Comprehensive Maritime Awareness (CMA)

Ken Bruner
USPACOM J-006
18 Apr 2006
kenneth.bruner@pacom.mil
808-477-0795
The MDA Imperative

- 9/11 Commission Report
  - “Practically every aspect of US counterterrorism strategy relies on international cooperation.”
  - “Coordinate the resolution of the legal, policy, and technical issues across agencies to create a ‘trusted information network’.”

  - “...Identify threats to the Maritime Domain as early and as distant from our shores as possible”
  - “Ensuring the security of the Maritime Domain must be a global effort, in which USG efforts are developed and furthered with the support of other governments ...”

- The National Defense Strategy of the United States of America, March 2005
  - “The United States cannot achieve its defense objectives alone. Our concept of active, layered defense includes international partners.”
The MDA Imperative (cont)

- National Plan to Achieve Maritime Domain Awareness (Second Coordination Draft)
  - Plan of Action: Engage and Enhance International Partnerships, Strengthen Interagency Relationships, Remove Barriers to Information Sharing

- Strategy for Homeland Defense and Civil Support, DRAFT September 13, 2004
  - “Achieve maximum awareness of potential threats.”
  - “Together with domestic and international partners, DOD will integrate information from a wide range of sources.”

- DoD Directive 8320.2, Data Sharing in a Net-Centric Department of Defense, December 2, 2004
  - Mandates application of DoD Net-Centric Data Strategy
Comprehensive Maritime Awareness

FY06 JCTD Proposal
For
International Cooperative Development
With
Republic of Singapore (RoS)

<table>
<thead>
<tr>
<th>US</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oversight Executive</td>
<td>Mr. Chris Vogt</td>
</tr>
<tr>
<td>COCOM Sponsors</td>
<td>PACOM, EUCOM, NORTHCOM</td>
</tr>
<tr>
<td>Lead Service</td>
<td>US Navy</td>
</tr>
<tr>
<td>Operational Managers</td>
<td>PACOM/COMPACFLT</td>
</tr>
<tr>
<td></td>
<td>NORTHCOM</td>
</tr>
<tr>
<td></td>
<td>NAVEUR</td>
</tr>
<tr>
<td>Technical Manager</td>
<td>Mr. Chris Dwyer</td>
</tr>
<tr>
<td>Transition Manager</td>
<td>PEO(C4I&amp;Space)</td>
</tr>
</tbody>
</table>
Serious gaps exist in identifying and prioritizing world-wide maritime threats

- Maritime security and defense forces lack the capabilities and capacities to provide timely and accurate maritime situational awareness
- Lack automatic tools to identify and prioritize relevant and actionable information to avoid information overload
- Inability to acquire, fuse and manage disparate information limits timely cueing and focus
- Information sharing (technical, cultural) barriers limit the effectiveness of partner nations

Searching the haystack for a needle: Lack of actionable maritime information leads to missed opportunities for interdicting terrorists, WMD proliferation, piracy, trafficking and smuggling
CMA JCTD

Vision:
Track 100% maritime movements; ID which tracks are potential threats — prioritize them for action—enabled by culture of sharing.

JCTD Objectives:
1. **Demonstrate** value of information exchange to improved Maritime Domain Awareness (MDA)
   - Acquire, integrate, exchange relevant maritime activity information
   - Identify regional threats using available information
   - Focus limited interdiction / inspection assets on most probable threats

2. **Demonstrate** net-centric information management for improved Maritime Domain Awareness, applicable across US Govt Departments, Combatant Commands, and Coalitions
   - Data are visible, available, and usable when and where needed
   - Metadata tagging to enable discovery by users
   - Data posting to shared spaces, enabling “many-to-many” data exchanges (with security and policy controls)
CMA Assessment Metrics

- **Rapid Shared Recognition of Critical Situations**
  - Measures the improvement to cross-COCOM situational awareness

- **Reduction in Timelines**
  - Measures the reduction in time to provide prioritized, relevant, actionable information

- **Rapid Coalition Information Sharing**
  - Measures the improvement of bi-lateral information sharing and management

- **Rapid Information Assessment**
  - Measure the improvement in capability of integrating databases and other information providers into an MDA enterprise
PAYOFF

• Comprehensive maritime information sharing….
  – Enables broader maritime domain awareness
  – Affords access to more and diverse information sources
  – Identifies and addresses capability and capacity gaps
  – Deters maritime threats
  – Provides US and partner nations with pieces of the puzzle (dots) otherwise unavailable

• Comprehensive maritime threat detection tools …
  – Improves probability of identifying and defeating threats
  – Expands focus beyond predetermined contacts of interest to identification of potential new threats
  – Provides agile and responsive contacts of interest prioritization
  – Increases analysts’ productivity

• Applying Net-Centric Data Strategy to MDA data management . . .
  – Improves data visibility, accessibility, understanding, and enables discovery by unanticipated users
  – Provides interoperability at data level, enabling many-to-many exchanges vs. point-to-point interfaces
Why JCTD With Singapore?

• Strategic position astride major shipping lanes

• Strong political will to ensure maritime security: Maritime Security Task Force, RMSI

• Good infrastructure already in place: Vessel Traffic Information System, Port Operations Command Centre, Changi Naval Base

• Strong US-SIN relationship in defence matters: Spartan, ex-CARAT, Southeast Asia Cooperation Against Terrorism, Proliferation Security Initiative
<table>
<thead>
<tr>
<th>Year</th>
<th>Total Vessel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>187,589</td>
</tr>
<tr>
<td>2003</td>
<td>179,607</td>
</tr>
<tr>
<td>2004</td>
<td>185,131</td>
</tr>
</tbody>
</table>
**Examples: Information Sharing, Potential Threat Detection**

**Case 1**
- Ship enters SOM with Automatic Information System on
- Singapore AIS receiver reports ship name: *Tokyo Maru*, Time 1500 on 13 SEP
- Singapore C2 Centre initiates track, triggers search for correlated data
- Query generated to U.S. Office of Naval Intelligence SEAWATCH database
- SEAWATCH returns latest visual sighting of *Tokyo Maru*: in Rotterdam, Time 0800 on 11 SEP
- CMA system generates alert at Singapore C2 Centre

**Case 2**
- *Caspian Trader* approaches Long Beach, sends Advanced Notice of Arrival message
  - 24 crew
  - Last port of call: Singapore
- PACOM track (from commercial AIS receivers) shows large gap in South China Sea/Philippine Sea area
- Query generated to Singapore
- Singapore data indicates 20 crew on board at departure from Singapore
- CMA system generates alert
CMA Program Strategy

FY06

Baseline Exchange:
• CENTRIXS extensions
• Security Guards
• GCCS Based

Develop, Evaluate And Integrate

Operate

FY07

Integrate New Capabilities
• USCG Vessel Tracking
  • Fusion
  • Anomaly Detection
  • Track Quality
• CATE Threat Assessment
• DARPA tools for Maritime COP and behavior analysis (C6F)
• Services Oriented Architecture

Operate

FY08

Net-Centric Interagency Exchange
Demonstrate:
• Interagency exchange
• Net-Centric Info Mgmt
• Improved MDA

Operate

Ongoing:
• CMA/MDA Working Group
  • MDA Data Model
  • MDA Data Exch Arch
• CONOPS/TTPS
Service Oriented Architecture

Common Business Services

- Common Operating Picture Services
- Planning Services
- Event Management Services
- Tracks Services
- Geographical Information Services
- Software Agents

Common Supporting Services

- Publish/Subscribe Services
- Security Services
- Common Data Store
- Integration Services
- Collaboration Services
CMA Partnership Approach

**Singapore C2 Centre**
- Regional Info Fusion
- SN Navy, Police Coast Guard, Maritime Port Authority

**USPACOM Data Fusion Center**
- Theater COP Maintenance
- Releasable COP

**NORTHCOM**
- Threat Awareness
- Interagency Collaboration

**MIFC PAC**
- Threat Analysis & Reporting (VTP, CATE)
- Regional Collaboration

**MIFC LANT**
- Threat Analysis & Reporting (VTP, CATE)
- Regional Collaboration

**EUCOM Theater Maritime Fusion Center**
- Regional Info Fusion (DARPA/ONR Tools, VTP)
- Threat Analysis & Reporting
Questions/Comments?