“Creating Capability Surprise for Irregular Warfare”

Joint Capability Area Track II:
Force Application
Force Support
Logistics
Protection

Mike Knollmann
Director, Joint Operations Support
Defense Research & Engineering
michael.knollmann@osd.mil
“Creating Capability Surprise for Irregular Warfare”

Joint Capability Area Track II:
Force Application
Force Support
Logistics
Protection

Mike Olmstead
Associate Director
Joint Needs Integration
Defense Research & Engineering

michael.olmstead@osd.mil
Accelerate delivery of technical capabilities to win the current fight.

- Solve the most difficult near term problems and transition compelling concepts to the warfighter.

Prepare for an uncertain future.

- Shape the Department’s science and technology investments to open options that counter (and create) strategic surprise.

Reduce the cost, acquisition time and risk of our major defense acquisition programs.

- Provide systems engineering leadership, deep system analysis and technical assessments across the Department.

Develop world class science, technology, engineering, and mathematics capabilities for the DoD and the Nation.
Defense Capabilities Enterprise:
Diversified Force Generation Roles,
Diversified Force Employment Needs

Organize, Train & Equip

Operationally Employ

…and increasingly, complex operational partners: NGB, inter-agency, coalition, NGO
Combatant Commander Science & Technology Staff: Diversified Roles, Diversified Needs

Variety of roles/titles
- Science & Technology (S&T) Advisor
- Research, Development, Test & Evaluation (RDT&E) Programs Liaison
- Concept Development Lead
- Capability Development Lead

Variety of organizational structures
- Reporting to Deputy Commander, Chief of Staff, J8/Resources, J9/Experimentation
- Single/multiple science advisors on HQ staff

Variety of resource support
- Executive agency Service / parent service support
- Experimentation support
- Working capital fund support
- Rapid reaction acquisition programs support
- Operational needs processes
Senior S&T Advisors at COCOMs

**USSTRATCOM**
- None – additional duty Dave Tyner, Reports to J8

**USSOCOM**
- William Shepherd, Reports to Commander

**USTRANSCOM**
- Lou Bernstein, Reports to J5/4

**USJFCOM**
- Dan Judy, Reports to Chief of Staff

**USCENTCOM**
- Marty Drake, Reports to J8

**USAFRICOM**
- Mike Owens, Reports to Director, Resources

**USEUCOM**
- Donald Jones, Reports to Deputy J8

**USEUCOM**
- Ken Bruner, Reports to J8

**USNORTHCOM**
- Dr. Susan Wirwille, Reports to Commander

**US SOUTHCOM**
- Juan Hurtado, Reports to Director, Stability
Aligning the Domains: Defense Engine for Capabilities

All three domains must be aligned & engaged to deliver capabilities

Military Needs Validation & Operations

Acquisition: Technology, Procurement, Logistics

Resources: Plans, Programs, Budgeting

The challenge for Combatant Commanders:

- They exist in the authority domain of Military Needs & Operations
  - Joint force needs are predominantly expressed through CJCS
  - Only US Special Operations Command has force development acquisition authorities
- They rely on Services for preponderance of force capabilities
  - “Force Integration” / “Force Provider” services performed by USJFCOM
  - USJFCOM translates joint force needs into force fill requirements for Services
- They rely on Services for HQ resources through legacy Executive Agency provisions
- They have limited manpower to participate in needs, acquisition & funding processes
Needs to Solutions: Processes & Roles

Needs Process
1. Develop & specify needs
2. Review & comment on budget-based programming and acquisition solutions
3. Allocate resources to joint/combatant commanders

Needs Roles
CJCS/JCS
CoComs – Including USJFCOM
Joint Staff
Military Staffs
CoCom/Component Cdr Staffs

Acquisition Solutions Process
1. Consult with needs authorities in development of acquisition solutions
2. Acquire material solutions based on validated needs and budget-based programming
3. Deliver resources (acquisition products) for allocation to joint/combatant commanders

Solution Roles
USD (AT&L)/DAE
Service Secretaries/SAEs
OSD (AT&L) Staff
Service Secretariat Staffs
Systems/Materiel Commands
Military Agencies
USSOCOM [special authorities]

National, Security, and Military Policies Framework
Joint Capability Development Strategy: Framing Remedies

Identifying Military Requirements
Analyze capability gaps
- Lessons Learned / Warfighting Analyses
Characterize improvements: What is really required?
- Experiment…what DOTMLPF elements are needed?
Define in actionable terms
- Specify DOTMLPF elements or options

Framing the Solution Set
Headquarters enhancement
- Engage Executive Agency (military Service)?
Specific Component Force Development
- Specify Service partnership / component roles
Joint Force Capability Gap
- Pursue Functional CoCom partnerships

Developing Specific Strategies
Address key gap-closing capability segments
Forge partnerships with strategy development
- Key element of resourcing & transition
Stipulate timeline and phasing of deliverables
- Cite operational imperative for timelines

Use diversity of tools
Employ gapfillers
Remain flexible

Understand DoD roles
Respect & leverage authorities
Needs⇒Requirements⇒Solutions
Joint Capability Areas

Comprised of functional portfolios to focus management and resource attention upon a desired capability-based vice threat-based envisioned and synchronized military force development and planning enterprise;

Encompass capability needs definition, gap and excess analysis, major trade analyses, and capabilities planning, i.e. the DoD military capability divided into manageable functional entities; and

Provide a framework to enable a capabilities-based US military enterprise to focus on emerging technological opportunities that certain capabilities such as long-range precision strike, transformed maneuver and expeditionary forces; and systems to overcome anti-access and area-denial threats.
Office of the Secretary of Defense
Acquisition, Technology & Logistics
Defense Research & Engineering

Technology in Demand
by
Joint Warfighters

UNCLASSIFIED
US Central Command
Environment & Technologies

USCENTCOM Mission
With national and international partners, U.S. Central Command
• Promotes cooperation among nations,
• Responds to crises, and
• Deters or defeats state and nonstate aggression, and supports development and, when necessary, reconstruction in order to establish the conditions for regional security, stability, and prosperity.

US Special Operations Command
Environment & Technologies

USSOCOM Mission
• Provide fully capable Special Operations Forces to defend the United States and its interests.
• Synchronize planning of global operations against terrorist networks

USSOCOM Priorities
• Deter, Disrupt & Defeat Terrorist Threats
• Develop & Support our People & Families
• Sustain & Modernize the Force

USNORTHCOM Mission
USNORTHCOM anticipates and conducts Homeland Defense and Civil Support operations within the assigned area of responsibility to defend, protect, and secure the United States and its interests.

NORAD Mission
In close collaboration with homeland defense, security, and law enforcement partners, prevent air attacks against North America, safeguard the sovereign airspaces of the United States and Canada by responding to unknown, unwanted, and unauthorized air activity approaching and operating within these airspaces, and provide aerospace and maritime warning for North America.

Missile/Air Defense, Information Collaboration with Partner Nations & Agencies, Network Capacity, Border/Seaward Approaches/Air Space Monitoring, CBRNE Response
US Southern Command
Environment & Technologies

USSOUTHCOM Mission
• Shape the environment within its area of responsibility by conducting theater engagement and counter drug activities in order to promote democracy, stability and collective approaches to threats to regional security;
• When required respond unilaterally or multilaterally to crises that threaten regional stability or national interests, and prepares to meet future hemispheric challenges.

Information Collaboration with Partner Nations & Agencies, Surveillance, Humanitarian Assistance and Disaster Response, Intra-Theater Airlift, Regional Airspace Integration
**USPACOM Mission**

- Protects and defend, in concert with other U.S. Government agencies, the territory of the United States, its people, and its interests;
- With allies and partners, U.S. Pacific Command is committed to enhancing stability in the Asia-Pacific region by promoting security cooperation, encouraging peaceful development, responding to contingencies, deterring aggression, and, when necessary, fighting to win.

**USPACOM Imperatives**

- Military Superiority
- Multilateral Approach to Security
- Freedom of Movement and Secure Access
- Whole-of-Government Approach

*Wide-Area Network Solutions, Sensors, Naval Forces, Long-Range & Heavy Lift Transportation, Missile/Air Defense, Security Collaboration with Partner Nations*
USEUCOM Mission
- Conduct military operations;
- Develops and strengthen security and interagency relationships;
- Supports NATO; and
- Builds partner capacity to enhance transatlantic security and defend the homeland forward.

USEUCOM Vision
An agile security organization with a "whole of government" approach seeking to support enduring stability and peace in Europe and Eurasia.

Long-Range & Heavy Lift Transportation, Information Collaboration with Partner Nations & Agencies, Coalition/Partner Nation Security Cooperation/Interoperability
"Working with our African partners is not only our highest priority; it is our only priority"

Building Partnership Capacity, Intra-Theater Mobility, Surveillance, Social-Cultural Understanding/Translation
USSTRATCOM Missions:
• To deter attacks on US vital interest,
• to ensure US freedom of action in space and cyberspace,
• to deliver integrated kinetic and non-kinetic effects to include nuclear and information operations in support of US Joint Force Commander operations,
• to synchronize global missile defense plans and operations,
• to synchronize regional combating of weapons of mass destruction plans,
• to provide integrated surveillance and reconnaissance allocation recommendations to the Secretary of Defense, and,
• to advocate for capabilities as assigned

Cyberspace Enabling Tools, Strategic Force Maintenance, Networking Enhancements, Space Monitoring and Asset Employment
US Transportation Command
Environment & Technologies

USTRANSCOM Mission
- Develop and direct the Joint Deployment and Distribution Enterprise to globally project strategic national security capabilities;
- Accurately sense the operating environment;
- Provide end-to-end distribution process visibility; and responsive support of joint, U.S. government and Secretary of Defense-approved multinational and non-governmental logistical requirements.

Transportation Asset Protection, Airlift/Sealift Capabilities Sustainment, Intra-Theater Airlift Options, Transportation Worldwide Command & Control
USJFCOM Main Missions
• Joint Concept Development and Experimentation - Develop new concepts and test them through experimentation and, in collaboration with other combatant commands, services and agencies, recommend solutions to better integrate their warfighting capabilities.
• Joint Training – As DoD’s joint force trainer, USJFCOM prepares joint task force commanders and staffs to execute their missions in a joint environment
• Joint Capabilities Development – Work closely with combatant commanders, the services and other government agencies to identify and resolve joint warfighting interoperability deficiencies.
• Joint Force Provider – Help national decision makers make informed choices on supporting operations, assists military commanders to identify potential readiness problems and develop appropriate strategies and maintain the nation’s forces at the highest possible level of readiness.

USJFCOM Goals
• Make Irregular Warfare A Core Competency
• Design Integrated, Properly Structured Command and Control
• Improve as Joint Force Provider
• Accelerate Efforts toward a Whole of Government Approach

Modeling & Simulation, Training Enhancements, Command & Control Interoperability, Tactical Networks Integration, Data Standards and Information Technology Integration, Joint Force Deployment Planning and Execution Tools
Development Model for Technology Solutions

Transition to Procurement & Sustainment
- Joint Training

Readiness & Suitability Confirmation
- Test & Evaluation
- Military assessment of utility

Functional Validation; Tailored Form/Fit/Function
- DOTMLPF construct development and confirmation
- Demonstration

Technical Concept Design & Development
- Prototyping

Alternatives Development & Assessment
- Experimentation
- Red Teaming Analysis

Conceptualization
- Needs identification/lessons learned/assessment
- Tech push exploitation

Maturity of Operational Concept and Technology

Fast Track Options for Critical Capabilities

more...
Adapting Technologies to Defense

**User Needs**

- **Strategic Guidance**
- **Joint Concepts**
- **Capabilities - Based Assessment**

**JCID**

**Joint Concepts**

- **COCOM**
- **OSD/JCS**

**Experiential**

- Data Collection
- Studies & Analyses
- JCOA, JWAC, JAWP, et al

**EXPERIMENTATION**

- CGA Validation
- Conceptual Exploration & Discovery
- DOT_LP Framework Definition
- Solution Refinement (Field Trials)

**Prototyping**

- TTI, JCTDs, JT&E, CWID, CWP, et al

**Test & Evaluation**

- Demonstration

**Acquisition Process**

- **Materiel Solution Analysis**
- **Technology Development**
- **Engineering & Manuf Development**
- **Production & Deployment**

**O&S**

- Acquisition/Technology Development Processes

**RRTO**

- Influence of policy, e.g. Guidance for Force Development
- Developmental doctrine; Tactics, Training & Procedures
- Innovative employment of existing capabilities

**Materiel Solutions**

- Experimentation Data
- Studies & Collection
- Analyses
- Prototyping
- Test & Evaluation
- Demonstration
- Conceptual Exploration & Discovery
- DOT_LP Framework Definition
- Solution Refinement (Field Trials)
- TTI, JCTDs, JT&E, CWID, CWP, et al

- Influence of policy, e.g. Guidance for Force Development
- Developmental doctrine; Tactics, Training & Procedures
- Innovative employment of existing capabilities

**JCOA, JWAC, JAWP, et al**