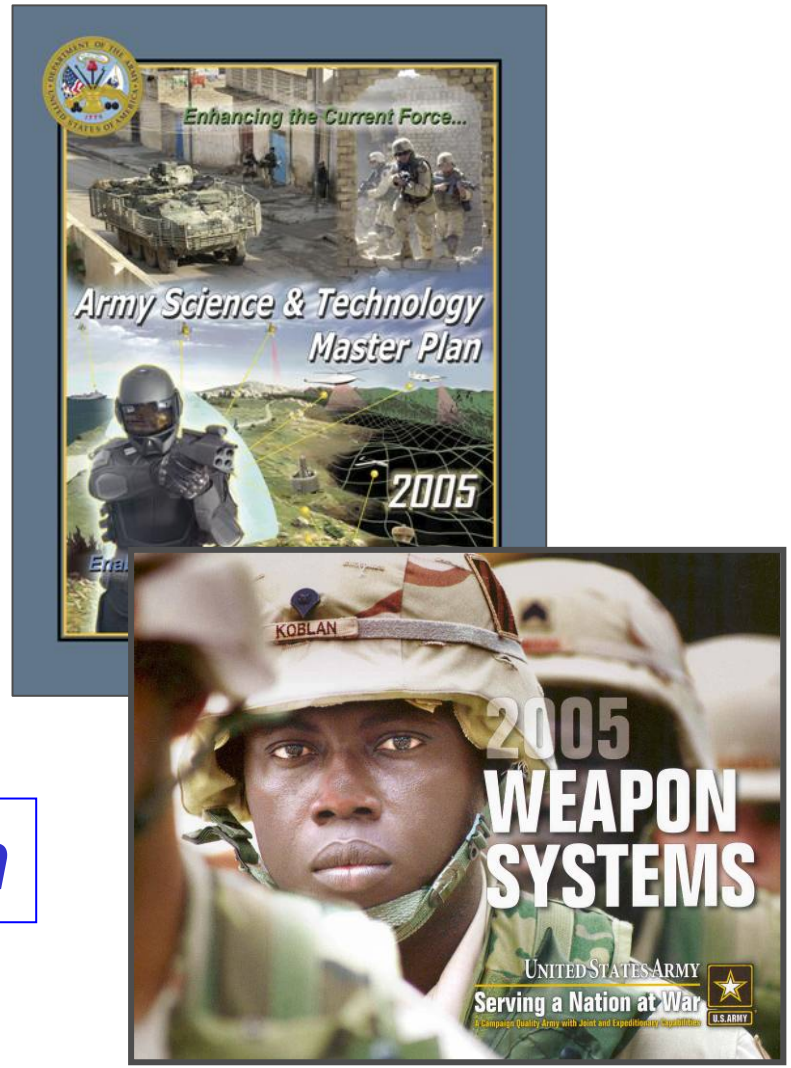
Acquisition Senior Leaders Conference

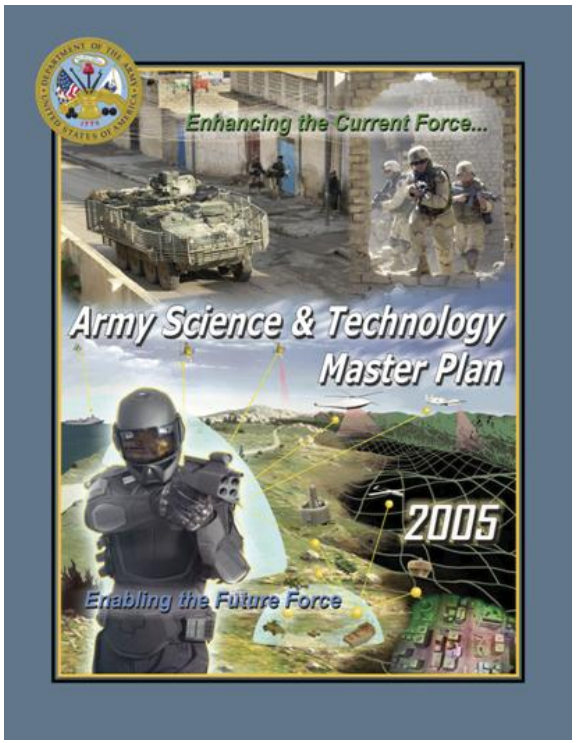
Technology Transition

23 Aug 2005



Dennis Schmidt
Office of the Assistant Secretary for Research & Technology/ Chief Scientist

Results Oriented



Creating products from S&T investments

Technology Transition Issues— an S&T Perspective

- *Limited procurement funding*
- *SDD funding shortfalls*
- *Increased Technology Readiness Level (TRL) does not by itself speed transition— the evidences of TRL become debatable*
- *PMs use their own criteria to make technology maturity decisions—some want more tests, some want the final S&T demo to be in a form, fit, function equal to the final system, which is yet to be built*
- *Need stronger partnerships—commitment—between technology development and acquisition communities*

There is no one, simple answer or solution

Examples from S&T Program History 2000-2005 (1 of 2)

S&T Complete	SDD Transition	Current Status
Hunter Sensor Suite-1997	1999	Currently in production as LRAS3, 700+ fielded to date
EFOGM-1998	None	Program terminated
GLMRS-1999	2001	In production
RPA-1999	Comanche-SDD terminated 2004	Technology for FCS
OICW-1999	*Pub RFP for SDD on-hold pending JCIDS results and JROC review	SDD (OICW-1) funded
HSTAMIDS-2000	SDD 2000	In LRIP—AN/PSS-14
SAPI-2000	Specifications to PM-SEQ	Fielded as Interceptor Body Armor
FSCS-w/UK terminated-2000	Army chose FCS to provide this capability	
LSTAT-2001	2001 (3rd Quarter) Congressional funded	In Production
PGMM-2001	MS B Sep 2003 fully funded	SDD fully funded
Chitosan Bandage-2001	2002 fully funded	In Production
One Handed Tourniquet (OHT)-2001	2002 fully funded	In Production— improve and renamed Combat Application Tourniquet
LOSAT ACTD-2002	Terminated in SDD 2005	
SATCOM OTM - 2002	SATCOM Antenna—WIN-T	WIN-T in SDD
Tactical C2 Protect-2002	Network Security Software—WIN-T	In production 4ID IRAQ
LCPK-2003	AKPWS-2003	2005 returned to S&T for cost reduction

Examples from S&T Program History 2000-2005 (2 of 2)

S&T Complete	SDD Transition	Current Status
ASTAMIDS-2003	SDD 2003	Fully funded through FY09
ANVG-2003	ATO completed in FY2003 no transition yet. Air Force version PNVG transitioned to SDD.	
OCSW-2003	2004	Mounted-fully funded Dismounted-partially funded
LCMR-2003		In Production
MFS3-2003	No transition	
Shortstop-2003		Prototypes to Iraq as WARLOCK
GSTAMIDS-2004	SDD 2004	Fully funded through FY12
Agile Commander-2004	C2 software for MCS	
MOSAIC-2004	Network Comms software for WIN-T	WIN-T in SDD
LSTAT-2004	In SDD	
NLOS LS-2004	2004	SDD fully funded for FCS
TWS-2004	2004	In production
Rechargeable Li-ion Battery-2004	NA	In production
Zinc Air Battery-2004	NA	In production
120mm Gun-2005	2006	PM FCS selected
DRAMA-2005	Network Comms software for WIN-T	WIN-T in SDD
HAA ACTD-projected-2007	None	ACTD terminated 2005—technology immature

How do WE get products to the warfighter faster?

- Mature technology faster—get it to the PMs
  - Generate more options: "no single point of failure"
  - Demonstrate technology in operational environments
  - Defense Acquisition Guidebook:
    - "… the S&T Program is uniquely positioned to reduce the risk of promising technologies before they are assumed in the acquisition process."
- Rapid Equipping Force
- Shorten SDD time
  - Technology matured and risk reduced in S&T
  - More concurrent developmental and operational testing
- Begin production sooner
  - Early operational testing
  - Manufacturing technology

Define The Needed Capabilities Sooner

Policy, Process, Reality

3.6 Technology Development

3.6.1 Purpose. The purpose of this phase is to reduce technology risk and to determine the appropriate set of technologies to be integrated into a full system. Technology Development is a continuous technology discovery and development process reflecting close collaboration between the S&T community, the user, and the system developer. It is an iterative process designed to assess the viability of technologies while simultaneously refining user requirements.

Technology Transition—
Technology Transition Agreements

Documents acquisition program needs for Critical Technologies from the S&T community

Key elements:

- **Program requirements**
- **Maturation strategy**
- **Milestones and schedule**
- **Funding**
- **Deliverables**
- **Key personnel**

FCS Technology Transition Agreements

Signed

- Security Systems and Algorithms (CT3B2)
- Dynamic Sensor-Shooter Pairing Algorithms & Fire Control (CT14)
- Recoil Management & Light Weight Cannon (CT17)
- Distributive Collaboration of Manned/Unmanned Platforms (CT18)
- Signature Management (CT26)

Being worked

Draft

- Water Generation and Purification (CT22A)
- Survivability (CTs 25A, 25B & 27)
- Power Distribution and Control (CT29)
- Manned Ground Vehicle High Density Packaged Power (CT31)

Partnering with PEOs to ensure maturity of Critical Techs

Why PMs Don't Accept Advanced Technology from Labs?

Fact or Fiction

- ***PMs not convinced it is mature***
- ***PMs don't think it is Producible***
- ***PMs think that technology costs too much***
- ***PMs think there are too many integration unknowns***
- ***PMs want to use their own contractor—not the S&T demo contractor***
- ***PMs don't need or cannot use all the capabilities of the new technology***
- ***PMs are committed to the current prime contractor***
- ***PMs want S&T to mature it further—using S&T money***
- ***PMs don't believe the S&T timeline is synchronized with the program***
- ***PMs have not seen S&T provide form, fit, function for the system***
- ***PMs have found acceptable technology from non-S&T sources***
- ***PMs believe Labs promise more than they can deliver***

PM Perspective—Why Labs Don't Provide PMs with what They Need?

- *Labs push the technology they have already been working on rather than what the PM really needs*
- *Labs compete with each other rather than working together to provide a single "product"*
- *Labs are not asked early on—PMs go to contractors and other people*
- *Labs cannot respond fast enough to changes in the program*
- *Labs say they don't have enough money to provide the technology in time*
- *Labs don't provide prototype solutions*
- *Labs don't have the expertise needed—PMs go to a contractor anyway, so the PM can bypass this step*

Fact or Fiction

Lab Perspective—Why PMs Don't use Lab Technology?

Fact or Fiction

- PMs want to control technology development
- PMs are locked to the prime
- PMs are too conservative—focused on minimum acceptable technology
- PMs are more interested in schedule rather than better solutions
- PMs are not willing to provide funds to mature technology more
- PMs are willing to accept minimum performance rather than a leap ahead solution—short sighted, the leap ahead would be cheaper in the Life Cycle
- PMs waste time and money "rediscovering" the technology
- PMs have S&T coordinators that spend a lot of time with the labs, but in the end they don't have the ear of the PM

The Solutions

Please fill in the blank…

These are great—implement immediately

So what should we do about all that?

- ***PEOs should require PMs to explain why they didn't use the technology available from the lab***

- ***MACOMS/DAS R&T should require Lab Directors to show what they are doing to make the technology acceptable to the PM***

A Reasonable Way Ahead?

- ***PEOs should require PMs to explain why they didn't use the technology available from the lab***
  - ***PMs need to fulfill their agreements with the Labs or be upfront and tell them 'No'***
  - ***PMs need to commit resources to integrate the technology beyond that which is reasonable to expect from the Lab—the Labs don't integrate***

Don't be absolutely program-centric—
make technology decisions based upon what is best for the ARMY

A Reasonable Way Ahead—more?

- ***MACOMS/DAS R&T should require Lab Directors to show what they are doing to make the technology acceptable to the PM***
  - ***Lab Directors need to come forward with proposed changes to the technical program when customer needs change***
  - ***Labs need to deliver what they say they are going to or inform the customer that they cannot do it***

Don't be absolutely program-centric—
make technology decisions based upon what is best for the ARMY

Where do we go from here?

- ***Don't be limited by traditional solutions***
- ***Seek technology insertion opportunities***
- ***Take technology when its ready***
  - ***Get an independent assessment***
- ***Establish and maintain dialogue—contact Director for Technology:***
  - ***mary.miller2@us.army.mil***
  - ***(703) 601-1555***

The Army…
Transforming while at War

"Beware when any idea is promoted primarily because it is "bold, exciting, innovative, and new." There are many ideas that are "bold, exciting, innovative and new," but also foolish."

Secretary Rumsfeld