Common Operating Picture enabling Coalition Interoperability

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SAP AG
Agenda

Defining Common Operating Picture

COP Issues & Pain Points
COP Best Practices & Trends
Solution Overview & Positioning
Illustrative Scenario
Solution Benefits
What are the Elements of a COP?

Achieving Situational Awareness

**Awareness of Enemy & Friendly Forces**
- Commander’s intent
- Location
- Status
- Available courses of action and predicted actions for enemy forces

**... and the Environment...**
- **Environment:**
  - The environment
  - Operations and enemy options
  - Terrain features such as trafficability
  - Canopy, sight lines, and sea conditions

**... resulting in situational awareness**
- **Common Operating Picture**
  - Predictability
  - Informed courses of action
  - Risk mitigation
  - Task organization
  - Distributed operations
  - Achievement of desired effects

Source: NETWORK CENTRIC WARFARE, Alberts, Garstka, Stein, 1999
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## Deficiencies in Achieving the Common Operating Picture

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<th>Current Deficiencies</th>
<th>Key Observations</th>
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| **Limited Logistics Visibility**  | Decisions handled in separate systems  
|                                   | Decisions based on incomplete data  
|                                   | Difficulty on making capability based decisions  
|                                   | Ad-Hoc and Improvised logistics                                                  |
| **Legacy System Environment**     | Closed and incompatible systems  
|                                   | Inability to upgrade individual components  
|                                   | High Total Cost of Ownership  
|                                   | Based on existing concepts of operations                                           |
| **Passive Interaction**           | Need to pull information  
|                                   | Lack of drill-down, drill-across and free navigation  
|                                   | Inability to determine impacts  
|                                   | Inability to initiate action in real time                                          |
| **Historical Based Data**         | Uncertain future posture  
|                                   | Actions are reactive rather than pro-active  
|                                   | Difficult to correlate historical data to current events                          |

**Source:** Objective Assessment of Logistics in Iraq
Models Are Changing... Shared Knowledge for Situational Awareness

**COP Genealogy**

**Resourcefulness**

**Co-operation**

**Collaboration**

**Human Integration**
Integration by manually collating data

**Direct Connections**
Integration nightmare with inflexible communities

**Net-Centric Environment**
Shared knowledge and flexible communities
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The Objective – COP & Decrease the Decision Cycle Time

At the most fundamental level, the objective is to create situational awareness leading to reduced decision cycle time ...

The Common Operating Picture

Tight OODA Loop

Reduced Decision Cycle Time

Enemy

Friendly

Environment
Military Fundamentals Remain

Empowering Coalition Forces...

...linked by “soft-wired” end-to-end processes
Flexible End-to-End Processes

Model Based
Event Driven
Embedded Analytics
Service Enabled
## COP Best Practices and Trends

<table>
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<tr>
<th>Operational Condition</th>
<th>Best Practice &amp; Trends</th>
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<td>Expeditionary warfare</td>
<td>Integrating data and collaborative within the services and commands as well as among the coalition partners in a net-centric environment</td>
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<td>Systems designed, tested, and developed to support a mobile, agile warfighter</td>
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<td>COP down to tactical units</td>
<td>COP systems need to communicate &amp; sync with rear support units 24/7</td>
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<td>Includes process visibility with automated event notification and response tools for plan deviations</td>
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<td>Integration of strategic logistics information</td>
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<td>Sensor rich environment</td>
<td>Extend RFID to the warfighter</td>
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<td>Integration with on-board diagnostic &amp; predictive systems</td>
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<tr>
<td>Combatant Commanders as the locus of control for logistics in support of deployed forces</td>
<td>Planning tools to incorporate OPLAN</td>
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<td>End-to-End planning</td>
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<td>Fusion of Operational &amp; Logistics data</td>
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<td>Application of control mechanisms</td>
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Source: Objective Assessment of Logistics in Iraq
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What: ... Common Operating Picture Solution ...

2. Orient
- Collaboration rooms to bring together experts
- Integrate with predictive and simulation tools
- Geo-spatial representation of courses of action
- Document and application sharing for option analysis

1. Observe
- Geo-spatial representation of COP
- Fusion in layers of enemy, friendly and environment data
- Drill-down, drill across
- Highly integrated alert-based framework

3. Decide
- Message and workflow based promulgation of decisions

4. Act
- Integration with logistics execution systems
- Monitoring & Control of the logistics plan

5. Learn
- Knowledge management repository
- E-Learning
How: ... Build on Enterprise Services Architecture

- Transformation
- Next “best defense practice”
- Custom built or composed

Process is captured in a coherent, easy to change composite application
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Operation Swashbuckler is launched in response to a hostage situation where a group of Non-Government Organization (NGO) employees are taken hostage by a group of insurgents. Elements of the 1st Special Forces Operational Detachment-Delta are assigned and currently in route from Frankfurt, Germany when the insurgents execute the first hostage and make additional demands. In response, the H-Hour of the mission is advanced, and using SAP software the OODA (Observe, Orient, Decide, and Act) loop begins.
Commanders Portal with Traffic Lights ...

I observe Calphato's operational critical vulnerability to be C2. I intend to close with and destroy, exploiting the Padang and Titu ports, to seize Pekanbaru, to pursue enemy remnants relentlessly into the interior.

I intend to secure and release seized hostages prior to initiating combat in Pekanbaru.

I intend to secure all seized objectives with minimal exposure of supply bases. I further intend to sustainment to enable our success during and after hostilities.
**Predictive Support Analysis ...**

![Image of a computer screen showing a SAP Enterprise Portal - Microsoft Internet Explorer interface with multiple tables and charts.]
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Strategic Benefits of a Common Operating Picture

- Creation of real-time situational awareness
- Compressed decision cycle time
  (e.g. OODA”L”- Loop)
- Increased responsiveness to Commander’s intent
- Creation of predictive assessment of courses of action
- Adaptive Defense Processes in a NETCENTRIC Environment
For more info ... 

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