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HOUSE ARMED SERVICES COMMITTEE

STATEMENT OF

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BEFORE THE

HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON AIR AND LAND FORCES

ON

INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (ISR) PROGRAMS

April 19, 2007

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Introduction

Chairman Abercrombie, Representative Saxton, distinguished members of the subcommittee, thank you for this opportunity to appear before you to discuss Marine Corps Intelligence, Surveillance and Reconnaissance (ISR) program capabilities and requirements. As a Corps, we remain true to our congressionally-mandated mission “to be most ready when the Nation is least ready;” thus providing the Nation a general purpose force that is adept at both irregular and traditional force operations. On behalf of our Marines forward deployed around the globe, I thank the Committee for your continued commitment to the health of our Marine Corps through budget increases and supplemental funding. Your support has made us more effective in the fight, saved lives, and helped us prepare for an uncertain future.

Marine Corps ISR Enterprise (MCISR-E)

The Marine Corps develops and manages the complete range of our current and future ISR capabilities/requirements under a concept known as the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISR-E). The enterprise goal is to ensure ISR capabilities are considered across the entire Marine Air Ground Task Force (MAGTF), and are filtered through the combat development pillars of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF), to harmonize effects and benefits throughout the organization. We do this on a regular basis.

Through this enterprise approach, your Marine Corps is proactively transforming its current and future ISR capabilities into a fully integrated architecture, including adherence to joint data interoperability standards effected through the Distributed Common Ground/Surface System Marine Corps. The MCISR-E vision is to provide networked intelligence down to the squad level in either conventional or irregular operations.

In order to grow to its full potential, this vision is dependent upon a robust communications environment referred to as the future Global Information Grid (GIG). The GIG will integrate all the Service components' ISR collection and dissemination assets to form a flexible, distributed, and collaborative joint ISR capability. The GIG will greatly accelerate the

ability of the entire Joint Force to exploit time-sensitive intelligence gathered at the tactical level by any collection asset, to include Unmanned Aircraft Systems.

The Unmanned Aircraft Systems (UAS) Family of Systems (FoS)

The Marine Corps requires a three-tiered, joint-interoperable UAS Family Systems (FoS) to provide the correct level of Battle Space Awareness, Force Protection, and Force Application required by our commanders. The three tiers are built upon our ISR Concept of Operations (ConOps) in support of a Marine Battalion, Marine Regiment, Marine Expeditionary Brigade, Marine Expeditionary Unit (MEU), or Marine Expeditionary Force (MEF). Our ConOps is integrated with the Joint ISR ConOps to provide a tactical, organic, joint-interoperable, and integrated ISR, fire support, and communications relay capability to each level of the MAGTF. This systems approach is designed to allow commanders relevant situational awareness through a common Command and Control (C2) architecture across the entire range of military operations. Our FoS approach has also been integrated into the Department of Defense UAS Roadmap.

Acquisition Strategy

The goal of our acquisition strategy is to develop and procure joint-interoperable systems that support both our Service and Joint Requirement Oversight Council (JROC) validated requirements. Where appropriate and available, we will always leverage and align ourselves with Joint common capabilities. The Marine Corps has worked hard to bring validated JROC Joint Capabilities Integration Development System (JCIDS) documentation and analysis into each of our three UAS tiers.

Tier I

Tier I UAS are man-packable, hand-launched, autonomous systems designed to provide the small unit commander with a reconnaissance and surveillance capability to see over the next hill on the battlefield or around the next building in the urban environment. The Marine Corps is transitioning this year from the highly successful Dragon Eye UAS to the Joint Raven B UAS. Our deployment of Raven B down to the battalion level will begin in Sept 2007. The President's Fiscal Year 2008 Budget has \$13.1M programmed for the continued procurement of Raven B systems, and our total acquisition objective is 467 systems.

Tier II

Tier II UAS are designed to support our Divisions, Regiments, Battalions and MEUs. Tier II is funded to begin in Fiscal Year 2008 with an Initial Operating Capability scheduled for Fiscal Year 2011, and Full Operational Capability (FOC) in Fiscal Year 2014. In the interim, we must continue to rely on an ISR fee-for-services agreement to fill this capability gap. We are working with the Navy, Air Force and US Special Operations Command (USSOCOM) to develop a tactical, expeditionary, and long endurance UAS capable of multiple missions. It is being designed with plug-and-play payloads, advance target acquisition, and fire support capabilities. The President's Fiscal Year 2008 budget contains a request for \$5.7M in RDT&E for the development of Tier II systems. We plan to use an incremental acquisitions approach to reach our requirement of twenty-six systems.

Tier III

Tier III UAS are designed primarily to support a MEF or Joint Task Force-level command. The Pioneer UAS has served us well since 1986; it has proven its worth in the fight against insurgent forces and terrorists in Iraq. However, due to the Pioneer's age and obsolescence, it has become a logistical challenge for our operational forces. Based on these challenges, the Marine Corps decided it will begin to transition to the Army Shadow UAS during the fourth quarter of Fiscal Year 2007. The Shadow's capabilities are similar to the Pioneer and have been upgraded over the past few years. It will provide the MEFs with a day/night ISR and target acquisition capability. The President's Fiscal Year 2008 budget contains a request for \$90.3M for procurement of five of thirteen Shadow systems. We envision the Shadow serving as an interim system until a Vertical UAS (VUAS) is developed.

The VUAS will provide a capability that can be either land or sea-based. It will provide the future MAGTF with organic, responsive and real-time ISR. VUAS will also employ a targeting and weapons employment capability that will enhance our responsiveness to confirmed threats with organic or joint fires.

Family of Systems Interoperability

A critical aspect of our UAS FoS approach is to ensure we have true interoperability. This requires us to design our ConOps within a common C2 architecture. We see this as critically important in helping to reduce life cycle cost, while ensuring we maintain interoperability with our sister Services and USSOCOM. This approach includes utilization of

common hardware such as the Army “One System” ground control station and Remote Video Terminal, and the Air Force Rover remote receive stations.

MAGTF Operational Employment Statistics

Tier I:

The Marine Corps does not directly track flight hours, aborts, or the operational availability rates of our fifty-two deployed Tier I UAS; however, from sparing and battery use, we estimate that the Dragon Eye has flown an excess of 10,500 missions, with an average flight hour consisting of forty-five minutes.

Tier II / ISR Services:

We have contracted Tier II ISR services to fly at four sites for a total of 1500 hours per month. ISR Service systems have flown over 2,500 flights in excess of 10,000 hours in support of Operation Iraqi Freedom (OIF) operations. Scan Eagles have experienced 199 mission aborts for an operational availability rate of ninety-two percent; and we had lost forty-three aircraft to mishap through the end of 2006.

Tier III:

The Pioneer continues to be the backbone of Marine UAS capability. Today seventy-seven percent of the air vehicles and two of our three ground control stations are supporting OIF operations. These hours have accounted for nearly forty percent of the 40,000 total Pioneer flight hours flown since the program’s start in 1986. During the eight months of OIF I, there were twenty-three incidents, including five strikes translating to one incident for every 103 hours and one strike per every 472 flight hours. During the twelve months of OIF II, Pioneer had six incidents including one strike for an incident for every 863 flight hours and a strike for every 5,177 flight hours. During the period of operations for OIF III, there were six incidents, which included no strikes, translating to an incident for every 1,045 flight hours and no strikes for 6,273 flight hours flown. During OIF IV the rate has remained relatively constant, with the majority of incidents related to engine and avionics failures, and none attributable to human error.

Future MAGTF Capabilities

The Marine Corps Persistent ISR (P-ISR) integrating concept is being designed within MCISR-E. The focus of P-ISR is to enable the MAGTF Commander to sense enemy activity across the electromagnetic spectrum in near-real-time without interruption. The payloads associated with the UAS FoS fulfill unique attributes associated with P-ISR. They will allow for a much more robust set of capabilities to include, platform endurance, sensor fidelity, fire support, strike, communications relay, and electronic warfare. In order to ensure that Marines have access to these new capabilities, the MAGTF C2 system of systems will provide the user interfaces necessary to integrate MCISR-E and UAS capabilities into Combat Operation Centers and small unit C2 nodes across the MAGTF.

We are currently bringing two critical capability sets -- ANGEL FIRE and Ground Based Operational Surveillance System (GBOSS) -- into the fighting force, based on valuable operational recommendations from both I MEF and II MEF. Combined with current UAS capabilities, ANGEL FIRE and G-BOSS will give insight into the future by providing critical layers to the MAGTF P-ISR concept. This systems approach to the current operational challenges will contribute to the MAGTF Commander's all-encompassing view of the battlespace.

ANGEL FIRE

ANGEL FIRE is an airborne sensor with a wide field of view capability that will provide near-real-time electro-optical video coverage enabling rapid identification and interdiction of enemy activity in medium-sized urban areas. ANGEL FIRE will allow the MAGTF Commander to cue and employ high-fidelity UAS capabilities in the urban battlespace with greater efficiency and effectiveness, and will mitigate the requirement for dense UAS coverage over cities.

Ground Based Operational Surveillance System (G-BOSS)

G-BOSS is an expeditionary, camera-oriented tool that provides a twenty-four hour day/night detection, tracking, and recording capability to disrupt insurgent activities in the emplacement and employment of Improvised Explosive Devices (IED). The system design will allow for integration with UAS, ground surveillance radars, unmanned ground stations, and acoustic systems. G-BOSS video will provide commanders an operational surveillance capability and will integrate with C2 and fire support systems. Initial employment of

autonomous camera tower systems has performed admirably in theater, and we anticipate integration of a fully networked G-BOSS system of systems later this year.

Processing and Display Equipment

Intelligence derived from UAS, ANGEL FIRE, G-BOSS and other sensors will be integrated and displayed via P-ISR applications within MCISR-E. This multi-functional digital workspace will provide a high fidelity, scaleable, and tailorable digital display; multi-sensor correlation and manipulation; sensor cross-cueing and control; data archive and “backtracking;” and “Cursor on Target” engagement capability. P-ISR will also provide on-demand overlay of geographically correlated multi-sensor data.

Developmental efforts

Our Marine Corps Warfighting Lab (MCWL) is currently performing test and evaluation on a hand-launched, back-packable, Micro Air vehicle. Known as the Wasp, it is being developed and employed in conjunction with the Defense Advanced Research Projects Agency . The fourteen deployed Block II Wasp systems have flown more than 1,000 sorties in-theater with tremendous success. This Micro UAS extended user evaluation has provided small-unit leaders with unprecedented situational awareness during combat operations and has developed and validated joint tactics, techniques and procedures. We see the Wasp as a complement to the Tier I Raven B UAS.

Another MCWL effort, the USMC Tier II UAS Concept Demonstrator, SpyHawk, will be employed as a test platform for evaluation of emerging technologies. It will also be used to develop and refine Tier II UAS concepts of employment and tactics, techniques, and procedures; and to collect data to inform Joint Tier II program of record development.

Service/Joint Interoperability

Recognizing that interoperability is key to our success, the Marine Corps has proactively cultivated productive and responsive partnerships with leading technology innovators and program managers at the Joint and Interagency levels. For example, ANGEL FIRE is being developed and delivered by a consortium of organizations that includes Los Alamos National Labs, Air Force Research Labs, Naval Research Labs, Marine Corps Warfighting Lab, and Marine Corps Combat Development Command. Funded by the Marine Corps and the Joint IED

Defeat Organization, our consortium is working under the cognizance of the Under Secretary of Defense for Intelligence to ensure that this critical capability will deliver effects that address needs of the joint force beyond the current fight.

The Marine Corps has representation at the Joint UAS Center of Excellence (JUASCOE) and on the Joint UAS Materiel Review Board. All three tiers of the Marine Corps UAS FoS are categorized as 'tactical UAS' by the JUASCOE Joint ConOps. We plan to leverage the operational and strategic capabilities of other Service systems by integrating with them operationally and through common joint-interoperable architectures. This will provide our commanders with a comprehensive joint battlespace awareness.

Conclusion

The Marine Corps is actively engaged in bringing a more robust ISR capability to our current and future MAGTFs. This combination of architectures, ground and air based sensor capabilities, and C2 systems will provide a real, persistent ISR capability for the joint force.

Again, thank you for the opportunity to provide an update on our ISR programs. We are extremely proud of our Marines and what they do for this Nation each day. Marines remain committed to their mission and they know that the American people and its government support them in their endeavors. Your Corps stands ready to serve in any clime and place, but your continued support remains a vital and appreciated foundation to this Service.