Common Operating Picture for Support Enabling NetCentric Operations

Jeffery Marshall
Director, Homeland Security and Defense
SAP Public Services, Inc.
Purpose

Discuss the requirements and high level architecture for a Common Operating Picture (COP) to enable actionable knowledge

- Integrate existing systems into an enterprise architecture to share information between systems
- Decrease the decision cycle time of the force and to visualize the course of action
- Rapidly take action and track execution

Building blocks are:

- COTS technology
- Geographic information system (GIS)
- Central user interface (portal)
- Net-centric environment building on Web services (SOA).
Command and Control

Synchronize combat power at the right place and the right time to achieve decisive results.

Art

• Anticipate required decisions
• Anticipate actions: friendly and hostile, and neutral
• Make decisions...even in an uncertain environment

Science

Art and science

Complete the puzzle
Data, Information, Knowledge

A simple example...

Data

3 Armed Men

Information

Activity
Location
Unit ID
Time
Equipment

Attributes

So what?

Knowledge

Context

Other threat information
Friendly force location
Friendly force status
Friendly activities
NGO locations/activities
Civilian information

Synchronized Information
A More Sophisticated Example

One of the key issues in Bosnia is the division of Bosnia into the Republic of Srpska and the Federation. The RS was very much interested in a separate government and country for the Serbs.

Patrols from an infantry company in my brigade came across a water problem in Modrica, a city in the RS located at a critical pinch point. The company reported the problem, but didn’t follow up aggressively. He didn’t think this was important since there was no follow up from the division.

As the brigade commander, I didn’t hear about until I was discussing a problem relating to proper information requirements for patrols with the company commander. This location is critical. It’s right at the pinch point of the eastern and western wings of the RS.

After checking, I found that this problem was shared by Odzak, a Federation city across the river. If we could get a joint CA project that required both cities involvement moving to fix the water problem, we could quite possibly loosen the RS grip in this key area.
**Key Issue**

Build knowledge

Fill in the gaps

Presentation is key to both building knowledge and filling the gaps.

Information may not become knowledge without a geo-spatial presentation

- See key linkages that may not be discernable via textual displays
- Most people react more to visual than textual presentations
Supporting Requirements

Link data to GIS
- Dynamic
- Drill-down

Enterprise rather stovepipe

Refresh the data for real-time/near real-time

Provide supporting screens as required

Context is king!
SOA is great, but not enough. “Enterprise Services” (ES) capture the business semantics and represent a “common language of business”. SOA+ES=Enterprise Services Architecture.
Expanding the Framework

Pure visualization of current events is not enough:

Trends

Analysis
- Linkages
- Decision support

Reporting

Execution

Follow up

Proactive
Shape
Penetrate
SOA is great, but not enough. “Enterprise Services” (ES) capture the business semantics and represent a “common language of business”. SOA+ES=Enterprise Services Architecture.
Common Operating Picture (COP)

- GIS Display (ESRI based, linked to all SAP components)
- CRM for Event Management
- BW based analytics in dashboard
- RiverGlass Link Analysis (launched contextually from CRM)
Geo EAM Data Integration Layer
(synchronize, views, new fields, …)

Geo EAM Basic Functionality Layer
(object create, change, delete, attribute view, …)

Geo EAM Portal
(request, project view, reports, …)

Geo EAM Portal
(analyze, assign, route, …)

Geo EAM Portal
(find, search, feedback, …)

Other Geo EAM Portals

Common Operating Picture

Composite Applications

Occasional
Users

Professional Users

Generic Functions

Integration & Synchronization

Source Systems

SAP Services

GIS Services

GIS Web Services

SAP

GIS

© SAP AG and PMI 2004, 13
SAP NetWeaver™

**ONE PLATFORM – ONE PRODUCT**

Open integration and application platform that enables change!

**People Integration** Abstracts
User from Applications

**Information Integration**
Provides Access to both Structured and Unstructured Information

**Process Integration**
Facilitates integration of internal and external systems SAP and non-SAP

**Application Platform**
Abstracts developers from Database and Operating System
SAP Exchange Infrastructure

- For both internal and external process integration (with SAP and non-SAP)
- Prepackaged collaboration knowledge
- Ecosystem of non-SAP collaboration content
- Integration Broker plus Business Process Management
- Pre-built content for industry standards
Using GIS to Manage an Incident
Event Depiction - Plume
Synchronize combat power at the right place and the right time to achieve decisive results.

**Art**

- Anticipate required decisions
- Anticipate actions: friendly and hostile, and neutral
- Make decisions...even in an uncertain environment

**Science**

Complete the puzzle