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ACT II

Advanced Concepts and Technology II

1994

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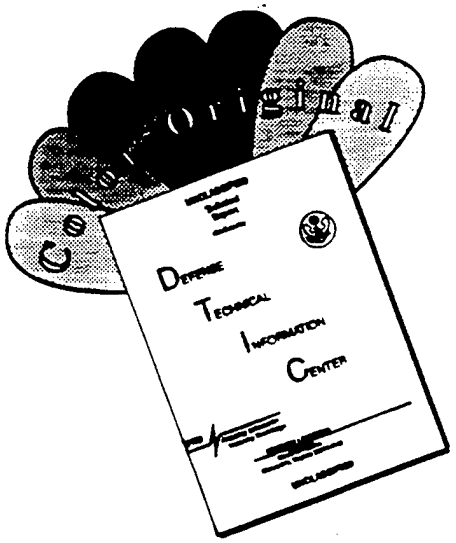

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Today, the Army recognizes more than ever the imperative to retain technological superiority as it continues to restructure into a smaller Force Projection Army of the 21st Century.

The establishment of the Battle Laboratories and the Louisiana Maneuvers (LAM) Task Force is a critical step towards achieving this goal. Together with the Army Research, Development, and Acquisition cummunity, the Battle Labs and LAM Task Force strive to streamline materiel acquisition and provide warfighters with overmatch capabilities.

The Army's Advanced Concepts and Technology II (ACT II) Program provides access for industry participation in this important endeavor. ACT II facilitates Battle Lab experimentation by competitively funding industry's advanced technologies, prototypes, and non-developmental items having greatest potential to fulfill warfighting capability requirements. In Fiscal Year 1994, its inaugural year, the ACT II Program funded the top twenty-eight projects highlighted in this brochure.

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Advanced Concepts and Technology II

Today, the Army recognizes more than ever the imperative to retain technological superiority as it continues to restructure into a smaller Force Projection Army of the 21st Century.

The establishment for the Battle Laboratories and the Louisiana Maneuvers (LAM) Task Force is a critical step towards achieving this goal. Together with the Army Research, Development, and Acquisition community, the Battle Labs and LAM Task Force strive to streamline materiel acquisition and provide warfighters with overmatch capabilities.

The Army's Advanced Concepts and Technology II (ACT II) Program provides access for industry participation in this important endeavor. ACT II facilitates Battle Lab experimentation by competitively funding industry's advanced technologies, prototypes, and non-developmental items having greatest potential to fulfill warfighting capability requirements. In Fiscal year 1994, its inaugural year, the ACT II Program funded the top twenty-eight projects highlighted in this brochure. Total contact values of these projects amounted to over $20 M. In FY95, with a funding level of some $40M, the Army anticipates funding approximately thirty-five projects.

ACT II is sponsored by the Army Chief of Staff and the Office of the Assistant Secretary of the Army (Research, Development, and Acquisition). The U.S. Army Training and Doctrine Command (TRADOC), the Army Materiel Command (AMC) and the Army Research Office (ARO) collaborates to build ACT II partnerships between the Army, industry, and the academic community.

The Army is pleased to announce Fiscal Year 1994 ACT II winners portrayed in this brochure. We look forward to your support and participation in the future.

Hands-Free Wireless Headset

Objective

Demonstrate a Hands-Free, Wireless Headset which incorporates the latest noise reduction and intelligibility technology. The program addresses the difficulties of communications in a very noisy environment, such as tactical vehicles and aircraft, and the issue of wires encumbering the soldier's movement. Voice activated command to control access to the Local Area Network (LAN) provides hands-free tactical communications.

Demonstration

The headsets use passive and active noise reduction techniques for hearing protection, and active noise cancellation methods for the microphone. These combine to provide improvements in attenuation both below 500 Hz, and from 500 to 8000 Hz over conventional military systems. Speech intelligibility will be increased by up to 90%. Transmissions are keyed by use of a voice activated microphone, and have a range of 1000 feet. Initially, the headsets will be equipped with a plug-in transceiver, based on an available commercial-off-the-shelf (COTS) chip set, providing an untethered capability.

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Multi-Level Neural Network Approach to BDA

Objective

Develop a neural network-based tool to increase the speed and accuracy of Battle Damage Assessment (BDA) for the deep attack commander. The neural network, a three-level network model, is based upon pattern matching of collected data, such as infrared or thermal signature data, by a trained network. By automating the analysis of post-strike data it provides BDA within 20 minutes after data input is complete.

Demonstration

The three layers of the network are numeric (analysis of the data), syntactic (association of the data with their meanings), and semantic (relating syntactic information to the generation of damage assessment estimates). Each target type has its own neural network. At the numeric level the direct measurements of the target are combined with related measurements of the engagement scenario, and parameters specifying certain characteristics of the scenario. At the syntactic level, the direct measurements are related to a set of probable causes via Bayesian statistics. The semantic level incorporates a database containing both new and a priori information, and manipulates output of the numeric and syntactic levels via operations on graph structures to form relationships between cause and damage assessment.

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Fiber Optic Mortar Projectile

Objective

Demonstrate 120MM Non-Line-of-Sight Fiber Optic Mortar Projectile concept. Gunner provides terminal guidance control using an optical fiber cable command link attached to a Gunner's Console. Provide Performance parameters and design data to support Battle Lab simulation and evaluation of the concept. Build advanced prototypes for flight testing. Provide capability for light forces to attack non-line-of-sight targets out to six kilometers with precision.

Demonstration

The round features man-in-the-loop navigation and terminal guidance control, a CCD type low light level TV seeker, and is propelled from the 120 mm mortar using a standard reduced charge. The projectile is a wooden round, with the optical fiber protruding from the muzzle when inserted into the mortar, and is attached to the Gunner's Console using a quick connect optical fiber connector.

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Tactical Mobile Wireless Local Area Network (LAN)

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Objective

Demonstrate modified, commercial-off-the-shelf (COTS) wireless LAN system that provides a wide bandwidth, very high throughput network. Configure users into microcells, each consisting of one control module with up to fifty users connected via the LAN. The primary objective of the project is to increase the connectivity distance within microcells to 2 KM and to address the multipath problems unique to tactical environments.

Demonstration

The COTS LAN uses Ethernet protocols with a Wide bandwidth (10 MHz) and a very high throughput (5.7 Mbps). The new 18 GHz antenna (+12 dBi gain) addresses multipath problems by providing redundant RF heads and antennas to segregate, transmit and receive functions. The proposed modifications to increase range provide additional transmit power (200 mw at the antenna) and improve receiver sensitivity (5 dB receiver noise). These changes will not alter the basic digital subsystem or control software. Low Probability of Intercept (LPI) is provided by the short range, and electronic antenna steering.

Wireless Battlefield Communications System

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Objective

To successfully pass data between two vehicle-mounted "master stations" and eight man-portable radios. A vehicle-mounted base station controls lightweight manportable units consisting of small transceivers linked to a headset and mike operating up to 500 meters apart. Using an HF or VHF link, base stations can communicate up to 20 miles apart.

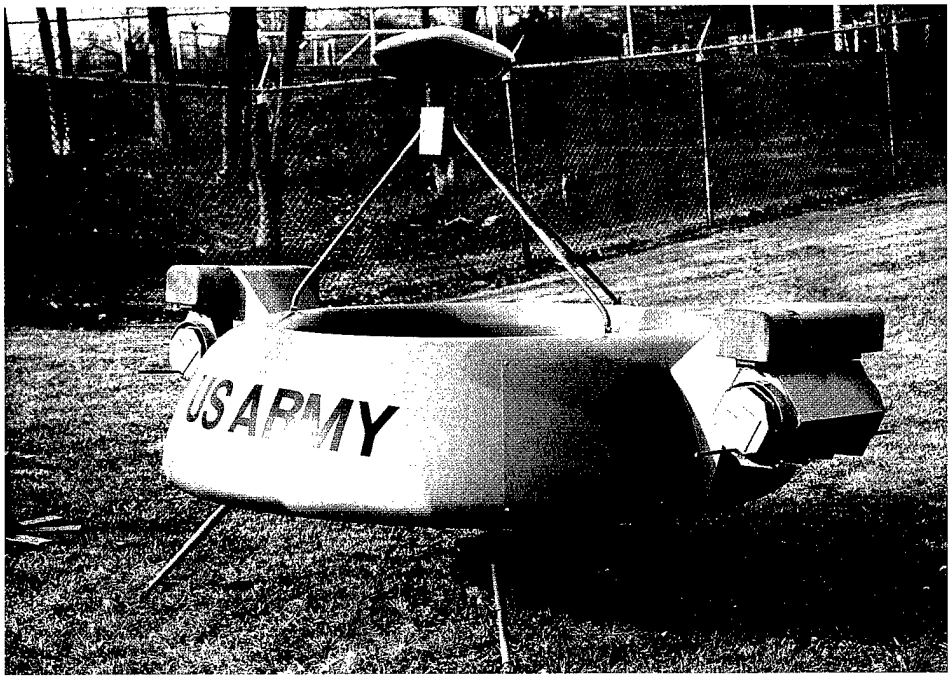
Demonstration

Frequency Division Multiple Access (FDMA) and Time Division Multiple Access (TDMA) techniques with slow frequency hopping (480 hps hopping rate) provide a large number of near-orthogonal nets. Time diversity techniques will increase immunity to interference. Multi-planar antenna array implements space diversity for resistance to propagation effects (multipath fading and shadowing). Algorithms process the signal strength information at different frequency hops to determine the optimal antenna to use at each hop. Adaptive transmitter power control optimizes, signal strength. 900 MHz frequency hopping data modem with a software-driven DSP controls the adaptive algorithms and provides a 300 kbps data rate.

Cypher UAV

Objective

To demonstrate, through simulation and hardware testing, that the shrouded rotor Unmanned Aerial Vehicle (UAV) can enhance soldier survivability, lethality, and increase situational awareness by providing timely reconnaisance, surveillence, and targeting imagery. A situational model of the Cypher capabilities and flight characteristics (including payload sensor performance) will be provided. Demonstrate and validate the simulation model by flying the Cypher technology demonstration aircraft.



Demonstration

The Cypher, a ducted rotor aircraft with a composite shroud structure, fly-by-wire controls, integrated avionics, and an onboard mission computer, can be equipped with a variety of payloads, such as sensor packages, weighing up to 40 lbs. The symmetrical, rounded shroud safely encloses the rotor system, and produces a low signature. The vehicle can operate autonomously according to a preplanned mission scenario, or under ground control via a datalink. Cypher has a hover capability, three hour flight endurance, and its top speed of 70 knots enables flights out to 25 Km.

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Objective

To provide a seamless battlefield communications network, and interoperability between all U.S. and coalition forces using existing and evolving communications systems.

Demonstration

Demonstration of a multimedia communications controller, using commercial-off-the-shelf (COTS) hardware, that maintains a wireless network comprised of several different tactical and commercial, systems are linked by SINCGARS, EPLRS, HSE Packet Network, VSAT, and coalition forces radios. Host computer access is provided via an IEEE LAN or Point to Point Protocol serial ports at each ICSC. Demonstration will include a mobile ICSC platform. An HF radio interface will be implemented for beyond line of sight media transmission. Enhancements to the Hughes Situation Awareness terminal will allow display of Joint situation awareness data.

Research in Telementoring Technology

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Objective

Design, develop, implement and test a small, lightweight, wireless video transmission system that allows over-the-air video, audio and data communications between medics in the field and doctors in a remote field hospital. Develop functional requirements for video compression and communication subsystems, and a refined, expanded interface. Interface is to be compatible with existing and planned system and interoperable with imaging software and format.

Demonstration

The project will develop the functional requirements for video compression and communication subsystems, a refined and expanded interface incorporating compatibility with existing and planned systems, and interoperability with imaging software and formats. A wireless transmission testbed with software will be produced and tested over a 1 GHz wireless link with a minimum range of 1 mile, and a data transfer rate of 128 kbps. The base station will have a second interface to a LAN functioning as a gateway to major medical facilities in CONUS or OCONUS.

Tele-Medicine

Objective

To increase survivability of wounded soldiers by providing major medical center information to field medics at a critical time during the initial stage of care.

Demonstration

Provide fully interactive multi-site audio and video teleconferencing to support medical consultations, remote surgical operations/mentoring, white board/write-board exchange of medical imaging information for consultation purposes. Wireless communications using the Primary Rate ISDN (T-1, 1.54 Mbits) level or less. The XTP (Xpress Transfer Protocol), a high throughput, low latency, increased functionality protocol for moving large amounts of data, will be adapted for use at reduced bandwidths. A new RF transmission technique. B-CDMA (Broadband-Code Division Multiple Access) will be introduced to provide the compression required for reduced bandwidth operations. Initial capability will be 10-15 Frames/Second over a bandwidth of 64 Kbs. Expectation is to improve capability to 30 F/sec with a bandwidth of 2 Mbps.

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MultiSIM for Distributed Interactive Simulation

Objective

Develop simulation of Battlefield sensors and data fusion for use in the Distributed Interactive Simulation (DIS) system or for live environment simulations. Provide ability to generate virtual prototypes of sensor and information processing systems. Enables the development of tactics and permits assessments of capabilities and vulnerabilities on the battlefield.

Demonstration

Enhancements to be made include: the capability to accept information via the DIS Standard Protocol Data Units; capability to manipulate the input data in combination with the MultiSIM representations of the entities associated with the data; capability to accept and use within MultiSIM various DIS scenario information on terrain, environmental conditions, etc.; and where possible, fast algorithms and processing for real time simulation. For ease of programming and maintainability, MultiSIM sensor models will be restructured using object-oriented programming methodologies.

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Precision Airdrop Capability

Objective

Demonstrate a fully autonomous, precision airdrop parachute system. Develop a prototype Guidance, Navigation, and Control (GN&C) system, integrate and test the GN&C system with the NASA Space Wedge/parafoil wing and demonstrate the robustness of the Advanced Precision Airborne System (APADS) to perform in adverse environments such as loss of the GPS signal.

Demonstration

Inserts an existing industry-developed GPS/Inertial Navigation System (INS) into a NASA subscale spacewedge equipped with a sport class parafoil. The project will culminate with test flight delivery of a 150 pound payload from altitudes of up to 25,000 feet, offsets of up to 15 miles, and a CEP goal of 50 meters. Engineering simulations will determine the scaleability of the design for payloads up to 30 tons. A simulation model will support the development of flight software, and analyze the validity of scaling the system upward for payloads of up to 30 tons. The flight software includes sensor data filters to discriminate conditions where individual navigation measurements are suspect due to interference, GPS signal blockage, or component failure. Algorithms will then efficiently combine acceptable data from the remaining inertial sensors and GPS receivers in a near optimal manner.

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Integrated Combat Service Support System (ICS^3)

Objective

To automate unit Arms Room functions including: item identification down to the piece part LRU level, requisitioning, material distribution, asset reporting and maintenance, manifesting, and stock/property book accounting.

Demonstration

The demonstration will feature automated operations in an active Army Small Arms Storage Facility at Ft. Lee, VA. It will employ technologies such as: Compressed Symbology (CS) item marking with laser and chem etch methods, RF Linked hand-held opticals scanners for reading bar codes and 2-D symbols, Remote Interface terminals for Arms Room Data Base Management, on-line technical manual access for repair procedures, special tools and repair parts management with STAMIS interaction, integration with the Multitech Automated Readiness Card and RFID tags for automated manifesting.

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Projectile Detection and Cueing System (PDCue)

Objective

Detect, classify, compute miss-distance and determine point of origin for hostile projectile. Investigate issues associated with integrating PDCue into two military applications, i.e., a vehicle-mounted system and an individual soldier system.

Demonstration

PDCue uses an array of three acoustic sensors that key on the rapid pressure rise-time of the shock wave produced by supersonic projectiles. By focusing on the very high frequency component of shock waveforms, it eliminates the effects of reflected shocks, multipath errors and other clutter. A sensor consists of three pressure sensitive piezoelectric elements. Each sensor determines the local shock wave orientation. Three such sensors provide the normal vectors that in turn determine the three dimensional solutions for azimuth, elevation, miss distance, and velocity of the projectile. Further pressure data is extracted from the projectile signature. This is key to defining the projectile's characteristics that type classify the round.

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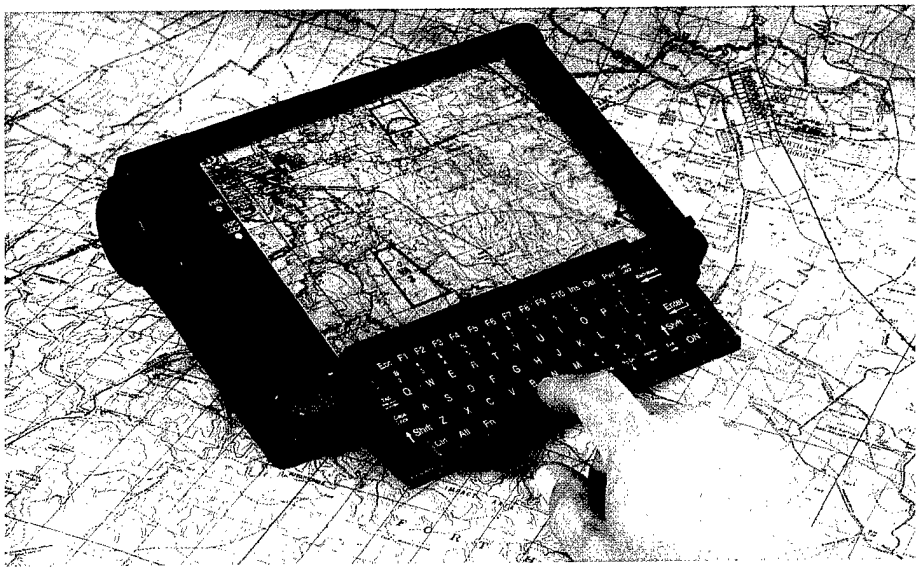
Soldier Command and Control

Objective

Demonstration of advanced soldier system utilizing 21st Century Land Warrior vignettes. Integrate soldier system functions via helmet mounted display, lightweight leader computer, and the lightweight SINCGARS. Capabilities will include command and control, positional information, and video capture. Build upon Soldier integrated Protective Ensemble effort and the 21st Century Land Warrior (21 CLAW) efforts to demonstrate an integrated C^4I (Command, Control, Communication and Intelligence) system for dismounted soldiers. Provide subsystems with expanded performance, lighter weight, and lower power consumption than systems demonstrated in earlier programs.

Demonstration

Each set is comprised of a lightweight soldier computer; handheld SINCGARS radio compatible with AN/PRC-139(C) radio with GPS (Global Positioning System); helmet mounted display (HMD) (32x24 mm, VGA, 640x480, 8 shades of grey), camera (w/8mm recorder), microphone and earphone; and a ruggedized menu control glove. The advanced features include full rate video color displays, voice recognition and synthesis, and size and weight reduction of up to 50% for some components.



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Advanced Enroute Command and Control System

Objective

Integrate Special Operations Planning and Rehearsal System (SOFPARS), Information Backplane technology, and other government owned software packages to provide for a portable Advanced Enroute Command and Control System (AECCS). Provides early entry forces with a portable enroute C2 system that can receive and transmit updated battlefield information, course of action, and orders.

Demonstration

Demonstrate integration of hardware (laptop style computer) and existing mission planning software into a package suitable for airborne operations. The Information Backplane works as an interface between different intelligence and information systems, storing their data output products in a common Rational Data Base Management System where the information can be "pulled" by commanders as it is needed. Object oriented software, compiled with Open System Architecture Standards enabling interface of Intelligence, Combat Service Support, and other Army tactical Command and Control (C2) family of systems to place data into the Information backplane.

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Personal Communications System (PCS) for the Warrior

Objective

To demonstrate a reliable, portable connectivity for soldiers on foot, in vehicles and inside or outside of buildings to the Command and Control (C2) structure. Demonstrate successful passing of calls through cellular base station at a Small Extension Network (SEN) to other base stations and the Public Switched Telephone Network (PSTN).

Demonstration

Integrate commercial-off-the-shelf (COTS) products and services with Mobile Subscriber Equipment (MSE). SEN's commercial cellular switch is cheaper than the switch of the currently fielded SEN, and provides many more built-in features. Each enhanced SEN controls a cell with a 3-5 km radius.

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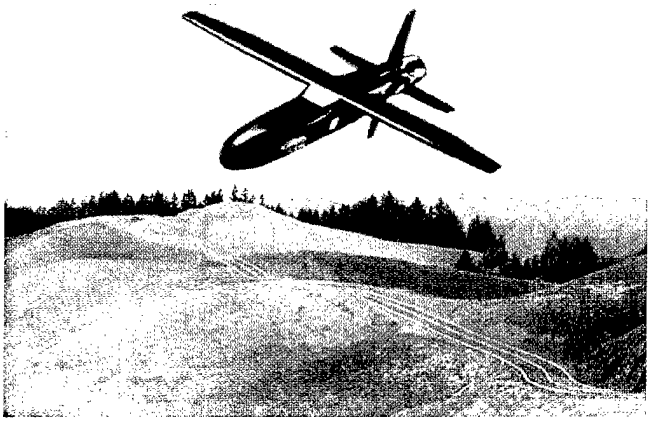
SIM Ferret

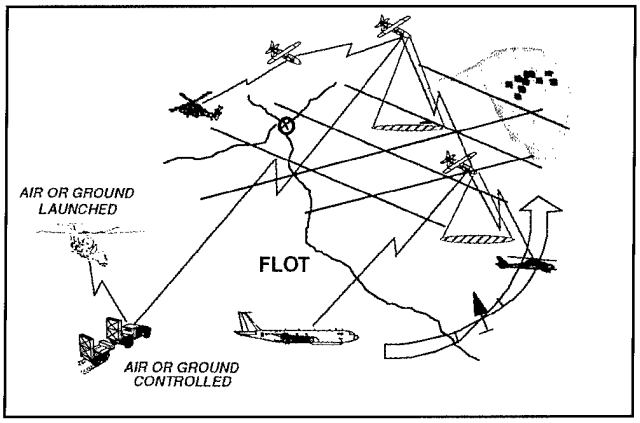
Objective

Develop, integrate, and evaluate, through distributed simulation, the Ferret weapon system concept for a helicopter launched missile. This has the capability of loitering, enabling reconnaissance and target information, and attacking a large set of targets.

Demonstration

Demonstrate a Distributed Interactive Simulation (DIS) - compatible simulation of the Ferret. Model an advanced helicopter crew-vehicle interface to simulate control of, and situational awareness from, the Ferret. Provide advanced aircrew displays and controls for simulation and hardware. Support Joint Precision Strike Demonstration 94. Assess the joint operability, technical feasibility, and military worth of the Ferret.





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Integrated Communications for the JTF Commander

Objective

Distribute information via and through various media (SINCGARS), EPLRS, Lansman (British), MSE, MST-20). Employ commercial off-the-shelf (COTS) hardware. Demonstrate adaptive network reconfiguration and adaptive routing between all ICSCs in the network in real time. Communications links are continually monitored and the best paths are determined in real time. Enables automated integration of dissimilar tactical networks, allowing mobile Joint Tactical Forces (JTF), forward area Command and Control (C2) systems to exchange data across service boundaries, between and within echelons, provides a common picture of the battlefield and synchronization of joint forces elements using existing, fielded equipment.

Demonstration

Data compression is used to achieve relatively high throughput. Network management information is piggy-backed onto a normal message. Internet Controllers, a single board unit added to the SINCGARS, provide access and protocol conversion between the user and the net. The multinet gateway provides multiple interfaces to disparate networks.

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Dynamic Airspace Management System (DAMS)

Objective

Demonstrate a three-dimensional (3-D) stand-alone, automated airspace de-confliction and management tool currently used by the USAF Special Operations Command. Potential to reduce fratricide, improve situational awareness, and allow for dynamic adjustments of missions. Automation of airspace management allows air operations to respond faster when low dwell time, critical targets are detected.

Demonstration

Train Early Entry Lethality and Survivability Battle Lab personnel on the use of the Dynamic Airspace Management System (DAMS). Design and build interface between the Aviation Mission Planning System (AMPS) and DAMS. Mission plans are integrated and then de-conflicted relevant to the airspace they require. DAMS can also de-clutter airspace for planners using filters (elevation, time, control, measure, etc.) that highlight only objects of interest.

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Wideband Data Networking for C3I On-The-Move

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Objective

A secure, on the move C4I capability that provides beyond line-of-sight data links between remote sensors and standoff weapons platforms.

Demonstration

Demonstrates a wireless network, using NDI hardware. The network is based on a developmental secure packet radio, a modernized next-generation version of the AN/PRC 118 with embedded COMSEC, and network interface software resident on a portable computer. The network features intelligent data links, high throughput, adaptive routing, automotive range extension via multihop relays, and support mobile nodes. Provides for a secure, on-the-move C4I capability. Potential applications include Combat Service Support, telemedicine, disaster relief operations.

Range Extension Repeater (RER) for MSE

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Objective

To demonstrate a mobile, high capacity, long range communications capability not available with currently fielded systems (tropospheric and HF radio).

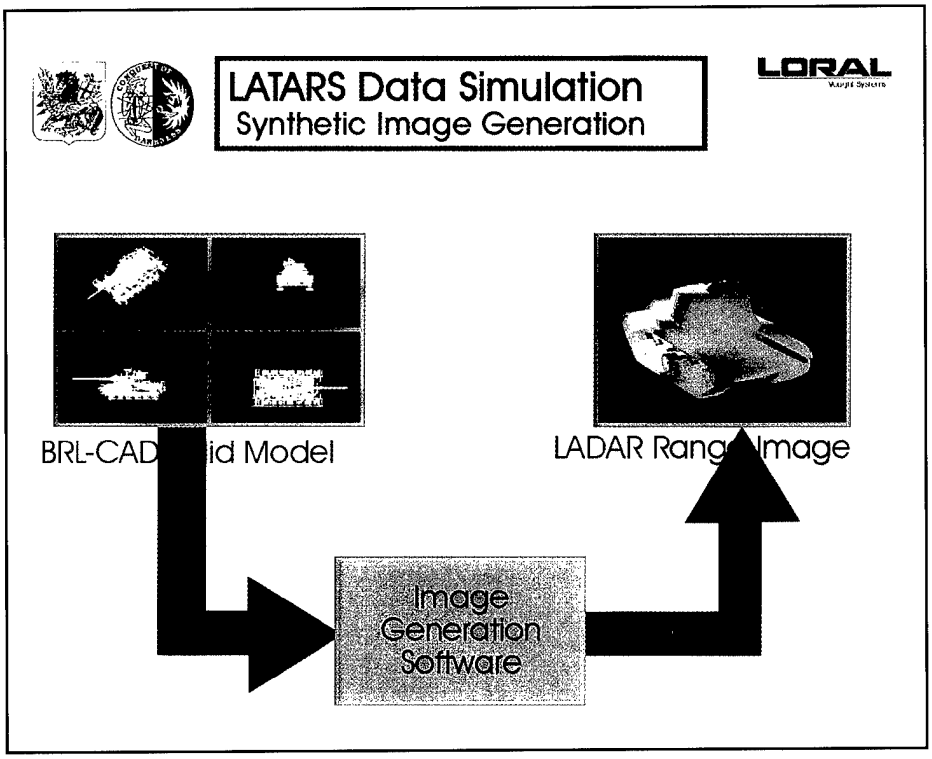
Demonstration

A Range Extension Repeater (RER) mounted on an aerial platform (UAV's or helicopters), to extend the range between various MSE switches out to 200 kilometers, will be demonstrated. RER to be comprised of NDI hardware which can communicate in either Band I or Band III on the move, and can support up to three Digital Trunk Groups (DTG) with data transfer rates between 256 and 2048 KBPS. Range extension for three mobile Radio Access Units (RAU) will also be provided to improve the mobility of RAUs.

LADAR Targeting System (LATARS) Data Simulation

Objective

Evaluate the use of advanced sensor data provided over communication models to tank simulators in a digitized battlefield. LATARS with advanced software to combine Forward Looking Infrared and Global Positioning System cueing with Laser Range (LADAR) 3-D imagery can instantaneously identify and locate combat systems on the battlefield. Integration of the force effectiveness models and the high fidelity sensor emulator into the Fort Knox BDS-D test bed facility will form the basis by which imagery utility can be assessed.



Demonstration

LATARS is an advanced sensor suite which combines FLIR and GPS cueing with Laser Radar (LADAR) in a 3-D imagery at longer ranges, providing high confidence that instantaneous identification and location of combat systems can be made. A LATARS simulation will generate sensor data (both imagery and processed data). The Fort Knox BDS-D test bed and tank simulator, after modification, will display the new data produced by this simulation.

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Commander's Decision Support System (CDSS)

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Objective

To provide tools and operational prototypes that improve the agility, mobility, real time intelligence information, and assessment/impact capabilities of the battle staff.

Demonstration

The Commander's Decision Support System, a prototype expert system with The All Source Analysis System (ASAS) Warrior as a baseline, will be mounted in a Battle Command Vehicle, with interfaces to analytical models, simulations to support training, and integration of multisource and multilevel intelligence information. It can access many databases such as order of battle, ELINT, secondary imagery files, friendly and enemy unit locations, as well as equipment and personnel status and terrain data critical to the Commander's decision making process.

Advanced Face Paint System

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Dismounted Battle Space Battle Lab
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Objective

To improve individual soldier survivability by reducing detectibility by thermal scanners.

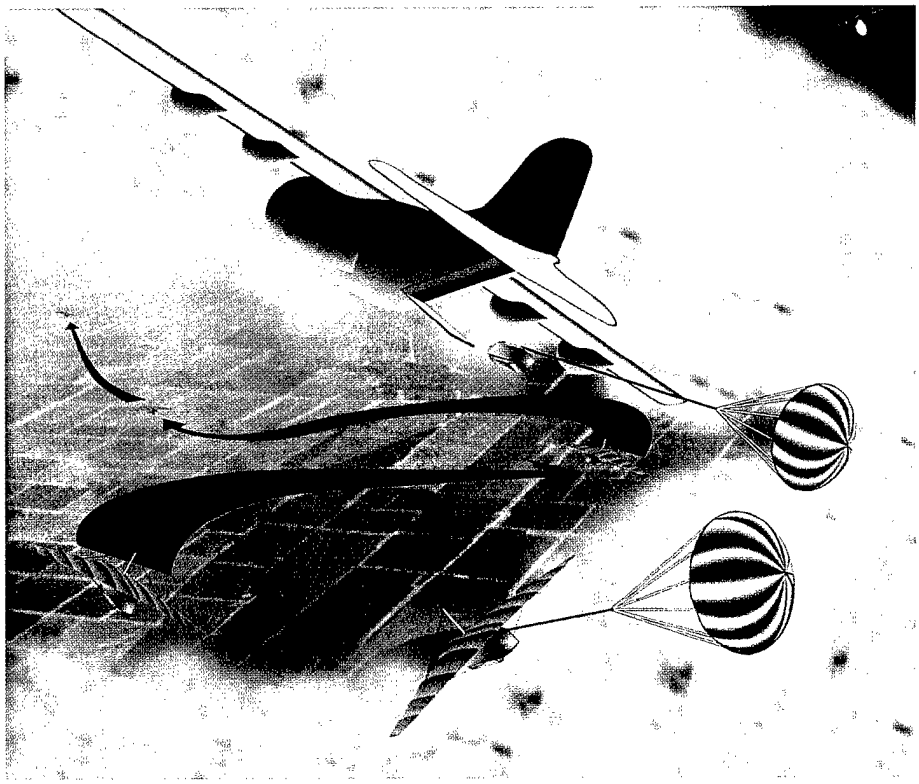
Demonstration

A material will be demonstrated that suppresses the thermal signature of exposed skin by diffusing thermal emissions with silver-coated cenospheres(SCC) incorporated into a non-hazardous binder. The material consists of hollow ceramic microballoons, mean particle size of 45 microns, incorporated into a non-hazardous binder to produce a pigment with low emissive and diffusive properties. The microballoons are coated with silver, which causes the microballoons to act like a mirror, reflecting back the surrounding environment. In addition, the microballoons reflect each other, diffusing the emission of thermal radiation from the skin. Since the silver-coated microballoons integrate a large portion of the background as the coated object moves, the background reflected changes to match its new environment. If the observer or wearer moves, the background reflected will instantly change, producing a chameleon effect.

Deployable Wing with Cargo Pod

Objective

Demonstrate high altitude deployment of Deployable Wing at 25,000 feet AGL. System will use precision guided GPS. Demonstrate payload of up to 500 pounds extracted from C-130 aircraft. Determine cargo pod design configuration. Conduct guidance, navigation, and control (GN&C) analyses, and determine aircraft extraction concepts. Conduct validation of proposed extraction concept. Provides a long stand-off-capability which eliminates the need for delivery aircraft to fly over a defended target or cross sensitive air borders.



Demonstration

The wing has a glide ratio of up to 8:1 at speeds from 30 to 70 knots, wind penetration, and precision delivery (when coupled with an integrated guidance, navigation, and control system linked to GPS). The structure has an internal rigid frame, enclosed in a ram-air inflated, double-surface sail, that is inflated via a single inlet at the nose of the wing. Maneuvering is controlled by a wing warping technique using servo actuators. The project will demonstrate a wing with a 30 foot span, a 15 mile minimum stand-off, and precision delivery within 100 meters of the target.

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Early Entry, Lethality & Survivability Battle Lab
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Next Generation Submunition (NGSM)

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Objective

Flight test an integrated LADAR/GPS/Data Link System to demonstrate Next Generation Submunition (NGSM) to search, detect, and identify targets, locate the targets in GPS coordinates, and relay the targets' identification, location, and NGSM attack mode to a battle commander's ground station in real time. Validate the NGSM performance simulation model.

Demonstration

Perform captive flight test of the integrated LADAR/GPS/DATA LINK System and relay the target's identification, GPS coordinate location, and NGSM attack mode to ground commander's ground station. Validate the NGSM performance simulation model provided to the Depth and Simultaneous Attack Battle Lab by comparing results of captive flight tests to Battle Lab simulations.

Defense Industrial Base Simulation and Model

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Louisiana Maneuvers Task Force
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Objective

To provide Army Planners with a flexible, easy-to-use analytical tool, that empowers them to assess the impact of various future warfare industrial requirements under different budget and economic forecasts. Specific sectors of the defense industrial base critical to the accomplishment of the Army's Title X mission will be included.

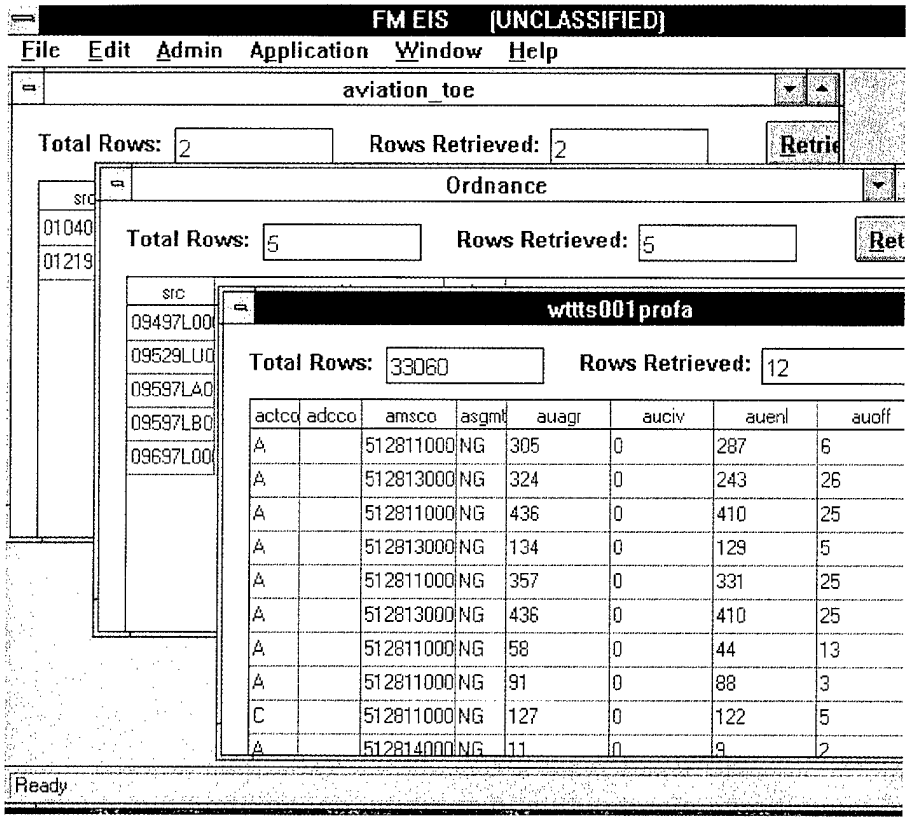
Demonstration

Demonstrate a rapid analysis capability for assessing "factory to foxhole" issues in the development of Force XXI. The project identifies key elements and variables affecting the defense industrial base (DIB). It then constructs a quantitative relational model of the DIB which can be adapted for use with the Integrated Theater Engagement Model (ITEM) and the Resolution of Capacity Shortfall (ROCS) Model. The new model includes modules for five specific industry sectors (tank-automotive, helicopters, tactical missiles, munitions, and information systems), along with model assessment, simulation, and analysis.

LAM Task Force Executive Information System

Objective

To enhance capabilities of the CSA and the Army Staff to rapidly generate relevant scenarios, develop requirements for planning, procurement, force modernization, force engagement and force deployment.



Demonstration

Integrates existing sources of Army data into a decision making system, and incorporates software to aid in the visualization and analysis of the data. The project has four demonstrations of stated software capabilities: User Interface; Force structure; Manpower, materiel, and training; and programmatics. The software provides capabilities from simple queries ("what is" status) to complex modeling simulation capabilities ("what if"). Functional specifications, users manual, and operational software fielded to DCSOPS community. Complete Beta testing by 15 January 95.

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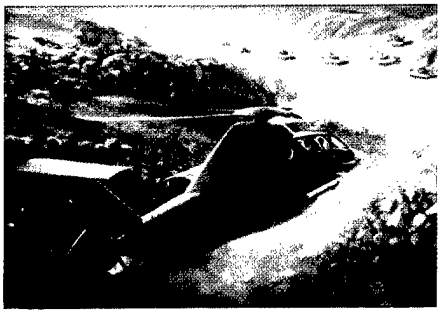
ACT II and the Battle Labs

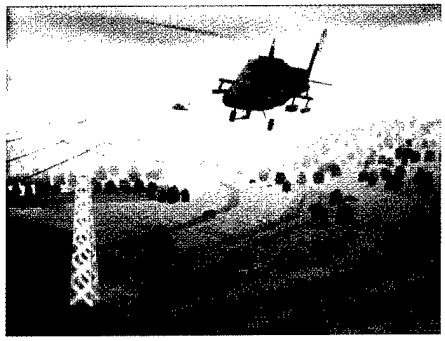


Today, the Army's challenge is to make conceptual leaps, conceiving new ways to organize, project power, respond to ill-defined crises, and deploy and sustain our forces. These conceptual leaps will require new capabilities from the materiel systems supporting the Army of the future. Battle Labs provide the mechanism for the Army to systematically examine warfighting ideas and evaluate the options offered by new technical capabilities.

The Advanced Concepts and Technology (ACT II) Program support Battle Lab requirements for rapid insertion of new technologies into systems.

Battle Labs are focal points for examining the latest concepts of battlefield organization, tactics, doctrine and technological capabilities. They facilitate the flow of new ideas, examine battlefield dynamics, and integrate promising concepts across the Army.

There has been a long history of Army experimental activities such as the Louisiana Maneuvers, and more recently, the 9th Infantry Division High Technology Test-bed. Each in its own way has contributed to a contemporary understanding of the interdynamics between doctrine, training, leadership, organization, materiel and the soldier.



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Advanced Concepts and Technology II

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