Foreign Comparative Testing (FCT) Projects Selected for Fiscal Year 2003 Funding

Army New Start Projects

105mm Preformed Fragments – Republic of South Africa
155mm Ammunition – Republic of South Africa
Ballistic Armor for Helicopters – Australia, United Kingdom
Fuel Cells for Dismounted Soldier Systems – Canada, Germany, United Kingdom
Small Bundle Resupply System – Canada, Republic of Korea, Netherlands

Army Continuing Projects

40mm Dud Reducing Ammunition – Germany, Singapore
Self-Destruct Fuze for Multiple Launch Rocket System (MLRS) – Germany, Israel
Silverized Kevlar – Canada

Navy and Marine Corps New Start Projects

Corona Monitoring System for High-Powered Naval Communications – Israel, Republic of South Africa
Deployable Instrumentation for MAGTF (Marine Air Ground Task Force) Training – Sweden, Switzerland
Eye-safe Laser Rangefinder for M1A1 Main Battle Tank – Germany, United Kingdom
High Rate-of-Fire .50 Caliber Machine Gun (joint with Air Force) – Belgium
High-Temperature Protective Coating for Gas Turbine Engines – Canada, Russian Federation
Improved Specific Emitter Identification System – United Kingdom
Replacement Structures for Aircraft – France, Poland
Resilient Abrasive-Resistant Skirt for LCAC (Landing Craft-Air Cushion) – Italy, Sweden, United Kingdom
Shipboard Anti-Jam GPS (Global Positioning System) Antenna – United Kingdom
Special Effects Small Arms Marking System – Canada
Underwater Communications & Tracking System for Submarines – Australia

Navy and Marine Corps Continuing Projects

Assault Breacher Vehicle Mine Plow & Lane Marking System – Israel, United Kingdom
Communications Distribution System – Canada
Digital Flight Control System for EA-6B – United Kingdom
Floating Smoke Pot System– Germany
High Frequency Adaptive Antenna Receive System Replacement – Canada
Infrared (IR) Decoy – Canada
NBC Multipurpose Protective Sock – France, Germany, United Kingdom

Air Force New Start Projects

Cleaner-Burning Stores Release Cartridges – United Kingdom
Man-Portable Intrusion Detection System – United Kingdom
Missile Reserve Battery Replacement – France, Japan
Rayon for Heatshield and Motor Nozzles – Austria, France, Germany, United Kingdom

Air Force Continuing Project

Eagle Vision Satellite Imagery Receiving and Processing Station Sensor Upgrade – France

U.S. Special Operations Command New Start Projects

40mm Enhanced Grenade Launcher for M4 Carbine – Germany, United Kingdom
Body Armor Flotation Vest – Israel, United Kingdom
Body-Worn Radar Warning Receivers – United Kingdom
Global System for Mobile Threat Warning – Canada, Denmark, Russia, Sweden, United Kingdom
Man-Portable SATCOM (Satellite Communications) System – Sweden
Ultra Light Aero Diesel Engine – Germany, United Kingdom
Wireless LAN (Local Area Network) Monitoring – Finland

U.S. Special Operations Command Continuing Projects

Advanced Demolition Weapons – Germany, Sweden
MAAWS (Multi-Role Anti-Armor, Anti-Personnel Weapon System) Infrared Illumination Round – Sweden

Summaries of Projects Selected by the Department of Defense for Fiscal Year 2003 FCT Funding

Army New Start Projects

105mm Preformed Fragments – Republic of South Africa. This project will evaluate the potential increased lethality and range of the conventional 105mm Field Artillery ammunition, developed by Denel-Naschem, over the current U.S. ammunition. If successful, the project would greatly enhance the lethality of U.S. Army light forces.

155mm Ammunition – Republic of South Africa. This project will evaluate the potential increased range of several different 155mm Field Artillery projectiles, developed by Denel-Naschem, over current U.S. ammunition. If successful, the project would greatly increase the fire support provided to U.S. Army ground forces.

Ballistic Armor for Helicopters – Australia, United Kingdom. This project will evaluate lightweight ballistic armor, developed for law enforcement use by Craig International Ballistics of Australia and Meggitt of the United Kingdom, for use on the RAH-66 Comanche Helicopter. If successful, the project would not only provide increased ballistic protection over the current armor, but also greatly reduce the overall weight of the aircraft, thereby improving operational performance. Comanche is a vital program in the U.S. Army's Transformation process.

Fuel Cells for Dismounted Soldier Systems – Canada, Germany, United Kingdom. This project will evaluate electrochemical fuel cells developed by Ballard Power Systems and Hydrogenics, both of Canada; NoVars and Smart Fuel Cells, both of Germany; and Advanced Power Sources of the United Kingdom to meet U.S. Army requirements for longer lasting, lighter weight power sources for individual soldiers under its Land Warrior program, a vital program in the U.S. Army's Transformation process.

Small Bundle Resupply System – Canada, Republic of Korea, Netherlands. This project will evaluate compact guidance and control units developed by MMist of Canada; Koable of the Republic of Korea; and Fokker Space of the Netherlands, as alternatives to the Guided Parafoil Aerial Delivery System – Extra Light. If successful, the project would provide extremely precise high altitude delivery of small bundles and airborne troops for missions such as re-supply for military operations in urban terrain, delivery of small robots and sensors, counter terror operations, and humanitarian support missions.

Army Continuing Projects

40mm Dud Reducing Ammunition – Germany, Singapore. This project is evaluating dud-reducing ammunition developed by Junghans/Dayron of Germany and Chartered Ammunition of Singapore for effectiveness, safety and feasibility of integration into the Mk 19-40mm round as a suitable fuze to reduce unexploded ordnance on the battlefield and training ranges. If successful, the project would greatly enhance both the operational effectiveness and safety of U.S. Army ground forces, and the safety of civilian non-combatants as well.

Self-Destruct Fuze for Multiple Launch Rocket System (MLRS) – Germany, Israel. This project is evaluating the performance, safety, and feasibility of integration into the MLRS submunitions, of two self-destruct fuzes for submunitions, developed by Junghans/Giat of Germany and Israel Military Industries, Ltd., for the purpose of reducing unexploded ordnance on the battlefield and training ranges. If successful, the project would greatly enhance both the operational effectiveness and safety of U.S. Army ground forces, and the safety of civilian non-combatants as well.

Silverized Kevlar – Canada. This project is evaluating Silverized Kevlar developed by Silverleaf Materials, Ltd., for use on the RAH-66 Comanche Helicopter. This material could enhance the performance characteristics of the structure with regard to conductive ground plane, electro-magnetic interference shielding, and static discharge, and achieve overall weight savings by eliminating layers of parasitic conductive materials, resulting in greatly enhanced operational performance and survivability. Comanche is a vital program in the U.S. Army's Transformation process.

Navy and Marine Corps New Start Projects

Corona Monitoring System for High Power VLF/LF Communications – Israel, Republic of South Africa. This project will evaluate commercially available daylight corona cameras manufactured by OFIL, Ltd. of Israel, and the Centre for Integrated Sensing Systems (CSIR) of the Republic of South Africa. The cameras are employed for remote viewing and sensing of energized inductors in the transmitting station's helix tuning house to provide early detection of damaging corona formation, to prevent unplanned outages in communications to submerged submarines.

Deployable Instrumentation for MAGTF (Marine Air Ground Task Force) Training – Sweden, Switzerland. This project will evaluate mobile Range Instrumentation Systems developed by Saab Training Systems of Sweden and RUAG of Switzerland to meet Marine Corps requirements to integrate current training devices which provide deployable force-on-force training for the Marine Air Ground Task Force.

Eye-safe Laser Rangefinder for M1A1 Main Battle Tank – Germany, United Kingdom. This project will evaluate eye-safe lasers developed by Zeiss of Germany and Thales of the United Kingdom, for range, beam divergence, output energy, shot life, receiver field of view, sustained rate of ranging, and other parameters used to locate distant targets for the M1A1 Firepower Enhancement Program. The eye-safe laser is expected to increase the range performance by 2000 meters.

High Rate-of-Fire .50 Caliber Machine Gun (joint with Air Force) – Belgium. This project will evaluate a cost effective, high-rate-of-fire .50 caliber machine gun manufactured by FN Herstal, for use by Marine Corps UH-1N and CH-53E helicopters, as well as ground vehicles, to replace the obsolete .50 caliber machine gun currently in use. The FCT evaluation will also focus on satisfying Air National Guard requirements for a more effective machine gun for its HH-60G rescue helicopters, whose defensive armament is currently inadequate.

High-Temperature Protective Coating for Gas Turbine Engines – Canada, Russia. This project will evaluate the benefit to the operational life of gas-turbine engine hot section components from a protective coating by MDS-PRAD, a joint venture company of Ural Works of Russia (PRAD) and MDS Aerospace of Canada. The protective coating reduces hot-gas corrosion, oxidation and thermal fatigue. Potential applications include: AV-8B, F/A-18E/F, JSF, AV-8B, H-53, V-22, SH-60, C-130, E-2, P-3, and naval surface combatants (DDG and DD-X).

Improved Specific Emitter Identification System – United Kingdom. This project will compare alternatives developed by QinetiQ of the United Kingdom to the U.S. cards for passive identification and fingerprinting of emitters in naval applications.

Replacement Structures for Aircraft – France, Poland. This project will qualify and certify the manufacture of replacement flight control surfaces for legacy aircraft structures, including honeycomb sandwich-constructed aluminum/titanium structures manufactured by Alcore of France and PZL-Swidnik of Poland. The immediate objective is to provide a cost effective source for replacement of flight control surfaces/sub-structures for Navy F-14, EA-6B, F/A-18, and Air Force F-15 aircraft.

Resilient Abrasive-Resistant Skirt for LCAC (Landing Craft-Air Cushion) – Italy, Sweden, United Kingdom. This project will evaluate candidate materials developed by Reeves of Italy; Trelleborg of Sweden; and Northern Rubber of the United Kingdom to determine if they can provide a 50 percent improvement in the LCAC skirt's resistance to abrasion without a weight or cost penalty.

Shipboard Anti-Jam GPS (Global Positioning System) Antenna – United Kingdom. This project will evaluate a Raytheon Systems Limited anti-jam Global Positioning System antenna to be used for U.S. Navy surface ship applications. Test and evaluation will begin with mine countermeasures ships.

Special Effects Small Arms Marking System – Canada. This project will evaluate the safety and integration suitability of Simunition's 5.56mm linked low-velocity training munitions for the M249 Squad Automatic Weapon (SAW). The marking system is a user-installed weapons modification kit that allows the individual Marine to fire, at short range, low velocity marking ammunition while precluding the weapon from firing live ammunition.

Underwater Communications & Tracking System for Submarines – Australia. This project will evaluate the suitability of Nautronix's underwater digital communication system for real-time data exchange of positional information between submarines participating in open ocean exercises.

<u>Navy and Marine Corps Continuing Projects</u>

Assault Breacher Vehicle Mine Plow & Lane Marking System – Israel, United Kingdom. This project is evaluating foreign, non-developmental Full-Width Mine Plows and Lane Marking Systems manufactured by Pearson Engineering of the United Kingdom and Israel Aircraft Industries, RAMTA Division. These subsystems will be integrated into the Marine Corps' Assault Breacher Vehicle and tested to verify vendor performance claims and to satisfy the requirement for in-stride breaching capability, operational suitability, and shock and mine blast.

Communications Distribution System – Canada. This project will is evaluating a digital voice and data distribution system developed by Computing Devices, integrated with the KC-130 aircraft, for command post complexes ranging (in size equivalents) from Marine Expeditionary Force headquarters down to squadron level air support.

Digital Flight Control System for EA-6B – United Kingdom. This project is evaluating digital technology developed by BAE Systems for the Eurofighter to improve the reliability, maintainability, and performance of the aircraft flight control system of the EA-6B "Prowler" aircraft.

Floating Smoke Pot System– Germany. The Marine Corps is evaluating an environmentally safe, non-toxic, non-carcinogenic, smoke-producing filler in a floating smoke pot configuration for use during low-light battlefield and training situations. The floating smoke pot system is designed to screen personnel and equipment on the battlefield, both land and sea smoke. The current U.S. system, the K867, contains carcinogenic filler and is thereby unsatisfactory for use in training. The candidate filler produced by Diehl Munitionssysteme is fielded in smoke pots in Germany, Belgium, France, Norway, and Poland.

High Frequency Adaptive Antenna Receive System Replacement – Canada. This project is evaluating a high-frequency adaptive antenna developed by SED Systems of Canada to meet a Navy requirement to improve the quality and range of long haul radio communications with P-3 "Orion" patrol and surveillance aircraft.

Infrared (IR) Decoy – Canada. This project is evaluating an infrared decoy produced by Magellan Aerospace - the Canadian MJU-5188 liquid pyrophoric decoy. This decoy has the potential to have the spectral and spatial characteristics required to provide tactical aircraft with dramatically increased self-protection against IR threat missiles. The MJU-5188 was developed by the Canadians for use on their tactical aircraft and has demonstrated excellent effectiveness in Canadian tests against advanced threats.

NBC Multipurpose Protective Sock – France, Germany, United Kingdom. This project is evaluating candidate launderable socks developed by Paul Boye of France; Texplorer GmbH and Helsa-Werke GmbH, both of Germany; and Purification Products, Ltd. of the United Kingdom, which allow freedom of movement, and chemical/biological and friction protection to areas of the foot when worn inside warfighter footwear. This sock will be an integral part of the Joint Service Lightweight Integrated Suit Technology (JSLIST) ensemble.

Air Force New Start Projects

Cleaner-Burning Stores Release Cartridges – United Kingdom. This project will test and evaluate the compatibility and performance of alternatives, developed by Wallop Defense Systems and Portsmouth Aviation, to the stores release cartridges now in use by the Air Force.

Man-Portable Intrusion Detection System – United Kingdom. This project will evaluate a wireless surveillance system developed by Sensor Electronics, Ltd., comprised of palm-sized passive infrared detectors which can be deployed from a briefcase. This sensor system appears to provide covert and overt, high value item protection, stand-off perimeter approach surveillance, or area protection for security forces deployed or in airbase ground defense operations.

Missile Reserve Battery Replacement – France, Japan. This project will evaluate foreign batteries developed by Saft of France and Japan Storage Battery in environments applicable to missile/booster uses. With the decline of military missile development and downsizing of strategic forces, several U.S. battery manufacturers for these applications have stopped production. Presently there is only one qualified U.S. source of batteries intended for missile/booster applications, particularly of the newer technologies.

Rayon for Heatshield and Motor Nozzles – Austria, France, Germany, United Kingdom. This project will evaluate high-quality rayon from the companies Lenzing of Austria; Snecma Moteurs of France; Acordis of Germany; and Acordis of the United Kingdom to meet Air Force requirements for use in high temperatures applications, such as heat shields and rocket motor nozzles.

Air Force Continuing Project

Eagle Vision Satellite Imagery Receiving and Processing Station Sensor Upgrade – France. Eagle Vision, previously tested and fielded under the FCT program, 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.

U.S. Special Operations Command New Start Projects

40mm Enhanced Grenade Launcher for M4 Carbine – Germany, United Kingdom. This project will evaluate grenade launchers from Heckler and Koch of Germany and Istech of the United Kingdom, to determine if either meets requirements for a more accurate and reliable weapon for Special Forces as a potential replacement for the current M203 40mm grenade launcher, which is over 30 years old and becoming logistically unsupportable.

Body Armor Flotation Vest – Israel, United Kingdom. This project will evaluate **i**nflatable body armor systems which are protected from bullets and fragmentation, while providing the wearer with increased range of movement and comfort, developed by Israel Military Industries of Israel, and Englands Ltd. of the United Kingdom.

Body-Worn Radar Warning Receivers – United Kingdom. This project will evaluate commercially available radar warning receivers developed by Filtronic Components and Spectrum Solutions to determine if either provides critical threat warning and situational awareness to meet Special Forces requirements.

Global System for Mobile Threat Warning – Canada, Denmark, Russia, Sweden, United Kingdom. This project will test and evaluate commercially available mobile threat warning systems from various companies to determine if they provide increased range (with use of less signal repeaters), improved data throughput, reduced probability of signal detection or intercept, and improved security, to meet Special Forces requirements.

Man-Portable SATCOM System – Sweden. This project will test and evaluate small, lightweight satellite dishes manufactured by the firm, SweDish, capable of providing one-person operations and turnkey satellite communications solutions. It will have the capability to provide secure communications (live video/audio streaming, broadband transmission and automated setup) without sacrificing the identity or location of the user.

Ultra Light Aero Diesel Engine – Germany, United Kingdom. This project will evaluate non-developmental diesel engine candidates in the 100 hp range for possible use on various special forces wind-supported air-delivery platforms developed by Wankel Rotary and Thielart Aircraft Engines, both of Germany; and A-Tech Group, Wilksch Airmotive, and UAV Engines, all of the United Kingdom..

Wireless LAN Monitoring – Finland. This project will test and evaluate commercial lightweight, portable wireless LAN monitoring systems developed by Wlanbit to meet Special Forces requirements for a component of the Joint Threat Warning System (JTWS).

USSOCOM Continuing Projects

Advanced Demolition Weapons – Germany, Sweden. This project is evaluating candidate shoulder-fired weapons developed by Diehl/Dynamit Nobel of Germany, and Bofors of Sweden that can be employed from confined spaces and can meet a range of Special Operations Forces missions, including Military Operations in Urban Terrain, anti-armor, and direct engagement of targets in protected/covered areas. Testing involves a series of live-fire assessments by representative users and munitions experts to determine which weapons are most effective against a number of targets ranging from reinforced concrete, to triple brick walls, enemy armor, and defilade positions.

MAAWS Infrared Illumination Round – Sweden. The Navy Special Warfare Command is evaluating infrared illumination ammunition developed by Bofors of Sweden for the Carl Gustaf anti-armor weapon, with a fuze that meets U.S. safety standards. These standards were previously waived for the version currently fielded with U.S. forces, and the waiver quantity limit has been reached. The Swedish round incorporates an infrared candle visible only with night vision devices in place of the current white light candle.