

# ***Comprehensive Maritime Awareness (CMA)***



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18 Apr 2006  
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# *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’.”**
- National Security Presidential Directive NSPD-41; Homeland Security Presidential Directive HSPD-13, **December 21, 2004: Maritime Security Policy**
  - **“... 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)***

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- **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)



	<u>US</u>	<u>Singapore</u>
Oversight Executive	Mr. Chris Vogt	DCE(T) / D(C4IT)
COCOM Sponsors	PACOM, EUCOM, NORTHCOM	NPLD
Lead Service	US Navy	Singapore Navy
Operational Managers	PACOM/COMPACFLT NORTHCOM NAVEUR	HNO
Technical Manager	Mr. Chris Dwyer	HJCIS
Transition Manager	PEO(C4I&Space)	DSTA NSuWC



# Problem

## **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?***

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- **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**



# SINGAPORE PORT

<u>Year</u>	<u>Total Vessel</u>
<b>2002</b>	<b>187,589</b>
<b>2003</b>	<b>179,607</b>
<b>2004</b>	<b>185,131</b>





# 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

*Tokyo Maru*

*Caspian Trader*

## 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

FY07

FY08

**Baseline Exchange:**

- CENTRIXS extensions
- Security Guards
- GCCS Based

*Operate* →

→  
*Develop, Evaluate  
And Integrate*

**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*

**Ongoing:**

- CMA/MDA Working Group
  - MDA Data Model
  - MDA Data Exch Arch
- CONOPS/TTPS

→  
*Develop, Evaluate  
And Integrate*

**Net-Centric Interagency Exchange**

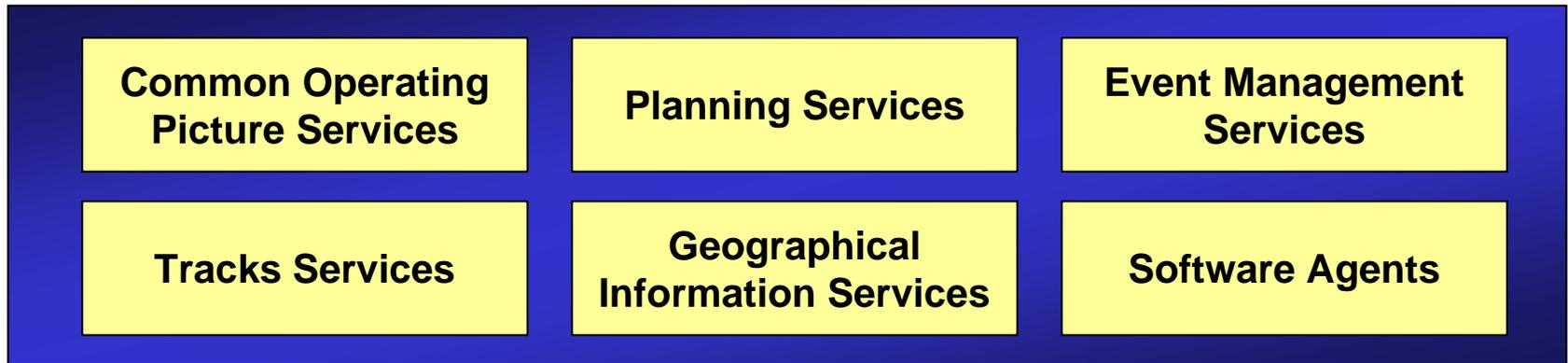
Demonstrate:

- Interagency exchange
- Net-Centric Info Mgmt
- Improved MDA

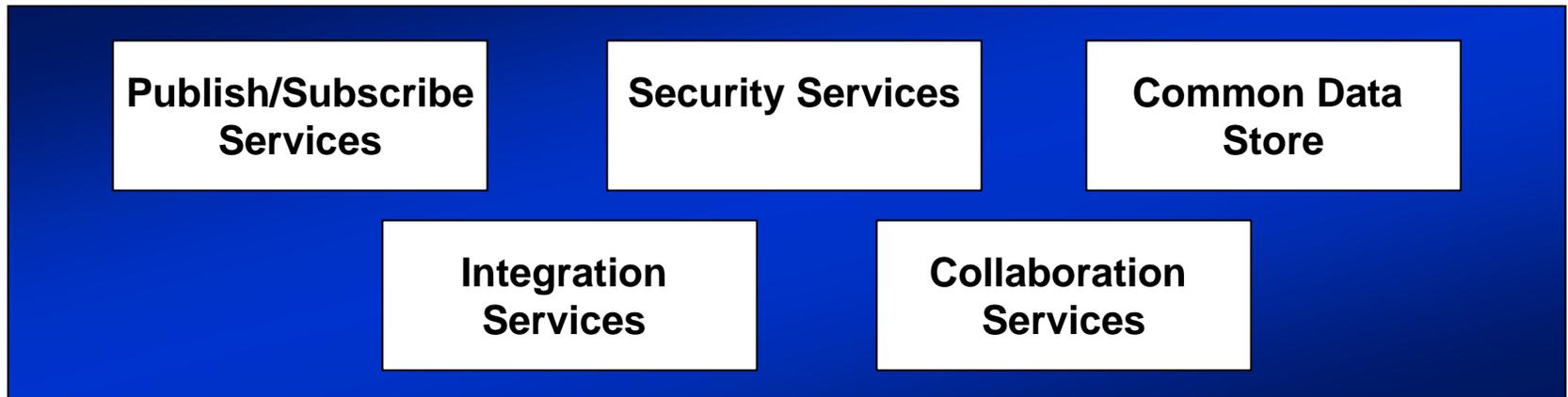


# Service Oriented Architecture

## Common Business Services



## Common Supporting Services





# CMA Partnership Approach

## Singapore C2 Centre

- Regional Info Fusion
- SN Navy, Police Coast Guard, Maritime Port Authority

## NORTHCOM

- Threat Awareness
- Interagency Collaboration

## EUCOM Theater Maritime Fusion Center

- Regional Info Fusion (DARPA/ONR Tools, VTP)
- Threat Analysis & Reporting

## USPACOM Data Fusion Center

- Theater COP Maintenance
- Releasable COP

## MIFC PAC

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

## MIFC LANT

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



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***Questions/Comments?***