A Method to Analyze Network-Centric Capabilities for Agile C2 for Force Sustainment Soldiers in Southwest Asia

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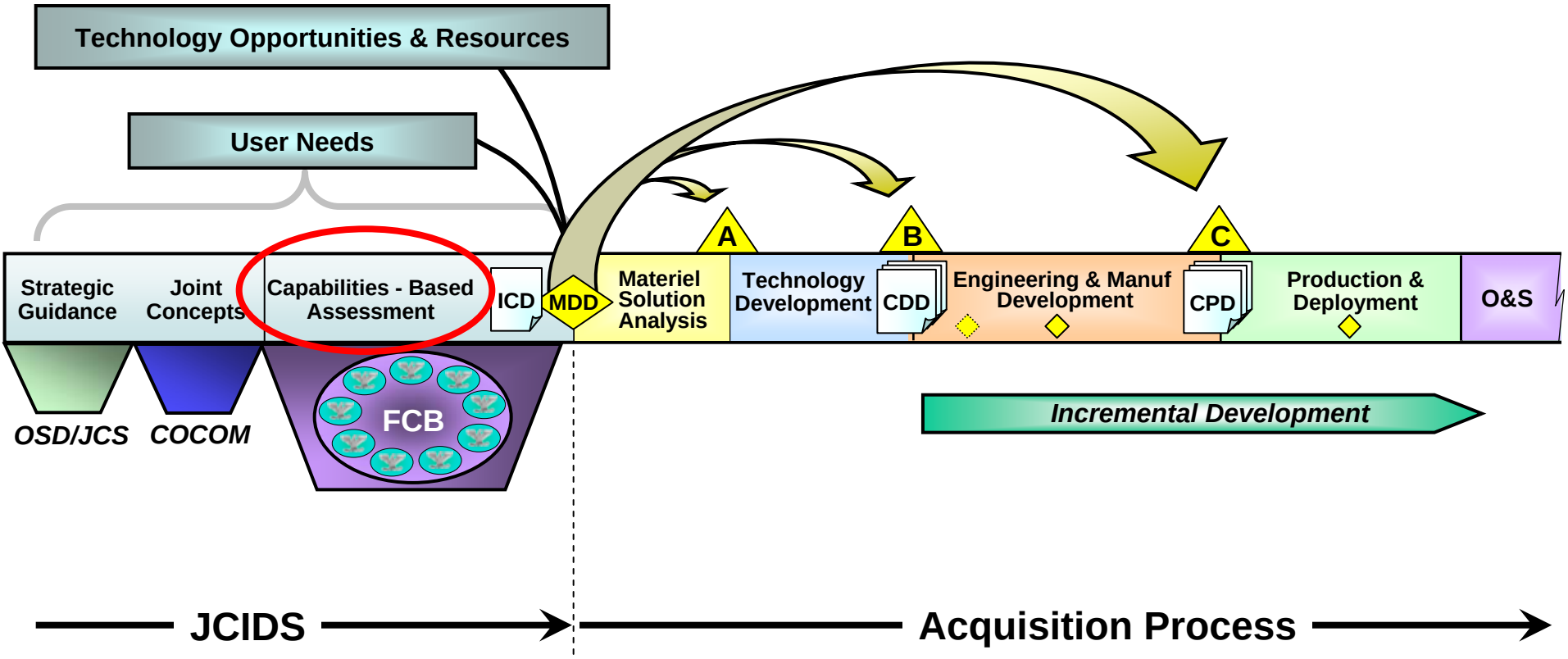
Purpose and Agenda

To describe a study commissioned by the U.S. Army to determine what network-enabled capabilities would improve deployed Sustainment operations

- **Background**
- **Study objectives, tasks, and scope**
- **Methodology to identify and prioritize gaps with potential solutions**
  - **FAA**
  - **FNA**
  - **FSA**
- **Recommendations**

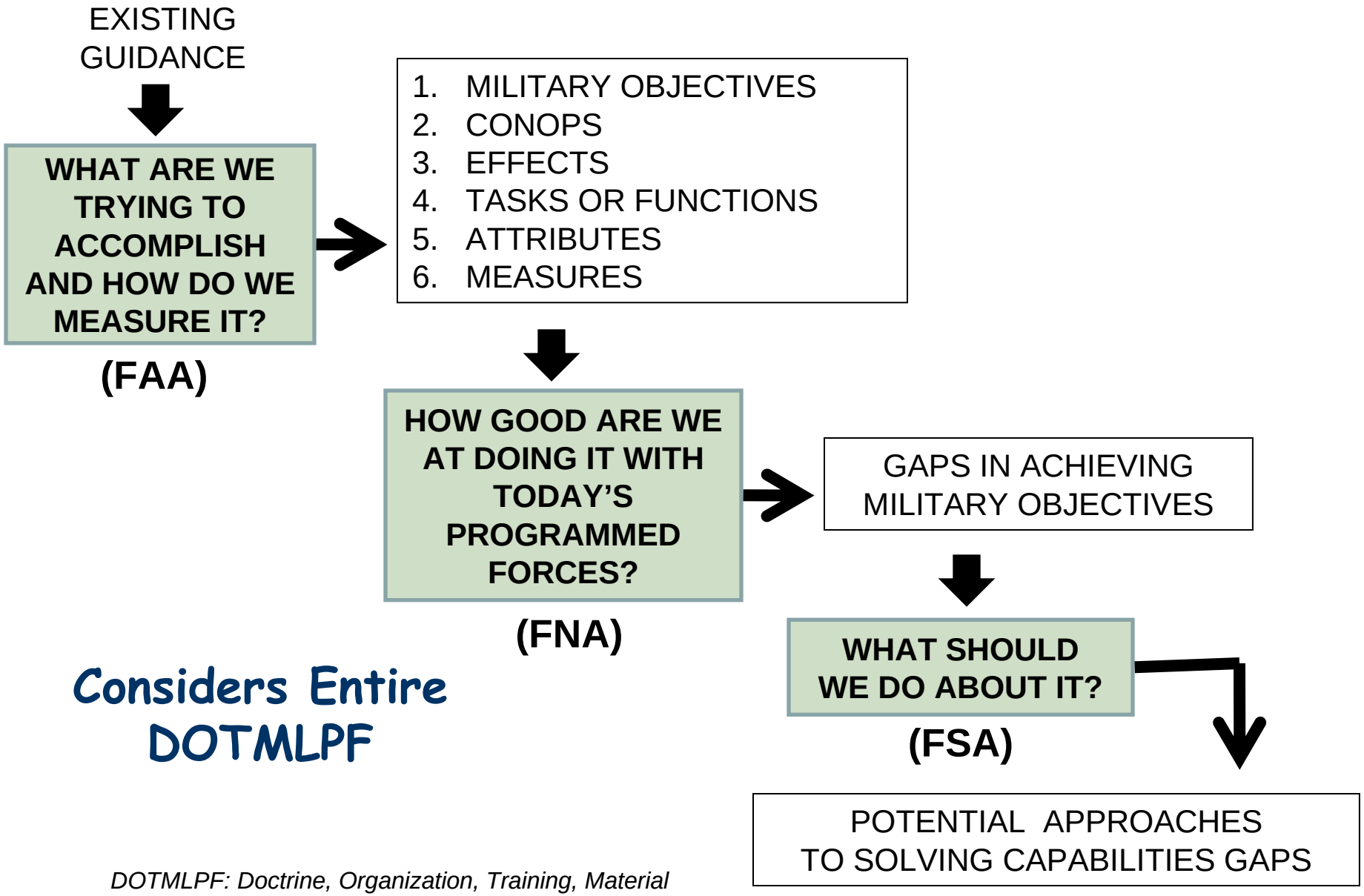
The Defense Acquisition Management System 2008



JCIDS: Joint Capabilities Integration and Development System
COCOM: Combatant Command
CDD: Capabilities Development Document

MDD: Material Development Decision
ICD: Initial Capabilities Document
CPD: Capabilities Production Document

Capabilities Based Assessment (CBA)



DOTMLPF: Doctrine, Organization, Training, Material Leadership & Education, Personnel, Facilities

Problem Background

Investment in info-structure:
BFT, FCS, JTRS . . .
for Combat Arms Soldiers!

What about these guys?

Constraints, Limitations, and Assumptions

- **Constraints:**
  - **Address current force MTOEs to 2010.**
  - **Focus on Sustainment and Headquarters Soldiers in and around fixed sites; only examine Transportation Soldiers.**
- **Limitations:**
  - **High OPTEMPO, low density population led to small sample sizes for some questionnaires and interviews.**
  - **Data fidelity enabled prioritization of net-centric capability gaps into two tiers.**
  - **Solution fidelity enabled high-level assessment.**
- **Assumptions:**
  - **Responses from highly experienced Transportation Soldiers enabled the study team to draw reasonable conclusions.**
  - **Net-centric capability gaps categorized into two tiers is sufficient for sponsor use.**
  - **For solution attributes, applying rough orders of magnitude estimates provided sufficient measure to assess solutions.**

Study Methodology

Objective: Identify network-enabled capability gaps for Transportation Soldiers and potential solutions to those gaps.

Functional Area Analysis

Transportation & Net-Centric Doctrine, Joint Concepts	SME Input: • TCS Evaluation. • Net-Centric Capabilities as Related to Transportation Tasks.	**FAA Product:** Transportation TCS impacted by Net-Centric Capabilities.

Functional Needs Analysis

SME Input: • Gap Identification • Risk	Logistics Battle Command Simulation	Council of Colonels	**FNA Product:** Prioritized Lists of Transportation Task Gaps and Tiered Net-Centric Gaps.

Functional Solutions Analysis

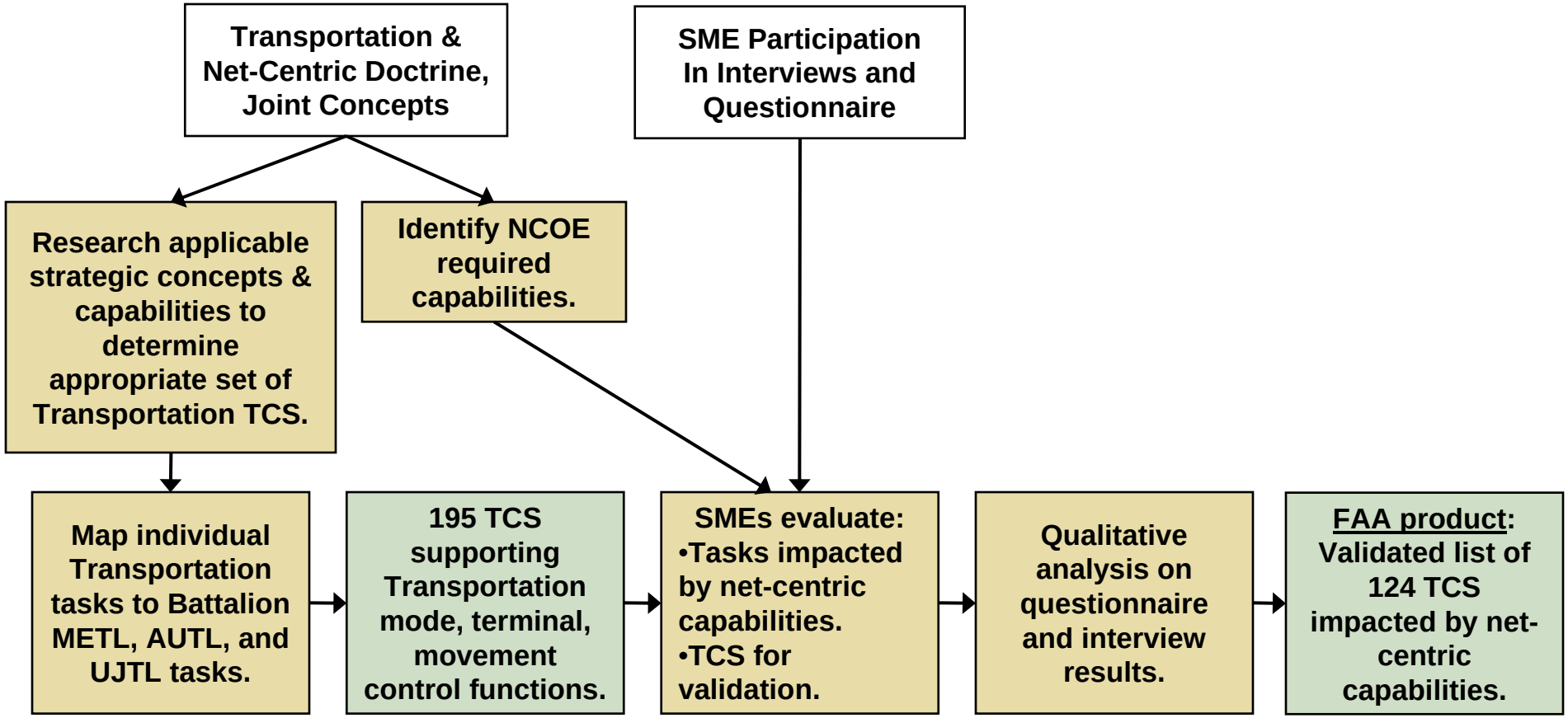
SME Input: • Identify Solutions • Assemble Packages • Analyze Packages	Logistics Battle Command Simulation	Council of Colonels	**FSA Product:** Recommended Solutions to Mitigate Gaps.

Legend: Input Output Process

SME: Subject Matter Expert
TCS: Tasks, Conditions, Standards

FAA Methodology

Issue: What individual Transportation Soldier tasks require network-enabled capabilities?



AUTL: Army Universal Task List *METL: Mission Essential Task List*
NCOE: Net-centric Operating Environment UJTL: Universal Joint Task List
TCS: Task, Conditions, Standards

Legend: ☐ **Input** ☐ **Output** ☐ **Process**

FAA Results

- **3 Transportation capabilities**

Mode Operations

Terminal Operations

Movement Control

- **10 Net-centric capabilities**
- **124 Individual tasks with corresponding standards that are impacted by net-centric capabilities**

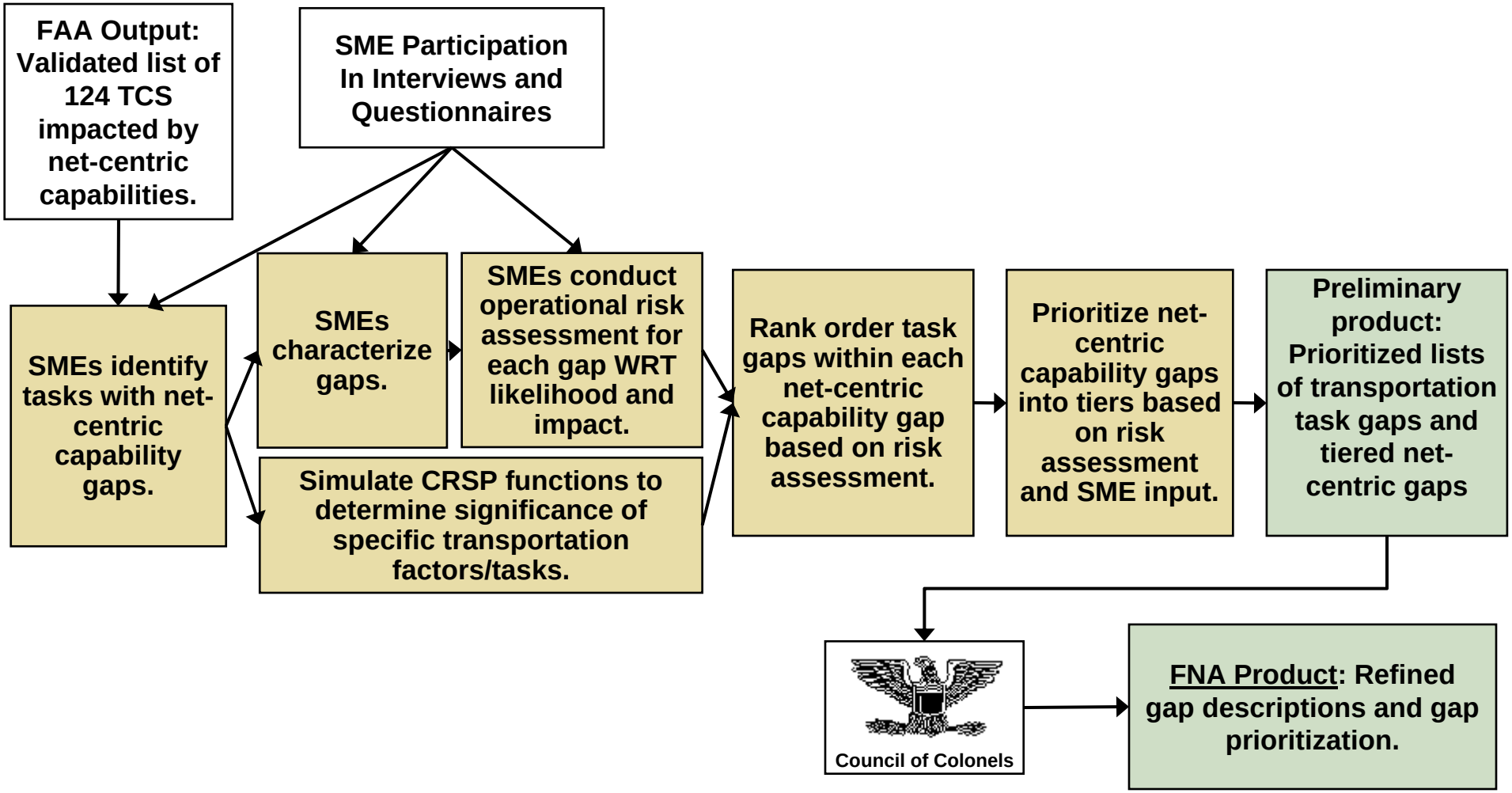
Motor Transport Operator

Cargo Specialist

Transportation Management Coordinator

FNA Methodology

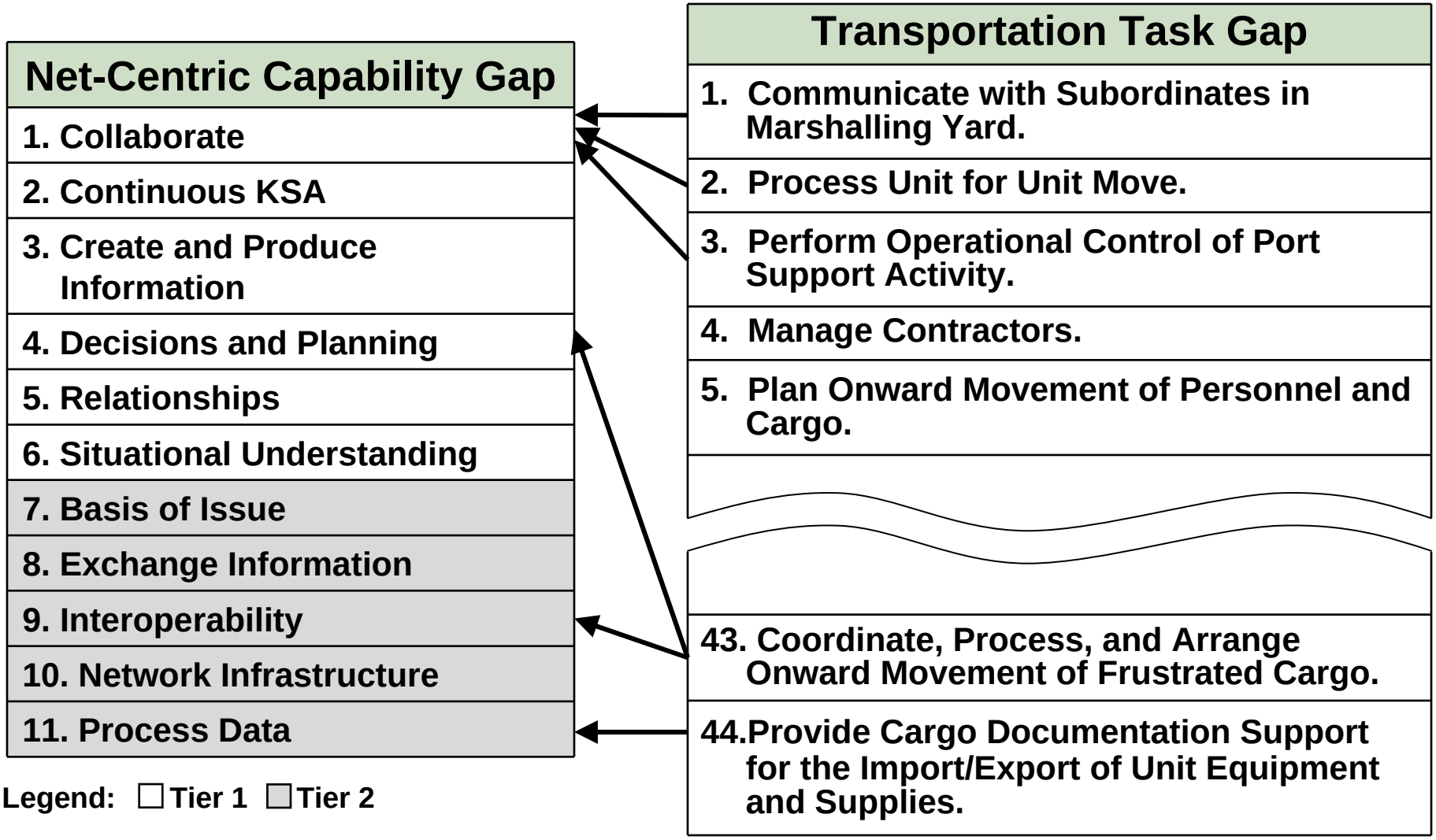
Issue: What network-enabled capability gaps exist and what is their priority?



Legend: Input Output Process

CRSP: Centralized Receiving and Shipping Point

FNA End State Example

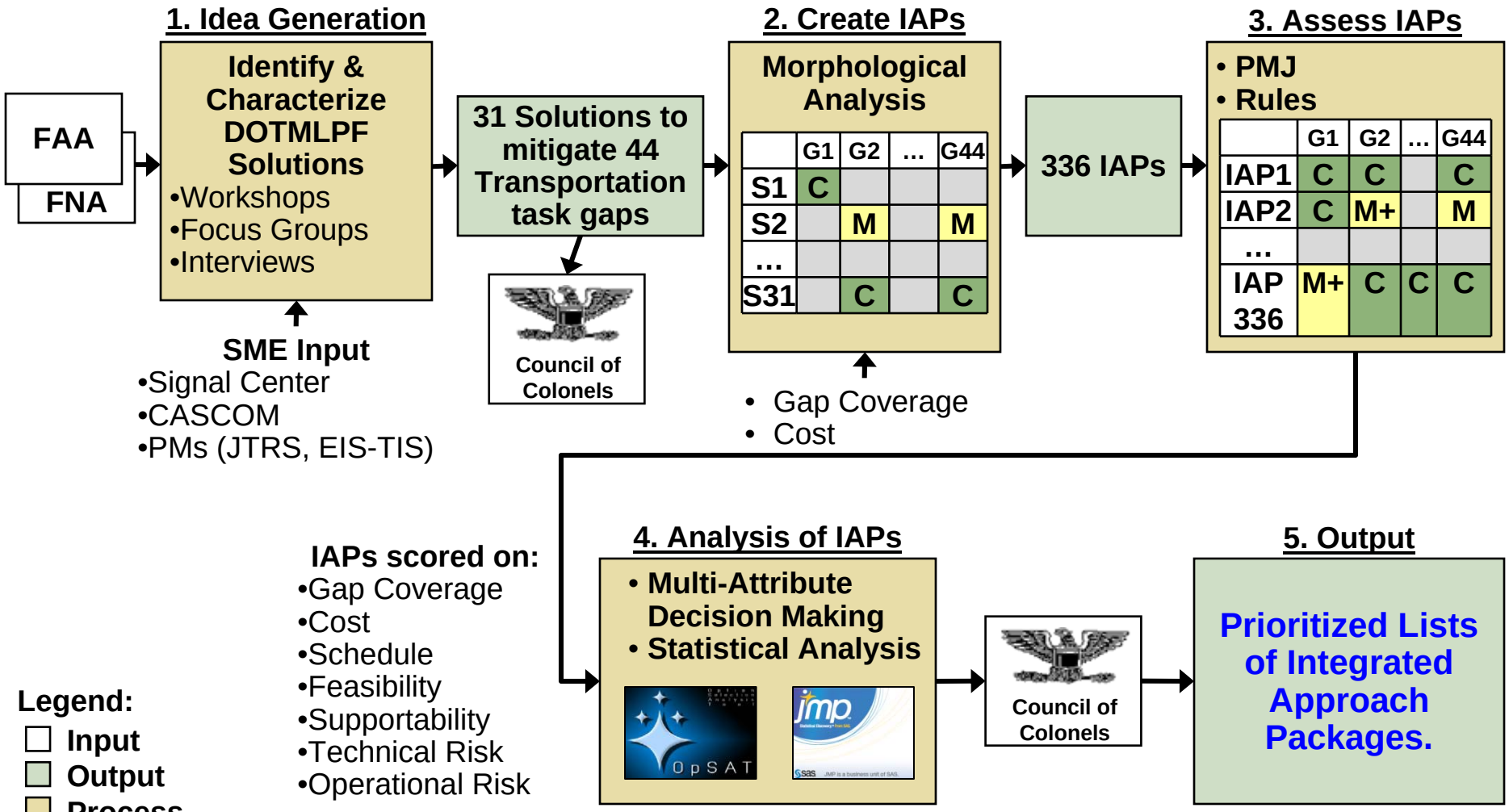


Legend: ☐ Tier 1 ☐ Tier 2

FNA Output: 44 Transportation task gaps aligned with 11 net-centric capability gaps (in two tiers), provides input to the FSA.

FSA Methodology

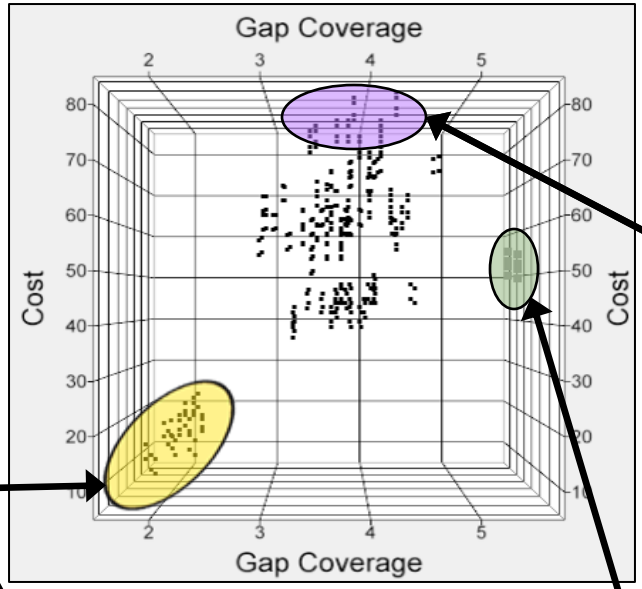
Issue: What DOTMLPF Solutions Mitigate Transportation Soldier Net-Centric Capability Gaps?

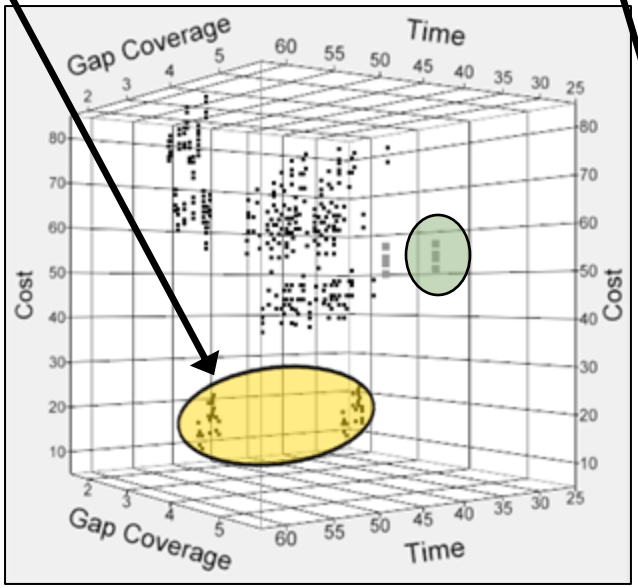


IAPs: Integrated Approach Packages

Analysis of IAPs

336 IAPs





Low cost IAPs:

- **Insufficient coverage to tier 1 gaps,**
- **Very little coverage to tier 2 gaps,**
- **Not considered viable.**

Highest cost IAPs:

- **Some tier 1 gaps uncovered,**
- **Included solutions that only mitigate one gap,**
- **Included multiple high cost solutions.**

Recommended IAPs:

- **Provided best gap coverage:**
  - **Coverage to all tier 1 gaps,**
  - **Coverage to most tier 2 gaps,**
- **Included few high cost solutions.**

IAPs: Integrated Approach Packages

Recommendation to the Sponsor

Recommend implementing one of the four bolded IAPs.
They are leading candidates regardless of weighting scheme.

‘Gap coverage’ weighted most	‘Cost’ weighted most	‘Schedule’ weighted most
IAPs	**IAPs**	**IAPs**
A-20	**A-21**	**A-20**
B-20	**A-20**	**A-21**
A-21	**B-21**	**B-20**
B-21	A-67	**B-21**
C-20	**B-20**	A-68
D-20	A-31	A-29
C-21	C-21	A-67
	A-29	A-31

Solutions Common to Recommended IAPs
(1 of 2)

- **(M) Field a radio with basic encryption at individual Soldier level**
- **(O) Authorize more communications devices at unit level to support rotational, attached personnel**
- **(P) Ensure policy supports contractors collaborating electronically**
- **(D)(T) Develop TTPs that create a method for sharing information horizontally between units and vertically between units and headquarters to facilitate tracer actions**
- **(M) Improve tracking and reporting capabilities to determine movement asset location (trucks, etc) and cargo contained in assets, by integrating multiple systems into a single tool for complete in-transit visibility**
- **(D)(O) Allocate and utilize current Army asset-tracking capabilities to other military services and non-military organizations (contractors, etc)**

Solutions Common to Recommended IAPs
(2 of 2)

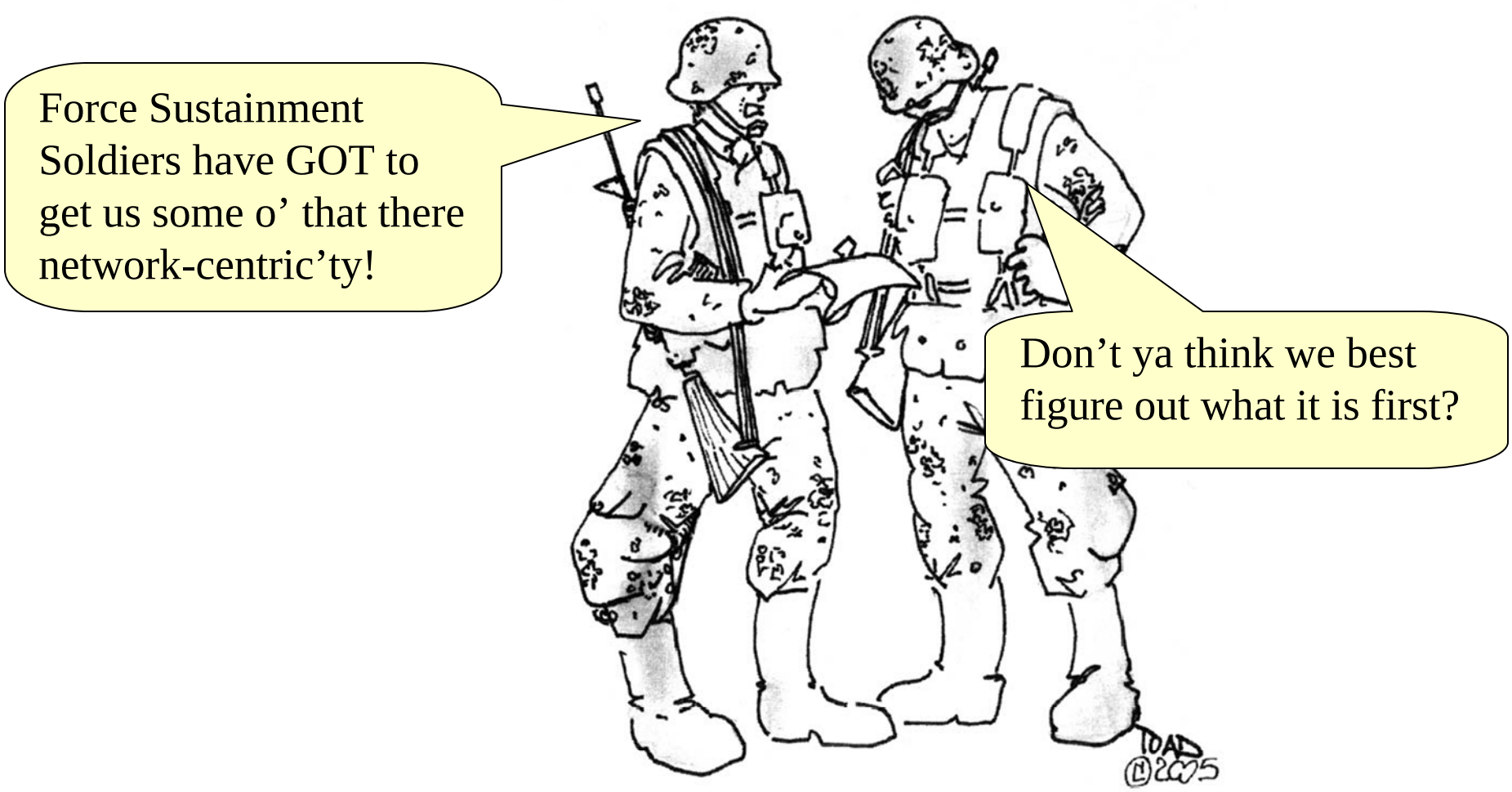
- **(O)(T) Modify Movement Control Battalion TOE so that in times of deployment, appropriate Air Force personnel are assigned to the unit. Develop habitual training relationships with supporting Air Force units**
- **(T) Train individuals on automated tracking & reporting**
- **(T) Provide MOS-independent training focused on reliable and accurate cargo documentation and consequences of incorrect data; training should be accessible from any location**
- **(L) Ensure Unit Movement Officers complete sustainment training**
- **(L) Make SMEs available to provide guidance to unit level Commanders on movement tasks**
- **(T)(L) Train Port Support Activity personnel on C2 organization and relationships at the SPOD (Sea port of debarkation)**
- **(T)(L) Establish training for senior and mid-grade Officers & NCOs for relationships w/contractors, and contractor roles & responsibilities**

Solutions That Differ Between Recommended IAPs

IAPs				
A-20	**A-21**	**B-20**	**B-21**	
X	X			(D)(L) Enact policy that all terminal nodes verify cargo seals to include seal condition and serial number. Enforce the standard for verifying cargo seals.
X		X		(D)(T) Develop joint doctrine on frustrated cargo. Provide frustrated cargo training for TTPs / doctrine to leaders at terminal locations.
X		X		(M) Create repository to share knowledge of frustrated cargo operations.
		X	X	(M) Add functionality to existing tracking systems (e.g., MTS) so that the seal serial number can be transmitted with other electronic data about the cargo.
	X		X	(M) Develop capability to communicate location and disposition (lost and found) of frustrated cargo to units within theater.
('X' indicates IAP contains stated solution set)				

Summary

Systematically examined net-centric requirements of Transportation Soldiers and recommended solutions to net-centric gaps.



Questions ?