

AMENDMENT OF SOLICITATION / MODIFICATION OF CONTRACT				1. Contract ID Code	PAGE
2. Amendment/Modification No. 0001		3. EFFECTIVE DATE 4 APR 02	4. REQUISITION / PURCHASE REQUEST N66001-2030-62101		5. Project No. (if applicable)
6. ISSUED BY CONTRACTING OFFICER, SPAWARSYSCEN BLDG A33 ROOM 1602W, D212 53560 HULL STREET SAN DIEGO, CA 92152-5000 JACK FAULKNER (619)533-4503 email: jfaulk@spawar.navy.mil		CODE N66001	7. ADMINISTERED BY (If other than Item 6)		CODE N66001
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, state and ZIP + 4 Code)				(X) 9a. Amendment of Solicitation No.	
				9b. Dated (See Item 11)	
				10a. Modification of Contract / Order No. N66001-02-R-5999 /	
CAGE CODE				CEC (facility) CODE	
				X 10b. Dated (See Item 11) 22 MAR 02	
11. THIS ITEM APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS					
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [] is extended, [X] is not extended.					
<i>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:</i> (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.					
12. ACCOUNTING AND APPROPRIATION DATA (If required)					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
(X) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc..) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).					
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
X D. OTHER (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> Is Not, <input checked="" type="checkbox"/> Is required to sign this document and return 1 copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)					
The solicitation is revised as follows: 1) Clause B100 is replaced with the attached B100 clause. 2) Attachments 3 and 4 of the solicitation are replaced with the attached Attachment 3 and 4. 3) Page 85 of the solicitation is replaced with the attached. 4) The attached questions and answers and its attachments are for informational purposes only and are not changes to the solicitation. All other solicitation provisions remain unchanged.					
<i>Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.</i>					
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME OF CONTRACTING OFFICER (Type or print) SHARON M. PRITCHARD <i>SP</i>		
15B. NAME OF CONTRACTOR BY _____ (Signature of person authorized to sign)		15C. Date Signed	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. Date Signed

**PART I
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

B-100 SCOPE

Section B - Contract Line Items (CLINs)

BASE PERIOD

The contractor shall provide the following on a **fixed price** basis:

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>MAXQTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL AMT</u>
0001	High Performance Modem & IAW SOW Related Interface Equipment	60	EA	_____	_____
0002	Equipment (operator/technical) Manual SOW para. 3.6.1	60	EA	NSP	NSP
0003	Standard Equipment Warranty 24 months after Govt. Accept.	60	EA	NSP	NSP
0004	12 month extension on the standard equipment warranty	20	EA	_____	_____
0005	High Performance Modem	10	EA	-----	-----
0006	Related Interface Equipment	10	EA	-----	-----
0007	90 Day Spares Kit IAW SOW para 3.4.1	18	EA	-----	-----
0008	One Year Spares Kit IAW SOW para 3.4.2	12	EA	-----	-----
0009	Factory Spares Kit IAW SOW para 3.4.3	6	EA	-----	-----
0010	Commercial Manual supplemental data IAW SOW para. 3.6.2	60	EA	-----	-----
0011	Organizational Maintenance Training SOW para. 3.7.3	60	EA	-----	-----
0012	Maintenance Training CD IAW SOW para 3.7.3.1	1	EA	-----	-----

0013	Organizational Operator Training IAW SOW para 3.7.4	60	EA	-----	-----
0014	Operator Training CD IAW SOW para 3.7.4.1	1	EA	-----	-----
0015	Factory Operator/Maintenance Training IAW SOW para. 3.7.5	4	EA	-----	-----
0016	High Performance Modem & Related Interface Equipment Hook-up Support IAW SOW para. 3.8.1	60	EA	-----	-----
0017	Saturn-Bm Terminal/Antenna hand-over Non-Manufactures Warranty IAW Section H	60	EA	-----	-----

The contractor shall provide the following on a **Time & Materials** basis:

0018 LABOR: in accordance with SOW 3.10, REGULAR TIME:

Program Manager	40	M/H	-----	-----
Electronic Engineer	80	M/H	-----	-----
Electronic Technician	480	M/H	-----	-----
Design Engineer	40	M/H	-----	-----
Electronic Test Technician	80	M/H	-----	-----
Quality Assurance	40	M/H	-----	-----
Material Purchase Manager	20	M/H	-----	-----
Packing Specialist	40	M/H	-----	-----
Administrative Support	120	M/H	-----	-----
Draftsman	40	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0018 \$ _____

0019 LABOR: in accordance with SOW 3.10, OVERTIME:

Program Manager	10	M/H	-----	-----
Electronic Engineer	20	M/H	-----	-----
Electronic Technician	80	M/H	-----	-----
Design Engineer	10	M/H	-----	-----
Electronic Test Technician	20	M/H	-----	-----
Quality Assurance	10	M/H	-----	-----
Material Purchase Manager	04	M/H	-----	-----
Packing Specialist	04	M/H	-----	-----
Administrative Support	02	M/H	-----	-----
Draftsman	04	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0019 \$ _____

0020	Pre-planned Product Improvement IAW SOW 3.10.4	01	<u>UNPRICED</u>
0021	Materials	01	_____
0022	Travel/PER DIEM Handling,	01	_____
0023	DATA FOR ITEM(S) IAW Contract Data Requirements List, (CDRL), Exhibit(s) "A"	1 LOT NSP	NSP

OPTION CONTRACT LINE ITEM NUMBERS

The Government shall have the option to purchase the following CLINs in accordance with FAR 52.217-7 "Option for Increased Quantity-Separately Priced Line Item" on a **fixed-price** basis. The Government shall have the option to purchase the following CLINs in accordance with FAR 52.217-9 "Option to Extend the Term of the Contract" on a **Time and Materials** basis.

The Government shall have the option to purchase the following CLINs in accordance with FAR 52.217-9.

OPTION I

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>MAXQTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL AMT</u>
0024	High Performance Modem & IAW SOW Related Interface Equipment	60	EA	_____	_____
0025	Equipment (operator/technical) Manual SOW para. 3.6.1	60	EA	NSP	NSP
0026	Standard Equipment Warranty 24 months after Govt. Accept.	60	EA	NSP	NSP
0027	12 month extension on the standard equipment warranty	20	EA	_____	_____
0028	High Performance Modem	10	EA	-----	-----
0029	Related Interface Equipment	10	EA	-----	-----

0030	90 Day Spares Kit IAW SOW para 3.4.1	18	EA	-----	-----
0031	One Year Spares Kit IAW SOW para 3.4.2	12	EA	-----	-----
0032	Factory Spares Kit IAW SOW para 3.4.3	6	EA	-----	-----
0033	Commercial Manual supplemental data IAW SOW para. 3.6.2	60	EA	-----	-----
0034	Organizational Maintenance Training SOW para. 3.7.3	60	EA	-----	-----
0035	Maintenance Training CD IAW SOW para 3.7.3.1	0	EA	-----	-----
0036	Organizational Operator Training IAW SOW para 3.7.4	60	EA	-----	-----
0037	Operator Training CD IAW SOW para 3.7.4.1	0	EA	-----	-----
0038	Factory Operator/Maintenance Training IAW SOW para. 3.7.5	4	EA	-----	-----
0039	High Performance Modem & Related Interface Equipment Hook-up Support IAW SOW para. 3.8.1	60	EA	-----	-----
0040	Saturn-Bm Terminal/Antenna hand-over Non-Manufactures Warranty IAW Section H	30	EA	-----	-----

The contractor shall provide the following on a **Time & Materials** basis:

0041 LABOR: in accordance with SOW 3.10, REGULAR TIME:

Program Manager	40	M/H	-----	-----
Electronic Engineer	80	M/H	-----	-----
Electronic Technician	480	M/H	-----	-----
Design Engineer	40	M/H	-----	-----
Electronic Test Technician	80	M/H	-----	-----
Quality Assurance	40	M/H	-----	-----
Material Purchase Manager	20	M/H	-----	-----
Packing Specialist	40	M/H	-----	-----
Administrative Support	120	M/H	-----	-----
Draftsman	40	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0041 \$ _____

0042 LABOR: in accordance with SOW 3.10, OVERTIME:

Program Manager	10	M/H	-----	-----
Electronic Engineer	20	M/H	-----	-----
Electronic Technician	80	M/H	-----	-----
Design Engineer	10	M/H	-----	-----
Electronic Test Technician	20	M/H	-----	-----
Quality Assurance	10	M/H	-----	-----
Material Purchase Manager	04	M/H	-----	-----
Packing Specialist	04	M/H	-----	-----
Administrative Support	02	M/H	-----	-----
Draftsman	04	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0042 \$ _____

0043	Pre-planned Product Improvement IAW SOW 3.10.4	01	<u>UNPRICED</u>
0044	Materials	01	_____
0045	Travel/PER DIEM Handling,	01	_____
0046	DATA FOR ITEM(S) IAW Contract Data Requirements List, (CDRL), Exhibit(s) "A"	1 LOT NSP	NSP

OPTION II

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>MAXQTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL AMT</u>
0047	High Performance Modem & IAW SOW Related Interface Equipment	60	EA	_____	_____
0048	Equipment (operator/technical) Manual SOW para. 3.6.1	60	EA	NSP	NSP
0049	Standard Equipment Warranty 24 months after Govt. Accept.	60	EA	NSP	NSP
0050	12 month extension on the standard equipment warranty	20	EA	_____	_____

0051	High Performance Modem	10	EA	-----	-----
0052	Related Interface Equipment	10	EA	-----	-----
0053	90 Day Spares Kit IAW SOW para 3.4.1	18	EA	-----	-----
0054	One Year Spares Kit IAW SOW para 3.4.2	12	EA	-----	-----
0055	Factory Spares Kit IAW SOW para 3.4.3	6	EA	-----	-----
0056	Commercial Manual supplemental data IAW SOW para. 3.6.2	60	EA	-----	-----
0057	Organizational Maintenance Training SOW para. 3.7.3	60	EA	-----	-----
0058	Maintenance Training CD IAW SOW para 3.7.3.1	0	EA	-----	-----
0059	Organizational Operator Training IAW SOW para 3.7.4	60	EA	-----	-----
0060	Operator Training CD IAW SOW para 3.7.4.1	0	EA	-----	-----
0061	Factory Operator/Maintenance Training IAW SOW para. 3.7.5	4	EA	-----	-----
0062	High Performance Modem & Related Interface Equipment Hook-up Support IAW SOW para. 3.8.1	60	EA	-----	-----
0063	Saturn-Bm Terminal/Antenna hand-over Non-Manufactures Warranty IAW Section H	10	EA	-----	-----

The contractor shall provide the following on a **Time & Materials** basis:

0064 LABOR: in accordance with SOW 3.10, REGULAR TIME:

Program Manager	40	M/H	-----	-----
Electronic Engineer	80	M/H	-----	-----
Electronic Technician	480	M/H	-----	-----
Design Engineer	40	M/H	-----	-----
Electronic Test Technician	80	M/H	-----	-----

Quality Assurance	40	M/H	-----	-----
Material Purchase Manager	20	M/H	-----	-----
Packing Specialist	40	M/H	-----	-----
Administrative Support	120	M/H	-----	-----
Draftsman	40	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0064 \$ _____

0065 LABOR: in accordance with SOW 3.10, OVERTIME:

Program Manager	10	M/H	-----	-----
Electronic Engineer	20	M/H	-----	-----
Electronic Technician	80	M/H	-----	-----
Design Engineer	10	M/H	-----	-----
Electronic Test Technician	20	M/H	-----	-----
Quality Assurance	10	M/H	-----	-----
Material Purchase Manager	04	M/H	-----	-----
Packing Specialist	04	M/H	-----	-----
Administrative Support	02	M/H	-----	-----
Draftsman	04	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0065 \$ _____

0066	Pre-planned Product Improvement IAW SOW 3.10.4	01	<u>UNPRICED</u>
0067	Materials	01	_____
0068	Travel/PER DIEM Handling,	01	_____
0069	DATA FOR ITEM(S) IAW Contract Data Requirements List, (CDRL), Exhibit(s) "A"	1 LOT NSP	NSP

OPTION III

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>MAXQTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL AMT</u>
0070	High Performance Modem & IAW SOW Related Interface Equipment	60	EA	_____	_____

0071	Equipment (operator/technical) Manual SOW para. 3.6.1	60	EA	NSP	NSP
0072	Standard Equipment Warranty 24 months after Govt. Accept.	60	EA	NSP	NSP
0073	12 month extension on the standard equipment warranty	20	EA	_____	_____
0074	High Performance Modem	10	EA	-----	-----
0075	Related Interface Equipment	10	EA	-----	-----
0076	90 Day Spares Kit IAW SOW para 3.4.1	18	EA	-----	-----
0077	One Year Spares Kit IAW SOW para 3.4.2	12	EA	-----	-----
0078	Factory Spares Kit IAW SOW para 3.4.3	6	EA	-----	-----
0079	Commercial Manual supplemental data IAW SOW para. 3.6.2	60	EA	-----	-----
0080	Organizational Maintenance Training SOW para. 3.7.3	60	EA	-----	-----
0081	Maintenance Training CD IAW SOW para 3.7.3.1	0	EA	-----	-----
0082	Organizational Operator Training IAW SOW para 3.7.4	60	EA	-----	-----
0083	Operator Training CD IAW SOW para 3.7.4.1	0	EA	-----	-----
0084	Factory Operator/Maintenance Training IAW SOW para. 3.7.5	4	EA	-----	-----
0085	High Performance Modem & Related Interface Equipment Hook-up Support IAW SOW para. 3.8.1	60	EA	-----	-----
0086	Saturn-Bm Terminal/Antenna hand-over Non-Manufactures Warranty IAW Section H	10	EA	-----	-----

The contractor shall provide the following on a **Time & Materials** basis:

0087 LABOR: in accordance with SOW 3.10, REGULAR TIME:

Program Manager	40	M/H	-----	-----
Electronic Engineer	80	M/H	-----	-----
Electronic Technician	480	M/H	-----	-----
Design Engineer	40	M/H	-----	-----
Electronic Test Technician	80	M/H	-----	-----
Quality Assurance	40	M/H	-----	-----
Material Purchase Manager	20	M/H	-----	-----
Packing Specialist	40	M/H	-----	-----
Administrative Support	120	M/H	-----	-----
Draftsman	40	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0087 \$ _____

0088 LABOR: in accordance with SOW 3.10, OVERTIME:

Program Manager	10	M/H	-----	-----
Electronic Engineer	20	M/H	-----	-----
Electronic Technician	80	M/H	-----	-----
Design Engineer	10	M/H	-----	-----
Electronic Test Technician	20	M/H	-----	-----
Quality Assurance	10	M/H	-----	-----
Material Purchase Manager	04	M/H	-----	-----
Packing Specialist	04	M/H	-----	-----
Administrative Support	02	M/H	-----	-----
Draftsman	04	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0088 \$ _____

0089	Pre-planned Product Improvement IAW SOW 3.10.4	01	<u>UNPRICED</u>
0090	Materials	01	_____
0091	Travel/PER DIEM Handling,	01	_____
0092	DATA FOR ITEM(S) IAW Contract Data Requirements List, (CDRL), Exhibit(s) "A"	1 LOT NSP	NSP

OPTION IV

<u>CLIN</u>	<u>DESCRIPTION</u>	<u>MAXQTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL AMT</u>
0093	High Performance Modem & IAW SOW Related Interface Equipment	60	EA	_____	_____
0094	Equipment (operator/technical) Manual SOW para. 3.6.1	60	EA	NSP	NSP
0095	Standard Equipment Warranty 24 months after Govt. Accept.	60	EA	NSP	NSP
0096	12 month extension on the standard equipment warranty	20	EA	_____	_____
0097	High Performance Modem	10	EA	-----	-----
0098	Related Interface Equipment	10	EA	-----	-----
0099	90 Day Spares Kit IAW SOW para 3.4.1	18	EA	-----	-----
0100	One Year Spares Kit IAW SOW para 3.4.2	12	EA	-----	-----
0101	Factory Spares Kit IAW SOW para 3.4.3	6	EA	-----	-----
0102	Commercial Manual supplemental data IAW SOW para. 3.6.2	60	EA	-----	-----
0103	Organizational Maintenance Training SOW para. 3.7.3	60	EA	-----	-----
0104	Maintenance Training CD IAW SOW para 3.7.3.1	0	EA	-----	-----
0105	Organizational Operator Training IAW SOW para 3.7.4	60	EA	-----	-----
0106	Operator Training CD IAW SOW para 3.7.4.1	0	EA	-----	-----
0107	Factory Operator/Maintenance Training IAW SOW para. 3.7.5	4	EA	-----	-----

0108	High Performance Modem & Related Interface Equipment Hook-up Support IAW SOW para. 3.8.1	60	EA	-----	-----
0109	Saturn-Bm Terminal/Antenna hand-over Non-Manufactures Warranty IAW Section H	10	EA	-----	-----

The contractor shall provide the following on a **Time & Materials** basis:

0110 LABOR: in accordance with SOW 3.10, REGULAR TIME:

Program Manager	40	M/H	-----	-----
Electronic Engineer	80	M/H	-----	-----
Electronic Technician	480	M/H	-----	-----
Design Engineer	40	M/H	-----	-----
Electronic Test Technician	80	M/H	-----	-----
Quality Assurance	40	M/H	-----	-----
Material Purchase Manager	20	M/H	-----	-----
Packing Specialist	40	M/H	-----	-----
Administrative Support	120	M/H	-----	-----
Draftsman	40	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0110 \$ _____

0111 LABOR: in accordance with SOW 3.10, OVERTIME:

Program Manager	10	M/H	-----	-----
Electronic Engineer	20	M/H	-----	-----
Electronic Technician	80	M/H	-----	-----
Design Engineer	10	M/H	-----	-----
Electronic Test Technician	20	M/H	-----	-----
Quality Assurance	10	M/H	-----	-----
Material Purchase Manager	04	M/H	-----	-----
Packing Specialist	04	M/H	-----	-----
Administrative Support	02	M/H	-----	-----
Draftsman	04	M/H	-----	-----

TOTAL AMOUNT FOR CLIN 0111 \$ _____

0112	Pre-planned Product Improvement IAW SOW 3.10.4	0/01	<u>UNPRICED</u>
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0113	Materials	01	_____
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4.3 VOLUME III - WRITTEN CAPABILITY INFORMATION (Technical) shall consist of the offeror's understanding of the technical requirements, and how the offeror complies with those requirements. Offers which do not present sufficient information to permit a complete technical evaluation by the Government may be rejected. Each technical proposal shall include the following:

Section A – (PHASE ONE) Minimum technical requirements

(1) Each offeror shall submit the information required by Clause L-322, DESCRIPTIVE LITERATURE and L-323, REQUIREMENT FOR TECHNICAL PROPOSAL of this solicitation. Information submitted in accordance with this clause shall be utilized to determine the required compliance with the minimum requirements identified in Attachment One (1) of this solicitation. (Refer also to Clause L-321, COMPLIANCE TO MINIMUM SPECIFICATIONS of this solicitation.)

(PHASE TWO) Mandatory Demonstration

Offerors meeting the minimum technical requirements will then be required to demonstrate the system interoperability and performance requirements in Phase Two to the evaluation. Phase Two will consist of an "On-Site" Evaluation hosted by the offeror for certain requirements that would be difficult to evaluate in a written proposal. All demonstrations will be in accordance with **Attachment 4**, "Technical Evaluation Demonstration."

The On-Site Demonstration will take no more than one-hundred and twenty (120) hours beginning with the arrival of the evaluation team. Offerors will not be allowed to videotape the demonstrations. Demonstrations will be scheduled as soon as practicable after evaluation of the written portion of the proposal. The order in which offerors will perform their demonstrations will be determined by a drawing of lots by the contact specialist and witnessed by the contracting officer. Once a date and time for the demonstration is coordinated between the offeror and the Government, requests from offerors to reschedule the date and time of their demonstration will not normally be entertained; however, the Government may choose, at its discretion, to grant the request. Unsuccessful requests for rescheduling of the demonstration shall not be judged by the Government to be a valid basis for protest.

Section B - Past Performance

(a) Offerors shall provide information on a minimum of three (3) previous Government contracts whose effort was relevant to the effort required by this solicitation; the contracts provided should have been performed within the last 5 years. If the Offeror has not had three (3) Government contracts within the last 5 years, information on relevant subcontracts and/or commercial contracts may be submitted instead. This information shall be provided by the submission of Attachment 7 - "Reference Information Sheet" for each contract.

(b) In addition to the information requested above, offerors shall contact their past performance references and request that each reference complete Attachment 6 - Past Performance

Attachment 3
TECHNICAL EVALUATION WRITTEN PROPOSAL

Minimum Technical Requirements Criteria			
Reference	Technical Proposal Criteria	Rating: Satisfactory or Unsatisfactory	Comments
SOW	<p>Statement-of-Work Offerors shall provide a written statement verifying that they shall meet all requirements of the Statement of Work supported by a summary description of their technical ability and approach to providing the required equipment and services.</p>		
SOW 3.3 Func Spec 6.1 Func Spec 3.2.10 Func Spec 3.2.1.13	<p>INMARSAT Authorization Offerors shall provide a written declaration of conformance from INMARSAT that 1) the proposed equipment does not invalidate the existing Saturn-Bm terminal INMARSAT Type Approval, 2) the proposed equipment does not invalidate the Saturn-Bm terminal INMARSAT CN-17 Approval, 3) The proposed equipment meets all INMARSAT operational compliance requirements for non standard lease services.</p> <p>Offer shall also provide a copy of the non-standard lease service application that was submitted to INMARSAT for achieving the operation compliance for non-standard lease service.</p>		
SOW 3.4	<p>Interim Spares Support Offeror shall provide a recommended spares list that identifies each LRU that can be removed and replaced shipboard. At a minimum, the information should include: Manufactures Part Number, Item Description and Mean Time Between Failure.</p>		
SOW 3.6.1	<p>Technical Manuals Offerors shall provide Manuals for the organizational level of operation and maintenance of the system. These Manuals shall be evaluated for comprehensiveness and usability.</p>		
SOW 3.10.4	<p>Pre-planned Product Improvement Offerors shall be required to submit a technical report (10-page limit) indicating that the proposed equipment has the capability of supporting a non-channelized service by modifying the systems existing firmware and or software.</p>		
Sec H-901	<p>Equipment Warranty (Variance) Offerors shall provide a written Statement from the Saturn-Bm OEM (Nera, Norway) that their product does not invalidate the Saturn-Bm terminals manufactures warranty. If the Offeror does not have an OEM endorsed statement for warranty validation, the Offeror shall provide a plan for supporting the Saturn-Bm terminal warranty. The plan shall include information on world-wide service support and Saturn-Bm terminal parts availability for non</p>		

	OEM warranty support.		
Func Spec 3.1 Func Spec 3.1.1 Func Spec 3.2.1.8	<p>System Configuration Definitions Offeror shall provide supporting documentation that clearly illustrates how 1) the proposed High Performance modem and related interface equipment are integrated with the Saturn-Bm System including both MK-I and MK-II Antenna configurations and antenna handover. As a minimum, the information should discuss signal flow and power requirements placed on the Saturn-Bm System by the High Performance Modem and related interface equipment. 2) How the proposed system configuration can be reconfigured to support 9.6kbps asynchronous data (via the MCU) on the on-demand satellite network.</p>		
Func Spec 3.2.1.13 Func Spec 3.2.1.3 SPAWAR Systems Command satellite lease services contract N00039- 02-D-2301, SOW Para 3.1.1.5 (Satellite Power)	<p>128kbps Synchronous Data Offeror shall submit technical documentation that clearly demonstrates that the proposed equipment is capable of providing reliable 128kbps in 100khz of Satellite Bandwidth.</p> <p>As a minimum, the documentation shall include modem configuration, including modulation method and Forward Error Correction scheme. A detailed link budget analysis including available margin for degradation.</p> <p>The link budget analysis shall be based on the following conditions: 1) Clear weather, 2) Earth referenced MES antenna angle of 5°, unobstructed, 3) INMARSAT F2 Satellite. 4) Earth referenced LES antenna angle of 12°, unobstructed. 5) Required BER of 10^{-6}. 6) MES EIRP of 33dBW in the return direction. 7) Satellite EIRP of 21.9dBW in the forward direction.</p> <p>Validating test documentation shall include the test setup, test equipment configuration, block diagrams, spectral plots, test data and any other supporting information that was used to verify that spectral requirements are met and/or exceeded.</p>		
Func Spec 3.2.2.2	<p>Equipment Dimensions Offeror shall provide documentation verifying that the High Performance modem and related interface equipment are rack mountable within the volume designated.</p> <p>As a minimum, the documentation shall include a three-dimensional pictorial drawing or equivalent photograph including measurement indications.</p>		
Func Spec 3.2.1.15	<p>Automatic Link Establishment Offeror shall submit technical documentation that clearly demonstrates that the proposed equipment is capable of supporting the HotLine signaling function on the Saturn-Bm terminal.</p>		

Attachment 4
TECHNICAL EVALUATION DEMONSTRATION

1.0 SCOPE

The Contract Award Technical Demonstration Evaluation Plan (CATDEP) provides instructions to TEB members for evaluating Offeror's High Performance Modem and related interface equipment demonstration. In addition, requirements are provided for hardware configurations, test configurations, and evaluated criteria.

2.0 GENERAL REQUIREMENTS

The test configurations depicted in figures 1 through 3 of the CATDEP are required to validate system performance. Demonstrations shall be performed at the Offeror's facility. The Offerors shall provide all equipment required for the demonstration including the High performance modems and related interface equipment required at the INMARSAT Land Earth Station to support connectivity. Exceptions are listed in the required material list in Table 1. Satellite lease channel space segment shall be provided by the government. A government designated Land Earth Station will be used to support government performance monitoring requirements. This support shall consist of monitoring and reporting system power levels, looping back government provided space segment leases, and reporting Bit Error Test set readings as required by the government. For verification of required performance parameters, a government representative shall be stationed at the Land Earth Station for the duration of the required testing.

2.1 High Performance Modem & related interface equipment testing shall be conducted with the Nera Saturn-Bm System (MK-II antenna variant). Specific tests will require the integrated Nera antenna handover unit.

2.2 As specified in this instruction, the Offerors shall be ready to perform the required tests on the day and time that was previously arranged through the contracting officer. The offeror shall have their Saturn-Bm terminals, High Performance Modems & related interface equipment, antenna handover unit, test jigs, Spectrum Analyzers, Bit Error Rate Testers (BERT), and required Land Earth Station connectivity in place or readily available for setup within 30 minutes of the Governments arrival at the Offerors designated test facility.

2.3 In the unforeseen event of hardware failure during a required test event, the Government shall allow the vendor up to 24 hours to repair the system and proceed with the required test event. If the faulty unit cannot be repaired within 24 hours, the government reserves the right to reschedule the test event.

2.4 Enclosure (1) of this attachment provides the government's minimum technical requirements for equipment performance in the Technical Review Tables. TEB members shall annotate any clarifications and comments to the test observations in enclosure (2). Each entry shall be initialed and dated.

2.5 If any of the required test results fail to meet the minimum government requirements (receive a unsatisfactory rating) then the Offeror shall be disqualified.

3.0 TEST PROCEDURES

The demonstration shall be conducted in three phases. Phase one shall consist of validating Saturn-Bm system interoperability with the High Performance Modem and related interface equipment. Phase two shall verify system performance when providing enhanced 128kbps and 64kbps services. Phase three shall consist of validating system interoperability between a Saturn-Bm system configured for antenna handover operation and the High Performance Modem and related interface equipment.

3.1 Saturn-Bm Terminal Interoperability Requirements

3.1.1 Phase one configuration shall consist of the Saturn-Bm terminal test setup (figure 1. Diagram) with the High Performance Modem & related interface equipment installed and operational. The offeror shall demonstrate that the minimum required handsets functions listed in the phase I system interoperability table are available during a 128kbps connection and idle condition.

- a. The government representatives shall verify that the test configuration, required equipment, and specified cable lengths, are in accordance with the prescribed requirements. The lead government

Representative shall then sign and date the appropriate block in the phase I system interoperability table of enclosure (1).

b. The government representatives shall validate that the BERT is in synch and data is flowing. Once the data link is verified, the government representatives shall verify operation of all applicable handset functions listed in the phase I system interoperability table of enclosure (1). The lead government Representative shall annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

c. The government representatives shall first verify that the Saturn-Bm terminal is configured and active in the external modem mode, and that the High Performance modem and related interface are activate with no data connection established (idle mode). The government representatives shall then verify operation of all applicable handset functions listed in the phase I system interoperability table of enclosure (1). The lead government Representative shall annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete

3.2 System Performance Requirements

3.2.1 Phase two configuration shall consist of three Saturn-Bm terminals with High Performance Modems & related interface equipment. Each system test configuration setup shall adhere to the figure 1 diagram. Initial baseline testing shall consist of validating standard 64kbps lease service in the presence of adjacent satellite channels providing 128kbps enhanced service. The satellite spectrum shall be allocated so that the standard 64kbps channel is operating between adjacent 128kbps channels. One of the three Saturn-Bm terminals shall be initially configured for standard 64Kbps lease service (no external modem). The two other systems shall be configured to support 128Kbps enhanced service. Three adjacent 100KHz channels shall be provided for all required testing. The 2047 pattern on each BERT shall be selected for all testing. In order to establish a baseline for the required power levels, data connectivity shall be first established for standard 64kbps lease service. The Land Earth Station shall be contacted to verify that the standard 64kbps lease service is operating at required power levels. Signal level amplitude shall be visually approximated on a spectrum analyzer. The peak signal level of the standard 64kbps lease service shall be used as a means of verifying 128kbps enhanced service power levels. Once data connectivity is established on all three systems, the BERT on the center channel (64Kbps standard service) shall be monitored periodically for system performance. At various intervals, bit error loss and average bit error rate shall be noted. Test duration shall be 24-hours. During the initial test, relative signal peak amplitude levels on the three adjacent channels shall be compared for equivalence to ensure each required service is operating at the required power level (21.9dBW in the forward direction). Signal level amplitudes shall be visually approximated on a spectrum analyzer. For the next test evolution, each system shall be configured to support 128kbps connectivity. Once data connectivity is established on all three systems, the BERT on the center channel (128kbps enhanced service) shall be monitored periodically for system performance. At various intervals, bit error loss and average bit error rate shall be noted. Test duration of shall be 24-hours. During the test, the Land Earth Station shall be contacted to verify that the enhanced 128kbps service is operating at the required power levels. Relative signal peak amplitude levels on the three adjacent channels shall be compared for equivalence to ensure that the required service is operating at a power level that is consistent with the previous test. Verification of power levels shall be done with the assistance of the Land Earth Station Operator (LESO) that is supporting each test evolution.

a. The government representatives shall verify that the test configuration, required equipment, and specified cable lengths, are in accordance with the prescribed requirements. The lead government Representative shall then sign and date the appropriate block in the phase II system performance table in enclosure (1).

b. Using one system configured to support standard 64kbps connectivity, the offeror shall established a single data session. After the BERT is verified in synch with data following, the LESO shall be contacted to confirm that the standard 64kbs lease service is operating at the required power levels. With one system configured to support 64kbps standard service and the other two systems configured to support 128kbps connectivity, the offeror shall establish three simultaneous data sessions. After all three BERT's

are visually verified to be in sync with data flowing, and the LESO has been contacted and has provided verbal verification that terminal transmit power and shore station transmit power are within specification, the lead government representatives shall record the test start time and the sign and date the appropriate block in enclosure (1). The duration of the test is 24-hours.

c. During the 24-hour link quality test, the offeror shall have a spectrum analyzer set-up to display the three adjacent 100KHz channels. The analyzer shall be connected to the directional coupler as depicted in figure 1. Spectrum analyzer should be set-up to display a 500KHz span that encompasses the three adjacent 100KHz channels. The government representatives shall visually verify that three adjacent channels are present in 300KHz of contiguous bandwidth. The government representatives shall also visually verify that the relative signal peak amplitudes are approximately the same for each carrier. Approximately shall be defined as within 1dB with the spectrum analyzer amplitude scale setting of 2dB/DIV (logarithmic scale). In addition, the government representatives shall visually verify that the 128kbps channel when measured at the 3db point resides within 100KHz. For 100KHz visual verification, the spectrum analyzer shall be set-up to display a 200KHz span that encompasses the center channel with an amplitude scale setting of 2dB/DIV (logarithmic scale). The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure.

d. After conclusion of the 24-hour link quality test, the government representatives shall visually verify that the measured average bit error rate is 10^{-6} or less as displayed on the BERT connected to the system operating on the center channel at the offeror's facility. For the BERT supporting data connectivity on the center channel at the LESO's facility, the government shall contact the appropriate LESO personnel to verify that the measured average bit error rate is 10^{-6} or less. The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure (1).

e. With each system configured to support 128kbps connectivity, offeror shall establish three simultaneous 128kbps data sessions. After all three BERT's are visually verified to be in sync with data flowing, and the LESO has been contacted and has provided verbal verification that terminal transmit power and shore station transmit power are within specification, the lead government representatives shall record the test start time and the sign and date the appropriate block in enclosure (1). The duration of the test is 24-hour.

f. During the 24-hour link quality test, the offeror shall have a spectrum analyzer set-up to display the three adjacent 100KHz channels. The analyzer shall be connected to the directional coupler as depicted in Figure 1. Spectrum analyzer should be set-up to display a 500KHz span that encompasses the three adjacent 100KHz channels. The government representatives shall visually verify that three adjacent channels are present in 300KHz of contiguous bandwidth. The government representatives shall also visually verify that the relative signal peak amplitudes for this link quality test approximately the same for each carrier. Approximately shall be defined as within 1dB with the spectrum analyzer amplitude scale setting of 2dB/DIV (logarithmic scale). In addition, the government representatives shall visually verify that the 128Kbps channel when measured at the 3db point, resides within 100KHz. For 100KHz visual verification, the spectrum analyzer shall be set-up to display a 200KHz span that encompasses the center channel with an amplitude scale setting of 2dB/DIV (logarithmic scale). The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure.

g. After the conclusion of the 24-hour link quality test, the government representatives shall visually verify that the measured bit error rate is 10^{-6} or less as displayed on the BERT connected to the system operating on the center channel at the offeror's facility. For the BERT supporting data connectivity on the center channel at the LESO's facility, the government shall contact the appropriate LESO personnel to verify that the measured average bit error rate is 10^{-6} or less. The lead government Representative shall then

annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure (1).

3.2.2 To validate the 64kbps enhanced service, the offeror shall use the same phase two configuration as was used to demonstrate the 128kbps enhanced service. The configuration shall consist of three Saturn-Bm terminals with High Performance Modems & related interface equipment. Each system test setup shall adhere to Figure 1. Two systems shall be configured for 64kbps enhanced service. The third system shall be configured for 128kbps connectivity. For the enhanced 64kbps service, relative signal amplitudes shall be compared for equivalence to ensure each required service is operating at the required power level (21.9dBW in the forward direction). Signal level amplitudes shall be visually approximated on a spectrum analyzer. During the test, the Land Earth Station shall be contacted to verify that the enhanced 64kbps service and enhanced 128kbps service are operating at the required power levels. Two adjacent 100KHz channels shall be provided for testing. One of the 100KHz channels shall support two 64kbps enhanced lease channel operating in 50KHz each. Once data connectivity is established on all three systems, two 64kbps enhanced leases and one 128kbps enhanced lease, the BERT operating on the 50KHz channel (enhanced 64kbps lease service) that is segmented between the other 50KHz channel and 100KHz channel shall be monitored periodically for system performance.

a. With two systems configured to support enhanced 64kbps service and one system configured to support 128kbps connectivity, offeror shall establish three simultaneous data sessions, two 64kbps and one 128kbps. After each of the BERT's are visually verified to be in sync with data flowing, and the LESO has been contacted and has provided verbal verification that terminal transmit power and shore station transmit power are within specification for enhanced 64kbps and enhanced 128kbps service, the lead government representatives shall record the test start time and the sign and date the appropriate block in enclosure (1). The duration of the test is 24-hours.

b. During the 24-hour link quality test, the offeror shall have a spectrum analyzer set-up to display the two adjacent 100KHz channels. The analyzer shall be connected to the directional coupler as depicted in figure 1. Spectrum analyzer should be set-up to display a 500KHz span that encompasses the two adjacent 100KHz channels. The government representatives shall visually verify that three adjacent carriers, two 64Kbps and one 128Kbps, are present in 200KHz of contiguous bandwidth. The government representatives shall also visually verify that the relative signal peak amplitudes for this link quality test are approximately the same for each carrier. In addition, the government representatives shall visually verify that the 64kbps carrier, when measured at the 3db point resides within 50KHz. For 50KHz visual verification, the spectrum analyzer shall be set-up to display a 100KHz span that encompasses the center channel with an amplitude scale setting of 2dB/DIV (logarithmic scale). The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure (1).

c. After the conclusion of the 24-hour link quality test, the government representatives shall visually verify that the measured bit error rate is 10^{-6} or less as displayed on the BERT connected to the system operating on the center channel at the offerors facility. For the BERT supporting data connectivity on the center channel at the LESO's facility, the government shall contact the appropriate LESO personnel to verify that the measured average bit error rate is 10^{-6} or less. The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each visual verification test is complete. The lead government Representative shall then sign and date the appropriate block in enclosure (1).

3.3 Antenna Hand-over Interoperability Requirements

3.3.1 Phase three configuration shall consist of the Saturn-Bm terminals and antenna handover test setup (Figure 2 diagram) with the High Performance Modem and related interface equipment installed and operational. Please note that the Government is not requiring the offeror to install the SLIP ring modification on either of the Saturn-Bm MK-II antennas that are required for antenna hand-over testing. The demonstration can be accomplished in lieu of the SLIP ring modification. The offeror shall demonstrate that the minimum required

handsets functions are available during stand-alone mode when both systems are configured to operate independently, and when the antenna handover unit is active and both systems are configured for antenna handover operation. Additionally, the offeror shall demonstrate that the proposed equipment is capable of operating during an antenna hand-over evolution. Using the test configuration setup in Figure 3, a synchro-transmitter/receiver shall be used to simulate a shipboard gyro providing Own Ships Heading, 60 Hz information. The Government furnished synchro tester shall be provided at time of demonstration. Upon completion of the testing, the Government shall retain custody of the synchro tester.

a. The government representatives shall verify that the test configuration, required equipment, and specified cable lengths, are in accordance with the prescribed requirements. The lead government Representative shall then sign and date the appropriate block in the phase III antenna handover interoperability table in enclosure (1).

b. With each Saturn-Bm terminal configured for stand-alone operation and the antenna handover unit set for standalone operation, the offeror shall demonstrate the minimum required hand set functions are available during stand-alone mode on the Saturn-Bm unit designated as the main (unit-A). The government representatives shall validate that BERT is in synch at a data rate of 128kbps. Once the data link is verified, the government representatives shall verify operation of all applicable handset functions listed in the in the phase III antenna handover interoperability of enclosure (1). The lead government Representative shall then annotate the observed results as satisfactory and unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

c. With each Saturn-Bm terminal configured for stand-alone operation and the antenna handover unit set for standalone operation, the offeror shall demonstrate the minimum required hand set functions are available with no data connection established (idle mode) on the Saturn-Bm unit designated as the main (unit-A). The government representatives shall verify operation of all applicable handset functions listed in the in the phase III antenna handover interoperability of enclosure (1). The lead government Representative shall then annotate the observed results as satisfactory and unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

d. With each Saturn-Bm terminal configured for antenna hand-over operation and the antenna handover unit set for hand-over operation, the offeror shall demonstrate the minimum required hand set functions are available prior to commencing an antenna handover evolution on the Saturn-Bm unit designated as the main (unit-A). The government representatives shall validate that BERT is in synch and data link of 128kbps is established. Once the data link is verified, the government representatives shall verify operation of all handset functions listed in the phase III antenna handover interoperability of enclosure (1). The lead government Representative shall then annotate the observed results as satisfactory and unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

e. With each Saturn-Bm terminal configured for antenna hand-over operation and the antenna handover unit set for hand-over operation, the offeror shall demonstrate the minimum required hand set functions are available with no data connection established (idle mode) prior to commencing an antenna handover evolution on the Saturn-Bm unit designated as the main (unit-A). The government representatives shall verify operation of all applicable handset functions listed in the phase III antenna handover interoperability of enclosure (1). The lead government Representative shall then annotate the observed results as satisfactory and unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

f. The government representatives shall verify that the test configuration, required equipment, and specified cable lengths, are in accordance with the prescribed requirements. The lead government Representative shall then sign and date the appropriate block in the phase III antenna handover interoperability table in enclosure (1)

g. With each Saturn-Bm terminal configured for antenna hand-over operation and the antenna handover unit set for hand-over operation, the offeror shall demonstrate modem interoperability during an

antenna hand-over evolution by using a simulated gyro source (Figure 3: Synchro tester connection) to drive the main antenna (Antenna-A) into a preprogrammed block zone causing a handover to the backup antenna (Antenna-B). It is anticipated that during the antenna hand-over evolution, that the BERT will lose N-bits and in an extreme case lose synch. However, the BERT should recover automatically and continue to send and receive data. The government representatives shall first confirm the successfully antenna hand-over evolution by observing the transmit carrier transfer from the spectrum analyzer that is monitoring antenna-A to the spectrum analyzer monitoring antenna-B. Next the government representative shall validate that BERT has successfully recovered and is in synch and data is flowing. The lead government Representative shall then annotate the observed results as satisfactory or unsatisfactory and then sign and date the appropriate block in enclosure (1) after each functional verification test is complete.

MATERIAL LIST

ITEM	QTY	ITEM NAME	PART, TYPE OR MODEL NUMBER	MANUFACTURER NAME/NSN NUMBER	REMARKS
1	3	ANTENNA, Bm ADE MK2	QUFF 911 09-3	NERA TELECOMMUNICATIONS	Contractor Furnished SEE FIG 1 & 2
2	3	COUPLER, DIRECTIONAL	3002-20	NARDA	Contractor Furnished SEE FIG 1 & 2
3	2	SPECTRUM ANALYZER	HP8563E OR EQUIV.	HEWLETT PACKARD	Contractor Furnished SEE FIG 1 & 2
4	1	DUAL ANTENNA SWITCH	101438	NERA TELECOMMUNICATIONS	Contractor Furnished SEE FIG 2
5	500ft Total *	CABLE, FLEXIBLE, COAXIAL, 50 OHMS	RG/214	M17/164-00002	Contractor Furnished SEE FIG 1 & 2
6	12	CONNECTOR, N-SERIES RF	KN-59-176	KINGS, M39012/01-0005	Contractor Furnished SEE FIG 1 & 2
7	2	CABLE, M/M DB9	EDN12H-0005-MM	BLACK BOX	Contractor Furnished SEE FIG 2
8	3	MCU	QUFC 911 901-2	NERA TELECOMMUNICATIONS	Contractor Furnished SEE FIG 1 & 2
9	3	POWER SUPPLY 10-34VDC	QUFC 911 903-2B	NERA TELECOMMUNICATIONS	Contractor Furnished SEE FIG 1 & 2
10	3	HAND SET	QDGS 911 903	NERA TELECOMMUNICATIONS	Contractor Furnished SEE FIG 1 & 2
11	2	CCA, GYRO	QROF2199003	SEATEL	Contractor Furnished SEE FIG 1, 2 & 3
12	2	XFMR, 115 AC TO 15 DC	112561	SEATEL	Contractor Furnished SEE FIG 3
13	3	CONNECTOR, TNC-SERIES RF	KA-51-19	KINGS	Contractor Furnished SEE FIG 1 & 2
14	3	BERT, W/RS-530 OPTION	FIREBERD 6000A	TELECOMMUNICATIONS TECHNIQUES CORPORATION	Contractor Furnished SEE FIG 1 & 2 Interface to be determined by test facility.
15	20ft Total	CABLE, GYRO INTERFACE	LS2SU-3 OR SIMILAR	JCH WIRE & CABLE	Contractor Furnished SEE FIG 3
16	1	SYNCHRO TESTER	1998308	CARBONARA LABS	Gov't furnished SEE FIG 3

* See Figures 1 & 2 For Required Cable Lengths

TABLE 1.

Single System Configuration

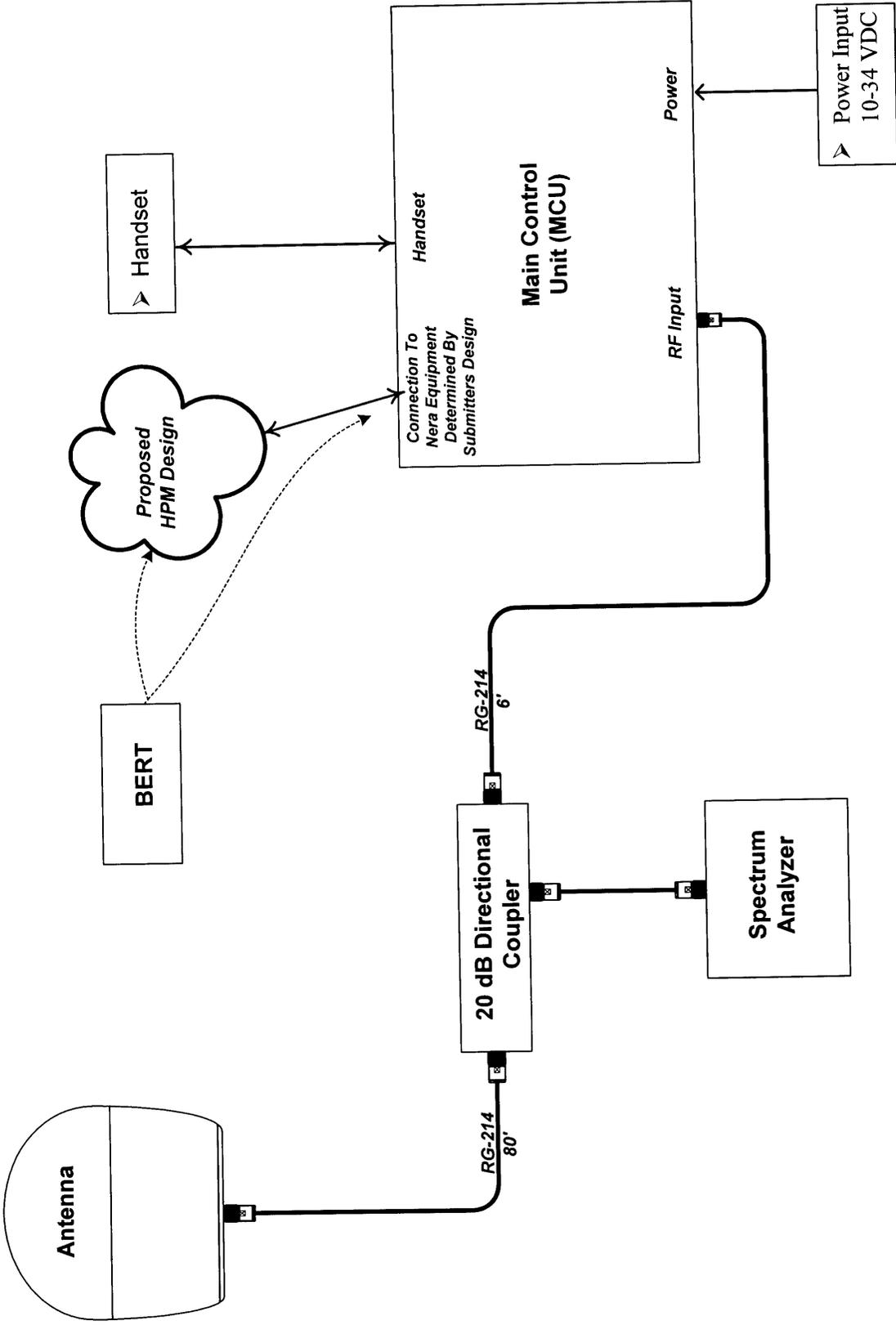


Figure 1.

Dual Antenna Handover System Configuration

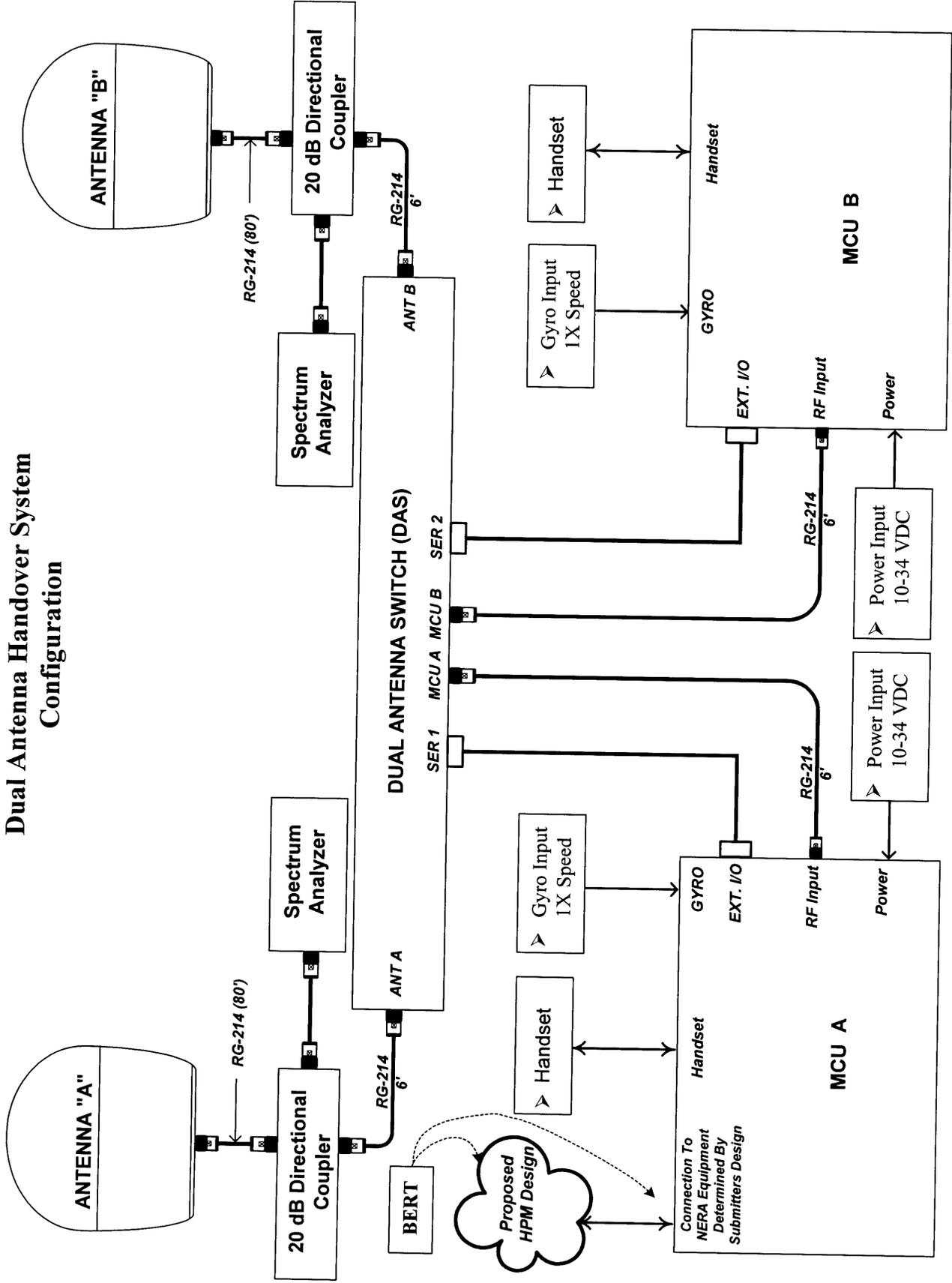


Figure 2.

GYRO Interface Configuration

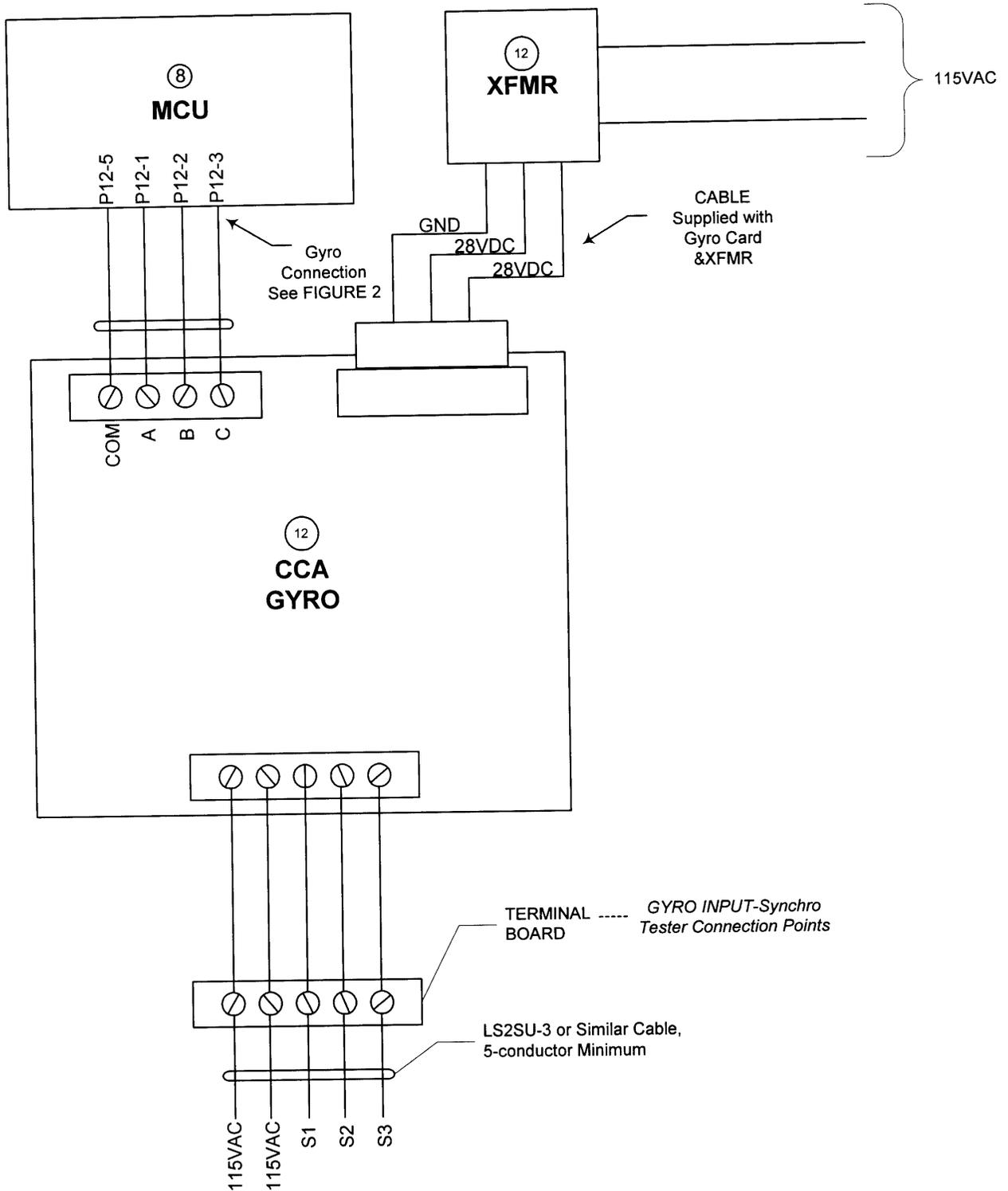


Figure 3.

Technical Review Table (Phase I)

Offeror : _____

System Tested: _____

PHASE I System Interoperability Required Saturn-Bm Terminal Functions				
Reference	Required Function	Demonstration Criteria	Rating: SAT or UNSTAT	Signature/Date
CATDEP Para 3.1.1.a	Demonstration Configuration Provide basis for system interoperability testing	Equipment Configuration verify that the test configuration, equipment and specified cable lengths are in accordance with requirements listed in Figure 1 and table 1.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.15	Auto Transmit Control Data path DTR handshaking signal controls call establishment and cessation	(Hot dial, Function 85) With the Saturn-Bm terminal configured for Hot Dial (Function 85) and the BERT connected to the High Performance Modem, the data control signal (DTR) state shall be changed by toggling the DTR Key on the BERT. 1) Transmit signal should be displayed on the spectrum analyzer. 2) 128Kbps Data flow should be observed on the BERT		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.11	Emission Control (EMCON) Provides a means to have positive control of all transmit signal outputs. External EMCON control required for MUTE capable ships.	MCU EMCON Key Switch With the spectrum analyzer configured to monitor the transmit signal, the EMCON Key is turned to enable EMCON. 1) The transmit signal should no longer be displayed. 2) The handset should provide a visual indication that transmit is disabled.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.7	Terminal Alarms Provides alarm or important message notification via flashing triangle symbol on the handset	Handset Display With the Saturn-Bm terminal configured for printer (function 77) and 128Kbps data connectivity established, the printer power switch shall be turned Off. 1) The terminal handset shall display a flashing triangle symbol. 2) 128kbps data flow shall be verified on the BERT		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.7	Active Alarms Provides listing of current active system alarms	Handset Display, Function 30 Continued from the Terminal alarms validation (printer power OFF and observed flashing triangle). 1) Function 30 shall display the printer alarm		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.7	Information Log Provides historical list of system alarms and faults that is used for monitoring the	Handset Display, Function 31 Continued from Active alarms. 1) Function 31 shall display a list of system alarms and faults.		

Enclosure 1

	terminals operational status and troubleshooting.			
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.7	Clear Cause Log Provides abnormal conditions that have caused the call to be cleared. Information is logged as it occurs. Used for monitoring terminal operation status and troubleshooting.	Handset Display, Function 32 Continued from Active alarms. 1) Function 32 shall provide a list indicating why previous calls were cleared. If no list is available the government representative shall verify access to function 32 on handset.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.16	Signal Level Provides indication of the receive signal level. Must be viewable when the terminal is in idle mode and busy with a call. Used to verify antenna pointing and receive system readiness.	Shift+7, Function 27/28 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing the Shift Key followed by the 7 key will display a signal level. 2) Function 27 and 28 shall also display Signal levels along with antenna position		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.12 Para 3.2.1.16	Current Ocean Region Provides indication of current satellite selected and is used for changing to a different satellite	Handset Display, Function 20 With the High Performance Modem system active and 128 data connectivity established. 1) Function 20 shall display current satellite.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6	Search for Satellite Provides capability to search for a satellite when the exact pointing angles are unknown	Handset Display, Function 26 With the High Performance Modem system active and no data call established. 1) Function 26 shall display the search for satellite prompt.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6	Antenna Absolute Position Provides capability to view and position the antenna to desired pointing angles, plus provides the current S/N levels.	Handset Display, Function 27 With the High Performance Modem system active and 128 data connectivity established. 1) Function 27 shall display antenna position and signal level.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.16	Read/Set Compass Indicates the current gyro input heading and provides the capability to correct. This is required for periodic updates to the heading	Handset Display, Function 29 With the High Performance Modem system active and 128 data connectivity established. 1) Function 29 shall display current heading position.		
CATDEP Para 3.1.1.b Func Spec Para 3.2.1.16	Display and Key Light Controls illumination of the display and keys for view under all ambient light conditions	Handset Display, Shift+9 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing SHIFT key followed by the 9 Key should activate the display light.		

Enclosure 1

<p>CATDEP Para 3.1.1.c</p> <p>Func Spec Para 3.2.1.16</p>	<p>Configure Ports Provides a means to toggle the Saturn-Bm terminal DTE port between data modes to prevent auto dialing when not authorized. Also used when troubleshooting the system</p>	<p>Handset Display, Function 70 With the High Performance Modem system active and no data call established. 1) Function 70 shall display current data port configuration.</p>		
<p>CATDEP Para 3.1.1.c</p> <p>Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6 Para 3.2.1.16</p>	<p>Relative Antenna Position Provides the capability to manually steer the antenna, plus provides the current S/N levels</p>	<p>Handset Display, Function 28 With the High Performance Modem system active and no data call established. 1) Function 28 shall display antenna position and signal level. 2) Current antenna azimuth shall be edited to a new value of existing azimuth plus 20° 3) Antenna change in position shall be confirmed by loss of signal.</p>		

Technical Review Table (Phase II)

Offeror : _____

System Tested: _____

PHASE II System Interoperability System Performance Requirements				
Reference	Required Function	Demonstration Criteria	Rating: SAT or UNSTAT	Signature/Date
CATDEP Para 3.2.1.a.	Demonstration Configuration Provide basis for system performance testing	Equipment Configuration Verify that the test configuration, equipment and specified cable lengths are in accordance with requirements listed in Figure 1 and table 1.		
CATDEP Para 3.2.1. b. Func Spec Para 3.2.1.3 Para 3.2.1.9 Para 3.2.1.12 INMARSAT SDM	Standard 64K Lease Service Legacy service will be required during transition to 128kbps lease service	64Kbps Performance-legacy Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) LESO confirmation of 64kbps legacy power levels. 2) LESO validation that terminal transmit power and Shore transmit power are in specification for 128kbps service.3) Record 24-hour test start time.	1) LESO Verbal Confirmation 2) LESO Verbal Validation 2) Test Start Time. _____	
CATDEP Para 3.2.1.c. Func Spec Para 3.2.1.3 Para 3.2.1.9 Para 3.2.1.12 INMARSAT SDM	Standard 64K Lease Service Legacy service will be required during transition to 128kbps lease service	64Kbps Performance-legacy Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) Visually verify that 3 carriers are present in 300KHz of contiguous bandwidth. 2) Visually verify that the three signal peak amplitudes are approximately equivalent. 3) Visually verify that the 128Kbps carrier resides within 100KHz.		
CATDEP Para 3.2.1 d. Func Spec Para 3.2.1.3 Para 3.2.1.9 Para 3.2.1.12 INMARSAT SDM	Standard 64K Lease Service Legacy service will be required during transition to 128kbps lease service	64Kbps Performance-legacy Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) Record Test Stop time 2) Visually verify that the measured bit error rate is 10 ⁻⁶ or less as displayed on the BERT	1) Test Stop Time. _____ 2) MES BERT	

Enclosure 1

SDM		less as displayed on the BERT monitoring the center channel. 3) LESO verification of measured bit error rate (10^{-6} or less at shore site).	3) Shore BERT	
CATDEP Para 3.2.1.e. Func Spec Para 3.2.1.3 Para 3.2.1.12 Para 3.2.1.13	Enhanced 128K Lease Service High performance Modem and related interface equipment required to support enhanced service.	128Kbps Performance Verify 128Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) LESO validation that terminal transmit power and Shore transmit power are in specification. 2) Record 24-hour test start time.	1) LESO Verbal Validation 2) Test Start Time.	
CATDEP Para 3.2.1.f. Func Spec Para 3.2.1.3 Para 3.2.1.12 Para 3.2.1.13	Enhanced 128K Lease Service High performance Modem and related interface equipment required to support enhanced service.	128Kbps Performance Verify 128Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) Visually verify that 3 carriers are present in 300KHz of contiguous bandwidth. 2) Visually verify that the three signal peak amplitudes are approximately equivalent. 3) Visually verify that the 128Kbps carrier resides within 100KHz.		
CATDEP Para 3.2.1.g. Func Spec Para 3.2.1.3 Para 3.2.1.12 Para 3.2.1.13	Enhanced 128K Lease Service High performance Modem and related interface equipment required to support enhanced service.	128Kbps Performance Verify 128Kbps performance in the presence of adjacent channels providing 128Kbps With all three BERT's verified in synch with data connectivity established. 1) Record Test Stop time 2) Visually verify that the measured bit error rate is 10^{-6} or less as displayed on the BERT monitoring the center channel. 3) LESO verification of measured bit error rate (10^{-6} or less at shore site).	1) Test Stop Time. 2) MES BERT 3) Shore BERT	
CATDEP Para 3.2.2.a. Func Spec Para 3.2.1.3 Para 3.2.1.10	Enhanced 64K Lease Service High performance Modem and related interface equipment required to support enhanced service.	64Kbps Performance Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps and 64Kbps enhanced services. With all three BERT's verified in	1) LESO Verbal Validation	

Enclosure 1

3.2.1.12		synch with data connectivity established. 1) LESO validation that terminal transmit power and Shore transmit power are in specification. 2) Record 24-hour test start time.	2) Test Start Time. _____	
CATDEP Para 3.2.2.b. Func Spec Para 3.2.1.3 Para 3.2.1.10 Para 3.2.1.12	Enhanced 64K Lease Service High performance Modem and related interface equipment required to support enhanced service.	64Kbps Performance Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps and 64Kbps enhanced services. With all three BERT's verified in synch with data connectivity established. 1) Visually verify that 3 carriers are present in 200KHz of contiguous bandwidth. 2) Visually verify that the three signal peak amplitudes are approximately equivalent. 3) Visually verify that the 64Kbps carrier resides within 50KHz.		
CATDEP Para 3.2.2.c. Func Spec Para 3.2.1.3 Para 3.2.1.10 Para 3.2.1.12	Enhanced 64K Lease Service High performance Modem and related interface equipment required to support enhanced service.	64Kbps Performance Verify 64Kbps performance in the presence of adjacent channels providing 128Kbps and 64Kbps enhanced services. With all three BERT's verified in synch with data connectivity established. 1) Record Test Stop time 2) Visually verify that the measured bit error rate is 10^{-6} or less as displayed on the BERT monitoring the center channel. 3) LESO verification of measured bit error rate (10^{-6} or less at shore site).	1) Test Stop Time. _____ 2) MES BERT 3) Shore BERT	

Technical Review Table (Phase III)

Offeror : _____

System Tested: _____

PHASE III Antenna Hand-over Interoperability Required Saturn-Bm Terminal Functions				
Reference	Required Function	Demonstration Criteria	Rating: SAT or UNSTAT	Signature/Date
CATDEP Para 3.3.1.a.	Demonstration Configuration Provide basis for system performance testing	Equipment Configuration Verify that the test configuration, equipment and specified cable lengths are in accordance with requirements listed in Figure 2 and table 1.		
<i>Modem Interoperability with Antenna Hand-over Unit in Stand-Alone Configuration</i>				
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.15	Auto Transmit Control Data path DTR handshaking signal controls call establishment and cessation	(Hot dial, Function 85) With the Saturn-Bm terminal configured for Hot Dial (Function 85) and the BERT connected to the High Performance Modem, the data control signal (DTR) state shall be changed by toggling the DTR Key on the BERT.1) Saturn-Bm terminals and antenna hand-over units are configured for Stand-alone mode 2) Transmit signal should be displayed on the spectrum analyzer. 3) 128Kbps Data flow should be observed on the BERT		
CATDEP Para 3.3.1.b. Func Spec Para 3.2.1.11	Emission Control (EMCON) Provides a means to have positive control of all transmit signal outputs. External EMCON control required for MUTE capable ships.	MCU EMCON Key Switch With the spectrum analyzer configured to monitor the transmit signal, the EMCON Key is turned to enable EMCON. 1) The transmit signal should no longer be displayed. 2) The handset should provide a visual indication that transmit is disabled.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.7	Terminal Alarms Provides alarm or important message notification via flashing triangle symbol on the handset	Handset Display With the Saturn-Bm terminal configured for a printer (function 77), and 128Kbps data connectivity established, the printer power switch shall be turned Off. 1) The terminal handset shall display a flashing triangle symbol. 2) 128kbps data flow shall be verified on the BERT		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.7	Active Alarms Provides listing of current active system alarms	Handset Display, Function 30 Continued from the Terminal alarms validation (printer power OFF and observed flashing triangle). 1) Function 30 shall		

Enclosure 1

		display the printer alarm		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.7	Information Log Provides historical list of system alarms and faults that is used for monitoring the terminals operational status and troubleshooting.	Handset Display, Function 31 Continued from Active alarms. 1) Function 31 shall display a list of system alarms and faults.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.7	Clear Cause Log Provides abnormal conditions that have caused the call to be cleared. Information is logged as it occurs. Used for monitoring terminal operation status and troubleshooting.	Handset Display, Function 32 Continued from Active alarms. 1) Function 32 shall provide a list indicating why previous calls were cleared. If no list is available the government representative shall verify access to function 32 on handset.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.16	Signal Level Provides indication of the receive signal level. Must be viewable when the terminal is in idle mode and busy with a call. Used to verify antenna pointing and receive system readiness.	Shift+7, Function 27/28 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing the Shift Key followed by the 7 key will display a signal level. 2) Function 27 and 28 shall also display Signal levels along with antenna position		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.12 Para 3.2.1.16	Current Ocean Region Provides indication of current satellite selected and is used for changing to a different satellite	Handset Display, Function 20 With the High Performance Modem system active and 128 data connectivity established. 1) Function 20 shall display current satellite.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6	Search for Satellite Provides capability to search for a satellite when the exact pointing angles are unknown	Handset Display, Function 26 With the High Performance Modem system active and no data call established. 1) Function 26 shall display the search for satellite prompt.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6	Antenna Absolute Position Provides capability to view and position the antenna to desired pointing angles, plus provides the current S/N levels.	Handset Display, Function 27 With the High Performance Modem system active and 128 data connectivity established. 1) Function 27 shall display antenna position and signal level.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.16	Read/Set Compass Indicates the current gyro input heading and provides the capability to correct. This is required for periodic updates to the heading	Handset Display, Function 29 With the High Performance Modem system active and 128 data connectivity established. 1) Function 29 shall display current heading position.		
CATDEP Para 3.3.1.b Func Spec Para 3.2.1.16	Display and Key Light Controls illumination of the display and keys for view under all ambient light conditions	Handset Display, Shift+9 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing SHIFT key followed by		

Enclosure 1

		the 9 Key should activate the display light.		
CATDEP Para 3.3.1.c Func Spec Para 3.2.1.16	Configure Ports Provides a means to toggle the Saturn-Bm terminal DTE port between data modes to prevent auto dialing when not authorized. Also used when troubleshooting the system	Handset Display, Function 70 With the High Performance Modem system active and no data call established. 1) Function 70 shall display current data port configuration.		
CATDEP Para 3.3.1.c Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6 Para 3.2.1.16	Relative Antenna Position Provides the capability to manually steer the antenna, plus provides the current S/N levels	Handset Display, Function 28 With the High Performance Modem system active and no data call established. 1) Function 28 shall display antenna position and signal level. 2) Current antenna azimuth shall be edited to a new value of existing azimuth plus 20° 3) Antenna change in position shall be confirmed by loss of signal.		
<i>Modem Interoperability with Antenna Hand-over Unit Active</i>				
CATDEP Para 3.3.1.d. Func Spec Para 3.2.1.14 Para 3.2.1.15	Auto Transmit Control Data path DTR handshaking signal controls call establishment and cessation	(Hot dial, Function 85) With the Saturn-Bm terminal configured for Hot Dial (Function 85) and the BERT connected to the High Performance Modem, the data control signal (DTR) state shall be changed by toggling the DTR Key on the BERT. 1) Saturn-Bm terminals and antenna hand-over units are configured for antenna hand-over mode 2) Transmit signal should be displayed on the spectrum analyzer. 3) 128Kbps Data flow should be observed on the BERT		
CATDEP Para 3.3.1.d. Func Spec Para 3.2.1.11 Para 3.2.1.14	Emission Control (EMCON) Provides a means to have positive control of all transmit signal outputs. External EMCON control required for MUTE capable ships.	MCU EMCON Key Switch With the spectrum analyzer configured to monitor the transmit signal, the EMCON Key is turned to enable EMCON. 1) The transmit signal should no longer be displayed. 2) The handset should provide a visual indication that transmit is disabled.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.7	Terminal Alarms Provides alarm or important message notification via flashing triangle symbol on the handset	Handset Display With the Saturn-Bm terminal configured for a printer (function 77) and 128Kbps data connectivity established, the		

Enclosure 1

Para 3.2.1.14		printer power switch shall be turned Off. 1) The terminal handset shall display a flashing triangle symbol. 2) 128kbps data flow shall be verified on the BERT		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.7 Para 3.2.1.14	Active Alarms Provides listing of current active system alarms	Handset Display, Function 30 Continued from the Terminal alarms validation (printer power OFF and observed flashing triangle). 1) Function 30 shall display the printer alarm		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.7 Para 3.2.1.14	Information Log Provides historical list of system alarms and faults that is used for monitoring the terminals operational status and troubleshooting.	Handset Display, Function 31 Continued from Active alarms. 1) Function 31 shall display a list of system alarms and faults.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.7 Para 3.2.1.14	Clear Cause Log Provides abnormal conditions that have caused the call to be cleared. Information is logged as it occurs. Used for monitoring terminal operation status and troubleshooting.	Handset Display, Function 32 Continued from Active alarms. 1) Function 32 shall provide a list indicating why previous calls were cleared. If no list is available the government representative shall verify access to function 32 on handset.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.14 Para 3.2.1.16	Signal Level Provides indication of the receive signal level. Must be viewable when the terminal is in idle mode and busy with a call. Used to verify antenna pointing and receive system readiness.	Shift+7, Function 27/28 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing the Shift Key followed by the 7 key will display a signal level. 2) Function 27 and 28 shall also display Signal levels along with antenna position		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.12 Para 3.2.1.14 Para 3.2.1.16	Current Ocean Region Provides indication of current satellite selected and is used for changing to a different satellite	Handset Display, Function 20 With the High Performance Modem system active and 128 data connectivity established. 1) Function 20 shall display current satellite.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6 Para 3.2.1.14	Search for Satellite Provides capability to search for a satellite when the exact pointing angles are unknown	Handset Display, Function 26 With the High Performance Modem system active and no data call established. 1) Function 26 shall display the search for satellite prompt.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.4 Para 3.2.1.5	Antenna Absolute Position Provides capability to view and position the antenna to desired pointing angles, plus provides the current S/N levels.	Handset Display, Function 27 With the High Performance Modem system active and 128 data connectivity established. 1) Function 27 shall display		

Enclosure 1

Para 3.2.1.6 Para 3.2.1.14		antenna position and signal level.		
CATDEP Para 3.3.1.d Func Spec Para 3.2.1.14 Para 3.2.1.16	Read/Set Compass Indicates the current gyro input heading and provides the capability to correct. This is required for periodic updates to the heading	Handset Display, Function 29 With the High Performance Modem system active and 128 data connectivity established. 1) Function 29 shall display current heading position.		
CATDEP Para 3.3.1.d Tech Spec Para 3.2.1.14 Para 3.2.1.16	Display and Key Light Controls illumination of the display and keys for view under all ambient light conditions	Handset Display, Shift+9 With the High Performance Modem system active and 128 data connectivity established. 1) Pressing SHIFT key followed by the 9 Key should activate the display light.		
CATDEP Para 3.3.1.e Func Spec Para 3.2.1.14 Para 3.2.1.16	Configure Ports Provides a means to toggle the Saturn-Bm terminal DTE port between data modes to prevent auto dialing when not authorized. Also used when troubleshooting the system	Handset Display, Function 70 With the High Performance Modem system active and no data call established. 1) Function 70 shall display current data port configuration.		
CATDEP Para 3.3.1.e Tech Spec Para 3.2.1.4 Para 3.2.1.5 Para 3.2.1.6 Para 3.2.1.14 Para 3.2.1.16	Relative Antenna Position Provides the capability to manually steer the antenna, plus provides the current S/N levels	Handset Display, Function 28 With the High Performance Modem system active and no data call established. 1) Function 28 shall display antenna position and signal level. 2) Current antenna azimuth shall be edited to a new value of existing azimuth plus 20° 3) Antenna change in position shall be confirmed by loss of signal.		
<i>Modem Interoperability During Antenna Hand-over Evolution</i>				
CATDEP Para 3.3.1.f.	Demonstration Configuration Provide basis for system performance testing	Equipment Configuration Verify that the test configuration, equipment and specified cable lengths are in accordance with requirements listed in Figure 2, Figure 3 and table 1.		
CATDEP Para 3.3.1.g. Func Spec Para 3.2.1.14 Para 6.3	Antenna Handover Provides a means of automatic switching between antennas to maintain a continuous line of sight to the satellite	128Kbps Interoperability With spectrum analyzers set to monitor each system during the antenna hand-over evolution and 128kbps data connectivity established. 1) verify the transfer from the primary antenna (A) to the secondary antenna (B) by observing the transmit carrier transfer. 2) Verify that the BERT has recovered and is in synch and receiving and transmitting data.		

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

Section B - Price/Cost (Volume I & II)

1. Q. Is the same Section B to be included in both Volume I and II of the offer with the addition of Price/Cost detail in Volume II?
 - A. Yes.

Attachment 1 – Pricing

CLIN 0001

2. Q. What does IAW SOW mean?
 - A. IAW SOW is defined as In Accordance With Statement-of-Work.

CLIN 0005/0006

3. Q. Are these the same modem and interface equipment as in CLIN 0001 without interface equipment?

A. CLIN 0005 is for the modem segment of CLIN 0001. CLIN 0006 is for the related interface equipment of CLIN 0001.

4. Q. If the interface equipment is integral to the modem, (i.e. LRU = modem with interface equipment), should this item be priced in CLIN 0005 or CLIN 0006 or both since it is required that all CLINs be quoted?

A. If LRU = Modem with interface equipment (excluding required interface cables) then the LRU should be quoted in CLIN 0005 and required interface equipment (external cables) should be quoted in CLIN 0006.

Section C – Descriptions/Specifications/Work Statement (Volume III)

SOW

5. Q. Please clarify the reference to the Inmarsat SDM requirements particularly in regards to the SOW requirements of 64 kbps in 50 kHz bandwidth and 128 kbps in 100 kHz bandwidth, are these to be considered Channelized services?

A. The Inmarsat System Definition Manual does not address INMARSAT hardware requirements for non-standard lease services such as 64kbps in 50 kHz bandwidth or 128 kbps in 100 kHz bandwidth. These services are defined as enhanced channel mode services in SPAWAR Systems Command satellite lease services contract N00039-02-D-2301, Stratos Mobile Networks, 6901 Rockledge Drive, Suite 900, Bethesda, MD 20817. Attachment 4, Phase II blocks relating to enhanced 64kbps and 128kbps service has been amended. The reference to INMARSAT SDM has been removed.

6. Q. Is SPAWAR aware of Inmarsat comments on guardband requirements for channelized 128kbps service?

A. Yes, SPAWAR is aware of INMARSAT's preliminary comments.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

7. Q. This solicitation is for shipboard equipment only. Will there be a solicitation for complementary LES equipment?

A. Yes, the solicitation is for shipboard equipment. No, Contract Line Items for supporting related LES equipment are addressed in the SPAWAR Systems Command satellite lease services contract N00039-02-D-2301, Stratos Mobile Networks, 6901 Rockledge Drive, Suite 900, Bethesda, MD 20817.

SOW 3.2

8. Q. Is there a requirement to use COTS or just a desire?

A. The contractor shall make best effort to utilize standard Commercial Off-the-Shelf (COTS) equipment or Non-Developmental Items (NDI). This is a desire but not a requirement.

9. Q. Are bidders to be evaluated on their use of COTS? If so, how?

A. No. Potentials offerors shall be evaluated in accordance with the requirements set forth in section M of the RFP.

SOW Functional Specification 2.3

10. Q. The SOW references both the CN 17 standard and INMARSAT-B SDM INMARSAT-B System Definition Manual Class 2, Issue 3 CN-18. - Which is meant to govern the government's requirement?

A. In the SOW, Change Notice 17 (CN-17) refers to the INMARSAT Type Approval Extension on the Saturn-Bm Terminal. CN-17 Approval is required for terminals operating in the standard lease mode on the INMARSAT Lease Satellite Network. Since the High Performance modem and related interface equipment must operate as an integrated part of Saturn-Bm terminal it is essential that the terminals existing INMARSAT CN-17 approval is not invalidated by the contractors proposed hardware.

In the SOW Functional Specification 2.3, the INMARSAT-B System Definition Manual (SDM) Class 2, Issue 3 CN-18 is referenced under other documents. This is the title of the latest INMARSAT-B SDM. The SDM specifies INMARSAT's overarching requirements for equipment operating on the INMARSAT on-demand satellite network and lease satellite network excluding non-standard lease services. The Saturn Bm-terminal is required to be in its basic operating mode before it is marked into lease mode for operations. The high performance modem and related interface equipment should neither inhibit nor degrade this functionality. Since the High Performance modem and related interface equipment must operate as an integrated part of Saturn-Bm terminal it is essential that the terminals existing INMARSAT Type Approval and INMARSAT CN-17 approval is not invalidated by the contractors proposed hardware.

SOW Functional Specification 3.2.1.13:

11. Q. -Will the govt. provide projected link budgets for this service, i.e. how much satellite power is assumed to be available in the forward and return directions for the stated BER performance?

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

A. As stated in attachment 3 (page 2) of the Technical Evaluation to the written proposal in the RFP, the government is requiring prospective offeror's to submit a link budget for evaluation. Therefore, the government shall not provide a projected link budget.

Attachment 3, Technical Evaluation to the written proposal 128kbps Synchronous data block has been amended. In the third paragraph, 4) Earth referenced LES angle has been modified from 5°, unobstructed to 12°, unobstructed. The following conditions have been added: 6) MES EIRP of 33dBW in the return direction. 7) Satellite EIRP of 21.9dBW in the forward direction.

Attachment 3, Technical Evaluation to the written proposal 128kbps Synchronous data reference block has been amended. The following references have been added: Func Spec 3.2.1.3 and SPAWAR Systems Command satellite lease services contract N00039-02-D-2301, SOW Para 3.1.1.5 (Satellite Power)

SOW Functional Specification 3.2.2:

12. Q. - Is a photograph with dimensions stated acceptable or will the government require some other verification?

A. Verification requirements are provided in attachment 3, Technical Evaluation to the written proposal, Equipment block. Photographs presenting isometric view with the appropriate dimensions are acceptable. Attachment 3, Technical Evaluation to the written proposal Equipment block has been amended. The second paragraph is revised to include (pictorial drawings) or equivalent photograph.

SOW Functional Specification 3.2.1.14:

13. Q. Please provide and Interface Control Document and Operation and Maintenance Manuals for the "Antenna Handover Function."

A. Attachment 4, Technical evaluation demonstration requires that the Offeror provide all required equipment for the demonstration including Dual Antenna Switch listed in the table 1.material list. Manuals are normally provided with the corresponding hardware. If the offeror requires additional interface control information, the Government recommends that prospective offerors contact the manufacturer Nera.

Section H - Special Contact Requirements

H-901 Equipment Warranty

NON-MANUFACTURER WARRANTY SATURN BM TERMINAL/ANTENNA
HANDOVER

14. Q. Where in the RFP response should specific information regarding assumption of Nera B warranty be included, Volume II?

A. Warranty information can be included in Volume III, Technical. Warranty information will not be included as part of the 60 page limitation for technical information.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

15. Q. Please provide relevant sections of the warranty responsibilities under the previous contract to provide Nera Saturn B terminals, including but not limited to:
- Warranty period? The warranty period is 24-months from Mackay Validation or 30-months from date of delivery.
 - Replacement requirements? The warranty covers parts and labor including Travel within a 50-mile radius of the authorized service centers facility.
 - Response times? Response times are based on the ships proximity to one of the worldwide authorized service centers. Government estimates that on average, a 72-hour response time is achieved.
 - Return procedures? After the required service action is completed, the certified representative from the authorized service center is responsible for returning the defective model(s) to Nera for replacement.
 - Spares requirements (LRU, 90 day, 1 year etc.)? Spare requirements are not relevant to warranty responsibilities.
 - Reimbursement for efforts where malfunction is demonstrated to be USN induced vs equipment malfunction; i.e. non-warranty? Issues arising from suspected sailor induced malfunction are handled on a case-by-case basis.

Additional warranty information is attached to this memorandum.

16. Q. Will the government provide a list Saturn B terminal S/N, associated hull numbers and ship names as well warranty status including warranty expiration date installed under the recently expired contract?

A. Assuming the successful Offeror cannot provide a written statement from the Saturn-Bm OEM that their product does not invalidate the Saturn-Bm terminals manufactures warranty, the Government shall provide a list of Saturn-Bm terminals, associated hull numbers and ship names as well as warranty expiration date. For the offerors convenience the government is providing a spreadsheet that contains the number of Saturn-Bm terminals under warranty per month out through 2004, which is attached to this memorandum.

17. Q. Will the government provide a history of maintenance performed on current terminals.

A. The Government does not possess maintenance histories on the currently installed terminals.

18. Q. Will the government provide an estimate of the number of additional Nera Saturn B procurements planned?

A. The maximum possible quantity are 60 per year as identified under contract N66001-02-D-5024.

19. Q. Will the government provide a delineation of Warranty requirements under the recently awarded sole source?

A. Warranty requirements for Contract N66001-D-02-5024 are delineated in section H-900 of that document. The subject warranty and clause are attached to this memorandum.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

20. Q. Are regular and extended warranty services described as CLINs for the previous and recently awarded Nera Saturn B sole source?

A. For both the N66001-96-5008 and N66001-D-02-5024 contract, equipment warranties are covered under the corresponding hardware CLINs. Contract 5008 did not have extended warranties. On contract 5024 extended warranties have their own CLIN. The primary purpose of the extended warranty was to support the SCN community (new construction ships) SCN community has placed terminals in storage of periods of greater than 6-months prior to installation. The extended warranty would then be used to augment the difference in warranty period due to storage.

21. Q. Will the government consider requesting a Non-warranty terminal price from the current Nera Saturn B vendor?

A. No, the Saturn-Bm terminal is normally sold to any potential customer with a warranty as not separately priced.

22. Q. If the terminal provider is unwilling to continue warranty with use of a third party advanced modem, will the government consider shifting the entire warranty and maintenance function for terminals, once installed with advanced modem, to the eventual advanced modem provider?

A. The “non-manufacturers warranty” would only be required to those terminals with high performance modems and related interface equipment installed.

23. Q. Will the government provide information on any extended warranties in force from recently expired contract and newly awarded contract.

A. Yes, no extended warranties have been ordered to date.

24. Q. Will the government supply a statement of condition for Nera Saturn B terminals at time of warranty turn over?

A. The government shall designate which terminals are in-warranty and operational at time of warranty turnover.

Section L – Instructions, Conditions and Notices to Offerors or Quoters

Volume II Inclusion Attachment 5

25. Q. Can one person hold more than one position, e.g. Materials Purchasing Manager and Packing Specialist?

A. Yes, assuming that individual is qualified for each designated position.

Section L – 4.2

26. Q. Other than position descriptions for the various Labor Grades and maximum number of hours, there are no requirements defined for the use of the task-based hours.

A. The use of the task hours shall be based on the requirements of individual delivery orders placed against the contract.

27. Q. Is it the intent of the government to use this contract as a general-purpose engineering support contract as well as one for purchasing 128kbps kits?

A. No, the government’s requirements for engineering services are described in the SOW under 3.10 Engineering, Installation, and Technical Services.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

28. Q. This does not seem to be consistent with a hardware procurement contract. It seems more in line with a development contract.

A. The outline of this contract is consistent with previous INMARSAT hardware contracts including related service support.

Section L – 4.3

29. Q. Section L describes a 9-hour test period while Attachment 4 describes multiple 24-hour tests and presents a table describing several 1-hour tests. – What is the correct duration for the various demonstrations and tests?

A. Section L, sub-section 4.3, second paragraph of the Mandatory Demonstration has been amended. The first sentence now states that the on-site demonstration shall take no more than one hundred and twenty (120) hours beginning with the arrival of the evaluation team. Attachment 4, Phase II blocks relating to 64kbps legacy performance, 128kbps and 64kbps enhanced performance has been amended. The paragraphs requesting: 2) record 1-hour test start time has been changed to 2) record 24-hour test start time.

Section L – 323

30. Q. States a requirement for a compliance matrix with each paragraph or subparagraph occupying one page.

For each numbered paragraph or subparagraph of the specification(s), the offeror must, on a separate sheet of paper, list each paragraph or subparagraph number, state “comply” or “exception,” and explain how he complies or how he takes exception

Are these pages included in the 60-page limit for this section?

A. No, the subject pages will not be included on the 60 page limit.

31. Q. Where space permits, may more than one explanation be included on a page?

A. Yes.

Section M – Evaluation Factors

Attachment 4 - 2.0

32. Q. Can alternate demo configurations be suggested if they allow the govt. to measure the desired items and achieve the desired functionality?

A. No, the test configurations depicted in figures 1 through 3 of the CATDEP are required to validate system performance.

Attachment 4 - 2.1

33. Q. When can the govt. provide the Antenna Handover Function documents requested above?

A. Attachment 4, Technical evaluation demonstration requires that the Offeror provide all required equipment for the demonstration including Dual Antenna Switch listed in the table 1.material list. Manuals are normally provided with the corresponding hardware.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

If the offeror requires additional interface control information, the Government recommends that prospective offerors contact the manufacturer Nera.

Attachment 4 – 2.2

34. Q. Shouldn't Saturn Bm terminals and antenna handover units be GFE since neither of these items is being procured via this contract?

A. As stated in attachment 4, Technical Evaluation Demonstration, paragraph 2.0 General Requirements, the offerors shall provide all equipment required for the demonstration including the High performance modems and related interface equipment required at the INMARSAT Land Earth Station to support connectivity. Saturn-Bm Terminals and the dual antenna switch are required to support this demonstration. Hardware requirements are provided in the material list (table 1) in attachment 4.

35. Q. Since the govt. is not requesting terminal software as part of this procurement can bidders assume that version 7.12 will be GFE including for the demonstrations?

A. As stated in attachment 4, Technical Evaluation Demonstration, paragraph 2.0 General Requirements, the offerors shall provide all equipment required for the demonstration including the High performance modems and related interface equipment required at the INMARSAT Land Earth Station to support connectivity. The Government defines firmware as a subset on the Saturn-Bm terminal. New Saturn-Bm Terminals normally have firmware preinstalled. For previously procured Terminals, firmware can be downloaded from Nera at the following Web Site:

ftp://ftp.nero.no/mesbbs/Software/Saturn_B/ The firmware is designed to support a multitude of options such as Telex, Facsimile, 9.6kbps STU-III and 64kbps synchronous data. Accessing each option requires a specific opening keycode for that option. Key codes are only available from the original equipment manufacturer.

Attachment 4 - 2.2

36. Q. Through which LES will the demonstrations be made?

A. STRATOS Land Earth Station.

37. Q. Who is responsible for coordinating LES access and support?

A. For the demonstration, the Government shall act as the coordinating agent between the offeror and the Land Earth Station.

Attachment 4 - 3.1.1 b

38. Q. For EMCON testing, what level (-X dBc) is required to meet the specification "The transmit signal shall no longer be displayed?"

A. There was no level specified since the Noise floor will be at a relative value based on such factors as equipment configuration, cable loss, and surrounding ambient noise conditions. To reiterate, with the EMCON Key turned to the EMCON enable position, the transmit signal will not be detectable on the spectrum analyzer display screen.

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

Attachment 4 – 3.2.1

39. Q. What is the pass / fail criteria for Sync Loss in a 24 hour period?

A. There is no pass/fail criteria for Sync Loss. Pass/fail criteria is only applied to the 24 hour measure of the average bit error being 10^{-6} or less. With the BERT set for “Continue” for the receiver action on synchronization loss, any synch loss will result in accumulation of bit errors to be averaged over the 24 hour period.

40. Q. How will the govt. determine if sync losses are due to causes other than the High Performance Modem, e.g. satellite congestion?

A. Satellite Congestion is normally experienced when a MES is attempting to make a connection and a satellite channel is not available. For this demonstration the Government shall provide the required Space Segment so satellite congestion should not be an issue.

Attachment 4 – 3.3 Antenna Hand-over Interoperability Requirements

41. Q. Has this unit successfully passed all government required acceptance testing?

A. The dual antenna switch has successfully passed the initial government testing. Final Operation Testing OT shall occur shipboard in conjunction with the high performance modem and related interface equipment.

42. Q. Did Antenna Handover Unit (AHU) testing include testing with any High Performance Modem to insure that the AHU did not interfere with the tested modem’s operation?

A. No, the dual antenna switch was not tested with the High Performance Modem.

43. Q. Will the govt. provide AHU test plans / procedures as well as test reports?

A. Attachment 4, paragraph 3.3, Antenna Hand-over Interoperability Requirements, describes the demonstration test configuration and required test procedures.

44. Q. Has the government specified MTBF for the AHU?

A. No MTBF has been specified for dual antenna switch. The dual antenna switch is covered by the same manufactures warranty that covers the Saturn-Bm Terminal.

Section B

45. Q. Section B CLINs 0004, 0027, 0050, 0073 and 0096 asks for Price/Cost of a 30 month extended warranty for 20 units. Does the Navy want extended warranty for only 20 units? Does the Navy intend to specify which units?

A. See Amendment 0001.

Section H

46. Section H-901 EQUIPMENT WARRANTY: SUPPLEMENTAL WARRANTY stipulates “The supplemental warranty shall provide an extended warranty offered in one year increments (parts and labor) to repair or replace High performance Modems and related interface equipment.” This seems to be in conflict with the description of CLINs 0004, 0027, 0050, 0073 and 0096. Which is correct?

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

A. See Amendment 0001.

Section I

47. Q. Please confirm that the below listed FAR references are exclusive of alternate clauses.

52.227-01 Authorization and Consent (JUL 1995)

52.227-02 Notice and Assistance Regarding Patent and Copyright Infringement (Aug 1996)

52.227-03 Patent Indemnity

52.227-10 Filing of Patent Applications – Classified Subject Matter (Apr 1984)

52.227-11 Patent Rights – Retention by the Contractor (short Form) Jun 1997)

A. Confirmed, no alternates.

Section L

48. Q. If the instructions of L-323 (a) “For each numbered paragraph or subparagraph of the specification(s), the offeror must, on a separate sheet of paper, list each paragraph or subparagraph number...” are followed for attachment 1, a minimum page count of 80 pages is required to address each paragraph and subparagraph of the SOW and the function spec. Please provide additional information as to how to interpret "each paragraph and subparagraph of the requirement(s)" to be consistent with the page limitation of 60 pages. E.g. Are subparagraphs identified as numbered to X . XX only or down to X . XX . X

A. All subparagraphs are to be addressed. As indicated earlier in this memorandum, this portion of your proposal will not be included in the 60 page limitation for Volume III – Technical.

Section M

Attachment 3

49. Q. SOW 3.3 – References: One of the references in Attachment 3, Functional Specification 3.2.10, does not exist. Is the correct reference 3.2.1.10?

A. Attachment 3 has been revised. See Amendment 0001.

50. Q. SOW 3.3 – Attachment 3 - SPAWAR asks for a copy of the offeror’s lease application submitted to Inmarsat for “achieving the operation compliance for non-standard lease services”. Inmarsat lease applications are submitted to Inmarsat by the LESO for the purposes of obtaining a lease or FRR for a lease. ICTI would normally, work with the LESO in developing an appropriate lease application when a customer is prepared to commit for a lease or demonstration, or when the LESO wishes to reserve capacity on an FRR basis for a particular service. Service provision and air-time is not part of this RFP, and there was no requirement from Inmarsat to submit a lease application for the purpose of obtaining the approvals defined in Section 6.1 of the Function Spec. Given that a lease service application has not been used to obtain the Inmarsat approvals specified in Section 6.1 of the Function Spec, shouldn’t the requirement for providing a copy of a non-standard lease service application be deleted from the RFP?

Response to Questions to RFP N66001-02-R-5999
Supplement to Amendment 0001
April 04, 2002

A. No.

Section C

SOW 3.7

51. Q. Does the government require that training materials be provided as part of the offerers proposal for the purpose of rating the offerer on the items in SOW Section 3.7 Training? If so, are these materials to be counted as part of the 60-page limitation?

A. Training materials are not an evaluation factor for the subject solicitation. Evaluation factors are contained in Section M of the solicitation.

SOW 2.3

52. Q. Please confirm that the table of contents item "2.3 INMARSAT B Terminal/Integrated 128kbps/Antenna Handover Specification", and SOW paragraph 2.3 "INMARSAT High Performance Modem and Related Interface Specification", are referring solely to the document "INMARSAT-B HIGH PERFORMANCE MODEM AND RELATED INTERFACE EQUIPMENT PRODUCT FUNCTION SPECIFICATION" included in Attachment 1.

A. Confirmed.

53. Q. Part IV Section L, para 4.3 states "on-site demonstration will take no more than (9) hours beginning with the arrival of the evaluation team." Attachment 4 Technical Evaluation Demonstration para 3.2 requires 3 ea 24 hrs tests.

A. Attachment 4 has been revised, see Amendment 0001.

Attachments in response to this memorandum:

- 1) Terminals under Warranty
- 2) Warranty Clause under Contract N66001-02-D-5024
- 3) Warranty under Contract N66001-02-D-5024
- 4) Warranty under previous contract

US NAVY SATURN Bm INMARSAT TERMINALS UNDER WARRANTY

MONTH	TERMINALS UNDER WARRANTY
July 1, 2002	78
August 1, 2002	80
September 1, 2002	81
October 1, 2002	81
November 1, 2002	84
December 1, 2002	84
January 1, 2003	82
February 1, 2003	72
March 1, 2003	70
April 1, 2003	68
May 1, 2003	65
June 1, 2003	59
July 1, 2003	49
August 1, 2003	41
September 1, 2003	38
October 1, 2003	34
November 1, 2003	31
December 1, 2003	29
January 1, 2004	25
February 1, 2004	22
March 1, 2004	22
April 1, 2004	21
May 1, 2004	21
June 1, 2004	21
July 1, 2004	21
August 1, 2004	21
September 1, 2004	16
October 1, 2004	12
November 1, 2004	8
December 1, 2004	4

Q+A - Attachment 1

US NAVY SATURN Bm INMARSAT TERMINALS UNDER WARRANTY

January 1, 2005	0
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H-900 EQUIPMENT WARRANTY (JUL 2001)

(a) At no additional charge to the Government, the Contractor shall furnish for equipment purchased under this contract, all maintenance (labor and parts) for a minimum period of two years or the OEM's commercial warranty (whichever is greater) from government acceptance of equipment. Government acceptance shall be defined as the time of equipment installation, immediately after the manufactures representative has validated the system warranty. In the specific case where a system is placed in storage, the warranty shall be 30 months from government receipt of equipment. Maintenance during the warranty period shall cover the principal period of 9 hours per day five days a week, plus 9 hours Saturdays, Sundays and Holidays. Maintenance requested and performed outside the principal period of maintenance will be reimbursed by the Government at the applicable OCOMP hourly maintenance rate.

(b) All parts replaced during the warranty period shall become the property of the Contractor.

(c) Prior to the expiration of the warranty period, whenever equipment is shipped for mechanical replacement purposes, the Contractor shall bear all charges, including, but not limited to, the charges for packing, transportation, rigging, drayage and insurance.

(d) The contractor shall provide warranty maintenance support on-board ship or shall provide a point of destination for the return of a failed Lowest Replaceable Unit (LRU). If the warranty does not provide for shipboard personnel to fault to an LRU level, the U. S. Government shall have the option of returning the unit or waiting until the next ship port-of-call.

(e) In the situation of a U.S. Ship requiring warranty service at sea, U.S Government personnel or a designated SPAWAR representative shall be authorized to perform required repairs. Repair work performed by U.S Government personnel and/or a designated SPAWAR representative shall not invalidate the Manufactures Warranty.

(f) The warranty shall not apply to maintenance required due to the fault or neglect of the Government.

Certificate of Guarantee

1. GENERAL

Nera SatCom AS Oslo (hereafter referred to as Nera), accepts guarantee responsibility for the equipment on the conditions stated below.

The equipment is guaranteed for a period of time from the date of shipment from Nera as stated below under Paragraph 3. "GUARANTEE CONDITIONS".

The guarantee covers defects in material, design and workmanship provided the equipment has been installed, operated and maintained in accordance with the manufacturers' recommendations.

Claims against this guarantee must be supported by a detailed service report stating the Serial No. of the Unit(s) concerned, and the Inmarsat Serial Number (ISN).

For ancillary equipment, not produced by NERA, but delivered by Nera for stand alone installation or as supplement to a complete installation, the guarantee is limited to replacement or repair of defective parts, ex. works, or the equivalent cost to NERA.

Parts returned to Nera must be accompanied by a Customs Invoice with description and value of equipment, and stating reason for the return. If known, NERA's original reference-/order number should be stated.

2. VALIDITY

This Guarantee becomes valid only when relevant copy of Section 2 of this certificate has been correctly completed and returned to NERA, signed by Owner's representative and the engineer who carried out the installation.

3. GUARANTEE CONDITIONS

"SATURN C" and "SATURN Mp" equipment.

The guarantee covers labour and component cost for repair at Nera of defective parts sent to Nera within 24 months from the date of shipment from Nera.

Labour and travelling expenses performed by others (for replacement of defective parts) are not included.

"SATURN B" and "SATURN Mm" equipment.

The guarantee covers replacement or repair of defective parts, including labour cost when the service work is ordered through Nera and carried out by Nera or by a recommended service agent for SATURN equipment within 24 months from the date of shipment from Nera.

Waiting time and other expenses incurred by the service engineer for reasons beyond NERA's control, and travelling outside a radius of 40 km from the relevant service depot are not covered under this guarantee.

4. TRANSPORTATION, SHIPPING AND CUSTOMS COSTS

Modules/Equipment sent to Nera

- Agent/buyer covers costs related to removing/dismantling the modules/equipment and all shipping agent/buyers arrangements within the agent's/buyer's country.

- Nera covers transportation cost to Norway (Freight collect) and shipping agent/customs costs in Norway.

Modules/Equipment returned to agent/buyer

- Nera covers shipping agent costs in Norway.

- Transportation (freight collect) and costs related to customs and shipping agent at destination to be covered by the agent/buyer.

5. LIMITATIONS OF LIABILITY

Nera shall not be liable for any special, indirect or consequential damage or losses such as, but not limited to, loss of revenue, loss of use, loss of communication, cost of capital or cost of replacement communication.

Nera's obligation to correct, repair or replace in accordance with this guarantee shall be the buyer's exclusive remedy for breach of any warranty. If Nera fails to so correct, repair or replace, the entire liability to the buyer shall not exceed the repair or replacement value of the defective item, whichever is lower.

NERA
TELECOMMUNICATIONS

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3.12 Warranty

3.12.1 New Terminal Warranty

Two Year Warranty. The contractor shall provide warranty maintenance support on-board ship or shall provide a POC for the return of failed LRUs. If the warranty does not provide for shipboard personnel to fault to an LRU level, the Navy shall have the option of returning the unit or waiting until the next ship portcall. If the contractor does not have a Two Year Parts and Labor Warranty, the contractor shall propose and cost a warranty for that period.

3.12.2 "A" to "B" Kit Warranty

Two Year Warranty. The contractor shall provide warranty maintenance support on-board ship or shall provide a POC for the return of failed LRUs. If the warranty does not provide for shipboard personnel to fault to an LRU level, the Navy shall have the option of returning the unit or waiting till the next ship portcall. If the contractor does not have a Two Year Parts and Labor Warranty, the contractor shall propose and cost a supplemental kit warranty for that period.

3.12.3 "A" to "B" Supplemental Kit Warranty

Two Year Warranty Option. The Supplemental Warranty shall

provide a warranty (parts and labor) to repair or replace parts of the original "A" system that will be integrated into the "B" system. This warranty shall include above and below decks equipment. The contractor shall provide warranty maintenance support on-board ship or shall provide a POC for the return of LRUs. If the warranty does not provide for shipboard personnel to fault to an LRU level, the Navy shall have the option of returning the unit or waiting till the next ship port of call.