TECHNOLOGY BASE INITIATIVES

BRIEFING TO APBI

DR. RICHARD E. McCLELLAND

OCTOBER 2004
### Technology Base Initiatives Briefing to APBI

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Current Operations

Army Transformation

TARDEC
U.S. ARMY TANK-AUTOMOTIVE RESEARCH DEVELOPMENT AND ENGINEERING CENTER
# FY O5 CONTRACT ACTIONS

Existing Contracts / O5 Actions

## SURVIVABILITY TECHNOLOGIES

<table>
<thead>
<tr>
<th>Technology</th>
<th>Amount</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Protection Testing</td>
<td>$500K</td>
<td>EMRTC</td>
</tr>
<tr>
<td>FCLAS Development</td>
<td>$11.5M</td>
<td>Chang Industries</td>
</tr>
<tr>
<td>Active Protection Modeling</td>
<td>$100K</td>
<td>Gleason</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$250K</td>
<td>GS Engineering</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$500K</td>
<td>Optimetrics</td>
</tr>
<tr>
<td>Active Protection Analysis</td>
<td>$250K</td>
<td>MIT / Lincoln Labs</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$300K</td>
<td>Booz Allen</td>
</tr>
<tr>
<td>Engineering Support</td>
<td>$100K</td>
<td>Signal Solutions</td>
</tr>
</tbody>
</table>
**FY 05 CONTRACT ACTIONS**

Existing Contracts / 05 Actions

**SURVIVABILITY TECHNOLOGIES – CONTINUED…**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Funding</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armor Material Property</td>
<td>$100K</td>
<td>Univ of Hawaii</td>
</tr>
<tr>
<td>Armor Materials Support</td>
<td>$300K</td>
<td>Sandia National Lab</td>
</tr>
<tr>
<td>Adv Joining NDE Concepts</td>
<td>$300K</td>
<td>Michigan State Univ</td>
</tr>
<tr>
<td>Armor Material Research</td>
<td>$100K</td>
<td>ARA</td>
</tr>
<tr>
<td>Armor Modeling and Effects</td>
<td>$1.3M</td>
<td>SWRI</td>
</tr>
<tr>
<td>Assymetric Thyristor Switch</td>
<td>$750K</td>
<td>Silicon Power Corp.</td>
</tr>
<tr>
<td>Adv ATD Structure</td>
<td>$1.2M</td>
<td>UDLP</td>
</tr>
<tr>
<td>FCS Laser Hardened Vision</td>
<td>$350K</td>
<td>Boeing / McD-Douglas</td>
</tr>
<tr>
<td>Signature Modeling Validation</td>
<td>$1.5M</td>
<td>Thermo Analytics</td>
</tr>
<tr>
<td>Assured Mobility Motion Sim</td>
<td>$120K</td>
<td>Dynamic Animation Sys</td>
</tr>
</tbody>
</table>
FY 05 CONTRACT ACTIONS
Existing Contracts / 05 Actions

VETRONICS TECHNOLOGIES

- Vetronics Tech Integration $5.25M
- Remote Imaging for UGVs $500K
- Autonomous Urban SUGV $487K
- ODIS $2.4M

GDLS
Lockheed Martin
iRobot
Kuchera
FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

WATER TECHNOLOGIES

• Water from Exhaust  $250K  LexCarb
• Water from Air      $1M   Mesosystems/Honeywell/Hamilton
• Water Monitoring   $2M   Wayne State Univ
• NBC Water Treatment $2M   ACTI
## FY 05 CONTRACT ACTIONS

### Existing Contracts / 05 Actions

#### MOBILITY TECHNOLOGIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power &amp; Energy SIL</td>
<td>$1.5M</td>
<td>SAIC</td>
</tr>
<tr>
<td>Test Platform Study</td>
<td>$30K</td>
<td>SWRI</td>
</tr>
<tr>
<td>Dynamic Sys Integration Lab</td>
<td>$650K</td>
<td>DSIL</td>
</tr>
<tr>
<td>Fuel Cell Consult</td>
<td>$55K</td>
<td>TPS</td>
</tr>
<tr>
<td>HE HMMWV Upgrade</td>
<td>$1.5M</td>
<td>DRS</td>
</tr>
<tr>
<td>High Pwr/Energy Li Ion Batteries</td>
<td>$3M</td>
<td>SAFT</td>
</tr>
<tr>
<td>6 X 6 Development</td>
<td>$1.5M</td>
<td>NATC</td>
</tr>
</tbody>
</table>
## FY 05 CONTRACT ACTIONS

### Existing Contracts / 05 Actions

**MOBILITY TECHNOLOGIES – CONTINUED...**

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Budget</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super-lattice SiC</td>
<td>$200K</td>
<td>Titan</td>
</tr>
<tr>
<td>Fastening &amp; Joining Research</td>
<td>$1.1M</td>
<td>Oakland Univ</td>
</tr>
<tr>
<td>Combat Vehicle Research</td>
<td>$3.5M</td>
<td>CTC</td>
</tr>
<tr>
<td>FCS Engine Development</td>
<td>$3.7M</td>
<td>Recardo</td>
</tr>
<tr>
<td>FCS Dual Engine Development</td>
<td>$1M</td>
<td>APT/FEV</td>
</tr>
<tr>
<td>FCS Engine Development</td>
<td>$3.7M</td>
<td>Honeywell</td>
</tr>
<tr>
<td>FCS Engine Development</td>
<td>$2M</td>
<td>DDC/MTU</td>
</tr>
<tr>
<td>FCS Engine High Temp Tribology</td>
<td>$200K</td>
<td>SWR</td>
</tr>
<tr>
<td>Li Ion Battery Chemistry</td>
<td>$7.5M</td>
<td>TJ Technologies</td>
</tr>
</tbody>
</table>
FY 05 CONTRACT ACTIONS

Existing Contracts / 05 Actions

BRIDGING COUNTERMINE TECHNOLOGIES

• Lightweight Vehicle Mounted Countermine $455K KRC
• Advanced Modular Composite Bridge $6.2M Seeman
• Field Repair Composite Bridges $750K Alphastar
• Innovative Wet Gap Crossing Technologies for FCS $120K Triton
• Biodegradable Matting / Temp Roadways $70K Texas Research
• Rapidly Deployable Gap Defeat Tech for FCS $1.6M TBA
FY 05 CONGRESSIONAL ADDS

Approximately $152M in Projects

• Low Temperature Research Center
• Partnership for Next Generation of Vehicle
• University based Automotive Research Center
• Adv High Power Rechargeable Stored Energy
• Advanced Electric Drives
• Advanced Energy and Manufacturing Technology
• Affordable Low Temp High Performance Adv Rechargeable Stored Energy Device
• Army Trailer Technology Insertion
• Advanced Vehicle Life Consumption & Maintenance Prognostics
• Mobile Thermal Perimeter Surveillance System

• Battlefield Production of Hydrogen for Fuel Cell Vehicles
• CALSTART Defense Adv Transmission Technology
• Center for Tribology and Coatings
• Compact Pulsed Power for Defense Applications
• Distributed Transportable Synthetic Fuel
• Flexible JP-8 Pilot Plant Program
• Future Hybrid Vehicle Systems
• Light Utility Vehicle
• Military Wheeled Vehicle Electronic Architecture Integration
FY 05 CONGRESSIONAL ADDS

Continued...

• Multi-purpose Utility Vehicle Reconfiguration
• Nano-Eng Materials for High Performance Armor
• Rapid Prototyping
• SmarTruck
• Stoichiometric Explosive Detector System
• Unmanned Vehicle Control Technologies
• Unmanned Vehicle Surveillance & Sensor System
• Wireless Sensors for Vehicle Maintenance
• Advanced Mobile Micro Grid Program
• Advanced Army Modular Composite Bridge
• Advanced Powertrain and Intelligent Control System for M-Gators
• Advanced Thermal Management Controls
• Aluminum Lightweight Structures
• Armored Composite Cab Development
• Battery Charging Technology
• CAV Technology Transition
• Combat Vehicle Research
• Composite Vehicle Research
• Development of Logistical Fuel Processes
• Digital Humans & Virtual Reality
FY 05 CONGRESSIONAL ADDS

Continued...

• Electro chromatic Material Windows
• Fastening and Joining Research
• FREEDOM Software Environment
• Fuel Cell Ground Support Equipment Demonstration
• High Strength Powder Metal Gears for Transmissions
• IMPACT Concept Modeling Tool Suite
• Innovative Materials for Infrastructure Security
• International Commercially Based Logistical Support Trucks
• In-Theater Systems Development
• Military Vehicle Technologies
• Virtual Systems Integration Lab
• Hybrid Vehicle Test Maintenance
• Mobile Hydrogen Infrastructure (MHI)
• Modular Logistics Transport Technology
• Next Generation Non-Tactical Vehicle Propulsion
• N-Step Enabled Manufacturing Cell for FCS
• Opposed Piston Opposed Cylinder (OPOC) Engine for APU
• Pacific Rim Corrosion Program
• Rapid Optimization of Commercial Knowledge (ROCK)
• Rotary Multi-fuel APU
• Secure Pervasive Computing for Advanced Control Vehicles
• Tactical Vehicle Design Tools
FUTURE TACTICAL TRUCK SYSTEMS ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION
(FTTS ACTD)

Status:

Maneuver Sustainment Variants (MSVs)
  • Awarded (2) Phase I Modeling & Simulation Contracts - $4.9M Total
  • Oshkosh Truck and Stewart Stevenson

Utility Variants (UVs)
  • Pending Contract Award in October 04

FY 05 Planned Activities:
  ➢ MSV and UV Prototype Build Downselect in June 05 (limited to Phase I awardees)
  ➢ Phase II Prototype Build Contract Awards in July 05 - $25M

NATIONAL AUTOMOTIVE CENTER POC: MR. PAUL SKALNY, 586.574.5436
SMALL BUSINESS INNOVATION RESEARCH (SBIR)

FY 04 /05

• 54 Phase I Awards for FY 04 Valued at $3,757,579

• 39 Phase II Selections for FY05 valued at $28,525,066 with an additional $1,687,843 in Options
SMALL BUSINESS INNOVATION RESEARCH
(SBIR)

➢ Pre-Solicitation – MAY 2005

➢ Open Solicitation – JULY 2005

TARDEC SBIR Managers: Mr. Alex Sandel, 586.574.7545
                         Mr. Jim Mainero, 586.574.8730
FY 05 COMPETITIVE SOLICITATIONS

Other possible Solicitations may be released in FY 05

VETRONICS TECHNOLOGY AREA:
POC: MR. DAVE THOMAS, 586.574.6160

› Autonomous Robotics Technology Integration $3M
› Human Robot Integration Program $300K

SURVIVABILITY TECHNOLOGY AREA:
POC: MR. STEVEN SCHEHR, 586.574.5780

› Technical Support $500K
FY 05 COMPETITIVE SOLICITATIONS

Other possible Solicitations may be released in FY 05

MOBILITY TECHNOLOGY AREA:
POC: MR. DAN HERRERA, 586.574.6411

- Dynamic SIL $1M
- Electric Motors and Inverters TBD
- Bi-Directional DC-DC Converter $488K
- FCS Engines TBD

TARDEC ACQUISITON SUPPORT TEAM REPRESENTATIVE:
MS. CASSANDRA MAXWELL, 586.753.2619

http://contracting.tacom.army.mil/opportunity.htm