

DEFENSE TECHNICAL INFORMATION CENTER

A DoD Field Activity Providing Access to Defense Information Since 1945

2011 DTIC CONFERENCE

DTIC: Your Authoritative Source of Defense Information for the Front Line and the Homeland

April 4-5, 2011

The Department of Defense S&T Program Innovation, Speed and Agility and Information

April 4, 2011

Mr. Al Shaffer

Approved for Public Release

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Information for the Defense Community 



Lab Research and Unified R&E Data for the Defense Community

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Acting Administrator
DTIC



**The Department of Defense S&T
Program
Innovation, Speed, and Agility
And Information
April 4, 2011**

**Mr. Al Shaffer
Principal Deputy
ASD/(RE)**



Connecting Researchers to the Warfighter



President Obama, State of the Union, January 25, 2011



“The first step in winning the future is encouraging American innovation. Our free enterprise system is what drives innovation. But because it’s not always profitable for companies to invest in **basic research**, throughout our history, our government has provided cutting-edge **scientists** and inventors with the support they need.

Two years ago, I said that we needed to reach a level of **research and development**, we haven’t seen since the Space Race. And in a few weeks I’ll be sending a budget to Congress that helps us meet that goal. We’ll **invest in biomedical research, information technology, and especially clean energy technology** -- an investment that will strengthen our security, protect our planet, and create countless new jobs for our people.

Maintaining our **leadership in research and technology** is crucial to America’s success. But if we want to win the future - - if we want innovation to produce jobs in America and not overseas – then we also have to win the race to educate our kids.

Over the next 10 years, with so many baby boomers retiring from our classrooms, we want to prepare 100,000 new teachers in the **fields of science and technology and engineering and math.**”

Investment in Basic and Applied Research is a commitment to the future warfighter



Thoughts from the Secretary of Defense



**Secretary Gates, Budget Rollout
Hearing 14 Feb 2011**

“These budget decisions took place in the context of a nearly two year effort by the DoD to reform the way the Pentagon does business – to change how and what we buy... We have protected programs that support military people, readiness, and modernization... We still live in a very dangerous and often unstable world. Our military must remain strong and agile enough to face a diverse range of threats – from non-state actors attempting to acquire and use weapons of mass destruction and sophisticated missiles, to the more traditional threats of other states...”

“Directed DoD to fund 2% real growth in Basic Research and to maintain stable funding in the rest of S&T for FY12-FY16. In real terms, the FY12 S&T budget request is almost 29% greater than the request in FY 2000.” OSD/PA News Release, 2/14/11



Information Agility

In 2007



George Hotz, 17, of Glen Rock, New Jersey holding the iPhone® that he separated from the AT&T network and used on the T-Mobile Network. **Career goal: hack the human brain**

- ❑ Apple and AT&T released the iPhone on 29 June
- ❑ An exclusive agreement guaranteed the iPhone could only be used on AT&T's mobile network
- ❑ Hotz spent approximately 500 hours working on his “summer project”
- ❑ The hack was announced on 24 August.
 - ❑ AT&T - market cap: \$245B
- annual revenue: \$90B
 - ❑ Apple - market cap: \$117B
- annual revenue: \$23B
 - ❑ Hotz - PRICELESS

This is the new asymmetry—victory goes to the agile and innovative



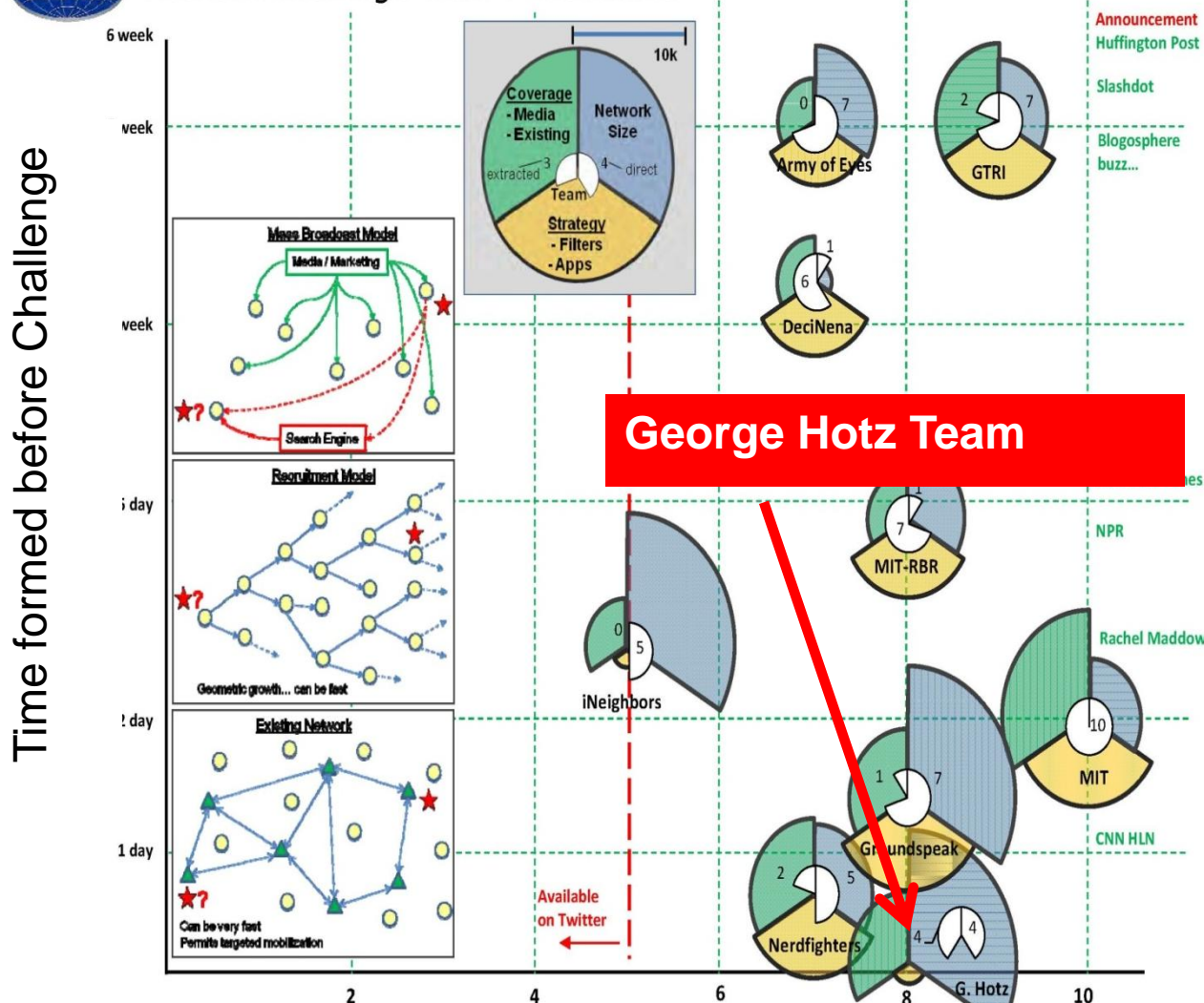
2009 DARPA 'Balloon' Challenge



- In Dec 2009 – DARPA set out 10 red weather balloons
- First team to find all 10 won \$40K
- Teams self assembled using Internet
- Hotz formed a team the morning of the competition....and almost won
- The power of the network enables the individual



Network Challenge Team Performance





Director, Defense Research and Engineering Imperatives



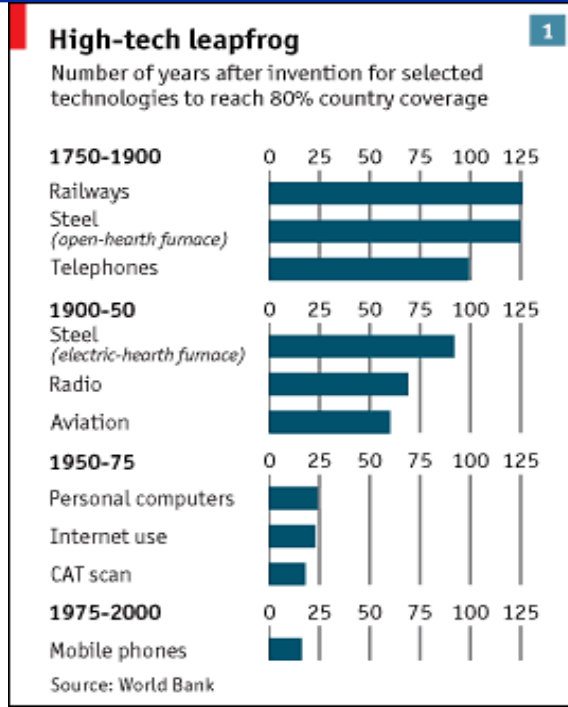
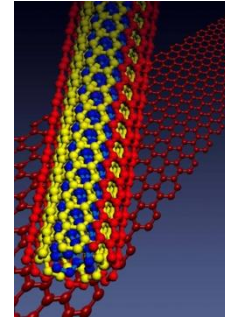
- 1. Accelerate delivery of technical capabilities to win the current fight.**
- 2. Prepare for an uncertain future.**
- 3. Reduce the cost, acquisition time and risk of our major defense acquisition programs.**
- 4. Develop world class science, technology, engineering, and mathematics capabilities for the DoD and the Nation.**



Pace of Technology Continues to Increase



- Time between modeling of semiconducting properties of germanium in 1931 and first commercial product (transistor radio) was 23 years
- Carbon nanotube
 - Discovered by Japan (1991)
 - Researchers recognized carbon nanotubes were excellent sources of field-emitted electrons (1995)
 - “Jumbotron lamp” - nanotube-based light source available as commercial product (2000)
- Information Technology



The Economist, Feb. 9, 2008





The Timeline has Collapsed (For Military Systems)!



Conventional Warfare

USAF Capability

High Altitude Aircraft



Electronic Countermeasures



Endgame Countermeasure



Engage SAM



Adversary Capability

High Altitude SAM



Monopulse SAM



SAM with ECCM



Response loop measured in years

Counter-Insurgency Warfare

US Capability

Jammers



Mine Resistant Ambush Protected (MRAP)



Adversary Capability



Advanced Technology

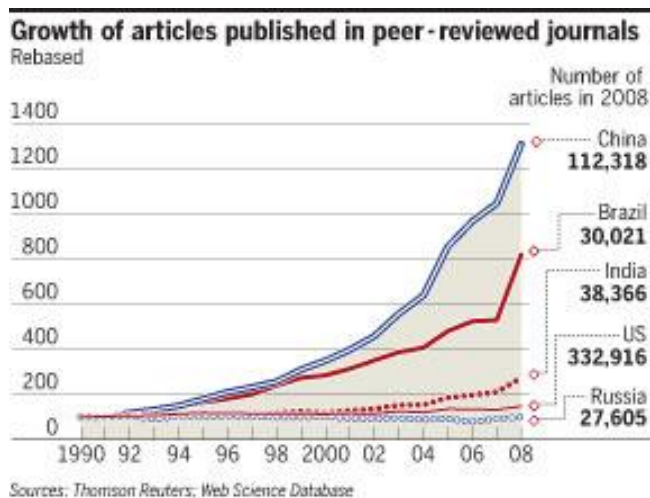
Response loop measured in months or weeks



Why DTIC?



- To make progress against Sec Gates and ASD/(RE) priorities, we need information agility and innovation
- Need to continue the migration from flat records to dynamic real world information

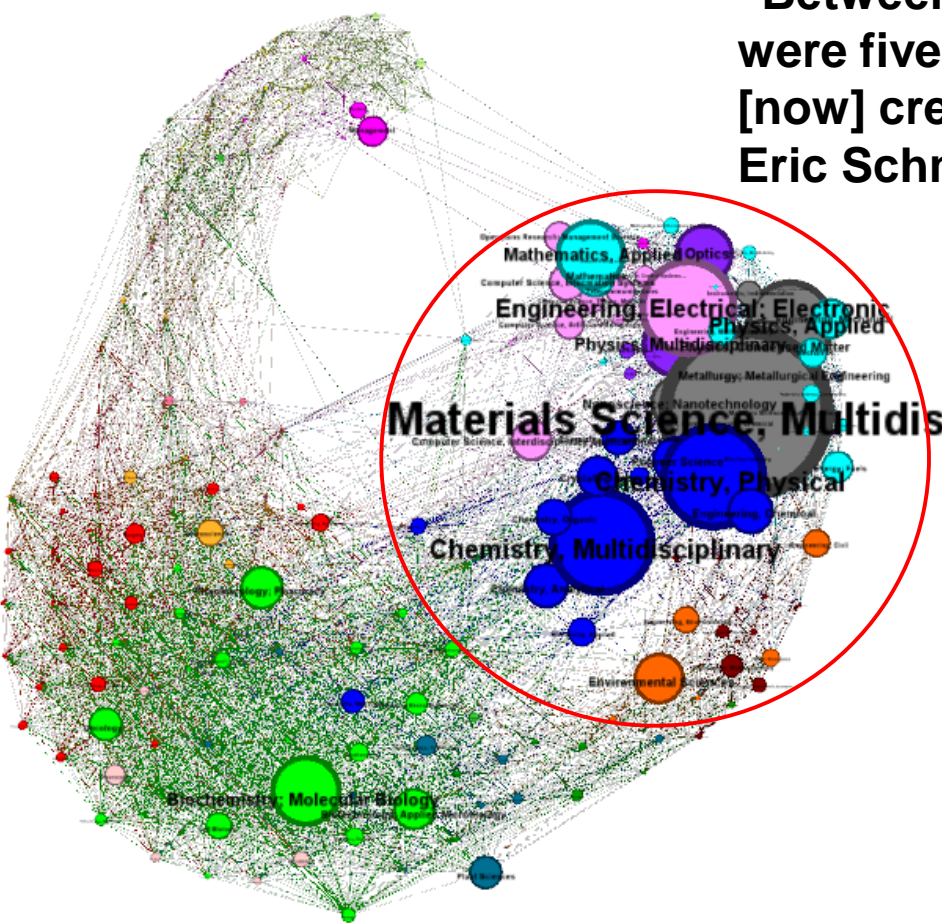


- This need exacerbated by growth in written word; doubling in 4 year increments in China



Leveraging Technical Information Globally...

“Between the birth of the world and 2003, there were five exabytes of information created. We [now] create five exabytes every two days...”
Eric Schmidt, CEO, Google



- So how do we find the Δ between our capabilities and the capabilities globally, now and into the future?
 - Leverage massive amounts of multi-source data
 - Leverage increasing computational analytic power

China 2010 Science Map

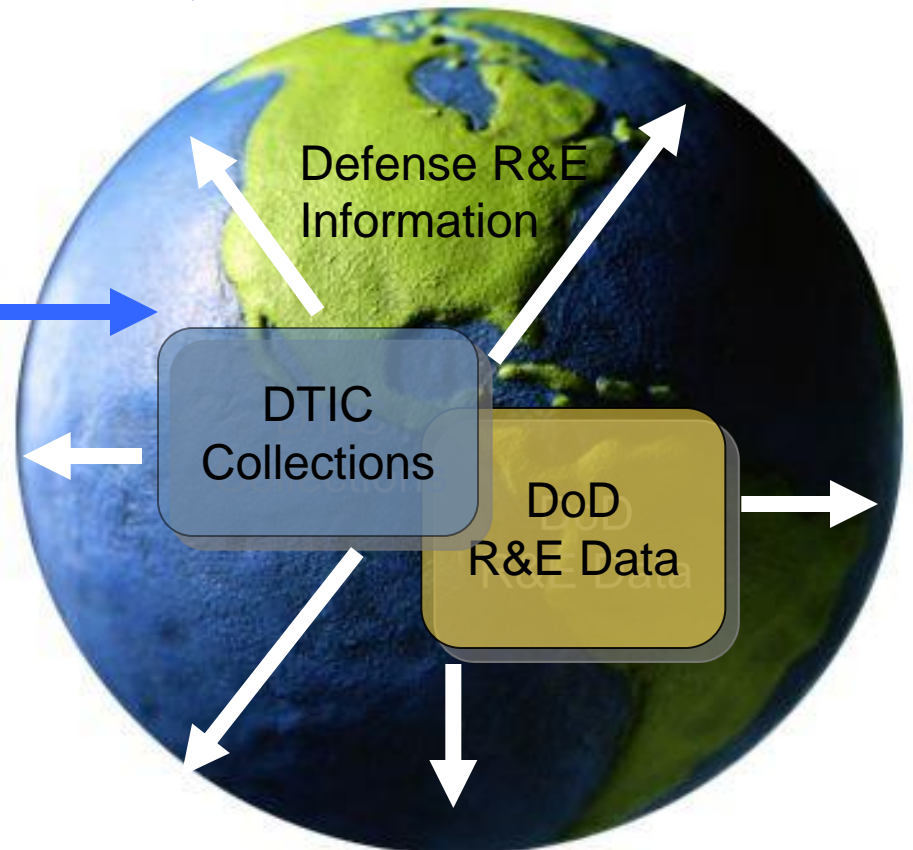
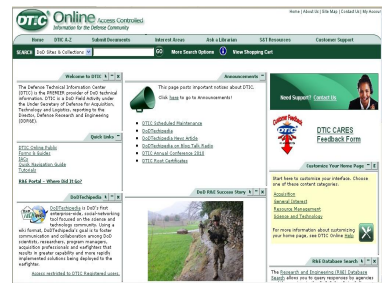


ASD/RE-DTIC GOAL -- Continue the Vision --



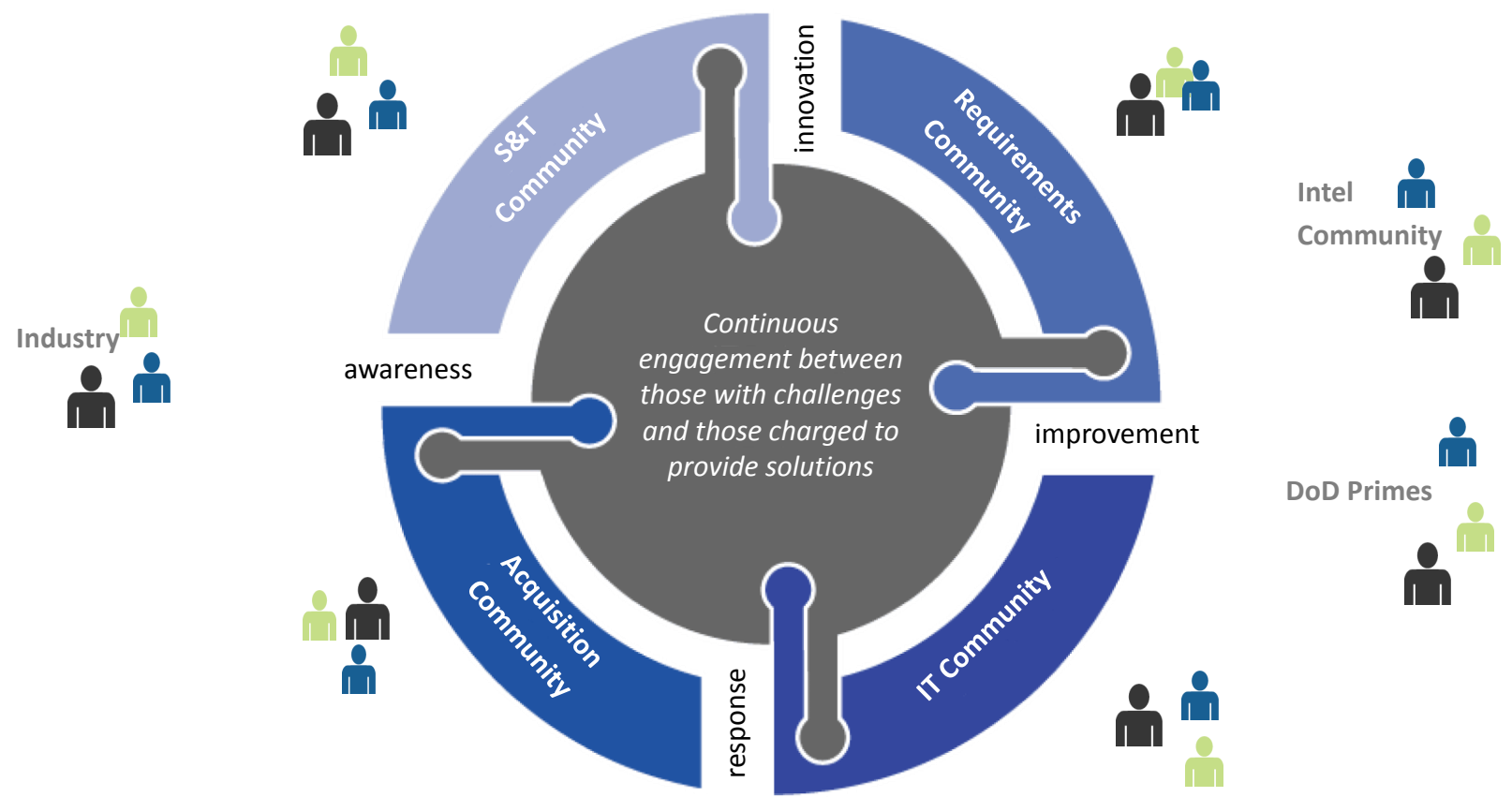
DTIC is the DoD implementation agent for access to Defense R&E Information

(moving beyond the sum of DTIC R&E Information and DDRE R&E Information, to all Defense R&E Information)





DoDTechipedia's Role Foster Collaboration



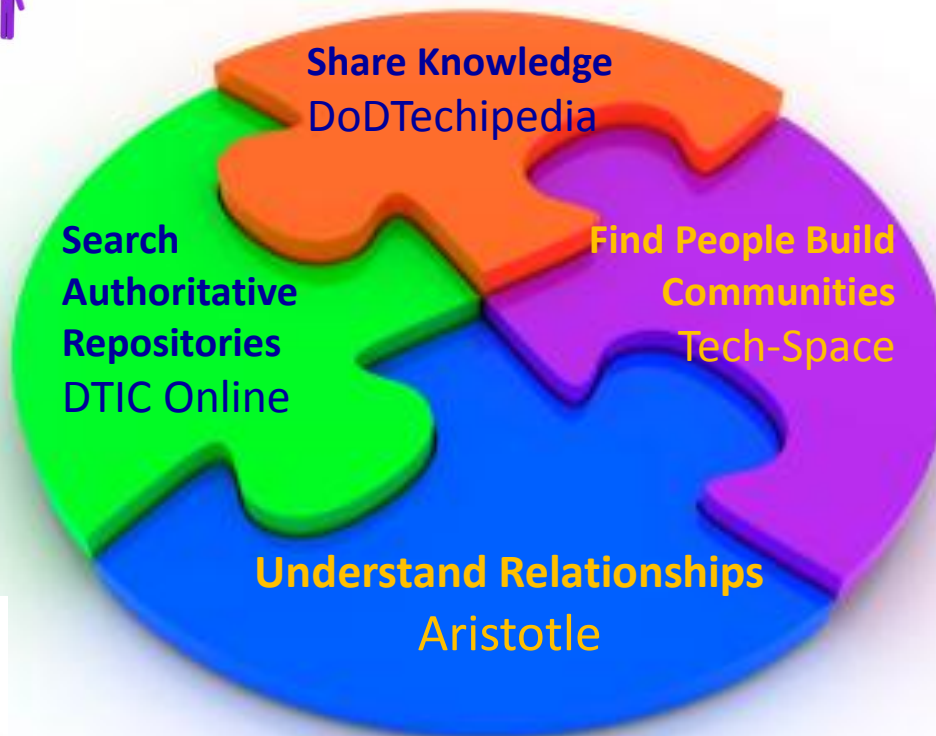
Foster communication between those with needs and those with solutions



Connecting the S&T to the Enterprise *an agile information environment*



CAC Access



Continuous
Enhancement

DoD Services
And Agencies

Best Elements of Web 2.0 tools integrated into One Space to find people, ask questions, search topics, collaborate with wiki's and blogs, publish, share needs, requirements, and capabilities...

DTIC Vision: The Hub of the R&E Community



**Welcome to DTIC**

The Defense Technical Information Center (DTIC) is the PREMIER provider of DoD technical information. DTIC is a DoD Field Activity under the Under Secretary of Defense for Acquisition, Technology and Logistics, reporting to the Director, Defense Research and Engineering (DDR&E).

Quick Links

[DTIC Online Public Forms & Guides](#)
[IACs](#)
[Quick Navigation Guide](#)
[Tutorials](#)

[R&E Portal - Where Did It Go?](#)

DoDTechipedia

DoDTechipedia is DoD's first enterprise-wide, social-networking tool focused on the science and technology community. Using a wiki format, DoDTechipedia's goal is to foster communication and collaboration among DoD scientists, researchers, program managers, acquisition professionals and warfighters that results in greater capability and more rapidly implemented solutions being deployed to the warfighter.

[Access restricted to DTIC Registered users.](#)

Announcements

This page posts important notices about DTIC.

Click [here](#) to go to Announcements!

- [DTIC Scheduled Maintenance](#)
- [DoDTechipedia](#)
- [DoDTechipedia News Article](#)
- [DoDTechipedia on Blog Talk Radio](#)
- [DTIC Annual Conference 2010](#)
- [DTIC Root Certificates](#)

DoD R&E Success Story

Need Support? [Contact Us](#)



DTIC CARES
Feedback Form

Customize Your Home Page

Start here to customize your interface. Choose one of these content categories.

[Acquisition](#)
[General Interest](#)
[Resource Management](#)
[Science and Technology](#)

For more information about customizing your home page, see DTIC Online [Help](#)

**R&E Database Search**

The Research and Engineering (R&E) Database Search allows you to query responses by agencies

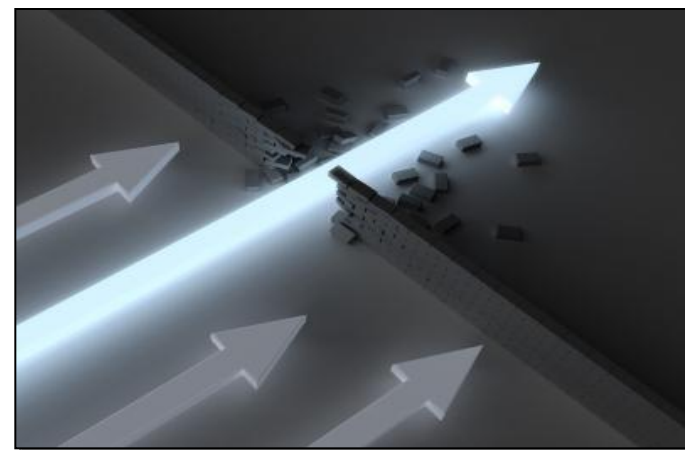


DoD Techipedia



Why a Wiki for DoD Technology Collaboration?

- Break across community barriers
 - Foster communication between those with needs and those with potential solutions
- Success of Wikipedia, Intelipedia make Wikis more familiar, especially to Generations X and Y
 - Builds on how people are interacting at home, and at schools
 - Increasing awareness of wiki's in the DoD S&T users community are through interaction with Intelipedia's S&T areas
- Low technical barriers to entry
 - Browsers based - no specialized tools
 - Low bandwidth



<https://www.dodtechipedia.mil>



Aristotle?

- Improve understanding of what we know, what we can do, and where we need to invest resources
- Understanding Relationships – Connecting the dots
 - Who are the experts
 - What Projects are On-going
 - Where is the work being done
- Provides means to rapidly respond to tomorrows questions



The screenshot shows the Aristotle Today web application interface. At the top, it displays the DTIC Online logo and navigation links. The main content area is titled "Aristotle Today" and features a search bar, tabs for "People", "Projects", and "Topics", and a "Sort by Relevance" dropdown. The right sidebar contains several sections: "Recent Changes" with a list of updates, "Inside DTIC" with "Most Actively Linked" items, "New Items" with a list of new content, and "Most Connected" with a list of people and projects.



DoDTechSpace



- How does the S&T Community support the COCOM Advisers need to collaborate on key issues?

STIPLS



- TechSpace Pilot to support this critical need
- Then expand discussion across the R&E enterprise

Professional Networking Across the Defense Community
 -- Gateway to Applications, News Feeds, Communities of Interest



Unified Research and Engineering Database (URED)



- **Unified Data Call**
 - Collapses R&E Data Call, Research Summaries and Lab In House Report
- **Better Visibility**
 - Key input to STIPL response
- **Simplified User Interface**
- **Analysis Tools**
- **Reduced Workload on Researchers and Labs/Improved Tools for Users**



The Right 75% Solution



“Our conventional modernization programs seek 99 percent solutions in years. Stability and counterinsurgency missions – the wars we are in – require 75 percent solutions in months.” Secretary of Defense, Robert M. Gates, National Defense University (29 Sept 2008)

The right 75% solution - use COTS to provide capabilities quickly and focus custom only where special needs demand.

Examples

- Jive  - TechSpace
- Google Search Appliance  –Public and SIPR Search



Challenges



- Security vs Sharing –
- Information leaks add a new complexity to this balance
- Privacy
- Integration is hard
- Must be intuitive



Web 2.0 tools are rapidly evolving - still maturing

- No one person, no single product has all the answers: We must repeatedly look at new commercial approaches and to the community for input

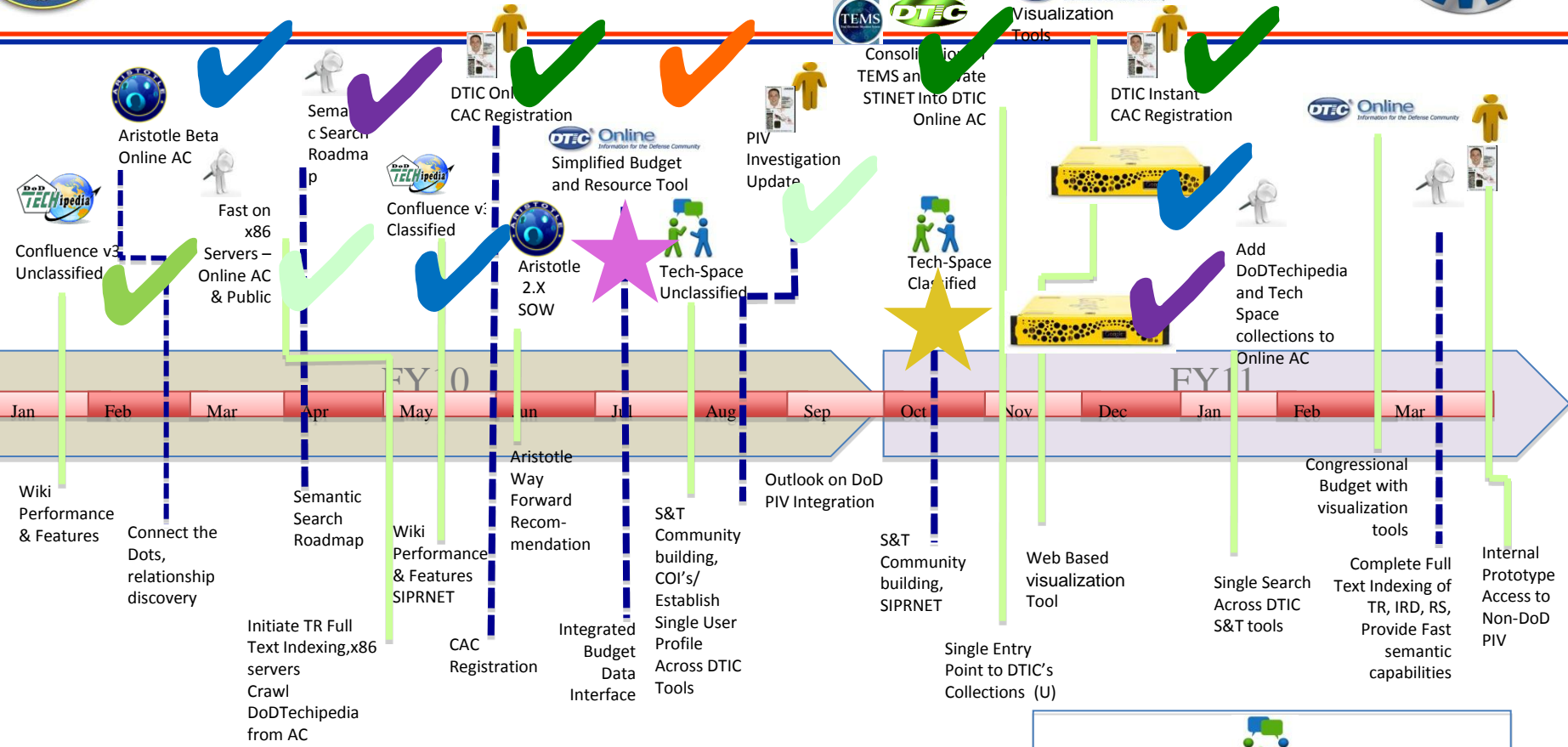


15 Month Action Plan DTIC Roadmap DoDTechpedia Suite Related Activities

DTIC Conferen

DTIC Conference

TOOL CAPABILITY



Progress





How Is DTIC Doing? (HIDD)



STI Disseminated	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
TR Orders	434	866	2,459
TR Auto Distribution	2,260	4,507	12,355
Electronic Bibliographies	708	1,376	3,024
Electronic AD Doc Downloads	2,275,904	4,782,810	11,506,405
NDIA Downloads	1,039,159	2,156,439	5,091,498
IAC Hard Technical Inquiries	565	1,080	2,730
TEMS downloads	734	1,687	3,660
IAC Web Inquiries	856,634	1,637,227	3,834,495
TOTAL STI Disseminated	4,176,398	8,585,992	20,456,626

STI Collected	Current Month Feb10	Current Quarter Q2 FY10	YTD FY10
Technical Reports	2,327	5,112	13,851
Research Summaries	174	287	1,174
IR&D	0	0	337
DTTIS	42	42	86
IAC Library Collection	8,447	14,848	36,825
TEMS	7,208	14,786	43,587
TOTAL STI Collected	18,198	35,075	95,860

Registered Users	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
New Registered Users	3,457	7,415	10,592
New DoDTechipedia Users	194	367	1,145
Total Active Users	35,721	35,721	35,721
Total ListServ Subscriptions	53,236	53,236	53,236

Customer Service Index	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
Customer Service Index	96%	96%	96%

Web Page Requests by Site	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
DoDTechipedia	91,682	100,349	221,671
DTIC Online Public	1,054,915	1,417,035	5,131,744
DTIC Online AC	123,190	138,110	246,324
IACs	2,054,114	4,213,447	6,837,224
Defense Solutions	1,065	1,087	5,463
DoD Public sites	29,381,946	60,224,908	157,109,601
DoD NIPR sites	19,668,553	19,782,617	42,453,560
Other	2,884,775	15,651,435	27,610,974
Total External Requests	55,260,240	101,528,988	239,616,561

Web Page Requests by Source Domains	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
af.mil	1,619,798	2,068,208	3,203,742
army.mil	14,064,563	14,616,326	19,741,027
navy.mil	2,713,472	3,023,033	4,349,962
other.mil	19,027,173	23,298,101	41,037,348
.edu	795,679	907,778	1,379,149
.com	14,415,383	19,499,799	37,809,341
.gov	1,968,836	2,929,017	2,959,433
unidentified	655,336	35,186,726	129,136,559
TOTAL	55,260,240	101,528,988	239,616,561

IACs	Current Month Feb 10	Current Quarter Q2 FY10	YTD FY10
Customer Funding (TAT, SA)	\$108,487,209	\$175,934,819	\$295,042,005

Key Program Milestones	Next Milestone Date	Scheduled Completion Date
Project 1 (TBD)	(TBD)	(TBD)
Project 2 (TBD)	(TBD)	(TBD)
Project 3 (TBD)	(TBD)	(TBD)
Project 4 (TBD)	(TBD)	(TBD)
Project 5 (TBD)	(TBD)	(TBD)

Need:

• Metrics that convey a clear understanding of activities

• Baseline to measure and improve performance



Questions?



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