



2010 DTIC CONFERENCE
March 22-24, 2010

Celebrating 65 Years of Providing Access to Defense Information

Overview of DTIC Information Analysis Centers (IACs)

24 March 2010

Mr. Howard A. Brande, Moderator



Overview of DTIC's Information Analysis Centers (IACs)

DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004 DoD Field Activity Since 2004

Mr. Terry Heston
IAC Program Manager
DTIC



IACs are hosted by industry and academia

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<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	Johns Hopkins University
DACS	Data and Analysis Center for Software	ITT
IATAC	Information Assurance	Booz Allen Hamilton
MSIAC	Modeling & Simulation	Alion Science & Technology
RIAC	Reliability	Wyle Labs
SENSIAC	Sensor Technology	Georgia Tech Research Inst
SURVIAC	Survivability/Vulnerability	Booz Allen Hamilton
WSTIAC	Weapons Systems Technology	Alion Science & Technology

<http://iac.dtic.mil>



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

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DDR&E

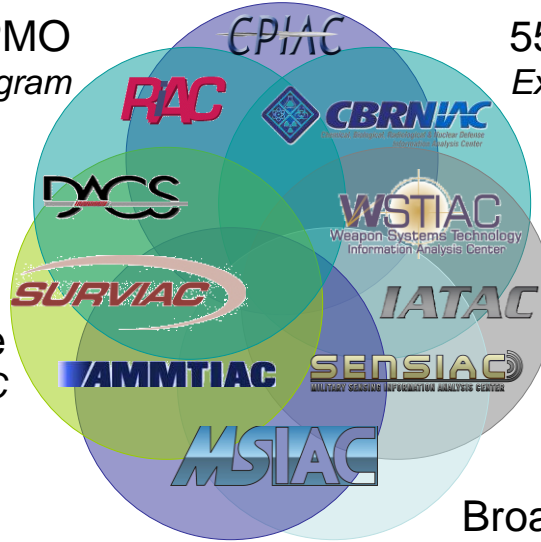
Sets policy for the IACs

DTIC, IAC PMO

Oversees and manages the IAC program

55th Contracting Squadron

Executes contractual requirements



Contracting Officer Representative

Technical oversight of each IAC

Steering Committees & TCGs

Advise on direction and focus of each IAC

IAC Hosts

Operate the IACs on behalf of the govt

Broader Supported Community

& Requesting Activities (RAs)

Leverages and contributes to the IAC

DDR&E: Director of Defense Research and Engineering

IAC: Information Analysis Center

PMO: Program Management Office

RA: Requesting Activity

TCG: Technical Coordinating Group



IACs serve as a bridge between government, industry, and academia

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- **IACs collaborate with scientists and other SMEs around the globe**
 - IACs collaborate with a diverse group of experts, including the Unified COCOMs, Defense research laboratories, U.S. Intelligence organizations, as well as engineers, physicists, biologists, medical professionals, and other experts from various government organizations (DHS, CDC, NASA) and private industry
- **IACs integrate with government program managers and technical experts to maintain awareness, relevance, and value to emerging issues**
 - IAC Executive Steering Committees are co-chaired by IAC PM and senior technical lead
 - E.g., CBRNIAC ESC co-chaired by DATSD(CBD/CDP) with members including JPEO-CBD, DTRA, OSTP, Joint Staff, military services, OSD-Health Affairs, OUSD(P), DHS, HHS, DOE and others





IAC teams leverage the best from industry (large and SB) and academia to solve the government's toughest problems

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Prime: **wyle** laboratories

Sub (BCO): **QUANTERION** SOLUTIONS INCORPORATED



Center for Reliability Engineering

- Global leader in R&M education (>170 degrees)
- Leading researcher in R&M and packaging
 - Center for Technology Risk Studies
 - CALCE Center
- Leader in Software & Human, & Process Reliability

Applied Research Lab

- Leader in System Health Monitoring, Condition Based Maintenance & Prognostics
 - Institute for Manufacturing & Sustainment Technology (iMAST)
 - Materials Research Institute
 - Center for Logistics Research
 - Center for Supply Chain Research

SUNY Institute of Technology

- Local expertise to improve RIAC IT/KM infrastructure
- "Gateway" to NYS RMQSI-related research
- Help in obtaining NYS support for RIAC
- Cost effective local facility for RIAC

RIAC Home at SUNYIT

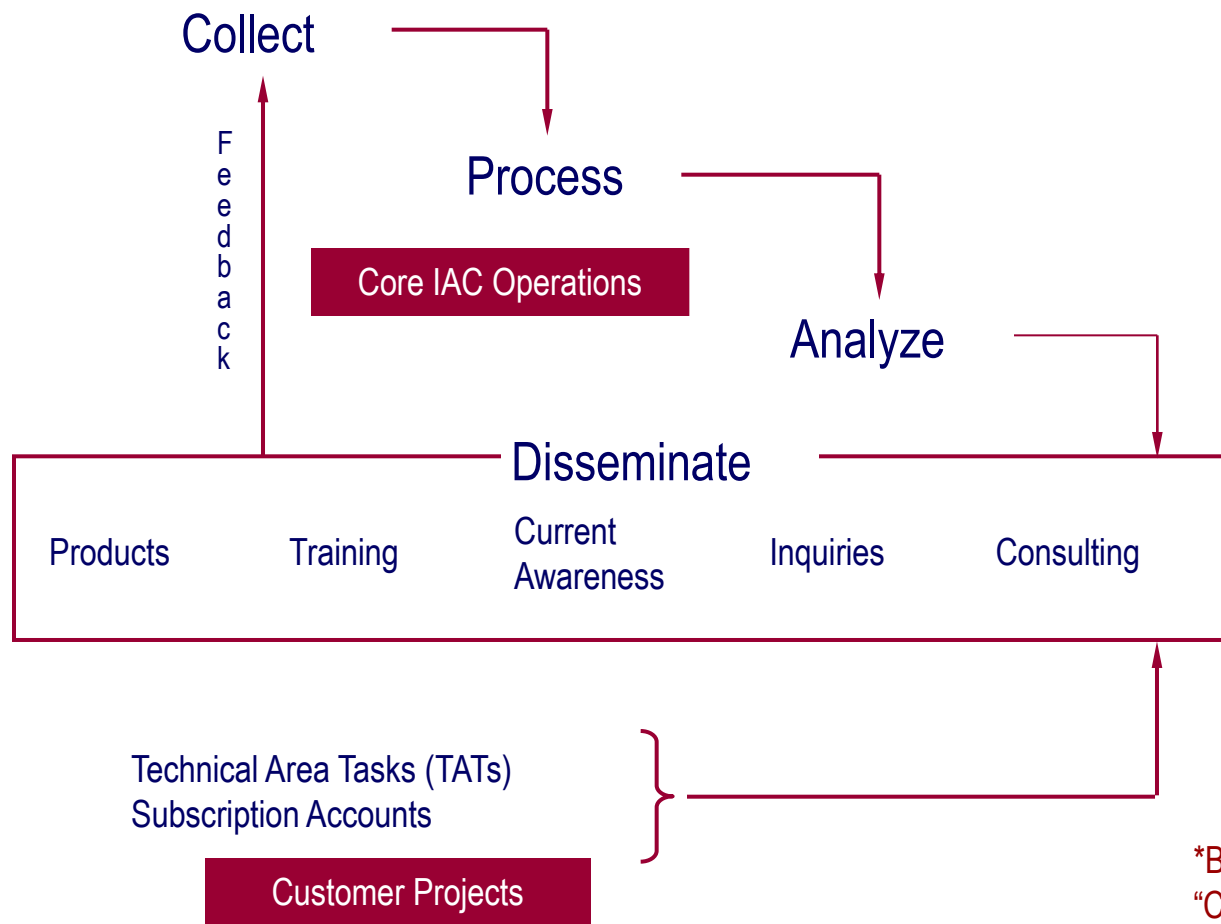




IAC Program: Processes

Integrating Core and TATs to Re-use STI

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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"

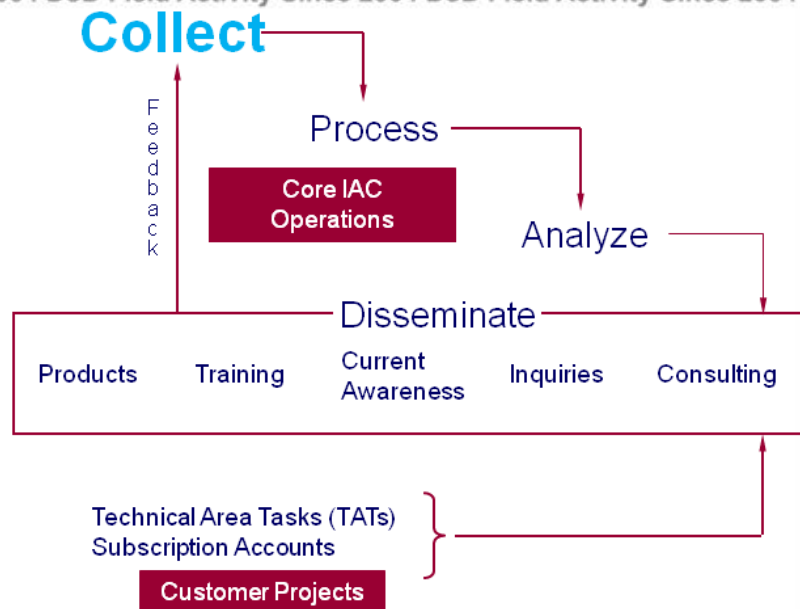


IAC Program: Processes Collection

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Key Processes

- Monitor and extract STI from worldwide, industry, engineering, technical and scientific, and other information sources
 - Employ technology and innovative techniques
 - Utilize personnel experienced in research, analysis, and synthesis
 - IACs have research librarians on staff, with extensive experience in specific technology area (e.g., CBRN)
 - Maintain awareness through participation in conferences, symposia, workshops, and through ESC coordination
- Review and evaluate STI for relevance and accuracy



Outputs

- Library collection
- Databases
- IAC website
- Evaluated STI

Benefits

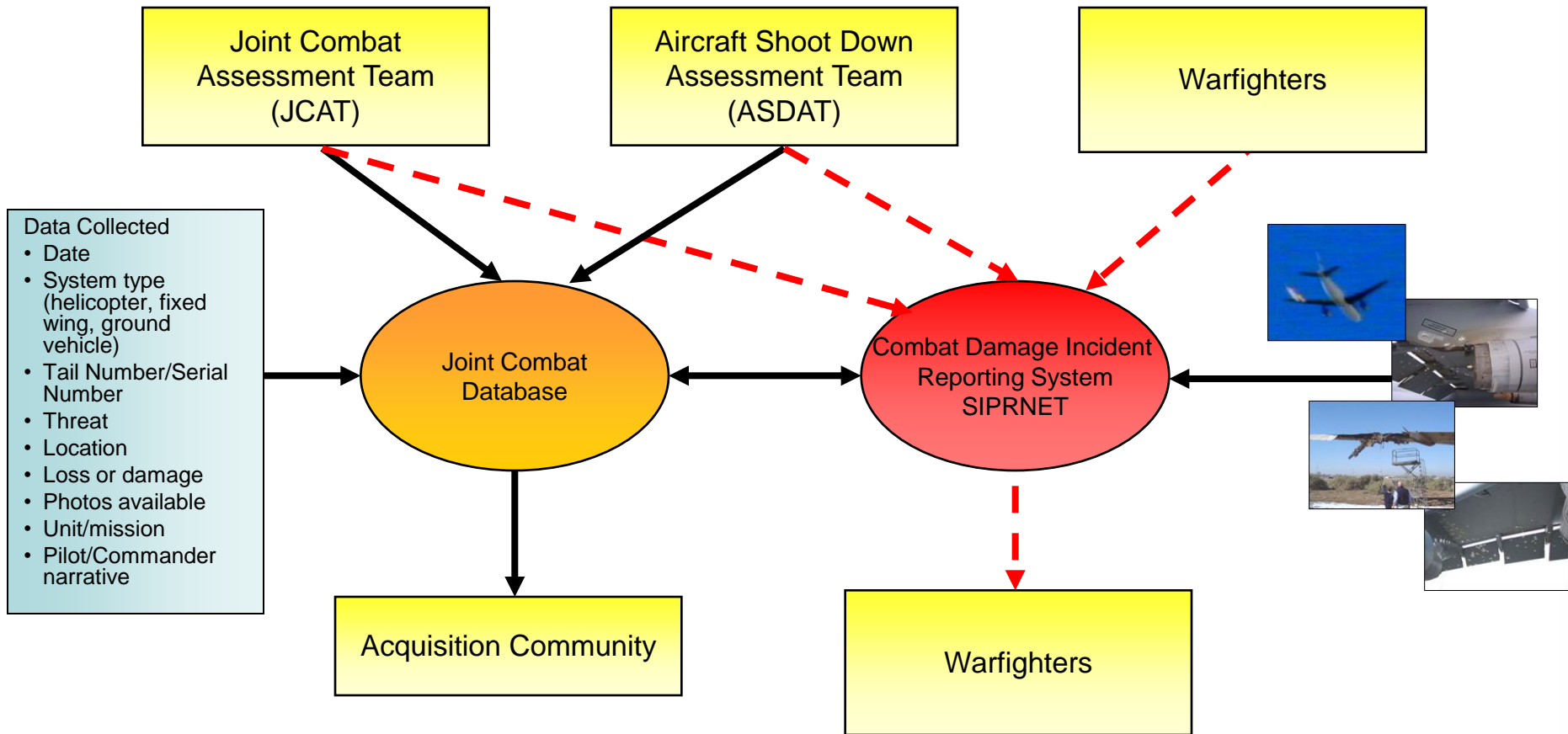
- Ready resource for responding to customer needs
- Saves resources by precluding organizations expending their own resources for work already completed elsewhere
- Readily available, searchable STI in a usable format



Information Collection

SURVIAC's Joint Combat Database

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- Data Collected
- Date
 - System type (helicopter, fixed wing, ground vehicle)
 - Tail Number/Serial Number
 - Threat
 - Location
 - Loss or damage
 - Photos available
 - Unit/mission
 - Pilot/Commander narrative

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

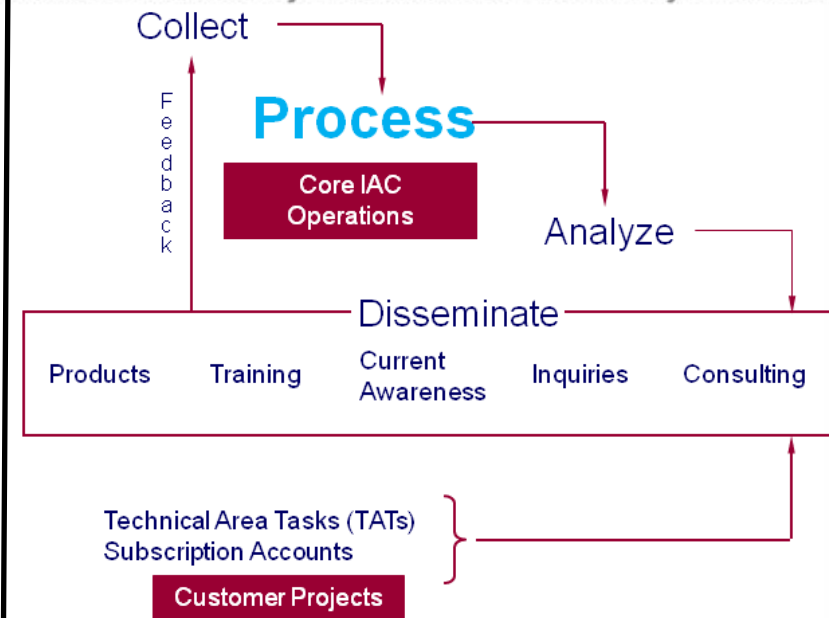


IAC Program: Processes Processing & Management

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Key Processes

- Analysis and synthesis of STI
 - Existing / historical information
 - Worldwide current technology information
- Maintenance of library collection
 - Contract deliverables / technical reports / STI
 - Hardcopy library
 - Softcopy library / database
 - Various classifications (Unclassified, FOUO, SECRET)
- Archive of historical web data



Outputs

- Libraries
- Information Support System
 - Customer list
 - Product list and history
 - Customer feedback data
- SME Database
- TEMS (IAC STI database)

Benefits

- Pay once, use many
- Quick answers and recommendations for getting to resources to solve tough problems
- Synthesis of STI increases efficiency of researchers and facilitates development of lessons learned and best practices



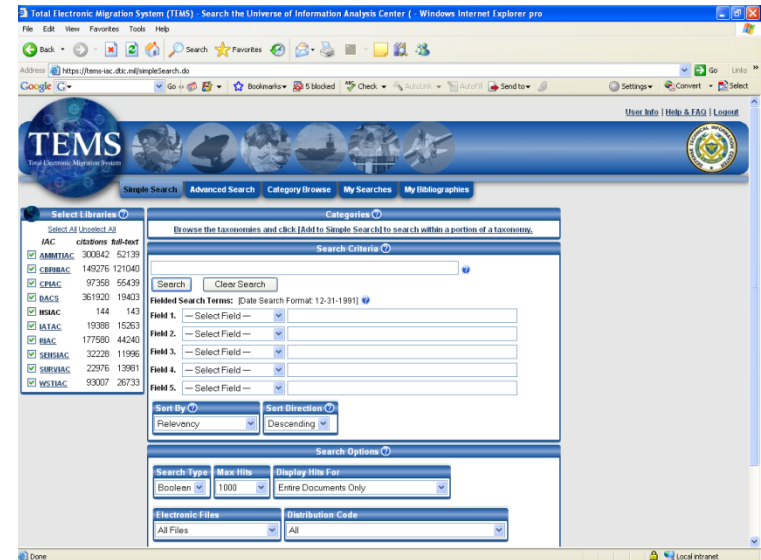
TEMS

Document Digitization and Search Engine

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- **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 1.2 million citations and 360,000 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

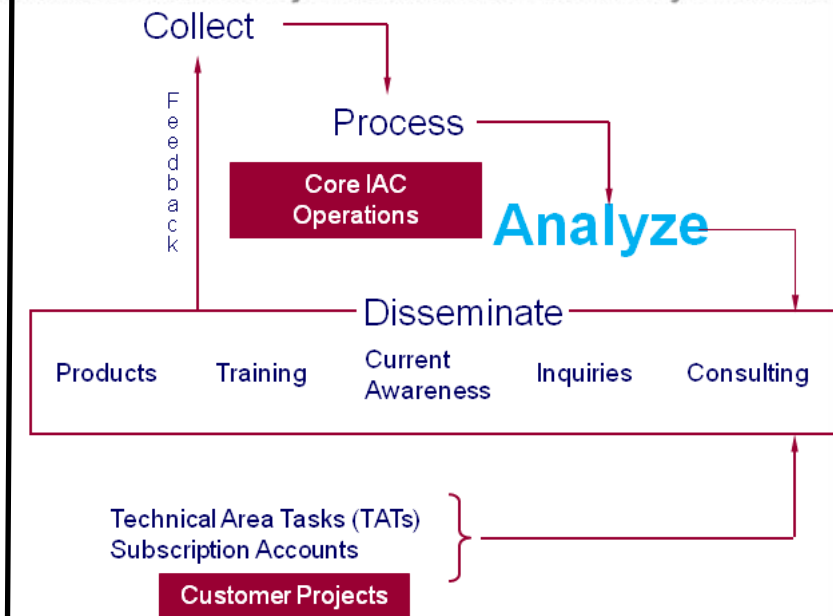


IAC Program: Processes Analysis

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Key Processes

- In response to known and anticipated needs, create STI products and offer STI technical advisory services
 - Conduct gap analyses and fill gaps in the knowledge base by:
 - Synthesizing existing information; and
 - Conducting basic and applied research
- Provide cost-effective, timely and efficient analysis services in response to customer needs
 - Extract data to produce products; synthesize information to produce knowledge
 - Maintain existing tools; develop new tools & techniques



Outputs

- Reports (CR/TAs, SOARs)
- Databases, handbooks
- Models, Simulations
- Inquiry responses
- New/improved tools & techniques

Benefits

- Turns data into information and ultimately knowledge
- Gets questions answered fast
- Leverages experts from the broader technical community
- Identifies areas requiring additional analysis (TATs)



Information Analysis Technical Inquiry Process

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- 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, comprised 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> for more information



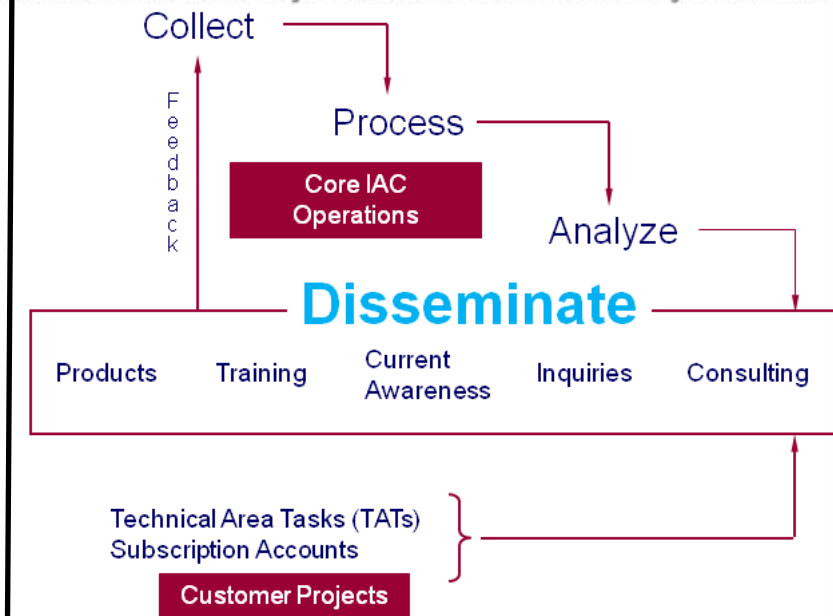


IAC Program: Processes Dissemination

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Key Processes

- Disseminate STI in paper and electronic format, as well as providing technical advice, based on subject matter expertise
 - Draw on library holdings and other databases
 - Compile and disseminate newsletters, journals, articles
 - Prepare briefings and conference presentations
 - Develop educational materials and provide training programs



Outputs

- IAC website
- Products (models, databases)
- Education resources & training
- Inquiry responses, consulting
- Community outreach and awareness (newsletters, calendars, conferences)

Benefits

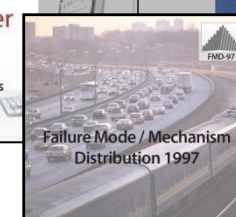
- Facilitates information sharing, best practices, standards, etc.
- Shared situational awareness across the respective IAC communities
- Helps synchronize respective IAC communities



Information Dissemination IAC Products

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- 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





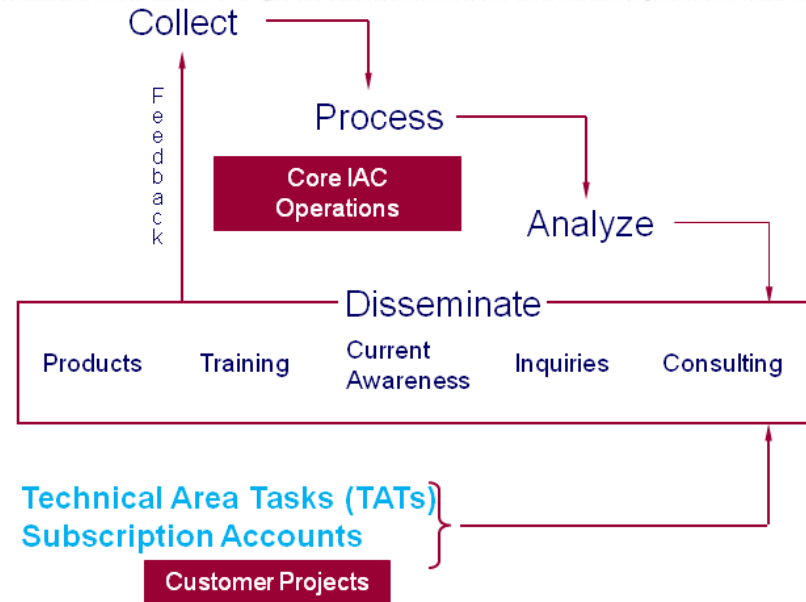
IAC Program: Processes

Customer-Funded Projects

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Key Processes

- Conduct in-depth research and analysis, based on emerging customer requirements
 - Maintain awareness of emerging requirements through integration with the technical community
 - Anticipate requirements through research and trends analysis
 - Collect and incorporate customer feedback
 - Provide cost-effective solutions that capitalize on existing information and synthesize the knowledge base



Outputs

- Research & analysis
- Technical evaluations
- Reports, databases, tools
- Cutting edge techniques
- Cost-effective solutions

Benefits

- Leverages experts from across the technical community: government, industry, and academia
- Identifies and solves the most challenging technical problems
- Enables collaboration between researchers and PMs/COCOMS, to provide timely and relevant support
- Promotes cutting edge concepts to reduce cost and risk



IAC Support for IED Defeat

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- **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



- **IEDs with CB components**

- Developing case and lab analysis system for IED component tracking



- **Supporting JIEDDO to enable rapid, reliable, interoperable response to IED threats**

- 24-hour turn-around from threat ID to countermeasure deployment



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



- **IED defeat and capability gap analysis**

- **Assess survivability / vulnerability of current force**



- **Detection and defeat technologies**

- **Development, evaluation and fielding of detection equipment**

- **Detonator classification**



MRAP: Improving Reliability & Survivability, Reducing Cost



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SURVIAC

RAC



- 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 \$22 million in reduced materials and a 7 million reduction in man-hours

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



IAC Contributions to Improving Helo Survivability

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- **Reachback analysis for DDR&E task force on Helicopter Survivability**

- Provided linkage to SMEs within DoD and Other Government Agencies
- Identified existing technical information to contribute to rapid analysis
- Collaborated with SURVIAC to provide M&S specific toolsets to assist in evaluating the problem



- **Broad-based ISR support contributing to helicopter survivability**

- Training on sensor systems, IR, and flare development and usage
- Warning sensors development and enhancement
- Flare optimization
- Rapid reprogramming for Aircraft Survivability Equipment

- **Developed and maintains Combat Damage Incident Reporting System, in support of JASP, JCAT, and ASDAT**

- Data repository used by forward deployed JCAT/ASDAT assessors to upload and manage aircraft incident damage/loss reports in Iraq and Afghanistan
- Used to support helicopter survivability studies, assess performance of Aircraft Survivability Equipment, and current and future threat predictions

- **Contributed to Rotorcraft Survivability Study as part of DoD Future Vertical Lift Capabilities Based Assessment**

- Congressional Rotorcraft Caucus concern; team to outline joint approach for future development of vertical lift aircraft for all military services





IAC Contract Construct

Significant Policy Changes

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- 2008 National Defense Authorization Act, Section 843
 - **Limitations on single award contracts**
 - No single award IDIQ contracts exceeding \$100M w/o Head of Agency written approval
 - IAC contracts will not be able to obtain exemption
 - **Enhanced competition for orders in excess of \$5M**
 - Provide all offerors “fair opportunity” to be considered
- Nearly all IAC contracts over the \$100M threshold
- Way forward: Separating the Core services from the TATs
 - **Separate PWS and Acquisition for each IAC’s Core/BCO contract**
 - **Consolidation of IAC focus areas into a multiple-award IDIQ contract construct for TATs (see next slide)**
 - Addition of new focus areas to highlight emerging requirements



IAC Program Way-Ahead

Revised Contract Construct

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Current Structure

Single-award IDIQ contract 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

Single-award contract for the IAC Core requirements

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

Multiple-award IDIQ contracts for TATs

SNIM TATs

Software Analysis
Information Assurance
Information Sharing
Knowledge Management
Modeling & Simulation
DACS, IATAC, MSIAC

Defense Systems TATs

Weapons Systems
Survivability
Vulnerability
RMQSI
Directed Energy
Non-kinetic Energy
Advanced Materials
WSTIAC, SURVIAC, RIAC, AMMTIAC

Homeland Defense TATs

Homeland Security & Defense
Critical Infrastructure Protection
Weapons of Mass Destruction
CBRN Defense
Biometrics
Medical
Cultural Studies
Advanced Sources of Energy
CBRNIAC, SURVIAC, AMMTIAC

Some existing coverage
New Area for IACs

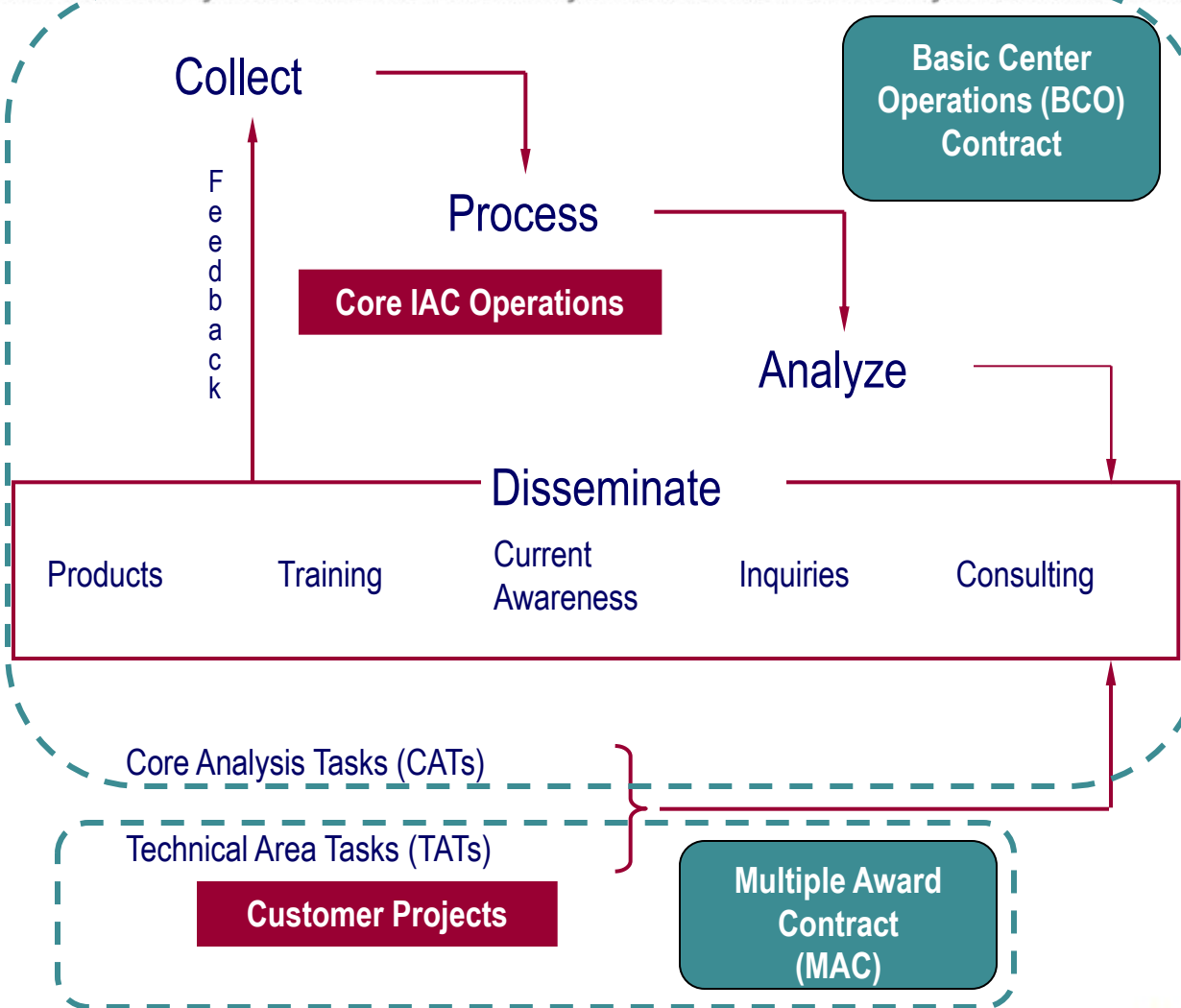
**CPIAC & SENSIAC
TATs (TBD)**



IAC Program: Processes

Same Mission, New Construct

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- Now:**
- 10 IACs
 - Ø BCO & TATs integrated
- Upcoming:**
- 10 BCOs
 - 3 MACs
 - 1. Software, Networks, Information and Modeling & Simulation (SNIM)
 - 2. Defense Systems
 - 3. Homeland Defense
- Multiple Award (+/-6 ea?)
Each MAC addresses multiple BCO technologies



IAC Contract Construct

Ensuring a Smooth Transition

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- **Initiatives underway to better serve customers under the new contract structure**
 - **IAC Strategic Plan (soon-to-be-released) ensures alignment with DDR&E strategic direction & emerging requirements**
 - Focus on leveraging IACs to directly contribute to Warfighter (quick, agile, responsive)
 - Multiple award contracts will leverage additional resources from industry and academia
 - **IAC Acquisition Management System (IAMS) broken into 3 components:**
 - Defense Agencies Initiative (DAI) will provide financial tracking and customer reporting data
 - IAC Web Portal updates
 - Information on program, IACs, contract vehicles: task order process, templates,
 - Requirement Management System will enable customers to quickly find an appropriate IAC vehicle to address their most urgent needs
 - IAC Program business process changes
 - Collaboration with industry, academia, and government stakeholders to:
 - » Baseline current processes
 - » Identify best practices
 - » Enhance processes to reduce cost, increase results
 - **Bottom line: work on contract quickly with minimal time/effort required by customers**



IAC Value Proposition

*Continuing the Mission under a
New Contract Construct*

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- **IACs provide tactical relevance via direct connection to the Warfighter & strategic value through long term trend analysis & recommendations**
 - Answer immediate need – requirements driven by the Warfighter and support infrastructure – immediate impact
 - State-of-the-Art Reports provide detailed analysis of immediate critical challenges
 - E.g., IATAC SSA SOAR (500,000 copies distributed; used in 5 universities)
 - Capture end product and other STI gathered during research
 - Made available to authorized users, via TEMS online database (full text)
 - Used in answering subsequent technical inquiries, and for additional research, trend analysis, and recommendations to the acquisition community
 - E.g., SURVIAC's Joint Combat Database
- **IACs serve as case study for implementing DDR&E strategic imperatives**
 - IACs are fully integrated into technical community
 - Leverage experts from across government, industry, academia
 - IAC Program ensuring alignment with DDR&E imperatives
 - Several existing initiatives underway at Program level, plus IAC customer-funded work



IAC Value Proposition

Supporting DDR&E Imperatives

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1. Accelerate delivery of technical capabilities to win the current fight.
 - IACs are enhancing collaboration with COCOMs through initiatives such as MSIAC's M&S needs assessment for PACOM & NORTHCOM
 - IAC Program goal to increase work for COCOMs by additional 25% in FY10
2. Prepare for an uncertain future.
 - IAC efforts to counter and enable strategic surprise (e.g., CBRNIAC infrastructure risk assessment for DHS)
3. Reduce the cost, acquisition time and risk of our major defense acquisition programs.
 - IACs enable immediate access to the most relevant STI, getting the right information when and where it is needed to reduce cost/risk (e.g., MRAP RCM effort at RIAC)
4. Develop world class science, technology, engineering, and mathematics capabilities for the DoD and the Nation.
 - IACs are industry and academia; work closely with DoD labs; inspiring young people to pursue S&T careers (e.g., SENSIAC is hosted by Georgia Tech; ONR initiative to use students to simulate threat / test of sensing systems)



Summary

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- IACs provide critical support to warfighters & acquisition community
- IACs provide an important means to integrate across DoD, the federal government, industry, and academia
- IACs help synchronize and standardize their respective communities
- IACs solve problems and save resources more broadly through STI reuse
- IAC PMO mobilizing resources to anticipate and meet customers' emerging requirements





Building partnerships for success...

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- **What can the IACs do for you?**
 - Enhance your performance & solve tough problems
 - Access information
 - Answer technical inquiries
 - Provide in-depth analysis
 - Identify cost-conscious solutions
 - Help synchronize and standardize efforts across DoD, the federal government, industry, and academia
 - Save resources more broadly through STI reuse
- **What can you do for the IACs?**
 - Register with DTIC and become an authorized user
 - Go to: <http://www.dtic.mil/dtic/registration/>
 - Register with an IAC to become a SME
 - Contact the individual IAC
 - Submit your research for inclusion into IAC STI database
 - Contact the individual IAC
 - Submit technical articles for publication in IAC newsletters
 - Contact the individual IAC
 - Become knowledgeable of IAC products and services, and put them to use



Visit us on the Web: <http://iac.dtic.mil/>

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Points of Contact

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