



Briefing to:
The Modeling and Simulation Community

**TRANSPORTATION M&S
FOR THE DTS
PROVIDING END-TO-END FORCE
PROJECTION ANALYSIS**

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STRANSCOM TCJ5
3 JUNE 1999

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MOBILITY MODELING AND SIMULATION OVERVIEW

- **M&S ANALYSIS**
 - MOBILITY REQUIREMENTS STUDY 2005
- **M&S DEVELOPMENT**
 - END-TO-END FORCE PROJECTION MODELING
- **M&S MANAGEMENT FOR THE DTS**
 - USTRANSCOM M&S MASTER PLAN
- **M&S FUTURE INITIATIVES**
 - ACTD'S ... ALP ... JSIMS ... JWARS ... TPFDD-IN-AN-HOUR

KEY RESPONSIBILITIES



Single Manager for the Defense Transportation System

- Air Refueling
- Joint Operational Support Airlift Scheduling
- Defense Courier Service



- Aeromedical Regulating
- Transportation Working Capitol Fund



**MILITARY SEALIFT
COMMAND**



**MILITARY TRAFFIC
MANAGEMENT COMMAND**



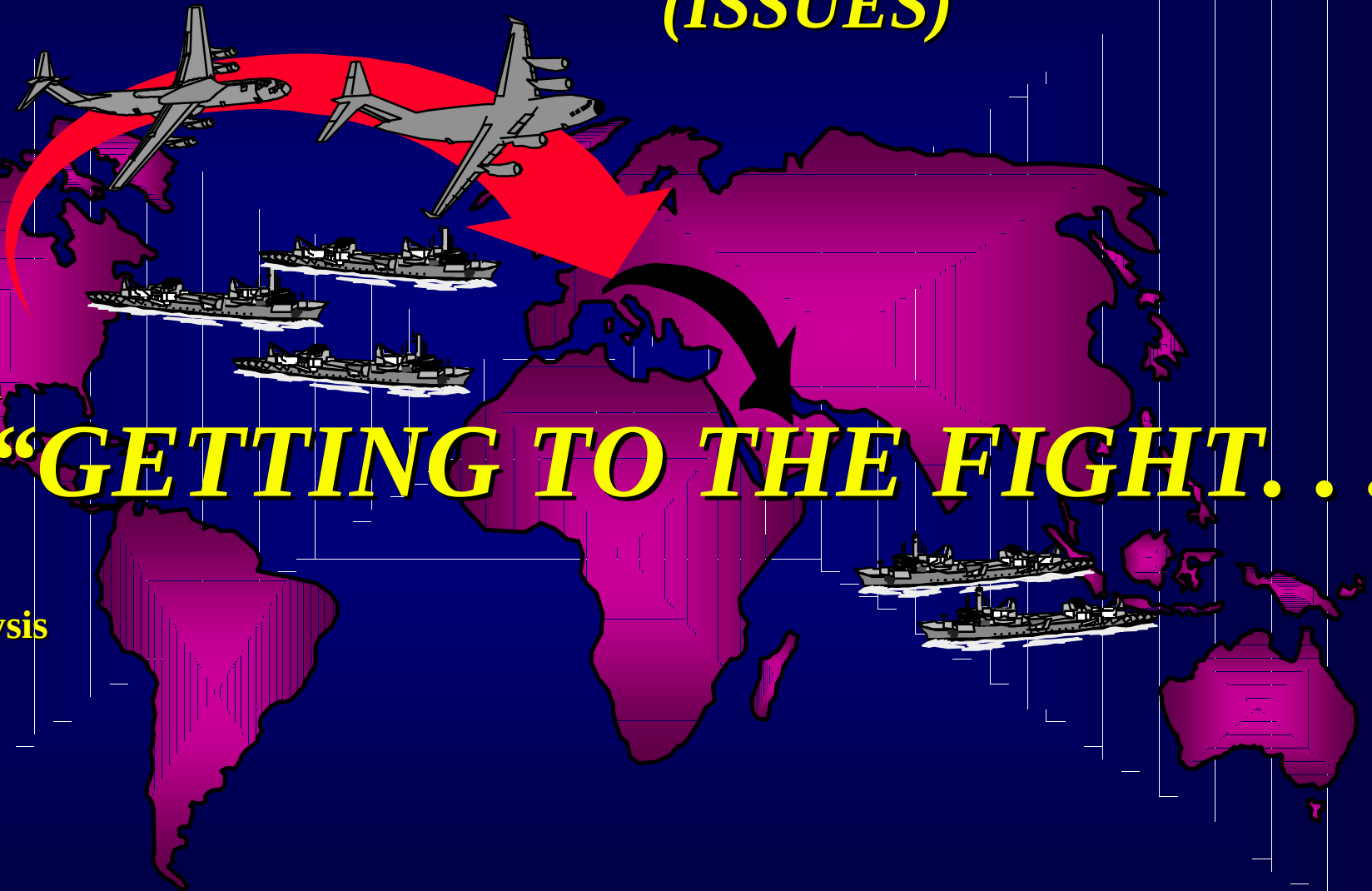
**AIR MOBILITY
COMMAND**



UNITED STATES TRANSPORTATION COMMAND DIRECTORATE OF PLANS AND POLICY (ISSUES)

7 Procurement
Modernization
Infrastructure
Route Basing
A
D Attacks
N:Future Analysis
n vs Actual
ining
ater Airlift
hnology
FDD Analysis

“GETTING TO THE FIGHT...”





MOBILITY MODELING AND SIMULATION REQUIREMENTS

- **PROGRAMMATIC ANALYSIS**

- MRS-05 ... QDR

- **DELIBERATE PLANNING**

- REFINEMENT CONFERENCE

- **EXERCISES**

- USFK EXEVAL99 ... TURBO CHALLENGES ... AGILE LION

- **WARGAMES**

- FOCUSED LOGISTICS WARGAME (FLOW) ... PW ... GEIV

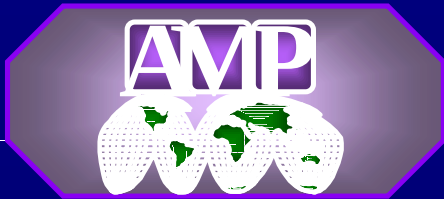
- **EXECUTION ANALYSIS**

- MCC ANALYSIS SUPPORT (DESERT STORM LIKE)



TRANSPORTATION ANALYSIS

REQUIREMENTS BASED



REQUIREMENT

DELIVERY

RISK

AIRLIFT
SEALIFT
PREPO
INFRASTRUCTURE

C
A
R
G
O

TIME

CAPABILITY BASED



REQUIREMENT

CAPABILITY

REDUCE REQUIREMENTS
DELAY REQUIREMENTS

C
A
R
G
O

TIME



FORCE PROJECTION BUSINESS

PROVIDING END-TO-END ANALYSIS

CONUS

STRATEGIC

THEATER(S)



A M P

**CONUS - STRATEGIC - THEATER
MULTIPLE OPERATIONS**

1991 ... DOD LACKS TOOLS FOR “END-TO-END” MOBILITY MODELING

1994 ...PART OF GTN FUTURE OPERATIONS CAPABILITY

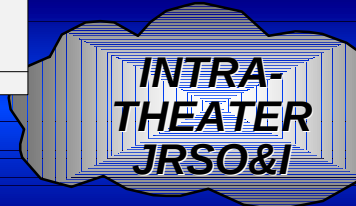
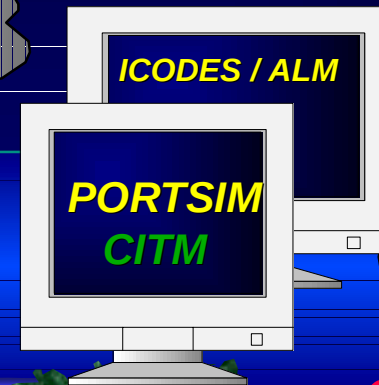


MODEL INTEGRATION OVERVIEW

AMP / FPM

PROACTIVE
PREDICTIVE
TRANSPORTATION
REQUIREMENTS

ANALYSIS
PLANNING
TRAINING
EXECUTION



CONUS
ELIST

POE

MIDAS

POD

OCONUS
ELIST



INSTALLATION

TARGET-
TPEDIT

TPFDD
X-TPFDD

FOXHOLE



TRANSPORTATION ANALYSIS, MODELING & SIMULATION

PBD 870

ROUNDTABLE
VISION

TAMS

DOD
Modeling
and
Simulation
Master Plan

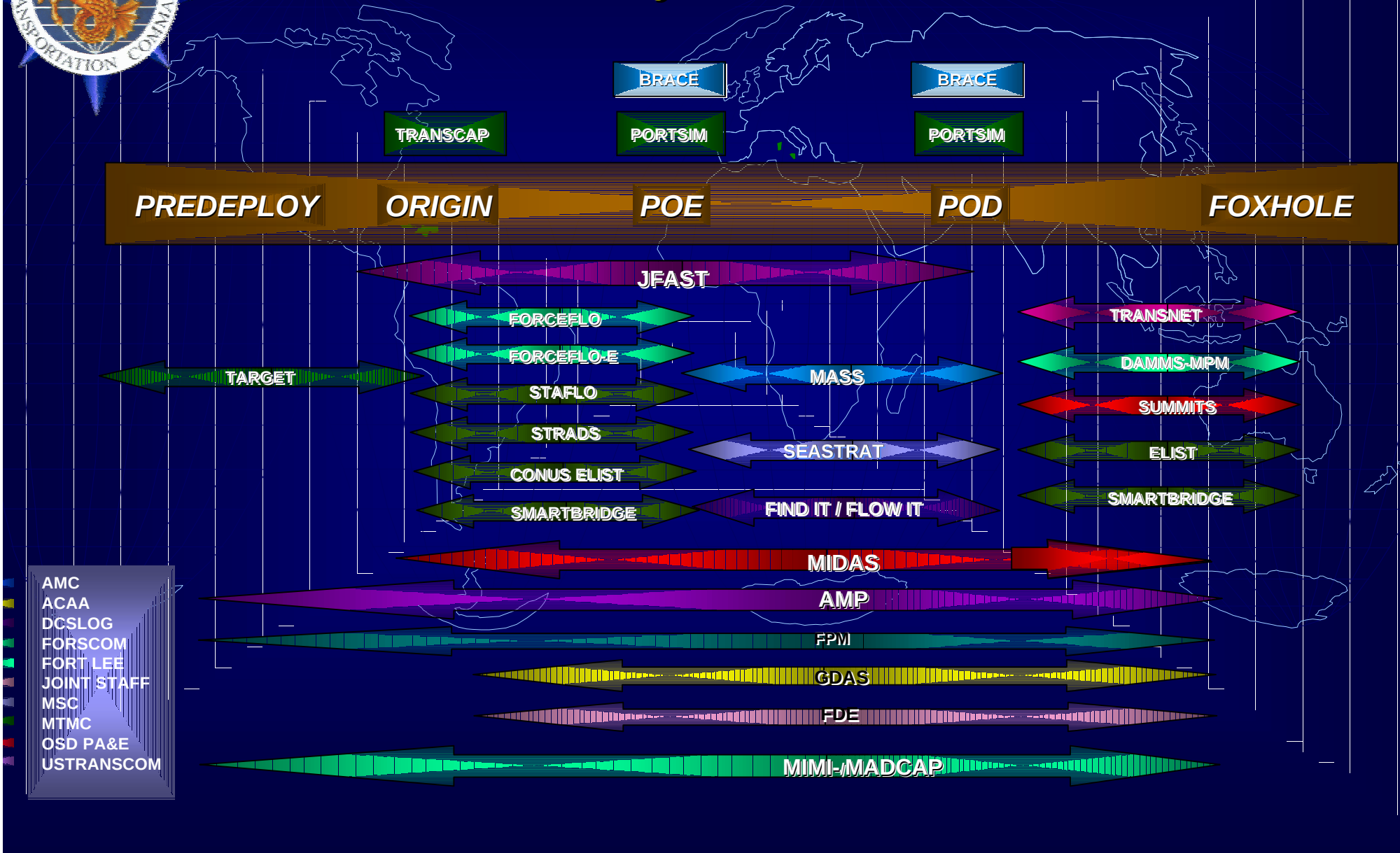
1996





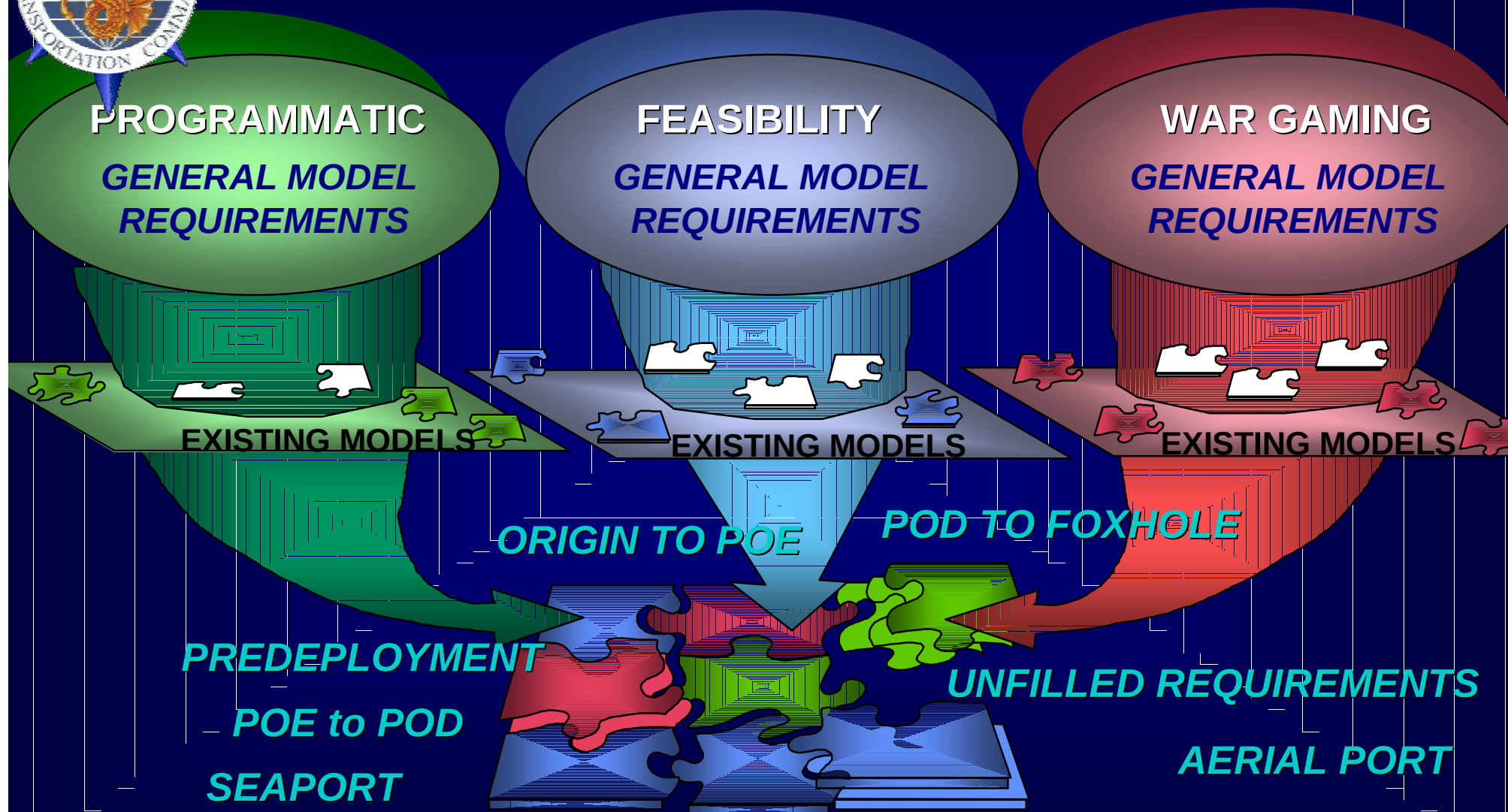
TRANSPORTATION ANALYSIS, MODELING & SIMULATION

“As-Is” System Data Collection





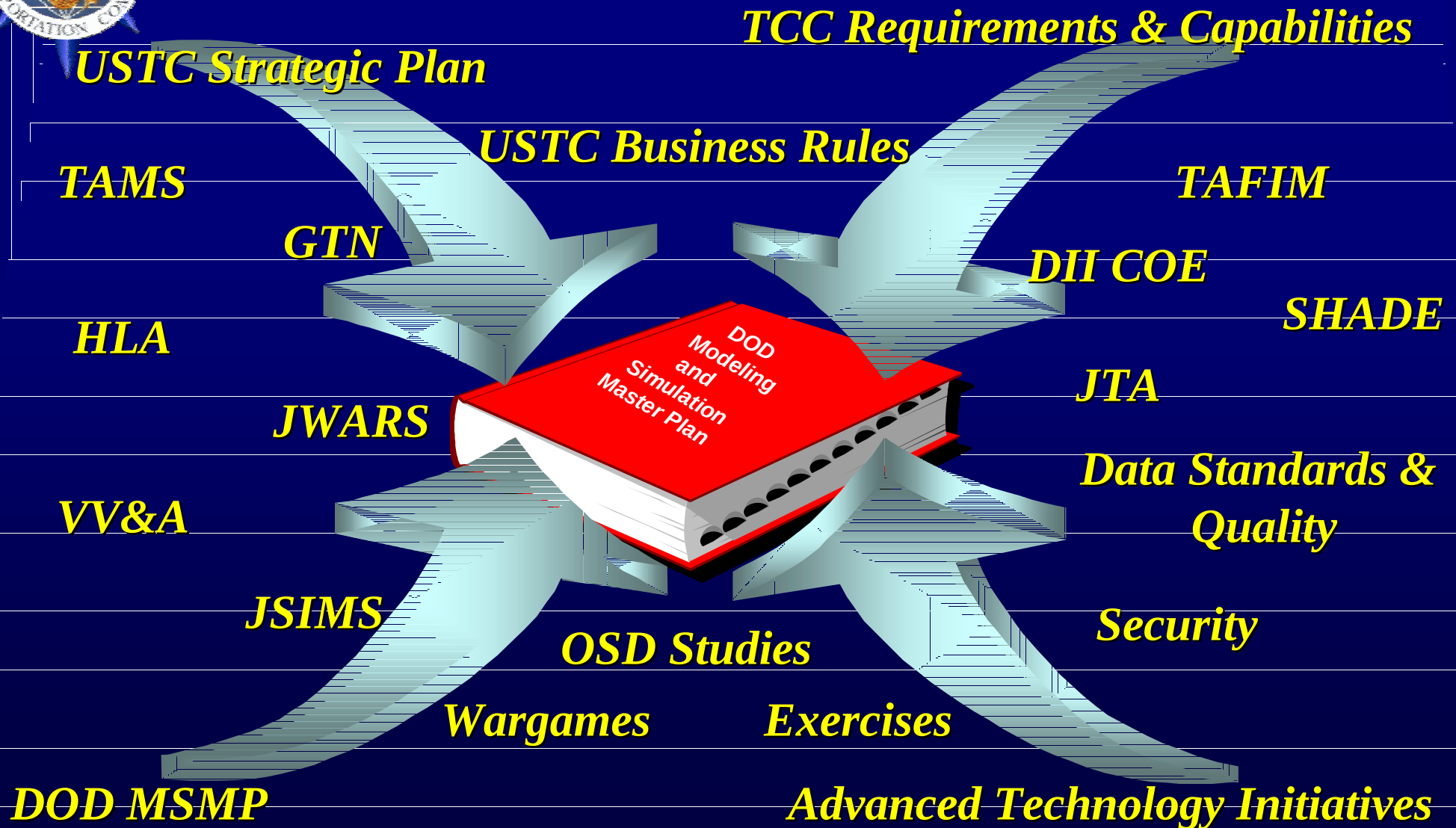
TRANSPORTATION ANALYSIS, MODELING & SIMULATION *DEVELOP END-TO-END ALTERNATIVE*



ALTERNATIVES FOR COMMON MODEL SUITE

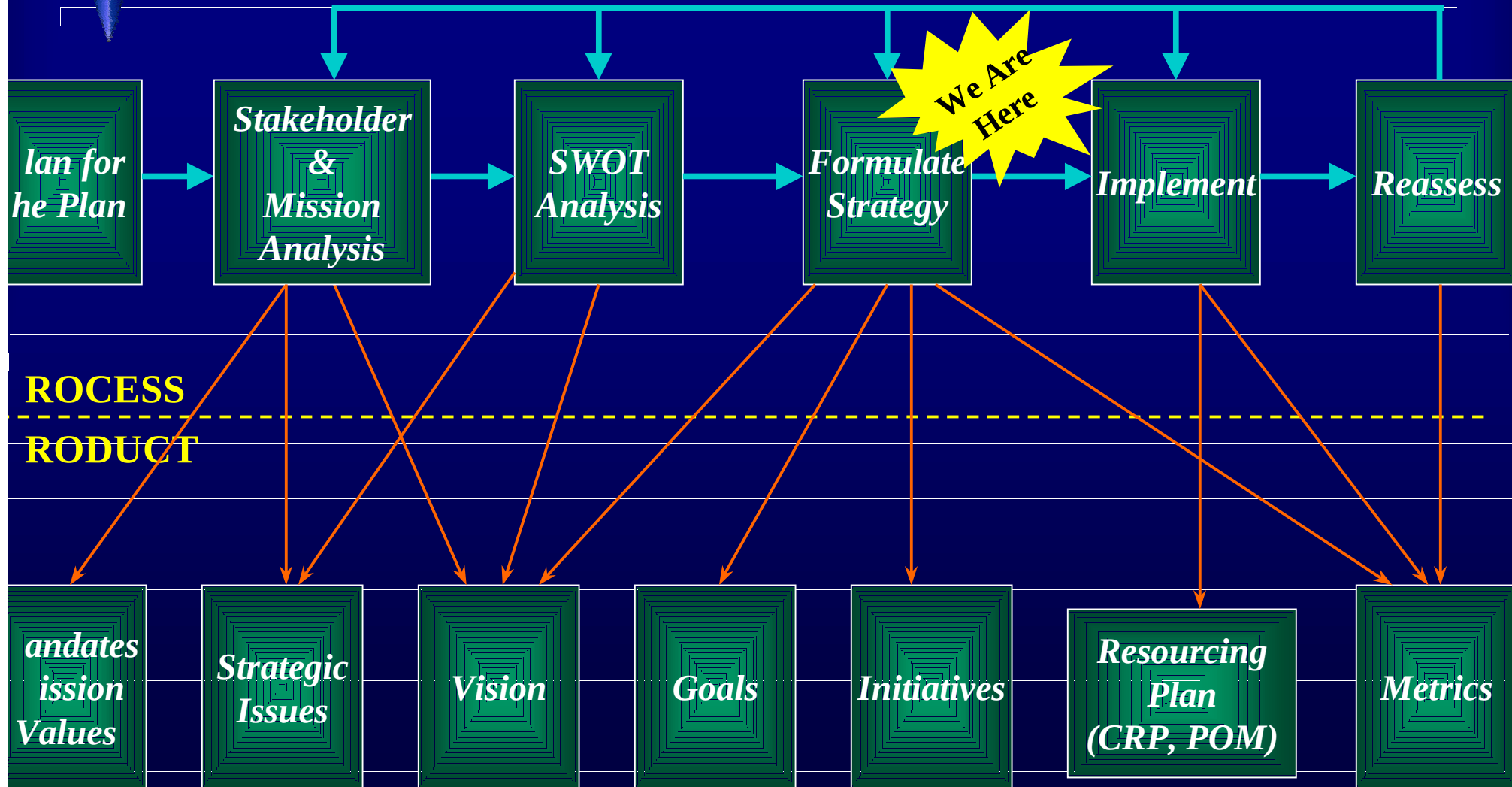


USTC M&S DRIVERS



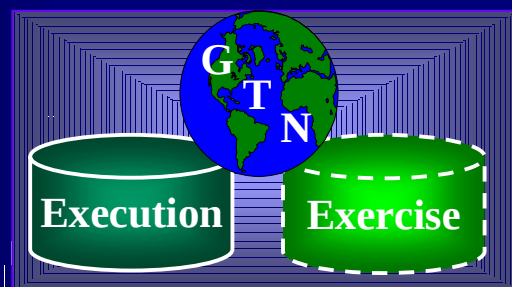
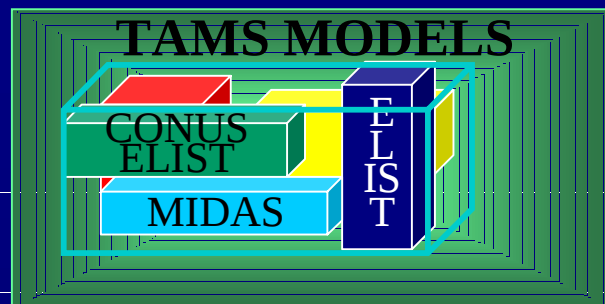


MSMP DEVELOPMENT APPROACH





CURRENT ENVIRONMENT

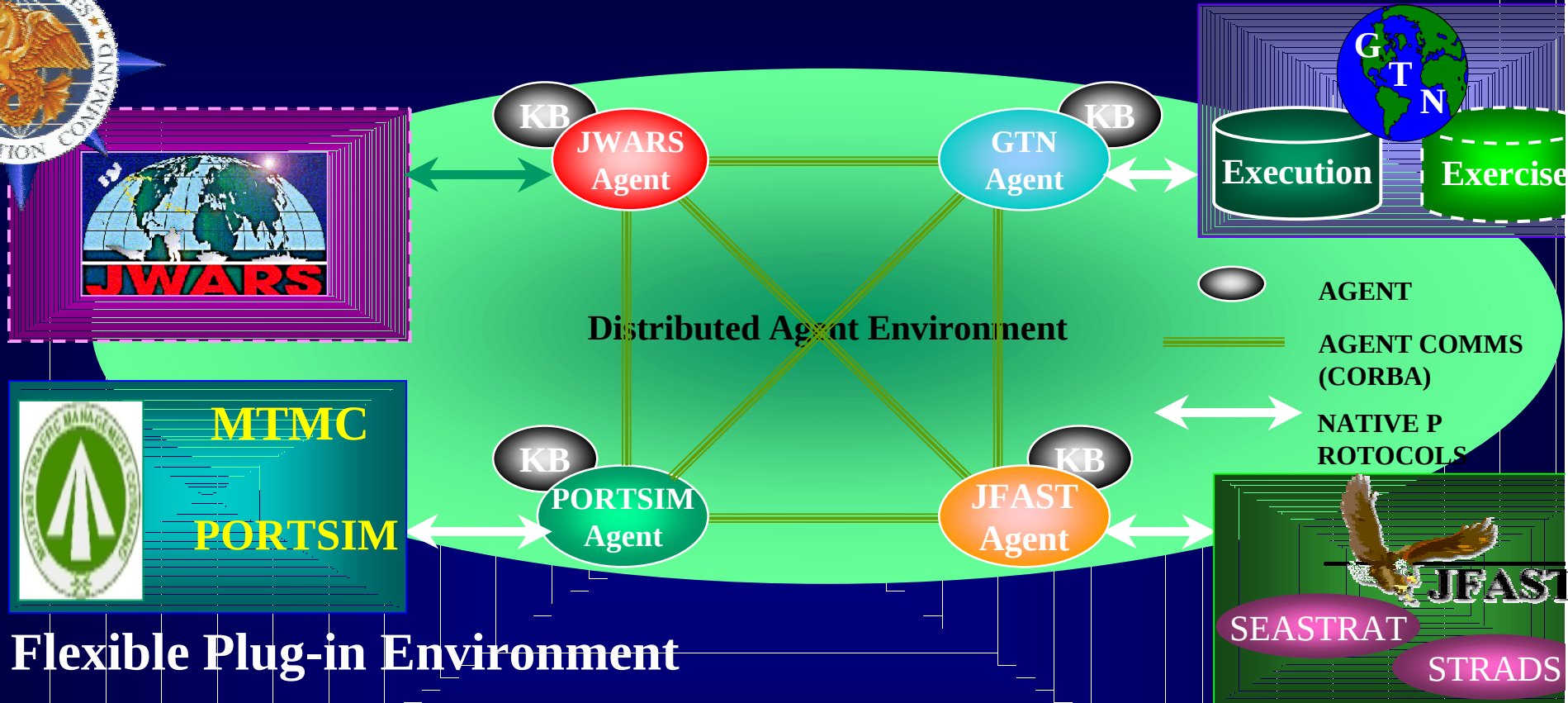


Single, Focused M&S Vision for the DTS:

single M&S environment of interoperable, collaborative models and execution systems capable of providing accurate and consistent answers at the required breadth and depth of the DTS domain.”



M&S AGENT ARCHITECTURE



- **Flexible Plug-in Environment**

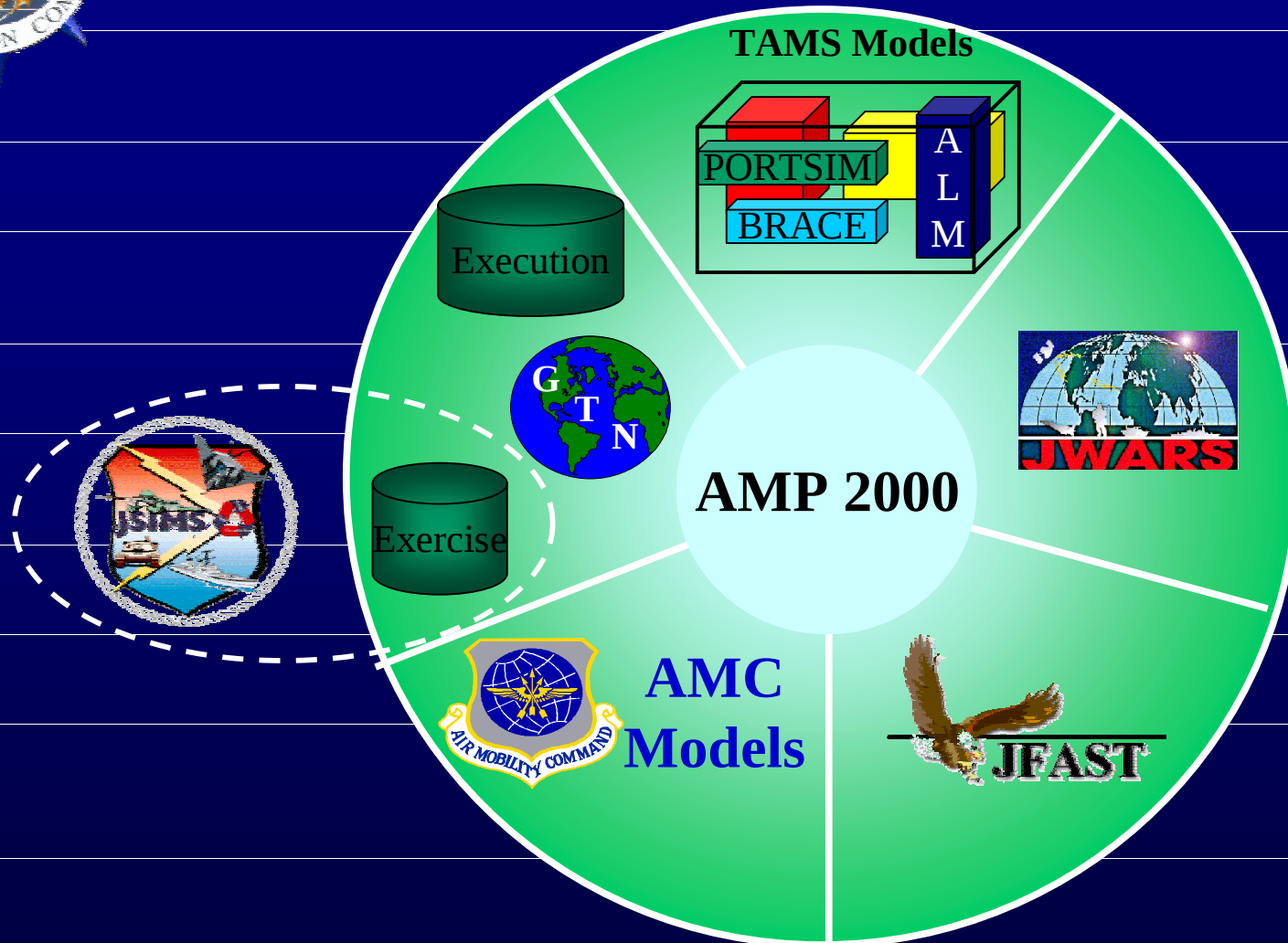
- No Hard Interfaces to Maintain (4 Agents in lieu of 6 Interfaces)
- Knowledge Base (KB) provides Rules to Translate b/w Global Agent Model and Domain Models

- **Agent Behaviors**

- Intelligent Data Retrieval, Mediation, Aggregation
- Remote Invocation of Models (Setup, Run, Return Results)



BRINGING IT ALL TOGETHER





FUTURE DTS ENVIRONMENT

- ***FOCUSED ON FORT TO FOXHOLE***
- ***RESPONSIVE AND FLEXIBLE***
- ***USE BEST BUSINESS PRACTICES***



S SINGLE MANAGER OF THE DTS, CINCTRANS CHARGED WITH INTEGRATING DTS OPERATIONS, PROCEDURES, AND PROCESSES



JOINT VISION 2010

Information Superiority

Dominant Maneuver

Precision Engagement

Technological
Innovations

Joint Forces

Coalition Partners

Focused Logistics

Full-Dimensional Protection

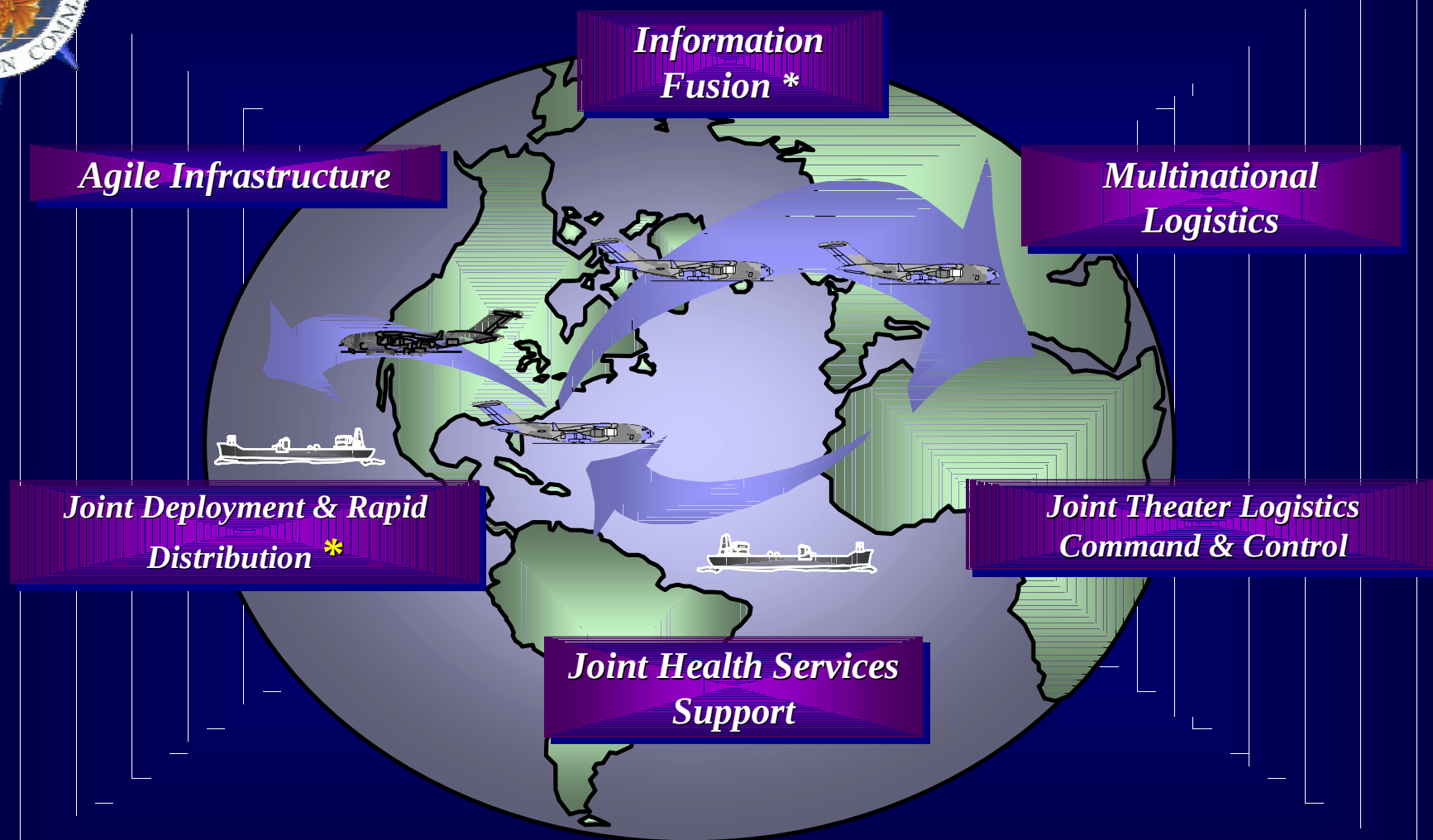
Massed

Effects

- **Advanced Logistics Project**
 - *Push the limits of technology*
 - *Cause a fundamental change in the way we do business*



TENETS OF FOCUSED LOGISTICS



**** Key USTRANSCOM Role***



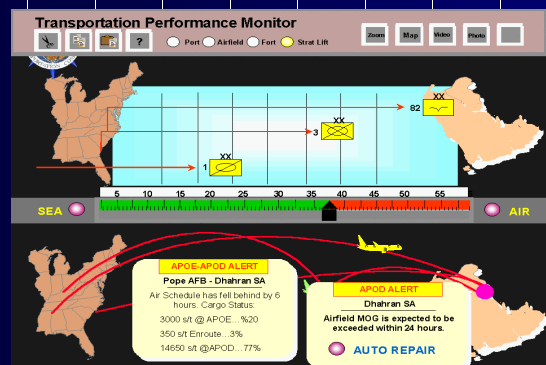
GLOBAL VIEW OF TRANSPORTATION



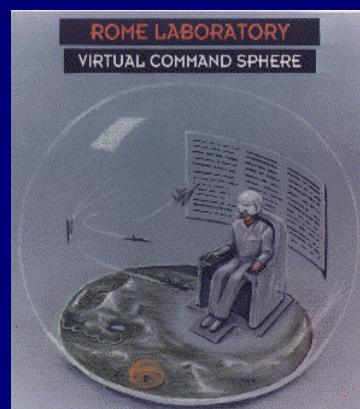
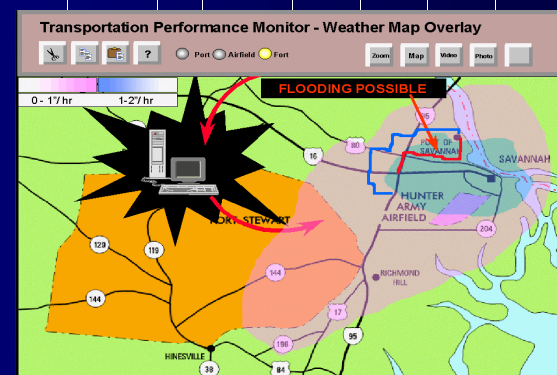


AT2000 VISION: TRANSPORTATION COP (TCOP)

Deployment Performance Monitor



Weather Overlay at Installation



Transportation Capability Mgr.



Transportation Performance Ins



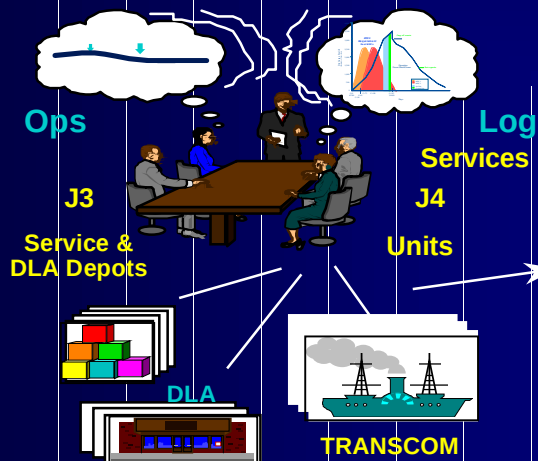
VISIONARY CONCEPT

Overarching issue: Logistical control

– Managing the pipeline

– Visibility into the process

Planning the pipeline



Develop Plan

- Collaboratively analyze tradeoffs of multiple Logistics COAs
- Globally optimize
- Executable detail



Monitor Execution

- Detect plan deviation
- Identify affected plan components
- Notify key players
- Execute IAW Plan
- Manage flow
- Create plan sentinels



Replan

- Redirected flow
- Locally optimal fixes
- Done in time to matter



IN-STORAGE

IN-PROCESS

IN-TRANSIT

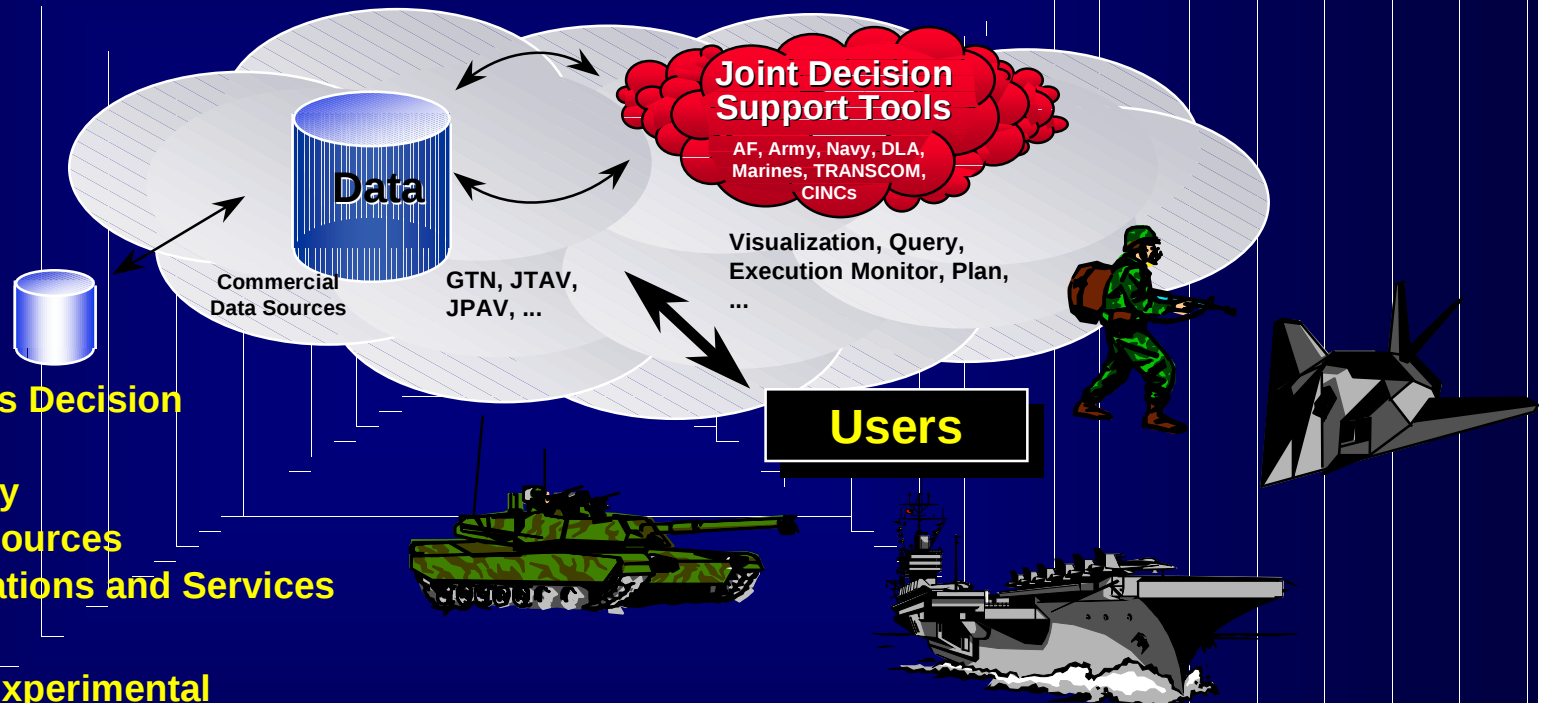
IN-THEATER



Joint Logistics Advanced Concept Technology Demonstration (JL-ACTD)

GCSS

DISN Backbone
(ATM SIPRnet and NIPRnet)



Goals

- Develop Joint Logistics Decision Support Tools
 - Common User Query
 - Access to all Data Sources
 - Transparent Applications and Services
 - Any User/Any Box
- Implement a Flexible Experimental Environment for Assessing Technology Impact on Logistics Operational Capability
- Work Trade-Offs, Users Derive Requirements

FY 96 - 97
Logistics
Anchor Desk
(LAD) Phase
I

FY 98 - 99
Joint Decision
Support Tools
Phase II

FY 00 - 02
Real-Time
Focused
Logistics
Phase III

JWARS MISSION



MISSION:

DEVELOP STATE-OF-THE-ART CLOSED-FORM SIMULATION ANALYSIS TOOL

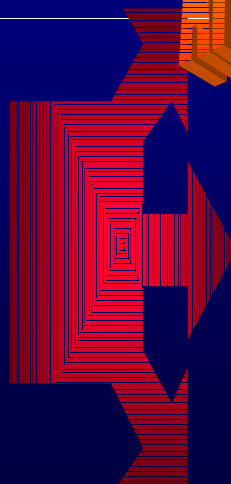
- **JOINT, CAMPAIGN-LEVEL WARFARE**
- **REPRESENT UNIQUE JOINT FUNCTIONS & PROCESSES**
- **ADDRESS JOINT DOCTRINE**
- **MODEL FUTURE WARFARE**

SERS:

- **JOINT STAFF**
- **SERVICES**
- **CINCs**
- **OSD**
- **JTFs**
- **Other DoDorg's**
- **Industry**

APPLICATIONS:

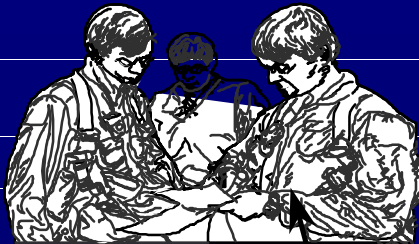
1. **Planning and execution**
 - Deliberate planning**
 - Crisis action planning**
2. **Force assessment**
3. **System effectiveness and trade off analysis**
4. **Concept and doctrine development and assessment**





JSIMS TRAINING ENVIRONMENT

Training
Audience



JSIMS

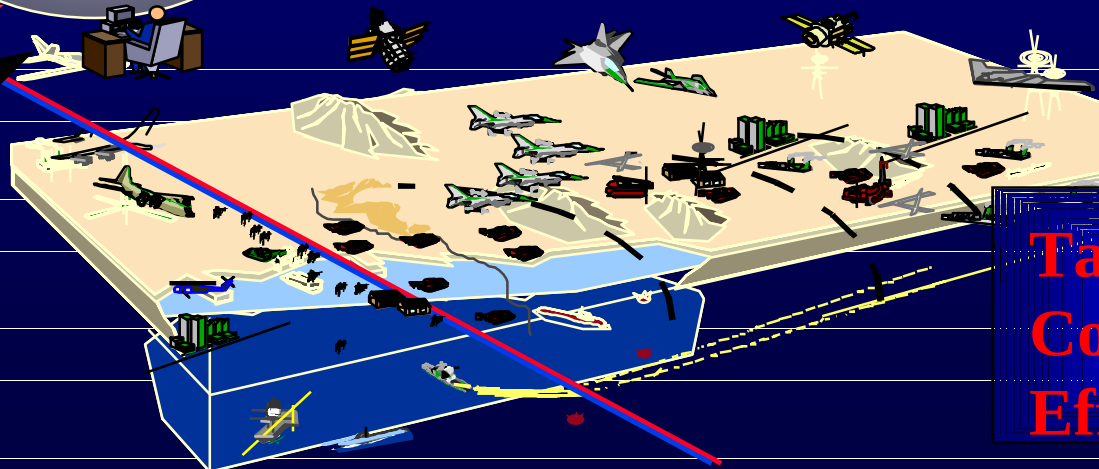
Multiple
Sides &
Factions



C⁴I systems

- GTN CSDB
1Q FY99
- GTN Rel. 5
FY01

Exercise
Control



**Tailorable
Composable
Efficient**

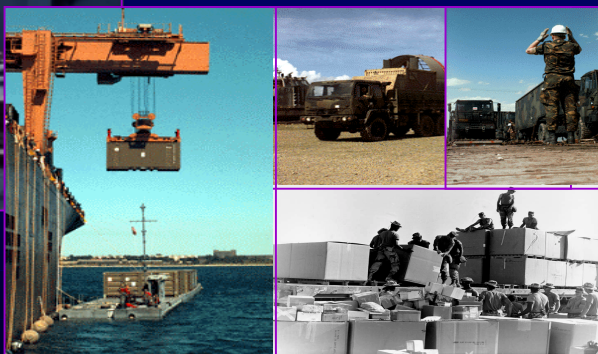
A joint, distributed, synthetic battlespace for all DoD players



TPFDD IN AN HOUR

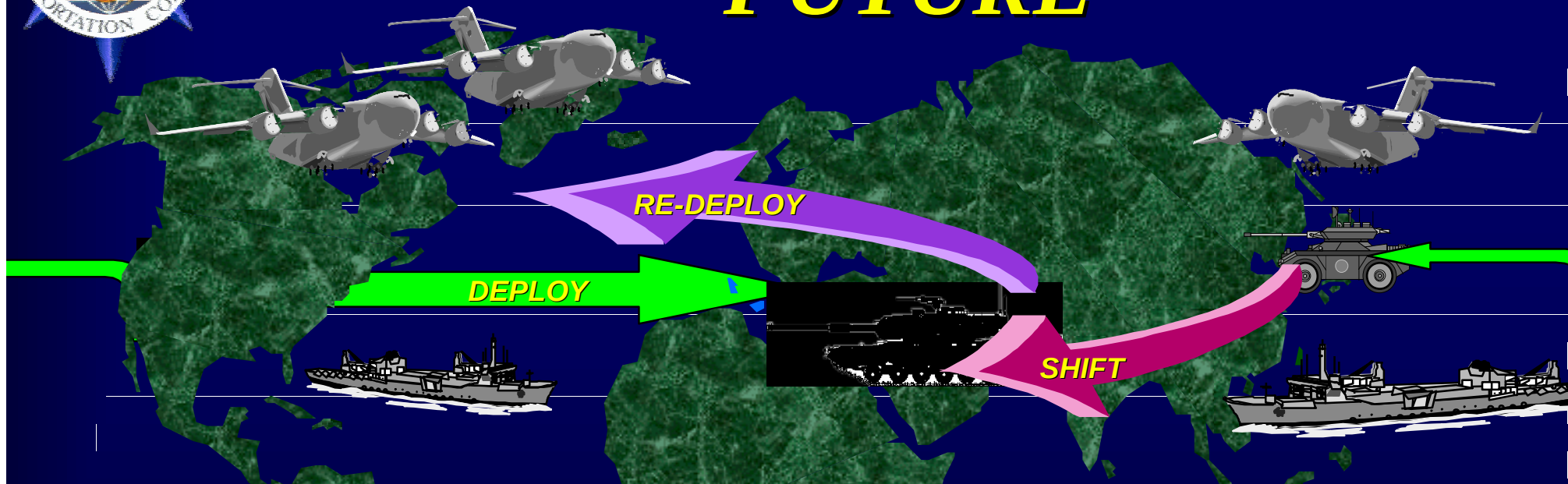
AN ENABLER FOR A

... More Responsive
Joint
Deployment
Process





FORCE PROJECTION FUTURE



OPERATIONAL OUTPUT

- **TREND ANALYSIS...PREDICTIVE ANALYSIS...TPFDD HR**
- **VISIBILITY OF ASSETS AND REQUIREMENTS**
- **COLLABORATIVE PLAN & EXECUTE**
- **INFLUENCE DECISIONS & REDUCE UNCERTAINTY**



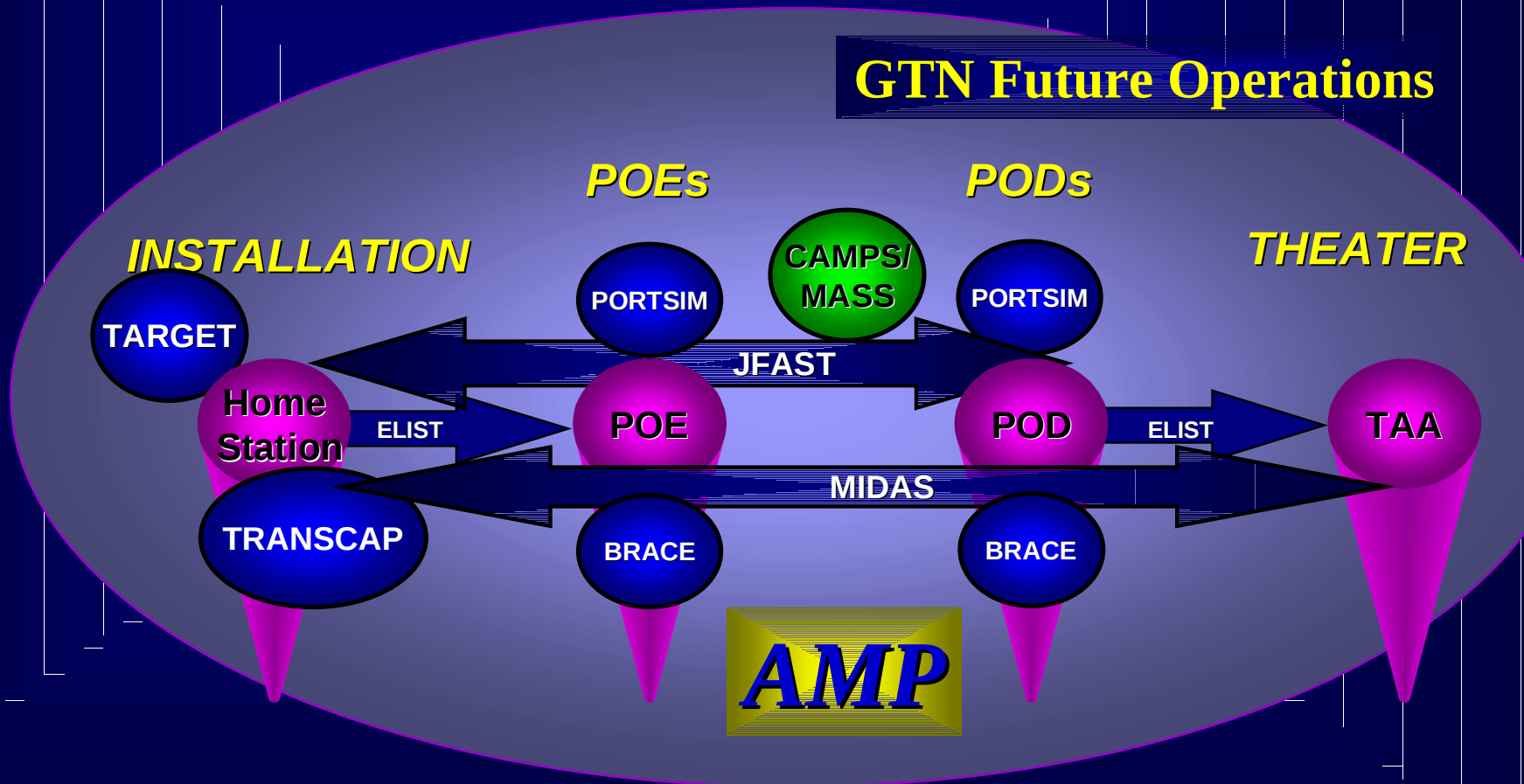
DTS 2010 . . . on the way



TRANSPORTATION ANALYSIS, MODELING & SIMULATION SYSTEM RECOMMENDATIONS

GRATION STEMS

CAMPS
CE MASS
ST
AS
TSIM
GET
NSCAP
T (CONUS)
T (OCONUS)



= MIGRATION SYSTEMS



= SUPPORTING SYSTEMS