MODIFICATION ONE TO STATEMENT OF WORK

FOR

NUCLEAR PLANNING SYSTEMS TARGET DATA FEED

1. SCOPE

This project is a DSWA initiative to increase coordination between the US and NATO regarding nuclear targeting and to respond to changes in the input data base as the Defense Intelligence Agency (DIA) migrates to the Modernized Integrated Data Base (MIDB).

1.1 Purpose The purpose of the Nuclear Planning Systems Target Data Feed (NPSTDF) is to ensure continuity of the nuclear targeting and mission planning data which the US provides to the Supreme Headquarters Allied Powers Europe (SHAPE).

This project will achieve that goal by developing and implementing a security-approved electronic interface from key US and NATO intelligence databases to SHAPE's Nuclear Planning System (NPS).

1.2 Background NPS assists nuclear operations staffs in several phases of targeting and planning air missions. The automated targeting functions manage the nomination, selection, and weaponeering of nuclear targets. The automated mission planning functions weigh several competing factors to maximize the chances of successful missions against a set of targets.

NPS utilizes several US databases in supporting these functions. The larger databases, previously currently received in magnetic tape form, are being phased out and replaced by other databases with different formats and structure. Moreover, the magnetic tape will no longer be the vehicle for transmission. Instead, US intelligence organizations will provide an electronic form of the database via the NATO intelligence system LOCE (Linked Operations Intelligence Centers Europe). As a backup, the US databases can be provided by US-only intelligence networks, particularly the Integrated Database (MIDB) distributed by the DIA. Defense Intelligence Agency (DIA). This effort will develop the interface to transfer data from the NATO and US networks to NPS.

Implementing an electronic interface with the NPSTDF provides an opportunity to make several improvements to the process of supplying US targeting and applications data to SHAPE. Therefore, additional goals of this project are to speed the data flow and to provide alternate paths for crisis related data.

1.3 Objectives The NPSTDF project will implement a security-accredited interface between the stand-alone NPS at SHAPE, Belgium and the distributors of the data used by NPS. The system will rely on a LOCE workstation, collocated with NPS, for most data; and as a backup to LOCE, a JDISS (Joint Deployable Intelligence Support System) workstation in SHAPE Survey Section, a US entity which maintains access to the Military Integrated Data Base (MIDB) as promulgated on MIIDS (Military Intelligence Integrated Data System).

Specifically, the contractor shall write NPSTDF interface software which retrieves targeting and applications (mission planning) databases from the appropriate intelligence networks and applies the data to the appropriate data tables or files in NPS. Where necessary, the contractor shall specify the hardware which is required to implement the nuclear planning systems target data feed.

The contractor shall indicate the manner in which the databases can be transferred to NPS and submitted to US and SHAPE authorities for security approval. After security approval by US and SHAPE authorities, the contractor shall develop and implement the NPSTDF interface on an experimental basis until formal acceptance by SHAPE for operational use. Finally the respondent will document the software and hardware used in the NPSTDF interface, and provide the US government all source code and the right to use the code in perpetuity as the government sees fit.

The contractor's NPSTDF interface shall supply the installation and threat databases in NPS with data from the LOCE workstation. The contractor's NPSTDF interface shall also be able to update the information and threat databases with data from MIDB MIIDS (at US discretion to be identified at the onset of the contractor's effort). The data will replace the data flow formerly provided by the EUIDAB and NADOB data tapes, except that some information, formerly supplied by EUIDAB, will not arrive on LOCE, but will be provided on a dedicated feed from USSTRATCOM. The contractor's software will incorporate the USSTRATCOM data into the corresponding target record from LOCE.

The contractor's NPSTDF interface will provide two modes of operation: In the first, a peacetime planning mode, the interface will provide a bulk data interface from incoming databases to NPS. In the second, the crisis planning mode, the interface will provide a capability for tracking fleeting targets and for assimilating information about enemy defenses into mission plans.

The contractor shall provide effective user guides, a robust test and evaluation procedure, and accurate software documentation. To meet these objectives, the contractor shall document, test, and install the NPSTDF interface hardware and software on the operational systems at SHAPE, after assisting SHAPE Nuclear Operations in acquiring security and configuration accreditation for the system.

2. APPLICABLE DOCUMENTATION

The following documentation will be furnished to the contractor by the government:

EUIDAB-LOCE Filter Field Comparison (U) CONFIDENTIAL/RELEASABLE TO NATO AS NATO CONFIDENTIAL. /EUCOM Targets Branch. 6 February 1995. Available at SHAPE.

"NPS Data Dictionary (NU)" NATO SECRET, This document lists the data items in each data table in the relational database used for targeting in NPS. Available at SHAPE.

File formats: EUIDAB, NADOB, Polygon, Fighter/SAM Attrition, Fratricide Separation (NU) NATO CONFIDENTIAL (23 June 1995). These documents list the incoming intelligence data which are used by NPS, some of which are not reflected in the data dictionary. Available at SHAPE.

MIDB 2.x (Modernized Integrated Database) Standard Operating Procedures, CONFIDENTIAL. Available through DSWA.

3. REQUIREMENTS (TASKS) 3.1 TASK 1: Data Requirements Analysis. The contractor shall perform an investigation and analysis of the best means of using the following files and database systems to update NPS files and databases which are required to perform basic nuclear planning functions and enable full operational capability of NPS:

Title/Database NPS Usage

MIDB 2.x databases: LOCE databases (with tape and IDB as first and second alternatives) installation

database replace old EUIDAB facility database replace old EUIDAB equipment database replace old EUIDAB unit database replace old EUIDAB population database replace old EUIDAB installation, facility and equipment replace old NADOB using USSTRATCOM databases specification for creating an enemy air defense order of battle from IDB files

USSTRATCOM files SAM attrition rates like-named file in NPS Fighter attrition rates like-named file in NPS Fratricide separation distances like-named file in NPS

DIA files not on LOCE population polygons like-named file in NPS

The contractor shall work with SHAPE, Nuclear Plans and Operations Section to address the following issues:

status of each field (required by NPS, not-required by NPS, or no longer used by NPS); validation requirements and methods for NPS required fields; and NPS software modifications required to accommodate changes in file format and/or content.

The data requirements shall be documented in the NPSTDF Software Requirements Specification.

3.2 TASK 2: Accreditation Requirement Analysis. Working through SHAPE and USEUCOM contacts, the contractor shall identify applicable regulations in the areas of computer security, communications security, and configuration control. It is expected that SHAPE, the LOCE Program Management Office, USEUCOM, DIA, and USSTRATCOM will apply accreditation authority to the contractor's work.

The contractor shall write a paper detailing the accreditation requirements and identifying whether and how a LOCE-NPS interface and a backup JDISS-NPS interface could meet these requirements. Before commencing development work, the contractor shall provide the paper to SHAPE, USEUCOM, USSTRATCOM, DIA, the LOCE Program Management Office, and DSWA. DSWA will collect comments from these organizations and pass the comments, with DSWA's findings, to the contractor. DSWA will inform the contractor whether the contractor's proposed security approach is adequate to allow work on the interface to continue. If so, the contractor shall incorporate DSWA's findings into the design and development of the LOCE-NPS interface. If it is not adequate, the contractor will revise the approach and resubmit for additional comments.

The contractor shall ensure that its deliverables meet the accreditation requirements specified by SHAPE for NPS; by USEUCOM and the LOCE Program Management Office for LOCE; and by DIA and USSTRATCOM for US targeting and applications databases. The contractor shall assist SHAPE, Nuclear Plans and Operations Section in acquiring security and configuration accreditation for the contractor's interface. Where necessary, the contractor shall assist SHAPE in performing surveys and completing forms to meet accreditation requirements.

The accreditation requirements shall be documented in the NPSTDF Software Requirements Specification.

3.3 TASK 3: Electronic Interface Analysis. The contractor shall perform an investigation of the technical means for moving data to NPS from the supplier systems. The following primary and backup systems will likely be used:

a LOCE workstation (installation and threat data) 8mm tape from LOCE Correlation Center or from Molesworth Joint Analysis Center (as a backup to LOCE) MIDB MIIDS/IDB via a JDISS in SHAPE Survey Section (as a further backup to LOCE) file transfer via a secure link from USSTRATCOM

(national target base data and other data not available from LOCE) message transfer via an AUTODIN terminal in SHAPE Nuclear Plans and Operations Section (unit route data and backup to USSTRATCOM)

Technical features of the interface(s) shall be documented in the NPSTDF Software Requirements Specification (SRS).

3.4 TASK 4: Implementation of the Interface. Based on the analysis performed in tasks 1 through 3, and with SHAPE and DSWA concurrence, the contractor shall specify and implement the electronic NPSTDF interfaces between the external systems and NPS. The interfaces shall enable SHAPE nuclear operations personnel to transfer data from external suppliers to NPS, utilizing the commander's guidance and SHAPE-identified operational criteria to control the selection of data from targeting databases. Where necessary, the interface will combine targeting data from USSTRATCOM with the appropriate records received from intelligence systems. Finally, the interface will ensure that missions planned using NPS make use of the latest threat data available from the systems available to SHAPE.

The interface to NPS will permit all of the following modes of operation:

a diskette-based and/or magnetic tape (likely 8mm) interface to minimize security accreditation parameters; an electronic interface to provide more nearly real-time data; a combination diskette and electronic interface, with the diskette interface being used as an interim arrangement until security requirements for an electronic interface can be defined and accommodated.

3.4.1 SUBTASK 4.1: LOCE and MIDB IDB Queries

Based on the contractor's data requirements analysis (see above), the contractor shall identify the fields and records in LOCE and the MIDBIDB which are to be transferred to NPS. Working with the personnel assigned by the LOCE Program Management Office (at CORCEN and USEUCOM), the contractor shall participate in specifying LOCE and MIDBIDB database queries which extract those fields and records necessary to update the installation, threat, population, and polygon files in NPS. The LOCE Program Management Office, USEUCOM, and DIA will write the queries and provide them to SHAPE for the contractor's use.

3.4.2 SUBTASK 4.2: NPS Software Modification

The contractor shall design and implement the following NPS software and database modifications required to accommodate the new bulk data files and crisis-related data updates:

Modify the structure of the NPS database to correspond to new or different file formats and deliver the updates to SHAPE to ensure current targeting information; Modify the Data Management Subsystem (DMS) interface, data processing software, and database queries to validate and process the data files and update the database; Modify the database queries and data processing software of the NPS and NNPS application subsystems to accommodate changes to the NPS database structure and content.

3.4.3 SUBTASK 4.3: Software Documentation

The contractor shall provide full user documentation consisting of operating instructions for the electronic interface and custom developed software to be used with the interface. The contractor shall update existing NPS software and database documentation to reflect enhancements and changes required to validate, process, and utilize the new bulk data files and data updates.

The user interactions shall be delivered with each release of the interface, including test releases.

3.5 TASK 5: Installation and Testing of NPSTDF at SHAPE

The contractor shall install and test the NPSTDF software and NPS software and database modifications at SHAPE. Installation shall include all hardware and documentation necessary to establish the interface(s) required to receive the input files for NPS from the following sources, as applicable to each file:

A LOCE workstation 8mm tape from LOCE Correlation Center or from Molesworth Joint Analysis Center MIDB MIIDS/IDB via JDISS in SHAPE Survey Section File transfer via a secure link from USSTRATCOM Message transfer via an AUTODIN terminal in SHAPE Nuclear Plans and Operations section Other systems as identified by the contractor, SHAPE, and DSWA during the course of the Interface Requirements Analysis (task 3)

If a workstation or computer is needed, the contractor shall use a Sun Sparc 2 which will be furnished by DSWA. For all other equipment, the contractor shall specify, purchase, and integrate all hardware required for this task.

3.6 TASK 6: Testing and Evaluation of NPSTDF at SHAPE

The contractor shall develop a test plan of the NPSTDF which will be approved by DSWA, SHAPE, and the appropriate database authorities prior to testing. The contractor shall write the test plan in such a manner that DSWA will be able to evaluate that the NPSTDF satisfies the system objectives. Testing shall be done using real or simulated planning data following test plan approval by DSWA, SHAPE, and the appropriate database authorities (particularly concerning LOCE and JDISS). The contractor shall also update the existing NPS Test Plan to reflect enhancements and changes to the NPS software and database. Upon completion of the testing, the contractor shall deliver to DSWA and SHAPE all source code, executable code, and documentation developed under this effort.

3.7 Task 7: Computer Administration and Support

During the test phase, and for a period of six months after final delivery, the contractor shall provide computer system administration and software support for NPSTDS. Support shall consist of assistance in configuring and managing the intelligence system and NPS workstations and servers at SHAPE.

As part of this task, the contractor shall train SHAPE computer systems personnel in the operational and maintenance aspects of the such that SHAPE can assume responsibilities for the interface. The contractor will submit a training plan to the COTR for approval one month prior to the test phase.

As part of this task, the contractor shall provide on site targeting technical support during SHAPE exercise ABLE ALLY.