



ANNEX B
Appendix 5

Computer Based Trainer
Specification

Naval Remote Weapon Station System

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1. INTRODUCTION

1.1 Scope

- 1.1.1 This specification contains the technical requirements for the Naval Remote Weapon Station (NRWS) System Computer Based Trainer, which will consist of an Operator and Instructor trainer mode. The Computer Based Trainer will consist of Software, Controls, and a Display.

1.2 Terminology

- 1.2.1 The following definitions shall apply throughout this specification:
- a. NRWS System: The NRWS System consists of four remotely operated NRWS mounts, sensor suites, and NRWS Operator Consoles integrated together;
 - b. NRWS Mount: The above deck component that secures, aims, and fires the mounted weapon, and secures the electro-optical sensor suite;
 - c. NRWS Operator Console: The component that provides the primary point for Operator monitoring and control of NRWS Mounts; and
 - d. Operator: The individual member of ship's staff who is operating the NRWS System.
- 1.2.2 The following acronyms shall apply throughout this specification:
- a. COTS: Commercial Off-The Shelf;
 - b. NRWS: Naval Remote Weapon Station; and
 - c. TSOR: Technical Statement of Requirements.

2. TECHNICAL REQUIREMENTS

2.1 General Requirements

- 2.1.1 The Computer Based Trainer shall have an Operator Trainer Mode.
- 2.1.2 The Computer Based Trainer shall have an Instructor Trainer Mode.
- 2.1.3 The Computer Based Trainer shall operate in either the Operator Trainer Mode or the Instructor Trainer Mode as selected by the user.
- 2.1.4 The Computer Based Trainer Controls shall have a Physical Fidelity level of not less than 4 in accordance with Table 1, to this Appendix.

- 2.1.5 The Computer Based Trainer Display shall have a Physical Fidelity level of not less than 3 in accordance with Table 1, to this Appendix.
- 2.1.6 The Computer Based Trainer Software shall have a Functional Fidelity level of not less than 4 in accordance with Table 2, to this Appendix.
- 2.1.7 The Computer Based Trainer shall include not less than 10 pre-programmed Combat Scenarios.

2.2 Combat Scenarios

- 2.2.1 The Combat Scenarios shall vary in levels of complexity.
- 2.2.2 The Combat Scenarios shall simulate each threat and target types as specified in the Tables 1 and 2 of Annex B, Appendix 3.
- 2.2.3 The Combat Scenarios shall include the following environmental conditions as a minimum:
 - a. Sea states 1,3,5;
 - b. Fog;
 - c. Rain;
 - d. Sunlight; and
 - e. Darkness.
- 2.2.4 The Combat Scenarios shall include the following marine operating areas as a minimum:
 - a. Harbour;
 - b. Littoral region; and
 - c. Blue water.

2.3 Operator Trainer Mode

- 2.3.1 The Operator Trainer Mode shall allow the user to choose which Combat Scenario to initiate.
- 2.3.2 The Operator Trainer Mode shall allow the user to access an electronic version of the NRWS System operator manual.
- 2.3.3 The Operator Trainer Mode shall simulate all NRWS System operator software functions.

2.4 Instructor Trainer Mode

- 2.4.1 The Instructor Trainer Mode shall allow the instructor to create Combat Scenarios.
- 2.4.2 The Instructor Trainer Mode shall allow the instructor to edit Combat Scenarios including environment conditions and marine operating areas as defined in section 2.2, of this Appendix.
- 2.4.3 The Instructor Trainer Mode shall allow the instructor to save Combat Scenarios to portable media.
- 2.4.4 The Instructor Trainer Mode shall allow the instructor to update Combat Scenarios on other Computer Based Trainers using portable media.
- 2.4.5 The Instructor Trainer Mode shall allow the instructor to access an electronic version of the NRWS System operator manual.

Level of Fidelity	Fidelity Description
1	Lowest - No physical replication is required, or the replication is in the form of a non-functional mock-up. Information typically available from the equipment may be available to trainer staff for role-playing.
2	Low - Use of Commercial Off the Shelf (<i>COTS</i>) equipment that displays valid information to the student but not necessarily with the format or functionality of the real equipment.
3	Moderate - Use of non-military or <i>COTS</i> equipment that may bear little physical resemblance to the actual military equipment, but offers functionality suitable for the operator to perform the tasks required by the training objectives. Typically only the person/machine interface devices that are required by the training objectives are reproduced.
4	Very high - A close replication of the actual equipment on the ownship, but allowing for slight differences to accommodate the use of non-military or <i>COTS</i> equivalents. Person/machine interface devices represent close replications of those on the real equipment and in some cases only those required by the training objectives are reproduced.
5	Highest - An exact replication of the actual military equipment on the ownship, may be achieved through the use of real equipment or precise form and fit replications. All person/machine interface devices are accurately replicated.

Table 1 : Physical Fidelity Levels

Level of Fidelity	Fidelity Description
1	Lowest - can be simulated by instructions from the trainer staff. Implementation involves "Pretending and Imagination-.
2	Low - Replication is achieved through a combination of equipment offering simplistic behaviour, and trainer staff intervention as required to clarify the intent.
3	Moderate - Replication is achieved through provision of idealistic or theoretical information and behaviour. Only occasional trainer staff intervention would be required. May provide functionality only to a level sufficient to achieve the training objectives.
4	Very high - Replication is achieved through provision of cues and interactions that closely replicate those of the actual system and can easily be related, to actual items or typical data information. Items can be distinctly identified from other similar items through details provided in the cues. All operator features are available.
5	Highest - The cues and interactions are as close as possible to those of the actual system. Differences between the simulation and the actual system are discernible only to an experienced operator, and do not detract from training. Must attain near exact replication with effect on all five senses if possible.

Table 2 : Functional Fidelity Levels