DNRO Presentation at GEOINT 2006

Harness the Power: Actionable Intelligence in a Changing World

Good morning. I am struck by the breadth of the topics this year at GEOINT – from R&D to Open Source, from Policy to Interoperability Capabilities. Certainly the challenges our nation faces today not only demand our ongoing dedication and commitment to the national intelligence mission, but more importantly new and innovative approaches to the work we do, the assets we design, build and operate, and the strategic partnerships we make across traditional and non-traditional boundaries.

The Changing Environment

The themes of innovation and imagination have come up almost daily since 9/11 in press accounts of the performance of the Intelligence Community, in users' requests for actionable intelligence, and in our own discussions of how we can effectively manage the definition of future capabilities and provide the most timely and relevant intelligence today. Every era has its seemingly impossible challenges. The Director of National Intelligence noted that the themes that will preoccupy us in the first quarter of the 21st

Century are the new geopolitical landscape, globalization, terrorism, and the proliferation of weapons of mass destruction.[1]

The intelligence enterprise must think ahead to ensure that the capabilities needed to deal with these challenging and often times explosive issues are available to the analyst, policymaker, operations officer, and warfighter. Cutting-edge analysis and critical operations must be informed and supported by technical collection to ensure that we, as a Community, bridge the mission gaps of locating terrorists, identifying and locating WMD activities, and protecting the homeland against WMD and cyber attacks.[2]

- The intelligence environment has changed -- the threat is no longer predictable and confined to specific geographic areas; it is mobile, dispersed, dynamic, and distributed. Intelligence problems develop at a much more rapid pace than in the past, and we must be able to adapt our acquisition and operations process to respond quickly to evolving problems.

[1] Remarks and Q&A by the Director of National Intelligence Ambassador John D. Negroponte, Oxford Analytical International Conference, Blenheim Palace—Oxfordshire, England, September 22, 2006
[2] Remarks by the Director of National Intelligence Ambassador John D. Negroponte, Woodrow Wilson International Center for Scholars, Washington, DC, September 25, 2006

Overhead reconnaissance has traditionally provided unique access to global information across the electromagnetic spectrum, but never has our need to comprehend the implications of worldwide events been as compelling as it is today. The changing battlespace, as defined by the threat - and the reality - of terrorism, is necessitating a more comprehensive, yet at the same time more focused, type of intelligence in order to understand and act on current and emerging challenges. As we learn more about this new battlespace, and our analysts and soldiers learn to deal with emerging threats, we must respond quickly, creatively adapting existing systems and capabilities to provide the best intelligence for those in harm's way. At the same time, as we must continue our efforts to protect NRO systems from threats by hostile nations.

We have to consider the challenges not only from the perspective of technology, acquisition and operations, but of the threats we face on the ground, on the seas, in the air, and now, possibly in space. Threats to our national security are not limited to the taking of human lives. One of the most pernicious threats to our infrastructure today is the interest by foreign powers in negating our space advantage.

- To this end, the Community is beginning to recognize the need to characterize the threat posed to our systems. In concert with STRATCOM and the Air Force, we have begun to lay the foundation for a Defensive Space Control mission. I will speak a bit more about this issue of threat and survivability later.

The Value of National Reconnaissance

Overhead access continues to allow for the penetration of denied areas and persistent and responsive access to key targets, while significantly reducing the risk to US lives in hostile areas. In addition, space access gives us timely and multi-disciplinary ways to address the most pressing transnational issues, such as terrorism, weapons proliferation and narcotics trafficking, which cut across country and regional boundaries. Against this backdrop, it is important to step back and reconsider and reconfirm those unique national reconnaissance capabilities. Because of our systems, we have capabilities that:

1. offer global access to imagery and signals information;
2. collect precise geo-spatial data;
3. are highly responsive on a daily basis for near-real-time reporting; and
4. present minimal risk to life.

While these capabilities are significant, it is how we use these products to derive actionable intelligence that are the measure of the work we all do. In particular, national reconnaissance products serve a broad-based user set engaged in diverse activities that include foreign policy, intelligence applications, geo-spatial applications, military operations, and civilian applications. In addition, national reconnaissance has provided the scientific community with numerous engineering-based, technological spin-offs.

- National reconnaissance has played a pivotal role in the foreign policy decision making process, often refuting or corroborating other sources on a myriad of issues, to include human rights issues, intentions and capabilities of U.S. adversaries, peace negotiations,

trade policy, and U.S. diplomatic efforts to secure and reduce foreign arsenals of weapons of mass destruction.

- During the 1990s, persistent national reconnaissance coverage of the Balkans documented human rights violations. In one case, a State Department spokesperson used imagery of mass grave sites as evidence of a Serbian massacre of the Kosovar Albanians. This kind of information made significant contributions, at one point, to break a diplomatic stalemate by confirming ethnic cleansing and convincing NATO to commence air strikes.

- Many of you are well aware that during the Cold War, national reconnaissance satellites provided the U.S. with intelligence on the intentions and capabilities of the Soviet Union. Arms control had made little progress until national reconnaissance solved a key roadblock by providing a reliable means of monitoring adherence to treaty terms and ushered in an era of confidence that resulted in treaties, such as the Anti-Ballistic Missile Treaty, Intermediate Nuclear Forces Treaty, and the Strategic Arms Limitation Treaty.

The Challenge We Face Today

We maintain a global presence with agile, responsive systems that have unparalleled capabilities, but that is not enough. User demands already far exceed our outputs. In order to provide the support our customers require we must reassess the way we think about our products; how we can best meet our users' needs; and how we approach the way we define, acquire, manage and operate not only the NTM systems, but the interplay of the larger systems – NTM, airborne, commercial, innovative ground applications.

Our space systems already collect a vast amount of data, but quantity is not the key to actionable intelligence. The key is to provide a coherent, comprehensive, and focused picture of the problem using existing data in better ways. I was struck by recent quote by Tom Fingar, who stated that "There can't conceivably be a market for 50,000 pieces of finished intelligence." As the NRO celebrates over 45 years of success, we cite as examples of our success hundreds of satellites, millions of images and billions of signals. Those are metrics worth celebrating. While bringing new collection systems that provide enhanced capabilities and increased

capacity is significantly noteworthy, we realize that we need to provide the tools and methodologies our users desperately need.

NRO Solutions

Within the NRO, I made some early organizational and strategic changes to ensure that we are positioned as an organization to deliver in this changing environment. Many of you are aware that I am looking for the NRO develop, operate and manage its systems as a single, *integrated* architecture focused on multi-sensor solutions to intelligence problems. The goal of our ground mission efforts is to ensure effective, flexible, seamless solutions to our customers across the Community, and to ensure that we have processes and systems that permit collaborative tasking, timely cross-cueing, and a synergy that allows for immediate response.

- It is clear that our most flexible "system" is not out there in space, but on the ground. We simply can't make the near-term, operationally responsive modifications to our satellites that would be required to address quickly evolving intelligence requirements.

- We are actively coordinating cross-INT ground plans to lay the foundation for a coordinated architecture, focused on interoperable services that will enable information sharing using common approaches and standards. The goal is not to *do* intelligence but to use technology to better *enable* it with joint assets.

Maritime Domain Awareness gives us a good example of where we are working cross-INT. The international community's focus on deterring terrorism has identified many vulnerabilities of our national borders. These vulnerabilities include not only airports and rail lines, but also the ports, harbors, and miles of coastline which many countries must protect.

- The NRO is working closely with the U.S. Navy and the DHS to find effective ways of ensuring border security. In seeking to address this challenge, many technologies, processes and procedures have been applied that utilize several sources of intelligence (INTs) to track sea-going vessels.

- Each of these intelligence sources provides information useful for tracking commercial vessels. Open-source yields ship itineraries, port arrival and departure information. SIGINT yields electronic emissions and communications, and IMINT yields visually detectable locations and identifiable features of the vessels. Typically, users of the different data sources employ only one of them, and almost exclusively in a singular fashion or approach.

- Initial studies have determined that when imagery is applied to the cross-intelligence domain, there are in fact many valuable maritime related data sets. Analyzed alone, volumes of positional information on ship locations, traffic patterns and activity within certain areas of interest provide only hits on a screen, but when fused with imagery and signals intelligence, analysts can quickly and easily determine spurious data sets and provide added value to many typically single-INT products.

Cross-INT fusion tools will use technology to better enable our users to do their jobs in a very difficult and uncertain environment. These tools will automatically collect data, automatically identify what is significant, and

then automatically disseminate information directly to users in formats compatible with their existing systems and on timelines that meet their operational needs.

The Path for the Future

While I have been with the NRO for about 15 months, my familiarity with the world of national reconnaissance and its programs pre-dates my arrival at the NRO. In 2001, I was charged by the SECDEF and then Director of Central Intelligence to lead a panel to assess how innovative remote sensing technologies could support future national security needs. The panel findings and recommendations, published in October 2001, remain largely valid today, but the urgency is greater than ever. We looked at all the possible intelligence collection disciplines. We considered things we might have bypassed that now might be enabled by new technology. Today we need capabilities such as those like the space radar program and others that will be valuable assets to the United States.

In considering technology, our challenges go beyond thinking solely about space-based capabilities, as our intent is to use technology to better enable what you are doing today in the Global War on Terror, against the possession and proliferation of Weapons of Mass Destruction, and in

supporting our warfighters on the ground. We find ourselves thinking about threats to our systems, survivability, and mission assurance. We find ourselves incorporating a new focus on the ground, strategic partnerships, and other enabling infrastructures to ensure our systems are operationally responsive. Finally, we continue to identify those actions and paths that will allow us to invest effectively in the future.

Mission Assurance -- While the new National Space Policy ushered in additional discussion in the press on the issue of threats in space, many in the IC and DoD communities had been raising this, seeking higher priority for and more attention on this emerging issue. In a positive move, the policy community is starting to seriously consider the appropriate steps to defend our systems against current and future threats. From the NRO's vantage point, we need to think proactively about this issue of threats and the overall survivability of our systems. While I cannot discuss specific vulnerabilities, threats, responses or steps to mitigate threats, I can confirm that the NRO and others are engaged in this important effort.

You are well aware that satellites are expensive and complex, operating in very extreme environment. Because of this, they require unique engineering,

design, and testing considerations to meet the mission requirement over the life of the spacecraft. Improving on mission assurance is a concern of the NRO and an area of interest for all of us, especially in terms of parts, materials, technologies, standards, and acquisition policies. Our ability to maintain strong leadership in this area of mission assurance lies in the expertise of our government, military and industrial bases. No one player can manage this piece alone. An important fact underlines our interdependence. Ninety-five per cent of our resources for which we have stewardship go out contract to our industrial base. We can not function without this highly integrated industrial, FFRDC, and government team.

Enabling Infrastructure -- The NRO seeks to be the foundation for global situational awareness, and, as I mentioned earlier, our ground systems will be essential enablers for cueing, tip-off, and information fusion capabilities required to build comprehensive understanding of our adversaries' actions and intentions. We need a capability that will provide the United States with an integrated and automated world-wide trip-wire capability to detect anything of intelligence or operational interest. We are rethinking from the ground up the way we approach and respond to current and future threats,

transforming our organization from a stove-piped architecture to a dynamic intelligence-gathering entity that provides value-added information.

- We are working diligently to deliver an on-demand surveillance capability that will focus on particular targets or areas of interest for sustained periods. This requirement is leading us to fielding a suite of improved sensors providing enhanced coverage, as well as the associated ground tools necessary to effectively fuse, integrate and synergistically task them. This ability will enable our space assets to integrate more effectively with airborne and other collectors.

Strategic Partnerships -- Over the past year the geo-spatial intelligence community has worked closely in a concerted effort to address these challenges. Specifically, the NRO has coordinated with multiple agencies to provide a broad spectrum of intelligence data that directly supports our missions in Iraq, Afghanistan and North Korea. This collaboration has resulted in more focused, meaningful intelligence for decision makers, analysts, and those in harm's way. Coupled with these strategic partnerships:

- Recent technologies have enhanced the flexibility and utility of national reconnaissance by linking its strategic coverage to data that tactical systems acquire, thereby giving the battlefield commander a continuously updated, substantially complete picture of the military situation as it unfolds.

While I can report that the NRO's existing relationships with mission partners are maturing and becoming more effective, they are fundamentally built on "INT-specific" and program-specific planning. I believe our mission partners recognize the need to elevate those relationships to address cross-INT synergies, and to discuss what space can bring to the table. I can report that ADM Murrett, Gen Alexander and I are committed to working the ground architecture together, thus reflecting the needs of the user and not a collector-centric approach. We will begin talking more about the ground merged architecture -- reflective of our closely integrated front and back end planning.

We certainly see an ongoing need to expand our intelligence relationships with our "emerging" mission partners. These include the Air Force, the

Navy, the Army and STRATCOM. As the NRO is working with STRATCOM and other space operators to better understand how we can function as an integrated constellation with other organizations that also operate in and require access to space, and to increase shared situational awareness in the operating environment. We see carrier strike groups go to sea looking more like mobile ground stations than ever before.

Future Investment -- We are on the path to provide intelligence information on timelines responsive to user needs by adapting existing capabilities for current user needs. We are leveraging the latent capabilities in our existing ground and collection systems to better support quick-reaction intelligence and operational support. We are also committed to rapidly developing and deploying new or appropriate solutions to evolving user needs. In order to do this, we must find ways to keep up with today's rapidly changing intelligence environment, and speed the time to market for new capabilities. One of the ways we can do this is by leveraging commercial capabilities, both space and ground, to more quickly address intelligence problems.

The NRO now has under contract for the first time a collection platform on a commercial firm fixed price contract. We are working with

NGA to look for new models of public-private cooperation with the commercial imaging community. We need to find ways to do this because as we plan to provide real time support to users, we need higher integration. A commercial role would need better insertion into the tasking and reporting system than in the past.

Conclusion

Let me share a bit of insight: In this first 15 months as the Director of the NRO, in talking about an integrated architecture, effective and responsive ground efforts, rapid-time-to-market technologies, and new models for new challenges, the NRO is grappling with some new and very difficult questions, for which answers are not coming easily. For example, what is the right mix of different capabilities that will give the nation the advantage it needs? To quote a member of the House of Representatives subcommittee on Intelligence: "The very best HUMINT is that which is enabled by technical collection. And the very best intelligence in which policy makers can place confidence is that which is multi-sourced." We do have to think about balance. We can't only think about the next generation of imagery satellites, for example, but how they integrate into this larger constellation architecture.

- The challenges we face today require the innovation and imagination not of just one sensor, one collector, one organization, one company. The challenges we face as a nation require the efforts of government and industry, Open Source and NRO, the ODNI and DoD to adapt the current system capabilities, to define and deliver future capabilities, to ensure that billions of US tax dollars, the tireless efforts of government and industry workers, the unimaginable talent and dedication are harnessed to deliver actionable intelligence in this ever-changing world.
- We think we are up to this challenge of adaptation. We find great support from our industry partners. More importantly, the effect of NGA, NSA, and the NRO working together to define a common approach to some of the challenging technical collection problems will serve us all well in the future. I look forward to working very hard on this effort. Thank you for your attention.