NATO Improved Link Eleven Project Management Office (NILE PMO)

Request for Information (RFI)

Link 22 Mobile Test System Requirement

02 February 2023

CONTENTS

1. BACKGROUND

a. The Naval Information Warfare Systems Command (NAVWAR), in support of Program Executive Office Command, Control, Communications, Computers, and Intelligence (PEO C4I), Navy Command and Control Program Office (PMW 150), on behalf of the North Atlantic Treaty Organization (NATO) Improved Link Eleven (NILE) Nations is conducting a market survey to determine the interest and capability of Industry to provide a Link 22 mobile test system.

b. This Request for Information (RFI) intends to accomplish two objectives: 1) to gain an understanding of which parties in the current marketplace within the seven NILE Nations (CAN, DEU, ESP, FRA, GBR, ITA and USA) are interested in delivering the RFI requirement, and 2) to gain an understanding of whether and how those interested parties can meet the requirements of this RFI.

c. During the late 1980s, NATO, agreeing on the need to improve the performance of Link 11, produced a Mission Need Statement (MNS) and later the Elementary Requirements Document that became the basis for the establishment of the NILE Project. The Link 22 goals are to replace Link 11, thereby removing its inherent limitations; to improve allied interoperability; to complement Link 16; and to enhance the commanders' war fighting capability.

d. The design of Link 22 uses a layered communications stack approach to produce a modular, open system architecture, with well-defined interfaces between the components. This approach allows for substitution of components on either side of the interface, and it maximizes extensions and enables contributions from multiple providers, including contributions from non-US NILE providers, during the sustainment of Link 22.

e. The inner grey box in Figure 1 below indicates the NILE Communications Equipment (NCE) system components that consist of the following:
   i. System Network Controller (SNC);
   ii. Modernized Link 22 Link Level COMSEC (LLC 7M);
   iii. Signal Processing Controllers (SPCs); and
   iv. Radios

f. The Link 22 system, shown by the outer green box in Figure 1, consists of the NILE Communication Equipment (NCE) and the Link 22 portion of the Data Link Processor (DLP). Within the DLP, the Link 22 system consists of the interface to the SNC and the handling of the tactical messages that the system transmits and receives on the data link. The formats for the tactical messages are defined in ATDLP-5.22 (Allied Tactical Data Link Publication). The DLP is connected to, or is part of, the Tactical Data System (TDS), also known as the host system of the NILE Unit (NU), which processes the received tactical messages and generates tactical messages for transmission in accordance with the unit's national requirements. Additionally, a Time of Day (TOD) source that meets Link 22 requirements is required.

g. All NILE interface specifications (the orange and yellow arrows in Fig. 1) and the SNC have been jointly defined, designed and developed by the NILE Nations.

LINK 22 SYSTEM

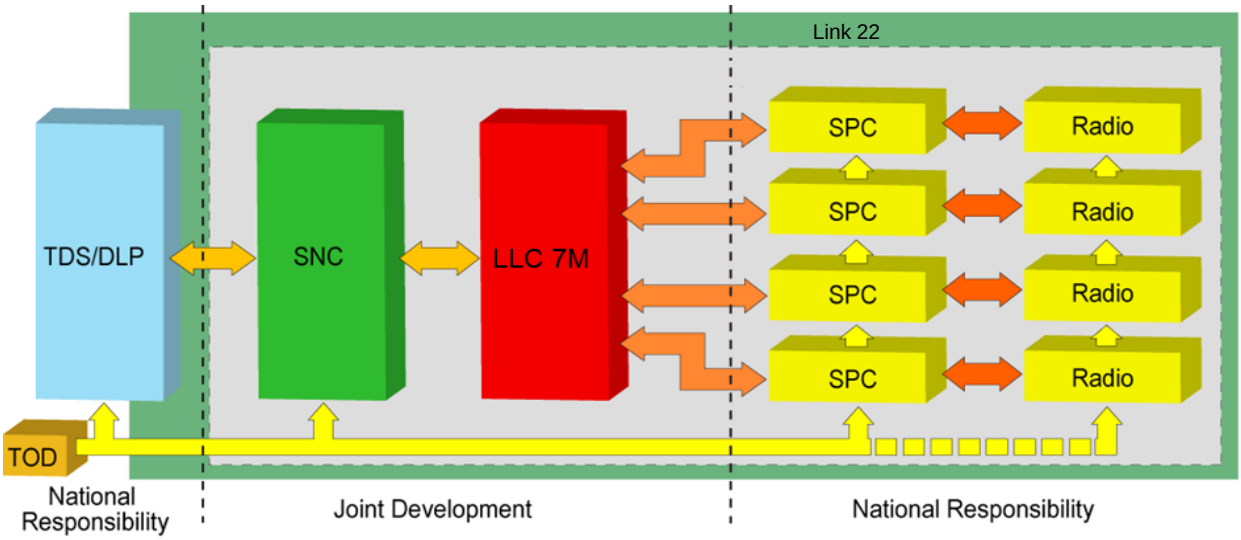

Figure 1- Link 22 System with NILE Communication Equipment

h. In addition to the NCE shown in Figure 1, the NCE also includes the NILE Reference Systems (NRS). The NRS is a tool that simulates the DLP, LLCs and the media segment (modems and radios) and several other SNCs for testing of the NCE in a laboratory setting.

2. LINK 22 MOBILE TEST SYSTEM REQUIREMENT

a. The NILE Project Management Office has a requirement for a Link 22 mobile test system for possible use in Link 22 trials involving operational platforms. The goal of the Link 22 mobile test system is to verify the end-to-end operation of a full Link 22 test suite and observe, collect and analyze the data. With the current state of Link 22 development among the NILE and Partner nations, a flexible system is needed to allow for standalone as well as end-to-end live operational testing.

b. The Link 22 mobile test system shall work as a standalone station. It shall be compatible with all standard country facilities power (for USA, Europe, and Japan) in accordance with Military Standards for shipboard and ashore systems.

c. The system shall be equipped with an Uninterruptible Power Supply (UPS).

d. The system shall be two-person transportable. The cases shall be lightweight, have wheels, air transportable and shall have the ability to protect the equipment from environmental damage during storage, transport and operation.

e. The system shall have space and ancillaries for, and the ability to operate 2 SPCs with 2 NILE Networks per SPC. The system shall have the ability to operate SPCs from both current manufacturers (DRS and Elbit Systems).

f. Each NILE Network of each SPC shall be able to operate with each radio in the system.

g. The system shall be provided with one LINK 22 compatible HF FF radio.

h. The system shall include the space for 1 HF FF radio and 1 UHF radio.

i. The system shall be able to operate Link 22 on UHF FF and Electronic Protection Measures (EPM) mode. (The vendor is not required to provide radio equipment with the Link 22 mobile test system).

j. The system shall be able to run Link 22 with the antennas placed at a safe distance from the operators and the system (cables shall be procured accordingly).

k. The system shall be able to establish and operate a stable Link 22 connection with NILE units at least 1000NM away in HF in every direction and 80NM away in Line of Sight in UHF in every direction.

l. The system shall be equipped with UHF and HF antennas (deployable mast).

m. The system shall have an Automatic Dependent Surveillance Broadcast (ADSB) and an Automatic Identification System (AIS) receiver with antenna.

n. The ADSB/AIS receivers shall provide Distributed Interactive Simulation (DIS) standard track through RJ45 connectors.

o. The system shall be equipped with a Global Positioning System (GPS) with dedicated antenna (TOD source).

With respect to the Data Link Processor (DLP), the DLP shall:

a. Display a world map

b. Simulate one or more Participant Location and Identification (PLI)

c. Simulate a PLI from the GPS

d. Simulate at least 1000 tactical tracks

e. Simulate tactical tracks from AIS/ADSB receivers

f. Fully support STANAG 5522 / ATDLP 5.22 Multiple Editions including the latest Ed 6

g. Support at least all management functions from the NG 278-A011-DLPIDD documentation provided on Block Cycle Release (BCR) 11

h. Have Super Network Management Unit (SNMU) and Network Management Unit (NMU) capability

i. Operate on a super network of up to 4 NILE Networks

j. Monitor statistics, error and alarms provided by the System Network Controller (SNC) in real-time

k. Monitor the Network Cycle Structure (NCS)

l. Be able to answer automatically or not to the technical orders (Automatic Comply Switch (ACS)/Automatic Perform Function Switch (APFS))

m. Be able to change the addressing mode for technical messages

n. Support all 18 Media Setting Numbers (MSN) in HF and Management Wave Form (MWF)

o. Have an integrated Keyboard, video, mouse (KVM)

p. Support simulated and real LLC 7M units

q. Be able to automatically process an OPTASK LINK Message in APP-11 and U.S. Message Text Format (USMTF)

Further, the system shall be equipped with:

a. A recording tool capable of storing technical and tactical data exchanged for at least 6 hours. Recordings shall be available in human-readable format

b. An Ethernet computer which can operate the Signal Processing Controller (SPC) and the LLC 7M

c. The system shall provide the Time of Day to the system through a GPS source

d. The system shall be provided with one year vendor's support, and the option for additional two years. During the support period, the vendor may be required to produce and deliver cables and connectors to connect the Signal Processing Controller to HF FF radios, and/or UHF FF/EPM radios.

3. STATION CONFIGURATION

The system shall be able to accommodate the following additional hardware, which will be provided as Government Furnished Equipment:

a. Qty 2 SPCs

b. Qty 1 UHF radio

c. Qty 2 LLC 7M units

The vendor will also be required to deliver the following items, all of which shall be mounted in transportable rack cases:

a. Power supply
b. Data Link Processor (DLP)
c. Monitoring tool
d. Recording tool
e. 1 HF radio
f. 1 HF and 1 UHF antenna
g. 1 AIS/ADSB and 1 GPS receiver and antenna
h. Ancillaries

The system shall adhere to the configuration below:

a. Case 1: DLP, SPC, Power supply, LLC 7M, monitor and recording tool, SNC
b. Case 2: HF equipment
c. Case 3: UHF equipment
d. Case 4: Antennas

4. GOVERNMENT FURNISHED EQUIPMENT

The Government will make the following Government Furnished Equipment available:

a. NILE System Network Controller (SNC) (latest version available);
b. 1 VHF/UHF XCVR radio manufactured by Rohde & Schwarz and,
c. 2 Signal Processing Controllers (SPC).

The Government will fit the two LLC 7M units into the Link 22 mobile test system after delivery.

5. RESTRICTIONS

a. The Government plans to award a contract under U.S. law, in accordance with Federal Acquisition Regulations (FARS) and Defense Federal Acquisition Regulations (DFARS).
b. Any non-US vendor awarded a contract as part of this requirement will be mandated to request a National Interest Determination (NID). The vendor shall be responsible for performing all requirements under this contract.
c. In accordance with the NILE ISS Phase Memorandum of Understanding (MoU) dated 02 July 2002 and FAR 6.302-4 (International Agreement), award is limited

to vendors of the seven NILE ISS Phase Participating Nations (CAN, DEU, ESP, FRA, GBR, ITA and USA). In addition, only vendors of the Participating Nations will be eligible for award of first-level subcontracts.

d. NATO STANAG documents (e.g., STANAG 5522) shall be obtained by the Vendor independently.

6. CONTRACTING AND INDUSTRY EXCHANGES

a. At present, the Government is considering procuring these services via a Single Award Indefinite Delivery Indefinite Quantity (IDIQ) contract with Firm-Fixed-Price (FFP), Cost-Plus-Fixed-Fee (CPFF), and Cost CLINs. Please note, FAR 16.301-3 requires that a vendor's accounting system be adequate for determining costs applicable to the contract prior to the award of a cost-reimbursement contract. The Government anticipates this contract to have a one-year base and four one-year option years. The Government seeks additional input from interested vendors regarding the Government's planned contracting strategy. Responses should be provided no later than 1000 PST on 31 March 2023 to Ms. Sarah Murr (Procurement Contracting Officer) at sarah.m.murr.civ@us.navy.mil and Ms. Jules Ward (Contract Specialist) at julie.a.ward38.civ@us.navy.mil.
b. NAVWAR representatives and the NILE PMO may or may not choose to interact with respondents in order to perform market research; such exchanges, should they occur, would be solely for the purpose of obtaining further clarification of industry's potential capabilities.
c. The North American Industry Classification System Code is 541512 and the Product Service Code is DA01.

7. CAPABILITY QUESTIONS

a. Vendors are still encouraged to respond to this RFI if they are able to meet, most, but not all, RFI requirements. Teaming possibilities may become apparent, and subcontracting/teaming arrangements between vendors from any combination of NILE Nations to meet the entire requirement are actively encouraged. If vendors "team up", please provide details of any proposed teaming/subcontracting arrangements as part of the RFI response.
b. In responses to this RFI, vendors are required to respond to the following capability questions:
    i. Please briefly describe previous experience in building and delivering Link 22 mobile test system for use in Link 22 trials involving operational platforms. Previous experience should relate to efforts where the goal of the Link 22 mobile test system was to verify the end-to-end operation of a full Link 22 test suite and observe, collect and analyze the data.
    ii. Please briefly describe the architecture of the Link 22 mobile test system that you would deliver, to meet the requirements set out in Section 3 and Section 4 of this document. Vendors shall include a diagram/picture of the Link 22 mobile test system that they would provide.

iii. Please briefly describe your experience delivering training on the operation of the Link 22 mobile test system to Government and civilian users.
iv. Please briefly describe the Link 22 mobile test system subject matter experts in your company, who can provide remote and in-person support on the operation and maintenance of the Link 22 mobile test system.
v. Please state if there are any parts of the requirement (section 2 and section 3 of this document) with which you cannot comply, and if you propose a teaming arrangement (as stated above, please include the teaming arrangement terms).
vi. Please provide the technical specification of the climatic condition ranges for the operation of the Link 22 mobile test system.

8. SUBMISSION INSTRUCTIONS

a. Responses shall be limited to ten (10) single-sided A4 pages, in 12-point Times New Roman font, standard 1" margins, including appendices, enclosures, pictures, diagrams, and footnotes. Each response shall include the following information:
   i. Primary Point of Contact (name, address, phone number, email address, CAGE[1] code, Unique Entity ID[2] number);
   ii. A statement that the respondent will allow the Government to release the respondent's proprietary data to the Government support vendor. In the absence of this statement, the response will only be reviewed by Government personnel.

b. Interested parties are requested to respond to this RFI with a white paper following the instructions listed below. Submissions must be received no later than 1000 PST, 31 March 2023. All responses must be submitted in Microsoft Word for Office 2010-compatible format, Responses shall be submitted to the NAVWAR e-Commerce Central website at https://e-commerce.sscno.nmci.navy.mil/, or by email directly to Sarah Murr at sarah.m.murr.civ@us.navy.mil. See the NAVWAR e-Commerce website for instructions on how to submit responses. For information regarding this RFI, contact Sarah Murr, Procurement Contracting Officer (PCO), at sarah.m.murr.civ@us.navy.mil. Acknowledgement of receipt will not be made. Availability of any formal solicitation will be announced separately.

9. QUESTIONS

a. Questions regarding this RFI shall be submitted in writing by e-mail to the NAVWAR PCO, Sarah Murr at sarah.m.murr.civ@us.navy.mil and Contract

[1] Applicable to US and CAN vendors only
[2] Applicable to US and CAN vendors only

Specialist, Jules Ward at julie.a.ward38.civ@us.navy.mil. Verbal questions will NOT be accepted. Questions will be answered by posting answers to the NAVWAR E-Commerce Central website https://e-commerce.dc3n.navy.mil, and www.link22.org; accordingly, questions shall NOT contain proprietary or classified information. The deadline for questions is 1000 PST, 09 March 2023. The Government does not guarantee that questions will be answered. Interested parties are invited to subscribe to the NAVWAR E-commerce website, and to regularly access www.link22.org, to ensure they receive any updates connected with this RFI.

b. NOTE: THIS RFI IS FOR INFORMATIONAL PURPOSES ONLY. IT DOES NOT CONSTITUTE A SOLICITATION AND SHALL NOT BE CONSTRUCTED AS A COMMITMENT BY THE GOVERNMENT. RESPONSES IN ANY FORM ARE NOT AN OFFER AND THE GOVERNMENT IS UNDER NO OBLIGATION TO AWARD A CONTRACT AS A RESULT OF THIS ANNOUNCEMENT. NO FUNDS ARE AVAILABLE TO PAY FOR PREPARATION OF RESPONSES TO THIS ANNOUNCEMENT. SUBMISSIONS WILL NOT BE RETURNED.

10. ACRONYMS

Acronym	Definition
ACS	Automatic Comply Switch
ADSB	Automatic Dependent Surveillance Broadcast
AIS	Automatic Identification System
APFS	Automatic Perform Function Switch
ATDLP	Allied Tactical Data Link Publication
BCR	Block Cycle Release
DLP	Data Link Processor
EPM	Electronic Protection Measures
FF	Fixed Frequency
GPS	Global Positioning System
HF	High Frequency
KVM	Keyboard, video, mouse
LLC 7M	Link Level Communications Security 7M
MSN	Media Setting Number
MWF	Management Wave Form
NCS	Network Cycle Structure
NM	Nautical Miles
PLI	Participant Location and Identification
SNC	System Network Controller
SNMU	Super Network Management Unit
SPC	Signal Processing Controller
STANAG	Standardized Agreement
UHF	Ultra High Frequency

UPS	Uninterruptible Power Supply
USMTF	U.S. Message Text Format