

**DEFENSE TECHNICAL INFORMATION CENTER**

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# 2011 DTIC CONFERENCE

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

**April 4-5, 2011**

## Overview of DoD Information Analysis Centers (IACs)

4 April 2011

**Mr. Christopher Zember**

The banner features the Department of Defense seal on the left, a central graphic of silhouetted figures walking on a path, and the title text on the right.

# Overview of DoD Information Analysis Centers (IACs)

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# IACs are Centers of Excellence

They are specifically charged to...



- Improve productivity of Researchers, Engineers, and Program Managers in the Defense Research, Development, and Acquisition Communities by collecting, analyzing, synthesizing, and disseminating worldwide STI in clearly defined, specialized fields or subject areas
- Promote standardization within their respective fields by:
  - Providing in-depth analysis
  - Creating products
  - Responding to technical inquiries
  - Performing technology assessments
  - Supporting exchanges of information among Scientists, Engineers, and practitioners of various disciplines

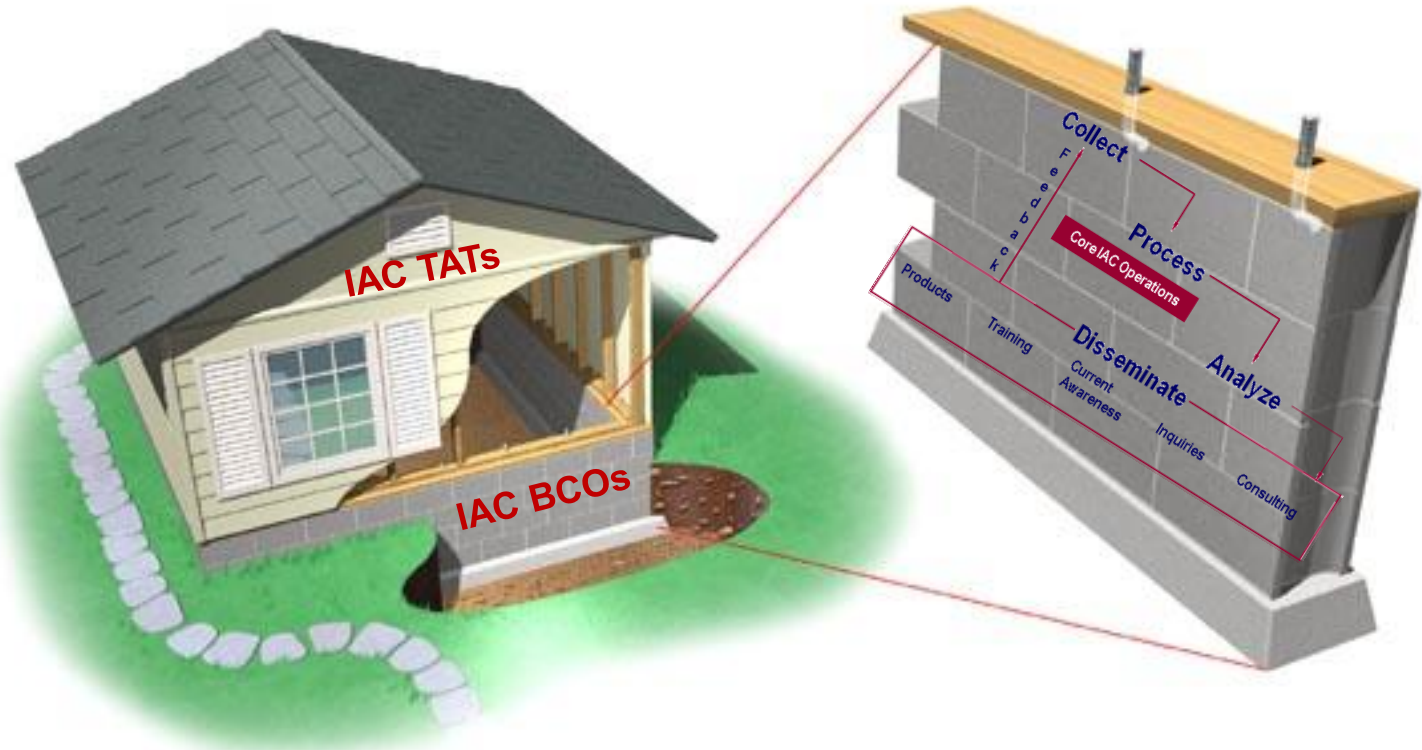


**Chartered – DoD Directive 3200.12**  
**Guided – DODINST 3200.14, May 13, 1997**



# IAC Model

*BCOs\* Serve as Foundation for TATs*



- Interdependence between “Core” and TATs defined in DoD guidance
  - DoD Instruction 3200.14 establishes IACs to provide Core and Additional Tasks (Technical Area Tasks, or TATs)
  - BCO/Core establishes knowledge base in areas of strategic importance
  - Intent of TATs is to leverage Core knowledge base to increase efficiency and effectiveness

\*Basic Centers of Operations



# IAC BCOs



# IACs are hosted by industry and academia



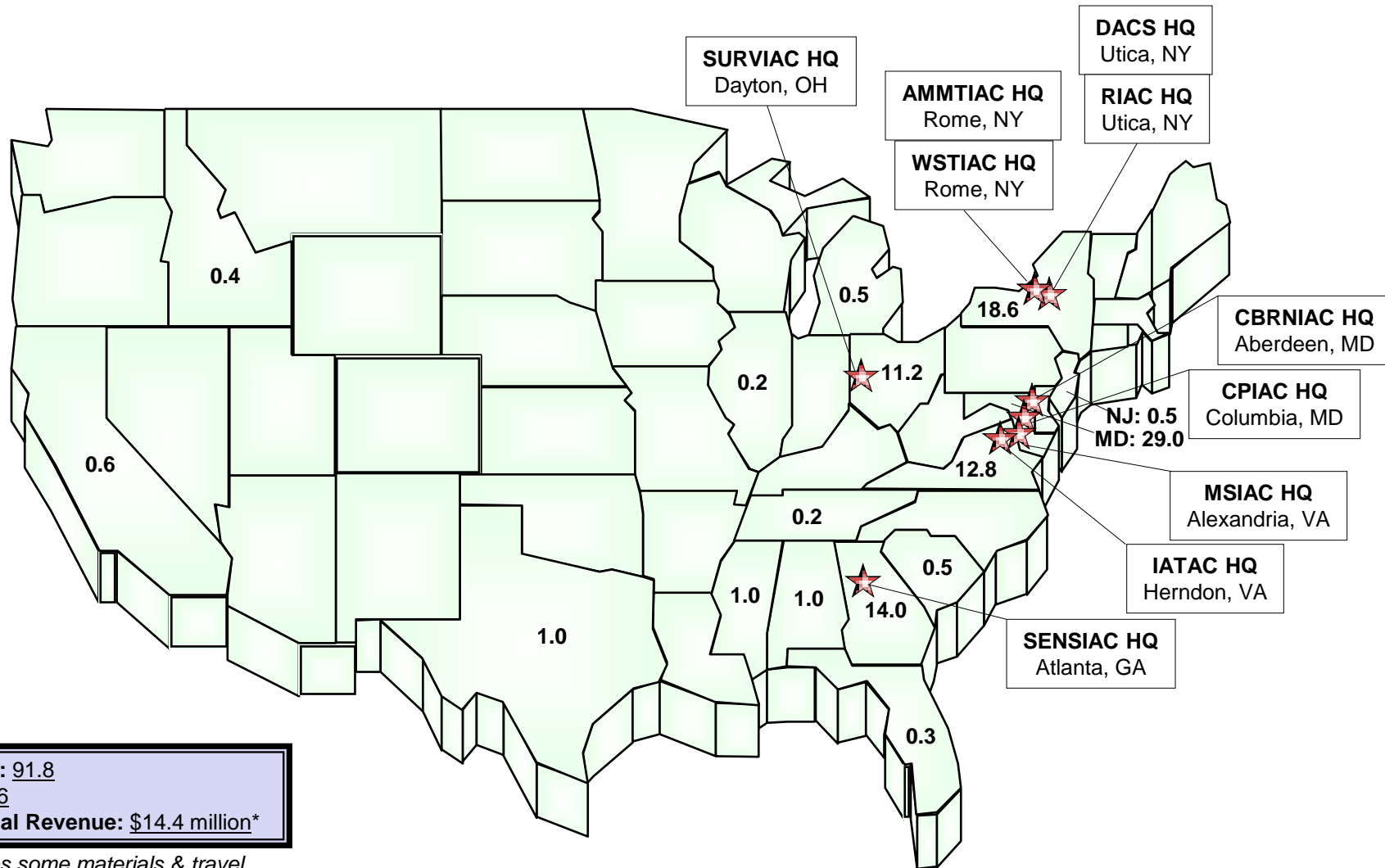
<u>IAC</u>	<u>Domain</u>	<u>Host</u>
AMMTIAC	Advanced Materials, Manufacturing & Testing	Alion Science & Technology
CBRNIAC	Chemical, Biological, Radiological, Nuclear Defense	Battelle
CPIAC	Chemical Propulsion	<a href="#">Johns Hopkins University</a>
DACS	Data and Analysis Center for Software	Quanterion
IATAC	Information Assurance	Booz Allen Hamilton
MSIAC	Modeling & Simulation	Alion Science & Technology
RIAC	Reliability	Wyle Labs
SENSIAC	Sensor Technology	<a href="#">Georgia Tech Research Inst</a>
SURVIAC	Survivability/Vulnerability	Booz Allen Hamilton
WSTIAC	Weapons Systems Technology	Alion Science & Technology

<http://iac.dtic.mil>





# IAC Basic Centers of Operations

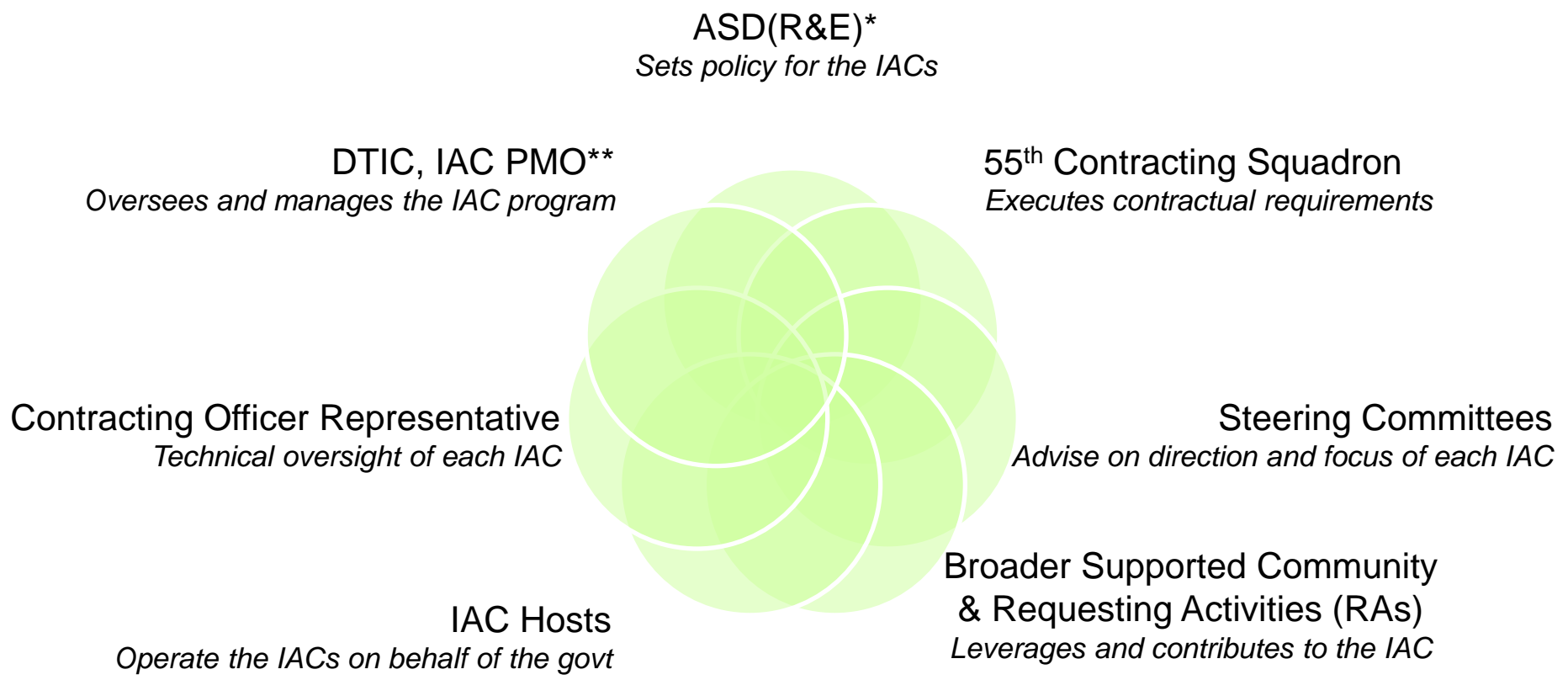


**Total FTEs: 91.8**  
**# States: 16**  
**Total Annual Revenue: \$14.4 million\***

\* Includes some materials & travel



**...and are part of a broader team that includes government and industry**



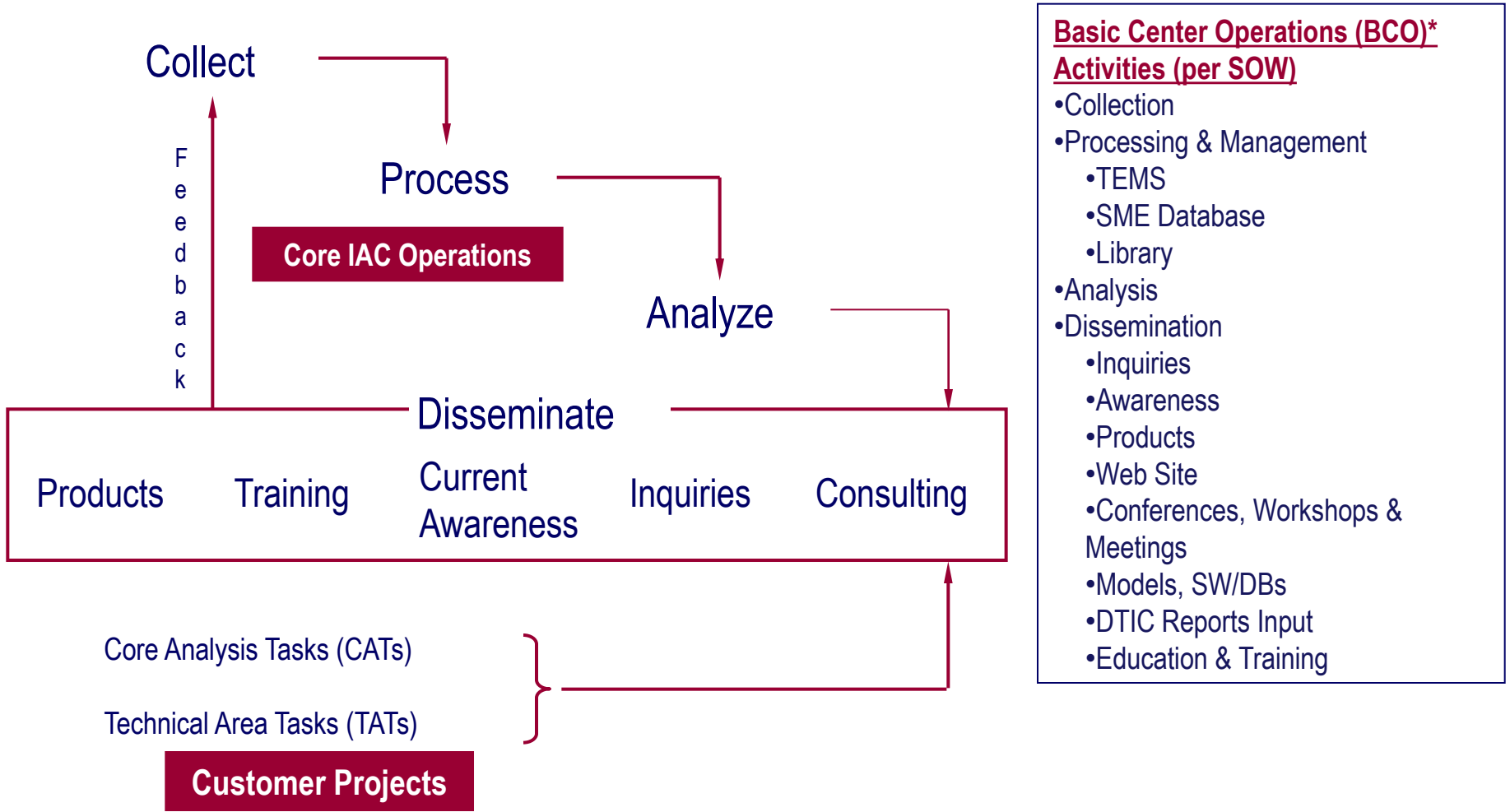
\*Assistant Secretary of Defense for Research and Engineering  
\*\*Program Management Office





# IAC Program: Core Processes

## Integrating Core and TATs to Re-use STI



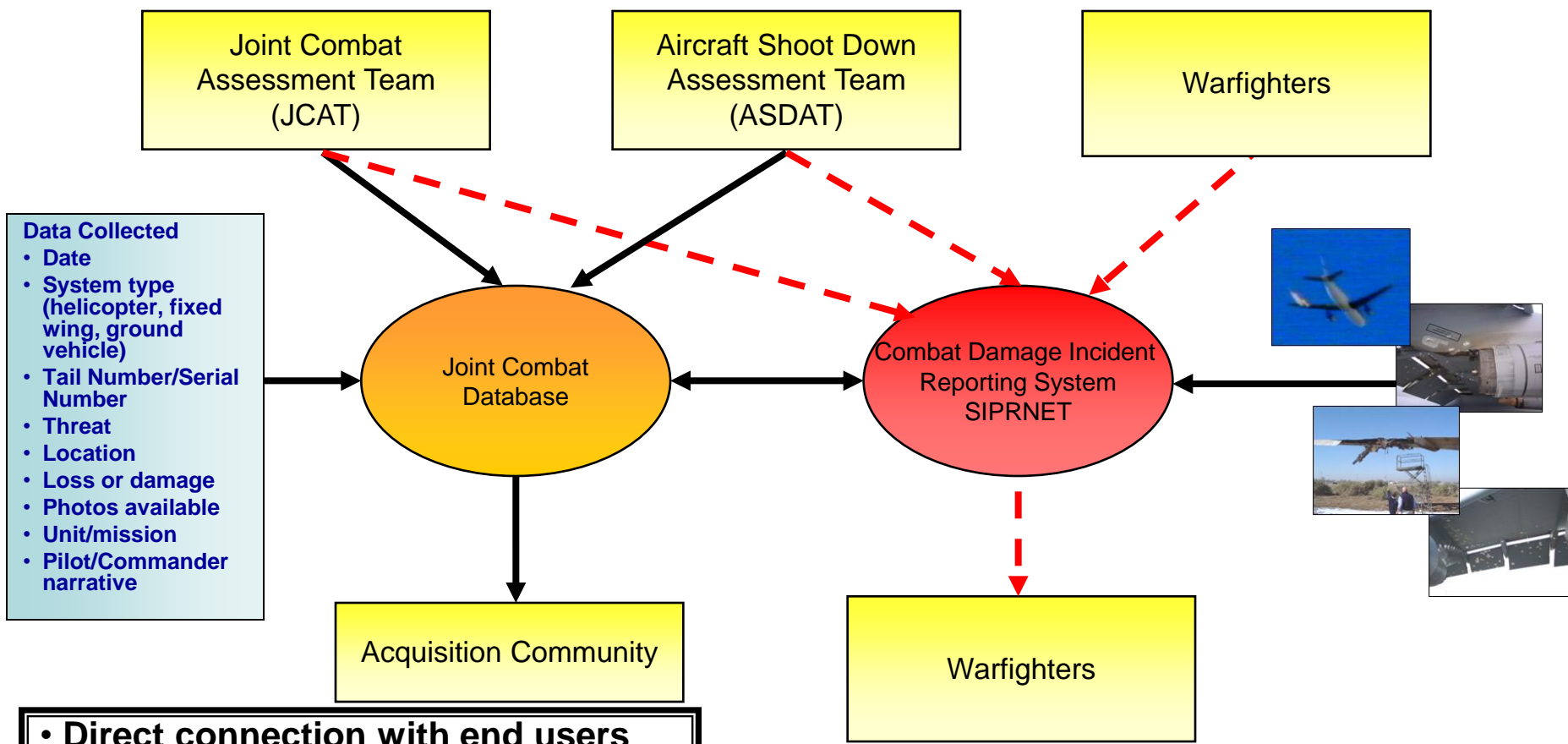
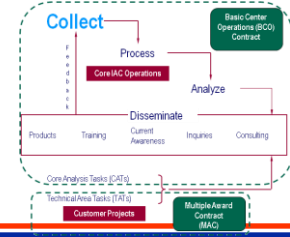
- Basic Center Operations (BCO)\***  
**Activities (per SOW)**
- Collection
  - Processing & Management
    - TEMS
    - SME Database
    - Library
  - Analysis
  - Dissemination
    - Inquiries
    - Awareness
    - Products
    - Web Site
    - Conferences, Workshops & Meetings
    - Models, SW/DBs
    - DTIC Reports Input
    - Education & Training

\*Basic Center Operations also referred to as "Core Operations"



# Information Collection

## SURVIAC's Joint Combat Database

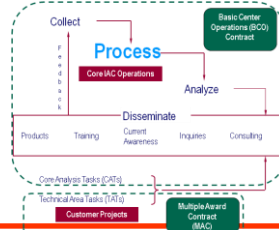


- Direct connection with end users
- Immediate tactical relevance
- Immediate impact on Warfighter



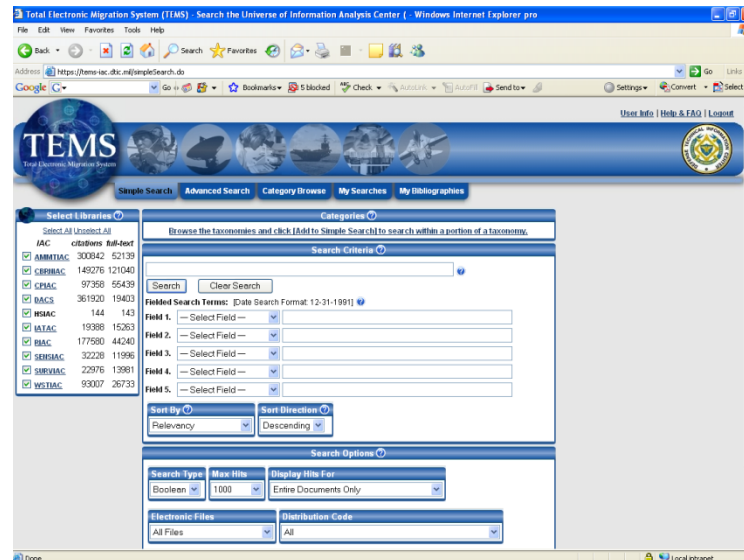
# TEMS

## Document Digitization and Search Engine



- **Total Electronic Migration System: IAC Program Search Engine for STI\***

- Digital archive of historical STI, safe from degradation
  - Two versions: Unclassified & SECRET
- Instant access to full online collection of IAC knowledge base
- Current status: over 1.3 million citations and 450,000 full text documents (all searchable)

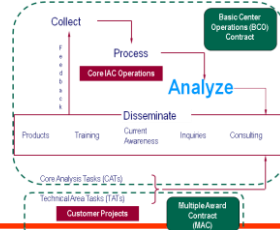


- **IAC PMO guiding principle:** strategic resource utilization to make the most valuable documents available to consumers first

- All IACs have prioritized holdings; efforts focused on most valuable STI
- Scanning strategy provides additional 90,000+ documents each year
- Monthly metrics track expenditures versus uploads
- Web analytics track users and downloads
- Bottom line: get STI into users' hands



# Information Analysis Technical Inquiry Process



- Every project **MUST** start in the library. Starting anywhere other than the library wastes precious time and money.
- IACs are staffed with SMEs\* to provide additional analysis & get you answers fast
  - IACs maintain a SME database, composed of the top experts across government, academia, and industry

I have exactly what you need and will get it to you ASAP.



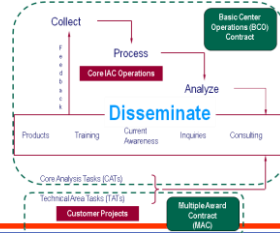
**FREE** access to STI is but a phone call or e-mail away. Visit <http://iac.dtic.mil> to access each IAC's Web site for more information

\*Subject Matter Experts

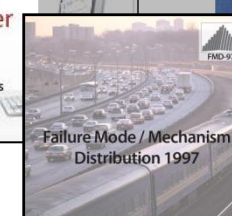
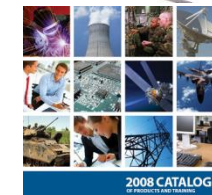




# Information Dissemination IAC Products



- IACs work collaboratively to leverage the best and brightest to tackle cross-domain challenges
  - Examples of joint IAC products include the System Reliability Toolkit handbook (RIAC & DACS), the Software Security Assurance SOAR (DACs & IATAC), and Power & Energy Journal Issue (AMMTIAC & WSTIAC)
- IAC products draw on existing information resources
  - IACs offer consolidated databases, enhancements on existing tools, and refined techniques
- IACs also develop new/custom products, based on awareness of gaps in the knowledge base
  - IACs maintain awareness of emerging requirements through:
    - Executive Steering Committee
    - Participation in focus groups and committees
    - Attendance at conferences
    - Collaboration with government, academia, and industry



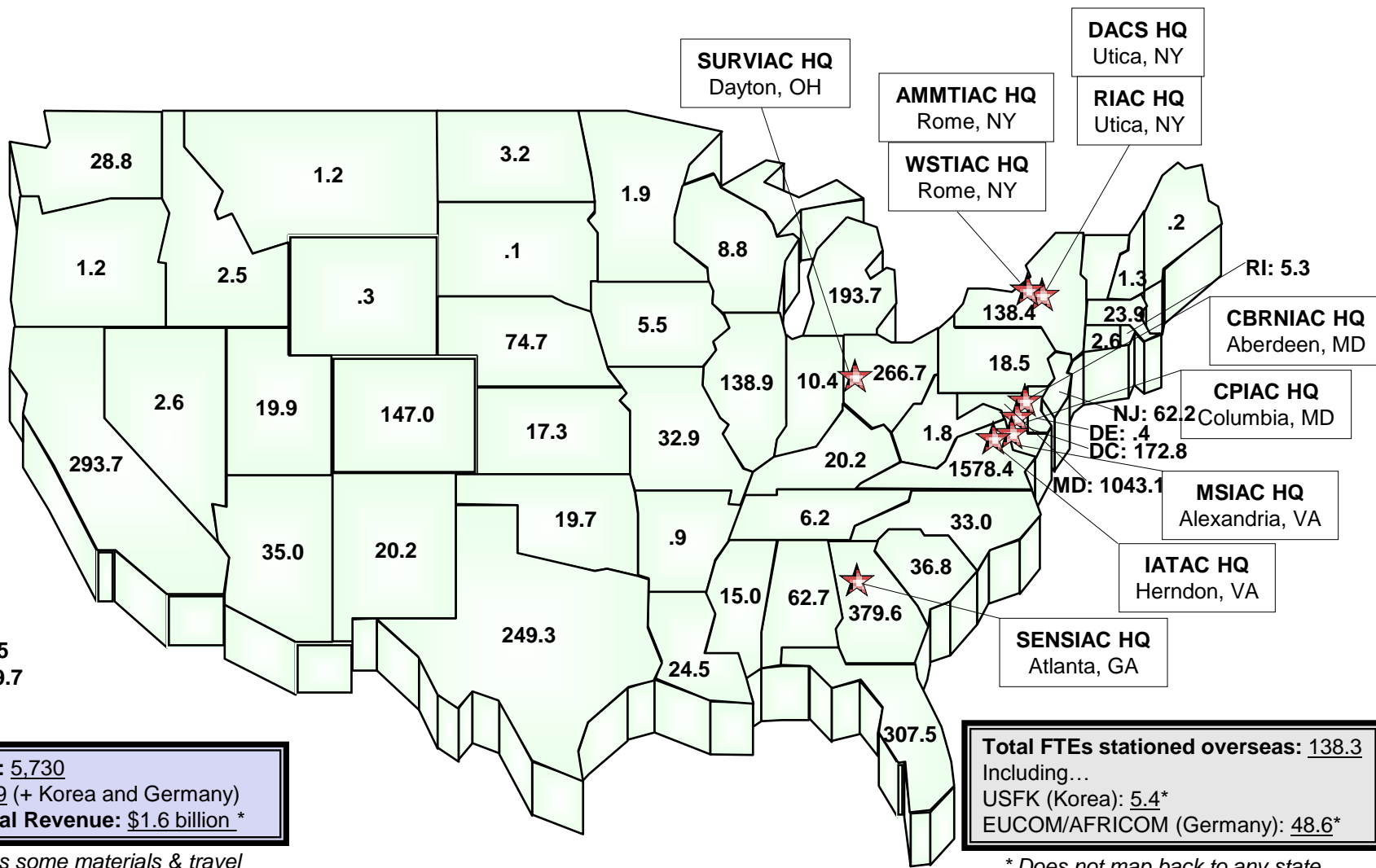


# IAC TATs





# IAC Total Program



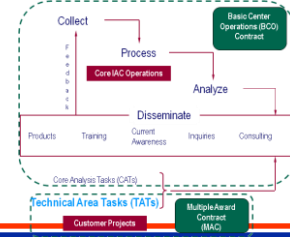
# IACs Support the Warfighter







# IAC Support for IED\* Defeat



- JIEDDO COIC: established network to assess & rapidly respond to threats
  - Leverage a network to defeat a network
  - Deployment of information & technology based solutions in a matter of days, not years or decades



- Responds to Tech Inquiries re: blast effects, structural survivability



- IEDs with CB components
  - Developing case and lab analysis system for IED component tracking



- IED defeat and capability gap analysis
- Assess survivability / vulnerability of current force



- Supporting JIEDDO to enable rapid, reliable, interoperable response to IED threats
  - 24-hour turn-around from threat ID to countermeasure deployment

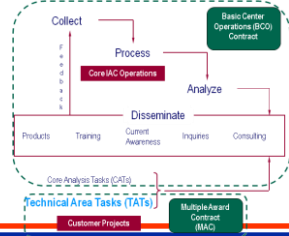


- Detection and defeat technologies
- Development, evaluation and fielding of detection equipment
- Detonator classification

\*Improvised Explosive Device



# MRAP: Improving Reliability & Survivability, Reducing Cost



- Survivability technology assessment on MRAP, including Long Term Armor Strategy & Walter Reed injury data
  - Assess crew effects, survivability measured, and blast mitigation

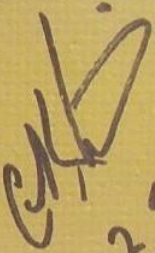
- MRAP vehicle reliability improvement program
  - Performing Reliability Centered Maintenance Evaluations on each variant on the fleet of vehicles, system by system, to optimize maintenance and sustainment of the fleet
  - So far, RCM actions identified will result in \$76 million in reduced materials and a 160 million reduction in man-hours

- Leverages M&S tools and knowledge to field technical inquiries on MRAP



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# USD(AT&L) Memorandum to Acquisition Professionals – June 28, 2010

IAC core competency:  
STI both from and to  
Govt/Industry/Academia

Objectives	
1.	Deliver the warfighting capability we need for the dollars we have
2.	Get better buying power for warfighter and taxpayer
3.	Restore affordability to defense goods and services
4.	Improve defense industry productivity
5.	Remove government impediments to leanness
6.	Avoid program turbulence
7.	Maintain a vibrant and financially healthy defense industry
+ Obtain 2-3% net annual growth in warfighting capabilities without commensurate budget increase by identifying and eliminating unproductive or low-value-added and transfer savings to warfighting capabilities. Do more without more.	
Providing Incentives for Greater Efficiency in Industry	
-	<b>Leveraging Real Competition</b> – avoid directed buys and other substitutes for real competition. Use technical data packages and open systems architectures to support a continuous competitive environment.
-	<b>Using Proper Contract Type for Development and Procurement</b> – Phase out award-fee contracts in favor of fixed-price or cost-type incentive contracts in which government and industry share equally in overruns and underruns, and overruns have analytically-based caps. Use cost-reimbursement contracts only when either government requirements or industry processes cannot be adequately specified to support pricing. Adjust sole-source fixed-price contracts over time to reflect realized costs. Work down undefinitized contract actions. Seek authority for multi-year contracts where significant savings are possible.
-	<b>Using Proper Contract Type for Services - Phase out Time and Materials and sole-source ID/IQ contracts</b> wherever possible. Utilize fixed-price performance-based contracts when requirements are firm and can be measured, with payments tied to performance. Utilize fixed-price level of effort or cost-plus-fixed-fee contracts (with profit/fee tied to weighted guidelines) when requirements are still being defined. Award fees should be used only by exception. <b>Maximize the use of multiple-source, continuously competitive contracts.</b>
-	<b>Aligning Policy on Profit and Fee to Circumstance</b> – Align opportunity to earn profit/fees to both value to the taxpayer and risk to the contractor. Apply weighted guidelines to profit/fee levels. Reward higher productivity with higher profits. Incentivize investment in innovation.
-	<b>Sharing the Benefits of Cash Flow</b> – Ensure that taxpayers receive adequate consideration (price reductions) for improved cash flows. Progress payments must reflect performance but can be increased above customary levels in return for consideration by the contractor. Reduce over time the gap between proposed and actual rates in forward price rate agreements.
-	<b>Targeting Non-Value-Added-Costs</b> – Identify and <b>eliminate non-value-added overhead</b> and G&A charged to contracts. Limit fees for subcontractor management to reflect actual value provided (risk assumed by prime and continuous subcontractor risk reduction). Limit B&P allowable costs in sole source contracts and encourage effective use of IRAD.
-	<b>Involving Dynamic Small Business in Defense</b> – When establishing multiple award contracts for services, make every effort to provide for small business participation. If at least two small businesses are deemed capable of performing on such a contract, consider setting aside that work for competition among them.
-	<b>Reward Excellent Suppliers</b> – Emulate the Navy’s pilot program to provide special benefits to consistently excellent industrial performers.
Adapting Government Practices that Encourage Efficiency	
-	<b>Adapting “Should-Cost” and “Will-Cost” Management</b> – Use historically informed independent cost estimation (“will-cost” estimates) to inform managing of programs to cost objectives (“should-cost” estimates).
-	<b>Strengthening the Acquisition Workforce</b> – Achieve SECDEF goals of adding to government acquisition workforce with increased skill levels. Leverage unique qualities of non-profit <b>FFRDCs and UARCs</b> to augment acquisition workforce capability.
-	<b>Improving Audits</b> - Improve consistency and quality of government audits, and focus them on value-added content.
-	<b>Maintaining Affordability as a Requirement</b> – In new programs such as the SSBN-X nuclear missile submarine, the Presidential Helicopter, the Ground Combat Vehicle, and the Air Force/Navy Long Range Strike Family of Systems, cost considerations must shape requirements and design.
-	<b>Stabilizing Production Rates</b> – To ensure more programs are in stable, economically favorable rates of production and avoid cost escalation, program managers may not adjust production rates downward without head of component authority.
-	<b>Eliminating Redundancy Within Warfighting Portfolios</b> – Emulate the Army’s Precision Fires Capability Portfolio approach to identify where multiple programs are pursuing similar objectives.
-	<b>Establishing Senior Managers for Procurement of Services</b> – Follow the Air Force lead in establishing a Program Executive Office for services in each DoD component to focus on improving policy and practice in this high-dollar-value area.
-	<b>Protecting the Technology Base</b> – Protect the future by sustaining investment while focusing on high value-added work.

## Bottom Line

IACs support OSD and AT&L Efficiency Initiatives both:

- 1) Within IAC Program
- 2) To IAC customers (across DoD)



# IAC Program Way-Ahead

## Expanding Scope and Adapting Structure

### Current Structure

10 Single-award IDIQ contracts for all requirements for each IAC

AMMTIAC Core & TATs	CBRNIAC Core & TATs	CPIAC Core & TATs	DACS Core & TATs	IATAC Core & TATs
MSIAC Core & TATs	RIAC Core & TATs	SENSIAC Core & TATs	SURVIAC Core & TATs	WSTIAC Core & TATs

### Way-Ahead

3 Single-award contracts for the IAC Core (BCO) requirements

<b>Cyber Security IAC (CSIAC) Core</b> DACS, IATAC, MSIAC + new scope	<b>Defense Systems IAC (DSIAC) Core</b> WSTIAC, SURVIAC, RIAC, AMMTIAC, CPIAC, SENSIAC + new scope	<b>Homeland Defense IAC (HDIAC) Core</b> CBRNIAC + new scope
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3 Multiple-award IDIQ contracts for TATs

### IAC PMO (DTIC)

*Some existing coverage*  
*New Area for IACs*

<u><b>SNIM TATs</b></u> Software Analysis Information Assurance Information Sharing <b>Knowledge Management</b> Modeling & Simulation	<u><b>Defense Systems TATs</b></u> Weapon Systems Survivability/Vulnerability RMQSI Advanced Materials Military Sensing <b>Energetics</b> <b>Autonomous Systems</b> <b>Directed Energy</b> <b>Non-kinetic Weapons</b>	<u><b>Homeland Defense TATs</b></u> Homeland Security & Defense Critical Infrastructure Protection Weapons of Mass Destruction CBRN Defense <b>Biometrics</b> <b>Medical</b> <b>Cultural Studies</b> <b>Alternative Energy</b>
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# *IAC Value Proposition*

## *Leveraging Research for Operational Application*



- **IACs are a valuable resource for accessing evaluated STI culled from efforts to solve new and historic challenges**
  - Integrate knowledge base and customer-funded work to provide increased value in a time of shrinking budgets and growing requirements
    - Provide tactical relevance by responding to an immediate need
    - Develop strategic capabilities by analyzing trends and recommending improvements to the acquisition community
- **IACs are actively contributing to achieving ASD(R&E) imperatives**
  - Focused on reducing development cycle, by building on existing knowledge base
  - Minimize unknowns by building a community of knowledge
  - Reduce cost and risk by identifying and applying lessons learned
  - Directly contribute to STEM through collaboration with academia
- **IACs are integrated in research communities**
  - Composed of scientists and engineers
  - Closely connected to DoD labs
  - Reach across government, industry, and academia
- **IACs are directly contributing to solving immediate Warfighter needs**
  - Currently supporting all 10 Combatant commands (COCOMs)
  - Technical Inquiry Service and TATs leverage knowledge base and information resources to respond to operational challenges
- **New structure provides sustainable value**
  - Alignment of BCO and TAT efforts
  - Governance role of DTIC as sponsor
  - IAC role in enabling efficiencies across DoD



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