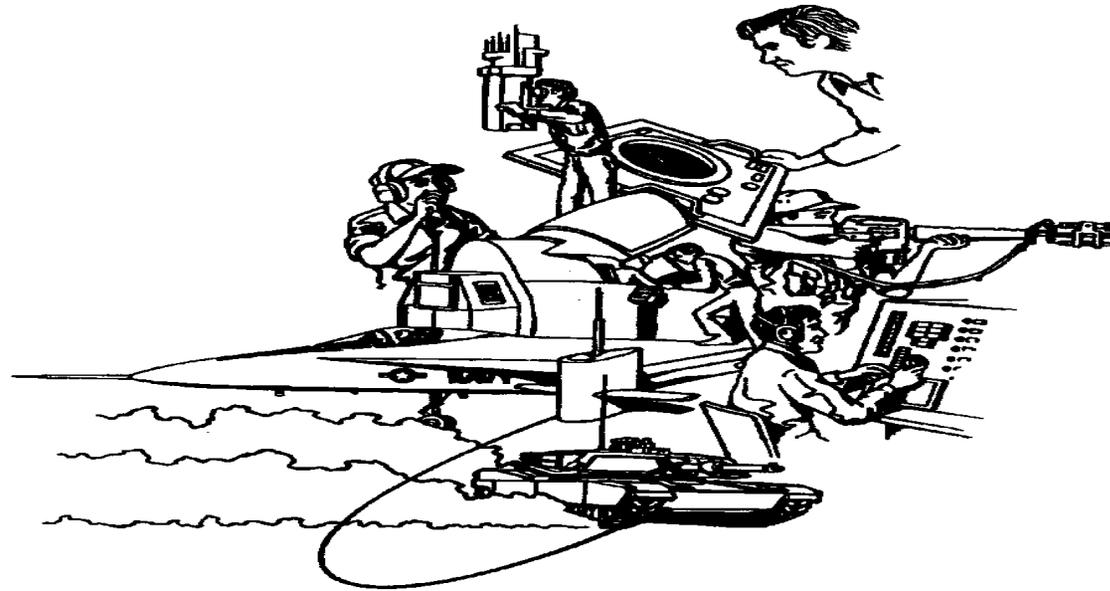


ADVANCE PLANNING BRIEFING TO INDUSTRY

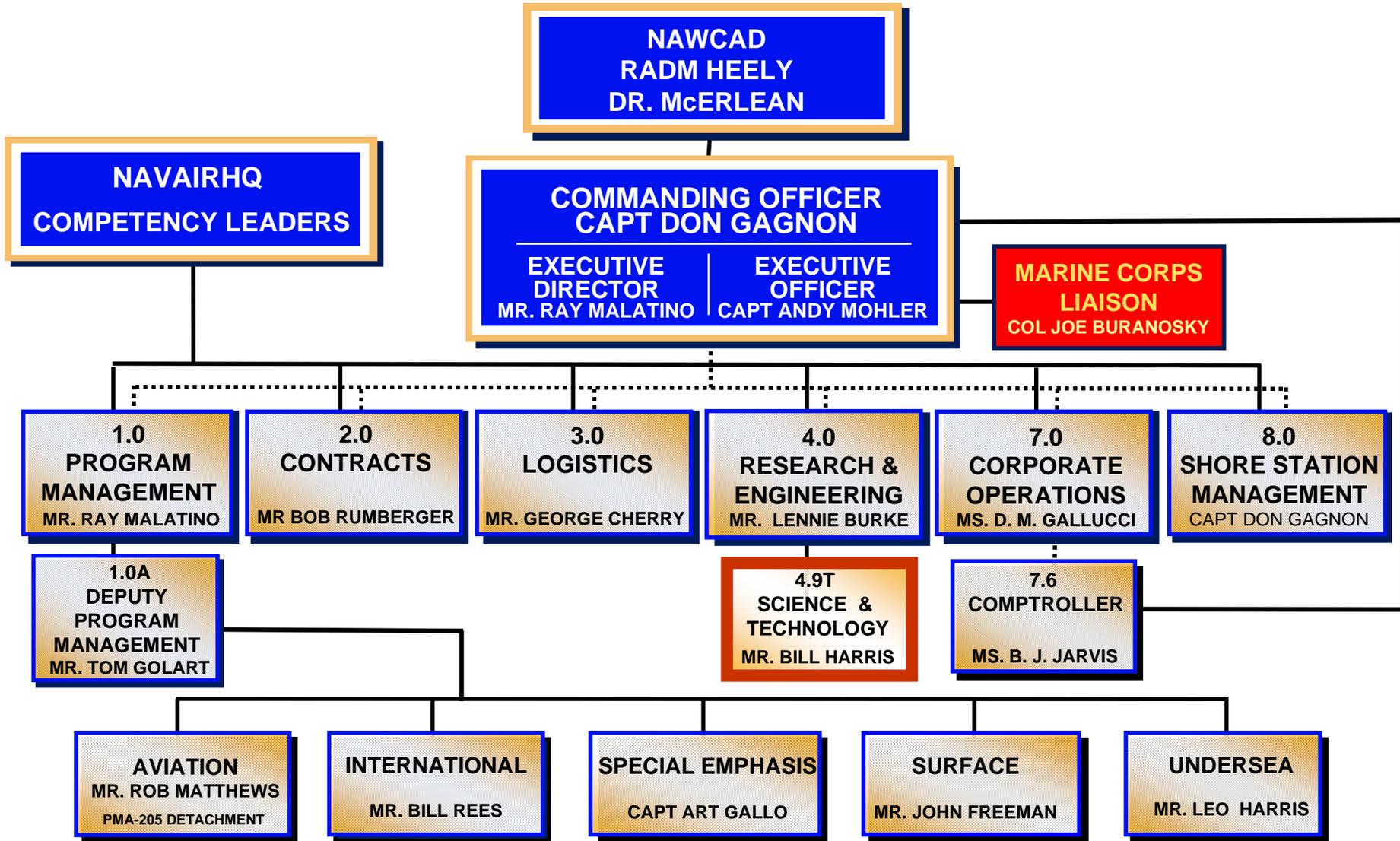


APRIL 2001

BILL HARRIS
PROGRAM DIRECTOR, RESEARCH & TECHNOLOGY
(407) 380-8376
HarrisWT@navair.navy.mil



ORGANIZATION STRUCTURE





R&D PHILOSOPHY



- Use technology to reduce cost, increase performance, and to reduce risk
- Maintain focus on Navy training systems
- Merge behavioral/cognitive science and engineering to produce effective systems
 - Behavioral Science is theory based with model testing
 - Hardware R&D is used to fill gaps in tech base and evaluate COTS equipment

ULTIMATE GOAL: TRANSFER OF R&D RESULTS TO USEFUL PRODUCTS WHICH MEET A NEED



TRAINING REQUIREMENTS DRIVERS



- **Reduced Manning**
- **Cost Effectiveness**
- **Coordination Training For Missions Performed By UAVs, UCAVs, And Manned Platforms**
- **Smaller Force/Infrastructure**
- **Adaptability/Flexibility**
- **Maintain Readiness**
 - *Schedules/optempo*



TRAINING DRIVERS TASK-RELATED



- **Task Complexity**
- **Battle Space Compression**
- **Advanced Technology**
- *“Design Problems Become Operational & Training Problems”*



CUSTOMER NEEDS



Future Naval Capabilities (FNCs)

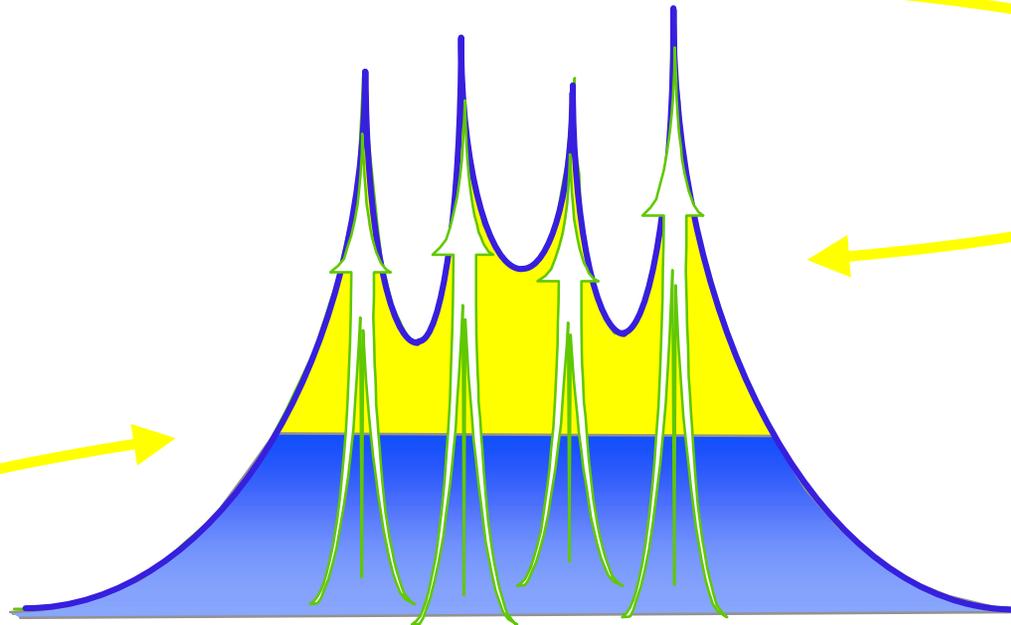
- **Integrated Product Teams (IPT) Members:**
 - Requirements
 - Planning & Programming
 - Science & Technology
 - Acquisition
- **Enabling Technology Development**
- **Planned Demonstrations**



FNC PROCESS



DoN requirements setters propose **capabilities**



IPTs generate **technology** investment plans:

for OPNAV to program

for ONR to execute

for Acquisition to transition



Future Naval Capabilities



- Information Distribution
- Time Critical Strike
- Decision Support System
- Organic MCM
- Autonomous Operations
- Littoral ASW
- Total Ownership Cost
- Platform Protection
- Missile Defense
- Expeditionary Logistics
- **Capable Manpower**
- Warfighter Protection



Definition



Capable Manpower FNC is ...

fully prepared Sailors and Marines fighting and winning in an information rich, distributed firepower battle-space using human-centered hardware and systems.



FNC Enabling Capabilities



- **Design affordable warfighter-centered systems, organizations and jobs by applying knowledge of human capabilities, limitations, and needs**
- **Acquire and match Sailors and Marines to the right jobs at the right time while balancing individual and DoN needs**
- **Equip Sailors and Marines with effective mission-essential competencies when and where they are needed at affordable cost**



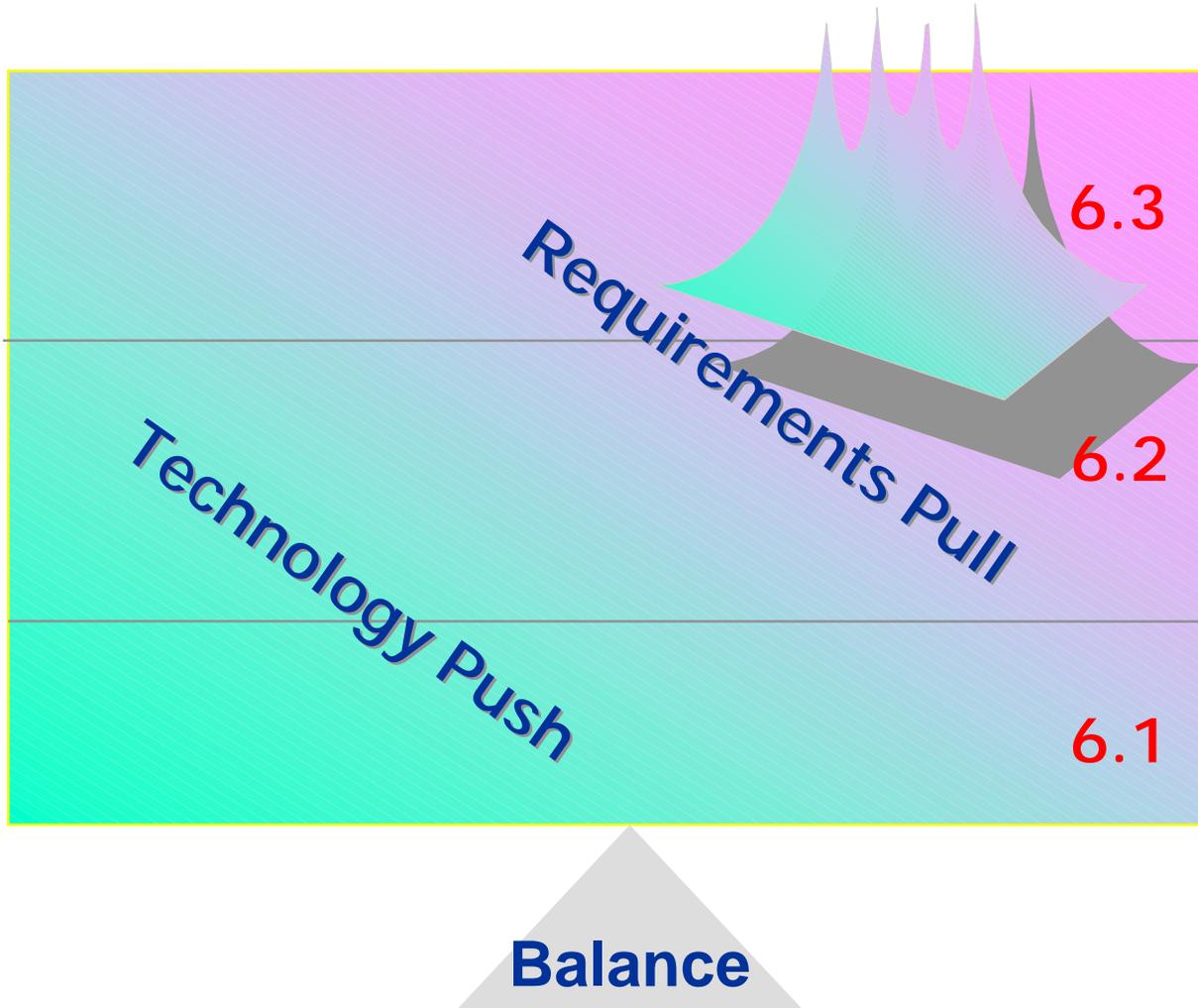
Training Enabling Capability Demonstrations



- **Advanced Distance and Distributed Learning**
- **Objective-based OJT and Maintenance Support for Individuals and Teams**
- **Virtual Technologies/Environments**
- **Visualization-based Training and Support Systems**
- **Computer Generated Forces for Team Training**



S&T PROGRAM BALANCE





R&D PROGRAMS



PROGRAM

SPONSOR

- **ADVANCED TECHNOLOGY DEVELOPMENT (6.3)** **ONR**
 - SYNTHETIC COGNITION OPERATIONAL TEAM TRAINING (SCOTT)
 - APPL OF MULTIMEDIA TECH TO TRAINING FOR KNOWLEDGE-RICH SYSTEMS
 - CONNING OFFICER VIRTUAL ENVIRONMENT (COVE)
 - COMPUTER SIM BASED TRAINING SYS w/INTELLIGENT TUTORING
 - INTELLIGENT AGENTS FOR EXERCISE PLANNING AND CONTROL

- **APPLIED RESEARCH (6.2)** **ONR**
 - MANNING AFFORDABILITY INITIATIVE
 - VIRTUAL ENVIRONMENT TRAINING TECHNOLOGY



R&D PROGRAMS



PROGRAM

SPONSOR

- **APPLIED RESEARCH (6.2) (CONT'D)**

ONR

- **INSTRUCTIONAL TECHNOLOGY**

- **MAINTAINING SELF TRAINING TEAMS AT SEA**
- **IMPROVING TRAINING IN DYNAMIC TASKS**
- **SUPPORTING KNOWLEDGE ACQUISITION THROUGH ENHANCED DISPLAYS**
- **COGNITIVE TASK ANALYSIS FOR INSTRUCTIONAL SYSTEMS**

- **PRINCIPLES OF MAINTENANCE TRAINING**
- **SHARED COGNITION IN TEAMS**

- **SIMULATION TECHNOLOGY**

- **FLEET INTEGRATION TRAINING AND EVALUATION RESEARCH**

- **COMPUTER GENERATED FORCES**



R&D PROGRAMS



PROGRAM

SPONSOR

- **BASIC RESEARCH (6.1)** **ONR**
 - COGNITIVE AND BEHAVIORAL MODELING OF HUMAN BEHAVIOR
 - MANNING AFFORDABILITY INITIATIVE
 - INDEPENDENT RESEARCH
 - DIAGNOSTIC UTILITY OF COMPUTER MODELING TECHNIQUES
 - COMPUTATIONAL LINGUISTICS
 - OVERCOMING MISCONCEPTIONS IN SCIENCE EDUCATION
 - PATTERN RECOGNITION THEORY

- **SMALL ARMS SIMULATOR TESTBED** **ARMY**

- **COOPERATIVE AVIATION HUMAN FACTORS RESEARCH** **FAA**

- **TECHNOLOGY TRANSFER** **ONR**

- **SMALL BUSINESS INNOVATION RESEARCH** **ONR**



BAA ANNOUNCEMENT



- **Broad Agency Announcement -- BAA NAWCTSD 01-1**
- **Issued 1 Jan 01; Expires 31 Dec 05**
- **To obtain copies of the BAA, call 407-380-8382**
- **Technical POC - Bob Hays, 407-380-8358**
- **Contracting Officer - Jane Waller, 407-380-4017**
- **For more information, see our web site at**

<http://www.ntsc.navy.mil/EBusiness/BusOps/Acquisitions/Index.cfm?client=NAWCTSD&men=OPA>



Research and Development Support Services

N61339-98-R-0017



TEAM COMPOSITION



- **APTIMA**
- **BASIC COMMERCE & INDUSTRIES**
- **CHI SYSTEMS**
- **COGNITIVE TECHNOLOGIES, INC**
- **EXECUTIVE CONSULTING GROUP, INC**
- **FLORIDA MAXIMA CORPORATION**
- **GRAY HAWK SYSTEMS, INC**
- **KLEIN ASSOCIATES, INC.**
- **LOCKHEED MARTIN ADVANCED TECHNOLOGY LABORATORIES**
- **MICRO ANALYSIS & DESIGN**
- **SONALYSTS, INC**
- **UNIVERSITY OF GEORGIA LEARNING & PERFORMANCE SUPPORT LABORATORY**



LEFT&T



Live Fire Test and Training (LFT&T) Program



- **LFT&T PROGRAM LEAD**

Project Manager

William A. (Bill) Duncan

(407) 381-8183

duncanwa@navair.navy.mil

- **LFT&T-Specific Broad Agency Announcement (BAA)**

Effective 16 April 2001

White Paper Solicitations: 16 April through 18 June 01

- **Located On LFT&T WEBSITE At:**

<http://www.afams.af.mil/lftt>



Live Fire Test and Training (LFT&T) Program



New with FY02 Solicitation: LFT&T Website and Information Management System (IMS)

- **Reasons For Website: Provide “One-stop Shopping for LFT&T Program (Portal)**
- **Links To Related Websites**
- **Publicize Key LFT&T Events and Dates**
- **Identify Key Organizations and Dates**
- **Automate White Paper Submittal Process**
- **Provide On-Line Access To Project Status**
- **Maximize Communication With Industry and Government**



Live Fire Test and Training (LFT&T) Program



OBJECTIVE

Develop projects that support live fire testing and training, particularly projects in these focus areas:

- Modeling of Human Decision-Making Under Fire
- Distributed Mission Training
- Non Line-of-Sight Tactical Engagement
- Aviation Related Testing and Training
- Crew Safety and Survivability
- Embedded Training
- Time Critical Targeting/Strike/Battle Damage Assessment
- Asymmetric Warfare
- Synthetic Natural Environment
- Network Centric Warfare
- Weapons of Mass Destruction



Live Fire Test and Training (LFT&T) Program



Proposed projects should have the following characteristics:

- Focus areas
- Applicability & benefit to training and LFT
- Training and testing collaboration
- Cross-service/Joint/OGA applicability
- Transition to operational use in 1 to 2 years (3 years in exceptional cases)
- Return on investment (ROI): (cost savings or avoidance, new capabilities, improved readiness)



Live Fire Test and Training (LFT&T) Program



USMC PMTRASYS Current Projects

- Infrared Targets for Testing and Training
- Dismounted Infantryman Survivability and Lethality Testbed
- MANPADS Test & Training Results



Live Fire Test and Training (LFT&T) Program



NAWCTSD Current Projects

- Virtual Target and Range System
- Virtual Environment for Shipboard Incident Management
- Augmented Reality for Ship Survivability
- Moving Weapons Platform Simulator



Live Fire Test and Training (LFT&T) Program



AFAMS Current Projects

- **Missile Warning Sensor Stimulator**
- **Enhanced G-LOC Recovery**
- **Synergistic Effects Of A-LOC/SA (Almost Loss of Consciousness/ Situational Awareness)**
- **Threat Warheads and Effects/Battle Damage Assessment & Repair**



Live Fire Test and Training (LFT&T) Program



STRICOM Current Projects

- **Exploiting Live Fire Test Data**
- **Vulnerability/Lethality Metrics**
- **Live Fire Advanced Concepts**
- **Weapons Aimpoint Analysis & Training Tool**
- **Virtual Target Gunnery Training System**



Live Fire Test and Training (LFT&T) Program



- 16 April 01** **NAWCTSD Releases: Broad Agency Announcement (BAA) (N61339-01-R-0019); Commerce Business Daily (CBD) Announcement; Letters To Military Services Soliciting Project Papers for Proposed New Projects for FY02/03**
- Jun 18 01** **White Papers due to Bill Duncan, NAWCTSD (firm cut-off date)**
- Mid-Jul 01** **LFT&T Senior Advisory Group (SAG) Reviews Submissions/Cuts to Finalists**
- 14-16 Aug 01** **Testing and Training: A National Partnership 4th Annual Symposium and Exhibition
Omni Rosen Hotel: Orlando, Florida**
- Early Sep 01** **Finalists Brief to SAG -- SAG Prioritizes**
- Early Nov 01** **LFT&T SAG Makes Final Cuts and Puts Together FY02 Program**



Live Fire Test and Training (LFT&T) Program



Funding Profile

FY97: \$ 3.0M

FY98: \$ 4.0M

FY99: \$ 5.0M

FY00: \$ 7.5M

FY01 & Beyond: Program Growth Planned



Live Fire Test and Training (LFT&T) Program



For more information:

<http://www.afams.af.mil/lftt> (BAA Posted Here)

www.dote.osd.mil/lfte

www.ntsc.navy.mil



S B I R



SBIR PROGRAM



- **Two DoD SBIR Solicitations Are Released Annually.**
- **Solicitation Periods for Phase I Proposals Open in October and May Each Year and Close in January and August.**
- **POC: Robert Seltzer (407) 380-4115
*SeltzerRM@NAVAIR.navy.mil***

For Complete Information on the SBIR Program:

Navy: <http://www.onr.navy.mil>

Defense: <http://www.dtic.mil/dtic.sbir>

or call 1-800-DOD-SBIR



CURRENT PROGRAM PROJECTS: Phase I



- In Progress (00.2 Solicitation): 3

> N00-109: Avionic Schematics on Demand [2 Awards]

> OSD00-CR01: Automated Dialogue Modeling Using
Natural Language [2 Awards]

> OSD00-CR01: Personal Education and Training Assistant
for Distance Learning (PETA) [3 Awards]

- May '01 Award (01.1 Solicitation): 1

> N01-011: Web Based Training [3 or 4 Planned Awards]



CURRENT PROGRAM PROJECTS: Phase II



- **Recently Completed:** 1
 - > N96-055: Software Package for Speech Recognition
- **In-progress:** 10
 - > N98-154: GPS Interface Emulation for Flight Simulators (CDNU Trainer Interface Unit)
 - > N98-158: Bump Map Software Tools and Texture Library
 - > N99-184: Alternate Time Management Scheme for Use in HLA Federate Simulation (**Fast Track**)
 - > N99-160: Access Control and Personnel ID Verification for Training Applications Using smart Cards (**BUPERS**)



SBIR PHASE IIs (Cont)



- In-progress (Cont): 10

- > N99-056: Inertial Sensor Technology (**Fast Track**)
- > N99-057: Advanced Development of Shadow Buffer Control Modules for Visual Systems (**PMA Track**)
- > N97-035: High Resolution Projector Display (**Joint ONR**)
- > N98-057: Advanced Training Technology Delivery System (**PMA Track**)
- > N95-244: A Tool for Modeling Distributed Decision Making in Complex Environments (**NAVSEA**)



SBIR PHASE IIs (Cont)



- In-progress (Cont): 10

- > N95-022: Modeling & Applying Distributed Team Training for Multi-Platform Naval Air Mission**
- > N96-233: Tradeoff Techniques for Training Using Multimedia**



SBIR PHASE IIs (Cont)



- Up-Coming Awards: 2

- > N99-183: Motion Coupling in a Deployable VE Trainer
- > NXX-XXX: Wavelet Compression to Increase Desktop PC Real-time Texture & Terrain Paging

SBIR PHASE IIIs

- > N99-057: Advanced Development of Shadow Buffer Control Modules for Visual Systems
(with AFRL; 2nd one Pending with Eglin AFB)
- > N96-233: Tradeoff Techniques for Training Using Multimedia (pending with PMA-205)



Marine SBIR Projects



- **Phase I ~ Apr. Award: 1**
 - > N00-024: Position location Tracking on MOUT

- **Phase I ~ In-progress: 1**
 - > N99-199: Tether-less Optical Tracking System

- **Phase II ~ Completed:**
 - > N96-012: Rapid Synthetic Environment Database Generation From Real World Scenes

- **Phase II In-progress: 1**
 - > N97-127: AAV Surf Zone Model

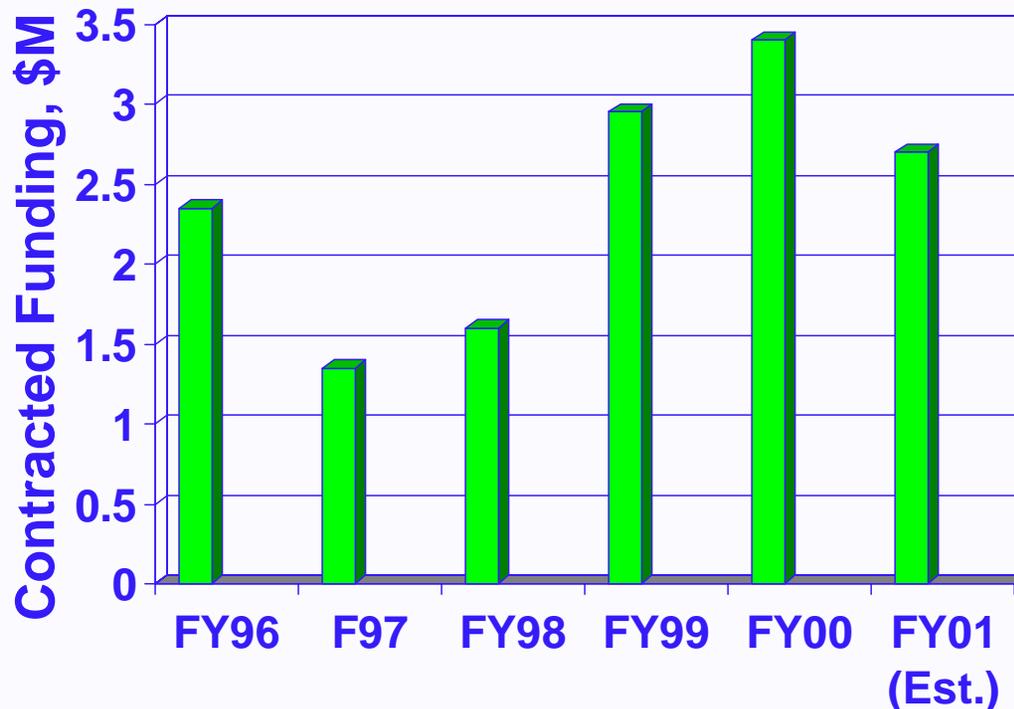
- **Phase III In-progress: 1**
 - > N97-001: MAGTF-2 (Previously Called MEU-2000)



NAWCTSD FY01 SBIR Program Summary



- Phase I's (May '00 Award): 1
- Phase I's in Progress: 3 (1 NAVAIR / 2 OSD)
- Phase II's in Progress: 10 (2 Joint NAVAIR/ONR)
- Up-Coming Phase II Awards: 2





TECHNOLOGY TRANSFER



TECHNOLOGY TRANSFER



Technology Transfer allows sharing/leveraging of:

- Personnel, Facilities, Equipment, & Software

Types of Agreements

- Cooperative R&D Agreements (CRADAs)
- Cooperative Agreements and Other Transactions
- Interagency Agreements
- Memorandums of Understanding/Agreement

Dual Use Program

- Commercial Operations Support Savings Initiative (COSSI)
- Dual Use S&T Program

NAVAIR Partnership Guide

- See The Partnership Advantage @ www.ntsc.navy.mil

NAWCTSD Project Manager

Patricia Nimmo

(407) 380-8225

nimmopr@navair.navy.mil



COMPLETED CRADAS



- **MOTOROLA**
 - Network Interface Unit for DIS
- **ECI SYTEMS**
 - Commercialization of 3-D Technology
- **DIGITAL EQUIPMENT CORPORATION**
 - Transportability of Flight and Simulation Software
- **SBS TECHNOLOGIES**
 - Firearms Training System for Commercial Applications
- **ENCORE**
 - Evaluation of Distributed Interactive Simulation
- **SIMULATION INITIATIVES**
 - Commercialization of Simulation Technology
- **PARAGON GRAPHICS**
 - Evaluation of HMD Technology for Flight Simulation
- **UNIVERSITY OF CENTRAL FLORIDA**
 - Evaluation of Software Tools
- **EASTERN KENTUCKY UNIVERSITY**
 - Evaluation of Security Training



CURRENT CRADAS



AERA Corporation

- **Technical Training Applications in the Advanced Distributed Learning Environment**

ATHENIUM

- **TEAM Think**

AUTOMETRIC, INC.

- **Joint Special Operation Mission Planning (JSOMP) Data Mining/Warehousing/Voxel Technology & Exercise Support Investigations**

FLORIDA HOSPITAL

- **Advanced Distributed Learning Technology for Medical Application**

BIHRLE Applied Research Inc. (BAR)

- **Development of a Reconfigurable Simulator Cockpit**



CURRENT CRADAS (continued)



**DUKE UNIVERSITY MEDICAL CENTER representing the
REHABILITATION ENGINEERING RESEARCH CENTER for
COMMUNICATION ENHANCEMENT**

- **Virtual Reality Applications for Assistive Technologies**

INTERNATIONAL PEACEKEEPERS INC.

- **Development of Simulation Center for Training Law Enforcement & Special Unit Military Personnel**

LEARNING OBJECTS NETWORK

- **Evaluation of Learning Objects Network**

LINEAR MOTION TECHNOLOGY

- **Evaluation of an Electromagnetic Motion Platform**

In progress: CRADAs with Valencia Community College Criminal Justice Institute and FATS, INC. to operate, evaluate and improve the Weapons Team Engagement Trainer



OTHER CURRENT AGREEMENTS



Cooperative Agreement:

EDUCAUSE

- Establish Standards for ADL

Interagency Agreement:

NATIONAL INSTITUTE OF JUSTICE

- Training Technology Development and Implementation

Memorandum of Understanding

NATIONAL GUARD BUREAU

- Facilitate shared use of the National Guard's Distributed Training Technology Project Sites

Other Transaction

ASYMETRIX

- Artificially Intelligent Tutoring for Advanced Distributed Learning



PUBLIC SAFETY



PUBLIC SAFETY PROGRAM



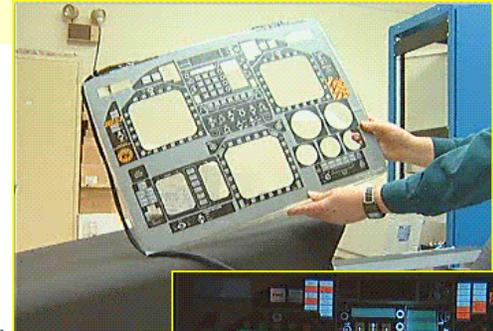
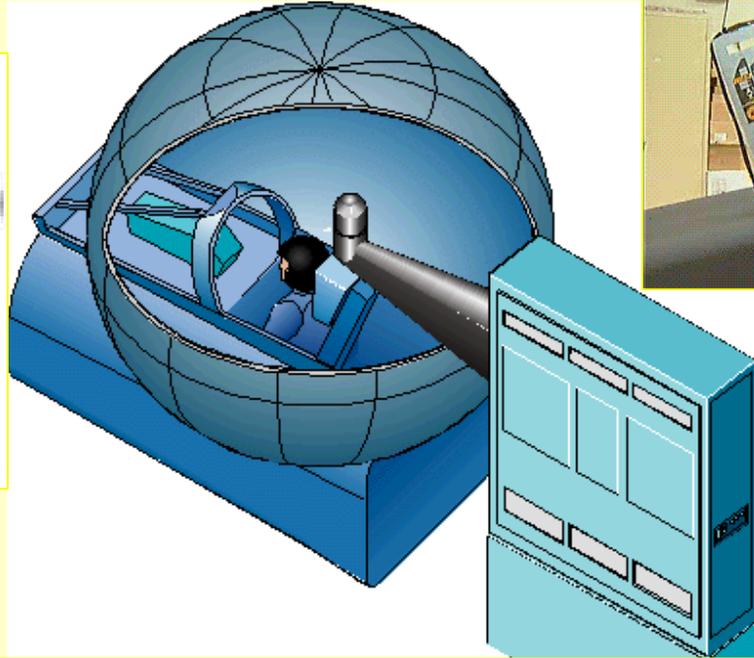
- USES TECHNOLOGY TRANSFER VEHICLES (CRADAS, COOPERATIVE AGREEMENTS, ETC.) AS WELL AS TRADITIONAL CONTRACTS

- EMPAHSIZES DUAL USE (MILITARY/OTHER) APPLICATIONS
 - Law Enforcement and Corrections
 - Counterdrug Activities
 - Emergency Management
 - Weapons of Mass Destruction

***NAWCTSD Public Safety
Program Manager
Dee Sheppe (407) 380-8559
sheppeml@navair.navy.mil***



TODAY.....



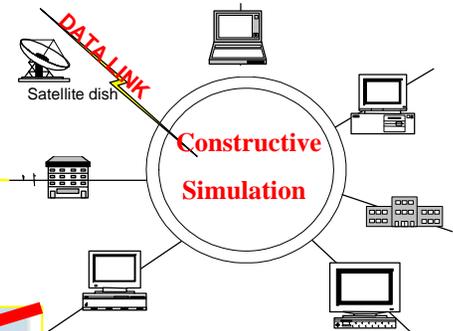
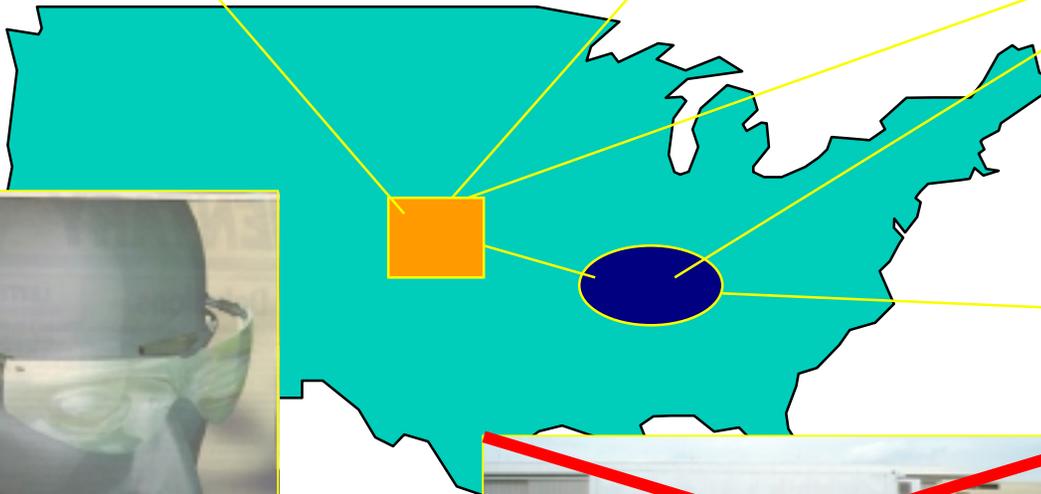
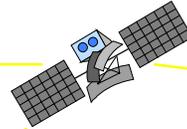


TOMORROW.....



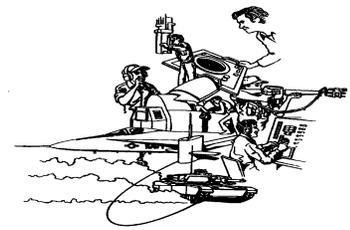
Embedded Distributed Training Supporting Network Centric Warfare

- Network Live, Virtual and Constructive
- Realistic Team Training





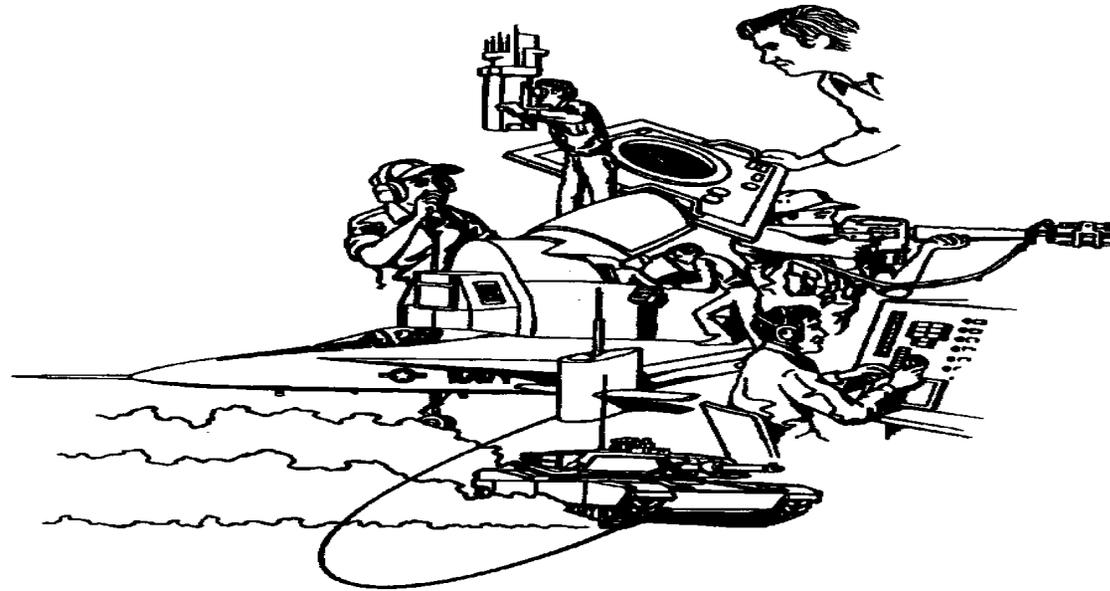
WANT MORE INFO?



**For more complete descriptions
of projects and points of contact,
see our web site at:**

<http://www.ntsc.navy.mil>

ADVANCE PLANNING BRIEFING TO INDUSTRY



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PROGRAM DIRECTOR, RESEARCH & TECHNOLOGY
(407) 380-8376
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