SECTION L COST ATTACHMENT 1

Program Work Breakdown Structure (PWBS)

XYZ PROGRAM (Level 0)

	Level 1	Level 2	Level 3
1	XYZ Program		
1.1		Concept Demonstrator (PMP)	
1.1.1			Array
1.1.2			Beam Steering Controller
1.1.3			Excited
1.1.4			Power Generation Assembly
1.1.5			Power Distribution/Supply
1.1.6			Processor/Controller
1.1.7			Thermal Management System
1.1.8			Pod Structure
1.1.9			Radomes
1.1.10			CD Applications Software
1.1.11			CD Systems Software
1.1.12			Integration, Assembly, Test, and Checkout
1.2		XYZ Prime Mission Product (PMP)	
1.2.1			Increment 1 Pod
1.2.2			XYZ Applications Software
1.2.3			XYZ Systems Software
1.2.4			Integration, Assembly, Test, and Checkout
1.3		Platform Integration, Assembly, Test, and Checkout	
1.4		Systems Engineering	
1.5		Program Management	
1.6		System Test and Evaluation	
1.7		Training	
1.8		Data	
1.9		Peculiar Support Equipment	
1.10		Common Support Equipment	
1.11		Operational/Site Activation	
1.12		Industrial Facilities	
1.13		Initial Spares and Repair Parts	

CA-1 PWBS

CA-1 PWBS Definitions

SECTION L COST ATTACHMENT 1

Program Work Breakdown Structure (PWBS) Dictionary

PWBS	Term	Definition
1	XYZ PROGRAM	A replacement Airborne Electronic Attack (AEA) system for the ABC System
1.1	Concept Demonstrator (PMP)	A combined subsystem prototype to provide the system level context for Technology maturation assestment of the subsystems. A relevant environment for demonstrating subsystem maturity.
1.1.1	Array	Self Explanatory
1.1.2	Beam Steering Controller	Self Explanatory
1.1.3	Exciter	Self Explanatory
1.1.4	Power Generation Assembly	Self Explanatory
1.1.5	Power Distribution/Supply	Self Explanatory
1.1.6	Processor/Controller	Self Explanatory
1.1.7	Thermal Management System	Self Explanatory
1.1.8	Pod Structure	Self Explanatory
1.1.9	Radomes	Self Explanatory
1.1.10	CD Applications Software	Self Explanatory
1.1.11	CD Systems Software	Self Explanatory
1.1.12	Integration, Assembly, Test, and Checkout	The materials and services involved in the assembly of Concept Demonstrator equipment at the contractor's site.
1.2	XYZ (PMP)	A replacement Airborne Electronic Attack (AEA) system for the ABC System
1.2.1	Increment 1 Pod	Hardware assemblies associated with Mid-Band Capability
1.2.2	XYZ Applications Software	Self Explanatory
1.2.3	XYZ Systems Software	Self Explanatory
1.2.4	Integration, Assembly, Test, and Checkout	The materials and services involved in the assembly of XYZ PMP equipment at the contractor's site.
1.3	Platform Integration, Assembly, Test, and Checkout	The materials and services involved in integrating the XYZ PMP equipment onto the host platform.
1.4	Systems Engineering	Resources necessary to manage, direct and control all effort contributing to the development, integration and production.
1.5	Program Management	Resources necessary to manage, direct and control all effort contributing to the development, integration and production.
1.6	System Test and Evaluation	The overall Test and Evaluation effort defined in the SOW and Performance Specification.
1.7	Training	Deliverable training services, devices, accessories, aids, equipment, and parts used to facilitate instruction through which personnel will learn to operate and maintain the system with maximum efficiency.

CA-1 PWBS Definitions

PWBS	Term	Definition
1.8	Data	All data items in support of the program.
1.9	Peculiar Support Equipment	Support Equipment which is unique to the XYZ program.
1.10	Common Support Equipment	Support Equipment which is common to other systems.
1.11	Operational/Site Activation	The real estate, construction, conversion, utilities, and equipment to provide all facilities required to house, service, and launch prime mission equipment at the operational sites.
1.12	Industrial Facilities	The construction, conversion, or expansion of industrial facilities for production, inventory, and contractor depot maintenance required when that service is for the specific system.
1.13	Initial Spares and Repair Parts	Spare parts and assemblies to establish relevant inventory and support prior to the Program's Material Support Date.
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SECTION L COST ATTACHMENT 2

Work Breakdown Structure						CLIN	SOW Paragraph	IMS
LEVEL	1	2	3	4				
1	[PROGRAM NAME]					0001 TD Phase for [PROGRAM] 000X [Other TD CLIN(s)] OPTION 000X [Any Options CLIN(s)]		
1.1		[PROGRAM NAME] TD				0001 TD Phase for [PROGRAM] 000X [Other TD CLIN(s)] OPTION 000X [Any Options CLIN(s)]		
1.1.1			Applications Based Architecture			0001 TD Phase for [PROGRAM]	1.7.4, 1.7.7	
1.1.1.1				Applications Based Architecture Hardware		0001 TD Phase for [PROGRAM]	1.7.4	
1.1.1.2				Applications Based Architecture Software		0001 TD Phase for [PROGRAM]	1.7.4	
1.1.1.3				Applications Based Architecture Integration, Assembly, Test and Checkout		000X (Example only)	1.7.5, 1.7.7	
1.1.2			Security Architecture			OPTION 000X (Example only)	1.7.2	
1.1.2.1				Security Architecture Hardware		0001 TD Phase for [PROGRAM]	1.7.4	
1.1.2.2				Security Architecture Software		0001 TD Phase for [PROGRAM]	1.7.4	
1.1.2.3				Security Architecture Integration, Assembly, Test and Checkout		0001 TD Phase for [PROGRAM]	1.7.6	
1.1.3			PMP Software			OPTION 000X (Example only)	1.7.4, 1.7.5, 1.7.6, 1.7.7	
1.1.4			PMP Integration, Assembly, Test and Checkout			0001 TD Phase for [PROGRAM] OPTION 000X (Example only)	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.11, 1.1.12, 1.1.13, 1.1.15, 1.1.17, 1.1.21, 1.1.23, 1.2, 1.5, 1.7.3, 1.7.4, 1.7.5, 1.7.6, 1.7.7	
1.2		Platform Integration, Assembly, Test and Checkout - N/A				0001 TD Phase for [PROGRAM] OPTION 000X (Example only)	1.3, 1.5. 1.7.3	
1.3		Systems Engineering				0001 TD Phase for [PROGRAM] OPTION 000X (Example only)	1.1.19, 1.1.20, 1.8	
1.4		Program Management				0001 TD Phase for [PROGRAM]	1.4	
1.5		System Test and Evaluation				0001 TD Phase for [PROGRAM] OPTION 000X (Example only)	1.1.10, 1.6	
1.6		Training				0001 TD Phase for [PROGRAM]	1.1.9	
1.7		Data				0001 TD Phase for [PROGRAM]	1.1.9	
1.8		Peculiar Support Equipment				0001 TD Phase for [PROGRAM]		
1.9		Common Support Equipment				0001 TD Phase for [PROGRAM]	1.1.16	
1.10		Operational/Site Activation				0001 TD Phase for [PROGRAM] 000X (Example only) OPTION 000X (Example only)	1.1.14, 1.1.22, 1.11	
1.11		Industrial Facilities						
1.12		Initial Spares and Repair Parts						

COST AND SOFTWARE DATA REPORTING PLAN

Form Approved
OMB No. 0704-0188

1. MAJOR PROGRAM a. NAME:

b. PHASE/MILESTONE ☐ Pre-A ☐ A ☐ B ☐ C-LRIP ☐ C-FRP ☐ O&S

c. PRIME MISSION PRODUCT

2. WBS SYSTEM TYPE

3. SUBMISSION TYPE ☐ INITIAL ☐ CHANGE

4. CURRENT SUBMISSION DATE (YYYYMMDD)

5. LAST APPROVED PLAN DATE (YYYYMMDD)

6a. POINT OF CONTACT (POC) NAME AND ADDRESS (Include ZIP Code)	**6b. TELEPHONE NUMBER** (Include Area Code)	**6c. FAX NUMBER** (Include Area Code)	**6d. E-MAIL ADDRESS**

7. PLAN TYPE ☐ PROGRAM ☐ CONTRACT (PRIME) ☐ CONTRACT (SUB)

8. PREPARING ORGANIZATION

9a. CONTRACTOR NAME/ADDRESS i. PERFORMING ORGANIZATION ii. DIVISION

9b. CONTRACT NUMBER

9c. APPROPRIATION ☐ RDT&E ☐ PROCUREMENT ☐ O&M

10. APPROVED PLAN NUMBER

11. WBS ELEMENT CODE		**12. WBS REPORTING ELEMENTS**	**13. REPORTS REQUIRED** (X if applicable)					**DD 1921-3 (CBDR):** ☐
a. PROGRAM/ CONTRACT/ SUBCONTRACT	**b. CONTRACT/ SUBCONTRACT**		**a. CWBS DICTIONARY**	**b. DD 1921 (CDSR)**	**c. DD 1921-1 (FCHR)**	**d. DD 1921-2 (PCR)**	**e. DD 1921-4 (CSR)**	**f. SRDR FORMATS**

DD FORM 2794, MAY 2011 PREVIOUS EDITION IS OBSOLETE

SECTION L COST ATTACHMENT 3

14. CSDR SUBMISSION DATES

a. SUBMISSION	b. FORM(S)	c. EVENT	d. AS OF DATE (YYYYMMDD)	e. DUE DATE (YYYYMMDD)

15. REMARKS

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SECTION L COST ATTACHMENT 4

Example Resource Distribution Table (RDT)

Aircraft System - Contract Plan

	Prime Contractor		Subcontractors						
Prime Contractor or Sub-Contractor	Total	In-House	Total	Subcontractor 1	Subcontractor 2	Subcontractor 3	Subcontractor 4	Subcontractor 5	Subcontractor 6
Description	Aircraft			Engine	Software	Navigation System	Electrical Subsystem	Heads-Up Display	Armament
Contractor/Organization Name	FlyByNight Corp.			Propulsion, Inc.	SoftwareRUs, Inc.	NFC, Inc.	ELSC, Inc.	NFC, Inc.	GunsRUs, Inc.
Contractor/Organization Location	St. Louis, MO			Baltimore, MD	Palo Alto, CA	Rome, NY	Tucson, AZ	Nashua, NH	Toledo, OH
Contract Number	X00019-08-C-XXXX			87312N	TBD	TBD	87493N	TBD	87418N
Total Program Office or Contract/Effort Value (Estimated), TY$M	$2,500.0	$1,622.0	$878.0	$370.0	$130.0	$169.0	$20.0	$31.0	$158.0
Subtotal Software Contract Value (Estimated), TY$M	$150.0	$0.0	$150.0	$0.0	$130.0	$0.0	$0.0	$0.0	$20.0
Program Office	PMA XXX			N/A	N/A	N/A	N/A	N/A	N/A
CSDR Direct Reporting per CWIPT (Yes/No)		Yes		Yes	Yes	Yes	No	No	Yes
SRDR Direct Reporting per CWIPT (Yes/No)		No		No	Yes	No	No	No	No

WBS	WBS Element Name												
NUMBER	L1	L2	L3	L4									
1.0	Aircraft System				X								
1.1		Air Vehicle			X								
1.1.1			Airframe		X								
1.1.1.1				Fuselage	X								
1.1.1.2				Wing	X								
1.1.1.3				Mechanical Subsystem	X								
1.1.1.4				Hyraulic Subsystem	X								
1.1.1.5				Electrical Subsystem	X						X		
1.1.1.6				Integ., Assembly & C/O	X								
1.1.2			Propulsion				X						
1.1.3			AV Applications Software					X					
1.1.4			AV System Software					X					
1.1.5			Communications/Identification		X								
1.1.6			Navigation/Guidance		X				X				
1.1.7			Central Computer										
1.1.8			Fire Control										
1.1.9			Data Display and Controls		X							X	
1.1.10			Survivability		X								
1.1.11			Reconnaissaince		X								
1.1.12			Automatic Flight Control		X								
1.1.13			Central Integrated Checkout		X								
1.1.14			Antisubmarine Warfare		X								
1.1.15			Armament										X
1.1.16			Weapons Delivery		X								
1.1.17			Auxiliary Equipment		X								
1.1.18			Crew Station		X								
1.2		Systems Engineering / Program Management			X								
1.3		System Test and Evaluation			X								
1.4		Training			X				X		X	X	
1.5		Data			X								
1.6		Peculiar Support Equipment											
1.7		Common Support Equipment											
1.8		Operational / Site Activation											
1.9		Industrial Facilities											
1.10		Initial Spares and Repair Parts			X	X							X

1. Contract/subcontract information provided in the Contract Plan RDT must be consistent with the information provided in the Program Plan RDT. It must reflect the most current contract or subcontract value (including all mods or CLINs) and must conform to the applicable rules established for the Program Plan RDT
2. If known, the assigned contract number for each subcontract between the prime and a subcontractor must be included.

SECTION L COST ATTACHMENT 5
COST SUMMARY
DD 1921
Base Year ____

1. PROGRAM	2. RFP NO: 3. RESERVED FOR FUTURE USE	5. ☐ PRIME/ASSOCIATE ☐ SUBCONTRACTOR *(Name and address, include ZIP Code)*

WBS ELEMENT CODE A	REPORTING ELEMENTS B	CONTRACT LINE ITEM C	NUMBER OF UNITS D	PROPOSED PRICES (in Thousands $) NON. REC. E	 REC. F	 TOTAL G	PERFORMANCE WORK STATEMENT PARAGRAPH (S) H	RESPONSIBLE ORGANIZATION I
	Note: Include WBS at the lowest level at which your estimate was developed.							

1921-1 CA-3

Offeror:

1921-1 Proposal

WBS Element Number

WBS Element Name

P8-A WBS Element Name

ENGINEERING

(1) DIRECT ENGINEERING LABOR HOURS
(2) DIRECT ENGINEERING LABOR DOLLARS
(3) ENGINEERING OVERHEAD DOLLARS
(4) TOTAL ENGINEERING DOLLARS

MANUFACTURING OPERATIONS

(5) DIRECT TOOLING LABOR HOURS
(6) DIRECT TOOLING LABOR DOLLARS
(7) DIRECT TOOLING & EQUIPMENT DOLLARS
(8) DIRECT QUALITY CONTROL LABOR HOURS
(9) DIRECT QUALITY CONTROL LABOR DOLLARS
(10) DIRECT MANUFACTURING LABOR HOURS
(11) DIRECT MANUFACTURING LABOR DOLLARS
(12) MANUFACTURING OPERATIONS OVERHEAD DOLLARS (Including Tooling and Quality Control)
(13) TOTAL MANUFACTURING OPERATIONS DOLLARS (Sum of rows 6, 7, 9, 11, and 12)

MATERIALS

(14) RAW MATERIAL DOLLARS
(15) PURCHASED PARTS DOLLARS
(16) PURCHASED EQUIPMENT DOLLARS
(17) MATERIAL HANDLING OVERHEAD DOLLARS
(18) TOTAL DIRECT-REPORTING SUBCONTRACTOR DOLLARS
(19) TOTAL MATERIAL DOLLARS

OTHER COSTS

(20) OTHER COSTS NOT SHOWN ELSEWHERE (Specify in Remarks)

SUMMARY

(21) TOTAL COST (Direct and Overhead) less G&A
(22) G&A (Total contract only)
(23) TOTAL COST PLUS G&A
(24) PROFIT/FEE
(25) COST OF MONEY
(26) TOTAL PRICE (Sum of lines 23, 24, and 25)

1.0	1.1	1.1.1	1.1.1.1	1.1.1.2	1.1.1.3	1.1.2	1.1.2.1	1.1.2.2	1.1.2.3
Electronic	Prime Mis	PMP Subs	PMP Subs	PMP Subs	Subsystem I	PMP Softv	Software F	Computer	Subsysten
P-8A Incre	Combat S	Combat S	Combat S	Combat S	Combat Sys	Combat Systems Software - NA			
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1.1.3	1.2	1.3	1.4	1.5	1.5.1	1.5.2	1.5.3	1.5.4	1.5.5
PMP Integ	Platform Ir	System Er	Program M	System Te	Developm	Operationa	Mock-ups	Test and E	Test Facili
PMP Integration, Ass		System Er	Program M	System Test and Evaluation					
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1.6 Training Training	1.6.1 Equipmen	1.6.2 Services	1.6.3 Facilities	1.7 Data Data	1.7.1 Technical	1.7.2 Engineerin	1.7.3 Managem	1.7.4 Support D	1.7.5 Data Depc
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1.8	1.8.1	1.8.2	1.9	1.9.1	1.9.2	1.10	1.10.1	1.10.2	1.10.3
Peculiar S	Test and M	Support ar	Common S	Test and M	Support ar	Operationa	System As	Contractor	Site Const
Peculiar Support Equipment			Common Support Equipment			Operational/Site Activation			
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1.10.4	1.10.5	1.11	1.11.1	1.11.2	1.11.3	1.12
Site/Ship/\	Sustainme	Industrial F	Constructi	Equipmen	Maintenan	Initial Spares and Repair Parts
		Industrial Facilities				Initial Spares and Repair Parts
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SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID: _____
Location of work: _____
Period of Performance: _____

*Cost Information shall be submitted in then year dollars (TY) based on the government's fiscal year (1 Oct through 30 Sept) with the escalation formula provided for each year

COST ESTIMATE TY$

DIRECT LABOR / MATERIAL BREAKOUT

	1921-1 Category	Qty (if applicable)	Contractor Labor Hours	A Contractor Direct Labor Cost	B Contractor Direct Mat'l Cost	Subcontractor Labor Hours	C Subcontractor Direct Labor Cost	D Subcontractor Direct Mat'l Cost	Total Direct Cost
Nonrecurring									
Recurring									
TOTAL									
TOTAL COST ESTIMATE (TY$) A+B+C+D									

Phasing Hours

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total

Phasing Dollars

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total

#1

Summary of Work/Technical Parameters

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #:_____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID:_____
Location of work: _____
Period of Performance: _____

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID: _____
Location of work: _____
Period of Performance:

Summary of Estimating Methodology

ANALOGOUS COST TY$

DIRECT LABOR / MATERIAL BREAKOUT

	1921-1 Category	Qty	Contractor Labor Hours	A Contractor Labor Cost	B Contractor Mat'l Cost	Subcontractor Labor Hours	C Subcontractor Labor Cost	D Subcontractor Mat'l Cost	Total
Nonrecurring									
Recurring									
TOTAL									
TOTAL COST ESTIMATE (TY$) A+B+C+D									

Description of Analogous Cost and Differences in Work Content Between Cost Esimate and Anaology
(include adjustments/calculations):

Analogous Direct Cost TY$:	
Adjustments Cost TY$:	
TOTAL Cost Estimate TY$:	

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #:_____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID:_____
Location of work: _____
Period of Performance: _____

Detailed Estimating Methodology

#4

Cross Check of Estimate

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #:_____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID:_____
Location of work: _____
Period of Performance: _____

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID: Identify IMS unique id no. to trace to the proposed CWBS.
Location of work: _____
Period of Performance: _____

*Cost Information shall be submitted in then year dollars (TY) based on the government's fiscal year (1 Oct through 30 Sept) with the escalation formula provided for each year

COST ESTIMATE TY$

DIRECT LABOR / MATERIAL BREAKOUT

	1921-1 Category	Qty (if applicable)	Contractor Labor Hours	A Contractor Direct Labor Cost	B Contractor Direct Mat'l Cost	Subcontractor Labor Hours	C Subcontractor Direct Labor Cost	D Subcontractor Direct Mat'l Cost	Total Direct Cost
Nonrecurring									
Recurring									
TOTAL									
TOTAL COST ESTIMATE (TY$) A+B+C+D									

This form may be used as separate form for labor and one for material; or it may be used to discuss all 1921-1 categories on a single form. Also , if Task Estimates are used as the methodology please provide a summary at the WBS level that provides WBS total hours, material dollars.

Principal Subcontractors should use this form and provide the Prime WBS element into which the Subcontractor WBS cost belong.

The intent is to clearly understand how offerors got to their proposed direct hours/material costs before pricing them .

Phasing Hours

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total

For Cost estimate. To be used as needed.

Use for WBS estimates that cover multiple FY's. Change heading as appropriate, e.g., 1st FY, etc.

Use to show phasing of multiple task oriented BOE's summarized at WBS level

If WBS is level of effort (LOE) or flat loaded, so state in narrative of estimating methodolgy vice filling out phasing box

Meant to be flexible and can be used as need toshow phasing Total Direct Cost; or Labor Hours and Dollars; and/or Material Direct Cost (e.g, delivery of units. Also , if Task Estimates are used as the methodology, can show the phasing of the summary at the WBS level that provides WBS total hours, material dollars.

Phasing Dollars

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total

For Cost estimate. To be used as needed.

Use for WBS estimates that cover multiple FY's. Change heading as appropriate, e.g., 1st FY, etc.

Use to show phasing of multiple task oriented BOE's summarized at WBS level

If WBS is level of effort (LOE) or flat loaded, so state in narrative of estimating methodolgy vice filling out phasing box

Meant to be flexible and can be used as need toshow phasing Total Direct Cost; or Labor Hours and Dollars; and/or Material Direct Cost (e.g, delivery of units. Also , if Task Estimates are used as the methodology, can show the phasing of the summary at the WBS level that provides WBS total hours, material dollars.

#1 **Summary of Work/Technical Parameters**

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID: Identify IMS unique id no. to trace to the proposed CWBS.
Location of work: _____
Period of Performance: _____

This box should not contain any cost information. Rather, it should include a description of the technical work content for the identified WBS or Cost element only.

Provide programmatic description related to the acquisition aspects of system; and Technical desciption including the performance and physical aspects of the system. This describes the system in terms of the number of parts, physical configuration, type of material, technology, and physical/performance parameters.

Summary of Estimating Methodology

The offeror shall provide an overview of the process used to develop the cost proposal. This will include, at the minimum, a summary of the approach used to estimate labor hours and a description of the process used to obtain vendor quotes for purchased equipment and/or material. It will also include a traceability matrix or table that shows the link between labor hours and material costs included in the cost summaries and those in the detailed labor and material sections. Similar information shall be provided to show traceability between the prime and subcontractor sections.

To support the proposal, the Offeror shall provide discussion of the pricing methodology to address why the Offerer's prosposed cost is realistic, including such factors as commonality with other programs, commercial sources, advantages of quantity buys, etc.

ANALOGOUS COST TY$

DIRECT LABOR / MATERIAL BREAKOUT

1921-1 Category	Qty	Contractor Labor Hours	A Contractor Labor Cost	B Contractor Mat'l Cost	Subcontractor Labor Hours	C Subcontractor Labor Cost	D Subcontractor Mat'l Cost	Total
Nonrecurring								
Recurring								
TOTAL								
TOTAL COST ESTIMATE (TY$) A+B+C+D								

Provide the Analogous historical direct costs . Detailed information is requested if known , for example, the 1921-1 categories from previous CSDR submittals on analogous historical programs.

Actual cost data is requested. The narrative below should include the cost account (if applicable), narrative description of the effort, and actual diorect cost data (material and labor hours).

Description of Analogous Cost and Differences in Work Content Between Cost Esimate and Analogy
(include adjustments/calculations):

Analogous Direct Cost TY$:	**Add rows for direct labor and material costs as needed.**
Adjustments Cost TY$:	**Add rows for adjustments to direct labor & material costs as needed.**
TOTAL Cost Estimate TY$:	**This should align with the estimate's total direct costs shown above**

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____
Contractor/Subcontractor: _____
Program Name: _____
Contractor/Subcontractor WBS code: _____
WBS description/title _____

CLIN: _____
SOW reference: _____
IMS UID: Identify IMS unique id no. to trace to the proposed CWBS.
Location of work: _____
Period of Performance: _____

Provide historic direct costs and labor hours from Analogous program(s). Include information explaining what the project was and how it is applicable to the proposed program

Historical data from comparable or analogous systems/subsystems should be used to substantiate the Offeror's estimate where possible. When using historical cost data from comparable systems/subsystems, all assumptions affecting the Offeror's cost proposal are to be fully documented (e.g., escalation methodology, make or buy decision, etc.). A summary programmatic and technical description of the historical analogous system should be provided along with the actual cost data for the historical system, a comparison to the proposed system, and any adjustments made to derive the proposed estimate. The following shall be considered:

1) Programmatic description related to the acquisition aspects of any system identified by the Offeror as comparable/anlogous. This includes, for example, the years the item was procured, production rates, quantities procured by year and definition of system composition, sole source or competitive procurement, and the development time period.

2) Technical desciption including the performance and physical aspects of the system. This describes the system in terms of the number of parts, physical configuration, type of material, technology, and physical/performance parameters.

3) Actual cost data including the cost account, narrative description of the effort, and the actual cost data (material and person-hours). The cost data should be provided in terms of total direct cost dollars actually spent by fiscal year and unit cost.

4) When using historical data, the Offeror should describe why the system is comparable to the proposed program. This includes a functional and technical comparison explaining the differences as well as simillarities between the historical and the proposed system. Also include an explanation of the relationship between the analogous element cost and the total program cost. Where applicable, provide reference to the to the technical proposal showing this relationship.

5) Adjustments made to derive the proposal estimate. The Offers should provide reasons and justification for any adjustments made to programmatic, technical and actual cost data for the historical system. The Offeror should provide the basis and document any adjustments applied to the historical data (e.g., complexity factors and normalization methods), which reflect the characteristics of the proposed system. This includes an audit trail sufficient for the Government to reconstruct the proposed estimate and judge its credibility.

6) Material Factors and Quote Adjustments. Provide an explanation of and substantiation for any adjustment factor(s) applied to the material costs. This includes a definition of the factor, the method of application, detailed quantitative substantiation, and the factor. Examples of these factors include, but are not limited to, escalation, learning curves, quantity adjustments, negotiation adjustments, purchase discounts, freight, scrap, rework, and yield.

Detailed Estimating Methodology

Provide a detailed cost estimating methodology that gives the detailed rationale and documentation of hours, material, and purchased items and describe the estimating technique in sufficient detail to enable the Government to replicate the Offeror's estimating technique. If parametric simulation or statistically derived models are used, statistical measures of confidence, prediction capability, and fit should be provided for independent and dependent variables, as well as the raw data and source(s) of this raw data.

Labor:
Data Substantiation is required, by CWBS element, for all prime and principal subcontractor costs and clearly described using CA-7 (this form).

This Section shall provide the substantition and estimating methodology of the labor hours presented. The total labor hours estimate for each CWBS element should trace to the lowest level of the functional categories of DD Form 1921-1 and the lowest level at which the estimate is substantiated. The overview of data substantiation in 5.3.1.2 - Summary of the Estimating Methodology (box above) should be traceable to this section.

For each CWBS element provide a description of the work to be performed, the total hours proposed, and the basis for the estimate and distinguish between recurring and nonrecurring efforts.

The Offeror should also provide a complete description of the labor hour estimating methodology. This also applies to company functional labor categories. If the engineering estimate was developed in person-months, the Offeror shall show conversion from person-months to person-hours. In addition, any cross checks used to verify the reasonableness of the estimate shall be provided (e.g.; drafting hours per drawing, software lines of code/day, minutes/component for board assembly; minutes/layer

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #: _____ CLIN: _____
Contractor/Subcontractor: _____ SOW reference: _____
Program Name: _____ IMS UID: Identify IMS unique id no. to trace to the proposed CWBS.
Contractor/Subcontractor WBS code: _____ Location of work: _____
WBS description/title _____ Period of Performance:

for board fabrication/ dollars per pound for fabrication and assembly, etc).

If standard hours are used as the basis for an estimate, provide any factors applied to the standard hours (i.e., realization factor); the method of calculation; the total proposed hours; the basis of the factors; and the process flows for each CWBS element. History from the manufacturing facility for previous contracts of similar types and quantities of systems should be provided for all factors. Hours for the functional labor categories should be shown separately according to CWBS element. A separate identification of recurring and nonrecurring labor standard should be made.

Material:
Data substantiation is required, by CWBS element, for all prime and principal subcontractor costs and clearly described using this form. This section shall provide the substantiation and estimating methodology of the material dollars presented in the Cost Summaries. The total material dollar estimate for each CWBS element should trace to the categories of DD Form 1921-1 and the lowest level at which the estimate is substantiated. The overview of data substantiation in the Summary of the Estimating Methodology section should be traceable to this section.

If learning curve theory is the basis for estimating unit costs, provide the formulation of the theory with all formulas, terms and exponents clearly defined. The substantiation should also include a discussion of the theoretical first unit values, any prior units, improvement slopes, and rate slopes if applicable.

Include actual material costs comprised of parts, devices, purchased products, etc. Includes vendor estimates, quotes, and pass through for parts and services. Detailed cost substantiation of vendor quotes or rough order magnitudes (ROMs) must be detailed here. The process of validating the ROM can be described here, and any cross check data point can be described in the following section. 'Vendor quote' alone as pricing substantiation is inadequate.

#4

Cross Check of Estimate

Any cross check data points should be described and should pertain to the estimate.

If Task Estimates are used as the methodology please provide cross check with the summary at the WBS level that provides WBS total hours, material dollars.

SECTION L COST ATTACHMENT 7
COST SUBSTANTIATION/BASIS OF ESTIMATE (BOE FORM)

**NOTE* Include WBS at the lowest level at which your estimate as developed*

RFP #:_____

Contractor/Subcontractor: _____

Program Name: _____

Contractor/Subcontractor WBS code: _____

WBS description/title _____

CLIN: _____

SOW reference: _____

IMS UID: __Identify IMS unique id no. to trace to the proposed CWBS.

Location of work: _____

Period of Performance: _____

SECTION L COST ATTACHMENT 8
SOFTWARE

SOFTWARE LINES OF CODE	WBS Element	LANGUAGE	MATURITY FACTOR	APPLICATION	SEI RATING	NEW OR UPGRADE	RADAR SOFTWARE (RADAR or OTHER)	PRODUCTIVITY (Hours and Subcontract dollars)	HISTORICAL BASIS	TOTAL EXISTING SLOC	NEW SLOC	REUSE SLOC	MODIFIED SLOC	COTS SLOC	TOTAL SLOC	ESLOC	ESLOC CALC
CSCI A															0		
CSCI B															0		
CSCI…															0		
TOTAL															0		

SW PRODUCTIVITY ELEMENTS	Is this Element included in Productivity? (Yes/No)
IEEE/EIA 12207 Elements	
Subsystem SW requirements analysis	
Subsystem SW architectural design	
Subsystem SW detailed design	
Subsystem SW coding and test	
Subsystem SW integration	
Subsystem SW qualification testing	
Additional Elements	
SW quality assurance	
SW configuration management	
SW management	

SW Productivity Map

Productivity Element	WBS Element	Hours and Subcontract dollars	Substantiation / Rationale (May use cost proposal reference)

NEW OR UPGRADE

Software Line of Code Nomenclature	WBS Element	Substantiation / Rationale (May use cost proposal reference)
CSCI A		
CSCI B		
CSCI…		

RADAR SOFTWARE

Software Line of Code Nomenclature	WBS Element	Substantiation / Rationale (May use cost proposal reference)
CSCI A		
CSCI B		
CSCI…		

DIRECTIONS:
1) For each WBS element provide requested data for each CSCI. Expand table as required to include all CSCIs. If SLOC estimates are done at a lower level expand table to include sub-indentured items such as CSCs or CSUs.

2) SLOC should be in LOGICAL lines of code.

3) In the SW Productivity Elements table, identify which elements are included in the proposed Productivity hours and Subcontract dollars. For ALL elements NOT included in the SW Productivity Elements table (that is, if "No" was selected in the SW Productivity Elements Table), provide the location in the cost proposal of the Productivity hours and/or subcontract dollars for these elements in the SW Productivity Map table.

DEFINITIONS:

LANGUAGE= Higher Order Language (HOL) used for coding. NOTE: Assembly Language is considered HOL for estimating purposes
MATURITY FACTOR= Assessment of how much is known about the software at time of size estimation. See Table 1 below for selections
APPLICATION= Intended use of Software. See Table 2 below
SEI RATING= CMMI rating of Organization developing software
PRODUCTIVITY= Provide productivity in terms of person hours and subcontract dollars (if applicable).
HISTORICAL BASIS= Historical basis of productivity metric.
TOTAL EXISTING SLOC= Number of Logical Source Line of Code (SLOC) of preexisting legacy Software
NEW SLOC= Number of newly developed logical source lines of code (SLOC)
REUSE SLOC= Number of existing logical source lines of code (SLOC) reused without modification
MODIFIED SLOC= Number of existing logical source lines of code (SLOC) that will be modified
COTS SLOC= Number of logical source lines of code (SLOC) of Commercial Off-The-Shelf (COTS) with which application will be integrated
TOTAL SLOC= Summation of NEW, REUSE, MODIFIED, and COTS logical source lines of code
ESLOC= Equivalent new line of code calculated from NEW, REUSE, MODIFIED, and COTS SLOC
ESLOC CALC= Formula used for ESLOC calculation. Example: ESLOC = New + x%*reuse + v%*modified + z%*COTS
BIT= Built in test
PHM= Prognostic and Health Management

Table 1: MATURITY FACTOR

The maturity factor is a means of assessing how good the size estimates for the CSCI are. It is logical that size inputs provided at the Preliminary Design Review would have much

Initial cost estimate, at least one year to award
CARD Completed or firm definition
SRR Complete
SDR Complete, prelim SW requirements complete
SSR Complete. All CSCI req identified
PDR
CDR
End of CSCI testing

Initial Cost Estimate - Reflects a program understanding approximately 1 - 2 years prior to award and the high uncertainty surrounding requirements and sizing inputs well in advance of award.

CARD Completed - Reflects a program understanding approximately 6 months prior to award. Frequently there will be an incomplete System Segment Specification and limited inputs from potential developers.

SRR Completed - Reflects a program understanding near contract award. Typically the preliminary system segment specification is complete and all CSCIs identified. Significant knowledge of similar systems and reuse is known.

SDR Completed - Reflects a program understanding when the system functional baseline, system segment specification, and software development plan are completed. Typically software requirements and Interface specifications will still be in a preliminary stage.

SSR Completed - Reflects a program understanding when all CSCI requirements are identified and defined (functional performance, database, testing), requirement and interface specification are done and the System Allocated Baseline is complete.

PDR- Preliminary Design Review is held.

CDR- Critical Design Review is held.

End of CSCI Testing Completed - Reflects completed and delivered software.

Table 2: APPLICATION

Airborne Software - Flight Critical
Airborne Software - Mission Critical
Airborne Software - Non-Critical

Shipboard or Van Software - Flight Critical
Shipboard or Van Software - Mission Critical
Shipboard or Van Software - Non-Critical
Ground Software - Flight Critical
Ground Software - Mission Critical
Ground Software - Non-Critical

Table 3: NEW OR UPGRADE

Designate CSCI as "New" if software development effort is being estimated for a new system. CSCIs with an identifiable heritage system or requiring a significant level of reuse code should be designated as "UPGRADE"

Table 4: RADAR SOFTWARE

Designate CSCI as "Radar" when the software being developed is intended for use in a radar or similar type system (i.e. jammer systems and/or other algorithmic intensive code). NOTE: This includes but is not limited to modes, beam steering, exciter, BIT, PHM, and signal processing. Also, Software written for radars, but are support or mission related should be designated as "Other."

SECTION L COST ATTACHMENT 9

SEPM Work Years Level Of Effort (LOE) Staffing Matrix

SE/PM (Equivalent Head-Counts by Yr)	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	TOTAL
Non-ILS										
Systems Engineering										
Prime										
Sub 1										
Sub 2										
Sub n										
Program Management										
Prime										
Sub 1										
Sub 2										
Sub n										
ILS										
Systems Engineering										
Prime										
Sub 1										
Sub 2										
Sub n										
Program Management										
Prime										
Sub 1										
Sub 2										
Sub n										

SECTION L COST ATTACHMENT 10
SKILL MIX / COMPOSITE DIRECT LABOR RATE

Base Year ____

1. WBS Element	1921-1 LABOR CATEGORY (1)	LABOR RATE CATEGORY (2)	LABOR RATE (TY$/HR) (3)	SKILL MIX PERCENT	ADJUSTED LABOR RATE (TY$/HR)	COMPOSITE LABOR RATE (TY$/HR) (4)
a.	b.	c.	d.	e.	f = d*e	g= Sum of f
Example:						
X000	*Engineering*	*Design Engineer*	*40.00*	*25%*	*10.00*	
		Test Engineer	*30.00*	*10%*	*3.00*	
		General Engineer	*27.00*	*50%*	*13.50*	
		Eng. Technician	*15.00*	*15%*	*2.25*	*28.75*
	Manufacturing	*Manufacturing 1*	*28.00*	*60%*	*16.80*	
		Manufacturing 2	*13.00*	*40%*	*5.20*	*22.00*

NOTES:

(1) Provide for each Fiscal Year by a minimum of Level 2 of the CWBS.

(2) Provide for all Modified DD Form 1921-1 Labor Categories as needed (i.e., Engineering, Manufacturing, Tooling, Quality Control).

(3) Provide Labor Category descriptions / titles as defined by the accounting structure with a link to specific rate negotiation agreements (e.g., FPRAs). For example, Engineering may be divided into: Design Engineering, Test Eng., General Eng., Eng. Technician, etc.

(4) Labor Rate should trace directly to current rate notices such as FPRA, AWD or CBA.

(5) Composite Labor Rate should trace directly to Modified DD Form 1921-1 Functional Labor Category.

Labor Rate Definitions (explain what tasks are being performed under each functional labor category):

SECTION L COST ATTACHMENT 12
Recurring Hardware Information

Labor and Material T1/AUC Matrix

CONTRACTOR WBS (CWBS) ELEMENT	CWBS NUMBER	LABOR T1	MATERIAL T1	LABOR AUC	MATERIAL AUC

SECTION L COST ATTACHMENT 11

Government Furnished Equipment / Property / Facilities / Information List

Base Year ____

WBS #	ITEM DESCRIPTION	NSN OR P/N	UNIT COST	QTY	TOTAL COST	CONTRACTOR / SUPPLIER	LOCATION	AVAILABILITY	COMMENTS