Enterprise SOAs for the convergence of Battle Management and Resource Management systems

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The International Security Environment at the Beginning of the 21st Century

- Failed & Failing States
- Terrorism
- Regional Flashpoints
- Natural Disasters
Within a Defense Ecosystem

Influencers:
- United Nations
- EU
- US
- Gov’t.
- Others

Theatre:

National Defense Organization:
- Army
- Navy
- Air Force

Supporting Agencies:

Suppliers:
- Industry

Country 1:
- Army
- Navy
- Air Force

Country 2:
- Army
- Navy
- Air Force

Country 3:
- Army
- Navy
- Air Force

Area of Operation:

DLA / NAMSA

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With a Range of Operations – The Three Block War

Simultaneous

Block 1: Warfighting

Block 2: Stability Operations

Large Urban Center
Difficult Terrain

Block 3: Humanitarian Operations
Agility Is Obtained Through Transformation

Net-Centric Operations

Concept of Operations

Agility

Technology
- Information & Communication Grid

Organizations
- Modular & Expeditionary Forces
Introduction

Empowering the “Strategic Corporal”

NATO CWID 2005 & 2006

The Need for an Enterprise SOA

NATO CWID 2007

Conclusion
Illustrative Example of Transformed Defense Forces

Example is inspired by the MPAT Pacifica Scenario
Road to Conflict
Illustrative Example of Transformed Defense Forces

Pilot notices that JSF is losing fuel and smells fumes in the cockpit - Fault confirmed

Automated net-centric message sent to NATO C2 system (AWACS) on the Information Grid
AWACS controller, in concert with ground control, determines best landing site and communicates location to pilot

Triggers emergency landing procedures

Informs Commander of new operational status
Illustrative Example of Transformed Defense Forces

Pilot lands safely at Coalition Airfield
Illustrative Example of Transformed Defense Forces

German Medic confirms Canadian pilot identity through RFID enabled dog-tag
Medical record accessed and potentially fatal drug interaction is avoided
Schedule follow-up medical appointment
Illustrative Example of Transformed Defense Forces

Embedded mechanic from Lockheed Martin uses Class V IETM to determine that part has failed prematurely.

Uses iUID data to trigger a safety of flight notice pending further investigation.
Illustrative Example of Transformed Defense Forces

After the medical screening, the pilot selects and accesses on their mobile device the debriefing “service” to provide feedback on the mission.

Logbook and qualification profile has been automatically updated from the flight data and mission parameters.
Illustrative Example of Transformed Defense Forces

Information Grid

- GIS
- Weapons platform
- Battle Management
- Office Software
- Resource Management
The Joint & Coalition Environment – Fluid & Adaptive

THE FLUID & ADAPTIVE DEFENSE NETWORK

Established for each deployment

Strategic Corporal #1
Lead Nation

Strategic Corporal #2


THE BEST-RUN BUSINESSES RUN SAP™
Empowering “Strategic Corporals”

The “Strategic Corporal”

Access to Understandable Contextually Relevant Actionable Knowledge

Any Device

Office Mobile Forms Widgets Portal Voice

RSS Embedded Dashboards Specialized GUI

GIS Resource Management Battle Management
Office Software Security Weapons Platform

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Conclusion
Supporting Decentralized ERP Systems interconnected to the homeland system

Providing organizational and resource data for Battle Management

Process Integration between Resource Management and Battle Management

Interoperability between Resource Management and Battle Management Systems across various IT security domains
Decentralized Resource Management System on board

- Proof of serviceability of an Resource Management system on board to support the operation even in case of communication failure
- Conducting processes within distributed personnel management and maintenance scenarios using SAP‘s Product Data Replication (PDR) framework
- Verifying ease of administration as well as robustness facing communication failures
Providing Data for NATO Functional Area Services

- ADAMS (Allied Deployment and Movement System) is part of NATO’s Logistics Functional Area Services for planning and simulation of relocation operations.
- Nations have to provide data about organizational structures and resources for creating the Detailed Deployment Plan.
- Information corresponding to NRF 9/10 has been extracted from the Resource Management system and have been successfully transmitted to ADAMS.
Providing Organizational and Resource Data to Battle Management Systems

- Transfer of organization and resource data from Resource Management to Battle Management systems using the NATO ADatP-3 standard (Baseline 11 & 12) and the MIP Standard (Block 2)
- Generating OWNSITREP, LOGSITLAND and PERSREP within the Resource Management system and transfer to Battle Management systems of different nations
Organizational and Resource Data for Battle Management Systems
AdatP-3

■ Transfer of organization and resource data from the Resource Management system to Battle Management systems
using the NATO ADatP-3 standard (Baseline 11 & 12) – OWNSTREP, LOGSITLAND and PERSREP
Transfer of organization and resource data from the Resource Management system to Battle Management systems using the MIP Standard (Block 2)

- Offline Transfer
- Replication via the FGAN replication server
Resource Management and Battle Management Across Security Domains

Joint Logistic Support Group

International CCIS

Mission SECRET

Information Exchange Gateway

National CCIS

National SECRET

Terminal of Real Support Command

Encrypted tunnel

Real Support Command

Unclassified

MIP/AD3

SAP

ADAMS

Terminal of Real Support Command

One way diode

Mission SECRET

Encrypted tunnel

Real Support Command

Unclassified
**Challenges**

- **ADatP-3** - point-to-point, not robust, difficult to enhance
- **MIP** - standardized data model, lower bandwidth, offline capable, complex
- **Predefined scenarios**
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Agile Business Process Platform

Enterprise Services Repository

WS  WS  WS
GIS  Weapons Platform  Battle Management
WS  WS  WS
Best Practice Processes

WS  WS  WS
Resc Manag  Off Soft  Battle Management
Driven by an Enterprise Services Community

Enterprise services community members

Customers

ISVs

Systems integrators

Enterprise infrastructure providers

Industry standards

Opportunities

SAP

Productize

Participate

Lead

Create

Enterprise service definitions

Liaisons

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CWID 2007: SAP ERP to CCIS Integration

SAP DFPS – ERP to C2IS Integration

Current Technical Objective:
- Revalidate existing interfaces as of CWID2006 and developments for German Navy
- Evaluate new web services provided to C2IS
- Demonstrate crossing of security domain borders

Trial Purpose:
- Initial data transfer from ERP-System to C2IS
- Ongoing update of CCIS with real time logistics, situation information
- Test and demonstration of the AdatP-3, MIP and Web Services interfaces
- Test and demonstration of the interfaces to NATO LogFAS
- Provide resource information in an across multiple information domains in both directions black-to-red and red-to-black
- Validation of Business Information Warehouse reports

Value/Benefit Provided:
- High quality reports and automated data entry for J1, J3 Org, J4 and J5
- Enabling real time integration of logistic and operational processes between CCIS and SAP ERP System
- Collaboration with NATO Functional Area Services
- Providing consistent information across security domain boundaries

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Conclusions

1. Strategic corporals will ultimately become the central focus of transformational activities

2. Information is shared in pursuit of shared goals, interests, missions, or business processes across security domains

3. SAP demonstrated feasibility at CWID 2005 & 2006

4. SAP demonstrated Enterprise SOA framework at CWID 2007

5. Only possible through the Community of Interest Involvement in Enterprise Services Communities