

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
GMB No. 0704-0188
Exp. Date: Jun 30, 1985

REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS N/A	
2a. SECURITY CLASSIFICATION AUTHORITY N/A		3. DISTRIBUTION/AVAILABILITY OF REPORT Unlimited	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A		5. MONITORING ORGANIZATION REPORT NUMBER(S) N/A	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		7a. NAME OF MONITORING ORGANIZATION Office of Naval Research	
5a. NAME OF PERFORMING ORGANIZATION Adaptive Solutions, Inc.	6a. OFFICE SYMBOL (if applicable) N/A	7b. ADDRESS (City, State, and ZIP Code) Code 251A GBP Ballston Tower One, 800 North Quincy Street Arlington, VA 22217-5660	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION ARPA	8b. OFFICE SYMBOL (if applicable) N/A	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER Contract # N00014-93-C-0234	
8c. ADDRESS (City, State, and ZIP Code) 3701 North Fairfax Drive Arlington, VA 22203-1714	10. SOURCE OF FUNDING NUMBERS		
	PROGRAM ELEMENT NO. N/A	PROJECT NO. N/A	TASK NO. N/A
			WORK UNIT ACCESSION NO. N/A
11. TITLE (Include Security Classification) High Performance Hardware and Software for Pattern Recognition and Image Processing			
PERSONAL AUTHOR(S) Wendell A. Henry			
13a. TYPE OF REPORT FINAL TECHNICAL REPORT	13b. TIME COVERED FROM 960901 TO 961206	14. DATE OF REPORT (Year, Month, Day) 961227	15. PAGE COUNT 37
16. SUPPLEMENTARY NOTATION			

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Pattern Recognition Image Processing
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

All objectives of the contract have been achieved. During Phase 1 of the project Adaptive solutions designed, implemented, and tested a PC/AT form-factor board which has sockets for up to 4 CNAPS-1064 chips. This gives it a configuration option of 64 to 256 processing nodes (PN). The 256 PN configuration provides the computational power of 5.12 Billion Multiply-Accumulates per second.

During Phase 2 of the project the CNAPS Software Development Kit was ported from the CNAPS/VME board running in a SunOS environment to the CNAPS/PC board running in the Windows 3.1x environment. Later it was ported to the Windows/NT environment when NT became available.

(CONTINUED ON REVERSE)

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
23. NAME OF RESPONSIBLE INDIVIDUAL Wendell Henry		22a. TELEPHONE (Include Area Code) (503) 690-1236	22b. OFFICE SYMBOL

FORM 1473, 34 MAR

81 APR edition may be used until exhausted.
All other editions are obsolete.

SECURITY CLASSIFICATION OF THIS PAGE

DTIC QUALITY INSPECTED 1

BLOCK 19 CONTINUED

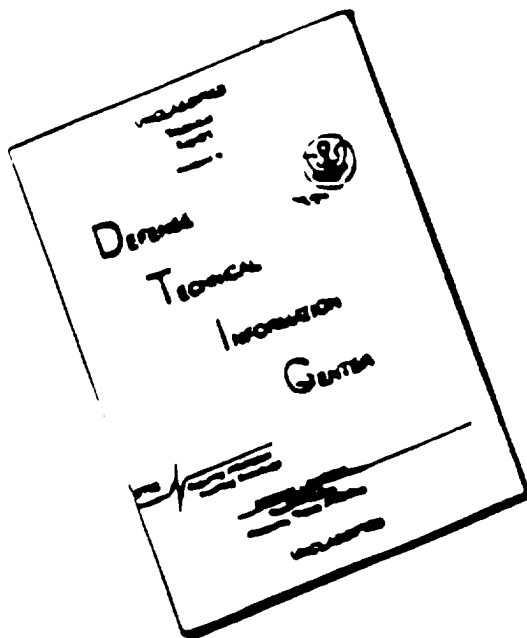
During Phase 3 of the project a C-callable function library which includes basic matrix math functions, image processing algorithms, and neural network functions was created. This function library is callable from within C and C++ application programs using the CNAPS/PC board in the Windows/NT environment.

During Phase 3 of the project Adaptive also completed the tasks related to the exercised project option. Portions of the next-generation CNAPS chip (X2) were designed and simulated. Schematics of the various CNAPS chip functional areas were completed.

The design of the X2 chip was accomplished while maintaining full code compatibility with the previous generation of the chip. Therefore, no changes to the loader, CNAPS-C compiler, or the CPL assembler were required to support the X2. Previous versions of the compiler and assembler are to be used with the new X2 chip. As a result of the X2's code compatibility the three line item deliverables 5AG (CNAPS assembler and loader), 5AH (CNAPS-C compiler), and 5AI (Design document for CNAPS-C optimizations enhancements) are satisfied by deliveries of the CNAPS software development environment.

At the time of this report, the project has been authorized to spend \$1,997,949.00 for the Phase 1, 2, and 3 tasks plus the one optional task. The project has accumulated expenses of approximately \$1,997,949.00. No further work on the project will be required.

DISCLAIMER NOTICE



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Final Technical Report

December 27, 1996

ARPA Order No.:

A407

Contractor:

Adaptive Solutions, Inc.
1400 NW Compton Drive, Suite 340
Beaverton, OR 97006

Contract No.:

N00014-93-C-0234

Contract Amount:

\$1,997,949.00

Effective Date of Contract:

November 8, 1993

Expiration Date of Contract:

December 7, 1996

Principal Investigator:

Wendell A. Henry

Telephone Number:

(503) 690-1236

Title of Project:

High Performance Hardware and Software for Pattern Recognition and Image Processing

Title of Work:

Final Technical Report

Reporting Period:

September 1, 1996 to December 7, 1996

Disclaimer

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Advanced Research Projects Agency of the U. S. Government.

19970106 077

Project Summary:

This contract helped fund the design, development, and debug of hardware and software modules to exploit the processing capabilities of the CNAPS architecture within a PC platform.

The contract funding was directed towards three specific objectives which were organized into different phases of the project. An optional objective to the contract was exercised and funded and was completed concurrent with the original Phase 3 objectives. The following outlines the primary objective of each contract phase plus the objective of the contract option.

Phase 1 Objective:

Build a PC/AT form-factor plug-in board using CNAPS 1064 chips which implement the CNAPS architecture.

Phase 2 Objective:

Port the Unix-based CNAPS Software Development Kit to the Phase 1 CNAPS/PC board and the Microsoft Windows environment.

Phase 3 Objective:

Design and implement a C-callable function library which includes image processing and neural network functions, and executes on the Phase 1 CNAPS/PC board.

Option 1 Objective:

Design portions of the next-generation CNAPS chip (X2).

All objectives of the contract have been achieved. During Phase 1 of the project Adaptive solutions designed, implemented, and tested a PC/AT form-factor board which has sockets for up to 4 CNAPS-1064 chips. This gives it a configuration option of 64 to 256 processing nodes (PN). The 256 PN configuration provides the computational power of 5.12 Billion Multiply-Accumulates per second.

During Phase 2 of the project the CNAPS Software Development Kit was ported from the CNAPS/VME board running in a SunOS environment to the CNAPS/PC board running in the Windows 3.1x environment. Later it was ported to the Windows/NT environment when NT became available.

During Phase 3 of the project a C-callable function library which includes basic matrix math functions, image processing algorithms, and neural network functions was created. This function library is callable from within C and C++ application programs using the CNAPS/PC board in the Windows/NT environment.

During Phase 3 of the project Adaptive also completed the tasks related to the exercised project option. Portions of the next-generation CNAPS chip (X2) were designed and simulated. Schematics of the various CNAPS chip functional areas were completed.

The design of the X2 chip was accomplished while maintaining full code compatibility with the previous generation of the chip. Therefore, no changes to the loader, CNAPS-C compiler, or the CPL assembler were required to support the X2. Previous versions of the compiler and

assembler are to be used with the new X2 chip. As a result of the X2's code compatibility the three line item deliverables 5AG (CNAPS assembler and loader), 5AH (CNAPS-C compiler), and 5AI (Design document for CNAPS-C optimizations enhancements) are satisfied by deliveries of the CNAPS software development environment.

At the time of this report, the project has been authorized to spend \$1,997,949.00 for the Phase 1, 2, and 3 tasks plus the one optional task. The project has accumulated expenses of approximately \$1,997,949.00. No further work on the project will be required.

Deliverables:

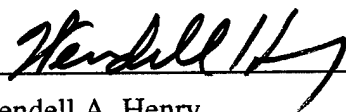
During the course of this project Adaptive Solutions has delivered specific contracted line items as they have been completed. Table 1, "Initial Delivery of Contracted Line Items," on page 4 presents a history of these deliveries.

In several cases Adaptive has shipped updated versions of the hardware and software as enhancements and bug fixes have been developed and tested. Table 2, "Delivery of Updated Contracted Line Items," on page 7 presents a history of these deliveries.

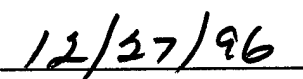
Appendix A of this report includes copies of Adaptive's shipping notices for each of the deliveries.

Fiscal Status:

Amount currently provided on contract:	\$1,997,949.00
Expenditures and commitments to date:	1,997,949.00
Funds required to complete work:	\$0.00
Authorized Phase funding:	\$1,997,949.00
Expenditures and commitments to date:	1,997,949.00
Authorized Phase funds remaining:	\$0.00



 Wendell A. Henry



 Date

Table 1: Initial Delivery of Contracted Line Items

Line Item	Line Item Description	Line Item Deliveries		
		Date	Qty.	Destination Address
1AA	10 Working copies of CNAPS/PC board	8/31/94	10	Dr. Barbara Yoon ARPA/MTO 3701 N. Fairfax Dr. Arlington, VA 22203-1714
1AB	10 User Licenses for PC based CNAPS-C software development environment	8/31/94	10	Dr. Barbara Yoon ARPA/MTO 3701 N. Fairfax Dr. Arlington, VA 22203-1714
1AC	Maintenance and Support for 1 year with each CNAPS-C license and each CNAPS/PC board	8/31/94	10	Dr. Barbara Yoon ARPA/MTO 3701 N. Fairfax Dr. Arlington, VA 22203-1714
1AD	10 User Licenses for PC based BuildNet software development environment	10/10/95	7	Mr. Kevin Kittka PRC Incorporated 4301N. Fairfax Dr., Suite 700 Arlington, VA 22203-1627
			1	Mr. Morgan Grover Defense Group Inc. 429 Santa Monica Blvd., Suite 420 Santa Monica, CA 90401
			1	Mr. David Hess David Taylor Model Basin, Code 54 Carderock Division, NSWC Bethesda, MD 20084-5000
			1	Mr. Jeff DeHart Army Research Lab. 2800 Powder Mill Rd. Attn: AMSRL-SS-IC Adelphi, MD 20783-1197

Table 1: Initial Delivery of Contracted Line Items

Line Item	Line Item Description	Line Item Deliveries		
		Date	Qty.	Destination Address
1AE	10 User Licenses for PC based CNAPS Software development environment	6/2/95	7	Mr. Kevin Kittka PRC Incorporated 4301N. Fairfax Dr., Suite 700 Arlington, VA 22203-1627
		4/28/95	1	Mr. Morgan Grover Defense Group Inc. 429 Santa Monica Blvd., Suite 420 Santa Monica, CA 90401
		4/28/95	1	Mr. David Hess David Taylor Model Basin, Code 54 Carderock Division, NSWC Bethesda, MD 20084-5000
		4/28/95	1	Mr. Jeff DeHart Army Research Lab. 2800 Powder Mill Rd. Attn: AMSRL-SS-IC Adelphi, MD 20783-1197
1AF	Support for 1 year for each PC based Buildnet license and each CNAPS software development environment license	10/10/95	7	Mr. Kevin Kittka PRC Incorporated 4301N. Fairfax Dr., Suite 700 Arlington, VA 22203-1627
		10/10/95	1	Mr. Morgan Grover Defense Group Inc. 429 Santa Monica Blvd., Suite 420 Santa Monica, CA 90401
		10/10/95	1	Mr. David Hess David Taylor Model Basin, Code 54 Carderock Division, NSWC Bethesda, MD 20084-5000
		10/10/95	1	Mr. Jeff DeHart Army Research Lab. 2800 Powder Mill Rd. Attn: AMSRL-SS-IC Adelphi, MD 20783-1197

Table 1: Initial Delivery of Contracted Line Items

Line Item	Line Item Description	Line Item Deliveries		
		Date	Qty.	Destination Address
0002	Data Item A003, Final Technical Report	12/30/96	3	Dr. Clifford G. Lau Office of Naval Research Ballston Centre Tower One 800 North Quincy St. Arlington, VA 22217-5660 Attn: ONR 314 Ref: Contract N00014-93-C-0234
	Data Item A004, Source code for C functions	12/30/96	10	
	Data Item A005, Documentation for C functions	12/30/96	10	
5AA	Phase Locked Loop schematic set and stream tape of final layout.	12/30/96	1	Dr. Barbara Yoon ARPA/MTO 3701 N. Fairfax Dr. Arlington, VA 22203-1714 Ref: Contract N00014-93-C-0234
5AB	Mini-Sequencer logic - preliminary schematic set	12/30/96	1	
5AC	Input/Output schematic set and stream tape of final layout	12/30/96	1	
5AD	Power Transistor schematic set and stream tape of final layout	12/30/96	1	
5AE	Logic Unit schematic set and stream tape of final layout	12/30/96	1	
5AF	PN SRAM schematic set and stream tape of final layout	12/30/96	1	
5AG	Next generation CNAPS Assembler and Loader - Letter of Explanation	12/30/96	1	
5AH	Port of CNAPS-C Compiler back-end - Letter of Explanation	12/30/96	1	
5AI	Design Document of Next Generation CNAPS-C optimization enhancements - Letter of Explanation	12/30/96	1	

Table 1: Initial Delivery of Contracted Line Items

Line Item	Line Item Description	Line Item Deliveries		
		Date	Qty.	Destination Address
0006	Data Item B003, Final Technical Report	12/30/96	3	Dr. Clifford G. Lau Office of Naval Research Ballston Centre Tower One 800 North Quincy St. Arlington, VA 22217-5660 Attn: ONR 314 Ref: Contract N00014-93-C-0234

Table 2: Delivery of Updated Contracted Line Items

Line	Line Item Description	Line item Deliveries		
		Date	Qty	Destination Address
1AA	Updated CNAPS/PC board	6/2/95	7	Mr. Kevin Kittka PRC Incorporated 4301N. Fairfax Dr., Suite 700 Arlington, VA 22203-1627
		4/28/95	1	Mr. Morgan Grover Defense Group Inc. 429 Santa Monica Blvd., Suite 420 Santa Monica, CA 90401
		4/28/95	1	Mr. David Hess David Taylor Model Basin, Code 54 Carderock Division, NSWC Bethesda, MD 20084-5000
		4/28/95	1	Mr. Jeff DeHart Army Research Lab. 2800 Powder Mill Rd. Attn: AMSRL-SS-IC Adelphi, MD 20783-1197

Table 2: Delivery of Updated Contracted Line Items

Line	Line Item Description	Line item Deliveries		
		Date	Qty	Destination Address
1AE	Updated CNAPS software development environment for PC	12/30/96	7	Mr. Kevin Kittka PRC Incorporated 4301N. Fairfax Dr., Suite 700 Arlington, VA 22203-1627
		12/30/96	1	Mr. Morgan Grover Defense Group Inc. 429 Santa Monica Blvd., Suite 420 Santa Monica, CA 90401
		12/30/96	1	Mr. David Hess David Taylor Model Basin, Code 54 Carderock Division, NSWC Bethesda, MD 20084-5000
		12/30/96	1	Mr. Jeff DeHart Army Research Lab 2800 Powder Mill Rd. Attn: AMSRL-SS-IC Adelphi, MD 20783-1197

Appendix A

Copies of Adaptive's Shipping Notices

MATERIAL INSPECTION AND RECEIVING REPORT	1. PROC. INSTRUMENT IDEN. (CONTRACT)	(ORDER) NO.	6. INVOICE	7. PAGE 1 OF 1
	N00014-93-C-0234			8. ACCEPTANCE POINT D

2. SHIPMENT NO. ASI0001	3. DATE SHIPPED 8/31/94	4. B/L TCN	5. DISCOUNT TERMS Net
----------------------------	----------------------------	---------------	--------------------------

9. PRIME CONTRACTOR Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006	CODE 0 PCB 8	10. ADMINISTERED BY DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019	CODE S4801A
--	-----------------	---	----------------

11. SHIPPED FROM (if other than 9) See Block 9	CODE	12. PAYMENT WILL BE MADE BY DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381	CODE SC1006
---	------	--	----------------

13. SHIPPED TO REF: Contract N00014-93-C-0234 Dr. Barbara Yoon ARPA/MTO 3701 n. Fairfax Dr. Arlington, VA 22203-1714	CODE	14. MARKED FOR Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234	CODE S4801A
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15. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY SHIP / RECD *	18. UNIT	19. UNIT PRICE	20. AMOUNT
0001 AA		CNAPS/PC Board	10	EA	NSP	
0001 AB		CNAPS-C User License	10	EA	NSP	
0001 AC		CNAPS/PC and CNAPS-C Maintenance and Support for one (1) year	10	EA	NSP	

21. PROCUREMENT QUALITY ASSURANCE		22. RECEIVER'S USE	
A. ORIGIN <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		B. DESTINATION <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.	
DATE	SIGNATURE OF AUTH GOVT REP	DATE RECEIVED	SIGNATURE OF AUTH GOVT REP
TYPED NAME AND OFFICE	TYPED NAME AND TITLE	TYPED NAME AND OFFICE	

* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.

23. CONTRACTOR USE ONLY

Five Solutions, Inc.
 1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PAGE 1 of 2

PACKING LIST

Ship to: **Dr. Barbara Yoon**
ARPA/MTO
3701 N. Fairfax
Arlington, VA 2203-1714

Attn:
 Ref: **Contract N00014-93-C-0234**

0387, 0378,
 0396

Reqst to Ship	Actual Ship Date
8/31/94	8/31/94
Sales Order #	P.O. Number
200680	N00014-93-C-0234
Order Date	Ship Via
	UPS Blue
Waybill Number	
179866910206300350, 0369	
F.O.B.	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
5 @ 110 lb	
Entry of Origin	Exporter's E.I.N.
USA	93-0981962
Country of Ultimate Destination	
Export License No. / Expiration	

Bill to: **5 sets - 6050 / 0210**
5 sets - 6051 / 0210

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
	0001AA	CNAPS-PC Board	CNAPS®/PC64 - 4 MB of data storage	10	10	ea	NSP	NSP
		ASIO6404C2-20	SN: 400025, 400026, 400027, 400028 SN: 400029, 400030, 400031, 400032 SN: 400033, 400034					
			• CNAPS Diagnostics Version B1.0 Software media, 3 1/4" diskettes	10	10	ea		
		801-20071-01	• CNAPS/PC Board Reference Manual Version Beta1.0	10	10	ea		
		801-20072-01	• CNAPS/PC Board Installation Guide Version Beta1.0	10	10	ea		
		801-30046-01	• CNAPS/PC Board Release Notes Guide Version Beta1.0	10	10	ea		
			• Microsoft Win32s Software media, 3 1/4" diskettes	10	10	ea		
			• CNAPI-PC Version B1.0 Software media, 3 1/4" diskettes	10	10	ea		
		801-30044-01	• CNAPI-PC Release Notes Guide Version Beta1.0	10	10	ea		
		801-20026-01	• CNAPI-PC Guide and Reference Manual Version Beta1.0	10	10	ea		
	0001AB	CNAPS-C User License	CNAPS-C Version B21.A (3 diskettes per set)	10	10	sets	NSP	NSP
		801-20050-01	• CNAPS-C Programming Guide 2.0	10	10	ea		
		801-20056-01	• CNAPS-C Language Reference Guide 2.0	10	10	ea		
		801-30047-01	• CNAPS-C for NT Release Notes B2.1.A	10	10	ea		
		801-30040-05	• Learning CPL 3.0	10	10	ea		
		801-30041-06	• CPL Programming Guide 3.0	10	10	ea		
		801-30006-05	• CNAPS CodeNet Release Notes 3.1	10	10	ea		
			MAINTENANCE LISTED ON PAGE 2					

(CONTINUED ON PAGE 2)

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PAGE 2 of 2

PACKING LIST

Ship to: **Dr. Barbara Yoon**
ARPA/MTO
3701 N. Fairfax, VA 22203-1714

Attn: **Dr. Barbara Yoon**
 Ref: **Contract N00014-93-C-0234**

Bill to: **5 sets - 6050 / 0210**
5 sets - 6051 / 0210

Reqst to Ship	Actual Ship Date
8/31/94	8/31/94
Sales Order #	P.O. Number
200680	N00014-93-C-0234
Order Date	Ship Via
	UPS Blue
Waybill Number	
See Page 1	
F.O.B.	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
5 @ 110 lb	
Country of Origin	Exporters EIN
USA	93-0981962
Country of Ultimate Destination	
Export License No. / Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
	0001AC	CNAPS-PC & CNAPS-C Support	<p>One Year CNAPS-PC Warranty and Support for ASI06404C2-20 for the following serial numbers: SN: 400025, 400026, 400027, 400028 SN: 400029, 400030, 400031, 400032 SN: 400033, 400034</p> <p>- Coverage: CNAPS-PC boards are warranted to be free of defects in material or labor for one year. Adaptive Solutions will repair or replace a board at its factory in Beaverton, Oregon. Repair time is dependent on the availability of the failed materials. * Coverage September 1, 1994 - August 31, 1995.</p> <p>One Year CNAPS-C Software maintenance - Coverage: One year of software and manual updates, and unlimited "Hot Line" support. * Coverage September 1, 1994 - August 31, 1995,</p>	10	10	ea	NSP	NSP

MATERIAL INSPECTION AND RECEIVING REPORT		1. PROC. INSTRUMENT DENL (CONTRACT)		ORDER NO.	2. INVOICE	7. PAGE	OF
		N00014-93-C-0234				1	1
				3. ACCEPTANCE POINT			
				D			
2. SHIPMENT NO.	3. DATE SHIPPED	4. 3PL	5. DISCOUNT TERMS				
AS10002	4/28/95	TCN	Net				
9. PRIME CONTRACTOR			10. ADMINISTERED BY		CODE		
Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006			DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019		S4801A		
11. SHIPPED FROM (if other than 9)			12. PAYMENT WILL BE MADE BY		CODE		
See Block 9			DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381		SC1006		
13. SHIPPED TO			14. MARKED FOR		CODE		
See attached list per instructions from: Dr. Barbara Yoon ARPA/MTO			Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234		S4801A		
15. ITEM NO.	16. STOCK/PART NO.	DESCRIPTION		17. QUANTITY SHIP/REC'D	18. UNIT	19. UNIT PRICE	20. AMOUNT
1AE		User license for PC based CNAPS software development environment		3	EA	NSP	
21. PROCUREMENT QUALITY ASSURANCE				22. RECEIVER'S USE			
A. ORIGIN		B. DESTINATION		Quantities shown in column 17 were received in apparent good condition except as noted.			
<input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		<input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		DATE RECEIVED			
SIGNATURE OF AUTH GOVT REP		SIGNATURE OF AUTH GOVT REP		SIGNATURE OF AUTH GOVT REP			
DATE		DATE		TYPED NAME AND OFFICE			
TYPED NAME AND OFFICE		TYPED NAME AND TITLE		* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.			
23. CONTRACTOR USE ONLY							

Delivery List for Line Item
1AE

Delivered 4/28/95

Quantity

1

Addressee

Mr. Morgan Grover
Defense Group Inc.
429 Santa Monica Blvd., Suite 420
Santa Monica, CA 90401

1

Mr. David Hess
David Taylor Model Basin, Code 54
Carderock Division, NSWC
Bethesda, MD 20084-5000

1

Mr. Jeff DeHart
Army Research Lab.
2800 Powder Mill Rd.
Attn: AMSRL-SS-IC
Adelphi, MD 20783-1197

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

Ship to: **Defense Group Inc.**
Suite 420
429 Santa Monica Blvd.
Santa Monica, CA 90401
 Attn: **Morgan Grover**
310.394.8599

Ref.: **ARPA N00014-93-C-0234**

Reqst Ship Date	Act. Ship Date
4/28/95	4-28-95
Sales Order No.	P.O. Number
201086	Upgrade
Order Date	Ship Via
N/A	UPS Blue
Waybill Number	
	2172
F.O.B.	Freight
Beaverton	Prepaid
# Pkgs/Wght.	Freight Charges
1-12	18.25
Entry of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. /Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIDS128PC-20	CNAPS®/PC Development Environment /128 Includes:	1	1	ea	N/A	N/A
		ASI12804C1-20 <i>IAA UPDATE</i>	CNAPS®/PC128 128PN's, with 4 MB of data storage SN: 400113	1	1	ea	N/A	N/A
		ASI SDKW10-1 <i>IAE</i>	CNAPS Software Kit for Windows Version B1.1.0 Includes: • CNAPS-C 'C' compiler designed for CNAPS architecture • CNAPS Programming Language (CPL) A CNAPS assembler that allows the programmer complete access to all of the features of the hardware. • CNAPS CPL Source Code • CNAPS Debugger An integrated set of powerful tools for source level symbolic debugging for either CNAPS-C or CPL. • CNAPS QuickLib Foundation Library	1	1	ea	N/A	N/A
(Upgrade to SN: 400027; Returned to ASI on RMA 146 on 4.26.95)								

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

Reqst Ship Date	Act. Ship Date
4/28/95	4-28-95
Sales Order No.	P.O. Number
201087	Upgrade
Order Date	Ship Via
N/A	UPS B/M
Waybill Number	
FOB	Freight
Beaverton	Prepaid
# Pkgs/Wght	Freight Charges
	18.25
Country of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. / Expiration	

Ship to: **David Taylor Model Basin, Code 54**
Carderock Division, NSWC
Bethesda, MD 20084-5000

Attn: **David Hess**
301.227.4704

Ref.: **ARPA N00014-93-C-0234**
REPLACEMENT BOARD FOR MODDED PC BOARD
UPGRADE

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIDS128PC-20	CNAPS®/PC Development Environment /128	1	1	ea	N/A	N/A
		ASI12804C1-20 <i>IAA UPDATE</i>	CNAPS®/PC128 128PN's, with 4 MB of data storage SN: 400114	1	1	ea	N/A	N/A
		ASI SDKW10-1 <i>IAE</i>	CNAPS Software Kit for Windows Version B1.1.0 Includes: • CNAPS-C 'C' compiler designed for CNAPS architecture • CNAPS Programming Language (CPL) A CNAPS assembler that allows the programmer complete access to all of the features of the hardware. • CNAPS CPL Source Code • CNAPS Debugger An integrated set of powerful tools for source level symbolic debugging for either CNAPS-C or CPL. • CNAPS QuickLib Foundation Library	1	1	ea	N/A	N/A
<p>PLEASE RETURN SN: 400023 TO: ON RMA #: ADAPTIVE SOLUTIONS, INC 1400 NW COMPTON DRIVE SUITE 340 BEAVERTON, OR 97005</p> <p>ATTN: RMA # 152 (JOHN HAYNES)</p>								

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

Ship to: **Army Research Lab**
 2800 Powder Mill Rd.
 Attn: **AMSRL-SS-IC**
 Adelphi, MD 20783-1197

Attn: **Jeff DeHart**
 301.394.3920

Ref.: **ARPA N00014-93-C-0234**
 End User: **Dave Hillis**

Reqst Ship Date	Act. Ship Date
4/28/95	4-28-5
Sales Order No.	P.O. Number
201085	Upgrade
Order Date	Ship Via
N/A	UPS Blue
Waybill Number	
	2252
F.O.B.	Freight
Beaverton	Prepaid
# Pkgs/Wght	Freight Charges
1-12	
Country of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. /Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIDS128PC-20	CNAPS®/PC Development Environment /128	1	1	ea	N/A	N/A
		ASI12804C1-20	Includes: CNAPS®/PC128	1	1	ea	N/A	N/A
		<i>IAA UPDATE</i>	128PN's, with 4 MB of data storage SN: 400106					
		ASI CSKW10-1	CNAPS Software Kit for Windows Version B1.1.0	1	1	ea	N/A	N/A
		<i>IAE</i>	Includes: • CNAPS-C 'C' compiler designed for CNAPS architecture • CNAPS Programming Language (CPL) A CNAPS assembler that allows the programmer complete access to all of the features of the hardware. • CNAPS CPL Source Code • CNAPS Debugger An integrated set of powerful tools for source level symbolic debugging for either CNAPS-C or CPL. • CNAPS QuickLib Foundation Library					
(Upgrade to SN: 400033; Returned to ASI on RMA 150 on 4.06.95)								

MATERIAL INSPECTION AND RECEIVING REPORT

1. PROC. INSTRUMENT GEN. CONTRACT: N00014-93-C-0234

2. PAGE 1 OF 1

3. ACCEPTANCE POINT D

2. SHIPMENT NO. ASI0003

3. DATE SHIPPED 6/2/95

4. IN. FCN

5. DISCOUNT TERMS Net

9. PRIME CONTRACTOR CODE: 0 PCB 8
 Adaptive Solutions, Inc.
 1400 NW Compton Drive
 Suite 340
 Beaverton, OR 97006

10. ADMINISTERED BY CODE: S4801A
 DCMAO Seattle
 Corporate Campus East III
 3009 112th Ave. NE, Suite 200
 Bellevue, WA 98004-8019

11. SHIPPED FROM (if other than 9) CODE: See Block 9

12. PAYMENT WILL BE MADE BY CODE: SC1006
 DFAS Columbus Center
 DFAS CO Santa Ana
 PO Box 182381
 Columbus, OH 43218-2381

13. SHIPPED TO CODE: See attached list per instructions from:
 Dr. Barbara Yoon
 ARPA/MTO

14. MARKED FOR CODE: S4801A
 Dr. Clifford Lau, Office of Naval Research
 Ballston Centre Tower One, 800 N. Quincy St.
 Arlington, VA 22217-5660
 ATTN: ONR 314
 REF: Contract N00014-93-C-0234

13. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY <small>SHIP. RECD.</small>	18. UNIT	19. UNIT PRICE	20. AMOUNT
1AE		User license for PC based CNAPS software development environment.	7	EA	NSP	

21. PROCUREMENT QUALITY ASSURANCE

A. ORIGIN
 PQA ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.

B. DESTINATION
 PQA ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.

22. RECEIVER'S USE
 Quantities shown in column 17 were received in apparent good condition except as noted.

DATE RECEIVED _____ SIGNATURE OF AUTH GOVT REP _____

TYPED NAME AND OFFICE _____

DATE _____ SIGNATURE OF AUTH GOVT REP _____

TYPED NAME AND TITLE _____

* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.

23. CONTRACTOR USE ONLY

Delivery List for Line Item
1AE

Delivered 6/2/95

Quantity

7

Addressee

Mr. Kevin Kittka
PRC Incorporated
4301N. Fairfax Dr., Suite 700
Arlington, VA 22203-1627

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PACKING LIST

Ship to: **PRC Incorporated**
4301 N. Fairfax Drive
Suite 700
Arlington, VA 22203-1627
Reference Contract N00014-93-C-0234

Attn: **Mr. Kevin Kittka**
(703) 516-6013

Bill to: **4085 - COGS UPDATE**

Rqst to Ship	Actual Ship Date
5/31/95	6-2-95
Sales Order #	P.O. Number
201135	Update
Order Date	Ship Via
n/a	UPS Blue
Waybill Number	
1597, 2448, 2489, 2470	
F.O.B.	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
4-88lbs	114.25
Crtry of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. /Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIDS128PC-20	CNAPS®/PC Development Environment /128 Includes: CNAPS®/PC128 128PN's, with 4 MB of data storage SN:400130 SN:400129 SN:400128 SN:400127 SN:400125 SN:400124 SN:400123	7	7	ea	N/A	N/A
		AS12804C1-20 <i>IAA UPDATE</i>						
		ASI SDKW10-1 <i>IAE</i>	CNAPS Software Kit for Windows Version 1.1 Includes: • CNAPS-C 'C' compiler designed for CNAPS architecture • CNAPS Programming Language (CPL) A CNAPS assembler that allows the programmer complete access to all of the features of the hardware. • CNAPS CPL Source Code • CNAPS Debugger An integrated set of powerful tools for source level symbolic debugging for either CNAPS-C or CPL. • CNAPS QuickLib Foundation Library	7	7	ea	N/A	N/A

MATERIAL INSPECTION AND RECEIVING REPORT	1. PROC. INSTRUMENT OEN (CONTRACT)	ORDER NO.	3. INVOICE	7. PAGE 1 OF 1
	N00014-93-C-0234			8. ACCEPTANCE POINT D

2. SHIPMENT NO. ASF 0004	3. DATE SHIPPED 10/10/95	4. JAL TCN	5. DISCOUNT TERMS Net
-----------------------------	-----------------------------	---------------	--------------------------

9. PRIME CONTRACTOR Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006	CODE 0 PCB 8	10. ADMINISTERED BY DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019	CODE S4801A
--	----------------	---	---------------

11. SHIPPED FROM (if other than 9) See Block 9	CODE	FOR:	12. PAYMENT WILL BE MADE BY DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381	CODE SC1006
---	------	------	--	---------------

13. SHIPPED TO See attached list per instructions from: Dr. Barbara Yoon ARPA/MTO	CODE	14. MARKED FOR Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234	CODE S4801A
--	------	---	---------------

15. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY SHIP/RECD *	18. UNIT	19. UNIT PRICE	20. AMOUNT
1AD		User licenses for PC based BuildNet software development environment.	10	EA	NSP	
1AF		1 year support for each BuildNet license and each CNAPS development environment license.	10	EA	NSP	

21. PROCUREMENT QUALITY ASSURANCE				22. RECEIVER'S USE	
A. ORIGIN <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		B. DESTINATION <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		Quantities shown in column 17 were received in apparent good condition except as noted.	
DATE	SIGNATURE OF AUTH GOVT REP	DATE	SIGNATURE OF AUTH GOVT REP	DATE RECEIVED	SIGNATURE OF AUTH GOVT REP
TYPED NAME AND OFFICE		TYPED NAME AND TITLE		TYPED NAME AND OFFICE	

23. CONTRACTOR USE ONLY

* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.

Delivery List for Line Items

1AD

1AF

Delivered 10/10/95

Quantity

1

Addressee

Mr. Morgan Grover
Defense Group Inc.
429 Santa Monica Blvd., Suite 420
Santa Monica, CA 90401

1

Mr. David Hess
David Taylor Model Basin, Code 54
Carderock Division, NSWC
Bethesda, MD 20084-5000

1

Mr. Jeff DeHart
Army Research Lab.
2800 Powder Mill Rd.
Attn: AMSRL-SS-IC
Adelphi, MD 20783-1197

7

Mr. Kevin Kittka
PRC Incorporated
4301N. Fairfax Dr., Suite 700
Arlington, VA 22203-1627

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PACKING LIST

Ship to: **The Defense Group**
Suite 420
429 Santa Monica Blvd.
Santa Monica, CA 90401

Attn: **Mr. Morgan Grover**
(301) 394-8599
Reference Contract N00014-93-C-0234

Bill to: **COGS**

Rqst to Ship	Actual Ship Date
10/11/95	10/10/95
Sales Order #	P.O. Number
201473	Henry
Order Date	Ship Via
n/a	UPS Blue

UPS 2ND DAY AIR SHIPPER RECEIPT
 1Z 98E 691 02 0238 100 8
 PLACE ON YOUR SHIPPING RECORD

FROM	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
1/LTR	0
Country of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No./Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIBPDL10-1 <i>IAD</i> <i>IAF</i>	ASI BP for Windows Version B1.5 Reference PC SN: 400113	1	1	ea	n/a	n/a

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PACKING LIST

Ship to: **David Taylor Model Basin, Code 54**
Carderock Division, NSWC
Bethesda, MD 20084-5000

Attn: **David Hess**
 Ref: **(301) 227-4704**
Reference Contract N00014-93-C-0234

Bill to: **COGS**

Request Ship	Actual Ship Date
10/11/95	10/10/95
Sales Order #	P.O. Number
201471	Henry
Order Date	Ship Via
n/a	UPS Blue

2ND DAY AIR SHIPPER RECEIPT
 1Z 98E 691 02 0238 098 3
 PLACE ON YOUR SHIPPING RECORD

Beaverton	Freight
Prepaid	
#Pkg/Weight	Freight Charges
1/LTR	6-
Country of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. /Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIBPDL10-1 <i>IAD</i> <i>IAF</i>	ASI BP for Windows Version B1.5 Reference PC SN: 400114	1	1	ea	n/a	n/a

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PACKING LIST

Ship to: **Army Research Lab**
 2800 Powder Mill Road
 Attn: AMSRL-SS-IC
 Adelphi, MD 20738-1197
Reference Contract N00014-93-C-0234

Attn: **Mr. Jeff DeHart**
 (301) 394-3920

Bill to: **COGS**

Request to Ship	Actual Ship Date
10/11/95	10/10/95
Sales Order #	P.O. Number
201472	Henry
Order Date	Ship Via
n/a	UPS Blue

UPS 2ND DAY AIR SHIPPER RECEIPT
 1Z 98E 691 02 0238 097 4
 PLACE ON YOUR SHIPPING RECORD

FOB	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
1/LTR	6-
Country of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. / Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIBPDL10-1 <i>1AD</i> <i>1AF</i>	ASI BP for Windows Version B1.5 Reference PC SN: 400106	1	1	ea	n/a	n/a

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

COPY

PACKING LIST

Rqst to Ship	Actual Ship Date
10/11/95	10/10/95
Sales Order #	P.O. Number
201470	Henry
Order Date	Ship Via
n/a	UPS Blue

2ND DAY AIR SHIPPER RECEIPT
 1Z 98E 691 02 0238 099 2
 PLACE ON YOUR SHIPPING RECORD

Ship to: **PRC Incorporated**
 4301 N. Fairfax Drive
 Suite 700
 Arlington, VA 22203-1627

Reference Contract N00014-93-C-0234

Attn: **Mr. Kevin Kittka**
 (703) 516-6013

Bill to: **COGS**

F.O.B.	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
1/5lbs	9.25
Cntry of Origin	Exporter's EIN
USA	93-0981962
Country of Ultimate Destination	
USA	
Export License No. /Expiration	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	ASIBPDL10-1 <i>IAD</i> <i>IAF</i>	ASI BP for Windows Version B1.5 Reference: SN: 4000130 SN: 400129 SN: 4000128 SN: 400127 SN: 4000125 SN: 400124 SN: 4000123	7	7	ea	N/A	N/A

MATERIAL INSPECTION AND RECEIVING REPORT	1. PROC. INSTRUMENT IDEN. (CONTRACT)	ORDER NO.	5. INVOICE	7. PAGE 1 OF 1
	N00014-93-C-0234			8. ACCEPTANCE POINT D

2. SHIPMENT NO. A510005	3. DATE SHIPPED 12/30/96	4. JAL TCN	6. DISCOUNT TERMS Net
----------------------------	-----------------------------	---------------	--------------------------

9. PRIME CONTRACTOR Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006	CODE 0 PCB 8	10. ADMINISTERED BY DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019	CODE S4801A
--	-----------------	---	----------------

11. SHIPPED FROM (if other than 9) See Block 9	CODE	12. PAYMENT WILL BE MADE BY DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381	CODE SC1006
---	------	--	----------------

13. SHIPPED TO REF: Contract N00014-93-C-0234 Dr. Barbara Yoon ARPA/MTO 3701 n. Fairfax Dr. Arlington, VA 22203-1714	CODE	14. MARKED FOR Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234	CODE S4801A
---	------	---	----------------

15. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY SHIP/RECD *	18. UNIT	19. UNIT PRICE	20. AMOUNT
5AA		Phase Lock Loop Schematics & Tape	1	EA	NSP	
5AB		Mini-Sequencer Schematic & Tape	1	EA	NSP	
5AC		Input/Output Schematics & Tape	1	EA	NSP	
5AD		Power Transistor Schematics & Tape	1	EA	NSP	
5AE		Logic Unit Schematics & Tape	1	EA	NSP	
5AF		SRAM Schematics & Tape	1	EA	NSP	
5AG		Next Generation CNAPS Assembler & Loader - Letter of Explanation	1	EA	NSP	
5AH		Port of CNAPS-C Compiler - Letter of Explanation	1	EA	NSP	
5AI		Design Document of Next Generation CNAPS-C Optimizations - Letter of Explanation	1	EA	NSP	

21. PROCUREMENT QUALITY ASSURANCE		22. RECEIVER'S USE	
<p><input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.</p> <p><input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.</p>		<p>Quantities shown in column 17 were received in apparent good condition except as noted.</p> <p>DATE RECEIVED _____ SIGNATURE OF AUTH GOVT REP _____</p> <p>TYPED NAME AND OFFICE _____</p> <p>* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.</p>	
DATE _____	SIGNATURE OF AUTH GOVT REP _____	DATE _____	SIGNATURE OF AUTH GOVT REP _____
TYPED NAME AND OFFICE _____	TYPED NAME AND TITLE _____		

23. CONTRACTOR USE ONLY

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **ARPA/MTO**
3701 N. Fairfax
Arlington, VA 22203-1714
Reference Contract: N00014-93-C-0234

Attn: **Dr. Barbara Yoon**

Ref:

Tel #:

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Cntry of Origin	
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	5AA	Phase Lock Loop Design	1	1	ea	n/a	n/a
		5AC	Input/Output Design					
		5AD	Power Transistor Design					
		5AE	Logic Unit Design					
		5AF	PN SRAM Design					
1	2	5AB	Mini-Sequencer Design	1	1	ea	n/a	n/a
1	3	5AG	Letter of Explanation: CNAPS Assembler & Loader	1	1	ea	n/a	n/a
		5AH	Letter of Explanation: Port of CNAPS-C Compiler					
		5AI	Letter of Explanation: Design of CNAPS-C Optimizations					
1	4	Tape	Data Stream Tape in TAR Format (5AA, 5AC, 5AD, 5AE, 5AF)	1	1	ea	n/a	n/a
1	5	Tape	Data Stream Tape in TAR Format (5AB)	1	1	ea	n/a	n/a
TOTAL US DOLLARS:								

MATERIAL INSPECTION AND RECEIVING REPORT		1. PROC. INSTRUMENT (GEN. CONTRACT)		ORDER NO.	3. INVOICE	7. PAGE	OF
		N00014-93-C-0234				1	1
				3. ACCEPTANCE POINT D			
2. SHIPMENT NO.	3. DATE SHIPPED	4. 3/L	5. DISCOUNT TERMS				
ASI0006	12/30/96	TCN	Net				
9. PRIME CONTRACTOR			CODE	10. ADMINISTERED BY			
Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006			0 PCB 8	DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019			
11. SHIPPED FROM (if other than 9)			CODE	12. PAYMENT WILL BE MADE BY		CODE	
See Block 9				DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381		SC1006	
13. SHIPPED TO			CODE	14. MARKED FOR			
Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234			S4801A	Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234			
15. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY SHIP/RECD	18. UNIT	19. UNIT PRICE	20. AMOUNT	
0002	A003:	Final Technical Report	3	EA	NSP		
0002	A004:	C Function Source code	10	EA	NSP		
0002	A005:	C Function Documentation	10	EA	NSP		
0006	B003:	Final Technical Report	3	EA	NSP		
21. PROCUREMENT QUALITY ASSURANCE				22. RECEIVER'S USE			
A. ORIGIN		B. DESTINATION		Quantities shown in column 17 were received in apparent good condition except as noted.			
<input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.		<input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents.					
DATE _____ SIGNATURE OF AUTH GOVT REP _____		DATE _____ SIGNATURE OF AUTH GOVT REP _____		DATE RECEIVED _____		SIGNATURE OF AUTH GOVT REP _____	
TYPED NAME AND OFFICE _____		TYPED NAME AND TITLE _____		* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.			
23. CONTRACTOR USE ONLY							

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **Office of Naval Research
 Ballston Centre Tower One
 800 N. Quincy Street
 Arlington, VA 22217-5660
 Reference Contract: N00014-93-C-0234**

Attn: **Dr. Clifford Law**
 Ref: **ONR 314**

Tel #: **301-394-8599**

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Cntry of Origin	Exporter's EIN
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	0002/A003	Final Technical Report	3	3	ea	n/a	n/a
		0006/B003	Final Technical Report					
1	2	0002/A004	C Functions Source Code	10	10	ea	n/a	n/a
1	3	0002/A005	C Function Documentation	10	10	ea	n/a	n/a
1	4	0002/A005	C Function Release Notes	10	10	ea	n/a	n/a
TOTAL US DOLLARS:								

MATERIAL INSPECTION AND RECEIVING REPORT	1. PROC. INSTRUMENT OEN. (CONTRACT)	(ORDER) NO.	5. INVOICE	7. PAGE 1 OF 1
	N00014-93-C-0234			8. ACCEPTANCE POINT D

2. SHIPMENT NO. AS10007	3. DATE SHIPPED 12/30/96	4. 3PL TCN	5. DISCOUNT TERMS Net
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9. PRIME CONTRACTOR Adaptive Solutions, Inc. 1400 NW Compton Drive Suite 340 Beaverton, OR 97006	CODE 0 PCB 8	10. ADMINISTERED BY DCMAO Seattle Corporate Campus East III 3009 112th Ave. NE, Suite 200 Bellevue, WA 98004-8019	CODE S4801A
--	----------------	---	---------------

11. SHIPPED FROM (if other than 9) See Block 9	CODE	FOB:	12. PAYMENT WILL BE MADE BY DFAS Columbus Center DFAS CO Santa Ana PO Box 182381 Columbus, OH 43218-2381	CODE SC1006
---	------	------	--	---------------

13. SHIPPED TO See attached list per instructions from: Dr. Barbara Yoon ARPA/MTO	CODE	14. MARKED FOR Dr. Clifford Lau, Office of Naval Research Ballston Centre Tower One, 800 N. Quincy St. Arlington, VA 22217-5660 ATTN: ONR 314 REF: Contract N00014-93-C-0234	CODE S4801A
--	------	---	---------------

15. ITEM NO.	16. STOCK/PART NO. <small>(Indicate number of shipping containers - type of container - container number.)</small>	DESCRIPTION	17. QUANTITY SHIP/REC'D	18. UNIT	19. UNIT PRICE	20. AMOUNT
1AE		CNAPS Software Development Environment for WIN/NT Update	10	EA	NSP	

21. PROCUREMENT QUALITY ASSURANCE A. ORIGIN <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents. DATE _____ SIGNATURE OF AUTH GOVT REP _____ TYPED NAME AND OFFICE _____		B. DESTINATION <input type="checkbox"/> PQA <input type="checkbox"/> ACCEPTANCE of listed items has been made by me or under my supervision and they conform to contract, except as noted herein or on supporting documents. DATE _____ SIGNATURE OF AUTH GOVT REP _____ TYPED NAME AND TITLE _____		22. RECEIVER'S USE Quantities shown in column 17 were received in apparent good condition except as noted. DATE RECEIVED _____ SIGNATURE OF AUTH GOVT REP _____ TYPED NAME AND OFFICE _____ <i>* If quantity received by the Government is the same as quantity shipped, indicate by (✓) mark, if different, enter actual quantity received below quantity shipped and encircle.</i>	
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23. CONTRACTOR USE ONLY

Delivery List for Line Items
1AE Update

Delivered 12/30/96

Quantity

Addressee

1

Mr. Morgan Grover
Defense Group Inc.
429 Santa Monica Blvd., Suite 420
Santa Monica, CA 90401

1

Mr. David Hess
David Taylor Model Basin, Code 54
Carderock Division, NSWC
Bethesda, MD 20084-5000

1

Mr. Jeff DeHart
Army Research Lab.
2800 Powder Mill Rd.
Attn: AMSRL-SS-IC
Adelphi, MD 20783-1197

7

Mr. Kevin Kittka
PRC Incorporated
4301N. Fairfax Dr., Suite 700
Arlington, VA 22203-1627

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **Defense Group, Inc.**
429 Santa Monica Blvd., Suite 420
Santa Monica, CA 90401
Reference Contract: N00014-93-C-0234

Attn: **Mr. Morgan Grover**
 Ref:

Tel #: **310-394-8599**

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Cntry of Origin	Exporter's EIN
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	1AE	CNAPS Software Development Environment for Windows/NT Update (Version 3.0 Beta 1)	1	1	ea	n/a	n/a
	2	1AE	Release Notes	1	1	ea	n/a	n/a
TOTAL US DOLLARS:								

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **Army Research Lab**
2800 Powder Mill Road
ATN: AMSRL-SS-IC
Adelphi, MD 20783-1197
Reference Contract: N00014-93-C-0234

Attn: **Mr. Jeff DeHart**
 Ref:

Tel #: **301-394-3920**

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Cntry of Origin	Exporter's EIN
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	1AE	CNAPS Software Development Environment for Windows/NT Update (Version 3.0 Beta 1)	1	1	ea	n/a	n/a
	2	1AE	Release Notes	1	1	ea	n/a	n/a
TOTAL US DOLLARS:								

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **David Taylor Model Basin, Code 54**
Carderock Division, NSWC
Bethesda, MD 20084-5000
Reference Contract: N00014-93-C-0234

Attn: **Mr. David Hess**
 Ref:

Tel #: **301-227-4704**

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Cntry of Origin	Exporter's EIN
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	1AE	CNAPS Software Development Environment for Windows/NT Update (Version 3.0 Beta 1)	1	1	ea	n/a	n/a
	2	1AE	Release Notes	1	1	ea	n/a	n/a
TOTAL US DOLLARS:								

Adaptive Solutions, Inc.

1400 NW Compton Drive
 Suite 340
 Beaverton, Oregon 97006
 Tel: 503.690.1236
 Fax: 503.690.1249

PACKING LIST

Ship to: **PRC Incorporated**
4301 N. Fairfax Drive, Suite 700
Arlington, VA 22203-1627
Reference Contract: N00014-93-C-0234

Attn: **Mr. Kevin Kittka**
 Ref:

Tel #: **703-516-6013**

Rqst to Ship	Actual Ship Date
12/30/96	12/30/96
Sales Order #	P.O. Number
Order Date	Ship Via
12/30/96	UPS 3 day
Waybill Number	
F.O.B	Freight
Beaverton	Prepaid
#Pkg/Weight	Freight Charges
Country of Origin	Exporter's EIN
USA	
Country of Ultimate Destination	
Export License No. /Expiration	
NLR	

Pkg. No.	Item No.	Product Code	Description	Order Qty.	Ship Qty.	Unit of Measure	Unit Price	Extended Price
1	1	1AE	CNAPS Software Development Environment for Windows/NT Update (Version 3.0 Beta 1)	7	7	ea	n/a	n/a
	2	1AE	Release Notes	7	7	ea	n/a	n/a
TOTAL US DOLLARS:								