#### CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justificat		DATE:													
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMI	ENT NUMBER AND	O NAME	PROJECT NUMBE	R AND NAME										
RDT&E,N / BA-7	0305149N/COBRA	JUDY		4021/CJR System	Engineering										
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011							
Project Cost	68.519	92.712	121.261	132.832	119.123	77.866	41.957	24.842							
RDT&E Articles Qty	0	0	0	0	0	0	0	0							

### (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

#### A. (U) Mission Description

Cobra Judy Replacement is a program that has been transferred from the Air Force to the Navy, per an Office of the Secretary of Defense (OSD) Milestone A Acquisition Decision Memorandum dated 6 August 2002. Funding depicted herein represents approximately half of the total budget.

Cobra Judy funds will replace the current U.S. Naval Ship (USNS) Observation Island which has become unsustainable and due to leave service no later than 2012. This program will fund the development of a single ship-based radar suite for world wide technical data collection against ballistic missiles in flight. Prior funding provided instrumentation of quality radar data and imaging, detailing threat assessment of ballistic missile development, testing and range augmentation and monitored or verified specific aspects of United States treaties with other countries. To avoid vulnerabilities in our national security it is imperative we replace the current capability of Cobra Judy in a timely manner to prevent any potential gap in coverage. Prior studies have indicated that a ship-based radar replacement is the most timely and cost effective solution.

The Cobra Judy Replacement program has successfully reached Milestone B/C, resulting in an approved Acquisition Strategy. The current CAIG estimate is consistent with the approved Acquisition Strategy. This submission reflects the current CAIG estimates.

R-1 SHOPPING LIST - Item No.

197

## **CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE:
Ŷ			FEBRUARY 2005
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	AME
RDT&E, N / BA-7	0305149N/COBRA JUDY	4021/CJR System Enginee	ring

## **B. Accomplishments/Planned Program**

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	43.102	72.229	103.072	92.982
RDT&E Articles Quantity	0	0	0	0

### **DESIGN AND RISK REDUCTION**

Planned:

Complete critical designs for prime mission (X-band & S-band) radars

Accomplishements:

- Awardedkey contract for X and S-band radars

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.902	6.000	9.701	27.895
RDT&E Articles Quantity	0	0	0	0

### SHIPBUILDING / CONVERSION

Planned:

- Complete ship selection studies
- Contract for ship and integration
- Initiate ship construction

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	13.428	11.691	3.638	3.321
RDT&E Articles Quantity	0	0	0	0

### SYSTEM ENGINEERING

Planned:

- Requirements development and analysis
- Development of specifications
- Complete designs for non-prime mission equipment (C4I, data handling, classified mission equipment)

R-1 SHOPPING LIST - Item No. 197

(Exhibit R-2a, page 2 of 10)

## **CLASSIFICATION:**

				DATE:						
<del>_</del>				FEBRUARY 2005						
IDGET ACTIVITY	PROGRAM ELEMENT NUME	BER AND NAME	PROJECT NUMBER AND	NAME						
l c	305149N/COBRA JUDY		4021/CJR System Engine	4021/CJR System Engineering						
:/Planned Program (Cont.)										
	FY 04	FY 05	FY 06	FY 07						
/Effort/Subtotal Cost	0.585	0.783	2.425	5.977						
Quantity	0	0	0	0						
	FY 04	FY 05	FY 06	FY 07						
	8.502	2.009	0.405							
/Effort/Subtotal Cost		2.003	2.425	2.657						
oroposals and contracts nical Interchange Meetings (TIMs)				FY 07						

## **CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification					DATE: FEBRUARY 2005
PPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER	AND NAME F	ROJECT NUM	BER AND NAME	FEBRUAR I 2003
PDT&E,N / BA-7	0305149N/COBRA JUDY	4	021/CJR Syste	m Engineering	
C. (U) PROGRAM CHANGE SUMMARY:					
Funding:	FY 2004	FY 2005	FY 2006	FY 2007	
FY 2005 President's Budget	69.369	80.694	124.804	137.155	
FY 2006/2007 President's Budget	68.519	92.712	121.261	132.832	
Total Adjustments	-0.850	12.018	-3.543	-4.323	
Summary of Adjustments					
Programmtic Adjustments	-0.772	-0.982	-0.276	-0.323	
FFRDC Reduction	-0.014	0.000	0.000	0.000	
Non Pay Inflation Savings	-0.064	0.000	0.000	0.000	
Other Adjustments	0.000	0.000	-3.267	-4.000	
Congressional Increase	0.000	13.000	0.000	0.000	
Subtotal	-0.850	12.018	-3.543	-4.323	
Schedule:					
Not Applicable.					
Technical:					
Not Applicable.					

### CLASSIFICATION:

Raytheon Company - Sudbury, Massachusetts

Northrop Grumman (subcontractor) - Baltimore, Maryland

IDDII K-Za, KDI&E PI	roject Justification								DATE:	FFBRU	ARY 2005
PROPRIATION/BUDGET AC	CTIVITY		PROGRAM EI	EMENT NUM	BER AND NAM	E	PROJECT NU	MBER AND N	AME	1	2000
DT&E,N /	BA-7		0305149N/CO	BRA JUDY			4021/CJR Sys	tem Enginee	ing		
D. OTHER PROGRAM	FUNDING SUMMARY:										
Line Item No. & Name	<u> </u>	<u>/ 2004</u>	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To <u>Complete</u> Continuing	Total <u>Cost</u> Continuing
P.E. 0303901N										Continuing	Continuing
Details and funding profile	for this Program Element is classif	fied.									
E. ACQUISITION STRATE	-cv.										
L. ACQUISITION STRATE	201.										
(U) The acquisition designs from a simil	strategy calls for leveraging one lar operational unit, and purchas ommercial standards to lower sc	sing and	integrating the	mission equipn	nent aboard an	appropriate r	nerchant-class h				

#### CLASSIFICATION:

Exhibit R-3 Cost Analysis (page	ge 1)												DATE: <b>FEBRUA</b>	RY 2005
APPROPRIATION/BUDGET ACTIV	/ITY	PROGRAM	ELEMENT NAM	E AND NUMBI	ER	PROJECT N	JMBER AND	NAME						
RDT&E, N / BA - 7		0305149N/0	COBRA JUDY			4021/CJR Sy	stem Engine	ering						
Cost Categories		Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Dev / Sys Eng														
Prototype Development	CPAF	Raytheon	26.430	43.102	9 09/04	72.229	TBD	103.072	2 TBD	92.982	2 TBD	Continuing	Continuing	g TBD
r lototype Development		PMS 325	6.430			6.000		9.701		27.895		Continuing	<u> </u>	_
Award Fee														1
System Engineering	WX/RX	Various	0.040	1.212	02/04	1.925	11/05	3.638	TBD	3.321	TBD	Continuing	Continuing	g TBD
	MIPR	Various	0.409	0.734	02/04	0.382	11/05							
	MIPR	MIT/LL	0.020	1.824	!	0.900	11/05							
	WX	NSWC DD	2.855	2.704	02/04	1.902	11/05							
	WX	NSWC CSS	2.085	0.857	02/04	0.000	11/05							
	WX	NSWC PHD	0.435	0.750	02/04	0.500	11/05							
	WX	NRL	0.375	0.425	02/04	0.640	11/05							
	WX	SEG	0.600	0.595	02/04	0.000	11/05							
		SPAWAR	0.320			1.600								
		GTRI	0.400			0.650								
	CPFF	JHU/APL	1.035	2.089		2.200								
		Riverside Research	0.000			0.992								
	GSA	Various	0.611	1.080	02/04	0.000	N/A							<del>                                      </del>
Subtotal Product Development			42.045	59.432	,	89.920		116.411		124.198		Continuing	Continuing	g TBD
Remarks:	<u> </u>		42.043	39.432	1	09.920	'I	110.411		124.190	7	Continuing	g Continuing	1 100
Nemarks.														
Test and Evaluation														
Test and Evaluation	CPAF/WX/RX	Various	0.000	0.000	N/A	0.000	TBD	1.213	TBD	1.328	TBD	Continuing	Continuing	g TBD
	CPAF	Raytheon	0.000	0.100	09/04	0.300	TBD	1.212	TBD	4.649	TBD	Continuing	Continuing	g TBD
		PMS 325	0.265	0.100	02/04									
	WX	NSWC DD	0.310	0.031	02/04	0.368								
		AFOTEC	0.050	0.085	02/04	0.050								
		COMOPTEVFOR	0.105	0.094	02/04	0.050								
		JITC	0.050	0.175	02/04	0.015								
		TSC	0.250	0.000	N/A									<b></b>
														<b></b>
								1	ļ		ļ		1	<del> </del>
				ļ			1	1					ļ	
Subtotal T&E:			1.030	0.585	i	0.783		2.425	5	5.97	7	Continuing	Continuing	g TBD
Remarks:														
Total Cost			43.075	60.017	·	90.703	:	118.836	6	130.175	5	Continuing	Continuing	TB
	ı	I	.5.070		1	23.700	1		1	1.50.17	1	23.16.16.19		

### CLASSIFICATION:

Fyhihit D 2 Coat Anal	vois (2000 2)													DATE: FEBRUAR	V 200E
Exhibit R-3 Cost Analy APPROPRIATION/BUDGE			PROGRAM FI	FMFNT NAM	E AND NUMBE	FR	PROJECT NU	IMBER AND I	NAME					FEBRUAR	1 2005
	BA-7		0305149N/CO		E 7114D 140WD	-11	4021/CJR Sy								
Cost Categories	Contra Metho	d Activity &	100001.01400	Total PY s	FY 04	FY 04 Award	FY 05	FY 05 Award	FY 06	FY 06 Award	FY 07	FY 07 Award	Cost to	Total	Target Value
D	& Type	Location		Cost	Cost	Date	Cost	Date	Cost	Date	Cost	Date	Complete	Cost	of Contract
Developmental Test & Eva		+					+						+		<del> </del>
Operational Test & Evalua Live Fire Test & Evaluation							1						+		
Test Assets	11				1								+	<del>                                     </del>	1
Tooling					1								+	<del>                                     </del>	1
GFE													+		
Award Fees													+		
Subtotal T&E				0.000	0.000	)	0.000	)	0.000	)	0.00	)	0.000	0.000	Cont.
Contractor Engineering	WX/RX	Various		0.885	0.000	02/04	0.980	02/05	2.425	TBD	2.65	7 TBD	Continuing	Continuing	TBD
	GSA	Computer S	Science Corp	2.725	0.430	02/04									
	GSA	Systems Pla	anning & Analysis	1.900	0.000	N/A									
	CPAF	BAE Systen	ns	0.000	3.986	02/04									
Government Engineering													+	+	-
Program Management	CPAF	BAE Systems	e	1.490	3.986	02/04	0.979	02/05					+		
r rogram wanagement	CPFF	DTI	3	0.385			0.575	02/00					+		
					1										
Travel				0.050	0.050	02/04	0.050	11/05							
Labor (Research Personnel)															
SBIR Assessment															
Subtotal Management				7.435	8.502	2	2.009	)	2.425	5	2.65	7	0.000	20.371	Cont.
Remarks:															
Total Cost				50.510	68.519	9	92.712	2	121.261	1	132.83	2	Cont.	. Cont.	Cont
Remarks:															

#### CLASSIFICATION:

RDT&E,N   BA-7	EXHIBIT R-4, Schedule Profile																															RUAR	Y 20	)5
Contract Award, Technical Reviews, & Delivery - ME Suite	APPROPRIATION/BUDGET ACTIVITY	PROC	GR/	M EL	EME	NT N	UMBE	ER ANI	D NAM	E															PROJE	ECT N	UMBEI	R AND	NAME	=				
Fiscal Year  1 2 3 4 1 1 2 3 4 1 1	RDT&E,N / BA-7	03051	1491	N/COI	BRA	JUDY	,																		4021/C	JR Sy	stem	Engine	ering					
ACQUISITION MILESTONES & DECISION REVIEWS  MISSION EQUIPMENT Contract Award, Technical Reviews, & Delivery - ME Suite  X-Band PAR  S-Band PAR  Radar Integration  Ship Concept / Preliminary Design  Functional & Detail Design  Developmental Test & Evaluation  Developmental Test & Evaluation  MS B/C  Contract Award  SPAR Development Complete  Ship Concept / Preliminary Design  Functional & Detail Design  Construction OR Conversion  TECHEVAL/PDDT	Fiscal Year			2004				20	005			20	06			200	07			200	08			20	09			20	10			2	011	
A DECISION REVIEWS  MISSION EQUIPMENT Contract Award Contract Award Contract Award Contract Award SDR  SYSTEM DEVELOPMENT & DEMONSTRATION  ME Delivery  ME Delivery  ME Delivery  APAR Development Complete  SPAR Development Complete  SPAR Development Complete  SPAR Development Complete  Ship Construction Down-Select  Functional & Detail Design Construction OR Conversion  TEST & EVALUATION  Developmental Test & Evaluation  Developmental Test & Evaluation  Mission Equipment DT&E  TECHEVALIPDDT  TECHEVALIPDDT  TOTALE		1		2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	
MISSION EQUIPMENT Contract Award, Technical Reviews, & Delivery - ME Suite  X-Band PAR  S-Band PAR  Radar Integration SHIP Construction OR Conversion  TEST & EVALUATION  Developmental Test & Evaluation  ME Delivery  X PAR Development Complete  X PAR Development Complete  Ship Concept / Preliminary Design  Functional & Detail Design  Construction OR Conversion  ME Delivery  X PAR Development Complete  Ship Construction Down-Select  Functional & Detail Design  Construction OR Conversion  Mission Equipment DT&E  TECHEVAL/PDDT  TECHEVAL/PDDT  TECHEVAL/PDDT  TECHEVAL/PDDT  TECHEVAL/PDDT  TECHEVAL/PDDT		MS	В/С									/									IPR	$\wedge$										Ю		
MSSION EQUIPMENT Contract Award. Technical Reviews, & Delivery - ME Suite X-Band PAR S-Band PAR  Radar Integration SHIP Construction OR Conversion TEST & EVALUATION  Developmental Test & Evaluation  Award  Award  SDR  ME Delivery  X PAR Development Complete  X PAR Development Complete  X PAR Development Complete  Ship Concept / Preliminary Design  Functional & Detail Design  Construction OR Conversion  Mission Equipment DT&E  IOT&E  IOT  IOT  IOT  IOT  IOT  IOT  IOT  IO		Contr	act					SYS	TEM D	EVELO	PMEN	IT & C	EMON	ISTRA	TION																			
X-Band PAR  S-Band PAR  Radar Integration  Ship Concept / Preliminary Design  Functional & Detail Design  Complete  Ship Construction OR Conversion  Functional & Detail Design  Developmental Test & Evaluation  Mission Equipment DT&E  IOT&E	Contract Award, Technical					SDR																												
X-Band PAR  S-Band PAR  Radar Integration  Ship Concept / Preliminary Design  Ship Construction Down-Select  Functional & Detail Design  Construction OR Conversion  TEST & EVALUATION  Developmental Test & Evaluation  Mission Equipment DT&E  TECHEVAL/PDDT  TECHEVAL/PDDT  TECHEVAL/PDDT  TOTAE	Reviews, & Delivery - ME Suite	$T^-$					^ -																	nt .										
Radar Integration  Ship Concept / Preliminary Design  Functional & Detail Design  Developmental Test & Evaluation  PDR  Complete  Ship Concept / Preliminary Design  Ship Construction  Down-Select  Functional & Detail Design  Construction OR Conversion  Mission Electronics Installation Complete  TECHEVAL/PDDT  A Mission Equipment DT&E  TECHEVAL/PDDT  TOT&E	X-Band PAR	$\triangle$						PDR			/\ci	DR										Comple	ete	$\triangle$										
Ship Construction Down-Select  Functional & Detail Design  Functional Test & Evaluation  Developmental Test & Evaluation  Ship Construction Down-Select  Functional & Detail Design  Functional & Detail Design  Mission Electronics Installation Complete  TECHEVAL/PDDT  A  Mission Equipment DT&E  Not Select  Mission Electronics Installation Complete  TECHEVAL/PDDT  A  IOT&E	S-Band PAR						△F	PDR			_\cr	DR											s											
SHIP Construction OR Conversion  TEST & EVALUATION  Developmental Test & Evaluation  Preliminary Design  Functional & Detail Design  Construction OR Conversion  Mission Electronics Installation Complete  TECHEVAL/PDDT  A  IOT&E	Radar Integration							Ship	Conce	ept /		s	hip Co	nstruct	ion						\			_/			Ch	in Dali						
Construction OR Conversion  Functional & Detail Design  Construction OR Conversion  Mission Electronics Installation Complete  TECHEVAL/PDDT  Developmental Test & Evaluation  Mission Equipment DT&E  TECHEVAL/PDDT	OUID							Prelim	inary D	esign			Down	-Selec	t									.			Sil	iip Deii	very					
TEST & EVALUATION  Developmental Test & Evaluation  Functional & Detail Design  Construction OR Conversion  Mission Electronics Installation Complete  TECHEVAL/PDDT  Mission Equipment DT&E  TECHEVAL/PDDT  A Not service of the property of									$\wedge$				/	\ ◆			<b></b>	• /\	•			_		$ \wedge$ $+$				$\blacktriangleright \land$	$  \wedge  $					
Developmental Test & Evaluation    A														Fun	ctional	& Deta	ail Desi	gn	Cons	structio	n OR (	Conver	sion	1										
Developmental Test & Evaluation  Mission Equipment DT&E  A  IOT&E	TEST & EVALUATION														$ \Delta $				Rad	ar DT8	ķΕ		$\triangle$		Insta	llation	Comp	lete	TECH	IEVAL	/PDD	T		
	Developmental Test & Evaluation																		Δ			Mission	n Equip	ment	DT&E		<u> </u>				$\wedge$		Γ&Ε/O	PEVA
Operational Test & Evaluation OTRR \( \sum \)	Operational Test & Evaluation																												ОТ	RR	$\triangle$	$\perp$	$\backslash \triangle$	ا د

		LEGEND	
CDR	Critical Design Review	OPEVAL	Operational Evaluation
DT&E	Developmental Test and Evaluation	OTRR	OperationI Test Readiness Review
IOC	Initial Operational Capability	PAR	Phased Array Radar
IPR	Interim Progress Review	PDR	Preliminary Design Review
IOC	Initial Operational Capability	PDTT	Post Delivery Test & Trials
IOT&E	Initial Operational Test & Evaluation	SDR	System Design Review
MS	Milestone	TECHEVAL	Technical Evaluation

## **CLASSIFICATION:**

Exhibit R-4a, Schedule Detail								DATE:		
							FEBR	<b>UARY 2005</b>		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM E	LEMENT		PROJECT NU	ROJECT NUMBER AND NAME					
RDT&E,N / BA-7	0305149N/CO	BRA JUDY			4021/CJR System Engineering					
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
ACQUISITION MILESTONES & DECISION REVIEWS										
Interim Progress Review (IPR)			2Q		4Q					
System Development & Demonstration	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-3Q		
Initial Operational Capability (IOC)								3Q		
MISSION EQUIPMENT										
Contract Award(s)	1Q									
System Design Review (SDR)	4Q									
Delivery						4Q				
X-Band Radar										
Preliminary Design Review (PDR)		1Q								
Critical Design Review (CDR)			1Q							
S-Band Radar										
Preliminary Design Review (PDR)		1Q								
Critical Design Review (CDR)			1Q							
Radar Integration										
Delivery					2Q	2Q	3Q			
SHIP										
Ship Concept/Preliminary Design		3Q								
Ship Construction Down Select			3Q-4Q	1Q-4Q						
Delivery							2Q			
TEST AND EVALUATION										
Radar Developmental Test & Evaluation (DT&E)				1Q - 4Q	1Q - 4Q	1Q				
Mission Equipment Developmental Test & Evaluation (DT&E)					1Q - 4Q	1Q - 4Q				
OTRR								1Q		
TECHEVAL / Post Delivery Test & Trials							3Q-4Q	1Q		
IOT&E/OPEVAL								2Q-3Q		

R-1 SHOPPING LIST - Item No.

197

EXHIBIT R-5, Termination Liability Funding For Major Defer	DATE:							
	FEBRUARY 2005							
APPROPRIATION/BUDGET ACTIVITY								
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						0305149N / COBRA JUDY		
PROGRAM	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

<sup>\*</sup> This is a reimbursable contract that does not specify termination liability.

<sup>\*</sup> Liability Costs:

<sup>\* &</sup>quot;LIMITATION OF FUNDS" (FAR 52.232-22)

<sup>\* &</sup>quot;LIMITATION OF COST" (FAR 52.232-20)