Acquisition & Life Cycle Management Symposium
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Kevin Crosthwaite, SURVIAC Director
937-255-3828 x279
crosthwaite_kevin @bah.com
# SURVIAC Overview Mission & Scope

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**5b. GRANT NUMBER**  
-

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**5d. PROJECT NUMBER**  
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**5e. TASK NUMBER**  
-

**5f. WORK UNIT NUMBER**  
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**14. ABSTRACT**  
-

**15. SUBJECT TERMS**  
-

**16. SECURITY CLASSIFICATION OF:**  

<table>
<thead>
<tr>
<th>a. REPORT</th>
<th>b. ABSTRACT</th>
<th>c. THIS PAGE</th>
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<tbody>
<tr>
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**17. LIMITATION OF ABSTRACT**  
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**18. NUMBER OF PAGES**  
18

**19a. NAME OF RESPONSIBLE PERSON**  
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Standard Form 298 (Rev. 8-98)  
Prepared by ANSI X3T10-18
MISSION STATEMENT: Perform the functions of a full-service DoD IAC in the vital technical area of non-nuclear survivability/vulnerability.

INCLUDES:

- **Survivability for Aeronautical/Ground Vehicles/Ships/Spacecraft**
  - Survivability Design
  - Survivability Technologies
  - Survivability Assessments, Methodologies and Information Assurance

- **Weapons Effectiveness**
  - Conventional Weapons
  - Directed Energy Weapons
  - Non Lethal Weapons

- **Homeland Security/Homeland Defense**
SURVIAC Relationships

**DDRE**

- **DDR&E**
- **DTIC**
  - IAC Program funding and administration
  - Contract administration

- **55th Contracting Squadron**

**DOT&E**

- **JASPO**
- **JTCG/ME**
  - Senior Steering Committee*

**SURVIAC Technical Coordinating Group**

- Policy direction and prioritization of objectives
- Program review and guidance

- **780 TS**
  - Host technical direction and surveillance

* Virtual committee from SURVIAC Charter

Information for the Defense Community
SURVIAC Typical Activities Per Year

• Inquiry support
  – Support over 40,000 inquiries
  – Distribute over 400 products

• Model outreach
  – Participate in over 20 modeling community meetings
  – Support new models/versions
  – Offer and teach training courses
  – Distribute models to users

• Promotion
  – SURVIAC booth present at 10-14 conferences/symposia
  – Liaison workshop
  – Survivability workshop
  – Brochures and Guides
  – Current awareness bulletins

• Technical Area Tasks
  – Analysis & testing support as required
<table>
<thead>
<tr>
<th>Technical Area Tasks - Scope of SURVIAC TATs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survivable Conventional Force Requirements</td>
</tr>
<tr>
<td>• Involvement in Planning Stages</td>
</tr>
<tr>
<td>• Integration of Survivability Requirements</td>
</tr>
<tr>
<td>• Homeland Security</td>
</tr>
<tr>
<td>• Space Survivability</td>
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<tr>
<td>Survivability Technologies</td>
</tr>
<tr>
<td>• Technology Development and Application</td>
</tr>
<tr>
<td>• Enhanced System Survivability</td>
</tr>
<tr>
<td>Optimizing Survivability and Lethality</td>
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<tr>
<td>• Conduct Trade-Off Analysis</td>
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<tr>
<td>• Achieve Optimum Designs</td>
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<tr>
<td>• Balance System Attributes</td>
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<tr>
<td>Live Fire Testing</td>
</tr>
<tr>
<td>• Test Planning, Guidance, and Evaluation</td>
</tr>
<tr>
<td>Methodology Advancement</td>
</tr>
<tr>
<td>• Modeling and Simulation</td>
</tr>
<tr>
<td>• Weapon System Evaluations</td>
</tr>
<tr>
<td>Support of Combat Operations</td>
</tr>
<tr>
<td>• Mission Effectiveness Determination</td>
</tr>
<tr>
<td>• Battle Damage Repair</td>
</tr>
</tbody>
</table>
Typical Information in Combat Database

IDENTIFICATION
- Service (Army, AF, Navy, USMC)
- Materiel type (aircraft, tank)
- Model & series (F-4E, M48)
- Serial number
- Incident type (loss, damage)
- Date

Scenario
- Mission type
- Incident location
- Target type
- Speed
- Altitude
- Country

Threat
- Number of hits
- Threat class (SA/AW, AAA)
- Threat type (12.7mm)
- Threat azimuth & elevation
- Threat effect (fire, blast)
- Hit location
**Typical Information in Combat Database**

<table>
<thead>
<tr>
<th>Damage</th>
<th>Casualties</th>
<th>Repair Data</th>
<th>Misc</th>
</tr>
</thead>
</table>
| • Vehicle Subsystem Damage (Listing of subsystems and major components damages)  
• Operational Effect (crashed; aborted)  
• Survivability Features Involved (armor; fuel tank foam) | • Number  
• Crewman Function  
• Status (WIA; POW)  
• Protective Devices  
• Wound Location | • Repair Level  
• Total Man-hours  
• Total Down Time  
• Parts | • Narrative (?)  
• Equipment Sketch (?)  
• Photos (?)  
• Vehicle Damaged in Earlier Incident (?)  
• Other vehicles involved in this incident (?) |

Note: All categories of data may not be available in each incident depending on the amount of information available in source material.
Survivability Products

• MANPADS Workshop and Report
• S/V Countermeasures Handbook (3 Volume Set)
  – Developed by JASPO Susceptibility Reduction Subgroup and Covers
  – Signature and detection
  – On-board, off-board and supporting ECM
  – Human factors, tactics and T&E
• Advanced Material State-of-the-Art Report (SOAR)
  – Material classes – metals, ceramics, polymers, composites for enhanced
    performance, soldier protection, hardening, and signature reduction
• Converted MIL HDBK 336 to SURVIAC Technical Report in COR Review
• Initiated Geometric Target SOAR
Lethality Products

- Missile Warhead & Propellant Response SOAR completed
- Directed Energy Weapons SOAR
- Initiated Nonlethal Weapons SOAR
- MANPADS workshop & report
### The Critical Mission Areas Are at the Heart of the National HLS Strategy

<table>
<thead>
<tr>
<th>Mission Area</th>
<th>Administration Vision</th>
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<tbody>
<tr>
<td><strong>Intelligence &amp; Warning</strong></td>
<td>Enhance intel community’s capacity to <strong>“connect the dots”</strong>, providing <strong>real-time actionable information</strong> to: policymakers &amp; law enforcement agencies (federal, state, local), and the private sector - based on the review and analysis of HLS information.</td>
</tr>
<tr>
<td><strong>Border and Transportation Security</strong></td>
<td>Create <strong>“one face at the border”</strong> -- including <strong>“smart border”</strong> initiatives -- to manage who and what enters the homeland while facilitating the legal flow of people, goods, and services.</td>
</tr>
<tr>
<td><strong>Domestic Counter-Terrorism</strong></td>
<td><strong>Redefine law enforcement mission and analytical capabilities</strong> to focus on prevention of terrorist attacks within the U.S.</td>
</tr>
<tr>
<td><strong>Protection of Critical Infrastructure and Key Assets</strong></td>
<td>Implement a <strong>comprehensive national CIP plan</strong> (including vulnerability assessments) forging unprecedented level of cooperation throughout all levels of government and private sector.</td>
</tr>
<tr>
<td><strong>Defending Against Catastrophic Threats</strong></td>
<td>Coordinate <strong>CBRN counter-measures</strong> (at all levels of gov’t, including private sector) as part of a <strong>national</strong> effort to prepare for, prevent, and respond to CBRN threats -- including consolidation, synchronization, and prioritization for R&amp;D.</td>
</tr>
<tr>
<td><strong>Emergency Preparedness and Response</strong></td>
<td>Create <strong>fully integrated national emergency “all hazards” response systems</strong> that have complete incident awareness and C2, ensuring responders are properly equipped, trained, exercised.</td>
</tr>
</tbody>
</table>
Leveraging STI Across IACs

1. IATAC TAT for CIP Support
2. SURVIAC TAT for HLS Support
3. SURVIAC TAT for HLD/CIP Support
4. SURVIAC TAT for HLD/CIP Support
5. SURVIAC TAT for HLD/CIP Support

Information for the Defense Community
Modeling Services

Information Exchange
- Promote use/knowledge of approved models
- Announce new model versions
- Support model users groups
- Provide training on-site at SURVIAC
- Conduct introductory workshops

Technical Inquiries
- Advise on installation
- Provide test data, test results
- Collect and distribute datasets
- Record distributions
- Check need-to-know
- Provide advice on model applications, algorithms, limitations, and options

Configuration Management Support
- Maintain standard version of models
- Distribute models and documents
- Receive software change requests (SCRs)/suggestions
- Update and verify models
- Distribute approved changes
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AIRADE</td>
<td>Airborne Radar Detection Model</td>
</tr>
<tr>
<td>ALARM*</td>
<td>Advanced Low Altitude Radar Model</td>
</tr>
<tr>
<td>BLUEMAX</td>
<td>Aircraft Flight Path Generator</td>
</tr>
<tr>
<td>BRAWLER</td>
<td>Air Combat Model</td>
</tr>
<tr>
<td>BRL-CAD</td>
<td>Target Geometric Description Program</td>
</tr>
<tr>
<td>COVART*</td>
<td>Computational Vulnerability Area Tool</td>
</tr>
<tr>
<td>DREAM</td>
<td>Directed Radio Frequency Energy Assessment Model</td>
</tr>
<tr>
<td>ESAMS*</td>
<td>Enhanced Surface-to-Air Missile Engagement Model</td>
</tr>
<tr>
<td>FASTGEN</td>
<td>Fast Shotline Generator</td>
</tr>
<tr>
<td>FATEPEN</td>
<td>Fast Air Target Encounter Penetration Program</td>
</tr>
<tr>
<td>IVIEW</td>
<td>Graphical User Interface for Output</td>
</tr>
<tr>
<td>JSEM</td>
<td>Joint Service Endgame Model</td>
</tr>
<tr>
<td>JTEAM</td>
<td>Joint Threat Engagement Analysis Model</td>
</tr>
<tr>
<td>LELAWS</td>
<td>Low Energy Laser Weapon Simulation</td>
</tr>
<tr>
<td>MIL AASPEM II (MIL II)</td>
<td>Man-In-the-Loop Air-to-Air System Performance Evaluation Model</td>
</tr>
<tr>
<td>RADGUNS*</td>
<td>Radar Directed Gun System Simulation</td>
</tr>
<tr>
<td>TRACES</td>
<td>Terrain/Rotorcraft Air Combat Evaluation Simulation</td>
</tr>
</tbody>
</table>

(PACAM8, P001A, HELIPAC, SCAN & LTM have been archived)
Reference Libraries

General Survivability Library
- Symposia Proceedings
- Test Reports
- Combat Operations Data & Analyses
- ABDR and UAV Collections
- Threat Information
- JASPO & JTCG/ME Publications
- Combat Damage Data & Analyses
- Specifications - Standards - Handbooks
- Movies/Video Tapes - Combat/Ballistic Tests

Vehicle Signatures Library
- Radar Cross Section
- Infrared
- Acoustic
- Low Signature Design

Combat Evaluation Library
- Special Operations Analyses
- Evaluation of Military Operations
- Equipment Development and Evaluations
- Memoranda on Operations
- Naval Gunfire Support Missions

Laser Library
- Test Reports
- Symposia Proceedings
- Analyses
- Vulnerability Reports
- Laser Weapon Reports
- High Power Microwave Reports

Total Holdings Exceed 30,433 Retrievable Items
Modeling Products

• Prepared Individual Model Training Notebook
• Model Meeting Minutes on CDs
  – JMUM, JIMM, ESAMS, Brawler, RADGUNS
• RADGUNS Sensitivity Study

* As of 30 September 2002
Summary

• SURVIAC Is Established and Operating
• A Wide Range of Resources and Services Are Available
  – Aircraft Survivability Models, Documentation and Databases
  – Reference Libraries in Key Survivability Technology Areas
  – Combat and Test Databases
  – Technical Inquiry and Special Study Support
• SURVIAC Is User-friendly
  – Inquiries Answered Promptly
  – Numerous Technical Area Tasks On-going
  – User Response Positive

We Welcome Your Inquiries!
Kevin Crosthwaite, SURVIAC Director
937-255-3828 x279
crosthwaite_kevin @bah.com