

APPENDIX D

Naval Forces Ordnance Readiness Application (NFORA) Interface and Planned Capabilities

a. The Naval Forces Ordnance Readiness Application (NFORA) is an on-line modular system designed to sort and aggregate the naval ordnance inventory aboard specific vessels to determine the Combat Readiness (C rating) of a selected battle group or task force when amphibious forces are assigned.

b. NFORA links with the Conventional Ammunition Integrated Management System (CAIMS), the Global Naval Ordnance Positioning Plan Tool (GNOPP-Tool), and Tomahawk Asset Inventory Management System (TAIMS) applications in order to share data that facilitates required reports.

c. Version 1.0 of this application is capable of providing the visibility of all components and sub-components of a major ordnance item and identifies limiting items to All-Up-Round (AUR) configurations. NFORA is currently available to the Fleets, MARFORs and AMMOs. Supply Classification Five ammunition for Marine Ground Forces Class V (W) and Naval Special Warfare (NSW) assets are excluded from this software application.

d. The Naval Supply Systems Command (NAVSUPSYSCOM) is the sponsor for this application and shall design, develop and deploy NFORA. The Naval Operational Logistics Support Center (NOLSC-AMMO) Mechanicsburg, Pennsylvania is designated as the Functional Sponsor and Project Manager to coordinate with the sponsor and other users to outline the specific requirements of the system.

e. The scope of Version 1.0 of this application includes all Carrier Battle Groups CVBG (carrier plus support units) and Amphibious Ready Groups (ARGs). When the CVBG and ARG operate together, the combination of units is referred to as a Task Force (TF). The scope of Version 1.1.0 of this application includes all Battle groups BGs [carrier plus support units, Amphibious Ready Groups (ARGs), and designated Middle East Force (MEF)] units that fall within the established time frames of the snapshots. Explosive Ordnance Disposal (EOD) Activity Classification Code (ACC) "L" ordnance allowances and reported quantities are included, however, this ordnance will not substantially raise or lower the overall battle group readiness posture and the sponsor may decide to discontinue its consideration.

f. The purpose of this application is to provide on-line, near real-time force readiness information to the user. NFORA is designed to electronically interface with the Conventional Ammunition Integrated Management System (CAIMS), the Complete Round Information System (CRIS) in the Global Naval Ordnance Positioning Plan (GNOPP) Tool, and the Tomahawk Asset Inventory Management System (TAIMS). CAIMS provides real time allowance and on-hand ordnance data except for Tomahawk weapons, as well as ship type. CRIS provides Platform Compatibility and AUR data including "Weapon ID, Components, etc." for the ordnance items. TAIMS provides real time on-hand data for Tomahawk weapons. Battle group and Task Force composition, UICs, and schedule information is obtained from the COMLANTFLT/COMPACFLT scheduling web sites and is entered into the NFORA database via a maintenance function.

g. The above CRIS information is manipulated in NFORA, comparing ship type to GNOPP Platform Capability, in order to segregate shipboard ordnance into mission categories. Overall combat readiness, as well as mission readiness by mission area, i.e., Strike Warfare, Air Intercept Missiles and Sea Control/Anti-submarine Warfare, is calculated for each CVBG/TF by comparing the combined allowed weapon quantities to the build up (all-up-round) quantities for the entire CVBG/TF. Although Activity Classification Code (ACC) "H" is designated to support aviation units in the amphibious units, for NFORA purposes these assets are used to calculate CVBG readiness when amphibious forces are not assigned. In addition the user is able to review each CVBG/TF unit's individual raw data used to calculate CVBG/TF readiness.

h. NFORA creates, and displays reports in PDF and HTML formats. The reports provide the user with the readiness percentages by CVBG/TF, Unit, Unit UIC, Mission Area, Weapon, allowance, on hand quantity and a calculated combat readiness rating by green, blue, yellow and red color designation as well as the associated numerical percentages. NFORA reports are viewable and printable. Individual user-created readiness reports may be saved on local hardware.

i. The user-created reports will be deleted from the application's database after thirty (30) days. The weapons, by Weapon ID, used to calculate CVBG/TF readiness are listed below and emulate established reports.

- (1) 1428 Surface TLAM C/D – Strike Warfare
- (2) 1429 Submarine TLAM C/D – Strike Warfare
- (3) 412 JSOW – Strike Warfare
- (4) 354 GBU-10 – Strike Warfare
- (5) 356 GBU-12 – Strike Warfare
- (6) 352 GBU-16 – Strike Warfare
- (7) 358 GBU-24 – Strike Warfare
- (8) 406 JDAM MK 84 – Strike Warfare
- (9) 407 JDAM-109 – Strike Warfare
- (10) 1435 JDAM MK 83
- (11) 1439 JDAM BLU-110 A/B
- (12) 805 SLAM/SLAM ER – Strike Warfare
- (13) 429 Laser Maverick – Strike Warfare
- (14) 427 IIR Maverick – Strike Warfare
- (15) 376 HARM – Strike Warfare
- (16) 181 AMRAAM – Air Intercept Missile
- (17) 651 Sidewinder – Air Intercept Missile
- (18) 174 Sparrow – Air Intercept Missile
- (19) 1294 SM-2 VLS – Air Intercept Missile
- (20) 704 SM-2 Rail – Air Intercept Missile
- (21) 695 SM-1 – Air Intercept Missile
- (22) 526 Sea Sparrow – Air Intercept Missile
- (23) 613 RAM – Air Intercept Missile
- (24) 1162 HELLFIRE I/II – Sea Control/ASW
- (25) 827 Harpoon Grade B/Thickwall – Sea Control/ASW
- (26) 382 Air Harpoon – Sea Control/ASW
- (27) 764 Tartar Harpoon – Sea Control/ASW
- (28) 1426 MK 46/50 Torpedoes – Sea Control/ASW

- (29) 477 MK 48 ADCAP – Sea Control/ASW
- (30) 743 TOW – Strike Warfare

j. Within a particular GNOPP Weapon ID, any one of several Naval Ammunition Logistics Codes (NALCs) could be the major end item for the particular weapon, i.e., NALCs PE29, PE30 or PE31 all represent a Surface-Launched Thickwall Harpoon. Similarly, within a GNOPP Mission, several Weapon IDs may be included, i.e., Air to Air Warfare (AAW) includes Air Sparrow, AMRAAM and Sidewinder. When addressing overall AAW capability any one of these weapons could be used in execution of this mission, although one may be more capable than another may.

k. The documentation used to develop NFORA includes, but is not limited to the following:

- (1) DOD Documents
 - DODINST 3000.4 Capabilities-Based Munitions Requirements (CBMR) Process
- (2) Navy Documents
 - a) NFORA-SDP-1.0 Software Development Plan (SDP) for the Naval Forces Ordnance Readiness Application
 - b) OPNAVINST 8010.12F/MCO 8010.12 Naval Conventional Ordnance Operational Logistics Policy
 - c) NAVSUP P-724 (Series) Conventional Ordnance Management Policies and Procedures
- (3) Other information used in the development includes:
 - a) Conventional Ammunition Integrated Management System (CAIMS) File Layouts
 - b) Global Naval Ordnance Positioning Plan (GNOPP) Tool File Layouts
 - c) Tomahawk Asset Inventory Management System (TAIMS) File Layouts
 - d) GNOPP Executive Summary
 - e) Battle group and Task Force composition, UICs, and schedule data located on the COMLANTFLT/COMPACFLT scheduling web sites
 - f) Sample Reporting Accuracy Report format(s)

l. The application's ordnance asset database is the Conventional Ammunition Integrated Management System (CAIMS) via the SIPRNet. The application is designed in a Graphical Interface (GUI) basis, providing on-line help and Help Desk contact information. The application is backed up regularly on a daily basis and is maintained remotely by the NOLSC-AMMO Project Manager or a designated representative.

m. The Help Desk is available on-line and by telephone at 1-877-962-3365.

n. NFORA provides the user with reports that will identify the Combat Readiness in various weapon categories, of each queried CVBG/TF, as well as the individual units' raw data used to calculate the readiness. NFORA reports are:

- 1) Viewable using a Navy standard browser.
- 2) Printable in Portable Data File (PDF) and Hypertext Markup Language (HTML) formats.
- 3) The user is able to obtain readiness information for any CVBG/TF resident in NFORA by using a pull down menu.

4) In the case of the readiness reports, the user is able to construct a CVBG/TF consisting of existing U.S. Navy vessels using pull down menus in NFORA.

o. NFORA is designed to electronically interface with CAIMS, GNOPP-Tool (CRIS), and TAIMS. As a result of these interfaces, NFORA shares, stores and manipulates data within these applications including:

1) CAIMS.

- a) Activity Address File data provides names and types of ship.
- b) Allowance File provides the ammunition allowance, by NALC, for each unit. The order of preference for allowance to be used in calculating readiness is:
 - (1) Operational Allowance, if none, then
 - (2) Tailored Allowance, if none, then
 - (3) Interim Allowance, if none, then
 - (4) NAVSEA 30,000 Allowance
- c) Asset File provides the on-hand ordnance for each unit:
 - (1) By NALC
 - (2) By Quantity
- d) NOLSC-AMMO Technical Data file provides the dollar value for naval ordnance items in NFORA.

2) GNOPP-Tool (CRIS Module).

GNOPP-Tool provides platform-specific ordnance data and AUR configuration information from the CRIS Module:

- (1) By Platform (Ship Class, Aircraft Type)
- (2) By GNOPP Control Number
- (3) By GNOPP Weapon ID
- (4) By Component ID
- (5) By Lead NALC
- (6) By NALC String
- (7) By Global Positioning (GP) or End Item (EI) Factor

3) TAIMS.

TAIMS provides the on-hand Tomahawk assets for each unit:

- (1) By NALC
- (2) By Quantity

p. The Naval Forces Readiness Report provides a visual display of the combat readiness including:

- (1) CVBG/TF Designation
- (2) CVBG Ordnance Allowance by Weapon Name
- (3) ARG Ordnance Allowance by Weapon Name
- (4) CVBG/TF Total Allowance Quantity
- (5) CVBG/TF Ordnance AUR Quantity by Weapon Name
- (6) CVBG/TF Percentage of readiness by weapon based on the ratio of AUR/allowance
- (7) CVBG/TF Shortfall
- (8) Date/Time Stamp (date report was created)
- (9) Report "As Of" Date (date of the data in the report)

q. The Naval Forces Detail Readiness Report provides a detailed visual display of the individual unit allowance and on-hand quantity for each of the component(s) required to build an AUR.

(1) The Readiness Report addressed above is constructed from this information enabling the process to identify the limiting component affecting AUR build up. Items issued to the Fleet as AUR items or the lead item designated for an AUR when multiple parts are required, are identified by an asterisk (*). Readiness is displayed in numerical percentages as well as providing a color presentation to reflect:

- a) 90+ % = Green (C-1)
- b) 80 – 89 % = Blue (C-2)
- c) 65 – 79% = Yellow (C-3)
- d) 0 – 64% = Red (C-4)

(2) CVBG/TF AUR build up shortfalls are displayed numerically, with negative quantities in red.

(3) The Group (or Task Force) Build Results Report provide a detailed visual display of the data and methodology used to calculate the buildup capability for each weapon designated for this report. The buildup capability takes into consideration the component designated as the AUR indicator and the other piece parts required to build the AUR.

(4) The final results of each of the calculations are located in the last column which displays the item that limits the buildup of the particular weapon, as well as, the shortfall quantity of the limiting component that precludes maximum weapon buildup. The user may select either a “Group” or “Task Force” to access this report. The report contents include data:

- a) By GNOPP Weapon ID
- b) By CAIMS/GNOPP Control Number
- c) By the Summary of On Hand Quantity
- d) By Positioning Factor (required to calculate AUR)
- e) Weapon Factor (quantity of AUR indicator required to build the weapon)
- f) By Ammunition Allowance (Operational/Tailored/30,000 Series)
- g) By Weapon On Hand
- h) By New Need (results of applying the “Weapon Factor” to the “Weapon On Hand” number)
- i) By AUR Indicator (a one in this column designates the component designated in GNOPP as the main component to an AUR)
- j) By Limiting Component (the first of two calculations to determine a limit to maximum buildup – component on hand multiplied by the positioning factor and compared to the weapon on hand)
- k) By LLC (the second of two calculations to determine the limiting component to maximum buildup – compares on hand quantity of component across all weapons that use that component)
- l) By Build Capability (maximum number of the particular weapon that can be built based on all on board parts)
- m) By Buildup Limiting Component (indicates the item that limits maximum buildup and the quantity that is needed – shortfall)

r. Primary priority among the external interfaces for NFORA is assigned to CAIMS. There are no internal interface requirements.

s. NFORA is required to operate at a **SECRET** level as approved by the Designated Approval Authority. The combination of NFORA software and data maintained and stored by NFORA is identified as "Security-Critical" making it a "classified" system. NFORA conforms to a **SECRET** security level or higher and uses the Secret Internet Protocol Routing Network (SIPRNet) for its network infrastructure. Connectivity to the SIPRNet and the accreditation process is in accordance with the guidelines in the SIPRNet Customer Connection Process as directed by the Defense Information Services Agency (DISA). No NFORA privacy requirement is required. The detailed approach for managing and resolving NFORA security aspects is provided in the NFORA SDP.

t. NFORA is deployed in a web environment on the NOLSC-AMMO SIPRNet and accessed by the users using SIPRNet protocols, controlled by user identification and password protocols. NFORA operates with the software quality factors specified herein, and specifically the system performs all desired functions, correctly and consistently.

u. NFORA operates near, real-time in an active state twenty-four (24) hours a day, seven (7) days a week with the exception of scheduled maintenance periods that will be promulgated to all system users. As stated previously, the application's ordnance asset databases are CAIMS and TAIMS. The system is flexible, portable, reusable and testable. NFORA operation is intuitive to the user. NFORA has been designed, developed and implemented using approved DOD programming standards, using approved DOD standard terminology and data elements. NFORA is flexible and expandable to support a minimum of 50 percent growth as a result of changes in technology, environmental threats, or system mission. NFORA users shall have a working-level knowledge of the information available through the NFORA database.

v. NFORA functionality includes on-line help and tutorial programs.