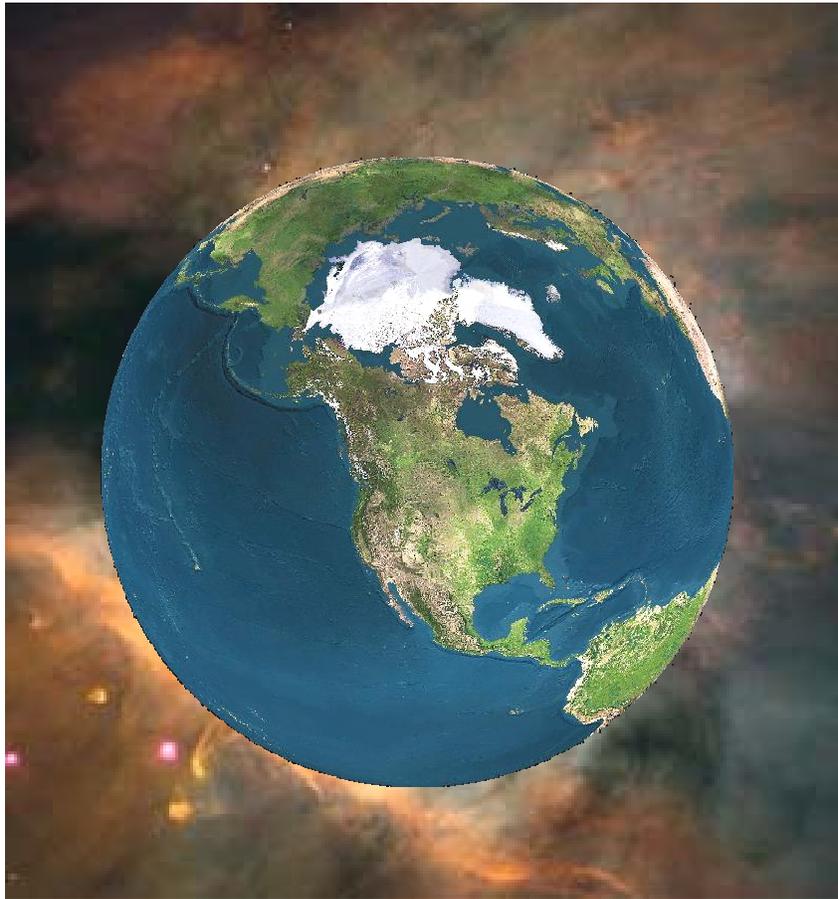




*Deputy Under Secretary of the Air Force
International Affairs*



IAPQ REVIEW

APR 04 - JUL 04

Chief's Corner



Welcome and thanks for taking the time to read the *IAPQ Review*. The activities and accomplishments you are about to read were the results of a lot of hard work, a focused team and an outstanding support network. I feel privileged to lead this office and work with such a high caliber team.

My background is primarily in political military affairs, Acquisition and Testing. During my career I served as a Diplomat, Test Program Manager, Advanced Plans Division Chief, and Flight Test Engineer. I also

specialized in hypersonic, space, laser, avionics, humanitarian, and Environmental disciplines. For further details of my Biography, log on to the updated SAF/IAPQ website at <http://www.hafdash1.hq.af.mil/>.

Although the *IAPQ Review* contains pages of activities and accomplishments, I want it to also be forward looking to help us sharpen our focus and collaborative efforts. We will be adding a new section that identifies significant upcoming events in 2005 to help coordinate and synergize our efforts. The intent is to provide everyone with a heads-up on who, what, when, where, and why of an upcoming activity. Also in 2005, I will emphasize the following eight areas to help sharpen our focus:

- Advancement of the USAF Foreign Comparative Test Program
- Filling vacant IAPQ civil servant billets
- Realignment of our Research & Development Liaison Officer positions
- Intensifying our Awareness and Training Program
- Emphasizing the International Agreements Database to include periodic reviews and releases
- Enhancement of our product focus
- Development of a cohesive USAF strategy to identify new International Armaments Cooperation (IAC) opportunities.
- Revitalizing the USAF Air Show booth

Our business is all about people and relationships. IAPQ's character and effectiveness is dependent on the people in the organization. We would like to say goodbye and thank the following people for their contribution to our office: Col Duane Tripp (retirement), Justin Kortanek (Civil Service), Timothy Dougherty (Medical school), Robin Dale (new job) and Col. Kurt Hackmeier (retirement). We welcome the following people and look forward to working with them: John Andreadakis (Air Vehicles & FCT Branch), Mona Hussein (IADB, C4ISR & Policy Branch), Brigitte Murray (Management Support). Since we've experienced a lot of personnel transitions this period, I want to encourage everyone to use our website to refresh their skills and become reacquainted with the new team. On our site you will find the latest information in IAPQ, links to the agreements database,

IAPQ *Review*

policy/issue papers, training information, and an updated list of personnel. The website is in the process of migrating to a new site. You can find it at <http://www.my.af.mil/>.

Now for the review. During this period we accomplished a lot of good work. A \$1.2B amendment to the NATO AWACSS MOU was signed. In addition, we have continued to transition German Global Hawk activity from armaments cooperation to Direct Commercial Sales/Foreign Military Sales. We've also assisted in final negotiation sessions with Taiwan on the Master Information Exchange Agreement (MIEA) resulting in the MIEA being signed this summer.

We have a very important role to play within the USAF and our efforts directly link to the current war on terrorism and support to the war fighter. The SAF/IA vision is to build enduring relationships with global air forces to support mutual security interests. The SAF/IAPQ mission is to promote access, interoperability, and coalition partnerships. Our Mission has always been important, but after OEF and OIF, it's now even more significant! There is no substitute for the cooperative efforts of every nation waging the battle against an elusive enemy that threatens us all. This global asymmetric threat requires a global response. Armament cooperation forms the basis for shared requirements and solutions. We must work collectively to expand our relationships and face these challenges together. Rest assured, **YOUR EFFORT MAKES A DIFFERENCE!** It's individual people and broad institutional relationships between nations that are the foundation of effective armament cooperation and our ability to wage war. The bottom line is the USAF must enhance coalition combat capability and we have a significant role to play in making this happen. You can't underestimate our early contribution and role in developing coalition combat effectiveness. I look forward to working with the new team and aggressively meeting our new challenges.

Helmut Reda, Col, USAF
Armaments Cooperation Division
(703) 588-8990/DSN 425-8990

TABLE OF CONTENTS

Chief's Corner.....	1
Employee Roster.....	4
SAF/IA Organizational Chart.....	5
SAF/IAPQ Organizational Chart.....	7
Agreements Database.....	8
Foreign Comparative Testing Program.....	8
Int'l Cooperative R&D Program.....	11
The Coalition Warfare Program.....	12
Space.....	12
Country Activities.....	18
NATO Programs.....	33
Multilateral Meetings and Projects.....	33
The Technical Cooperation Program.....	35
Training.....	36
SAF/IAPQ FY 2005 Calendar.....	36
November 2004.....	37
December 2004.....	37
Hypersonic Propulsion PA ICAT Mtg., Arnold AFB, TN.....	37
January 2005.....	37
February 2005.....	37
March 2005.....	37
April 2005.....	37
June 2005.....	38
July 2005.....	38

IAPQ Review

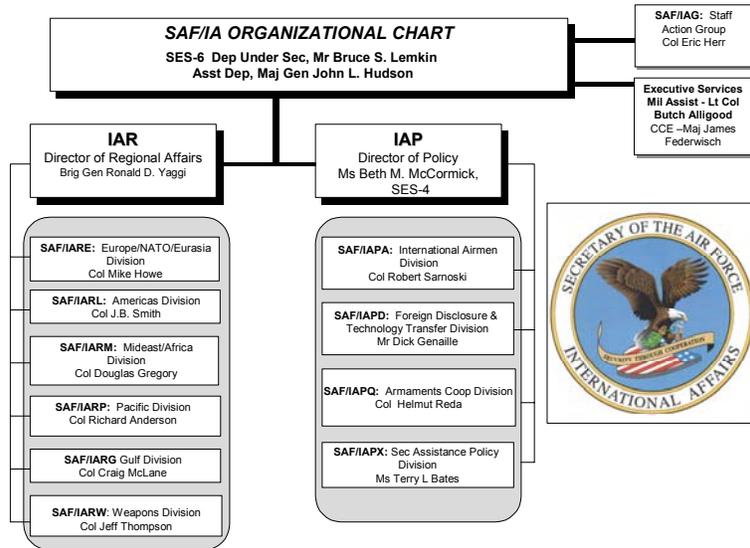
EMPLOYEE ROSTER

USAF Military Personnel
US Government Civilian Employee
Contractor

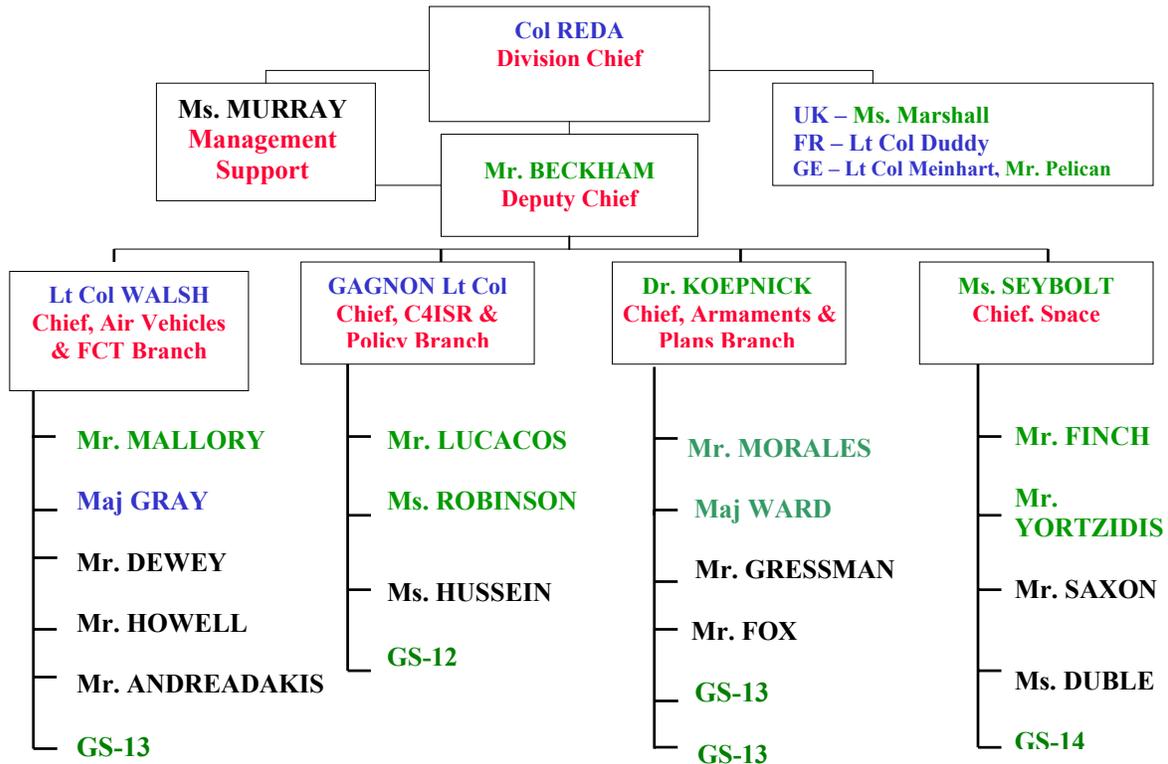
SAF/IAPQ INTER-OFFICE PERSONNEL LOCATOR (UPDATED 27 AUGUST 2004)		
NAME	PHONE	EMAIL
REDA	588-8990	helmut.reda@pentagon.af.mil
BECKHAM	588-8906	gregory.beckham@pentagon.af.mil
ANDREADAKIS	588-8976	john.andreadakis@pentagon.af.mil
DEWEY	588-8944	dewey.clay@pentagon.af.mil
DUBLE	588-1035	alyssa.duble@pentagon.af.mil
DUDDY	011-331-43124644	bduddy@san.osd.mil
FINCH	588-8947	james.finch@pentagon.af.mil
FOX	588-8909	maurice.fox@pentagon.af.mil
GAGNON	588-1017	craig.gagnon@pentagon.af.mil
GRAY	588-1019	rodney.gray@pentagon.af.mil
GRESSMAN	588-1016	david.gressman@pentagon.af.mil
HOWELL	588-8945	fred.howell@pentagon.af.mil
HUSSEIN	588-8943	Mona.Hussein@pentagon.af.mil
KOEPNICK	588-1018	thomas.koepnick@pentagon.af.mil
LUCACOS	588-8908	john.lucacos@pentagon.af.mil
MALLORY	588-1020	Craig.Mallory@pentagon.af.mil
MARSHALL	011-44-207-514-4668	kristen.marshall@london.af.mil
MEINHART	011-49-228-329-2768	Ray.meinhart@dlobonn.org
MORALES	588-8949	wayne.morales@pentagon.af.mil
MURRAY	588-6099	brigitte.murray@pentagon.af.mil
PELICAN	011-49-228-329-2768	fred.pelican@dlobonn.org
ROBISON	588-8946	kathleen.robison@pentagon.af.mil
SAXON	588-8924	richard.saxon@pentagon.af.mil
SEYBOLT	588-8993	kelli.seybolt@pentagon.af.mil
WALSH	588-8941	andreas.walsh@pentagon.af.mil
WARD	588-8996	dale.ward@pentagon.af.mil
YORTZIDIS	588-1035	aris.yortzidis@pentagon.af.mil
OFFICE MAIN	588-8950	DSN: 425-8950
OFFICE FAX	588-8470	DSN: 425-8470
VOICE MAIL CHECK	696-8383	1-800-872-3879/800-833-3879
LONDON FAX	44-207-514-4928	DSN: 314 235 4928
BONN FAX	49-228-329-2250	
PARIS FAX	33-1-4312-4602	

IAPQ Review

SAF/IA ORGANIZATIONAL CHART



SAF/IAPQ ORGANIZATIONAL CHART



USAF Military Personnel
US Government Civilian Employee
Contractor

IAPQ Review

SAF/IAPQ AREAS OF RESPONSIBILITY BY ACTIVITY

ACTIVITY	INDIVIDUAL	BRANCH
ACQ POLICY/DOD POLICY/AFIs/AFPDS	KOEPNICK/WARD	ARMAMENTS
AFI 16-110	ROBISON/LUCACOS	C4ISR
AGREEMENTS DATABASE DEVELOPMENT	HUSSEIN	C4ISR
AIR ARMAMENTS SUMMIT	MARSHALL	RDLL
AIR SHOWS	WARD/GRESSMAN	ARMAMENTS
ANALYSIS STEERING GROUP/QDR	MORALES/LUCACOS	ARMAMENTS/C4ISR
C-130J	MALLORY	AIR VEHICLES
COALITION WARFARE PROGRAM (CWP)	GRAY/FOX	AIR VEHICLE/ARMAMENT
COMMERCIAL REMOTE SENSING	FINCH	SPACE
COOPERATIVE GPS/GNSS (JAXA/QZSS)	DUBLE/SEYBOLT	SPACE
COTR	LUCACOS	C4ISR
COUNTRY CLEARANCES	MURRAY	MGT
CRDAs/OTs	GRESSMAN	ARMAMENTS
DEAS/IEAS	LUCACOS	C4ISR
DEFENSE SPACE COOPERATION (CANADA)/SAPPHIRE	YORTZIDIS	SPACE
DEFENSE SPACE COOPERATION (TURKEY)	YORTZIDIS	SPACE
ESEP	ROBISON	C4ISR
FAST	ROBISON	C4ISR
FCT PROGRAM MANAGEMENT/PROJECT DEVELOPMENT	DEWEY/ANDREADAKIS	AIR VEHICLES
FCT PROJECT OVERSIGHT	HOWELL/ANDREADAKIS	AIR VEHICLES
FINANCIAL MANAGEMENT	ROBISON/FOX	C4ISR/ARMAMENTS
FIVE POWER (ASNR/et al)/ICOG	MORALES	ARMAMENTS
GLOBAL BROADCAST SYSTEM	DUBLE	SPACE
GLOBAL HAWK	MEINHART/WALSH	AIR VEHICLES/RDLO
GPS-GALILEO	SEYBOLT/SAXON	SPACE
IAPQ REVIEW	HUSSEIN	C4ISR
ICDs/ORDs	GRAY/WARD	AIR VEHICLE/ARMAMENT
INNOVATION PANEL	FOX	ARMAMENTS
INTELLIGENCE COMMUNITY ISSUES	FINCH	SPACE
INTERNATIONAL AGREEMENTS GENERATOR	KOEPNICK/GRAY	ARMAMENT/AIR VEHICLE
INTERNATIONAL SCIENCE & TECHNOLOGY CENTERS (ISTCS)	FOX	ARMAMENTS
JSF	GRAY/MALLORY	AIR VEHICLES
LOANS	LUCACOS	C4ISR
LTTP	WARD/KOEPNICK	ARMAMENTS
MILSATCOM AEHF (UK, NL, CA)	ROBISON/YORTZIDIS	C4ISR/SPACE
MISSILE DEFENSE AGENCY ISSUES	DUBLE	SPACE
NAFAG (CNAD)	MORALES/FOX	ARMAMENTS
NATO ALLIANCE GROUND SURVEILLANCE	GRAY/BECKHAM	AIR VEHICLES/MGT
NATO AWACS	GAGNON	C4ISR
NATO R&D PEM	GRAY/FOX	AIR VEHICLE/ARMAMENT
NATO RTO	MORALES/FOX	ARMAMENTS
NAVWAR	SEYBOLT/SAXON	SPACE
NPOESS/DMSP	SEYBOLT/DUBLE	SPACE
OFFICE MNGT (COMPUTERS, ADPE, IMPAC, OIs, SUPPLY)	MURRAY	MGT
SECURITY	LUCACOS/GRESSMAN	C4ISR/ARMAMENTS
SECURITY COOP STRAT/DEFENSE COOP GUIDANCE	MALLORY/BECKHAM	AIR VEHICLES/MGT
SEISMIC MONITORING AGREEMENTS	FOX	ARMAMENTS
SPACE ISR (DSP, SBIRS)	FINCH	SPACE
SPACE LAUNCH	FINCH	SPACE
SPACE POLICY/STRATEGIES	SEYBOLT	SPACE
SPACE SURVEILLANCE	DUBLE/FINCH	SPACE
SPACE-BASED HYPERSPPECTRAL IMAGERY (HSI)	FINCH	SPACE
SPACE-BASED RADAR/TTRDP	YORTZIDIS/FINCH	SPACE
STREAMLINING II	KOEPNICK/BECKHAM	ARMAMENTS/MGT
TIME AND ATTENDANCE	MURRAY	MGT
TRAINING	LUCACOS/HUSSEIN	C4ISR
TRI-LATERAL FORUM (AS, CA, US)	MALLORY	AIR VEHICLES
TTCP	MALLORY	AIR VEHICLES
UNITED NATIONS SPACE	FINCH	SPACE

IAPQ *Review*

ACTIVITY	INDIVIDUAL	BRANCH
WEBMASTER	HUSSEIN	C4ISR

SAF/IAPQ AREAS OF RESPONSIBILITY BY COUNTRY

COUNTRY DESK	INDIVIDUAL	BRANCH
AFRICA	MORALES	ARMAMENTS
AUSTRALIA	MALLORY	AIR VEHICLES
AUSTRIA/SWITZERLAND	FOX	ARMAMENTS
BALTICS (ESTONIA/LATVIA/LITHUANIA)	FOX	ARMAMENTS
BELGIUM/NETHERLANDS/LUXEMBOURG	GRAY	AIR VEHICLES
CANADA	YORTZDIS	SPACE
EGYPT	ROBISON	C4ISR
FRANCE	MORALES	ARMAMENTS
GERMANY	WALSH	AIR VEHICLES
INDIA	LUCACOS	C4ISR
ISRAEL	LUCACOS	C4ISR
ITALY	MORALES	ARMAMENTS
JAPAN	GAGNON	C4ISR
KOREA	ROBISON	C4ISR
NATO	GRAY	AIR VEHICLES
NEW ZEALAND	MALLORY	AIR VEHICLES
NORWAY/DENMARK/FINLAND	GRAY	AIR VEHICLES
PACRIM (CHINA)	GAGNON	C4ISR
POLAND/HUNGARY/CZECH REPUBLIC	GRAY	AIR VEHICLES
RUSSIA/UKRAINE/CENTRAL ASIA	FOX	ARMAMENTS
SINGAPORE	GAGNON	C4ISR
SOUTH AMERICA (BR NEA)	KOEPNICK	ARMAMENTS
SPAIN/PORTUGAL	MORALES	ARMAMENTS
SWEDEN	ROBISON	C4ISR
TAIWAN	WARD	ARMAMENTS
TURKEY/GREECE	LUCACOS	C4ISR
UNITED KINGDOM	WARD	ARMAMENTS

AGREEMENTS DATABASE

Air Force International Agreements Database: The agreement database is now operational and validated. The database includes over 700 agreements spanning over 40 years of international cooperative research and development. The database, through input of the Headquarters Air Force and action officers, has the status of all Air Force International RDT&E agreements in process and once completed, maintains readable scanned copies of all key documentation for that agreement.

Release 4 of the International Agreements Database (IADB) is now available. Use of the IADB continues to grow as field activities have begun using it for researching and maintaining information on RDT&E agreements. The new release allows use of Saved Queries as selection criteria for reports and includes the ability to save Adhoc Report definitions for future use. Other improvements include speed improvements for large and complex reports (up to 6 times faster), and breaks out the Country Agreement Counts by bilateral and multilateral agreement counts. The Reports page has been redesigned for improved accessibility. Upcoming Release 5 will save IAPQ action officers time by automating collection of data in preparation for Level II Country Reviews. Access to the IADB is available only through .mil sites at <http://www.afiadb.hq.af.mil/> and requires a USERNAME and PASSWORD. (Ms. Mona Hussein, Contractor- (703) 588-8943, DSN 425-8943 or e-mail: mona.hussein@pentagon.af.mil)

FOREIGN COMPARATIVE TESTING PROGRAM

The Foreign Comparative Testing (FCT) Program is Congressionally mandated by Title 10, U.S. Code, Section 2350 and receives OSD 0400 R&D funding that is separate from Air Force 3600 funding. The intent of the FCT Program is to acquire non-developmental items from our allies and friendly nations in order to satisfy valid defense requirements more quickly and economically with projects that possess a substantial procurement potential. More details on the FCT program and process can be found at the OSD FCT web site (<http://www.acq.osd.mil/sts/fct/>) and at the AF FCT web site (<http://www.safia.hq.af.mil/fct/default.htm>).

New Project Development: The annual cycle for the FY05 FCT Program is in the project selection phase at OSD. The FY05 new start project proposals will be forwarded to Congress for approval in September.

FY04 On-Going Projects:

20MM Replacement Round: This project will evaluate 20mm ammunition developed by Diehl Munitionssysteme of Germany and Oerlikon of Switzerland to replace current 20mm combat rounds. The in-service round, the PGU-28B, currently presents a safety hazard due to twenty-five in-barrel detonations that caused aircraft damage and could have resulted in pilot death and loss of the aircraft. The PGU-28B inventory has been declared "For Emergency Use Only" even though the rounds meet the USAF requirements for employment ranges and target damage. The current alternative is the M-56 round. While the M-56 rounds do not present these safety hazards, but they require the pilot to engage targets at significantly closer ranges without the same lethality, resulting in an increase in vulnerability and limits to mission effectiveness. The 46th Test Wing, Eglin AFB, FL is conducting the test program. \$910K of FY04 FCT funds were provided for this project with an additional \$85K committed in FY05.

IAPQ Review

Status: The decision to conduct DT&E/Risk Reduction testing with AF funding on this round in FY04 has pushed OT&E to FY05 with a concurrent FY05/06 funding requirement.

RADARSAT II Commercial High Resolution SAR: This project is evaluating the capability of the Canadian Radarsat II, developed by MacDonald-Dettwiler. The RADARSAT II is designed to provide all-weather imaging capability at 3 meter resolution for support of target detection, ocean surveillance, homeland defense, moving target indicators, and disaster response, as an upgrade to the Air Force's Eagle Vision Deployable Satellite Imagery Receiving and Processing Station. The Canadian Radarsat II satellite is the first commercially available high resolution synthetic aperture radar imaging capability. The Air Force Electronic Systems Center, Hanscom AFB, MA is conducting the test program. \$500K of FY04 FCT funds were provided for this project with \$660K committed in FY05.

Status: The contract for the test article was awarded in June 04 and testing will commence in FY05.

Micro- Electro-Mechanical system, (MEMS), Inertial Measurement Units (IMU): This project is evaluating British Aerospace (BAE) Systems MEMS Inertial Measurement Unit which is reported to represent a significant size, weight, and cost advantage over domestic alternatives. Many current U.S. weapon systems require an IMU to make them precision assets with the capability to strike targets accurately. IMU's are a major contributor to the high cost of overall guidance systems. Additionally, reducing the size of the IMU has the potential to increase the lethality of USAF weapon systems by reducing the portion of the overall "payload mass" dedicated for guidance. The Space and Missile Systems Center- Detachment 12, Air Force Space Command (AFSPC), Kirkland AFB will conduct the test program. \$550K of FCT funds were provided for FY04 with \$1250K in FY05.

Status: To minimize the risk and time conflict between testing unit by team members, the decision was made to procure 4 SiIMU02. Two units are assigned to 46TG @ Holloman AFB for performance test, one unit for Coleman Aerospace for qualification test, and one unit for NGMS in SBD for UFS system test.

Guidance Components for Missiles: This project is evaluating the performance of missile guidance components developed by Radstone Technology of the United Kingdom, DY4/Force Computers of Canada, Aitech Defense of Israel, Saab Ericsson Space of Sweden, SBS (OR) Technologies of Germany, and Thales Computers of France. Improvements to basic guidance and control (G&C) technology and miniaturization of G&C components have potential to enhance the performance of U.S. non-strategic missile systems. Advanced components are being used by foreign suppliers and are candidates for easy integration into U.S. programs. The Space and Missile Systems Center- Detachment 12, Air Force Space Command (AFSPC), Kirkland AFB will conduct the test program. \$478K of FCT funds were provided for FY04 with \$500K in FY05.

Status: Two vendors have been eliminated from the candidate list. Thales does not provide a product that is designed to work in a vacuum environment and Saab Ericsson utilizes a special processor configuration which would require the end users to incur additional cost to adapt to another development environment. Radstone, DY4, SBS and Aitech remain as candidate vendors

FY03 Ongoing Projects:

Man-Portable Intrusion Detection System: This project is evaluating a wireless surveillance system developed by Sensor Electronics, Ltd., of the U.K. comprised of palm-sized passive infrared detectors that can be deployed from a briefcase. The sensor system is designed to provide covert and overt, high value item protection, standoff perimeter approach surveillance, or area protection for security forces deployed or in airbase ground defense operations. The Air Force Tactical Automated Security System

IAPQ Review

(TASS) Office, Hanscom AFB is conducting the test program. \$130K of FCT FY03 funds were provided for this evaluation.

Status: While the System did not test well, the NATO version has positive verbal feedback from NATO/USAFE. The detrimental environmental conditions encountered may require a deployment limitation if USAF acquires this system. Additional configuration evaluations are being investigated.

Missile Reserve Battery Replacement: This project is evaluating foreign batteries applicable to missiles/boosters. The batteries by SKC of Korea, SAFT of France and Japan Storage Battery are being evaluated. Presently there is only one qualified U.S. source of batteries intended for missile/booster applications. The Space and Missile Systems Center- Detachment 12, Air Force Space Command (AFSPC), Kirkland AFB is conducting the test program. \$280K of FCT funds has been provided for FY03 with \$570K provided in FY04.

Status: Testing has continued on all 30 cells and is now complete. Two cells have failed and adjustments have been made to the testing procedure to compensate for the loss. NAVSEA has collected technical data from the tests completed thus far and sent the data to Northrop Grumman for analysis.

Rayon for Heat shield and Motor Nozzles: Domestic suppliers of aerospace grade rayon for rocket nozzles and reentry heat shields have gone out of business. Stockpiles of existing rayon for nozzle and heat shield thermal protection are almost exhausted and must be replaced for future systems. This project seeks to qualify foreign sources of aerospace grade rayon or alternative materials that can meet Air Force missile specifications. High-quality rayon from the companies Fabelta of Belgium; Lenzing of Austria; Snecma Moteurs of France; Acordis of Germany; and Acordis of the United Kingdom are being evaluated to meet Air Force requirements for use in high temperatures applications. The Space and Missile Systems Center- Detachment 12, Air Force Space Command, Kirkland AFB is conducting the test program. \$690K of FCT funds has been provided for FY03 and \$870K in FY04.

Status: Based on the thermocouple data, review of high speed video coverage of the arc test and post test visual inspection of the test articles, both Fabelta and Snecma C-2 performed better qualitatively than the other candidate materials. SRI presented their independent analysis on Arcjet test data. Their conclusion also found both Fabelta and Snecma C-2 performed better than the other candidate materials. Observers, from Lockheed Martin, Aerojet, TTI, and Textron, also confirmed the selection. The selected two candidate materials have been sent to Aerojet for nozzle manufacturing and test.

FY02 Ongoing Projects: Eagle Vision Satellite Imagery Receiving and Processing Station Sensor Upgrade (SPOT 5): Eagle Vision is the Department of Defense's only deployable commercial satellite imagery receiving and processing system. This project is evaluating the improvement in Eagle Vision performance achieved by incorporating 2.5-meter resolution imagery from the French SPOT 5 satellite. The Air Force Electronic Systems Center, Hanscom AFB is conducting the test program. \$750K of FY03 funds were provided for this project.

Status: The system has been deployed in support of EUCOM tasking. The SPOT 5 imagery is being collected and processed. Final FCT Report is in the process of being completed and should be released in 4th qtr FY04. EADS has been awarded \$3.507M to procure SPOT 5 downlink capability for two more Eagle Vision systems. To be completed by April 2005.

IAPQ Review

Fiber-Optic Mesh Security Fence: This project evaluated a perimeter fence developed by Youyang Airport Lighting Equipment of Korea that continuously monitors laser pulses to detect and locate physical intrusion with high alarm reliability and a low false alarm rate. The Korean system provides highly reliable intrusion detection and requires minimal maintenance. It can be placed on existing fences or walls or used as a stand-alone fence. The Air Force TASS Office, Hanscom AFB is conducting the test program. \$300K of FY02 funds were provided for this project.

Status: Testing has been conducted but modifications to the system has delayed the final phase of testing until July 04, and the Final Report should be available soon.

Self-Regulated Anti-G Ensemble (SAGE): This FCT project is evaluating a liquid filled suit that may significantly improve an aircrew's ability to counter and sustain high Gs. Through a very limited centrifuge and F-16 flight test program at the Air Force Flight Test Center (AFFTC), the CAF (Combat Air Forces) experienced that the claims of the Swiss developer Libelle and the German Company Autoflug who markets the suit seemed to be valid. The improved protection, the ability to talk and sustain nine G's for four to eight times longer than current technology, have held true. The suit is self regulated and does not require any connections to the aircraft. This FCT will further evaluate these initial results. \$1040K in FY02 and \$250K of the FY03 funds was provided for this project.

Status: COMACC provided guidance to maintain the use of current g-suits for the foreseeable future. SAGE has shown promising results for some flyers, however, ACC has decided not to procure the suit at this time.

FY01 Continuing Projects: There are no FY01 continuing projects.

FY00 Continuing Projects: There is one continuing FY00 program.

Wideband Klystron for E-3 AWACS: This FCT project is evaluating a wide-band klystron power amplifier manufactured by TMD Ltd. (UK) that promises to provide greater reliability and much lower operating and maintenance costs. Approved FCT funding is \$710K in FY00, \$2110K in FY01, and \$58K in FY03.

Status: Qualification testing commenced in May and will be conducted at both CPI in Palo Alto, CA and at Waddington in the UK. Qualification testing is scheduled for completion in December 04.

Completed Projects: None.

INT'L COOPERATIVE R&D PROGRAM

The International Cooperative Research and Development (ICR&D) Program: The ICR&D Program promotes international armaments cooperation with North Atlantic Treaty Organization (NATO) member states, NATO organizations, major non-NATO allies, and friendly foreign countries by providing Research, Development, Test and Evaluation (RDT&E) funding to selected technology development and demonstration/validation projects that improve commonality, standardization, and interoperability. The ICR&D Program is also known as the "Nunn Program," or "Nunn Funds," or the NATO Cooperative Research and Development (NCRD) Program.

IAPQ Review

FY06 Call for Project Nominations: The FY06 project nomination packages are currently being evaluated to determine new FY06 projects. Amounts allocated to new projects generally range from \$100K to \$500K per year. Typically, three to five new-start projects are selected to receive funding each year. SAF/IAPQ will brief AFRL, as well as other interested Air Force organizations, on the FY06 nomination and selection process following release of the FY06 Call Letter.

THE COALITION WARFARE PROGRAM

Coalition Warfare Program (CWP): This program exists to foster RDT&E programs that improve coalition interoperability of US forces by providing RDT&E funding to selected projects. Established in FY01, it is managed by the Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics, International Cooperation [OUSD(AT&L)/IC]. Congressional appropriation of PE 0603923D CWP funds requires the funding to be used in support of improving coalition interoperability of U.S. forces. CWP is a defense-wide effort to assist the Commanders-in-Chief, Services, and Agencies in inserting coalition-enabling solutions into existing and planned US programs. CWP leverages DoD investments in areas critical to coalition operations. The program focuses not only on short-term interoperability-enhancing solutions, but also on early identification of coalition solutions to long-term interoperability issues with a broad range of potential coalition partners. Typical amounts allocated to projects are in the range of \$800K to \$1M per year.

FY/06 Call for Projects Nominations: Some limited amount of FY/06 funds are expected to be available for new projects, and a formal call for USAF project nominations has been issued. Nominated projects compete for funds through a board review and ranking process, first within the USAF, and then at OUSD(AT&L)/IC. We expect most USAF projects that successfully compete for this funding will come from the Air Force Materiel Command (AFMC) and Air Force Space Command product center program offices.

CWP Management: SAF/IAPQ has been updated and available for review in AFI 16-110, Nov 2003 publication. (Maj Rodney Gray, (703) 588-1019, DSN 425-1019 or e-mail: rodney.gray@pentagon.af.mil)

SPACE

Overhead Non-imaging Infrared (ONIR) Cooperation: Australia and the United Kingdom have expressed interest in further bilateral (and trilateral) cooperation with the U.S. in the area of overhead non-imaging infrared (ONIR), specifically with the Space-Based Infrared System (SBIRS). As a first step in expanding cooperation, and based on International Cooperation Guidance signed by the Under Secretary of the Air Force, SAF/IAPQ began formal negotiations with Australia and the UK on a trilateral umbrella Memorandum of Understanding to enable research and development (R&D) of data exploitation tools and techniques. The goals of the MOU are to enable cooperative R&D to develop exploitation algorithms for SBIRS sensors to ensure full capability is achieved (e.g, technical intelligence and battlespace characterization); and to develop and demonstrate concepts of operation for ONIR data exploitation and data fusion for producing information products in a multi-source intelligence, surveillance, and reconnaissance environment. (Mr. Jay Finch, (703) 588-8947, DSN 425-8947 or e-mail: james.finch@pentagon.af.mil)

Hyperspectral Imagery: Sensors using hyperspectral instruments can detect and classify targets through differences between the spectral signatures of the targets and the background, whereas target detection

with broadband electro-optical sensors relies on detecting differences in intensity or shape. Experiments have shown that hyperspectral sensors can detect targets in difficult circumstances where existing sensors fail, e.g., targets under camouflage or in deep hiding. The Air Force has established a Project Arrangement with Australia to cooperatively evaluate the performance of hyperspectral instruments through joint trials and data analysis. The Air Force is also exploring collaboration with Defense Research and Development Canada (DRDC) Valcartier to cooperatively explore and validate hyperspectral algorithms for military applications. (Mr. Jay Finch, (703) 588-8947, DSN 425-8947 or e-mail: james.finch@pentagon.af.mil)

Defense Space Cooperation Working Group (DSCWG) with Canada: SAF/IA hosted the formal the US-Canada Defense Space Cooperation Working Group (DSCWG) meeting on 18-19 May 2004 in Arlington, VA. The meeting was co-chaired by OASD/ISP/FP Space Policy and the Canadian Directorate of Space Development. Meeting participants included OUSD(AT&L), OSD(NII), Joint Staff (J-3, J-6), SAF/USA, AF/XOS, NSSO, HQ Marine Corps, USSTRATCOM, AFPSC, AFRL, NASA, DARPA, and Army RDECOM. The DSCWG provided the United States and Canada the opportunity to review current defense space cooperation efforts and share information on other potential areas of cooperation. Topics of discussion included Defense Space Cooperation RDT&E MOU; Surveillance of Space; Position, Navigation and Timing (PNT); Military Satellite Communications (MILSATCOM); Space-Based Radar; Hyperspectral Imagery; Space Cadre/Education and, satellite aided search and rescue. During the meeting, it was agreed that an O-6 group would reconvene in approximately six months with the next formal DSCWG to be held in one year in Canada. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035 or email: aris.yortzidis@pentagon.af.mil)

Surveillance of Space (SofSp) Project with Canada: The second agreement of this cooperative effort, an operational MOU, is currently in development. The first agreement, which was signed on 31 October 2003, is the information exchange/concept demonstrator Project Arrangement (PA) under the auspices of the August 1996 Memorandum of Understanding (MOU) between the United States and Canada Concerning Technology Research and Development Projects (TRDP). This agreement allows for exchange of information, U.S. participation in the Canadian acquisition processes, and will demonstrate the concept by integrating Canadian ground-based telescope data into the SSN. The second agreement (MOU) is being developed by AFSPC and will enable operational integration of the data from the Canadian space-based SAPPHIRE sensor into the SSN. A meeting to discuss this effort and related issues is scheduled for early Fall 2004 where consideration will be given to adding the Canadian High Earth Orbit Satellite System (HEOSS) sensor into the PA effort since it will fly before SAPPHIRE and could serve as a concept demonstrator. HEOSS is a micro-satellite that will support satellite tracking research and development and asteroid detection. Other issues that will be considered include the potential to either provide a U.S. launch for SAPPHIRE and/or HEOSS payloads, or obtain a launch at USG cost. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035 or email: aris.yortzidis@pentagon.af.mil)

CANUS Defense Space Cooperation Memorandum of Understanding: Exploratory discussions are underway on the draft CANUS Defense Space Cooperation (DSC) Framework MOU. When complete, the MOU will provide the political and legal framework for working groups, familiarization visits, placement of Cooperative Program Personnel (CPP), and specific efforts under project arrangements in the future. It also proposes a new Management structure to replace the current Defense Space Cooperation Working Group (DSCWG). SAF/IAPQ has submitted a request for authority to develop and negotiate the DSC Framework MOU to the Director for International Cooperation, OUSD(AT&L). We expect to receive authority to develop and negotiate the framework MOU by 16 September 2004. The goal is to have the MOU signed NLT May 2005. (Ms. Alyssa Duble, Ctr, (703) 588-1021, DSN 425-1021 or email: alyssa.duble@pentagon.af.mil / Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035 or email: aris.yortzidis@pentagon.af.mil)

US-Turkey Defense Space Cooperation Memorandum of Understanding: With the Defense Technology Security Administration/Department of State and OSD/Service export control language issue resolved, this agreement is currently undergoing revisions prior to being sent to Turkey for final review. When complete, the MOU will provide the political and legal framework for working groups, familiarizations visits, placement of Cooperative Program Personnel, and specific efforts under project arrangements. Upon signature of the MOU, SAF/IAPQ will stand-up a Cooperative Opportunities Working group to explore areas of potential cooperation. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035 or email: aris.yortzidis@pentagon.af.mil)

Advanced Extremely High Frequency (AEHF) Military Satellite Communications (MILSATCOM) Operations and Support (O&S) Memoranda of Understanding with Canada, the Netherlands, and the United Kingdom: These bilateral agreements will be the follow-on arrangements to the Development, Documentation, Production, and Initial Fielding of AEHF MILSATCOM MOUs. The USAF received authority to develop the O&S MOUs with all three International Partners and currently the Canadian and Dutch agreements are in the final stages of negotiation. Since the UK was the last to sign a Development, Documentation, Production, and Initial Fielding AEHF MOU, the O&S MOU is in the early stages of the negotiation process. Signature of all the agreements is expected by early to mid - 2005. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil /Mr. Aris Yortzidis, DSN 425-1035, (703) 588-1035 or email: aris.yortzidis@pentagon.af.mil)

International Cooperation Strategy for Military Satellite Communications (MILSATCOM): On 7 July 2004, SAF/IA, in conjunction with OSD (NII), co-chaired an International Cooperative Agreements Team (ICAT) to further develop the International Cooperation Strategy for MILSATCOM. Representatives from SAF/US, AF/XOR, NSSO, AFSPC, SMC, ESC, Army, DISA, and the Joint Staff participated in the meeting. The purpose of the Strategy is to develop a comprehensive MILSATCOM international strategy for the DoD. When completed, this strategy will be used to provide overarching guidance for all international MILSATCOM-related deliberations and interactions with U.S. coalition partners, allies, and friends. At this time, SAF/IAPQ is addressing the ICAT comments and plans to initiate formal USAF/DoD staffing of the document in September 2004. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035, or e-mail: aris.yortzidis@pentagon.af.mil)

US-Italy Extremely High Frequency Military Satellite Communications (EHF MILSATCOM) Exploratory Discussions: On 27 July 2004, SAF/IA facilitated exploratory discussions with Rear Admiral Giancarlo Cecchi and other Italian representatives on potential cooperation on EHF MILSATCOM in Arlington, VA. Representatives from SAF/USA, AF/XOS, AFSPC, OSD(NII), OUSD(AT&L), Joint Staff, and NSSO participated in the meeting. These discussions provided the US an opportunity to gain an understanding of Italian EHF MILSATCOM requirements to better determine the scope of Italian interest, plans, and goals for potential future cooperation. During the meeting, the Italians received briefings on US EHF MILSATCOM programs, briefed the status of the SICRAL program and expressed their desire to fly a processed EHF package on SICRAL. It was agreed that both parties would work quickly to determine whether or not there is potential for cooperation (information exchange, etc.) on a processed EHF package for the SICRAL 2 satellite to facilitate interoperability, given that Italy must define its requirements for SICRAL 2 by the end of 2005. Additionally, the US and Italy agreed that all areas of potential cooperation need to be explored (on space segment and associated ground segments) as long-term allied interoperability on EHF is desired (the Italians noted interoperability with the US and NATO is their top priority). Follow-up technical discussions are planned for October 2004. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035, or e-mail: aris.yortzidis@pentagon.af.mil)

Global Broadcast System: SAF/IAPQ is working with ESC to explore opportunities to cooperate with the United Kingdom on the U.S. Global Broadcast Service (GBS). Currently, SAF/IAPQ and ESC are developing a draft information exchange agreement with the UK, which will allow for exchange of

IAPQ *Review*

information on the U.S./UK systems. The U.S. GBS is presently a one-way military satellite communication system information delivery capability that enables war fighters to receive large information products such as imagery, Unmanned Aerial Vehicle video, Air Tasking Orders, situational awareness updates, and weather. The equipment used to assemble, store, transmit and receive the broadcast is all commercially available. GBS can utilize either military or commercial satellites for transmission. The UK presently is testing a prototype national military satellite broadcast system for the same purposes as GBS. Their system is built by BAE and is entirely proprietary. The UK and U.S. are interested in pursuing a cooperative agreement allowing for greater interoperability between the communication systems of both countries. (Ms. Alyssa Duble, Ctr, (703) 588-1021, DSN 425-1021, email alyssa.duble@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

Distress Alert Satellite System (DASS): The current system, COSPAS-SARSAT is based on 1970's technology. Cooperation is being explored between Canada and the U.S. to enhance the system that is already in place. The idea behind cooperation is to provide U.S.-developed Distress Alerting Satellite System specs to Canada for production and flight on U.S. GPS III satellites. Multiple medium earth orbiting platforms are optimal for Search and Rescue relay because of their global coverage, which would allow near-instantaneous beacon location, significantly reducing waiting time between beacon activation and rescue personnel mobilization. SAF/IAPQ has had several internal meetings and interagency International Cooperative Agreements Team meetings with representatives from NASA, NOAA, AFSPC, the GPS JPO and Headquarters Air Force staff to discuss this potential cooperative. (Ms. Alyssa Duble, (703) 588-1021, DSN 425-1021, email alyssa.duble@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

RazorView: A PA is in development between the AFSPC Space Battle lab and ADoD under the auspices of the Cooperative and Collaborative Research, Development and Engineering MOU. The project will attempt to demonstrate accurate detection and tracking of small (less than 5 cm) space objects and innovative active avoidance techniques for aircraft. A technical exchange occurred in early December 2003, and as a result of the meeting SAF/IA worked with AFSPC to scope a formal arrangement. The ADoD has reviewed the draft Project Arrangement (PA) and provided comments to AFSPC. Once SAF/IAPQ receives the revised draft PA formally from AFSPC, SAF/IAPQ will begin the process to request for approval to develop and conclude the PA. (Ms. Alyssa Duble, Ctr, (703) 588-1021, DSN 425-1021, email alyssa.duble@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

Global Positioning System(GPS)/QZSS (Japan): Japan is working towards fielding an indigenous position, navigation, timing system interoperable with GPS. SAF/IAPQ is currently working with the GPS JPO to place a Japanese civilian (JAXA – Japanese Space Agency) into the GPS Joint Program Office to work interface issues on Civil GPS and QZSS, under the auspices of the U.S./Japan Science and Technology umbrella agreement executed by the Department of State. Under this umbrella S&T agreement there is a Federal Aviation Agency (FAA)/ Civil Aviation Bureau of the Ministry of Transport of Japan (JCAB) Implementation Arrangement with several annexes. SAF/IAPQ is working with the FAA to draft an annex under the FAA/JCAB Implementation Arrangement that will allow for the exchange of information derived from mutual cooperation, in order to ensure interoperability between GPS and QZSS and placement of the JAXA representative in the JPO. SAF/IAPQ submitted the draft Annex with Appendix to the FAA for review. Formal Air Force coordination of the draft agreement is expected to be initiated September 2004. (Ms. Alyssa Duble, Ctr, (703) 588-1021, DSN 425-1021, email alyssa.duble@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

NPOESS-EUMETSAT: Under the Joint Transition Agreement (JTA), National Oceanic and Atmospheric Agency (NOAA) will provide spare instruments to European Meteorological Satellite

Organization (EUMETSAT) for flight on Metop 3 satellite. The two parties will share data from National Polar-orbiting Operational Environmental Satellite System (NPOESS) and Metop 3 instruments. The U.S. will have data denial capability on the U.S. instruments flying on EUMETSAT spacecraft. The Data Denial Implementation Plan (DDIP) is in the process of being negotiated between the U.S. and EUMETSAT. A High Level Working Group meeting in parallel with the U.S.-EUMETSAT Bilateral Working Group meeting was held in June 2004 to discuss the status of several U.S.-EUMETSAT programs. The next U.S.-EUMETSAT Bilateral meeting will occur in September 04 in Darmstadt, Germany to discuss the most recent revision of the DDIP. The DDIP must be in place one year in advance of the first Metop launch (scheduled for 2006). This cooperation and U.S. use of EUMETSAT data will help us to approach "objective" NPOESS requirements thereby improving DoD weather forecasting. (Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993 or email: kelli.seybolt@pentagon.af.mil) or Ms. Alyssa Duble, Ctr, (703) 588-1021, DSN 425-1021, email alyssa.duble@pentagon.af.mil)

Position, Navigation and Timing (PNT) International Cooperation Guidance (ICG) for Global Positioning System (GPS) and Navigation Warfare (Navwar): SAF/IAPQ with OASD(NII) has led a DoD effort to draft a forward leaning International Cooperation Guidance for GPS and Navwar. Once coordination is complete, this document will establish DoD guidance on international military-to-military engagement on GPS and Navwar with a primary focus on the Protection and Prevention of GPS. The document is in the final phase of PNT EXCOM staffing and is expected to be finalized, Oct 04. (Mr. Richard Saxon, Ctr, (703) 588-8924, DSN 425-8924, or email: Richard.Saxon@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

Multi-National Research, Development, Test and Evaluation (RDT&E) Memorandum of Understanding Concerning Global Positioning System (GPS) and Navigation Warfare (Navwar) Projects: The USAF is leading an effort to establish an umbrella MOU for cooperation in GPS and Navwar RDT&E with select allies. This agreement will enable cooperation including establishing working groups, information exchange, loan of equipment, placement of personnel, and establishment of specific project arrangements among two or more signatories. It will enable allies to participate in efforts to modernize GPS equipment and in development of Navwar capabilities. This MOU will complement existing arrangements. (Mr. Richard Saxon, Ctr, (703) 588-8924, DSN 425-8924 or e-mail: Richard.saxon@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

Navigation Warfare (Navwar) Technology Demonstrator & System Prototype (TDSP) Projects Memorandum of Understanding: Australia, Canada, United Kingdom, and the United States are cooperating under the Umbrella Navigation Warfare Technology Demonstrator and System Prototype Projects MOU. The purpose of the MOU is to allow the Participants to cooperatively develop and demonstrate satellite navigation and Navwar protection and prevention systems. In addition to the PAs listed below, there is a Prevention PA in development that will implement a security architecture to support collective work between the Participants on counter-adversary access and use of satellite navigation (Satnav) information in military applications, and an Electronic Support PA in development that will promote and support cooperative testing and information sharing of technologies for the Electronic Support component of Navwar. SAF/IAPQ will staff the Electronic Support PA for RAD Aug 04. (Mr. Richard Saxon, Ctr, (703) 588-8924, DSN 425-8924 or e-mail: Richard.saxon@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

US-UK Navigation Warfare Protection Project Arrangement: This Project with the GPS JPO will cooperatively develop a high anti-jam (AJ) Global Positioning System (GPS) navigation set that consists of two major components: 1) a Digital Antenna Control Unit (DACU); and 2) a GPS Digital Receiver Module (DRM). Under this PA an Interface Control Document (ICD) will be developed for the digital AJ antenna electronics control unit and the DRM as well as performance specifications. The first test occurred March 04. Currently, the U.S. and UK are considering adding new tasks and funding to this PA.

IAPQ *Review*

(Mr. Richard Saxon, Ctr, (703) 588-8924, DSN 425-8924 or e-mail: Richard.saxon@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

US-UK-CA-AS Navigation Warfare Test, Trials and Demonstrations Project Arrangement,

Revision One: This PA enables the USG and Participants to identify and characterize Participant nations' existing and emerging vulnerabilities, capabilities, and interoperability issues; establish a test execution and evaluation capability for activities under the Navwar TDSP MOU; conduct tests, trials, and demonstrations utilizing Participants' tests ranges; and evaluate results of testing. Two successful coalition tests have been executed in the UK and Australia, respectively, and third is scheduled for Oct 04 in the UK. (Mr. Richard Saxon, Ctr, (703) 588-8924, DSN 425-8924 or e-mail: Richard.saxon@pentagon.af.mil / Ms. Kelli Seybolt, (703) 588-8993, DSN 425-8993, email kelli.seybolt@pentagon.af.mil)

Trilateral Technology Research and Development Project (TTRDP): The United States, Canada, and the UK are active participants in the Space-Based Surveillance, Systems Concept Studies, Experiments and Trials PA under the Trilateral Technology Research and Development Project (TTRDP) MOU. Under this PA, the participants have been investigating the military value, technical feasibility, and potential cost of space-based surveillance systems for maritime, land, and aerospace defense applications. The activities conducted under this PA have directly contributed to the Analysis of Alternatives and the development of the Concept of Operations for the Space-Based Radar (SBR) Program. The next meeting of this group is scheduled for 13-17 September 2004 in Farnborough, United Kingdom. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035, or e-mail: aris.yortzidis@pentagon.af.mil; Mr. Jay Finch, (703) 588-8947, DSN 425-8947, or e-mail: james.finch@pentagon.af.mil)

COUNTRY ACTIVITIES



ARGENTINA

Proposed Seismic Monitoring Agreement with Argentina: No change. The United States is currently awaiting a response to the latest draft. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



AUSTRALIA

5th Australian Air Senior National Representatives (ASNR) Forum: The 5th Australian ASNR was held on 19-20 May in Canberra. The Operations, Requirement/Capability Development, Strategic Plans, Science and Technology, and Combat Support Working Groups met on 17-18 May. Maj Gen Gratton, Assistant SAF/IA, headed the USAF delegation and Air Vice Marshall Roxley McLennan, Deputy Chief of the Air Force, headed the Australian delegation. The 5th meeting was noteworthy for its bilateral commitment to increase the impact of the ASNR. It was agreed to develop Maj Gen Gratton's concept of a Transformational Capability and Requirements Planning Matrix to help focus ASNR activities. The ASNRs agreed on the following revised working group structure:

- Strategic Plans Steering Group (SPSG)
 - Capability Development Working Group (CDWG)
 - Science & Technology Working Group (S&TWG)
 - Operations Working Group (OWG) with Combat Support Sub-Group (CSSG)
- (Mr. Craig Mallory, (703) 588-1020, DSN 425-1020 or e-mail: craig.mallory@pentagon.af.mil)

C2 Warrior Project Arrangement (PA): The C2 Warrior PA was signed on 6 Jul 04. It provides for the development, demonstration, and evaluation of advanced display and control devices and decision aids designed to support air battle management tasks and enhance the air battle manager's decision effectiveness and situation awareness. Both AFRL and Australia's Defence Science and Technology Organisation (DSTO) have developed cognitive task analytic methodologies for evaluating the demands of complex decision-making tasks common to C2 environments and translating these into interface concepts. This PA will assess the strengths and weaknesses of these diverse techniques. Technology development will include the optimization of adaptive decision support algorithms and the integration of these algorithms and candidate advanced interface technologies into simulation facilities at AFRL and DSTO. (Mr. Craig Mallory, (703) 588-1020, DSN 425-1020 or e-mail: craig.mallory@pentagon.af.mil)

Proposed USAF/Australia Data Exchange Annex (DEA) on Unmanned Aerial Vehicles (UAV's): The proposed DEA will exchange RDT&E information on UAV's, including UCAV's. The RDT&E information that will be exchanged focuses on those technologies, processes and systems attributes that are key to understanding the utilization of unmanned air technology. *Staffing Status:* Established 20 May 04 and expires 19 May 09. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed USAF/Australia Data Exchange Annex (DEA) on Air Breathing Propulsion Technology: This DEA is a revision of a previous DEA with Australia, DEA-AF-89-AUST-7017 on ramjet propulsion technology. The new DEA focuses on scramjet technology, but continues to include subsonic

combustion operation. *Staffing Status:* Established 20 May 04 and expires 19 May 09. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



BOLIVIA

Proposed Seismic Monitoring Agreement with Bolivia: Still no change in status and still awaiting an official response from the Bolivian Government. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or email: maurice.fox@pentagon.af.mil)



BRAZIL

Proposed USAF/Brazil Data Exchange Annex (DEA) on Fundamental Mechanisms in Hypersonic Aerodynamics: This DEA will assist the participants in characterizing the basic underlying physics in hypersonic, plasma-aerodynamics and magnetogasdynamic flows. The coordination of US computational efforts with Brazilian experimental capabilities shall provide a strong team to advance the current knowledge base. *Staffing Status:* Sent to Brazil on 22 Jan 04 for review and approval of DEA text. Signed DEA envisioned May 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed USAF/Brazil Data Exchange Annex (DEA) on Fundamental Mechanisms in Hypersonic Aerodynamics: This DEA will assist the participants in characterizing the basic underlying physics in hypersonic, plasma-aerodynamics and magnetogasdynamic flows. The coordination of US computational efforts with Brazilian experimental capabilities shall provide a strong team to advance the current knowledge base. *Staffing Status:* Sent to Brazil on 22 Jan 04 for review and approval of DEA text. Signed DEA envisioned Dec 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



CANADA

Proposed Battle Control System-Fixed (BCS-F) Modernization Memorandum of Understanding and Annex 1 for Spiral 3

1996 Region/Sector Air Operations Center MOU will be replaced by the BCS-F MOU and Annex 1 for Spiral 3. This MOU is a hybrid approach proposed and agreed to at the Canada Bi-National Steering Committee meeting on 23 March 2004. Under this approach Canada will buy BCS-F Spirals 1 and 2 via Foreign Military Sales (FMS) and a new BCS-F Modernization MOU will also be promulgated for the cooperative development of future Spirals of BCS-F. The FMS case for BCS-F Spirals 1 and 2 went on contract on 1 July 2004. SAF/IAPQ requested authority to develop (RAD) and negotiate the BCS-F Modernization MOU and Annex 1 for Spiral 3 in July 2004 from OUSD (AT&L). RAD is anticipated by 26 August 2004 at which point SAF/IAPQ will negotiate the text of the MOU with Canada. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035, or e-mail: aris.yortzidis@pentagon.af.mil)

Proposed USAF/Canada Shape Searching for Fit and Accommodation Consulting Tools (SS-FACT) Project Arrangement: Negotiations on this PA were reinvigorated in June 2004 and the agreement is in Canada for final approval. Once approved, SAF/IAPQ will request final authority to conclude the agreement from OUSD (AT&L). When signed, this collaborative project will develop a prototype human-equipment integration tool with the capability to collect, analyze and display the information regarding human accommodation and fit in the context of the design of cockpit, working space, equipment (such as an instrumented helmet), protective clothing all in a virtual 3-D visual mode. (Mr. Aris Yortzidis, (703) 588-1035, DSN 425-1035 or email: aris.yortzidis@pentagon.af.mil)

Proposed USAF/Canada Data Exchange Annex (DEA) on Flight Training Aircraft: Canadian flight training aircraft are older than US aircraft, operate at a lower overall temperature, and at a higher sortie rate. The DEA will provide the USAF with information with operational and safety shortfalls which will reduce operating and lifecycle costs. *Staffing Status:* Sent to Canada for country review on 9 Aug 04. Signed DEA envisioned Oct 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



CENTRAL AFRICAN REPUBLIC

Proposed Seismic Monitoring Agreement with the Central African Republic (CAR): Still no change in status. Civil war and the resulting constant change in government have made negotiation of this agreement extremely difficult. The draft remains at the Ministry of Foreign Affairs. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



DENMARK

Proposed Measurement of High-Latitude Ionospheric Structures Memorandum of Agreement: The proposed MOA will enable the United States and Denmark to model, study, and determine the effects of the ionosphere on communication and navigation systems over Northeast Greenland. *Staffing Status:* The draft MOA was submitted to Denmark for negotiations on 23 Apr 03, but is currently on hold pending parliamentary considerations of internal matters concerning Greenland. (Major Rodney Gray, (703) 588-1019, DSN 425-1019 or email: Rodney.gray@pentagon.af.mil)



EGYPT

Egyptian Delegation Visit: A high level delegation from the Egyptian MOD visited the US at the invitation of OSD (AT&L). The delegation visited Wright Patterson AFB on 30 July 2004. The seven-member delegation was given a tour of the Air Force Institute of Technology and the Human Effectiveness Directorate (AFRL/HE), which gave overview briefings and demonstrations of AFRL/HE's Computerized Anthropometric Research and Development efforts and the 3D Audio efforts. During the wrap-up session the Egyptian delegation was informed once again that before any steps towards cooperation can be taken the USAF would need to have access to Egyptian scientists and facilities. OSD also reiterated the need for open doors on the part of the Egyptian MOD. Planning is continuing for the visit of the two technical teams. One technical team will focus on radar detection of underground mines and the second team on automatic test equipment. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

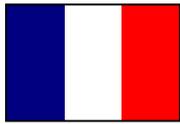


ETHIOPIA

Proposed Seismic Monitoring Agreement with Ethiopia: The agreement, being processed with a concurrent Tunisia Seismic Monitoring Agreement, has been processed through SAF/XOI, has been reviewed by SAF/IAPQ, SAF/IARM, and SAF/IAPD, and is currently awaiting

IAPQ Review

review at SAF/IA front office {is it still in review?} (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



FRANCE

OSD Policy on Cooperation with France: Current OSD policy regarding cooperation with France is "As long as there are substantial and tangible benefits to furthering US national security interests a bilateral event may occur". The bilateral umbrella RDT&E agreement with France expired in January 2004, and OSD has not approved establishing a new umbrella agreement. While the lack of an umbrella agreement with France does not preclude the possibility of pursuing cooperation, since stand-alone agreements can be negotiated, project offices will need to budget significantly more time for agreements with France to be signed. (Wayne Morales, SAF/IAPQ, (703) 588-8949, DSN 425-8949, email: wayne.morales@pentagon.af.mil)

Engineering and Scientific Exchange (ESEP) Bilateral Umbrella MOU: OSD AT&L/IC assigned executive agent duties to the USAF for the French ESEP agreement. The current agreement with France expired in January 2004. While OSD Policy did not support the negotiation of a new ESEP agreement it did accept a 2-year extension of the ESEP MOU to cover current ESEP participants. The current ESEP extension is in final USAF staffing for SAF/IAP signature. US ESEP representatives are: Major Robert Reed, USAF who is doing research on composite materials in the Office National d'Etudes et de Recherches Aerospatiales, Chatillon FR (term July 2002 – July 2004), and Dr. Bradley Stiles, Army, microbiology, doing research on the prevention and treatment of Anthrax related illness, Grenoble, France (term October 2003- October 2004 extendable until October 2005). Two Frenchmen are in the US. Dr. Dancer who is working at the Human Effectiveness Directorate of the Air Force Research Laboratory (AFRL/HE), Wright-Patterson AFB, OH and ICA Jean-François Cosse, who is in the Single Integrated Air Picture, Systems Engineering (SIAP) Joint Program Office (JPO). (Wayne Morales, SAF/IAPQ, (703) 588-8949, DSN 425-8949, email: wayne.morales@pentagon.af.mil)

Next bilateral Air SNR between France: The initial bilateral Air SNR session occurred in March 2002 between the French Air SNR, L'Ingénieur Général de l'Armement (IGA) Patrick Bellouard, and the USAF Air SNR, the Asst Dep Under Sec of the Air Force for International Affairs. The focus of the bilateral Air SNR is to exploit areas of mutual interest and promote cooperation in the fields of air, space, and information technology for aerospace systems. USAF remains sensitive to OSD Policy guidance and could consider a bilateral event subsequent to possible Ops-to-Ops talks with the French Air Force (FAF) in CY04. (Wayne Morales, SAF/IAPQ, (703) 588-8949, DSN 425-8949, email: wayne.morales@pentagon.af.mil)

Next bilateral Technology Working Group (TWG) meeting: The last meeting between the Air Force Research Lab and French Procurement officials took place in Jan 01. France would like to convene a TWG meeting in the 3rd quarter of 2004. The Terms of Reference (TOR) for the TWG expired in December 2002; however, the TOR does not provide any specific legal provisions -- rather, it is a "formalization" of the corporate level relationship. At this time, AFRL/IA is looking at the potential of an autumn 2004 date for a TWG event if mutual supportive topics are identified. (Wayne Morales, SAF/IAPQ, (703) 588-8949, DSN 425-8949, email: wayne.morales@pentagon.af.mil)



GERMANY

US-Germany Global Hawk Cooperative Project Agreement (PA): Following a highly successful Oct '03 flight demonstration effort in Nordholz, Germany, SAF/IAPQ is working with SAF/IARE to facilitate Germany's procurement of a Global Hawk system (airframe and

ground stations) via both Direct Commercial Sale (DCS) and Foreign Military Sales (FMS) methods. SAF/IA is working in conjunction with SAF/AQ, AF/XOI, ACC/DR, ASC/GRX, DSCA and other pertinent organizations, including Northrop Grumman Corporation, to ensure schedule and asset availability issues are resolved. Lt Col Andreas W. Walsh, (703) 588-8941, DSN 425-8941 or email andreas.walsh@pentagon.af.mil

U.S./German Research, Development, Test and Evaluation (RDT&E) Agreement: The RDT&E “umbrella” agreement, a follow-on agreement to the Research and Technology Projects Memorandum of Understanding (MOU) that expires in Mar ’05, was presented to Germany in 2003 for their consideration prior to formal negotiation efforts. The RDT&E agreement further defines and establishes general terms and conditions that apply to the initiation, conduct, and management of RDT&E projects detailed in separate Project Agreements (PAs).

US/German negotiations on the RDT&E agreement have been significantly delayed due to German demands that the RDT&E agreement be deconflicted with an OSD-submitted Test and Evaluation Programs (TEP) MOU. After initially insisting that the RDT&E agreement and TEP MOU be combined, Germany recently agreed to negotiate the two agreements separately. SAF/IA is now working with Germany to establish a date to commence formal negotiations. (Lt Col Andreas W. Walsh, (703) 588-8941, DSN 425-8941 or email andreas.walsh@pentagon.af.mil)

U.S./Germany Cooperative Projects Agreements Review: The 5th Annual U.S./German International Agreements Review was conducted at the Arnold Engineering Development Center (AEDC) on 16-17 Mar ’04. The meeting was co-chaired by SAF/IAPQ and the German Liaison Office, and representatives from AFRL, AEDC, and AFOSR participated. The purpose of the review was to discuss current status and health (a subjective “Green, Yellow, or Red” evaluation by both nations) of each agreement in the U.S./German armaments cooperation portfolio. Several special interest topics were also addressed, including the Global Hawk/Euro Hawk PA, the Engineering and Scientist Exchange Program (ESEP), the Research, Development, Test, and Evaluation (RDT&E) agreement, and the Air Force Office of Scientific Research (AFOSR) Broad Agency Announcement.

Action items were assigned to responsible organizations, and the meeting co-chairs have conducted several follow-on action item review meetings to ensure satisfactory progress. The next review is scheduled for Spring ’05 in a TBD location in Germany.

(Lt Col Andreas W. Walsh, (703) 588-8941, DSN 425-8941 or email andreas.walsh@pentagon.af.mil)

Hypersonic Airbreathing Propulsion Test Techniques (HAPPT) PA: This PA addresses U.S. deficiencies in hypersonic test capabilities and diagnostic techniques, and will leverage U.S. and German investments in test techniques, non-intrusive diagnostics, and Computational Fluid Dynamic technologies. The key component of the HAPPT project will involve complementary testing of a hypersonic engine at Arnold AFB's Aerodynamic and Propulsion Test Unit facility and the German Aerospace Center High Enthalpy Göttingen facility.

SAF/IA is working with Arnold Engineering Development Center (AEDC) to finalize the draft Summary Statement of Intent, draft Project Agreement, and the Delegation of Disclosure Authority Letter prior to submitting the HAPPT PA for Air Force staffing.

(Lt Col Andreas W. Walsh, (703) 588-8941, DSN 425-8941 or email andreas.walsh@pentagon.af.mil)

Proposed USAF/Germany Loan Agreement on Residual Precision Navigation Upgrade (PNU)

Assets: The purpose of this loan is for the U.S. to obtain from Germany residual PNU Assets for use in a Raytheon Missile System (RMS) development initiative for a similar navigation upgrade to the operational High-Speed Anti-Radiation Missile (HARM). This new navigation upgrade named the

IAPQ Review

HARM DEAD Attack Module (HDAM) and is being developed with RMS corporate funds under a Cooperative Research and Development (CRAD) Agreement with the US Air Force. Staffing Status: Sent to Germany for Country Review on 9 Aug 04. Signed loan agreement envisioned Nov 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908, or e-mail: john.lucacos@pentagon.af.mil)



GREECE

US-Greece Engineer and Scientist Exchange Program: SAF/IAPQ meet with the MOD to initiate negotiations the morning of 3 May 2004. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

Proposed USAF/Greece Data Exchange Annex (DEA) on Flight Training Aircraft: Greek flight training aircraft operate their aircraft at a higher gross weight. Consequently, their fleet provides sustainment and durability problems that would be of beneficial interest to the US. The DEA would provide the USAF with information with operational and safety shortfalls which will reduce operating and lifecycle costs. *Staffing Status:* Sent to Greece for Country Review on 9 Aug 04. Signed DEA envisioned Oct 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



INDIA

US-India Master Information Agreement: A Master Information Exchange Agreement (MIEA) was signed into effect on 7 Feb 04 and will remain in force for a period of 15 year until 6 Feb 2019. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Aero India 2005 – The 5th Biennial Aerospace Exposition will be held at Yelahauka Air Force Base near Bangalore in South India from 9-13 Feb 05. The Department also plans to hold an International Seminar on Aerospace Technologies: Development and Strategies at Bangalore to coincide with the exposition. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



ISRAEL

Proposed US-Israel Multi Function Display (MFD) Project Agreement: This PA is under the Technology Research and Development Projects Agreement between the United States and Israel. The objective of the MFD PA is to develop a commercial off-the-shelf, large format, color display screen on a laptop computer that will be demonstrated in a combat aircraft (e.g., F-16 C/D, scout/attack helicopter). The benefit of this effort will be development of a large physical display surface in the cockpit with little/no impact on the existing controls and displays, and the ability to provide the flight crew with information (e.g., target images) not otherwise available. *Staffing Status:* Review, evaluation and resolution of Israeli comments by AFRL/HECA. Signed PA envisioned On Hold. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed US-Israel Development of Materials, Methods, and Processes for Rapid Runway Repair Project Agreement: The objective of this PA is to investigate, characterize, and develop RRR materials; develop, analyze, and model RRR processes and techniques; conduct test and evaluation of materials and processes; validate and document design criteria and processes. *Staffing Status:* Sent to Israel on 26 Aug 04 for Country Review. Signed PA envisioned Dec 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

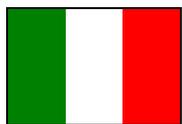
US-Israel Closed-Loop Flow Control Project Agreement: The US and Israel have identified flow-control as a significant key technology and in recent years each side has been actively engaged in flow-control related research. The USAFA has undertaken an AFOSR grant funded, closed-loop control program to suppress vortex shedding of a simple bluff body in the form of two-dimensional circular cylinder at very low Reynolds numbers. Israel supported this research at the USAFA by providing an exchange engineer (who has since returned to Israel) under the ESEP. *Staffing Status:* Established 22 May 04 and expires 21 May 07. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed Amendment #2 to the US-Israel Thulium Holmium (TmHo) Energy Transfer Modling Project Agreement: This PA develops a theoretical model that predicts the performance of mode-locked Tm, Ho: YLK lasers. This is accomplished by developing a model to understand mode-locked holmium laser performance. This model will then be used to improve mode-locked performance, particularly with reduced pulse widths. *Staffing Status:* Sent to Israel for Country Review on 26 Aug 04. Signed Amendment #2 envisioned Oct 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed Amendment #2 to the US-Israel Nonlinear Frequency Conversion Materials Project Agreement: The overall scope is to develop and demonstrate improved nonlinear frequency conversion materials for mid infrared tunable lasers. Materials under development in the US and Israel will be exchanged to share the cost burden, technical advances and expertise. *Staffing Status:* Sent to Israel for Country Review on 26 Aug 04. Signed Amendment #2 envisioned Oct 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed US-Israel Data Exchange Annex (DEA) on Construction and Engineering in the Air Force with Israel: The DEA will replace DEA-AF-96-IS-8707 and will allow both the US and Israel to build structures and facilities that are more survivable and cost effective and provide the vehicle to continue these mutually productive exchanges. *Staffing Status:* Sent to Israel on 15 Jan 04 for their review and approval of DEA text. Signed DEA envisioned Dec 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed US-Israel Research, Development, Test and Evaluation (RDT&E) Projects Umbrella Agreement: The RDT&E Agreement will replace the existing TRDP Agreement. It provides a more current reciprocal agreement with regards to the International Agreement (IA) Generator language, provides for the exchange of project personnel, provides for a broader scope than the TRDP Agreement, and provides a mechanism for bilateral cooperation. *Staffing Status:* Sent to Israel on 9 Jan 04 for review and approval of RDT&E text. Signed RDT&E Agreement envisioned Nov 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



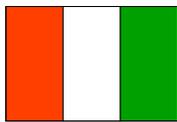
ITALY

New US-Italy Research and Development Technology and Evaluation (RDT&E) Umbrella Memorandum of Understanding:

On 15 January 03 the Navy International Program Office sent the new RDT&E MOU to Admiral Accardo, in the Italian MoD. Navy IPO anticipates the first negotiating session possibly in the 2nd quarter of 2003. The new RDT&E umbrella agreement will include cooperation in Advance Concept Technology Demonstrations (ACTDs) and expand the means and methods by which the US DOD and Italian Ministry of Defense (IMOD) may cooperate under Project Agreements (PAs). This includes exchanging funds, contracting on each other's behalf, and joint disposal of project equipment. The objective of the RDT&E is to define and establish the general principles that shall apply to the initiation, conduct, and management of PAs established

between the United States and Italy. Each PA will state the specific anticipated Italian contribution to the US DOD R&D objectives. This new document will serve as a mechanism to leverage Italian technological advances for benefit of both the US DOD and Italy. (Mr. Wayne Morales, (703) 588-8949, DSN 425-8949 or e-mail: wayne.morales@pentagon.af.mil)

Italian Unmanned Aerial Vehicle (UAV) Cooperation: An International Cooperative Opportunities Group (ICOG) Task force led by the International Cooperation Directorate from the Office of the Secretary of Defense for Acquisition and Technology is attempting to establish a cooperative arrangement with Italy in the technical areas of UAV Low Reynolds Number Aerodynamics, Lightweight and Adaptive Structures, and Propulsion. In support of this effort, the Air Force Research Lab at Wright Patterson AFB, Ohio offered to host a meeting of U.S. and Italian technical experts possibly in May 03 to determine what cooperation is possible. (Mr. Wayne Morales, (703) 588-8949, DSN 425-8949 or email: wayne.morales@pentagon.af.mil)



IVORY COAST

Proposed Seismic Monitoring Agreement with the Ivory Coast: Over a year and a half of civil war and instability has slowed the processing of the agreement for the operation and maintenance of a seismic station at Dimbroko. The United States is currently awaiting a response, although no response can be anticipated until the country is stabilized. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or email maurice.fox@pentagon.af.mil)



JAPAN

Japan Systems and Technology Forum: Acting USD(AT&L) Wynne and Mr. Kazuo Ofuru co-chaired the 24th Systems and Technology Forum (S&TF) meeting in the Pentagon on 23 April 2004. Meetings of related bilateral groups were held earlier in the week. The Navy International Programs Office (IPO) presented a proposed master framework agreement for future R&D projects, the "RDT&E MOA." Japan agreed to take the concept under review. Discussions on declassifying Master Information Exchange Agreements and all annexes continue.

Technical Discussions on Toxic Effects of JP4/JP8: Technical discussions between AFRL/HE and AML/JASDF continue on a potential JP4/JP8 jet fuels project. The discussions are progressing very well at this time. (Lt Col Craig Gagnon, (703) 588-1017, DSN 425-1017 or e-mail: craig.gagnon@pentagon.af.mil)

Proposed US-Japan DEA on Research and Development in Three Dimensional Anthropometry: Anthropometry, the study of human body surface measurements in 3-D was only made possible within the last 20 years. This improved knowledge has potential for both engineering better fitting and safer equipment systems and for understanding relationships between body shape and things such as disease and performance. *Staffing Status:* Sent to Japan for review and possible signature Apr 04. Signed DEA envisioned Dec 04. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)



LITHUANIA

U.S.-Lithuania Defense Technology Working Group: Based on the Master Information Exchange Agreement for the Exchange of Research and Development Information signed 10 October 1997, USAF involvement is concentrating on any annexes regarding semi-conductor technology IEAs that will be facilitated through Dr. Agee of AFOSR. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



MOROCCO

Proposed Seismic Monitoring Agreement with Morocco: On 22 Apr 03, DoS sent cable to US Embassy Rabat inclusive of negotiation guidance and draft agreement. AFTAC is currently awaiting Morocco response. AFTAC negotiated further on said agreement in mid-April 04. AFTAC received Morocco Draft Agreement in June 04 and was routed through SAF/GCI with changes. Currently awaiting Morocco response. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



NETHERLANDS

Proposed Visualization Process for Fit and Accommodation Consulting Tools (VPFACT) PA: This US-Dutch collaborative project will develop a prototype human/equipment integration tool with the capability to collect, analyze and display, in a virtual 3-D visual mode, information regarding human accommodation and fit in the context of the cockpit and work station design space. The accommodation effects of equipment such as an instrumented helmet, protective clothing, and restraint systems will be included in this visualization. This prototype human/equipment integration tool is intended to support human/equipment accommodation and fit issues along with developing solutions that directly effect cost, human/equipment performance, and safety aspects. This agreement is currently in the Netherlands for negotiation. Signature of the PA is anticipated in early summer. (Maj Rodney Gray, (703) 588-1019, DSN 425-1019 or e-mail: rodney.gray@pentagon.af.mil)

Proposed Sustained C3 Team Performance in Simulated Environments PA: This US-Netherlands program will build on lessons learned from previous and current work in fatigue in US C4ISR teams and from combine US-Dutch team training. It will leverage a cost-effective, deployable, and highly configurable platform for the assessment and practice of team performance and distributed decision-making in C4ISR mission-relevant operational scenarios. Investigations of fatigue effects will result in knowledge of how and when fatigue effects occur, in time-critical, dynamic, and sustained operational conditions. This will enable identification and/or development, and implementation of counter-fatigue strategies in a variety of C3 team operations. This agreement is currently in SAF/IAPQ for review and staffing. Signature of the agreement is anticipated in Fall 2004. (Maj Rodney Gray, (703) 588-1019, DSN 425-1019 or e-mail: rodney.gray@pentagon.af.mil)



PARAGUAY

Proposed Seismic Monitoring Agreement with Paraguay: No change in status. Negotiation of the agreement for the operation and maintenance of a seismic station in Paraguay has been completed, although government instability has slowed the process. Paraguay's Ministry of Foreign Affairs has reviewed and preliminarily approved the Spanish language text of the agreement. SAF/IAPQ is awaiting official government position. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or email: maurice.fox@pentagon.af.mil)



POLAND

Proposed USAF/Poland Information Exchange Annex (IEA) on Aircrew Simulation and Performance: Proposed five year extension will continue the exchange of R&D information on aircrew simulation which includes information about the technologies that are involved in developing and operating simulators as well as the human-centered research for which these technologies are used by both countries that are principally, selection, protection,

training, and performance. Expired 12 Dec 01. Signatory Agency for Poland changed. *Staffing Status:* Development Stage pending USAF staffing. Signed DEA envisioned Mar 05. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed USAF/Poland Agreement Concerning the Exchange of Research and Development

Information (MIEA): The objective of the agreement is to conduct reciprocal, balanced exchanges of R&D information of mutual interests to the Parties. The Parties may exchange R&D information under this Agreement upon conclusion of individual IEAs. The Signatory office in Poland changed. The USAF has been designated Executive Agent by OSD to reaccomplish the MIEA. *Staffing Status:* Developmental stage pending USAF staffing. Signed MIEA envisioned by May 05. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed Seismic Monitoring Agreement with South Africa: No change in status. SAF/IAPQ, on the behalf of AFTAC, is in the process of negotiating a new agreement for the operation and maintenance of the seismic monitoring station at Boshof, South Africa. The agreement currently in place had been negotiated between the South African Government (SAG) and the US Geological Survey. Preliminary indications from the SAG Department of Foreign Affairs suggest that there are only a few minor issues remaining to resolve. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



SINGAPORE

US - Singapore Technical Working Group #2 and Technical Assessment: The Second Technical Working Group is currently scheduled for Nov 04. The new Singaporean TWG co-chair is Mr Tong Boon QUEK, Singapore's Deputy Secretary (Technology Transformation). A technical assessment scheduled for Jun 04 was postponed until Nov 04 due to key personnel turnovers on both the US and Singapore sides. The plan is to have the technical assessment team report the results to the TWG. (Lt Col Craig Gagnon, (703) 588-1017, DSN 425-1017, or e-mail: craig.gagnon@pentagon.af.mil)

Singapore Engineer Placement: Efforts to place a Singaporean Flight Surgeon at AFRL Human Effectiveness Directorate to conduct spatial disorientation research have been postponed until the end of CY05/beginning of CY06 due to personnel availability. (Lt Col Craig Gagnon, (703) 588-1017, DSN 425-1017, or e-mail: craig.gagnon@pentagon.af.mil)



SOUTH KOREA

Proposed DEA for Radar Target Signature: This proposed DEA between the AFRL Sensors Directorate (AFRL/SN) and the Korean Agency for Defense Development (ADD) will allow for the exchange of scientific and technical information on the simulation, research, development, test results of Radar Target Signature. Technical discussions will be held in Oct/Nov 04 timeframe. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

Proposed Seismic Monitoring Agreement with South Korea: No change in status. South Korea has indicated that it would sign the MOU if given title to the equipment. SAF/GCI drafted acceptable Title 10 clauses (for transferring equipment ownership to South Korea) into the proposed agreement, and AFTAC has provided an equipment list appendix for South Korea. US Embassy Seoul has passed the agreement to Government of South Korea. South Korea's Ministry of Science and

IAPQ Review

Technology is reviewing the Agreement. Currently no response has been received from MST. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



SPAIN

Proposed Seismic Monitoring Agreement with Spain: No change in status. SAF/IAPQ, on the behalf of the Air Force Technical Applications Center (AFTAC), is negotiating a new agreement for the operation and maintenance of the long-period array at the seismic station at Sonseca. USAF is awaiting official government response as well as suggested changes. Turnover of government personnel within Spain's National Geographic Institute has slowed Spain's review of the agreement. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)

US-Spain Engineer and Scientist Exchange Program: SAF/IAPQ is in the final stages of negotiations with the MOD. Expect request for signature authority to be sent to OSD early Sep 04. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

US-Spain Engineer and Scientist Exchange Program Amendment 1: SAF/IAPQ received Final Authority to Conclude this Amendment on 10 Sep 03 from OSD AT&L and was completed 14 Nov 03. The current agreement was scheduled to expire 30 Sep 03. Amendment 1 extends the current agreement until 30 Sep 04 was signed 14 Nov 03. This extension will allow the USAF time to negotiate a new agreement developed in accordance with DoD Directive 5230.20. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)



SWEDEN

Proposed Project Agreement for Coalition Mission Training Research: This proposed project between AFRL Materials and Manufacturing Directorate and the Swedish Defense Research Agency (FOI) will cooperatively conduct research and development activities that will enhance the technologies, processes, and strategies for training based on Distributed Simulation. The participants will cooperatively conduct research efforts to enhance the capabilities of national Distributed Mission Training (DMT) systems and accelerate collection of research data. Participants will also develop a secure data link between the US and Sweden to support DMT exercises to develop and evaluate application of DMT for training coalition operations in Peacekeeping Support Operations. SAF/IAPQ will begin coordination processes once a DDL has been drafted. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

Proposed Project Agreement for Micro Scale Secondary Flow Control in an Inlet S-duct at Angles of Incidence: This proposed project involves the AFRL Air Vehicles, NASA, the Swedish Defense Material Administration (FMV), and the Swedish Defense Research Agency (FOI). The organizations involved will cooperative research the viability of compact S duct concepts in ultra-compact combat aircraft inlet diffusers at high Reynolds numbers. SAF/IAPQ will begin coordination processes once a DDL has been drafted. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)

Proposed Project Agreement for Materials and Technologies for Laser Protection: This proposed project between AFRL Materials and Manufacturing Directorate and the Swedish Defense Research Agency (FOI) will allow collaboration on materials and technologies for Laser Protection. Laser protection materials and technologies protect eyes and sensor systems from laser threats, including both temporary jamming and permanent damage. SAF/IAPQ will begin coordination processes once a DDL

IAPQ Review

has been drafted. (Mrs. Lizz Robison, DSN 425-8946, (703) 588-8946 or e-mail: kathleen.robison@pentagon.af.mil)



TAIWAN

Proposed USAF/Taiwan Master Information Exchange Agreement (MIEA): The objective of the agreement is to conduct reciprocal, balanced exchanges of R&D information of mutual interests to the Parties. The Parties may exchange R&D

information under this Agreement upon conclusion of individual IEAs. There are currently two offices interested in creating Annexes for information exchange: AFOSR is interested in an exchange of nanotechnology information and AFRL Human Effects Division is interested in information exchange. *Staffing Status: MIEA Established 4 August 2004.* (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)



TUNISIA

Proposed Seismic Monitoring Agreement with Ethiopia: The agreement, being processed concurrently with an Ethiopia Seismic Monitoring Agreement, has gone through SAF/XOI, and has been reviewed by SAF/IAPQ, SAF/IARM, and SAF/IAPD. (Mr. Maurice Fox, (703) 588-8909, DSN 425-8909 or e-mail: maurice.fox@pentagon.af.mil)



UNITED KINGDOM

Impacts of the Space Environment on Radio Frequency Communication, Navigation and Surveillance Systems: Maintenance of Information Superiority for

the War fighter Project Arrangement with the United Kingdom: This PA under the RDP MOU was signed into effect on 6 July 2004. This PA will allow the US and UK to study ionospheric phenomena which impact communication, navigation and surveillance systems. Research will include global characterization of ionospheric phenomena and assessment of impacts to generic space-based radio frequency (RF) systems and concepts. Specific emphasis will be given to addressing ionospheric effects on wideband waveforms desirable for high bandwidth communications, ultra-precise navigation and both ground- and space-based radar applications. The technologies developed under this effort provide a basis for improving the performance of existing satellite communication, navigation and surveillance systems and facilitates informed design capabilities for such systems in the future. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Coalition Electronic Warfare Concepts And Technology Information Exchange Annex: This information exchange agreement, signed 19 May 2004, covers the exchange of research and development information on electronic warfare technologies that span the electromagnetic frequency spectrum. Information to be exchanged will include: concepts; techniques; architecture approaches and trade-offs/options; generic application plans; experimental/experimentation methods and test reports; test instrumentation/methodology and related analyses; models and modeling results; sub-system(s) integration standards; "system of systems"/networked system concepts; and, planned direction/trends of related program/EW program plans. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Intelligence, Surveillance, Target Acquisition, and Reconnaissance Systems (ISTAR) Information Exchange Annex: This information exchange agreement, signed 26 July 2004, involves the exchange of

ISTAR system standards, development, employment, and interoperability. This agreement will permit exchange of information up to the SECRET level on command & control system studies, concepts of operations, and other data of mutual interest and benefit. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Directional Infrared Countermeasures (DIRCM) Memorandum of Understanding: SAF/IAPQ staffed a three-year extension to this SOCOM MOU due to the need to extend interim contractor support for the installed systems. The extension was signed in July 2004.

Proposed Cooperative Agreements: The following cooperative agreements with the United Kingdom have been actively staffed by SAF/IAPQ during this period.

Joint-Unmanned Combat Air Systems (J-UCAS) US/UK Coalition Warfare System Demonstration (CWSD) Project Arrangement: This PA under the RDP MOU was negotiated and signed by DARPA in August 2004. SAF/IAPQ coordinated the PA through the Air Staff to ensure Air Force issues were addressed; SAF/IAPD will act as the disclosure authority for this agreement. The objective of this PA is to determine the cost-effectiveness of J-UCAS, UK Integrated Unmanned Combat Air Vehicles (UCAV), and other UCAVs operating in a US/UK coalition warfare environment through joint simulation conducted at AFRL. *Status:* This PA is in the UK for coordination.

Personnel Recovery Situational Awareness Technology Interoperability Project Arrangement: The Personnel Recovery PA is being established under the existing Personnel Recovery Memorandum of Understanding from the Joint Personnel Recovery Agency. This effort will demonstrate and assess PR interoperability between the US and UK and will include research and development activities, interoperability trials. The PA will help improve US and UK interoperability and sharing of information for isolated personnel authentication, location, evasion intentions and movement, and recovery force location. This project will help to develop a viable coalition PR capability between the US and UK. *Status:* This PA is currently in OSD coordination with signature expected in September 2004. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Network Centric Coordinated Targeting (NCCT) Project Arrangement: This proposed PA under the RDP MOU would develop network-centric collaborative concepts and techniques to demonstrate technologies and operational concepts required by Joint/Coalition War fighters by providing significant improvements in accuracy and timeliness of Time Sensitive Target (TST) identification through "front end" horizontal integration and collaboration of multiple Intelligence, Surveillance and Reconnaissance (ISR) platforms. This will allow the United States and United Kingdom to better operate in a coalition environment by integrating network centric functionality. *Status:* This PA is in the UK for coordination. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Turbine Engine Particulate Matter Emissions Project Arrangement: The USAF's AEDC and UK MOD have identified common interest to jointly evaluate state-of-the-art particulate measurement instrumentation, modify instrumentation for robust operation in turbine test cells, develop particulate characterization test procedures and validate instrumentation performance during Gas Turbine Engine (GTE) testing using current and future low emission jet fuels. This agreement will produce test protocol adequate to assess regulatory agency (USEPA and ICAO) requirements for GTE Particulate Matter emissions. *Status:* This PA is in the UK for coordination. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

JSTARS-ASTOR Interoperability Project Arrangement: This proposed PA under the RDP MOU will develop interfaces, conduct tests and analyses, and develop concepts of operations to ensure

interoperability for coalition operations. The effort concludes with a report identifying the current state of interoperability between ASTOR and Joint STARS. The report will be based on the results of the interoperability demonstration between and among the ASTOR aircraft, ASTOR Ground Station (GS), Joint STARS aircraft, and JSTARS Common Ground Station (CGS). *Status:* This PA is being developed by the Program Office. (Maj Dale Ward, (703) 588-8996, DSN 425-8996 or e-mail: dale.ward@pentagon.af.mil)

Proposed US-UK Information Exchange Annex (IEA) on Weather Impact Decision Aids (WIDAs) with the United Kingdom:

The focus of this IEA is the development and evaluation of weather impact decision aid software and algorithms. The UK and the US are both developing this software and algorithms to operationally predict the impact of weather on the performance electro-optical (visible and infrared) sensor systems used by the military for weapons acquisition and targeting, and navigation. Staffing Status: Initial development. Signed IEA envisioned Mar 05. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed US-UK Information Exchange Annex (IEA) on Global Broadcast Service with the United Kingdom:

This IEA provides for the exchange of research, development, test and evaluation information on the satellite broadcast system to support real-time access to mission data for allied operations. Staffing Status: Initial development. Signed IEA envisioned Feb 05. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Proposed US-UK Information Exchange Annex (IEA) on Interoperability of Tactical Communications Systems (TCS) with the United Kingdom:

This IEA deals with system standards, development, employment, and interoperability of various tactical communications media. Staffing Status: Initial development. Signed IEA envisioned Mar 05. (Mr. John Lucacos, (703) 588-8908, DSN 425-8908 or e-mail: john.lucacos@pentagon.af.mil)

Topics of Interest

MoD Personnel Changes - Professor Phil Sutton recently took over the post of Director General (Research & Technology). Prof. Sutton has replaced Mr Mike Markin, who was recently promoted to the post of Science & Technology Director. Prof. Sutton will be the UK signatory for annexes under the RDP, MIEM, MMIEM (ABCANZ), Square Dance and Tiger Lake MOUs. The remainder will be signed by Mr Markin, with the exception of ESEM arrangements which will continue to be approved by Dr Dai Morris, Research Collaboration Head (RC HD). Individual project MOUs will be allocated as required.

Air Power Conference – London (15-16 April 2004) – Mr. Lemkin (SAF/IA), LGen Keys (AF/XO) and Dr. Mike Francis (DARPA) spoke at the Royal United Services Institute's annual Air Power Conference in London. Mr. Lemkin's speech will be published under the title "International Armaments Cooperation: Perspectives on Air Power and Interoperability" in the October issue of RUSI's *Defence Systems* periodical.

Farnborough International Air show: The Farnborough Air show was held 19-25 July in the UK. Over \$20B in business was done during the trade days. 42 official military delegations (including SECAF & SAF/IA), 1360 exhibitors, and 243,000 visitors attended the show. The Society of British Aerospace Companies has confirmed that there will be a Farnborough Air show in July 2006.

Transformation in UK Defense: In July the UK's Defense Minister announced sweeping changes in the UK's military with the goal of transforming UK forces into a flexible, networked-enabled expeditionary military. The announcement revealed a \$6.5 billion increase in funding over the next 4 years and huge

cuts in manpower and platforms (i.e. RAF cut by 7,500 people, 3 Jaguar strike squadrons cut, 1 Tornado (F-3) squadron cut, 5 (of 21) Nimrod maritime patrol aircraft cut). “Winners” in this transformation are mobility (i.e. UK will purchase 4 leased C-17s and buy 1 more), special forces and Network Enabled Capability.

Cursor on Target Demonstration: On 6 Aug, Air Vice Marshal Dalton (Capability Manager for Information Superiority) hosted a demonstration of the UK’s Cursor on Target (CoT) project. This initiative began in Nov 03 when AVM Dalton was briefed at ESC on the USAF/MITRE CoT program. The MoD wanted to bring this technology forward in the UK to demonstrate the “art of the possible” in quickly transferring vital Combat ID information between sensors, shooters and decision makers. The demo proved that targeting info could be passed into the cockpit of a fast-jet via machine-to-machine interfaces using currently available equipment. The UK-only demo was very successful and the UK would like to pursue a US-UK demo of CoT in the future.

NATO PROGRAMS

NATO AEW&C: NATO AEW&C is currently working three agreements. The U.S. Air Force has completed staffing of the extension of the MOA concerning Air Command, Control, Communications and Intelligence Capabilities. The extension was mailed to NACMA on 9 Aug 04 for review and signature. The USAF is also coordinating for a PA with NAPMO on the Cooperative Development of ARC-204 Test Program Sets for the Bench-top Reconfigurable Automatic Test (BRAT). The package was sent to NAPMA on 26 Aug 04 for review and comment. HQ USAF has coordinated on an Amendment to the Supplement concerning the Accession of Spain to the MMOU on the E-3A Cooperative Programme. Under this amendment, Spain's lump sum PGI payment will be set and Spain will be fully vested in Programme Generated Income (PGI). The PGI payment will result in simpler budgetary processes for Spain and for NAMPO. The package was sent out by OSD for RAD/RFA on 27 Aug 04. (Lt Col Craig Gagnon, (703) 588-1017, DSN 425-1017 or e-mail: craig.gagnon@pentagon.af.mil)

NATO Alliance Ground Surveillance (AGS): In April the AGS steering committee agreed on a core program based on the Northrop Grumman TIPS Mixed Fleet (Airbus 321 and Global Hawk platforms). NATO is now proceeding with plans to conclude a 400M Euro design and development contract with Northrop Grumman for the first phase of the AGS acquisition program. Target for contract award is spring 2005, coincident with the spring CNAD meeting. With recent agreement on the TCAR radar, this will help keep the overall AGS program on schedule. In spite of programmatic progress, nations have still not agreed on the long-term structure for the AGS management organization. (Major Rodney Gray, (703) 588-1019, DSN 425-1019, or email: Rodney.gray@pentagon.af.mil)

MULTILATERAL MEETINGS AND PROJECTS

Long Term Technology Projects (LTTP): France, Germany, the United Kingdom and the United States are the current participants in LTTP will have its next meeting on 7-9 September 2004 in Paris. The status of LTTP technical groups will be briefed at the meeting. (Mr. Tom Koepnick, DSN 425-1018, (703) 588-1018 or email: Thomas.koepnick@pentagon.af.mil). The LTTP technical groups and their US participants are listed below:

1) **Aging Aircraft (AA):** This group focuses on structural aspects of the Aging Aircraft problem. US OPR: Mr. David L. Morris (AFRL/VAS), phone 937-255-8493.

2) **Air Refueling Technologies (ART):** This group is considering air refueling technologies for scenarios involving manned, combined manned and unmanned, and a future total unmanned air vehicle environment. US OPR: Lt. Col Cheryl ("CA") Allen (SAF/AQQM), PHONE 703-588-7750.

3) **Aircraft Battle Damage Repair (ABDR):** This group is focused on honeycomb sandwich structure repair, composite structure repair, training methods and system repair concepts. US OPR: Mr. Douglas Carter (AFRL/MLSA), phone 937-255-7483.

4) **Aircraft Survivability Technology (AST):** The group is focused on two major areas: warhead damage to composite structures, and composite degradation due to fire and heat. US OPR: Mr. Alex Kurtz (46 OG/OGM/OL-AC), phone 937-255-6302, x250.

5) Airflow Influence on Airdrop (AIA): This group is working to identify key aspects of aircraft airflow influence on airdrop, with a view to enhancing airdrop capability. US OPR: Mr. Richard Benney (AMSSB-RAD-T(N)), phone 508-233-5835.

6) Advanced Transmission Language and Allocation of New Technology for International Communications and the Proliferation of Allied Waveforms (ATLANTIC PAW): The objectives of this group are to enable interoperability of communication assets for combined operations and to support the portability of waveforms by defining and developing a common Waveform Description Language (WDL). US OPR: Mr. Rick Hinman (AFRL/IFGC), phone 315-330-3616.

7) High Power Microwaves (HPM): This effort has been focused on understanding the fundamental physics governing the effects of HPM on electronic components. US OPR: Dr. Michael G. Harrison (AFRL/DEHE), phone 505-846-0956.

8) Non Destructive Evaluation (NDE): The group has focused on the topics of hidden corrosion, heat damage in composites, engine materials and structures, and general NDE information exchange. US OPR: Mr. Charles Buynak (AFRL/MLLP), phone 937-255-9807.

9) Precision Airdrop Improvement (PAI): The key areas of focus for this group are self-guided airdrop systems, and wind and weather prediction and measurement. US OPR: Mr. Richard Benney (AMSSB-RAD-T(N)), phone 508-233-5835.

10) Tactical Missile Propellants (TMP): This group is focused on developing and demonstrating a less-sensitive, high-performance, low-signature propellant. US OPR: Mr. John Clark (AFRL/PRSB), phone 661-275-5208.

11) Unmanned Air Vehicles for Offensive Missions (UAVOM): The group's objective is to explore operational and technical issues critical to the cost effective use of UAVOM. US OPR: Mr. Dan Goddard (AFRL/VAA), phone 937-255-6852.

New 5-Power Research and Technology Projects MOU: In response to a tasking from the 5-Power ASNRs, SAF/IAPQ prepared a new cooperative Research and Technology Projects MOU. This MOU would expand upon the work performed under the LTTP MOU, adding Italy for future efforts. The current LTTP MOU (in effect since 1988) will remain in force until current LTTP efforts are completed (2007). The new 5-Power MOU has been negotiated with representatives from the UK, France, Germany and Italy and is awaiting Request for Final Approval (RFA) action by OSD. The goal has been to have the MOU ready for signature at the next 5-Power ASNR meeting in October 2004. (Mr. Tom Koepnick, DSN 425-1018, (703) 588-1018 or e-mail: thomas.koepnick@pentagon.af.mil)

Seven Nation Memorandum of Understanding on Mission Training via Distributed Simulation (MTDS MOU): The MTDS MOU is among Canada, France, Germany, Italy, Netherlands, the UK and the US. The key event under this MOU was planned to be Exercise "First WAVE" (EFW), originally scheduled for September 2004. The Exercise was to stimulate distributed mission operations. The technical sponsor for MTDS in the US is HQ USAF/XOOT. The Distributed Mission Operations Network (DMON) was planned to be used as the backbone communications network for EFW. In light of the results of a DMON assessment, the decision was made to not grant accreditation for EFW participation of the DMON network or any other US simulation faculty. This decision only affects accreditation for US facility participation in EFW and does not affect any existing non-EFW US accreditations. This decision severely impacted the remaining 6 EFW nations' ability to execute EFW. The nations are now working recovery planning to enable execution of a scaled-down EFW event in Nov

IAPQ *Review*

04 using an alternate non-US network (currently being developed). The US is planning to provide limited assistance to the nations to help ensure execution of an EFW event in Nov 04. (Mr. Tom Koepnick, DSN 425-1018, (703) 588-1018 or e-mail: thomas.koepnick@pentagon.af.mil)

US-UK-Italy-Australia C-130J Cooperative Systems and Software Upgrade Requirements

Management (COSSURM) Project Arrangement: This project with the Aeronautical Systems Center C-130 Development System Office (DSO), ASC/GRB, was signed on 22 Oct 03 and is the first PA under the C-130J Cooperative Projects MOU. This project provides a mechanism to carry out the identification, collection, definition, engineering analysis, pricing and schedule estimations, and acceptance of requirements for C-130J Data Processing Systems upgrades. The United Kingdom on behalf of the other Participants is providing the Contract Agency and contract with the C-130J manufacturer to establish and maintain a C-130J Data Processing System requirements Information System, including a database. (Mr. Craig Mallory, (703) 588-1020, DSN 425-1020 or e-mail: craig.mallory@pentagon.af.mil)

US-UK-Italy-Australia C-130J Reduced Vertical Separation Minimum (RVSM) Certification Data

Package PA: An equally-funded \$6.37M PA was concluded under the C-130J Cooperative Projects Memorandum of Understanding (MOU) for the RVSM Certification Data Package on 21 Jun 04. The objective of this PA is to develop a data package to enable each country to obtain RVSM certification through their national certification approval process. As delivered, the C-130J includes all the hardware equipment to operate in RVSM airspace (flight levels 290 to 410), only technical analysis and testing are required. The C-130J System Program Office (ASC/GRB) will contract with Lockheed Martin for the RVSM data package. (Mr. Craig Mallory, (703) 588-1020, DSN 425-1020 or e-mail: <mailto:craig.mallory@pentagon.af.mil>)

THE TECHNICAL COOPERATION PROGRAM



Policy Enabled Communications within a Coalition Environment Project Arrangement: This proposed PA with Australia, Canada, and the United Kingdom will support research and development activities to develop and demonstrate a coalition network management system by which to improve INFOCON levels within a coalition environment. *Staffing Status:* IAPQ provided the PA to Canada and the UK on 12 May 04 for their final approval. (Mr. Craig Mallory, (703) 588-1020, DSN 425-1020 or e-mail: craig.mallory@pentagon.af.mil <<mailto:craig.mallory@pentagon.af.mil>>)

Coalition Mission Training Effectiveness Research Project Arrangement: This PA with Canada and the United Kingdom supports research and development activities in simulation and network architecture technologies to investigate mechanisms to improve the effectiveness of simulated coalition-training instruments. *Staffing Status:* This PA was signed 8 May 03. (Mr. Ron Meyers, (703) 588-8976, DSN 425-8976 or e-mail: ronald.meyers@pentagon.af.mil)

Tropospheric Refraction and Propagation Modeling for Airborne Surveillance Systems (Formerly Refraction and Propagation Modeling) Project Arrangement: This PA with Australia and the United Kingdom addresses the measurement, modeling, and prediction of atmospheric refractive structures that limit any microwave system performance; but in particular an Airborne Early Warning and Control (AEW&C) radar system. *Staffing Status:* This PA was signed 3 Jun 03. (Mr. Ron Meyers, (703) 588-8976, DSN 425-8976 or e-mail: ronald.meyers@pentagon.af.mil)

TRAINING

To learn more about the International Armament Cooperation Process, the types of agreements SAF/IAPQ negotiates, key documents involved in the process and other pertinent information log on to the updated SAF/IAPQ homepage at <https://extranet.hq.af.mil/webfiles/ia/ia/IAHome.htm>; this extranet website is available to Headquarters Air Force personnel only. Go to Division home Pages and click on IAPQ or contact Mr. John Lucacos at (703) 588-8908, DSN 425-8908 or email: <mailto:john.lucacos@pentagon.af.mil>.

SAF/IAPQ FY2005 CALENDAR

[Please note that the following trips are subject to change; for updated information, contact the individual POCs. Further contact information is listed in the SAF/IAPQ Employee Roster on Page 4.]

SEPTEMBER 2004

28 Aug-3 Sep	JP4/JP8 Exploratory Discussions, Tokyo, Japan	POC: LtCol Gagnon
28 Aug-3 Sep	DEA/PA Status, Sweden	POC: K. Robison
30 Aug-3 Sep	AGS MOU WG, Canada	POC: Maj Gray
4-10 Sep	IAC Negotiations, Israel	POC: J. Lucacos
6-10 Sep	Future Air Capabilities WG, Paris, France	POC: Maj Ward
13 Sep-17 Sep	DCC Meeting, Singapore	POC: LtCol Gagnon
13-15 Sep	NPOESS-EUMETSAT, Darmstadt, Germany	POC: A. Duble
13-15 Sep	Trilateral Tech. R&D Program/Space-Based Surveillance Tech. WG, Farnborough, UK	POC: A. Yortzidis
20-23 Sep	MILSATCOM Int. Partner AEHF WG, Columbia, MD	POC: A. Yortzidis
27 Sep-1 Oct	JSF Discussions, Richmond, VA	POC: Maj Gray
27-30 Sep	RDLO Meeting, Bonn/EUCOM, Stuttgart, Germany	POC: Col Reda

OCTOBER 2004

1 Oct	RDLO Meeting, Paris, France	POC: Col Reda
2-6 Oct	IADC Steering Committee, Vancouver	POC: J. Finch
4-7 Oct	5 Power ASNR, Toulouse, France	POC: Col Reda/W. Morales
4-8 Oct	S&TF Technology Session, Tokyo, Japan	POC: LtCol Gagnon
6 Oct	Survival of Space WG/Defense Space Cooperation MOU/Canada, Rosslyn, VA	POC: A. Yortzidis
7 Oct	RDLO Meeting, London, UK	POC: Col Reda
10-15 Oct	RUSI Conference, London, England	POC: J. Finch
11-15 Oct	NATO Sub-Committee 8, Brussels, Belgium	POC: R. Saxon
11-15 Oct	DSTO & Global Hawk, Canberra, Australia	POC: C. Mallory
18-22 Oct	NATO Air Force Armament Group MOU Exploratory Session #1, Brussels, Belgium	POC: W. Morales
18-22 Oct	Exhibitors Conference, Las Vegas, NV	POC: D. Gressman
18-22 Oct	US/German RDT&E Umbrella Agreement Negotiations, Bonn, Germany	POC: LtCol Walsh

IAPQ Review

19 Oct	US/Canada Agreement Review, Canadian Embassy, Washington, DC	POC: A. Yortzidis
19-20 Oct	1 st C-130J Business Management WG, Rosslyn, VA	POC: C. Mallory
26-28 Oct	ONIR Users Conference, Chantilly, VA	POC: J. Finch
TBD/Early Nov.	Plenary Meeting, Tokyo, Japan	POC: A. Duble
TBD/Early Nov.	AEHF MILSATCOM Negotiations, UK/The Netherlands	POC: K. Robison, A. Yortzidis

NOVEMBER 2004

TBD/Early Nov.	AEHF MILSATCOM Technical Discussions, Rome, Italy	POC: A. Yortzidis
8-12 Nov	ESEP Agreement Negotiations, Greece	POC: J. Lucacos
15-18 Nov	RDT&E Negotiations, Tel Aviv, Israel	POC: J. Lucacos
29 Nov-1 Dec	Transatlantic Defense Conference, Luxembourg	POC: LtCol Duddy

SAF/IAPQ FY2005 CALENDAR

[Please note that the following trips are subject to change; for updated information, contact the individual POCs. Further contact information is listed in the SAF/IAPQ Employee Roster on Page 4.]

DECEMBER 2004

TBD	Hypersonic Propulsion PA ICAT Mtg., Arnold AFB, TN	POC: LtCol Walsh
-----	--	------------------

JANUARY 2005

TBD	US-Sweden ASNR, Dayton, OH/Mesa, AZ	POC: G. Beckham
TBD	NATO Air Force Armament Group MOU Exploratory Session #2, Brussels, Belgium	POC: W. Morales

FEBRUARY 2005

5 Feb	AEHF MILSATCOM Steering Committee; Int. Partner AEHF WG; Int. Partner Security AEHF WG, Site TBD	POC: K. Robison, A. Yortzidis
6-15 Feb	Aero India, Bangalore, India	POC: Maj Ward
21 Feb- 4 Mar	42 nd Session/Sci. & Tech. Sub. of the UN Committee on Peaceful Uses of Outer Space, Vienna, Austria	POC: J. Finch

MARCH 2005

7-11 Mar (TBD)	LTTP Working Group, Germany	POC: Maj Ward
12-21 Mar	Australia International Airshow, Victoria, Australia	POC: Maj Ward
TBD	NATO Sub-Committee 8 Meeting	POC: R. Saxon

APRIL 2005

5-8 Apr (TBD)	5 Power ASNR, Italy	POC: W. Morales
19-22 Apr	Inter-Agency Space Debris Coordination Committee, Darmstadt, Germany	POC: J. Finch
Spring 2005/TBD	US-German Annual Agreements Review, Germany (TBD)	POC: LtCol Meinhart, LtCol Walsh

IAPQ *Review*

JUNE 2005

5 Jun	NATO Air Force Armament Group MOU Exploratory Session #3, Brussels, Belgium	POC: W. Morales
6-10 June	IDEA Conference, Berlin, Germany	POC: LtCol Meinhart, LtCol Walsh
10-20 June	Paris Air Show	POC: Maj Ward
TBD	6 th Air Senior National Representatives Meeting, TBD US Location	POC: C. Mallory

JULY 2005

18-22 Jul	C-130J Joint Users Conference, San Diego, CA	POC: C. Mallory
-----------	--	-----------------