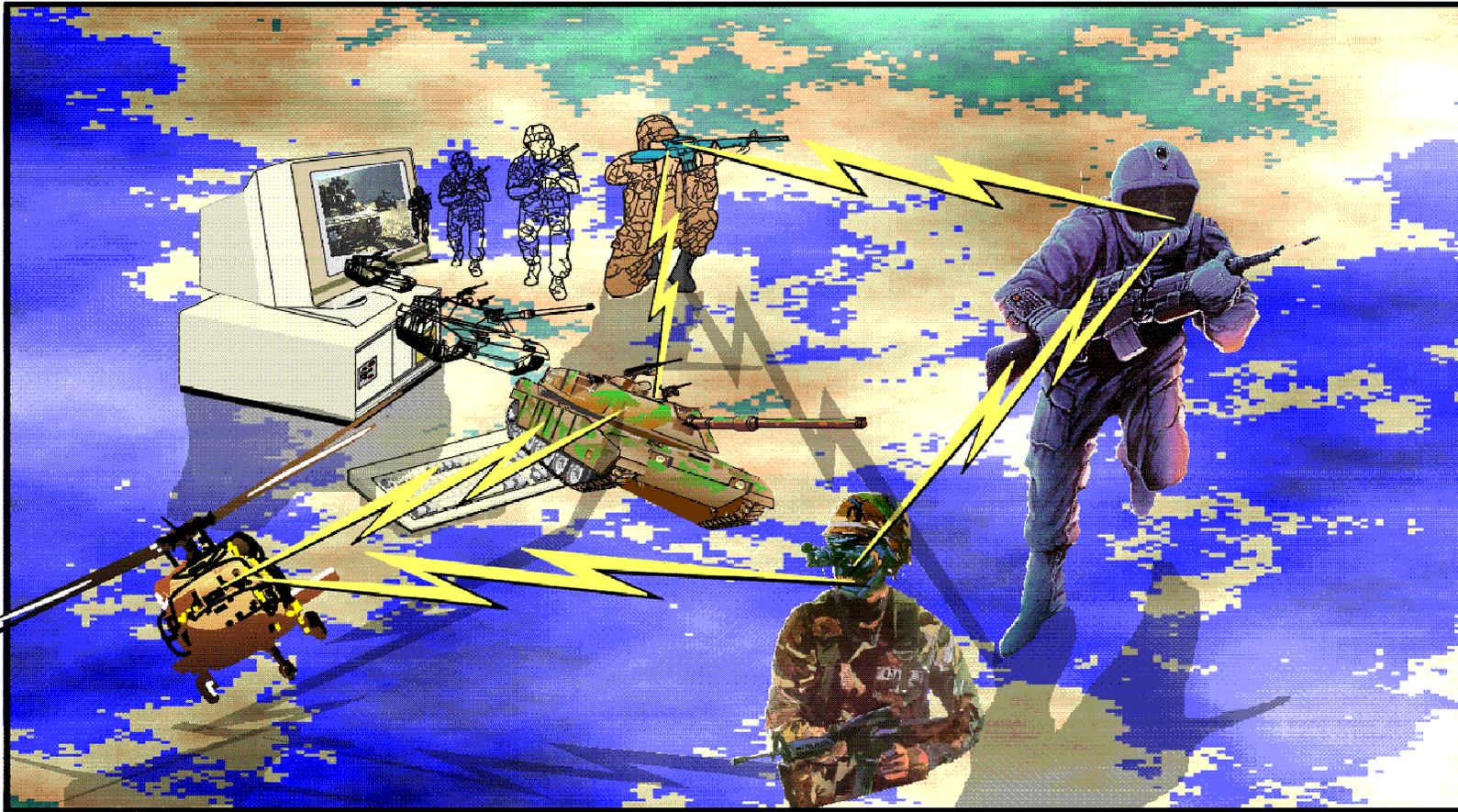




ENGINEERING DIRECTORATE



Shaping the Future of Simulation Excellence



Purpose



- **Provide information on:**
 - **Business Opportunities**
 - **Contracting Processes**



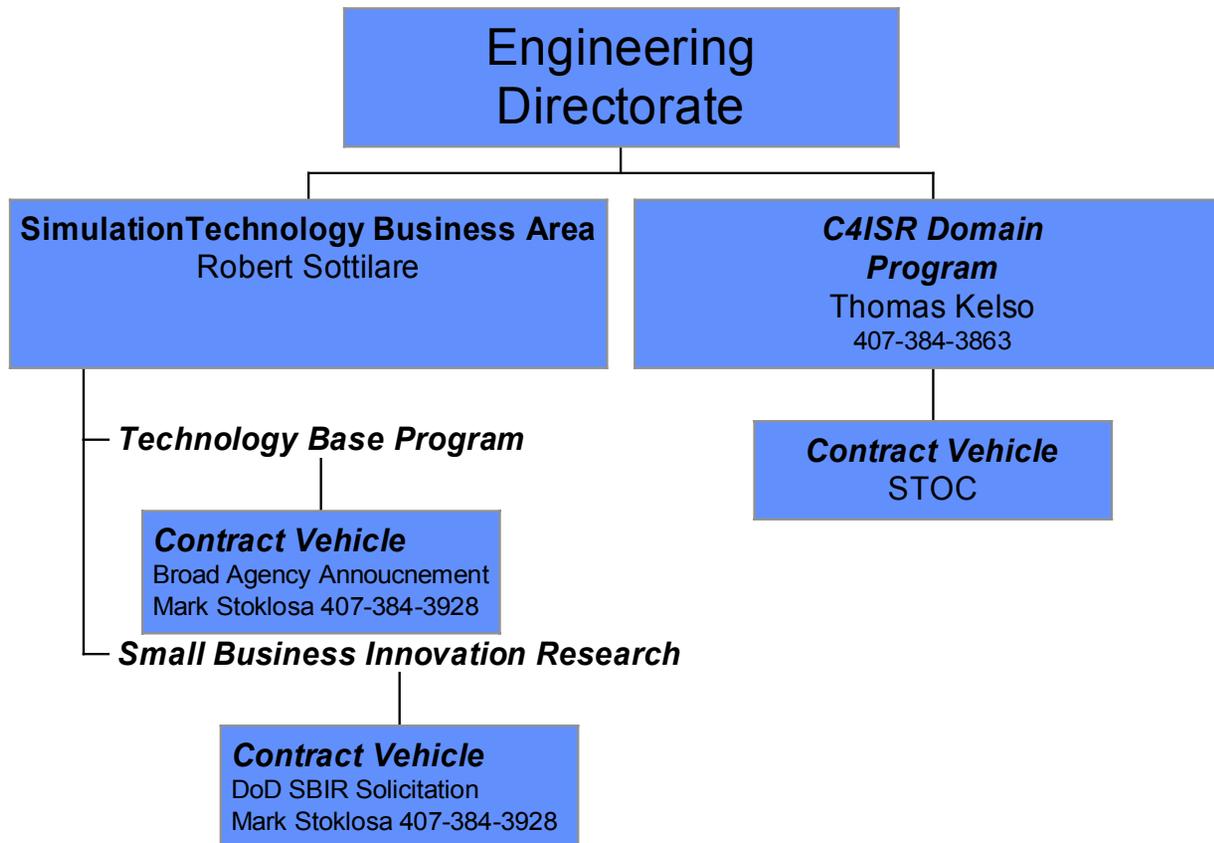
STRICOM's Engineering Programs



- **Technology Base Funds**
- **C4ISR** (*Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance*) **Domain**
- **Small Business Innovative Research (SBIR) Program**
- **Customer Funds**



Engineering Directorate Opportunities

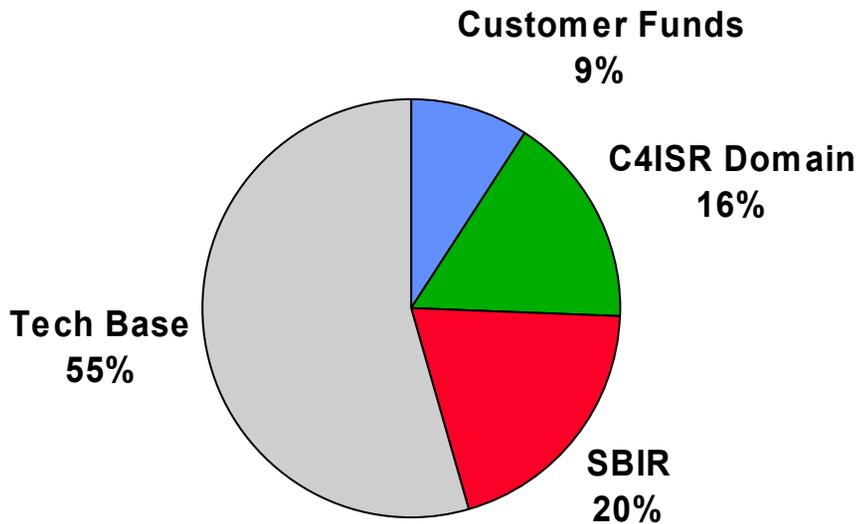




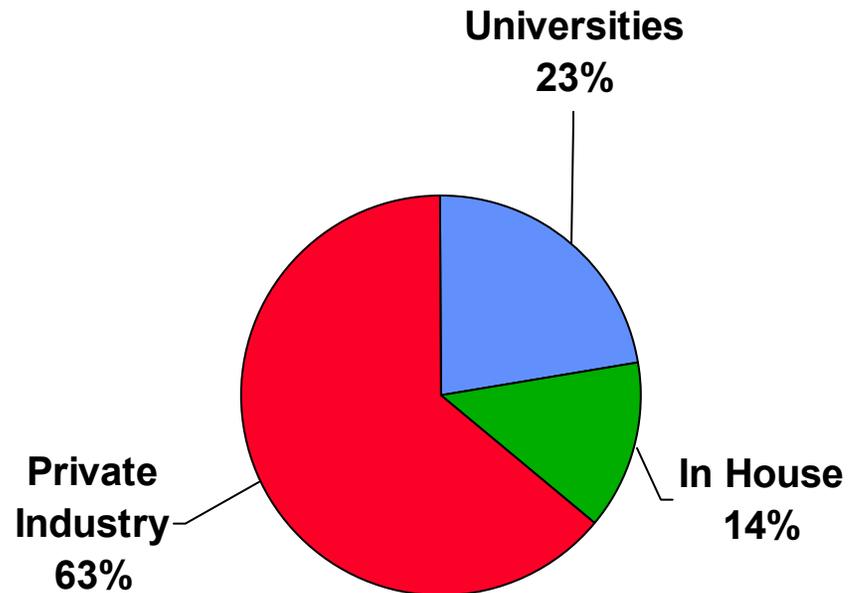
FY02 Funding Allocation



Source



Destination

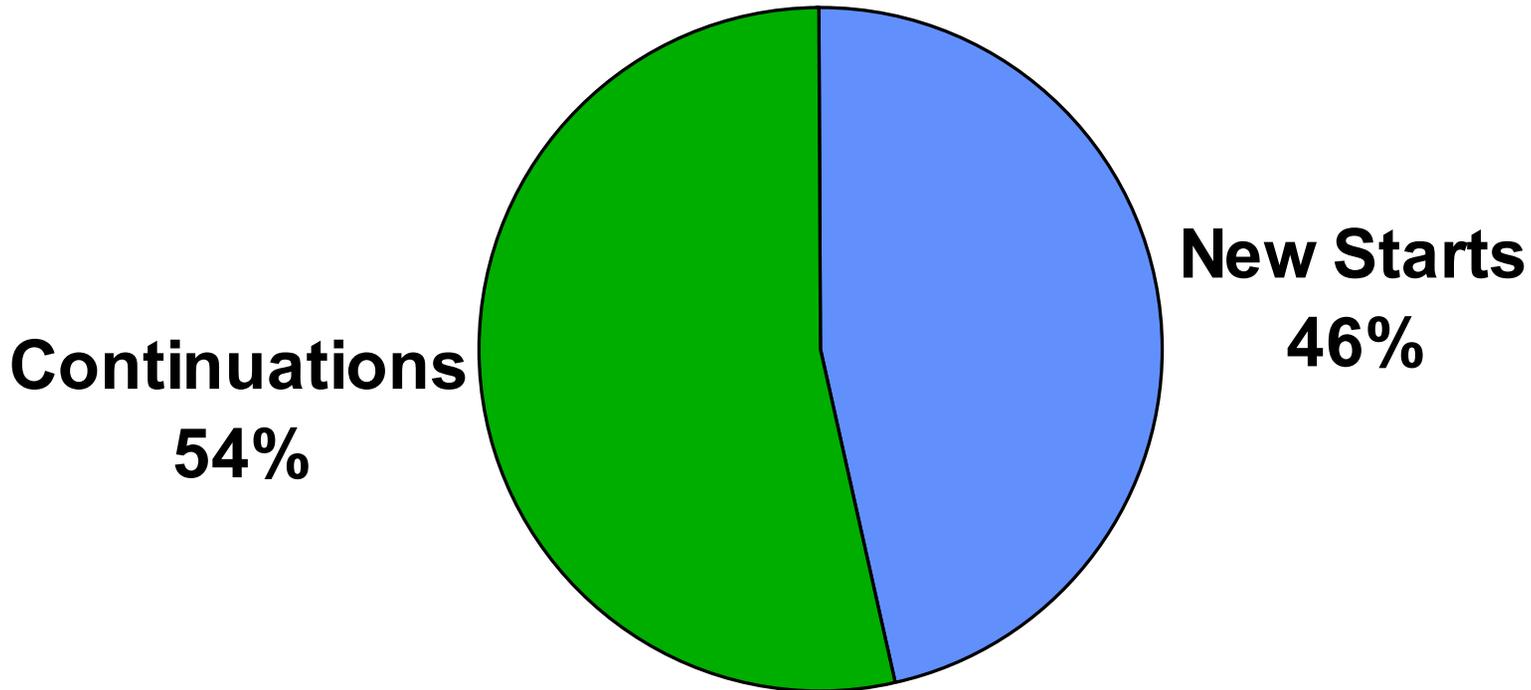




STRICOM Technology Base Overview



Gage of new work vs. continued efforts





Technology

Base

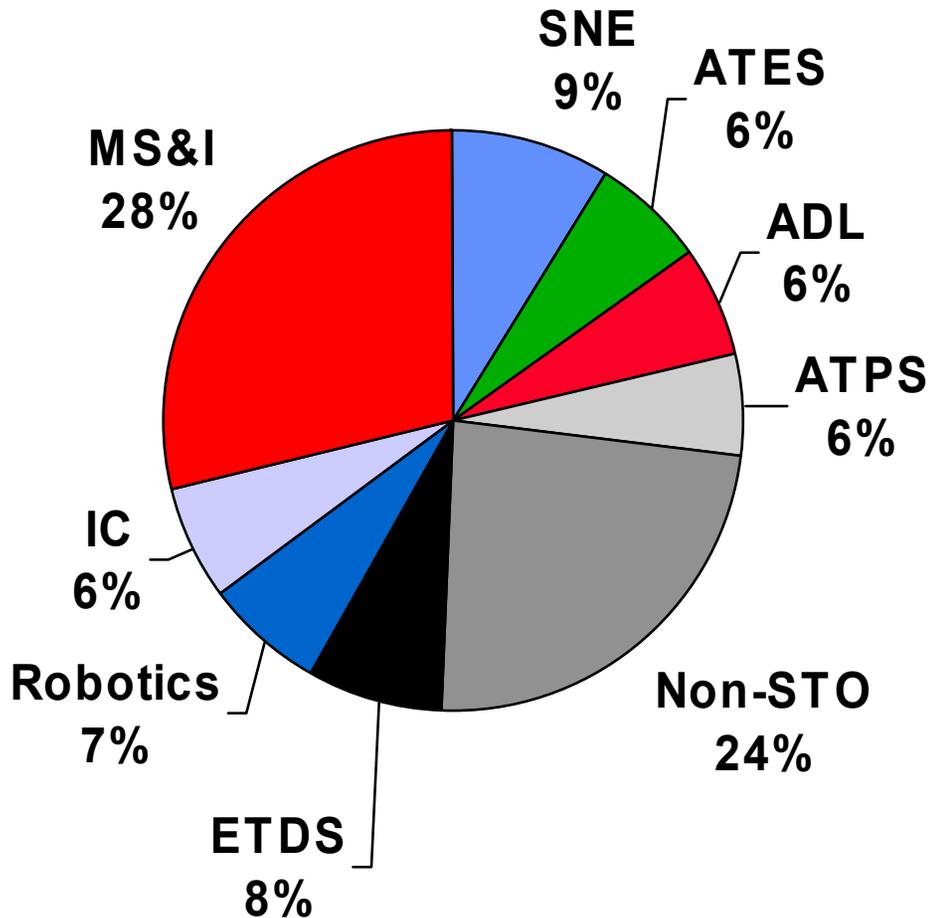




FY02 Projected Tech Base



FY02 0602308 allocation



- ATPS = Advanced Trauma Patient Simulator
- ADL = Advanced Distributed Learning
- ATES = Advanced Tactical Engagement Simulations
- ATPS = Advanced Trauma Patient Simulator
- ETDS = Embedded Training for the Dismounted Soldier
- IC = Individual Combatant
- MS&I = Modeling and Simulation Infrastructure
- SNE = Synthetic Natural Environment for Simulation and Training
- STO = Science and Technology Objective



Advanced Distributed Learning (ADL)



Objective: *Introduce collaborative team training environments into the Army Distance Learning Program and eventually enable education and training of forward deployed units of the Objective Force via Internet technologies.*

- **Internet-based instruction**
- **Collaborative training tools**
- **Web-based simulation**
- **Intelligent Tutoring Systems**
- **Natural Language Understanding**



Advanced Tactical Engagement Simulations



Objective: *R&D affordable Tactical Engagement Simulation (TES) solutions to enable the live play of emerging systems -- with specific focus on the air-bursting capability of the Objective Individual Combat Weapon (OICW) and Objective Crew Served Weapon (OCSW).*

- **Testing and Training of Smart and Top Attack Munitions**
- **Precision Small Arms Weapon System Instrumentation**
- **Power, Weight, and Size Reduction of Tactical Engagement Simulation System (TESS) components**
- **Embedded LIVE test and training capabilities**
- **Geometric Pairing for Small Arms Area Effects Weapons**



Advanced Trauma Patient Simulation



***Objective:** Investigate, prototype and demonstrate the use of simulation technologies to provide a common medical modeling and simulation environment for initial, refresher, and sustainment training, focused on 91W and/or Combat Life Saver training objectives.*

- **Develop enhanced physiological representations (skin, internal organs, head trauma, chem/bio symptoms), and information for triage, treatment, evacuation, After Action Review, and Distance Learning**
- **Leverage other research efforts and incorporate a state-of-the-art medical simulator**
- **Develop a link to an existing constructive simulation**
- **Lower Cost Simulation Capabilities**



Embedded Training for Dismounted Soldiers (ETDS)



Objective: *To mix live and virtual simulations to provide the individual a realistic on-demand, anytime and anywhere training and simulation capability.*

- **Embedded Training for Dismounted Soldiers**
 - Training & Mission Rehearsal software running on Portable/Mobile Hardware Platforms
- **Interactive, Intelligent Simulation Models**
- **Augmented Reality Technology**
 - Military Operations on Urbanized Terrain (MOUT)
Training with Mixed Reality & Theme Park Technologies



Immersive Simulation Technologies



Objective: *To provide effective methods, strategies and procedures for use of Virtual Environment (VE) technology to prepare the infantry/emergency response small unit leader and/or team members for the conduct of Asymmetric operations through improved training in a virtual environment linked with new constructive CGF behaviors.*

- **Individual and Group Behaviors for Virtual Environments that Simulate Asymmetrical Warfare**
- **Visual Display Systems Enhancements**
- **Human and Other Model Representations**



Constructive Simulation Robotics M&S



Objective: *Investigate, prototype and demonstrate the use of SAF simulation technologies to enhance the intelligence, scale and realism of Robotic implementations (live & virtual)*

- **Semi Automated Forces (SAF)-Robotics Collaborative Environment for analysis & experimentation**
- **Enables & facilitates reuse of SAF behavior code for robotic behaviors**
- **Reduces prototype development time**
- **Provides Objective Force training in employment & control of robotics vehicles**
- **Integration w/OneSAF Testbed Baseline (OTB) and Interface w/Battle Labs**
- **Provide complex mission task & coordination behaviors to real robots**
- **Single Operator Command & Control of Multiple Robotic Vehicles**



Synthetic Natural Environments



Objective: *To identify and demonstrate candidate standards for simulation interoperability and to prototype simulation tools and processes needed to generate authoritative, correlated, synthetic environments efficiently and at reduced costs.*

- **Synthetic Environment Data Standardization**
- **Linkages between Modeling & Simulation (M&S) and Command, Control, Communications, Computers, & Intelligence (C4I) Visualization Systems**
- **Rapid Data Base Development**
(Emphasis on Urban Environments)
 - **Process Improvement**
 - **Automated Tools Development & Integration**



STO Principal Investigators



ADL	Bill Pike	407-384-5349
ATES	Troy Dere	407-384-3882
ATPS	Beth Pettitt	407-384-3934
ETDS	Paul Dumanoir	407-384-3939
IC	Jim Grosse	407-384-3872
ROBOTICS	Michelle Kalphat	407-384-3862
SNE	Julio de la Cruz	407-384-3733



Non-STO Business Areas



STRICOM's Advanced Concepts and Basic Research Business Area focuses on simulation that supports futuristic concepts and advanced ideas.

Neal Finkelstein, Ph.D. 407-384-3865

STRICOM's Applied Technology Business Area focuses on the Army's Science and Technology Objectives and applied research for live, constructive, and medical simulation.

Paul Dumanoir 407-384-3838

STRICOM's Simulation Environments Business Area focuses on providing Visual System Support for the STRICOM PM's (including synthetic environment interchange mechanisms and networking) and applied research for immerse and virtual environment simulation technology.

James Grosse 407-384-3872

STRICOM's Experiments and Demonstrations Business Area focuses on modeling and simulation experiments that support the development of the Objective Force and Advanced Technology Demonstrations for the transition of technology to weapons systems and simulations.

John Hart 407-384-3887



C4ISR Domain



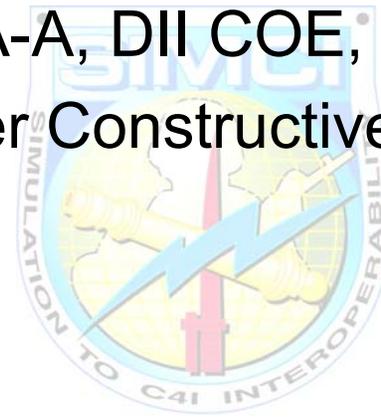


STRICOM's C4ISR Domain Program (1)



Objective: *To Develop the Army's Command, Control & Communications (C3) Driver v2.0, aligned to the Army's Software Blocking - Block 2.*

- Users Include Army C4ISR Developers, Developmental & Operational Testers & Trainers (including PM FCS)
- Program Alignment with Objective OneSAF System
- Program Activities on-site @ Whitfill CTSF, Ft. Hood, TX
- Core Program within Army Software Blocking
- Standards Based (AKEA, JTA-A, DII COE, SIMCI SCA)
- Anticipate STOC Award Under Constructive Domain - 3rd Quarter FY03



Program Executive Officer

Program Manager

Stakeholder

Stakeholder



STRICOM's C4ISR Domain Program (2)



- Simulation Technical Support Facility (STSF) Support
 - Army Knowledge Enterprise Architecture
 - M&S Object Model Development
 - Systems Integration (L-V-C)



STRICOM/ARI BAA

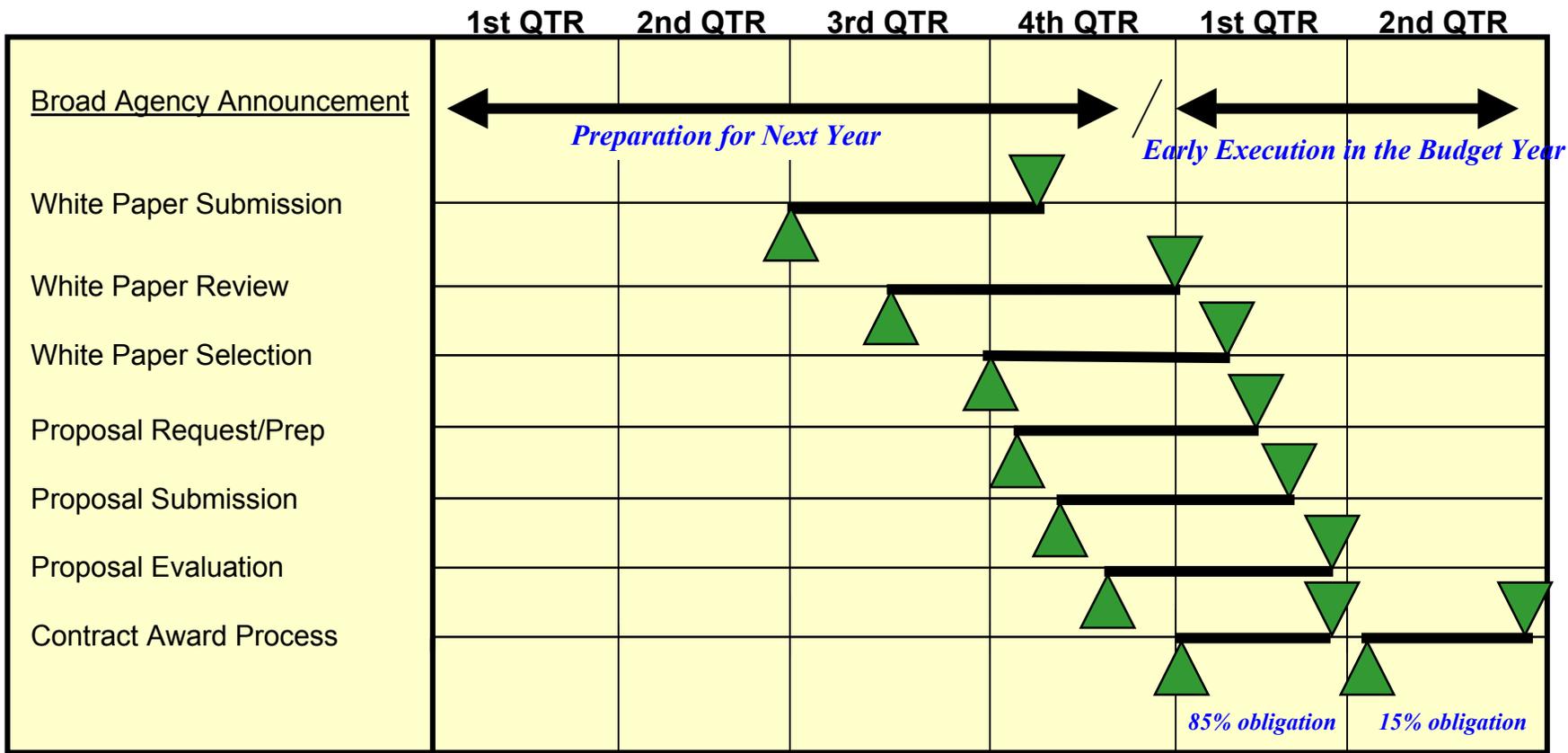


- **STRICOM and ARI Technology Objectives to industry**
- **Continuously open**
- **Contractor submits white papers for consideration prior to request for proposal**
- **Evaluations performed by engineering personnel**
- **Recently modified STRICOM/ARI BAA solicitation**



STRICOM/ARI BAA Contract

New Starts: Obligating Early within New Fiscal Year





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Department of Defense
Army



History, purpose, and objectives

- **Congress initiated SBIR in 1982**
- **Program re-authorized in December 2000**
- **Program authorized until 2008**
- **Program funded by 2.5% “assessment” from Extramural R&D Budget set aside by each participating Government agency**
- **Program’s main objectives:**
 - **To stimulate technological innovation**
 - **To increase Small Business participation in Federal R&D**
 - **To increase private sector commercialization of technological advances developed through Federal R&D**
 - **To increase participation by woman-owned and by socially and economically disadvantaged small business**



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Three phase approach

- **Phase I - 6 month effort, SBIR funded up to \$70k study efforts that focus on concept definition and feasibility analysis with a \$50k option for interim gap funding when selected for phase II.**
- **Phase II - typically a 24 months effort and SBIR funded up to \$730k for Research, Development, and Prototype development.**
- **Phase III * - The culmination of successful Phase I and Phase II's and results in the delivery of end items that satisfy federal government requirements or in the transfer of technology into the private sector or both.**

*** Phase III funding must come from other sources.**



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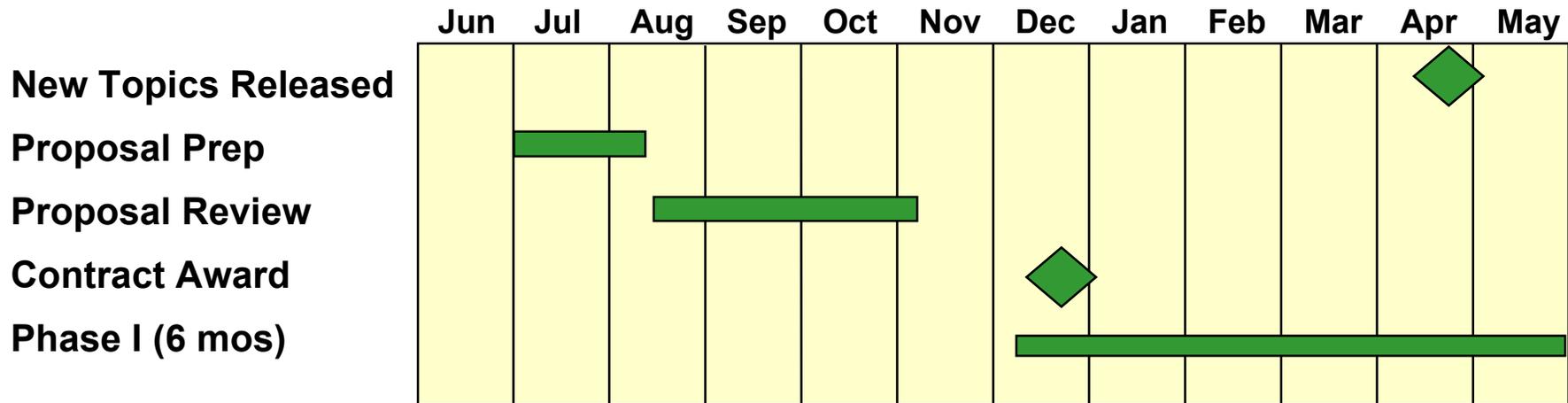
ARMY EVENTS CYCLE

Aug Sep Oct Nov

Event / Month	1	2	3	4	5	6	7	8	9	10	11	12
Award Phase I contract	▲											
Conduct Phase I Effort	●					▼						
Invite Phase II				▲								
Receive Phase II Proposals					▲							
End of Phase I Effort						◆						
Select Phase II Winners							▲					
Interim funding							←	→				
Award Phase II Contracts											▲	




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Army



- Congressionally mandated program
- R&D in Science and Engineering
- Topic descriptions provided by Army
- Stimulate technical innovation
- Increase role of small business
- Phase I, usually 6 months long, concept definition, feasibility analysis
- Successful Phase I programs compete for Phase II Funding
- Phase II Programs have potential for commercialization with a sponsor



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Key Dates in SBIR Cycle Milestone (02.2 Solicitation)

- **Pre-solicitation Opens on Internet**
 - (<http://www.acq.osd.mil/sadbu/sbir/>)
 - (<http://www.aro.army.mil/arrowash/rt/sbir/sbir.htm>)**1 May - 1 July**
- **02.2 Solicitation Opens** **2 July**
- **SITIS closes to new questions** **2 Aug**
- **Phase I Proposals Due (25 pages)** **14 Aug**
- **Award Notification** **mid November**
- **Contract Award** **December**



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SBIR Key Web Sites

- **SBIRHome pages**
 - <http://www.acq.osd.mil/sadbu/sbir/homepg.htm>
 - <http://www.aro.army.mil/arowash/rt/sbir/sbir.htm>
 - <http://www.stricom.army.mil/STRICOM/E-DIR/ES/ISC/SBIR/>
- **SBIR/STTR help desk**
 - Phone: 866-724-7457 (8AM to 8PM EST)
- **SBIR/STTR solicitation site**
 - <http://www.acq.osd.mil/sadbu/sbir/>
- **Fast Track policy**
 - <http://www.acq.osd.mil/sadbu/sbir/fasttrack/fsttrack.htm>



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STRICOM'S SBIR TOPICS (DoD 2002.2 SBIR SOLICITATION)

- A02-211 Unified Position/Location Tracking and Communications Device for Live Urban Warfare Training
- A02-212 Transportable Multi-Modal Interactive Device for the Dismounted Soldier
- A02-213 Scene Management for Complex Environments
- A02-214 Advanced Personal Digital Assistant for Training and Simulation
- A02-215 Dynamic Composable Simulations for Robotic Behaviors
- A02-216 Embedded C4I Training Using Courseware and a Game Engine
- A02-217 Display for Embedded, Deployable Training Systems