Simulation Based Acquisition (SBA) Support

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- Promote standardization within specific technical areas
- Provide in-depth analysis services
- Create specialized technical information products
<table>
<thead>
<tr>
<th>IAC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPTIAC</td>
<td>Advanced Materials and Processes Technology IAC</td>
</tr>
<tr>
<td>CBIAC</td>
<td>Chemical and Biological Defense IAC</td>
</tr>
<tr>
<td>CPIAC</td>
<td>Chemical Propulsion Information Agency</td>
</tr>
<tr>
<td>DACS</td>
<td>Data &amp; Analysis Center for Software</td>
</tr>
<tr>
<td>HSIAC</td>
<td>Human System IAC</td>
</tr>
<tr>
<td>IATAC</td>
<td>Information Assurance Technology Analysis Center</td>
</tr>
<tr>
<td>IRAC</td>
<td>Infrared Analysis Center</td>
</tr>
<tr>
<td>MSIAC</td>
<td>Modeling and Simulation IAC</td>
</tr>
<tr>
<td>MTIAC</td>
<td>Manufacturing Technology IAC</td>
</tr>
<tr>
<td>NTIAC</td>
<td>Nondestructive Testing IAC</td>
</tr>
<tr>
<td>RAC</td>
<td>Reliability Analysis Center</td>
</tr>
<tr>
<td>SURVIAC</td>
<td>Survivability/Vulnerability IAC</td>
</tr>
<tr>
<td>WSTIAC</td>
<td>Weapon System Technology IAC</td>
</tr>
</tbody>
</table>
Service-sponsored IACs

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- Airfields, Pavements, and Mobility IAC
- Coastal Engineering Defense IAC
- Cold Regions Science and Technology IAC
- Concrete Technology IAC
- Defense Threat Reduction IAC
- Environmental IAC
- Hydraulic Engineering IAC
- Shock and Vibration IAC
- Soil Mechanics IAC
IACs support the acquisition life-cycle from concept to operations.
IAC Support Throughout The Life Cycle

- Scientific/Technical Information
  - Conceptual/research & Development
  - Successful Practices and Lessons Learned

- Activities
  - Technology Forecasts and Assessments
  - Concept Development ‘Wargames’
  - Concept Analysis

- Joint and Service Experiment Support
IAC Support Throughout The Life Cycle

- **Scientific/Technical Information**
  - Return on Investment Information
  - Successful Practices & Lessons Learned
  - Commercial standards (e.g. factory data exchange standards, interface requirements to existing software or hardware, etc.)

- **Activities**
  - Provide Technology Forecasts & Assessments
  - Investigate commercial software (COTS) that may provide core capability for the 'to be' systems
  - Cost As an Independent Variable (CAIV) Studies
  - Provide Modeling and Simulation Support
  - Prototyping
  - Human Interaction with technology/Environment
IAC Support Throughout The Life Cycle

- **Scientific/Technical Information**
  - Reliability Studies

- **Activities**
  - Process Analysis
  - Independent Test Support
IAC Support Throughout The Life Cycle

- Scientific/Technical Information
  - Reliability Information
- Activities
  - Support for Engineering Changes
  - Configuration Management
  - Reliability Studies
  - Human Systems/Environmental Studies

DoD 5000 Acquisition Model
IAC Support for SBA
Advanced Materials and Processes Technology IAC

- MatPro Database
- Corrosion Predictive Modeling for Aging Aircraft - Critical Review & Technology Assessment
- Life Prediction and Performance Assurance of Structural Materials in Corrosive Environments

DoD 5000 Acquisition Model

- Concept & Technology Development
- System Development & Demonstration
- Production & Deployment
- OT&E
- FRP Decision Review
- Operations & Support
Chemical Warfare and Chemical Biological Defense IAC

Chemical-Biological Weapons of Mass Destruction: Understanding the Problem.

(Need more detail)
Evaluation of the B-2 engine repair facility and process.

Cost-benefit analysis for the Army's Air Warrior Program (life support gear for aviators).

(Need more detail)
Solutions

- Air Force Electronic Systems Command
  - Joint Synthetic Battlespace development
- Naval Air Systems Command
  - wake turbulence models for KC-135 and KC-10 aircraft.
- US Army Night Vision Lab
  - info on M&S of tactical night vision sensors.
- Joint Strike Fighter Program
  - M&S configuration management
- CIA
  - information on models that predict aspects of missile performance.

Services

- Education
  - Program Manager’s Workshop
  - T&E Tutorial
  - Sim Support Plan Tutorial
- Planning and Assessing
  - Simulation Support Plans
  - IV&V
Manufacturing Process Flow for Patriot Advanced Capability (PAC-3) missile -- MTIAC developed a high level model of the manufacturing process flow at Communications and Power Industries (CPI) to support the manufacture of microwave power tubes.
Nondestructive Testing

IAC

- Conducting a Technology Assessment on computer simulation of nondestructive inspection techniques
- Developing a program plan for Probability of Detection of Nondestructive Evaluation techniques and applications
Waiting for Input
SURVIAC
Survivability/Vulnerability Information Analysis Center

- A-10 Program
  - analysis of armor required to improve survivability for the warfighter.
- Joint Strike Fighter
  - computer analysis of survivability tradeoffs.
- DOT&E Live Fire Test
  - Front-end simulation in support of live fire testing.
Weapon System Technology Analysis Center

- VV&A of the Genesis BAT Area denial (modeling of performance and characteristics of minefields)
- Modeling of the SWORD Interferometer (ground-base air defense radar)
- Air and Missile Defense Experiments and joint exercises.
Obtaining IAC Services

Basic IAC Services
Available at little or no cost

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Separated funded work efforts
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Questions?
Backups
Modeling and Simulation
IAC

- Planning & Employing
  - M&S Master Plans
  - Sim Support Plans
- VV&A – Experts, SOAR
- On-site liaisons
  - Hanscom AFB
  - Norfolk
  - Orlando
  - Wright-Patterson AFB
- Education
  - Acquisition M&S Workshop
  - RDA Tutorial
  - T&E Tutorial
Special Interest Areas

Special Interest Areas (SIA) are a place for people interested in specific areas of M&S to exchange information.

- Acquisition
- DoD M&S Master Plan Revision (MSMP)
- Experimentation
- Human and Organizational Behavior Modeling (HOBM)
- Impact Assessment (IA)
- M&S Needs
- MSRR Board of Directors
- Operations Other Than War (OOTW)
- Simulation Based Acquisition (SBA)
- Training
- Weapons of Mass Destruction (WMD)
Summary

IACs provide:

• Valued added information exchange among researchers, developers and warfighters
• Central source of research, development and testing information
• Program managers with affordable short- and long- term analytical services
• Access to the full spectrum of Defense S&T information