



***TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.***

U.S. Army Materiel Systems Analysis Activity  
**AMSAA --- An Overview**



# AMSAA --- BLUF



1. AMSAA is the Army's independent source of lifecycle Materiel & Logistics Systems Analysis, M&S, and Data to support Equipping, Sustaining, and Warfighting decisions.
2. WSARA 2009 is driving demand: more AoAs, more BCAs; more risk assessments.
3. Dollars have gotten tighter. Army acquisition needs MORE & BETTER analysis ISO lifecycle decisions. This results in an increased demand for Army analysis capability.

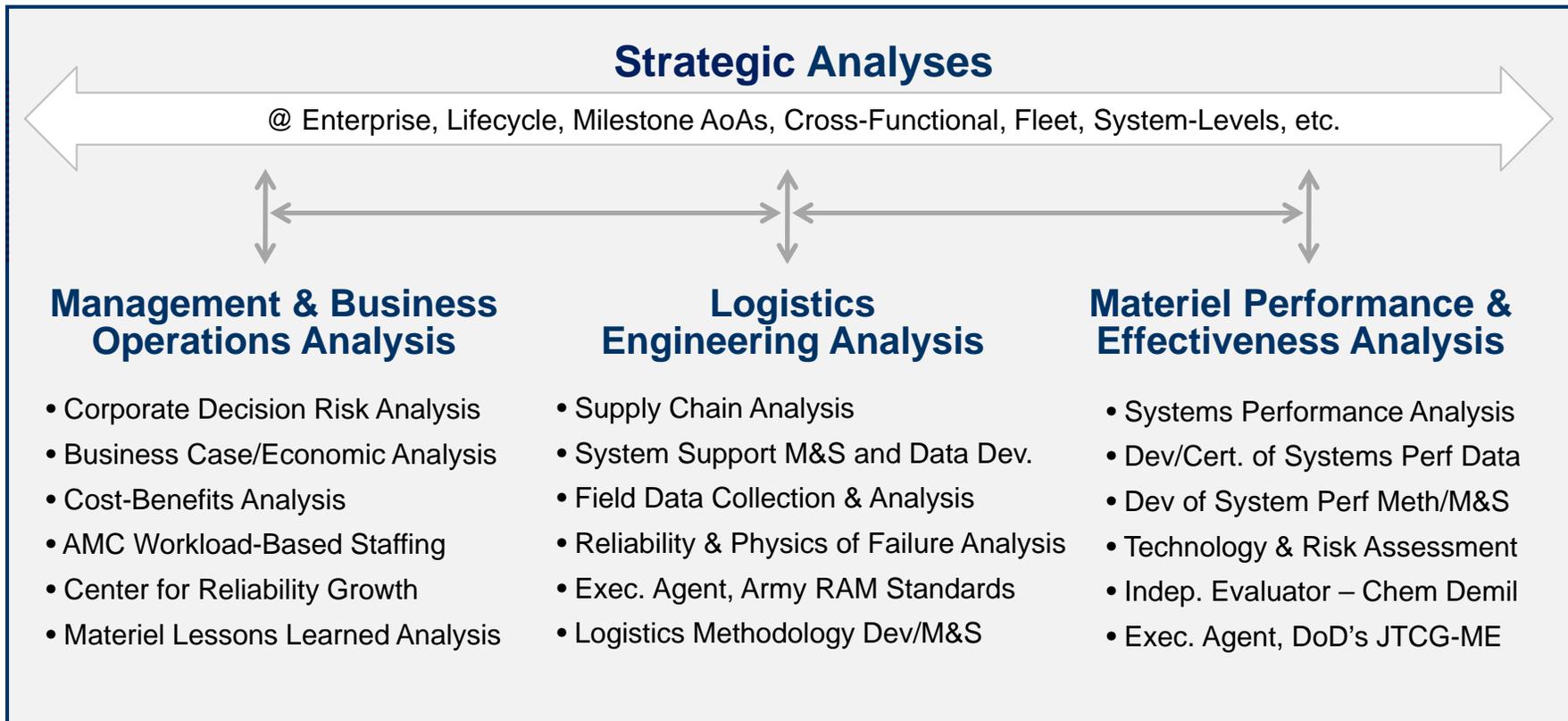
**Have a Requirement for Analysis or Data ? --- Call AMSAA**



# AMSAA's Key Areas of Decision Support



**Mission:** AMSAA conducts analyses across the Materiel Lifecycle to inform critical decisions for current and future Soldier needs.



**AMSAA Conducts Analysis to Inform Decisions Impacting Both Current Operations and Army Transformation.**

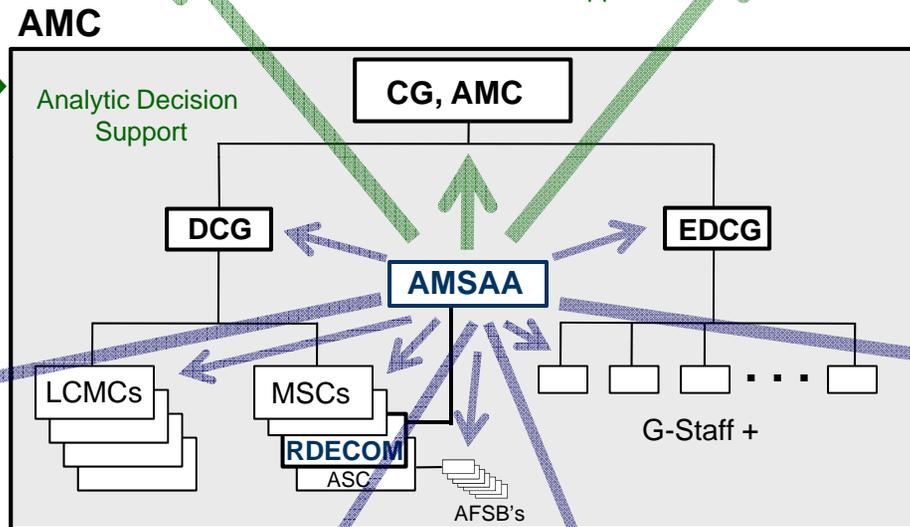
## Key Army Materiel Enterprise Stakeholders/Customers



**AMSAA's Key Customers! (DA & AMC)**

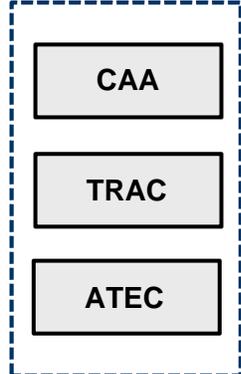
Sample Data Collection and Analytical Support to Current Operations

**Readiness Enterprise Customers**



Certified Data, Authoritative M&S, Study Partnership & Analytic Collab. In AoAs & T&E

## Other Army Analysis and T&E Orgs

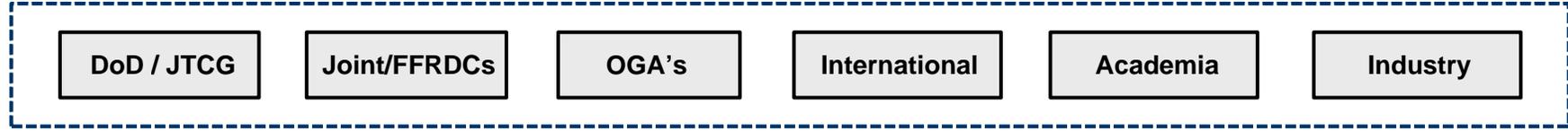


DoD's Executive Agent for JTCG-ME Program

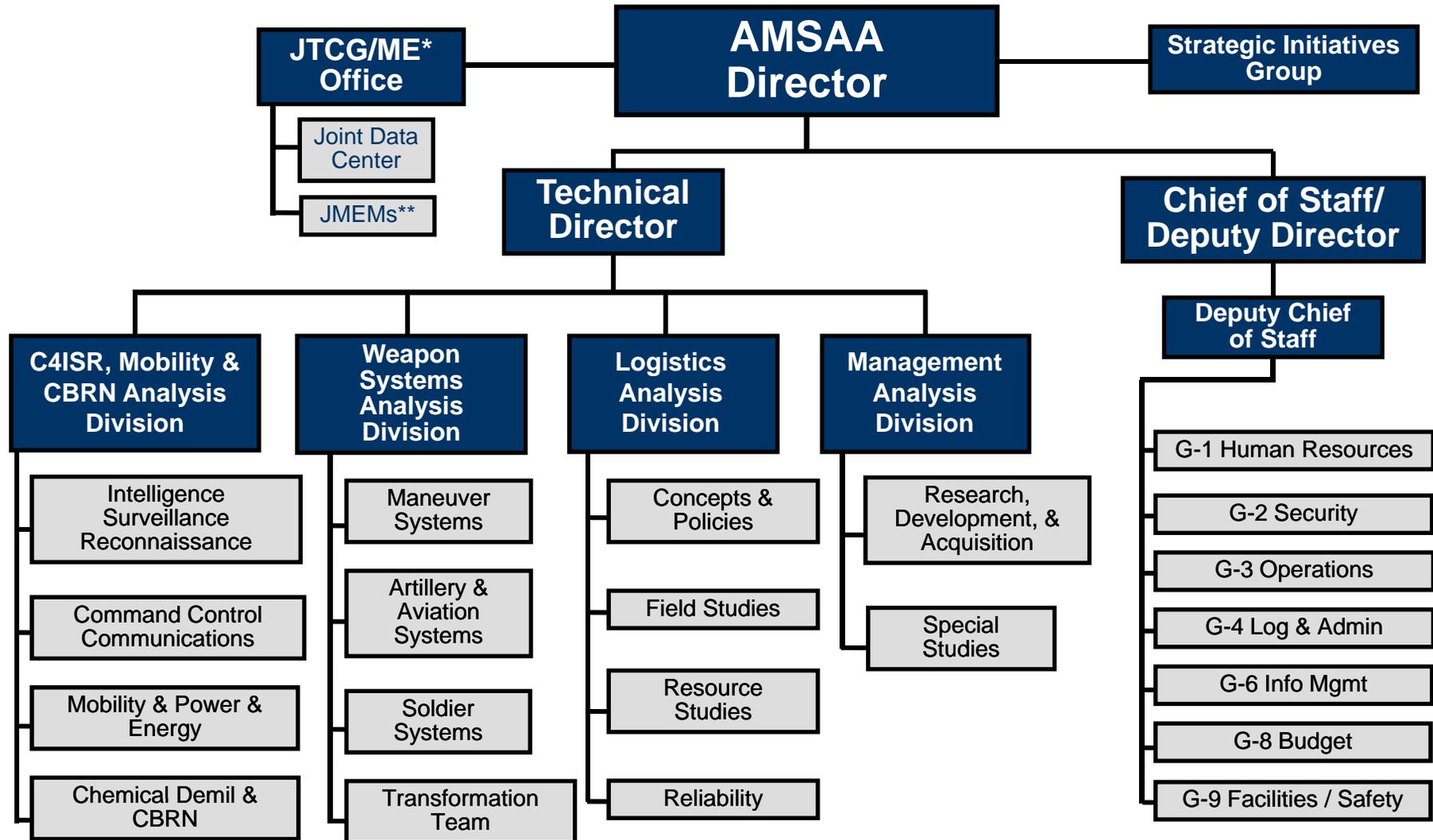
Collaboration in Data & Methodology Development & Standards

Coordination in New Analytic Techniques & Tools

## Other Analysis Efforts/Capabilities



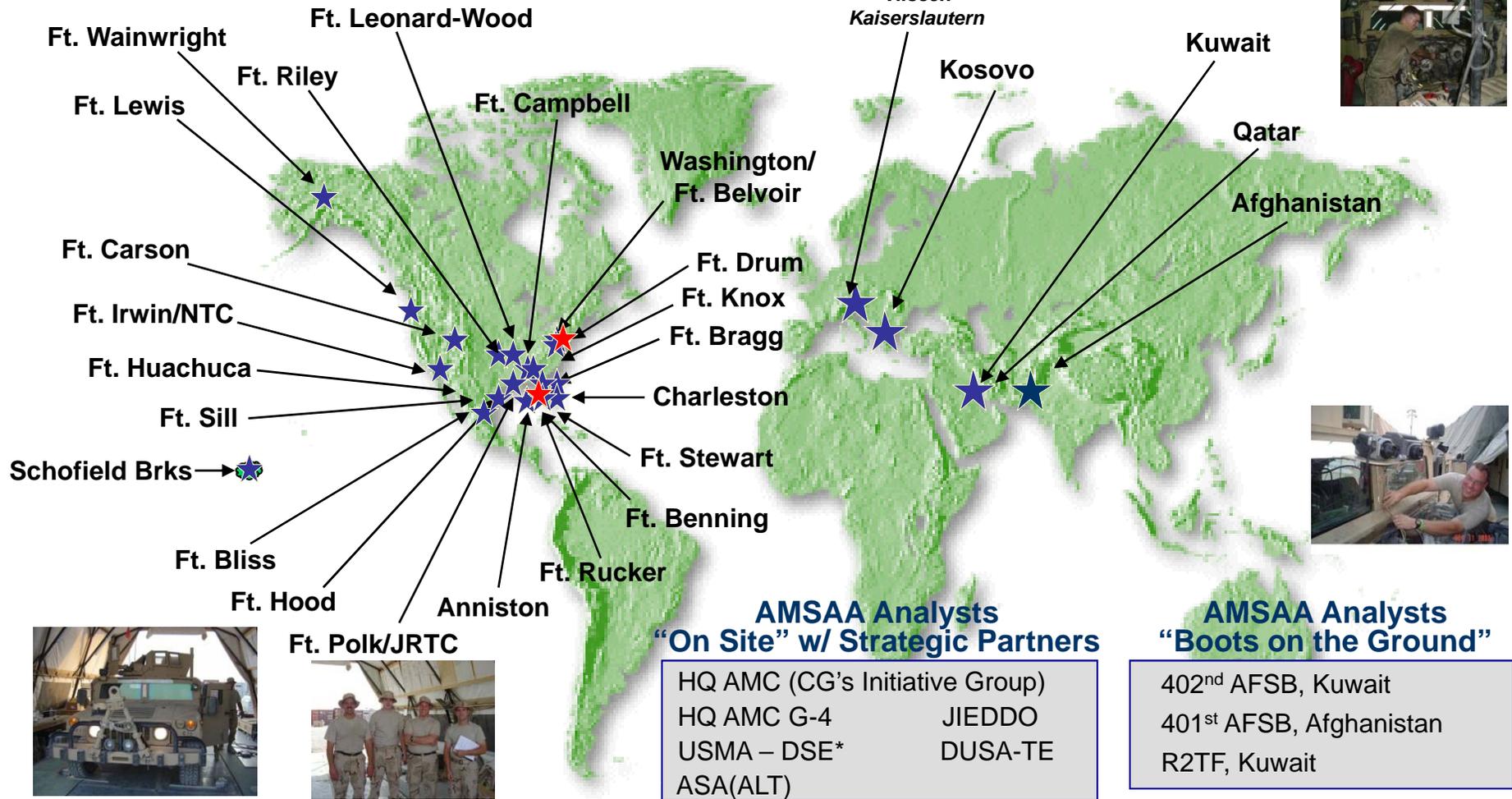
**AMSAA's Key Customers Are DA & AMC Decision Makers --- Ultimately, the "The Soldier!"**



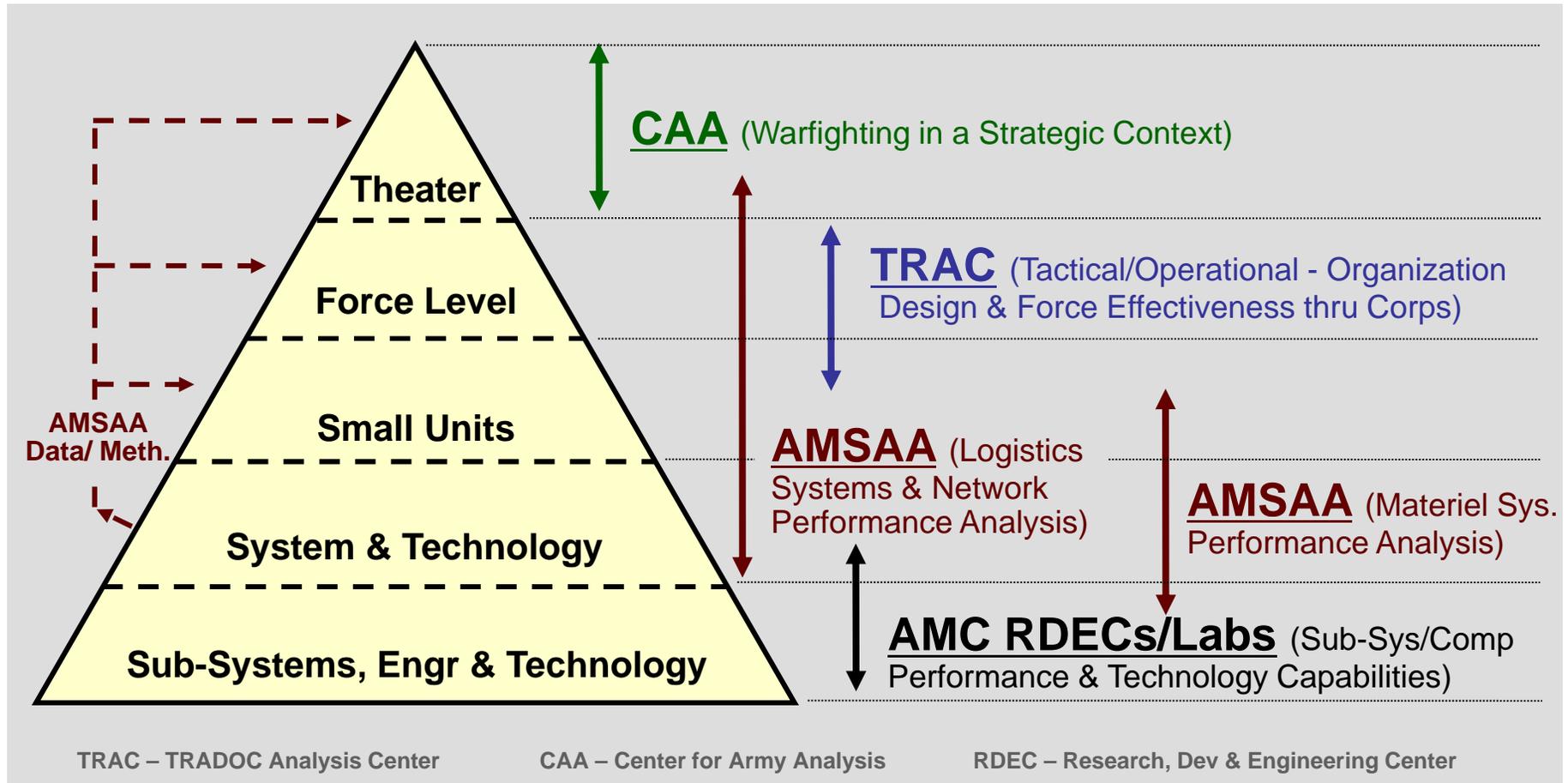
\* Joint Technical Coordinating Group/Munitions Effectiveness

\*\* Joint Munitions Effectiveness Manuals

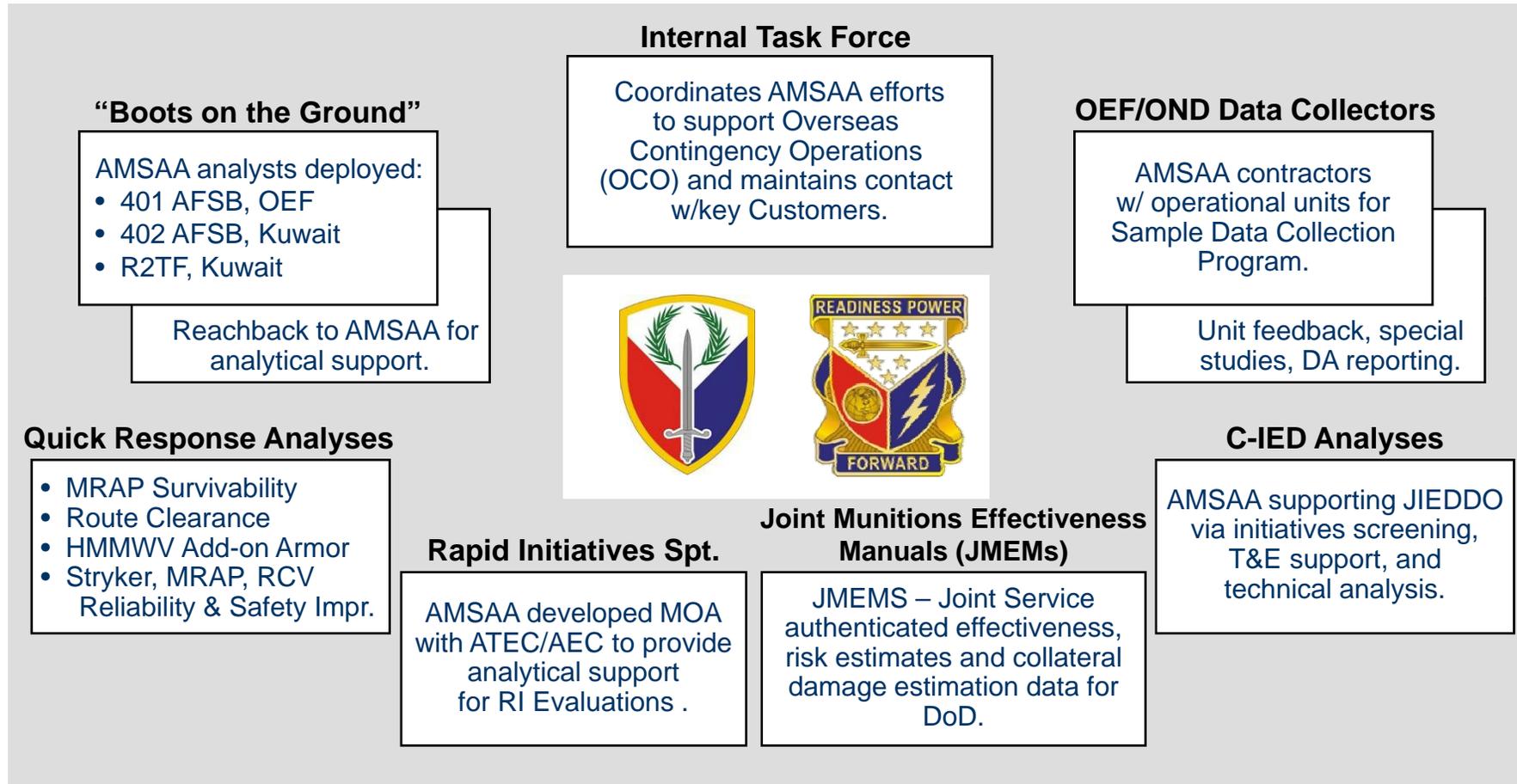
## AMSAA Sample Data Collection Contractors Worldwide:



★ **AMSAA Main – APG**                      ★ **AMSAA South – RSA**



**AMSAA, TRAC & CAA Collaborate to Provide an Effective, Responsive, In-House Analysis Capability for Army Decision Makers**



**Current Operations/OCO are One of AMSAA’s Top Priorities**

# What Drives AMSAA's Analytic Demand Signal?

## “Statutory Reqs & ARs”

### Title 10 Functions

### Army Regulations

- Equipping
- Sustaining
- AR 70-1
- DA Pam 70-3
- AR 750-1
- DA Pam 5-11
- AR 5-5 & others
- Various MOA/MOUs

## “New Directions from Above”

### WSARA (May'09)

### DoDI 5000.02 (Dec'08)

### DoD Efficiencies

### OSD AoA Guidance

- More Focus on Pre-Acq Phases
- Early Systems Engineering
- Increased MDD Analytic Reqs
- Expanded Cost-Sched-Perf Trades
- Expanded AoA Analytical reqts

## “Changing Army Processes”

### ARFORGEN Process

### 2010 Army Acq Review

### Grow the Army Acq WF

- ARFORGEN-Based Equipping
- More Materiel Analysis & Data Reqs
- Rebuilding Acq Analysis WF
- More Milestone Decision Analysis
- Increase BCA/CBA Capability
- Increase AMSAA's AoA funding

## “The War”

### Current vs. Future Focus

### New Threats & Techs

### New Analysis Reqs

### Retrograde et al

- Current Becomes Priority
- New Analytic Skill Sets
- Lessons Learned
- What Continues?

## Changes in AMSAA Analytical Demand Signal

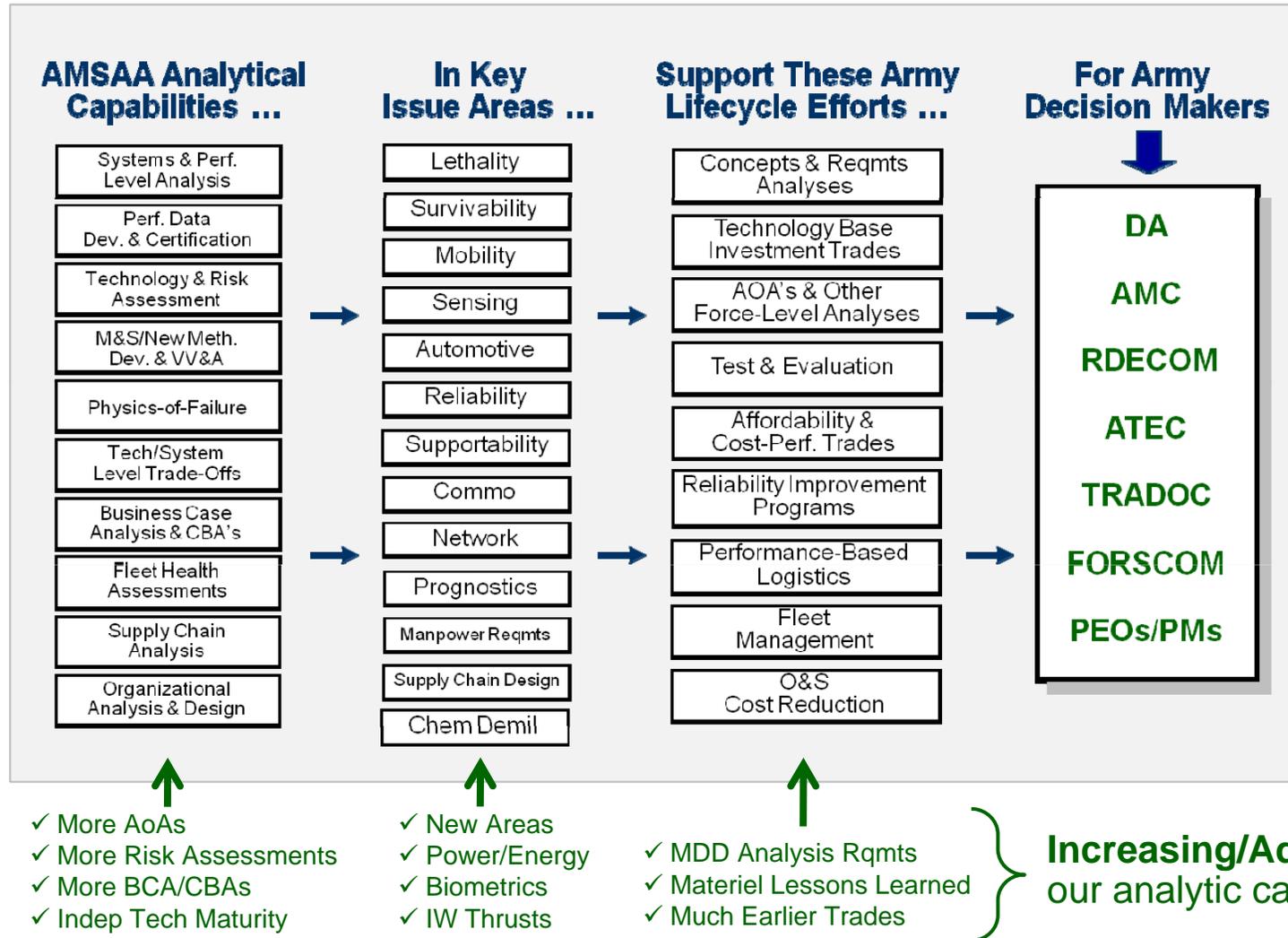
### Increases in Existing Areas:

- Number & Complexity of Army/Joint AoAs
- Incr demand/scope certified perf data for AoAs
- Earlier/Better Acq Risk & Tech Maturity Assessments
- Business Case & Cost Benefit Analyses (CBAs)

### Focus in Newer Areas:

- ARFORGEN-Based Equipping Analysis
- New Analytical & Info Reqs for MDD
- Pre-MS A Systems Engineering Efforts
- Early System Cost-Sched-Perf Trades

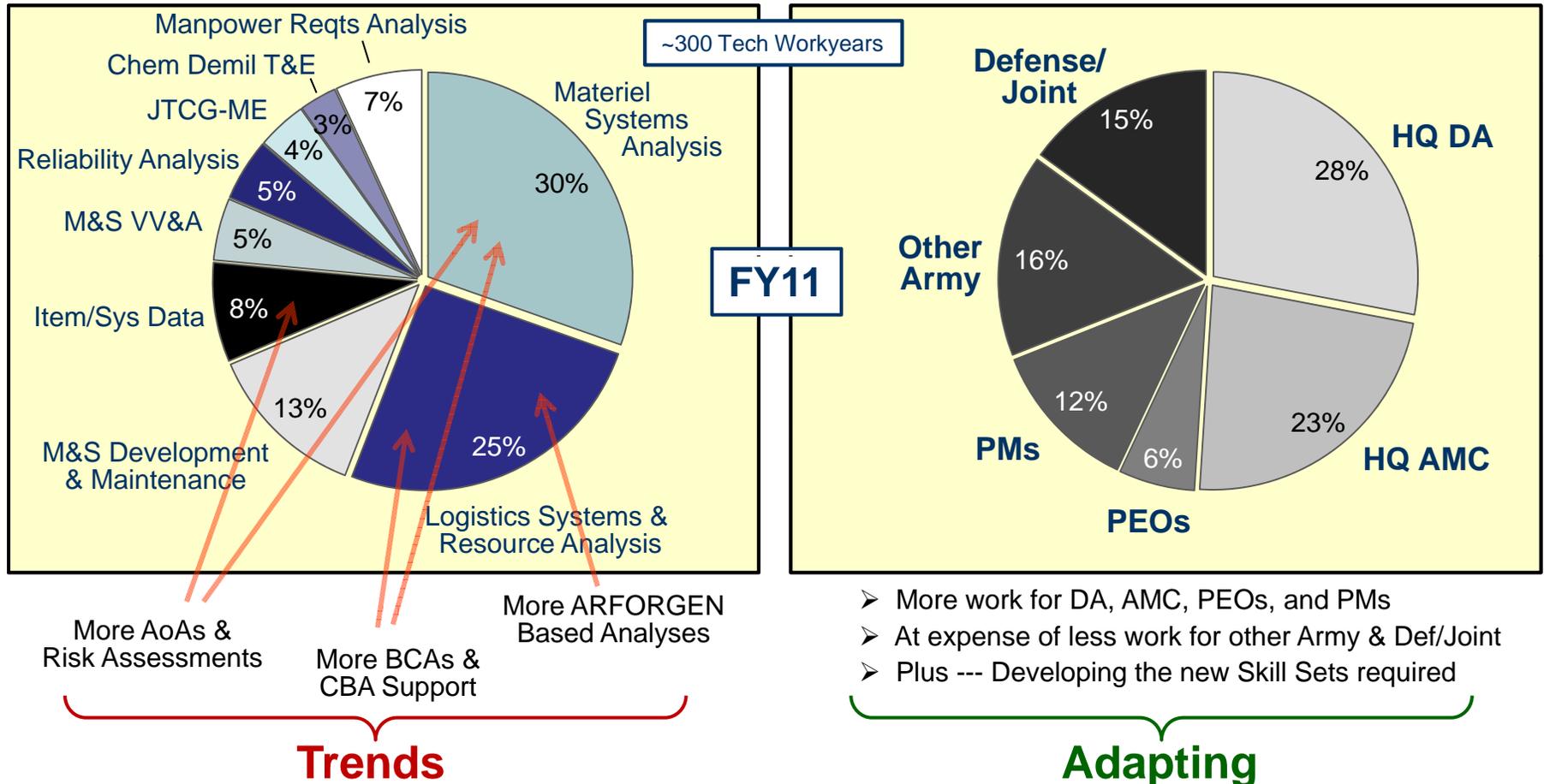
**WSARA 2009 is Biggest New Demand Driver**



**AMSAA Is Continually Re-Balancing Its Priorities to Address Critical Analytic Support Demands of Army Decision Makers.**

## Applying Our Core Competencies Across These Mission Areas

## For These Primary Customers



**Top Customer Groups Are HQ DA, HQ AMC, and PEO/PMs**

## What's AMSAA Doing to Meet Them?

### **AoA Analysis**

- Supporting increasing # of AoAs w/ authoritative data & meth.
- Leading AoAs involving new/complex tech or systems level.
- Organizing to meet increasing workload & growing scope.

### **Independent Risk Assessments**

- Working w/ community to dev Army integrated risk approach.
- Addressing OSD reqt: Perf Trade Space = F(Cost, Tech, Sched).
- Building increasing capability for Tech Maturity Assessment.

### **ARFORGEN-Based Equipping Analysis**

- Adapting lifecycle analytic methods to support this critical area.
- Working to increase the credibility of supporting data bases.
- Providing an analytic leadership capability when Army needs it.

### **Business Case & Cost Benefit Analysis (BCAs/CBAs)**

- Conducting BCA/CBA as alt to costly AoA [for smaller sys/ECPs].
- Leading numerous large-scale BCAs.
- Supporting and/or independently performing more CBAs.

**AMSAA Is Actively Working These Areas to Address Demand Signal.**



# Analytic Outlook & Challenges



- ❑ Significant workload increases in BCAs and CBAs (**additional cost analysis expertise req'd**).
- ❑ More risk assessments (**new risk assessment methodology & stds req'd**).
- ❑ # & complexity of AoAs increasing (**new technologies & problem sets --- new skill sets req'd**).
- ❑ Increasing demand for reliability analyses to support OSD Directives (**CRG\***).
- ❑ Above issues are driving increased data dev/cert demand (**data dev/certification capacity**).
- ❑ Continued analysis of Retrograde activities and Excess Disposition (**skill sets & reachback**).

**AMSAA Is Committed to Providing A Ready, Relevant & Responsive Organic Analytic Capability to Support Army Decision-Making!**

\* Center for Reliability Growth



## AMSAA “Top 10” Efforts (FY11)



- ❑ ACAT I AoAs (GCV, GMLRS, JLTV, Stryker, JTCl...)
- ❑ Army Risk Assessment Initiative
- ❑ Business Case / Cost Benefit Analyses (PIM, Bradley, Abrams, ...)
- ❑ Irregular Warfare M&S Initiative for VCSA
- ❑ Responsible Reset Task Force (R2TF)
- ❑ Sample Data Collection/Analyses In-Theater
- ❑ Condition Based Maintenance Initiatives
- ❑ Power & Energy Analyses (Current Ops & Transformation)
- ❑ Small Unit Modeling & Analyses w/OneSAF and IWARS
- ❑ Reliability Engineering & Physics of Failure

**Diverse Analytical Efforts Supporting Major Army/DoD Decisions**



# Cost Savings ID'd in AMSAA Analyses



## Some AMSAA Examples:

AARG - Army AWCF Requirements Group chaired by G-8

For:	AMSAA Study or Analysis	Cost Savings/Avoid.	Rationale
G-8 (AARG)	Analysis of reliability improvements from AMC Nat'l Maint. Prog for major aviation components.	Cost Avoidance of <b>\$63M/yr</b> (over 10 year period)	Detailed CBA showed reliability improvements reduced demand for major comp's.
DA G-4	Analysis of energy & cost savings w/ new Tent Foam Insulation applications in Iraq/Afghanistan.	<b>\$65M/yr</b> after 1 <sup>st</sup> yr (at FOB level) plus fewer fuel sorties.	Tent foam insulation reduced fuel demand and shipments within theater.
A TEC	Analysis & Model Accred. of Excalibur Perf Against Cmd Post Targets vs Actual Testing for req'd LFT&E	Cost savings of <b>~\$10M</b> in Excalibur LFT&E Program	OSD accepted AMSAA analysis & model accreditation vs actual live-fire testing.
JIEDDO	Assessment of Operational Perf. of GLASSWAVE System (addressing need for number of systems)	Cost savings <b>~\$65M</b> in Buy of Fewer Systems	Prelim oper assess indicated need for addl oper data before full purchase decision.
CG AMC	Conducted BCA to det. cost-benefit of Under Armor APU (@\$40K) for M1 SEP's w/ OIF OPTEMPO.	Cost savings/avoidance <b>~\$124K/veh/yr</b> in OIF.	~\$63k fuel savings + ~\$61K reduced engine replace costs --- Based on fully-burdened fuel cost in OIF ~ \$10/gal; OIF Non-Move times M1 SEP ~ 1.5hrs/day w/engine on) vs APU Usage.
AMCOM	Determined optimal levels of AMCOM inventory	Cost savings of <b>\$148M</b>	AMCOM inventory safety levels were modified to minimize costs subject to a performance target
AMC G-4	Analysis of inventory model parameters	Cost avoidance of <b>\$38M</b>	Analysis and updating of parameters that determine inventory levels including obsolescence rates, storage fees, and pilferage rates

**These Are Cost Savings or Cost Avoidance Examples ... Most Often AMSAA Analyses Result in Increased Perf, Surv, Reliability, Supportability, etc.**



# Our Primary Customer --- the Soldier!



Develop and provide analytical products to support Senior Decision Makers.

OSD



HQ DA



HQ AMC



RDECOM



JIEDDO



Provide data & analytical support to other organizations for use in their studies.

Int'l



ATEC



PEOs/PMs



CAA



COCOMs



TRADOC



FORSCOM



AMSAA's Analytical Contributions to Army:

**Save Dollars -- Provide More Reliable & Effective Equipment Faster-- Reduce Risk -- Support the Warfighter**