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

R. KEITH SEAMAN
STRANSCOM TCJ5
3 JUNE 1999
<table>
<thead>
<tr>
<th>1. REPORT DATE (DD-MM-YYYY)</th>
<th>03-06-1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. REPORT TYPE</td>
<td>Briefing</td>
</tr>
<tr>
<td>3. DATES COVERED (FROM - TO)</td>
<td>xx-xx-1999 to xx-xx-1999</td>
</tr>
<tr>
<td>4. TITLE AND SUBTITLE</td>
<td>Transportation M&amp;S for the DTS Providing End-to-End Force Projection Analysis</td>
</tr>
<tr>
<td></td>
<td>Unclassified</td>
</tr>
<tr>
<td>5a. CONTRACT NUMBER</td>
<td></td>
</tr>
<tr>
<td>5b. GRANT NUMBER</td>
<td></td>
</tr>
<tr>
<td>5c. PROGRAM ELEMENT NUMBER</td>
<td></td>
</tr>
<tr>
<td>5d. PROJECT NUMBER</td>
<td></td>
</tr>
<tr>
<td>5e. TASK NUMBER</td>
<td></td>
</tr>
<tr>
<td>5f. WORK UNIT NUMBER</td>
<td></td>
</tr>
<tr>
<td>6. AUTHOR(S)</td>
<td>Seaman, R. K.</td>
</tr>
<tr>
<td>7. PERFORMING ORGANIZATION NAME AND ADDRESS</td>
<td>STRANSCOM TCJ5</td>
</tr>
<tr>
<td></td>
<td>xxxxxx, xxxxxxx</td>
</tr>
<tr>
<td>8. PERFORMING ORGANIZATION REPORT NUMBER</td>
<td></td>
</tr>
<tr>
<td>9. SPONSOR/MONITORING AGENCY NAME AND ADDRESS</td>
<td>United States Department of Defense</td>
</tr>
<tr>
<td></td>
<td>Defense Modeling and Simulation Office</td>
</tr>
<tr>
<td></td>
<td>1901 N. Beauregard St., Suite 500</td>
</tr>
<tr>
<td></td>
<td>Alexandria, VA22311-1705</td>
</tr>
<tr>
<td>10. SPONSOR/MONITOR’S ACRONYM(S)</td>
<td></td>
</tr>
<tr>
<td>11. SPONSOR/MONITOR’S REPORT NUMBER(S)</td>
<td></td>
</tr>
<tr>
<td>12. DISTRIBUTION/AVAILABILITY STATEMENT</td>
<td>APUBLIC RELEASE</td>
</tr>
<tr>
<td>13. SUPPLEMENTARY NOTES</td>
<td></td>
</tr>
<tr>
<td>15. SUBJECT TERMS</td>
<td></td>
</tr>
<tr>
<td>16. SECURITY CLASSIFICATION OF:</td>
<td></td>
</tr>
<tr>
<td>a. REPORT</td>
<td>Unclassified</td>
</tr>
<tr>
<td>b. ABSTRACT</td>
<td>Unclassified</td>
</tr>
<tr>
<td>c. THIS PAGE</td>
<td>Unclassified</td>
</tr>
<tr>
<td>17. LIMITATION OF ABSTRACT</td>
<td>Public Release</td>
</tr>
<tr>
<td>18. NUMBER OF PAGES</td>
<td>29</td>
</tr>
<tr>
<td>19. NAME OF RESPONSIBLE PERSON</td>
<td>Fenster, Lynn</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:lfenster@dtic.mil">lfenster@dtic.mil</a></td>
</tr>
<tr>
<td>19b. TELEPHONE NUMBER</td>
<td>International Area Code</td>
</tr>
<tr>
<td></td>
<td>Area Code Telephone Number</td>
</tr>
<tr>
<td></td>
<td>703767-9007</td>
</tr>
<tr>
<td></td>
<td>DSN</td>
</tr>
<tr>
<td></td>
<td>427-9007</td>
</tr>
</tbody>
</table>

Standard Form 298 (Rev. 8-98) Prescribed by ANSI Std Z39.18
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
“GETTING TO THE FIGHT...”

7 Procurement
Modernization
Restructure
Route Basing
A
D Attacks
N:Future Analysis
n vs Actual
ining
ater Airlift
hnology
FDD Analysis
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)
1991 ... DOD LACKS TOOLS FOR “END-TO-END” MOBILITY MODELING

1994 ... PART OF GTN FUTURE OPERATIONS CAPABILITY
MSMP DEVELOPMENT APPROACH

LAN FOR THE PLAN

Stakeholder & Mission Analysis

SWOT Analysis

Formulate Strategy

Implement

Reassess

PROCESS PRODUCT

We Are Here

Missions

Values

Strategic Issues

Vision

Goals

Initiatives

Resourcing Plan (CRP, POM)

Metrics
Single, Focused M&S Vision for the DTS:

A 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

TAMS Models
PORTSIM
ALM
BRACE
Execution
AMP 2000
AMC Models
G T N
JWARS
JFAST
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

- 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

- Agile Infrastructure
- Joint Deployment & Rapid Distribution *
- Information Fusion *
- Multinational Logistics
- Joint Theater Logistics Command & Control
- Joint Health Services Support
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

Planning the pipeline

- Managing the pipeline
- Visibility into the process

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-PROCESS
IN-STORAGE
IN-TRANSIT
IN-THEATER
Joint Logistics Advanced Concept Technology Demonstration (JL-ACTD)

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

DISN Backbone
(ATM SIPRnet and NIPRnet)

GCSS

Joint Decision Support Tools

AF, Army, Navy, DLA, Marines, TRANSCOM, CINCs

Visualization, Query, Execution Monitor, Plan, ...

Users

Goals

- Logistics Anchor Desk (LAD) Phase I
- Joint Decision Support Tools Phase II
- Real-Time Focused Logistics Phase III

FY 96 - 97

FY 98 - 99

FY 00 - 02
**JWARS 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

**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

**SERVICES:**

- JOINT STAFF
- SERVICES
- CINCs
- OSD
- JTFs
- Other DoDorg’s
- Industry
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