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DEFENSE DATA NETWORK SUPPORT CONCEPT ANALYSIS(U)
DYNAMICS RESEARCH CORP WILMINGTON MA L S COHEN ET AL.
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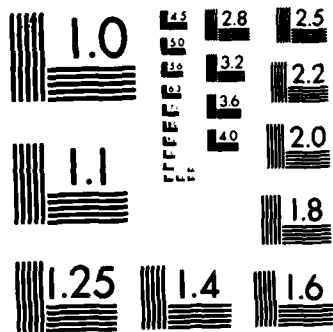
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Final
Technical Briefing

DEFENSE DATA NETWORK SUPPORT CONCEPT ANALYSIS

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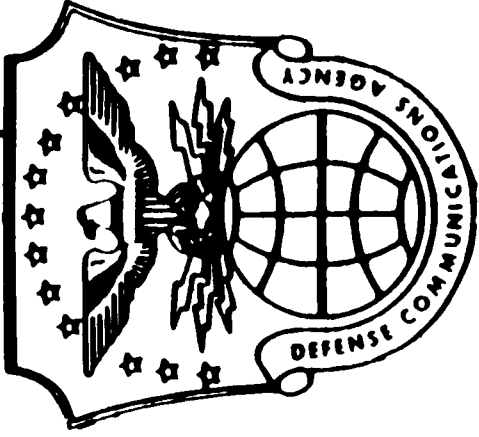
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DEFENSE DATA NETWORK SUPPORT CONCEPT COMPARATIVE ANALYSIS

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Louis S. Cohen
William J. Miller


DYNAMICS RESEARCH CORPORATION

JANUARY 1985

DDN SUPPORT CONCEPT COMPARATIVE ANALYSIS

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OVERVIEW

- **INTRODUCTION**
- **BASELINE COMPARISON SYSTEM**
- **QUALITATIVE ANALYSIS**
- **QUANTITATIVE ANALYSIS**
- **SENSITIVITY ANALYSES**
- **ISSUES**
- **OBSERVATIONS**
- **RECOMMENDATIONS**

INTRODUCTION

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TASK OBJECTIVES

- **ANALYZE REQUIREMENTS FOR**
 - **SOLE SOURCE CONTRACTOR SUPPORT**
 - **COMPETITIVELY PROCURED CONTRACTOR SUPPORT**
 - **ORGANIC ON-SITE AND CONTRACTOR OFF-SITE SUPPORT**
 - **ORGANIC SUPPORT**
- **RECOMMEND A SUPPORT CONCEPT**

INTRODUCTION

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SCHEDULE

- **START TASK 26 SEP 84**
- **TECHNICAL BRIEFING 30 OCT 84**
- **DRAFT REPORT 26 NOV 84**
- **FINAL REPORT 26 DEC 84**

INTRODUCTION

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APPROACH

- **STRUCTURED ANALYSIS - LOGISTICS SUPPORT ELEMENTS**
- **BASELINE COMPARISON SYSTEM**
- **QUALITATIVE ANALYSIS**
- **QUANTITATIVE ANALYSIS**

BASELINE COMPARISON SYSTEM

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DDN SYSTEM DESCRIPTION

BACKBONE NETWORK

- **PACKET SWITCHING NODES**
- **COMMUNICATION LINKS AND DEVICES**
 - **MODEMS**
 - **MUXES**
 - **CRYPTO**

ACCESS NETWORK

- **TAC**
- **COMMUNICATIONS LINKS AND DEVICES**
 - **MODEMS**
 - **DIAL-UPS AT TAC**
 - **CRYPTO**

BASELINE COMPARISON SYSTEM

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LOGISTICS ELEMENTS SELECTED

- **MAINTENANCE PLANNING**
- **SUPPLY SUPPORT**
- **SUPPORT EQUIPMENT (SE)**
- **TECHNICAL DATA**
- **MANPOWER AND PERSONNEL**
- **TRAINING AND TRAINING DEVICES**
- **PACKAGING, HANDLING, STORAGE AND TRANSPORTATION (PHS&T)**
- **FACILITIES**

BASELINE COMPARISON SYSTEM

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OTHER LOGISTICS ELEMENTS

- **ILS TESTING AND EVALUATION (T&E)**
- **RELIABILITY AND MAINTAINABILITY INTERFACE**
- **LOGISTICS SUPPORT RESOURCE FUNDS**
- **LOGISTICS SUPPORT MANAGEMENT INFORMATION**
- **COMPUTER RESOURCES SUPPORT**
- **ENERGY MANAGEMENT**
- **SURVIVABILITY**

BASELINE COMPARISON SYSTEM

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OTHER DESCRIPTIVE FACTORS

- **HARDWARE**
 - C-30s, C-70s, TAC — COMMON SUITE OF BOARDS
 - BOARDS, HARNESES, CABINETS, PERIPHERALS
- **MAINTENANCE MANPOWER**
 - BBN SKILLED TECHNICIANS
- **SPARES LOCATIONS**
 - BBNCC, STUTT GART, EUROPEAN SITES, FIELD SERVICE REPS, WIN SITES
- **DEPOT REPAIR**
 - SCREENING AND REPAIR AT BBNCC AND STUTT GART
 - MAJOR REPAIRS AT BBNCC SHARED WITH MANUFACTURING
- **NETWORK OPERATIONS CENTER (NOC)**
 - CONTROLLERS, FIREFIGHTERS

SOLE SOURCE CONTRACTOR SUPPORT (THE BASELINE SYSTEM)

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LOGISTICS ELEMENT	REQUIREMENT FULFILLED BY	REMARKS
MAINTENANCE	CONTRACTOR-SOLE SOURCE	
SUPPLY	CONTRACTOR-SOLE SOURCE	SITE AND DEPOT SPARES
S.E.	CONTRACTOR	SITE - NONE DEPOT - CONTRACTOR
DATA	CONTRACTOR	SITE AND DEPOT
MANPOWER	CONTRACTOR	SITE AND DEPOT
TRAINING	CONTRACTOR	TRAINING REQUIRED FOR CONTRACTOR TECHNICIANS
PHS&T	CONTRACTOR	ALL TRANSPORTATION BY COMMERCIAL MEANS
ILS T&E		PART OF DDN PMO PROGRAM
FACILITIES	CONTRACTOR	DEPOT AND NOC

COMPETITIVELY PROCURED CONTRACTOR SUPPORT (WITH GFE SPARES)

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BASELINE COMPARISON SYSTEM

ALTERNATIVE CONCEPT

<u>LOGISTICS ELEMENT</u>	<u>FULFILLED BY</u>	<u>ADDITIONAL REQUIREMENT</u>	<u>COST IMPACT</u>
MAINTENANCE	SOLE SOURCE	CONTRACTOR	- FROM COMPETITION
SUPPLY	SOLE SOURCE	GOVERNMENT	+ NO SHARING, PROVISIONING
S.E.	CONTRACTOR		
DATA	CONTRACTOR		
MANPOWER	CONTRACTOR		
TRAINING	CONTRACTOR		
PHS&T	CONTRACTOR		
ILS T&E			
FACILITIES	CONTRACTOR		+ RIGHTS, TECH MANUALS

COMPETITIVELY PROCURED CONTRACTOR SUPPORT (WITH CFE SPARES)

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BASELINE COMPARISON SYSTEM

ALTERNATIVE CONCEPT

<u>LOGISTICS ELEMENT</u>	<u>FULFILLED BY</u>	<u>ADDITIONAL REQUIREMENT</u>	<u>COST IMPACT</u>
MAINTENANCE	SOLE SOURCE	CONTRACTOR	- FROM COMPETITION
SUPPLY	SOLE SOURCE	CONTRACTOR	+ NO SHARING, RISK, POTENTIAL MARK UP
S.E.	CONTRACTOR		
DATA	CONTRACTOR		
MANPOWER	CONTRACTOR		
TRAINING	CONTRACTOR		
PHS&T	CONTRACTOR		
ILS T&E			
FACILITIES	CONTRACTOR	GOVERNMENT	+ RIGHTS, TECH MANUALS

ORGANIC ON-SITE AND COMPETITIVELY PROCURED OFF-SITE SUPPORT

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BASELINE COMPARISON SYSTEM

ALTERNATIVE CONCEPT

<u>LOGISTICS ELEMENT</u>	<u>FULFILLED BY</u>	<u>ADDITIONAL REQUIREMENT</u>	<u>COST IMPACT</u>
MAINTENANCE	SOLE SOURCE	GOVERNMENT ON-SITE CONTRACTOR OFF-SITE	UNK MANAGEMENT REQUIRED — FROM COMPETITION
SUPPLY	SOLE SOURCE	GOVERNMENT	+ NO SHARING, PROVISIONING
S.E.	CONTRACTOR	GOVERNMENT	UNK COMMON VS PECULIAR
DATA	CONTRACTOR	GOVERNMENT	+ RIGHTS, TECH MANUALS
MANPOWER	CONTRACTOR	GOVERNMENT ON-SITE CONTRACTOR OFF-SITE	UNK POLICY ISSUES — FROM COMPETITION
TRAINING	CONTRACTOR	GOVERNMENT ON-SITE	+
PHS&T	CONTRACTOR	GOVERNMENT	UNK
ILS T&E			
FACILITIES	CONTRACTOR		

ON AND OFF-SITE ORGANIC SUPPORT

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BASELINE COMPARISON SYSTEM

ALTERNATIVE CONCEPT

<u>LOGISTICS ELEMENT</u>	<u>FULFILLED BY</u>	<u>ADDITIONAL REQUIREMENT</u>	<u>COST IMPACT</u>
MAINTENANCE	SOLE SOURCE	GOVERNMENT	UNK MANAGEMENT REQUIRED
SUPPLY	SOLE SOURCE	GOVERNMENT	+ NO SHARING, PROVISIONING
S.E.	CONTRACTOR	GOVERNMENT	UNK SITE, COMMON VS PECULIAR + DEPOT S.E.
DATA	CONTRACTOR	GOVERNMENT	+ RIGHTS, TECH MANUALS
MANPOWER	CONTRACTOR	GOVERNMENT	+ NO SHARING, POLICY ISSUES
TRAINING	CONTRACTOR	GOVERNMENT	+
PHS&T	CONTRACTOR	GOVERNMENT	UNK
ILS T&E		GOVERNMENT	+
FACILITIES	CONTRACTOR	GOVERNMENT	+ DEPOT FACILITY

QUANTITATIVE ANALYSIS

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- LOGISTICS SUPPORT COST MODEL
 - RELEVANT INCREMENTAL COSTS
- SOURCES OF INFORMATION
 - DDN PMO
 - SM ALC
 - DDN PRINCIPLE CONTRACTOR
 - DCA OC
 - DCA COST AND PLANNING FACTORS MANUAL

QUANTITATIVE ANALYSIS

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GROUND RULES

- **CRITERIA**
 - **COST**
 - **OTHER QUALITATIVE FACTORS**
- **SOFTWARE SUPPORT NOT AN ISSUE**
- **MCS OPERATED BY DCA**
- **EXISTING HARDWARE ASSUMED NOT STOCK LISTED**
- **NAC SUPPORT SIMILAR TO TAC/PSN SUPPORT**
- **TEN YEAR SPAN FOR ANALYSIS**
- **NO GOVERNMENT SE WITH CONTRACTOR MAINTENANCE**

QUANTITATIVE ANALYSIS

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ASSUMPTIONS

- COMPETITIVE SUPPORT POSSIBLE
- DATA RIGHTS AVAILABLE
- C-30 PROCESSOR STANDARD
- ON-SITE SUPPORT VARIES
- DEPOTS BACKLOGGED
- PHS&T COSTS CONSTANT, TIMES VARY
- SPARES AVAILABLE
- STABLE DEFCON 4/5

QUANTITATIVE ANALYSIS

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RESULTS (\$1000)

	<u>BY</u>	<u>TY</u>	<u>PV</u>
	B/L	B/L	B/L
SOLE SOURCE			
COMPETITIVE	-6570	-11244	-723
COMP. DEPOT	-35081	-49567	-18206
ORGANIC	-32546	-46585	-16064

SENSITIVITY ANALYSES

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IMPACT OF CHANGING MEAN TIME BETWEEN MAINTENANCE ACTIONS (MTBMA) (PV \$1000)

	<u>REFERENCE</u>	<u>+50% MTBMA</u>	<u>-50% MTBMA</u>
SOLE SOURCE	B/L	-2830	8498
COMPETITIVE	-721	-846	-354
COMPETITIVE DEPOT	-18206	-19897	-13124
ORGANIC	-16062	-17845	-10724

- REMAIN WITH SOLE SOURCE SUPPORT FOR RELIABLE EQUIPMENT
- COMPETE INCREASED WORKLOAD FOR LOW RELIABILITY

SENSITIVITY ANALYSES

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IMPACT OF INCREASING SPARES UNIT COST BY 50% (PV \$1000)

	<u>REFERENCE</u>	<u>INCREASING SPARES COST</u>
SOLE SOURCE	B/L	0
COMPETITIVE	-721	1916
COMPETITIVE DEPOT	-18206	-15609
ORGANIC	-16062	-13338

- IF SPARES COSTS INCREASE SOLE SOURCE SUPPORT BENEFITS FROM SHARING

SENSITIVITY ANALYSES

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IMPACT OF REDUCING ON-SITE OVERHEAD FOR COMPETITIVE MAINTENANCE BY 15% VS. 50% (PV \$1000)

	<u>REFERENCE</u>	<u>SENSITIVITY</u>
SOLE SOURCE	B/L	N/A
COMPETITIVE	-721	18529

- COMPETITIVE SUPPORT PREFERRED ONLY IF SIGNIFICANT COST REDUCTIONS ARE LIKELY

ISSUES

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OTHER CONSIDERATIONS

- **USERS' DESIRES OR DEMANDS**
- **PROGRAM STABILITY**
- **RISK AND UNCERTAINTY**

OBSERVATIONS

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- **GFE SPARES LESS RISKY, EXPENSIVE THAN CFE SPARES**
- **COST NOT BASIS FOR COMPETITIVE CONTRACTOR SUPPORT**
- **ON-SITE SUPPORT MAJOR COST DRIVER**
- **ORGANIC SUPPORT COST REDUCTIONS COMPLICATED BY SUBJECTIVE ISSUES**
- **SUBJECTIVE ISSUES FAVOR COMPETITION**

RECOMMENDATIONS

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- MOVE TOWARD COMPETITIVE SUPPORT FOR DDN
- IMPLEMENT COMPETITIVE SUPPORT INCREMENTALLY
- EMPHASIZE COMPETING ON-SITE SUPPORT

END

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