorganization of the NRO in 1989, which consolidated the headquarters elements of the geographically dispersed programs (Programs A, B, and C) into a central headquarters, caused administrative (as opposed to operational) facilities to become major line items in the NRO budget. Until this era, programs had been housed by their parent organizations. Similarly, declassification of the existence of the NRO has permitted the costs of DoD military and civilian personnel assigned to the NRO to be moved to the NRO budget--an entry for the first time in FY97. As a result, there is an apparent growth in the NRO infrastructure costs that is explained, at least in part, by budget transfers from participating organizations to the NRO of what were once covert support costs. This trend of budget transfer is likely to continue and, in time, the comprehensive costs of the NRO will emerge.

(U) This historical perspective--a covert intelligence collection effort using space systems for the first time, staffed and managed jointly by the SECDEF and DCI, its resources hidden within larger classified budgets, and its people assigned through dispersed cover organizations--is fundamental to an appreciation of the Panel's findings.

## 2. METHODOLOGY

(U) To assess the infrastructure burden, the Working Group relied heavily on cost and expenditure data from a variety of sources as well as on extensive interviews. The interviews were

an important aspect of interpreting the budget and cost data so that comparisons could be made between years or between organizations. To assess the effectiveness of administrative and support operations, the Working Group relied on interviews (Appendix VIII-2).

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The Panel was unable to determine the burden of the NRO infrastructure because so much of the cost remains in the budgets of participating organizations and cannot be identified. It appears that less than half the true costs are contained in currently identifiable accounts within the NRO budget. The Panel recommends the Associate Director of the Office of Resource Oversight and Management design the new budget structure so that such a question can be answered in the future.

b1 ~~1.4(c)~~ [redacted]

(U) In May 1996, the rules changed for delegating DCI contracting authorities to NRO personnel. Until then, only CIA employees could exercise DCI delegations, a policy interpretation that excluded delegating authorities to the DNRO. A new legal opinion now makes it possible to consolidate DCI and DoD contracting authorities and establish a unified acquisition and financial system. Because there are advantages to both the DCI and DoD systems, the Panel recommends that the DNRO seek authorities from both.

(U) Reorganization of the NRO and consolidation of its headquarters personnel have made possible at least $20M initial savings through standardization, integration, and the termination of leases. The Panel applauds these efforts and recommends that they continue in the future.

(U) Finally, it became apparent that the NRO has been aggressive in extending itself towards its customers, but that the operational and data fusion issues are so complex that a demonstration facility would provide a useful resource for outreach. As a result, the Panel recommends creating a Concept Demonstration Laboratory where customers could explore new ways to integrate and display the data they had available, whether it is from NRO, theater, commercial, or coalition partner systems.

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## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) What is the cost of the NRO infrastructure?

**Findings:** (U) Infrastructure is generally understood to include the services of common concern--communications, acquisition, information services, logistics, facilities, human resources, training, and security. The infrastructure burden includes costs of operations, contract expenditures, and salaries of administrative and support personnel. The Panel was unable to determine a reliable compilation of such costs for the NRO.

(C) There are two primary reasons why the true costs of the NRO infrastructure cannot be determined. The first, suggested by the introduction, is that historically, resources devoted to the NRO by participating departments and agencies were deliberately mixed into larger activities in the participating organizations so that they could not be identified to disclose the existence, scope, or nature of NRO activities. This was successful and today they cannot be completely retrieved and aggregated to determine an accurate historical or current cost series.

(U) The second major reason for difficulty in determining true infrastructure costs stems from the fact that the NRO has traditionally budgeted all mission-associated costs under the various system program offices (SPOs). Thus, the cost of a mission ground station (MGS)--necessary to operate a satellite program--has been considered an operational cost. But the costs of the facilities, administrative communications, etc., within the MGS, which might ordinarily be considered as infrastructure, cannot be identified and sub-aggregated even though they are contained in the NRO budget. The current NRO accounting structure does not have the sub-object or cost center structure that would break out costs in this manner.

(U) Costs that can be identified as NRO infrastructure costs are, as a result of the two considerations above, only partial. Table VIII-1 presents those infrastructure costs identified in the NRO budget plus the costs of administrative communications plus forward funding. The budget numbers were extracted from the FY97 Congressional Budget Justification Book for the National Reconnaissance Program. The forward funding accounting consists of funds from a prior year applied to certain categories which,

~~(S//B)~~ [redacted] b1

[redacted] b1 b3 b6

when added to the annual new funding request, constitute the total expenditure. The budget contains no forward funding after FY98. Note that the infrastructure as a proportion of the total budget ranges from 8.1-8.8 percent. This contrasts with approximately 25-30 percent spent by the Central Intelligence Agency and the National Security Agency.

(U) In the future, as the NRO develops its relations with contributing organizations on a non-covert basis, the prospects are much improved for capturing the basic data required to measure infrastructure burden. The director of the newly formed Office of Resource Oversight and Management intends to create an accounting structure that will facilitate such analyses. Moreover, resources requested by the NRO to support future programs will increasingly be funded by the NRP rather than by participating departments and agencies.

**Recommendation:** (U) As the Office of Resource Oversight and Management creates its new accounting structure and review system, it should include data fields to aggregate infrastructure costs and facilitate performance measurement.

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**Issue 2:** ~~(S)~~ Could the future security environment in the NRO, which will likely include additional declassification of NRO activities and infrastructure support, permit infrastructure cost reductions in the logistics base and [redacted] services?

b1

**Findings:** ~~(S/B)~~ The NRO's [redacted] b1 b3 [redacted] General operating costs (contained in the NRO budget) are some [redacted] is currently staffed by the [redacted] and is an integral part of the [redacted] b1

~~(S/B)~~ The [redacted] b3 was established to provide the NRO with a [redacted] that is, a logistics [redacted] b1 b3

~~(S/B)~~ Today, [redacted] b3 continues to maintain a [redacted] b1 b1 b3 [redacted] and procures about [redacted] in materiel. But the rules may change. With public acknowledgement of the NRO and the possibility that contractors will have increasingly open relationships with the NRO, it is increasingly feasible to [redacted] b1 b1 b3 [redacted] Thus the raison d'etre of [redacted] to provide unilateral [redacted] will diminish. b3 This in itself affords an opportunity to review b3 [redacted] for possible savings.

~~(S/B)~~ The reasons for establishing a dedicated [redacted] b1 b3 b1 b3 [redacted] in the NRO parallel very closely those for creating an [redacted] b1 b3 [redacted] In this regard, security policy dictates how the NRO moves its equipment. This [redacted] b1 b3 b1 b3 [redacted] capability serves the NRO well in an environment [redacted] where cargo has to be moved [redacted] and often under severe time lines to support launch schedules and operations.

b1 b3

~~(S/B)~~ As the security environment changes, however, and as the NRO's ground station [redacted] a corresponding [redacted] operations is likely. The future b1 b3



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environment might merit a reorganization of [redacted] resources that includes equipment [redacted] manpower [redacted] and funding [redacted]

b1 b3 b1 b3 b1 b3 b1 b3 b1 b3

~~(S)~~ Furthermore, alternative logistics capabilities should be explored, such as a shift to commercial air carriers, used increasingly by the CIA, or the expanded use of [redacted] b1 b3

(U) Table VIII-2 shows some cost comparisons between military airlift and commercial rates experienced by the NRO and CIA.

**(U) Table VIII-2. Airlift Costs Per Pound Over Comparable Routes**

| Aircraft | NRO | CIA |
|---|---|---|
| b1 b3 [redacted] | [redacted] | b3 [redacted] |
| Commercial Air | N/A | |

**Recommendation:** b3 ~~(S/B)~~ Seek savings (in terms of staffing and funding) in the [redacted] consistent with anticipated security policy changes. Also, pursue the use of [redacted] where possible.

b1 b3



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**Issue 3:** (U) Shall the DNRO adopt a single contracting authority as proposed by the Joint CIA-DoD IG Draft Inspection Report or establish delegations of contracting authority from both the SECDEF and DCI?

**Findings:** (C) When the Inspectors General conducted their inspection of the NRO, they found that the acquisition authorities used by the NRO were multiple and complex. The DNRO had been designated a "senior procurement executive" by the DoD, but the DCI contracting authority was vested in the NRO's Director of Contracts--a CIA official--and was not delegated to the DNRO. [redacted] b1 b3 [redacted] The result was a complicated NRO acquisition system in which parts of programs were acquired under DoD rules and parts under DCI rules, but which had to assure that only CIA employees--and no other NRO employee, including the DNRO--signed contracts using the DCI's Section 5 or 8 authorities.

(U) In the aftermath of the Draft IG Report, the CIA's General Counsel issued a revised opinion that focused on the fact that the NRO is a special case of a Joint CIA-DoD office. As a result, CIA procurement authority under Sections 5 and 8 of the CIA Act may be delegated to DoD employees assigned to the NRO provided: (1) the NRO remains a Joint CIA-DoD entity; (2) the DCI retains authority to review, and periodically does review the exercise of that authority; and (3) the DCI retains authority to revoke the exercise of CIA procurement authority at his discretion.

(U) The new General Counsel opinion will permit creation of a unified contract management system within the NRO as well as a unified financial and procurement oversight system, all of which the Draft IG Report encouraged. Indeed, the NRO is progressing toward implementation of a streamlined, simplified system which includes the "best practices" from both the CIA and the DoD systems in its recently completed NRO Acquisition Manual (NAM).

(S)

b1 b3

(U) Because the internal management issues raised by the Draft IG Report appear to lend themselves to resolution without going to delegation of a single procurement authority, it is worthwhile to establish dual DoD/DCI delegations of procurement authorities to the DNRO to enhance his flexibility and likelihood of success in future covert procurements.

**Recommendation:** (U) Both the SECDEF and DCI should delegate their respective contracting authority to the DNRO.

**Issue 4:** (U) Should the NRO create a facility to support and educate customers on data fusion?

**Findings:** (U) The future of intelligence for support to military operations as well as to support national policy analysis requires timely integration of data from diverse technical sources. Although a growing variety of information sources might potentially be useful to a commander or policy analyst, the effective use of available information is complex, not easily understood, and never available in an integrated form.

(S) A simple example might convey a sense of the issue. Suppose a U.S. military commander is opposing an armored force located beyond some rugged hills. He will want to know the size and disposition of armored units--data he might derive from an NRO imaging or SIGINT satellite, a reconnaissance aircraft or remotely piloted vehicle (RPV) subordinate to the theater, or from ground SIGINT intercept sites, [redacted] b1 b3 Finally, he may wish to survey the battlefield during and after an engagement to facilitate a damage assessment and a follow-on plan of attack.

(U) While all of these collection capabilities might contribute to a commander's understanding of the battlefield, they are a crazy-quilt of data sources. Some, like satellites, may pass over but rapidly out of view of the engagement area. Some will be able to loiter but will have limited horizon or coverage and may be vulnerable to antiaircraft systems if they linger. To the average commander, this diverse array of NRO, theater, and commercial sensors is bewildering. For the accomplished intelligence support component, it is cumbersome and difficult to integrate. Yet all of these data sources exist today and are being tested or deployed by the NRO, by the Defense Airborne Reconnaissance Office (DARO), by the National Security Agency (NSA), by the military services, or by U.S. and foreign commercial firms.

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~~(S)~~ The national policy support analyst has a similar problem of integrating data from technical collectors as several recent foreign policy issues have illustrated-

[redacted] b1

~~(S)~~ NRO customers need help to understand how IMINT, SIGINT, RADINT, MASINT, and multispectral data collected via national, theater, foreign government, and commercial platforms can be integrated, fused, and brought to bear on the information issues they face. Although there are some efforts to integrate and display different types of data, the efforts are piecemeal and fragmentary.

~~(S)~~ Within the NRO, the Office of Systems Applications (OSA) [redacted] b1 b3 and the Operational Support Office (OSO) has plans for displays of IMINT and SIGINT in its Joint Demonstration Center. The Space Warfare Center in Colorado Springs has programs to display data from national and theater collection systems. NSA's Regional SIGINT Operations Centers integrate satellite and non-satellite derived information. But nowhere is there a national SIGINT/IMINT integration center or a demonstration facility for fusion across the combat support data spectrum.

**Recommendation:** (U) Because NRO customers need help to understand and grasp the possibilities of fusing multimedia data and because the NRO systems engineering and integration capabilities are uniquely suited to this task, the Panel endorses the creation of a comprehensive Concept Demonstration Laboratory as part of the NRO's outreach to assist and educate its customers on the potential of data from remote sensing collectors. The Lab would provide a test bed for experimentation and the design of solutions involving integration of data to address customer needs. It would not perform systems acquisition for customers. It could, however, contribute to the development of intelligence simulations needed to support operational exercises.

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# APPENDIX VIII-1

## (S/~~SB~~) INFRASTRUCTURE WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| R.M. Huffstutler (Chairman) | Aegis Research Corp. |
| Thomas Bartosiewicz | NSA |
| [redacted] b3 b6 | NRO/MS&O |
| [redacted] b3 b6 | NRO/Staff/Contracts |
| [redacted] b3 b6 | NRO/SIGINT |
| Daniel King | Computer Sciences Corp. |

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## APPENDIX VIII-2

## ~~(S/B)~~ INFRASTRUCTURE WORKING GROUP POINTS OF CONTACT

b3 [redacted] Chief, Headquarters Facilities Group, Office of Facilities and Security Services, CIA.

b3 b6 [redacted] Director, Information Technology Group, Communications Directorate, NRO.

Caballero, Julian. Consultant. Former Director of IMINT, NRO.

b3 b6 [redacted] Director, Office of Contracts, NRO.

b3 b6 [redacted] Chief, Management Staff, MS&O, NRO.

b3 [redacted] Procurement Executive, CIA.

b3 b6 [redacted] Deputy, Financial Management Executive, NRO.

b3 [redacted] Chief, Logistics Operations Center, Office of Finance and Logistics, CIA.

b3 b6 [redacted] Deputy Director, Office of Contracts, NRO.

Johnson, Col Stu. Director of Contracts, Space & Missile Systems Center/Air Force Materiel Command, Los Angeles AFB.

b3 [redacted] Deputy Chief, Support Services Staff, Support Services (DDS), NSA.

Marsh, Roger. Director, Management Services and Operations, NRO.

Mastin, Col David. Chief, Resources Management Division, Directorate of Contracting, Headquarters Air Force Materiel Command, Wright-Patterson AFB.

b3 [redacted] Chief, Information Technology Group, Technology and Systems (DDT), NSA.

b3 [redacted] Chief, Facilities Consolidation and Planning Staff, Facilities Management Group, Office of Facilities and Security Services, CIA.



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Pace, Col John. Commander, Defense Contracts Management Command (DCMC), Defense Logistics Agency, Lockheed-Martin Astronautics, Denver.

b3 b6 [redacted] Director, GEO, SIGINT Directorate, NRO.

b3 [redacted] Chief, Space Planning Staff, CIA.

b3 [redacted] Chief, Advanced Reconnaissance Office, Technology and Systems (DDT), NSA.

b3 [redacted] Chief, Office of Maintenance Management, Support Services (DDS), NSA.

b3 [redacted] Facilities Specialist, Support Services (DDS), NSA.

b3 [redacted] Senior DO Rep to the RSOC, Technology and Systems (DDT), NSA.



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# IX. SECURITY

## 1. INTRODUCTION

(U) The Security Working Group conducted a high-level review of NRO security with the aim of determining whether major security policies and business practices appear suitable for the NRO mission in the 21st Century. Many of the important issues identified by the Working Group were covered by the recently completed Joint CIA-DoD inspection of the NRO.

(U) This report discusses five issues identified by the Working Group. The membership of the Security Working Group is listed in Appendix IX-1.

(U) One of the first and most obvious trends the Working Group detected in NRO security was that security policies and practices within the NRO have undergone significant change in the last five years. As a result there have been cost savings and more reasonable implementation of policies within the organization. Several sources outside the NRO would rate NRO security the most effective in the Intelligence Community. The NRO, and in particular the NRO Security Office, deserve much credit for taking the initiative and implementing fundamental change in long-standing policies and practices. At the same time these changes have only whet the appetites of customers for more relaxation of security rules to accommodate the changing needs of users--for example, the intelligence needs of US military forces working closely with coalition partners. NRO management must now be prepared to revise policies that drive the current set of security rules.

## 2. METHODOLOGY

(U) The Working Group received briefings, conducted interviews, reviewed earlier studies, and conducted three surveys to gather as much information as possible within the time allocated for this study. Appendix IX-2 contains a complete list of sources of information. Appendix IX-3 highlights the significant security findings of previous studies. Appendix IX-4 contains a list of major security accomplishments. Appendix IX-5 highlights results of the corporate survey. Other supporting data for much of the discussion in this report are in classified annexes held by NRO Security.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The Security Working Group identified five issues needing attention, if the high quality of NRO security support is to be maintained. The issues are:

(1) the NRO security system

(2) the NRO-corporate relationship

(3) support to military operations

(4) computer security

(5) the organization of security inside the NRO.

(U) Our principal recommendation--revising the current NRO security system--will have direct impact on two other recommendations; one calling for removing the "fact of" a corporate relationship with NRO from its security compartment and another calling for improved support to the warfighter. Because accomplishment of the NRO mission depends on secure information handling systems, a robust computer security program is essential. We recommend the NRO develop one. Lastly, inconsistent NRO security practices among several NRO organizations warrant senior management attention.

## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) Is the NRO security system being used to excess, costly, archaic, and losing its effectiveness?

**Findings:** (U) Fundamental to NRO security is its security system. The recent IG report stated that there were "numerous examples of over classification and use" of the compartment.

(U) The Working Group did not review classification practices in the NRO, but anecdotal information we received is consistent with the conclusion of the IG report. We were told that the NRO security system is often used as the excuse to bypass or mitigate established procedures and controls.

(U) There have been several attempts in the past to scrub the NRO security system and reduce its scope and the amount of information in it; and there is clear evidence of considerable success in doing so. Nevertheless, the practice of using the NRO security system as something more than a security compartment still exists within the NRO. There is also a perception by many outside the NRO that it uses its security system selectively and arbitrarily to restrict what is seen as legitimate access to NRO information.

(~~S/B~~) NRO Security is currently conducting another review of the BYEMAN security system. After considering the costs and benefits of moving to an entirely new system vice a substantially revised BYEMAN system, the Panel thought revising the BYEMAN security system would be more cost effective. However, in revising the current system, the goal should be to drastically shrink the system to safeguard the minimum amount of data that requires protection. This goal would best be achieved through a zero-based review of what should be in the compartment.

(U) Changes to the NRO security system cannot be made in isolation. Regardless of whether the NRO moves to an entirely new compartment or a revised compartment, any changes must be fully coordinated with other security systems such as other DCI compartments. The timing of such a review of the NRO security system should be in parallel with a review of SCI compartments which is to begin in the near future.

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**Recommendation:** (U) Substantially revise the NRO security system. The first order of business in revising the current system would be to define its purpose and identify those data that require compartmented protection, measurably reducing the amount of information in the compartment.

**Issue 2:** (U) Is there reason to continue to universally classify the fact of an NRO relationship with virtually all contractors?

**Findings:** (U) The protection of the NRO-corporate relationship at the NRO security system level is seen as a costly practice; one that limits legitimate communications across programs; one that restricts competition for NRO business; and one that has outlived its original purposes. Historically, the NRO has protected its contractor relationships for the purpose of protecting technology advantages, concealing the breadth and scope of collection activities, and minimizing the threats from foreign intelligence services and terrorist organizations. In some cases an added effect has been reduced systems costs.

(U) Recently, the Acting DNRO directed a thorough reevaluation 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) preservation of the full range of contracting options at the unclassified, classified, and compartmented levels.

(U) The Security Working Group solicited comments from all current companies eligible to do business with the NRO. Most responding companies (some 60 percent, based on early returns from survey data) would opt for an open relationship with the NRO.

(U) Some companies might want to maintain a covert relationship with the NRO based on business or safety reasons. It is important to note, however, that continued classified relationships have to be based on national security considerations.

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

**Recommendation:** (U) Proceed on an accelerated basis to decompartment/declassify the NRO-corporate relationships where there are no legitimate reasons to retain them at the classified

level. Implement on a case-by-case basis.

**Issue 3:** (U) Are security practices a principal reason why support to military operations is still seen as inadequate, inconsistent, and cumbersome to acquire?

**Findings:** (U) Our survey of military intelligence and operational users of NRO products indicates that this perception persists despite an aggressive outreach effort by the NRO to the U.S. military. In recent years the NRO has made great strides in training and educating the military consumer (it trained several thousand personnel in 1995), in becoming more involved in military operations (the NRO participated in 72 exercises in 1995), and in developing closer working relationships with the CINCs (there are now NRO liaison officers at three major commands, with more to come).

(U) Nevertheless, information from our survey suggests:

- Security rules and regulations are not well understood.
- Customers believe that security rules and regulations do not support mission effectiveness.
- There is strong support for the three-tier system (unclassified, secret, compartmented) initiated by the NRO, but that program only whet the appetite of the military consumer.
- There is a strong desire for system capabilities data at the secret collateral level.
- There is a pressing need for a "How To" guide for coalition operations.
- There is a need for more training and education.
- The military has an insatiable appetite for collateral products.

(U) Improvements in support to military operations depend on changes to other security systems, as well as the NRO security system, and can only be accomplished based on new guidance from the DCI to the Intelligence Community.

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**Recommendation:** (U) Any new or revised NRO security system should allow for timely and efficient delivery of information to the warfighter. It should make support to military operations one of its highest priorities.

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**Issue 4:** (U) Does NRO computer security represent a significant vulnerability over the long run?

**Findings:** (C) The NRO is [redacted] b1 [redacted] A top priority therefore must be to preserve the confidentiality, integrity, and availability of the information systems infrastructure from hostile attack. Given its vast holdings of sensitive information, its extensive information handling capabilities, and the high demand for its services and products, the NRO should have a robust and as effective as possible computer security program, with auditing an integral part of it.

**Recommendation:** (U) The NRO should develop a comprehensive computer security program--assign responsibility, develop a plan, allocate resources, and begin implementation of the plan as soon as possible. This program should include an auditing function to be carried out by an organization not involved in the acquisition and operation of information handling systems.

**Issue 5:** (U) Is there a clear chain of command with regard to NRO security policies, practices, and responsibilities?

**Findings:** (U) Policy development responsibility for all NRO security rests with the Director of NRO Security, who also has responsibility for several security activities. However, some security functions are also practiced by six other headquarters organizations, which do not fall under the operational control of the Director of NRO Security.

(U) Despite a 1995 memorandum describing overall responsibilities of the DNRO Security, there still appears to be a lack of coordination between the NRO Security Office and the other headquarters security elements. For example, companies receive conflicting security guidance from different security elements in the NRO; also, there is no comprehensive approach to assignment of security personnel in the NRO. In addition, the lack of a coherent security program and consistent practices extends beyond NRO headquarters. There apparently is little coordination of security practices between headquarters security elements and other NRO elements.

**Recommendation:** (U) The new DNRO should expand the authority and responsibility of the Director of NRO Security spelled out in the 1995 DNRO memorandum. This revision should strengthen oversight of security practices and ensure consistency in implementation of policy across the entire organization. It should address security activities at headquarters and elsewhere. The DNRO should also consider empowering the DNRO Security to conduct periodic reviews and audits of *all* security activities.

(U) There was not full agreement in the Working Group on what should be done to correct those problems in the management of security at NRO headquarters.

The majority view. (U) The NRO should consolidate all NRO security activities at headquarters under a single office and one senior officer and reassign all security personnel to the new office. The Director of NRO Security should have the authority to direct consistent implementation of security policies and redirect personnel resources as necessary.

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The minority view. (U) Security should be viewed as a service for the line manager who should have as much control as possible over those services that impact his/her program. Mechanisms need to be put in place to handle conflicts/differences of view.

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# APPENDIX IX-1

## (~~S~~/B) SECURITY WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Frank Ruocco (Chair) | Computer Sciences Corporation |
| Renee Davis-Harding (Vice-Chair) | OSD/DIS |
| Rick Cazessus | Security Policy Board Staff |
| Cindy Conlon | The RAND Corporation |
| Col Art Davis | NRO Security |
| Bill Geiger | AEGIS Corporation |
| Bob Greer | TRW |
| Rich Haver | CMS |
| Don Kingsly | AEGIS Corporation |
| Shirley Krieger | Honeywell |
| Bernie Lamoureaux | Lockheed-Martin Corp |
| Bob McCants | CIA |
| Ralph Miller | Computer Sciences Corporation |
| Peter Saderholm | Security Policy Board Staff |
| Dick Weaver | NSA |
| Bob Weber | CIA |
| Drew Winneberger | DIA |

# APPENDIX IX-2

## (U) SOURCES OF INFORMATION

Briefings/Interviews

| | |
|---|---|
| Jim Boley | NRO/Security |
| Col Art Davis, USAF | NRO/Security |
| Col Fred Riccardi, USAF | NRO/Security |
| Bob Dumais | NRO/IM |
| John Buckman | NRO/COMM |
| Terry Cronin | NRO/Contracts |
| CAPT Bruce Coburn, USN | NRO/OSO |
| Ed Appel | NSC Staff |
| Col Phil Pounds, USAF | NRO/Counterintelligence |
| Lt Col Steve Young, USAF | NRO/SI |
| Jon Goldsmith | NSA |
| Ken Renshaw | NRO/IM |
| Bill Rooney | NRO/COMM |
| Adm D Blair | CIA |
| Brig Gen David "Bull" Baker, USAF | NRO/DDMS |
| John Elliff | CMS |

Surveys

Almost 200 corporations
Some 40 corporate security organizations
Approximately 100 customers of products, primarily military consumers

Previous Studies

Joint CIA-DoD IG Draft Inspection Report dated April 1996
Eight studies conducted between 1989 and 1995

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# APPENDIX IX-3

## (S~~X~~B) REVIEW OF PREVIOUS STUDIES OF NRO SINCE 1988

**1989 NRO RESTRUCTURE STUDY**
Tasked by: ADNRO
Conducted by: Robert Geiger (Retired Rear Admiral)
Barry Kelly

Purpose: Identify changes to ensure NRO is prepared to respond to future intelligence changes

Security Recommendation:
- Create a centralized BYEMAN Security implementation management function

Status: Completed. NRO Security management structure and NRO Security Center established.

**1992 DCI TASK FORCE on NRO**
Commissioned by: DCI April 1992
Conducted by: Bob Fuhrman

Purpose: Advise the DCI concerning the future of the NRO

Fundamental Question: How should U.S. Government organize to acquire and operate overhead reconnaissance systems?

Security Recommendations:
- Declassify fact of NRO
- Review classification guidelines for NRO system characteristics and related products to improve flow of information to users

Status: Completed.

**CL BY: 0492464**
**CL REASON: 1.5(C)**
**DECL ON: X1**
**DRV FROM: NRO SCG 4.0, 14 October 1995**





NRO APPROVED FOR RELEASE 6 FEBRUARY 2012

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**1992 JOINT (NRO/CIA) INSPECTOR GENERAL REPORT**
Commissioned by: DDCI October 1991

Purpose: Broad Inspection of BYEMAN Security Management which was viewed as fragmented and uncoordinated

Security Recommendation 1:
- Define expectations of roles, and interrelationships of Special Assistant for Security/Byeman Security Center and Deputy Director, NRO Security

Status: 1992 Memo established Director of Security/NRO

Security Recommendation 2:
- Complete what is BYEMAN Study

Status: Completed December 1993

Security Recommendation 3:
- Central security planning authority for NRO

Status: Established Director, Policy and Operations Support position August 1992

Security Recommendation 4:
- Define criteria used for Must Know determination

Status: Completed (DNRO)

Security Recommendation 5:
- NRO IG evaluate BYEMAN Security Center progress in one year

Status: Did not occur. Joint CIA/DoD inspection done April 1996

**1992 NATIONAL RECONNAISSANCE PROGRAM TASK FORCE FOR THE DCI**
Commissioned by: DDCI September 1992
Conducted by: R. James Woolsey Panel

Purpose: Review and validate future direction of all aspects of National Reconnaissance Program

Recommendation: Security found to be excessive. System should be thoroughly reviewed and overhauled

Status: Completed. BYEMAN Compartmentation Restructure (2/94). Eliminated internal compartmentation into single compartment. Promoted cross-program technical interchange.

**1993 BYEMAN COMPARTMENTATION RESTRUCTURE**
Commissioned by: DNRO November 1993
Conducted by: Joint Government and Industry Review Team

Purpose: Create security environment based on need-to-know that enhances efficiencies, eliminates duplication, promotes sharing of technology assets

Action: Restructure hundreds of BYEMAN Compartments into single major compartment. Allow access on strict need-to-know basis

Status: Completed February 1994

**1995 IMPLEMENTATION PLAN FOR FURTHER DECOMPARTMENTATION AND DECLASSIFICATION OF THE NRO**
Commissioned by: DNRO August 1994
Conducted by: Internal NRO Review Team

Purpose: Describe the process for declassifying organizations, office, and personnel

Action: Declassify names of directorates, offices, and most Headquarters personnel. Permits NRO Headquarters personnel to acknowledge NRO affiliation and declassification of locations of all Headquarters facilities

Status: Completed April 1995

**1995 WEST COAST SECURITY OFFICE REORGANIZATION PROPOSAL**
Commissioned by: IMINT Security Directorate August 1995
Conducted by: AEGIS Research Corporation

Purpose: Study West Coast security function to achieve greater efficiency

Recommendation: Eliminate remnants of programs A, B, C. Realign and physically consolidate all offices on West Coast

Status: Completed or in work. Two Sunnyvale offices and two Los Angeles offices will be merged and collocated--one in Los Angeles and one in Sunnyvale

**1996 JOINT INSPECTION OF NATIONAL RECONNAISSANCE OFFICE**
Commissioned by: DCI and SECDEF
Conducted by: CIA and DoD Office of Inspector General

Purpose: Determine efficiency and effectiveness of the processes and mechanisms used to manage and administer NRO resources and administrative program

Recommendation 1: All security reference materials are available to all employees and contractors. Distribute memo acknowledging which documents are current or superseded

Status: Completed or in work

Recommendation 2: Establish program on how to distinguish BYEMAN information from other SCI and collateral information

Status: In work. Scheduled completion date June 1997. (also see Decision Tool)

Recommendation 3: Develop and implement clearly defined roles and responsibilities for security personnel and employees

Status: In work to revise Byeman Security Manual and Info Sec Program Regulation. Scheduled completion September 1996 and December 1996 respectively

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Recommendation 4: Develop a security performance measurement plan and a security violations reporting mechanism

Status: In work. Scheduled dates for completion October 1996 and December 1996 respectively.

Recommendation 5: Resolve overlapping AIS Security responsibilities between F&ISD and COM/ITG

Status: In work. Scheduled completion August 1996

Recommendation 6: Establish program to monitor AIS Security

Status: In work to establish more comprehensive monitoring of contractor systems. Scheduled date of completion July 1996

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# APPENDIX IX-4

## (~~S/B~~) SUMMARY OF MAJOR ACCOMPLISHMENTS BY NRO SECURITY

Security Policy and Operational Support

- INTERNAL
  - What is BYEMAN study
  - Compartmentation Restructure
  - NRO Classification Guide (Revisions)
  - Implementation of Executive Order 12958
  - NRO Declassification (Phase I)
  - DCID 1/19 Implementation (Document accountability--TS/B only)
    - Eliminated control of SECRET/B-1993
  - Phase History Data from BYEMAN to TK
  - Relaxation of Security Controls
    - Electronic calculators, voice mail, lock combinations, etc.
  - Designed introduction to BYEMAN briefing for government and industry
- EXTERNAL
  - CORONA declassification
  - National Industrial Security Program Operating Manual (NISPOM) and Supplement
  - Control Access Program Oversite Committee (CAPOC)

- Created NRO Special Security Office

Personnel Security Division

- Personnel security eligibility-Community reciprocity
  - Full Defense Central Investigative Index (DCII) input
- Reduced investigative cycle time
  - Initials from 134-492 days in 91 to 52 days in 1995
  - Reinvestigations from 207 to 105 days
- Central management of NRO Polygraph Program
- Initiated community working group for "common adjudicative practices for SCI Community" (CAPSCI)
- Sponsored additional adjudicative standard (DCID 1/14)
- Provided Defense Investigative Service (DIS) a copy of SMCP software

Facilities and Information Security Division

- Virtually eliminated domestic tempest requirement - 1992
- Eliminated Two-Persons in SCIFs - 1993
- Draft DCID 1/21 Implemented - 1992
- Risk-based TSCM program
- Created Management Information and Documentation System (MIDS) database
  - DIS and Community briefed on capabilities
- SCIF Co-utilization

- Automated Information System Security Implementation Manual (AISSIM) 100 and 200
- Conduct DCID 1/21 training for community

Training and Education Division

- Completed Community/DoD review of courses
- Initiated NRO Orientation seminar
- Conducted security officer training and AIS orientation seminars for government and industry
  - 360 classes, 2500 students since 1992
- Developed NRO Security Awareness Program (videos, newsletter, briefings, regional conferences)
  - Built training resource center
- Chair the Security Policy Board's Training and Professional Development Committee

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## APPENDIX IX-5

## (U) RESULTS OF SURVEY OF CORPORATIONS

(U) The Security Working Group conducted three surveys:

- (U) A survey of its membership to evaluate the effectiveness of NRO Security

- (U) A survey of some 100 customers (mostly military) to evaluate NRO responsiveness and the effectiveness of NRO security.

- (U) A survey of some 175 corporations to gather data regarding the classification/declassification and compartmentation/ decompartmentation of NRO-corporate relationships.

(U) The questions for each survey are included as well as a summary of the responses. The detailed responses to the survey will be retained in the NRO Security office.

(U) In summary, the results indicate that about 62 percent of the responding companies currently cleared to do business with the NRO would choose to have the fact of their contractual relationship with the NRO to be overt and unclassified.

(U) Sixty-two of 175 corporations responded to the survey. Thirty-eight have indicated a preference to be overt or expressed a neutral position. Twenty-four wanted to maintain a covert relationship with the NRO, citing business and safety reasons, and in a few cases indicating greater concern for counterintelligence if the relationship were overt.

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# X. PERSONNEL AND CAREER DEVELOPMENT

## 1. INTRODUCTION

(U) The Personnel and Career Development Working Group conducted a top-level review of NRO personnel, their suitability to carry out the new mission, and the adequacy of the supporting personnel systems. Specifically, the Working Group focused on two issues:

- (U) Should the personnel system(s) and practices of the NRO be changed?
- (U) Are NRO manpower and expertise right for the mission?

(U) The Working Group members who assisted in this work are listed in Appendix X-1.

**An Excellent History**

(U) The NRO population represents a confederation of people assigned to the mission by organizations that receive significant benefit from the NRO. They include CIA, Air Force, and Navy civilians, and military from all Services. The NRO has historically attracted world-class talent, both civilian and military. The majority of the civilian population are CIA employees, and the NRO has benefited from the flexibility of the CIA personnel system in attracting and developing the unique skills needed. Air Force and Navy civilians are equally talented and represent the interests of their respective Services within the NRO. Military officers are specially selected for the NRO assignment and, in the past, most spent the majority of their careers within the organization. This is a unique circumstance in military career patterns and is demonstrative of the interest and support intended by the Services.

(U) Personnel seem to have been well served by deliberate career guidance and management--"succession planning"--by supervisors who made a concerted effort to move talented people through increasingly important positions, thus meeting the requirements of the organization while growing the force of the future. Force downsizing, reorganization, declassification, and mission changes are potentially disruptive, however, and special

attention must continue to be given to critical manpower and personnel programs.

(U) The following vision for the 21st Century workforce--taken from work done by the recent CIA Human Resources Oversight Committee--easily applies to NRO objectives:

- Employees with multiple skills, varied experience, and multicultural perspective.

- Employees who continuously develop new skills and hone their expertise.

- Employees and managers who view skills and experiences as agency resources and support incentives and rewards for matching them with the highest priority needs.

- Managers who can work with multiple cross-cutting business practices.

- Managers who can manage and lead effective teams with people from different disciplines.

**Concern For The Future**

(U) For better or worse, the NRO is an anomaly when compared to other DoD and CIA institutions. Its policies and processes for acquiring and maintaining personnel really belong to the several major entities that draw on it for their products (CIA and DoD). The system has been inherently flexible, permitting by-name requests, market-competitive accession pay, career-enhancing mobility, and competitive careers for military personnel through and beyond the rank of 0-6, an Air Force Colonel or Navy Captain.

(U) Early in the deliberations of the Panel, however, it was discovered that the multiplicity of personnel systems, especially civilian, could present a problem to the Director. Additionally, changes in military personnel programs over the last five to six years represent a change in manning policies that could affect the critical military talent base. While there is a history of high-priority support to NRO manning, current policies and practices could result in less unique attention to the NRO. Left

unchecked, this could have a catastrophic effect on future NRO success. While there is a rich history of "arrangements" with supporting organizations, including delegations and memoranda of understanding, it is clearly time to reexamine the NRO approach to personnel.

## 2. METHODOLOGY

(U) The Working Group reviewed existing and draft policies, legislation, and agreements governing civilian and military personnel assigned to the NRO and the conduct of programs elsewhere within the supporting components. The Working Group was briefed on CIA, NSA, and other DoD personnel and career development programs and problems. The Working Group interviewed NRO, Air Force, Navy, and CIA principals and conducted case study interviews with current and former NRO employees representing a broad spectrum of backgrounds and disciplines. The interviewees are listed in Appendix X-2.

## 3. SUMMARY FINDINGS AND RECOMMENDATIONS

(U) The DNRO must assure the accession and maintenance of the necessary talent at the appropriate grade to support the NRO mission. Essentially, this includes the existence of and attention to processes--including the commitment of leadership of the various organizations that provide manpower to support the NRO--to deliberately acquire, grow, and promote unique human resources needed for the NRO mission. This should be done *systematically* with a limited amount of bureaucratic regulation, but more than exists now. In addition, DNRO control over the manpower and personnel systems and policies that serve and support the organization must be enhanced. *This proves to be a pivotal/key issue.*

(U) For military personnel, the DNRO operates within the prevailing policies of the larger military departments, especially Air Force and Navy; Army is a distant third. All joint or multi-Service organizations with military requirements must operate within the prevailing personnel systems(s) of the supporting Services. Special arrangements and emphasis for the NRO are historically significant but would be enhanced through

continued or expanded coordination between the DNRO and the supporting Service(s) as discussed below.

(U) For civilian personnel, the DNRO is served by CIA, Air Force, and Navy personnel systems. However, as with Defense agencies, CIA directors are usually delegated the authority to operate their own civilian personnel systems. With the exception of delegation of personnel authority from the Secretary of the Air Force for Air Force civilian personnel, the DNRO draws on the supporting organization(s) for policy and procedural assistance in the manning of other civilian personnel. Therefore, a key question was how much control of [supporting] civilian personnel policies and processes should reside with, or be moved to, the DNRO in order to achieve control and accountability of the workforce?

## 4. SPECIFIC FINDINGS AND RECOMMENDATIONS

**Issue 1:** (U) Do current military (Air Force and Navy) personnel practices adequately support the unique requirements of the NRO?

**Findings:** (U) Both Services continue to pay significant attention to the assignment of highly talented junior officers to the NRO. In the past, Air Force and Naval officers entered at junior grades, usually by-name requested and/or recommended, and often stayed through promotion to O-6. Our assumption is that the organization needs considerable stability and experience, and that normal military rotations do not provide the required experience base. However, recent assignment, rating, and promotion policies of both Services increasingly require assignment outside the NRO in order for officers to be competitive at the time for promotion to O-6. Furthermore, there does not seem to be adequate attention to the assignment profile of officers with the specific intent of grooming a cadre of experienced NRO officers for eligibility, selection, and reassignment to the NRO as Air Force General or Navy Flag officers.

(U) The solution is in the design of rotations to commands and/or staffs with related disciplines. This is already being done through arrangements with several commands, but the number

of assignments is too small, and it is not adequately reflected in the policy of the Service. This can be achieved, however, with the top-down support of the Air Force and Navy leadership in coordination with the specified commands and staffs. Figure 1 (Air Force) and Figure 2 (Navy) illustrate notional assignment profiles. Assignment arrangements for Air Force, for example, should be principally with AF Space, AF Materiel, and Air Combat Commands, and with the AF Intelligence Agency. Joint intelligence assignments, as well as assignments to the Joint Staff, Air Staff, and Office of the Secretary of Defense also provide a solid foundation of experience. Similar assignment patterns to analogous organizations/commands within the Navy should also be designed.

(U) Rotational assignments will benefit all three parties--the NRO, the Service or Agency involved, and the individual. Benefits to the NRO include getting fresh new technical and operational ideas and keeping attuned to its customers. Benefits to the Services and Agencies include a significant increase in knowledge of NRO systems and capabilities and influx of ideas and technologies developed in the NRO. Perhaps the greatest benefit, however, is to the individual, who would become more broadened and more aware of the big picture while at the same time becoming more widely employable and more promotable within his/her "home" Service or Agency.

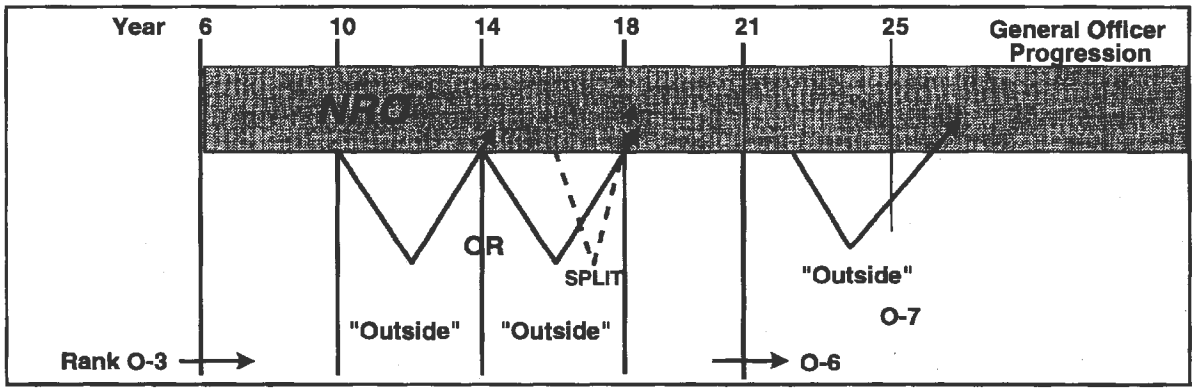


**Figure X-1.** Air Force Military Career Progression

(U) As illustrated in Figure X-1, the Air Force notional cycle assumes entry into the NRO at the junior Captain (O-3) level, usually around the sixth career year. Officers should be

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reassigned to selected command or staff positions at either the 10- or 14-year mark. After this rotation, the officer would return to the NRO. During the 10- to 18-year period, officers might separate from the NRO for one year for Intermediate Service School and/or graduate school or for a split (two-year) tour on a related staff. The objective is for the officer to be back at the NRO for one to three years prior to primary consideration for promotion to Colonel--having been at the NRO for as many as 9 or 10 years at the time of consideration. Similarly, the competitive Colonel would be expected to have another assignment outside the NRO, and should attend Senior Service School prior to consideration for promotion to General Officer and reassignment to the NRO.

(U) The notional cycle for the Navy in Figure X-2 is similar, but with the usual accession nearer the 10th year.

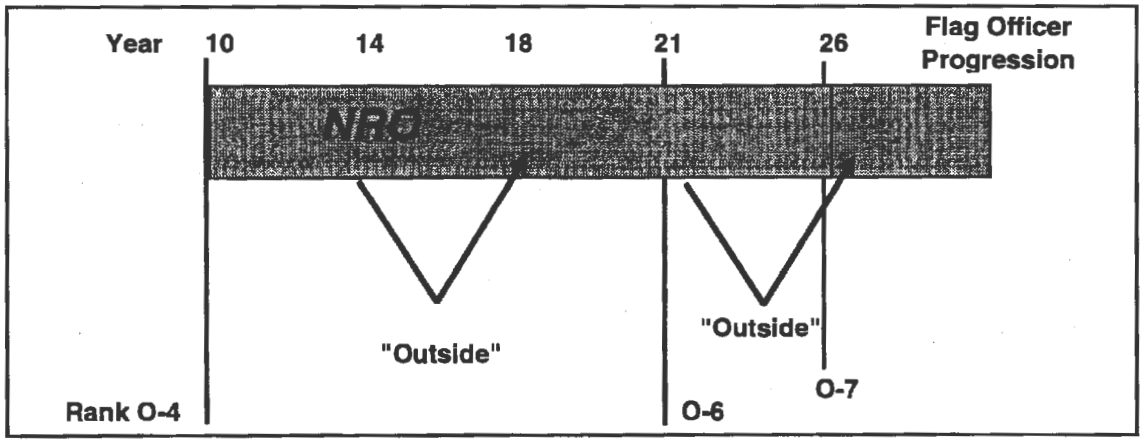


**Figure X-2.** Navy Military Career Progression

**Recommendation:** (U) Within the Air Force, the Panel recommends the Secretary/Undersecretary and the Chief/Vice Chief of Staff should caucus with affected CINCs, MAJCOMs, and staff elements to select the appropriate policy medium--retaining maximum flexibility--and issue guidelines for assignment patterns to support the NRO. The Panel recommends similar action within the Navy, enhancing the existing MOU. The Panel also recommends that the Navy identify a single sponsor on the OPNAV Staff to oversee the resulting assignment program.

**Issue 2:** (U) Is the current CIA personnel system supportive and responsive to the NRO, and does the DNRO have adequate control of the process?

**Findings:** (U) The NRO is served by three major civilian systems: CIA (there are two variants), Air Force, and Navy.**** The largest contiguous group are CIA civilians assigned to the Office of Development and Engineering (OD&E). OD&E is actually more a career "field" than an "office" and is a subset of the larger Science and Technology (S&T) career field at CIA. OD&E exists in and for the NRO mission. The second largest grouping are non-OD&E CIA careerists rotationally assigned mostly to support functions (contracts, finance, personnel, security, logistics, etc.). The majority of these personnel are part of the CIA Administration career field and rotate in and out of all CIA Directorates and the NRO.

(U) Multiple personnel systems are becoming increasingly difficult to administer within a single organization. In addition, the DNRO may not have adequate control over the various systems, policies, and practices that govern NRO's human resources. The Panel reviewed the desirability of having the DCI delegate his [Title 50 USC] personnel authority to the DNRO for the purpose of managing, principally, the OD&E career field. This might include transfer of OD&E careerists from the CIA Program (CIAP) to the National Reconnaissance Program (NRP).

(U) However, the Panel recognized the potential strength that comes from the overall CIA manpower base and was cautious not to alter the fundamental arrangement. Furthermore, the Panel 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. In consideration of the

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****A fourth group are NSA employees, mostly in direct support of NRO's SIGINT mission. These personnel seem to be more directly involved in an NSA mission, and even now very few are actually integrated into the NRO structure. There is a Memorandum of Understanding between the DNRO and the Director NSA which includes a delineation of the personnel arrangement. NSA personnel are not further discussed in this report.

DNRO personnel control issue, however, the Panel recognizes the need to create additional DNRO Memoranda of Agreement with the DCI concerning civilian personnel, such as are outlined in the NRO response to the recent Joint CIA-DoD IG Draft Inspection Report.

**Recommendation:** (U) The proposed SECDEF/DCI Memoranda of Agreement concerning the mission, function, and operations of the NRO should include reference to the responsibilities and authorities of the DNRO concerning CIA personnel in the NRO. The MOA should candidly state the DNRO responsibility for managing the administration and oversight of CIA personnel assigned to the NRO. This MOA should address the participation of the DNRO in the development of key CIA personnel and manpower policies which may impact the NRO as well as development of policies governing the distribution of human resource assets.

(U) The Panel also recommends the creation of an additional Memorandum of Agreement between the DNRO and the DCI/Executive Director, CIA which specifically addresses civilian personnel management arrangements. This focused MOA should cover arrangements for DNRO oversight of all personnel and manpower actions affecting size, accessions, promotions, grievances, awards, reassignments, and separations of the workforce, and oversight of the NRO's EEO process. It should provide for DNRO participation on Agency Senior Intelligence Service promotion boards.

(U) The estimated work-start for the SECDEF/DCI MOA is January 1997 with completion in July 1997. The Panel recommends a much earlier start on personnel issues and an early agreement on shared authorities.

**Issue 3:** (U) Should the Services' (Air Force and Navy) civilian personnel systems be modified to more effectively support the NRO?

**Findings:** (U) The Air Force represents approximately one-eighth of the NRO civilian workforce and the Navy an even smaller fraction. Nevertheless, they are a critical part of the force and are a valuable connection to the supporting Service. Air Force personnel are employed under Title 5 USC, standard Civil Service, as Excepted Service (Schedule A) appointees. Navy personnel are a combination of Title 5 USC Excepted and regular Competitive Service. Civil Service forms and procedures are burdensome, and grade structures are nominally not competitive with the CIA system. The Secretary of the Air Force (SECAF) has delegated personnel authority to the DNRO, and the Navy has a Memorandum of Understanding with the DNRO which includes reference to civilian personnel support. But neither vehicle includes enough specifics, and basic civil service practices continue.

(U) The Panel is aware that the NRO Human Resources Management Group is reviewing with both Services the possibility to convert these civilians to the Civilian Intelligence Personnel Management System (CIPMS), which allows for greater flexibility in personnel administration. If Services' civilians were thus converted, their personnel program would be closer to that practiced by CIA. This would give management greater flexibility to assign and reward people comparably with others in the workforce.

**Recommendation:** (U) Revise and update the aforementioned SECAF delegation and Navy MOU; assure that all parties understand the objectives and requirements of the NRO and that Service support/signatures are gained at the highest level. Develop DNRO responsibilities and authorities similar to those delineated in the new MOA with CIA. Proceed with the conversion of Service civilians to the CIPMS authority (Title 10 USC).

**Issue 4:** (U) Should the NRO be included as a Defense intelligence organization in the draft House Permanent Select Committee on Intelligence bill to reform administration of DoD intelligence activities?

**Findings:** (U) As part of an Intelligence Community-wide effort, the Department of Defense recently completed and submitted draft legislation that will reform the administration of intelligence civilian personnel programs in all intelligence activities of the DoD. The heart of the bill is combining the heretofore separate statutory authorities of NSA, CIO, DIA, and the Civilian Intelligence Personnel Management System (CIPMS, covering the intelligence components of the military departments) into a single law. The new law would also expand use of time-limited appointments and create a performance-based adjustment-in-force procedure to replace standard RIF (reduction-in-force) practices. The legal responsibility to administer the Act would be given to the Secretary of Defense who would have the authority to identify DoD activities as "intelligence" and then to practice the new personnel system therein.

(U) In developing the bill, the House Permanent Select Committee on Intelligence (HPSCI) defined the NRO as a DoD "intelligence activity." While use of the new personnel system would remain at the Secretary's discretion, and therefore he may not be legally compelled to use it for the NRO, the designation of the NRO in the law may be construed by some legislators as a direction to the Secretary to apply the new statute to the NRO. This would countermand the practice of the CIA personnel system at NRO. The CIA Title 50 USC authority offers the most extensive personnel flexibility in the Intelligence Community, and has matured through practice. Inclusion of the NRO in the definitions section of the proposed DoD Intelligence Personnel Reform Act could eliminate that flexibility and be counterproductive.

**Recommendation:** (U) The DCI and/or the SECDEF should take action with HPSCI staff or principals to extract reference to the NRO from the definitions section of the proposed bill on DoD Intelligence Personnel Reform.

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**Issue 5:** (U) How can the NRO increase the operational military expertise in the NRO and facilitate greater understanding of the NRO in operational military units?

**Findings:** (U) There is enormous benefit to having officers with operational experience assigned to the NRO. This provides not only a practical input from the warfighter-as-user of NRO products, but also serves to educate combat arms officers with the utility of NRO products to support military operations. It would be beneficial for operational officers to be assigned to the NRO, especially in OSO and the Defense Support Project Office (DSPO) activity. However, for example, there are no rated Air Force flight billets assigned to the NRO and, therefore, no active Air Force pilots can be assigned.

**Recommendation:** (U) The Air Force should allocate a reasonable number of operational billets to the NRO to allow for the assignment of O-3- and O-4- level operational officers to the organization.

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# APPENDIX X-1

## (~~S//B~~) PERSONNEL AND CAREER DEVELOPMENT WORKING GROUP MEMBERSHIP

| MEMBERS | ORGANIZATION |
|---|---|
| Craig Wilson (Chair) | Pacific Sierra Research |
| [redacted] b3 b6 | NRO/MS&O |
| (Vice-Chair/Civilian Panel) | |
| [redacted] b3 b6 | NRO/MS&O |
| (Vice-Chair/Military Panel) | |
| [redacted] b3 b6 | NRO/Senior Enlisted Advisor |
| Dr. Jack Breedlove | NRL |
| Craig Capen | OSD |
| Richard Endres | AF/DPC |
| Col John Landon | DUSD(Space) |
| CAPT John Long | DUSD(Space) |
| Lynn Matsler | AF/DPC |
| [redacted] b3 | NSA |
| [redacted] b3 | NSA |
| Kent Pelot | NRL |



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CONTROL CHANNELS ONLY

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# APPENDIX X-2

## (~~S~~/B) INTERVIEWEES AND DATA SOURCES

| | |
|---|---|
| Dennis Fitzgerald | NRO/OSA |
| Frank Ruocco | Computer Sciences Corp |
| Jim Hirsch | Independent Consultant |
| Rae Huffstutler | Aegis Corp |
| RADM Jack Dantone, USN | DMA/NIMA |
| Keith Hall | NRO/Acting Director |
| Roger Marsh | NRO/MS&O |
| Jimmie Hill | NRO/former Deputy Director |
| Garnett Stowe | NRO/Chief of Staff |
| Brig Gen Howard "Mitch" Mitchell,USAF | NRO/COMM |
| Brig Gen David "Bull" Baker, USAF | NRO/DDMS |
| [redacted] b3 b6 | NRO/IM |
| [redacted] b3 b6 | NRO/SI and NSA |
| William Davidson | SAF/AA |
| RADM Thomas Betterton (USAF, Ret) | |
| Maj Gen Nate Lindsay (USAF, Ret) | Lockheed-Martin |
| Leo Hazelwood | NIMA |
| VADM Skip Bowman, USN | Navy/OPNAV |
| [redacted] b3 b6 | NRO/OSO |
| [redacted] b3 b6 | NRO/ROM |
| [redacted] b3 b6 | NRO/IM |
| [redacted] b3 b6 | NRO/OSA |
| [redacted] b3 b6 | NRO/IM |
| [redacted] b3 b6 | NRO/SI |

# APPENDIX XI-A

## (U) JEREMIAH PANEL TERMS OF REFERENCE

8 Apr 96

**SENIOR REVIEW OF THE FUTURE OF THE NATIONAL RECONNAISSANCE OFFICE**

TERMS OF REFERENCE

**1.0 AUTHORITY:**

This review is formed in response to the request of the Deputy Director, National Reconnaissance Office, under the authorities of the Director of Central Intelligence, for a senior panel to review the major factors bearing on the future of the NRO as an effective organization of the U.S. Government.

**2.0 PURPOSE:**

The purpose of this review is to assess the NRO and to make recommendations for the next Director of the NRO on the mission and responsibilities of the NRO in the 21st Century.

The NRO is in the midst of significant, multiple transitions. The post-Cold War environment of greater openness has resulted in a change in the NRO security environment. Consolidations in the defense industry at large have continued to impact the NRO industrial base. Significant NRO program and management changes and the major changes in the NRO environment have made a fundamental review appropriate at this time. Individual NRO programs are in the process of transitioning to new and integrated architectures by early in the next decade. Last, but not least, recent events concerning the financial management have contributed to the erosion of the historical credibility of the NRO with Congress.

More complex management challenges face the NRO with the transition to an integrated architecture, the expansion of Congressional and OSD staff oversight, and increasing attempts to standardize DoD and NRO budget and acquisition processes. The move away from a highly compartmented security environment and the pressures from operational military users for increased support and declassification and sharing with coalition partners also present new challenges. At the same time, new non-military customers for NRO data continue to develop novel applications for NRO derived products.

The recent publication of the Commission on the Roles and Capabilities of the United States Intelligence Community (BrownCommission) and the report of the House Permanent Select Committee on Intelligence on The Intelligence Community in the 21st Century (IC-21) have the potential to make a significant impact on the NRO of the 21st Century. Both studies have recommended significant modifications to Intelligence Community structures and relationships.

**3.0 OBJECTIVES:**

The review is to accomplish a comprehensive evaluation of the mission and responsibilities of the NRO. This will include assessing its mission and responsibilities in the 21st Century; describing how the NRO should relate to new organizations (e.g, DUSD(Space), DoD Space Architect, the Joint Space Management Board, the JROC, and National Imagery and Mapping Agency); and recommending changes to NRO organizational structure and business practices. The review will not include an assessment of specific program content or status of NRO programs. The review will provide a basis for recommendations to the next Director, National Reconnaissance Office on ways to enhance providing unique intelligence on priority U.S. intelligence needs associated with the planning and operational cycles of U.S. Government departments and agencies.

**4.0 APPROACH:**

The review will evaluate each of the following areas. It will include a description of relevant factors (e.g., Brown Commission and IC-21 recommendations), decision criteria, assessment of alternatives, and recommendations.

21st Century Mission and Strategic Vision
Customers--Definition and Relationships
Organizational Structure and Infrastructure
Benchmarking and Business Processes
Relations with New Organizations

## 5.0 REVIEW STRUCTURE

This review will be conducted by a Panel composed of individuals from government and industry at the personal invitation of the DDNRO (See Annex 1). An Executive Secretary for the Panel will be named by the DDNRO. The Panel will be supported by a Support Group composed of Working Groups, administrative activities, and other support activities as required by the Panel. The Panel Executive Secretary will be responsible for managing Support Group activities, to include selecting members for any such Working Groups.

## 6.0 DELIVERABLES

The results of all assessments and recommendations of the Panel will be presented in a final report and summary briefing to the Acting Director, NRO. The Panel may also be required to brief their recommendations to other senior members of the DoD and the Intelligence Community.

## 7.0 SCHEDULE

The Panel will provide a report to the DDNRO and a briefing of its findings and recommendations no later than 3 June 1996.

/signed/

Keith R. Hall
Acting Director,
National Reconnaissance Office

/signed/

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

## ANNEX 1--Panel Members

Admiral David E. Jeremiah (USN, Ret.)--Chairman
General Larry D. Welch (USAF, Ret.)
Martin Faga
Stephen Friedman
Anthony J. Iorillo
John N. McMahon

b6 [redacted] will be the Executive Secretary.

# APPENDIX XI-B

## GLOSSARY

| | |
|---|---|
| ACOM | Atlantic Command |
| AFMC/SMC | Air Force Materiel Command/Space and Missile Systems Center |
| ASD/C³I | Assistant Secretary of Defense for Command, Control, Communications, and Intelligence |
| CAAS | Contract Advisory and Assistance Services |
| CEO | Chief Executive Officer |
| CENTCOM | Central Command |
| CI | counterintelligence |
| CIA | Central Intelligence Agency |
| CIAP | CIA Program |
| CINC | Commander in Chief |
| CIO | Central Imagery Office |
| CIPMS | Civilian Intelligence Personnel Management System |
| COMM | Communications |
| CMS | Community Management Staff |
| DARO | Defense Airborne Reconnaissance Office |
| DARPA | Defense Advanced Research Projects Agency |
| DCI | Director of Central Intelligence |
| DCID | DCI Directive |
| DDCI | Deputy Director of Central Intelligence |
| DDMS | Deputy Director for Military Support |
| DEPSECDEF | Deputy Secretary of Defense |
| DIA | Defense Intelligence Agency |
| DISA | Defense Information Systems Agency |
| DMA | Defense Mapping Agency |
| DNRO | Director, National Reconnaissance Office |
| DoD | Department of Defense |
| DOE | Department of Energy |
| DRSP | Defense Reconnaissance Support Program |
| DSPO | Defense Support Project Office |
| DUSD(Space) | Deputy Under Secretary of Defense for Space |
| ECP | engineering change proposal |
| EEO | equal employment opportunity |
| EUCOM | European Command |
| GII | Global Information Infrastructure |
| HPSCI | House Permanent Select Committee on Intelligence |
| IC | intelligence community |

| | |
|---|---|
| IG | Inspector General |
| IMINT | Imagery Intelligence |
| IPT | Integrated Product Team |
| IR&D | Independent Research and Development |
| ISR | intelligence, surveillance, and reconnaissance |
| JCS | Joint Chiefs of Staff |
| JOSST | Joint Operational Space Support Team |
| JROC | Joint Requirements Oversight Council |
| JSMB | Joint Space Management Board |
| JSST | Joint Space Support Team |
| LNO | Liaison Officer |
| LSG | Logistics Service Group |
| MCM | Management Committee Meeting |
| MAJCOM | Major Command |
| MASINT | Measurements Intelligence |
| MGS | mission ground stations |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| MS&O | Management Services and Operations |
| NAM | NRO Acquisition Manual |
| NASA | National Aeronautics and Space Administration |
| NFIP | National Foreign Intelligence Program |
| NIMA | National Imagery and Mapping Agency |
| NRO | National Reconnaissance Office |
| NRP | National Reconnaissance Program |
| NSA | National Security Agency |
| OD&E | Office of Development and Engineering |
| O&M | operations and maintenance |
| OSA | Office of Systems Applications |
| OSD | Office of the Secretary of Defense |
| OSD/PA&E | Office of Secretary of Defense for Program Analysis and Evaluation |
| OSF | Operational Support Facility |
| OSO | Operational Support Office |
| PACOM | Pacific Command |
| P&A | Plans and Analysis |
| RADINT | Radar Intelligence |
| RIF | reduction-in-force |
| ROM | Resource Oversight and Management |
| RPV | remotely piloted vehicle |
| R&D | research and development |
| S&T | Science and Technology |
| SAO | SIGINT Applications Office |
| SECAF | Secretary of the Air Force |



NRO APPROVED FOR RELEASE 6 FEBRUARY 2012

| | |
|---|---|
| SECDEF | Secretary of Defense |
| SIGINT | Signals Intelligence |
| SMO | support to military operations |
| SOCOM | Special Operations Command |
| SPO | system project office |
| SSCI | Senate Select Committee on Intelligence |
| STRATCOM | Strategic Command |
| SOUTHCOM | Southern Command |
| TRANSCOM | Transportation Command |
| TSR | Theater Support Representative |
| UCP | Unified Command Plan |
| USAF | United States Air Force |
| UISD | User Interface Support Division (IMINT) |
| USN | United States Navy |
| USSPACECOM | US Space Command |