

**SOFTWARE DEVELOPMENT PLAN (SDP)
FOR THE
NATO INTEROPERABLE SUBMARINE BROADCAST SYSTEM
(NISBS)**

NISBS-SDP-01-U-R1C0

Version 1.3

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Prepared By:

**Space and Naval Warfare Systems Center San Diego
Submarine Communications and C4I Systems Division, D83
53560 Hull Street
San Diego, CA 92152-5001**

SPAWAR PMW-153

Manager, SSC SD D83

Systems Engineer

Program Manager

Quality Assurance

Hardware Manager

Software Project Manager

Configuration Management

Test Manager

SECTION 1. SCOPE

1.1 IDENTIFICATION

This Software Development Plan (SDP) establishes the plans to be used during the development of the single Computer Software Configuration Item (CSCI) for the North Atlantic Treaty Organization (NATO) Standard Agreement (STANAG) 5030 Formatter. The Formatter is part of the overall NATO Interoperable Submarine Broadcast System (NISBS) and is referred to herein as the NISBS Formatter. System requirements are specified in references (a) through (d) of 2.1.2.

1.2 SYSTEM OVERVIEW

The primary mission of the NISBS is to provide the U. S. with a NATO-interoperable message preparation, management, format and transmit capability. The NISBS shall be capable of relaying STANAG 5030 formatted broadcasts to submarines in the mid- and north-Atlantic oceans via transmitters located at Naval Radiating Transmit Facility (NRTF) Annapolis, Maryland (both LF and VLF) and NRTF Driver, Maryland. A Submarine Satellite Information Exchange Subsystem (SSIXS) II Message Processing Terminal (MPT) will be located both at the Broadcast Control Authority (BCA), at Commander, Submarine Forces, Allied Command for the Atlantic (COMSUBACLANT) headquarters in Norfolk, Virginia and the alternate BCA located at Commander, Submarine Group 10 (CSG-10) in Kings Bay, Georgia. It is intended that for multilateral (NATO) and US/UK (bilateral) broadcasts, CSG-10 will be the primary BCA. The operational areas supported by these transmitters include the mid- and north-Atlantic and Arctic Ocean areas. In addition, a requirement exists to install an NISBS MPT at Commander, Submarine Forces Pacific (COMSUBPAC) for multilateral and U.S. national broadcasts. A block diagram of NISBS is shown in Figure 1-1.

The purpose of the NISBS Formatter is to provide the U.S. the capability to generate, format, edit, encrypt, modulate, transmit and relay, NATO STANAG 5030 Very Low Frequency/Low Frequency (VLF/LF) submarine broadcasts from both U.S. and NATO-owned Fixed VLF (FVLF) transmitters. The NISBS Formatter will provide COMSUBACLANT with NATO VLF/LF communications interoperability for effective command and control of all NATO submarine forces. A separate development project will provide the U.S. with the capability to detect, demodulate, decrypt, decode, and print STANAG 5030 submarine broadcasts.

The Broadcast Keying Station (BKS) shall be configured with a minimum of two separate message formatters (excluding spares.) One formatter, designated the Black Formatter, shall operate only on encrypted data. The second formatter, designated the Red Formatter, shall operate only on classified clear text data.

1.3 DOCUMENT OVERVIEW

This SDP describes the organization and procedures to be used by the SPAWAR Systems Center, San Diego (SSC SD) in performing software development for NISBS Formatter. This plan is intended to be used by the sponsor, Space and Naval Warfare Systems Command (SPAWAR) to monitor the procedures, management and contract work effort of the SSC SD D833.

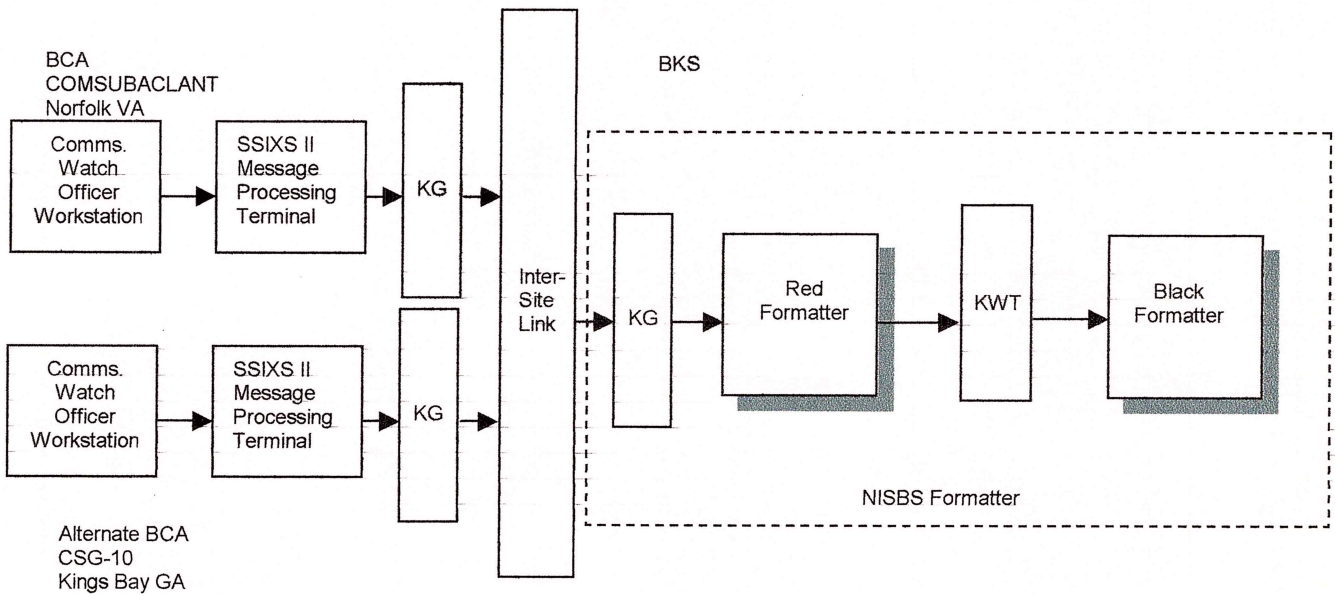


Figure 1-1. NISBS Functional Flow Diagram

This SDP identifies applicable policies, requirements, and standards for NISBS project software development. It defines schedules, organization, resources, and processes to be followed for all software activities necessary to accomplish the development. This SDP contains no privacy considerations pertaining to the NISBS Project.

This document follows the outline of a Software Development Plan contained in the MIL-STD-498 Data Item Description for an SDP: DI-IPSC-8127. It also meets the content requirements for IEEE/EIA 12207.1 Development Process Plan (paragraph 6.5) and Project management plan (paragraph 6.11). The SDP is organized as follows:

Section 2 lists all documents referenced by this SDP and used during its preparation.

Section 3 provides an overview of the required work.

Section 4 describes plans for general software development activities.

Section 5 describes the details of all software planning, design, development, reengineering, integration, test, evaluation, Software Configuration Management (SCM), product evaluation, Software Quality Assurance (SQA), and preparation for delivery activities.

Section 6 defines the project schedule and activity network.

Section 7 describes the project organization and the resources required to accomplish the work.

1.4 RELATIONSHIP TO OTHER PLANS

This SDP and its companion documents, the Software Configuration Management Plan (SCMP) and the Software Quality Assurance Plan (SQAP), serve as the guiding documents to develop the software for the NISBS Project.