DATA ITEM DESCRIPTION

Title: Human Engineering Test Plan

Number: DI-HFAC-80743B
AMSC Number: A7317 **Approval Date:** 19980708
DTIC Applicable: **Limitation:**
Office of Primary Responsibility: A/AMCOM **GIDEP Applicable:**
Applicable Forms:
Use/Relationship: The Human Engineering Test Plan details the proposed testing to demonstrate that the personnel-equipment/software combination can accomplish the intended operation and maintenance functions in accordance with system specifications. This plan serves as the principal means of planning for validating human performance requirements, accuracy of personnel selection criteria, adequacy of training, and acceptability of design of the personnel-equipment/software interface.

a. This data item description (DID) contains the format and content preparation instructions for a Human Engineering Test Plan resulting from applicable tasks delineated in the SOW.

b. This DID is related to DI-HFAC-80744B, "Human Engineering Test Report". This plan serves as the principal means of planning for validating human performance requirements, accuracy of personnel selection criteria, adequacy of training, and acceptability of design of the personnel-equipment/software interface.

c. This DID supersedes DI-HFAC-80743A.

Requirements:
1. General. The Human Engineering Test Plan shall detail the contractor's plan for gathering and analyzing data to show that the system, when fielded, will satisfy four criteria:

a. All human performance requirements for operations and maintenance can be performed to an acceptable level or standard under conditions of expected use.

b. The human performance requirements for operations and maintenance can be performed reliably by personnel reasonably representative of the military personnel who will ultimately perform them.

c. Both the cost (in terms of all resources required) and some measure (based on human performance time and error data) of prospective effectiveness of the contractor's training program for operations and maintenance are known.

d. The design of system hardware and software facilitates efficient, safe, and accurate human performance.

2. Format. The Human Engineering Test Plan format shall be contractor selected. Unless effective presentation would be degraded, the initially used format arrangement shall be used for all subsequent submissions.

3. Content. The Human Engineering Test Plan shall contain the following:

a. Introductory information. Introductory information shall include the following:

(1) Title descriptive of each test to be conducted.

(2) Identification of equipment (or concept) being tested.

(3) Statement of the task groups (or portions thereof) being reported. (A list, in sequential order, of all the discrete performance tasks--with critical tasks identified--which will be required of each person in the system).

(4) Purpose of tests.

(5) Objective(s) of tests (if different from paragraph 3a-4).

b. Test design. Identification of test conditions, performance measures, sample sizes, and sequence of test events.

c. Test methods and controls. Description of procedures to be followed in conducting each test. Explanation of how environmental variables and other factors which could affect the performance measures will be controlled or described, including where relevant:

(1) Noise.

(2) Illumination level.

(3) Shock and vibration.

(4) Air temperature and humidity.

(5) Ventilation.

(6) Exposure to toxic or hazardous substances.

d. Test participants . General description of the personnel population from which test participants will be selected. Identification and justification of test participant selection criteria. Identification of methods by which data describing actual test participants will be gathered, including where relevant:

(1) Age.

(2) Weight.

(3) Sex.

(4) Body dimensions relevant to performance tasks.

(5) Visual acuity.

(6) Hearing level.

(7) Existence of physical disabilities.

(8) Educational and work experience.

(9) Prior experience relevant to performance tasks.

e. Training of test participants .

(1) Type and amount (in hours) of system-specific pre-test training planned for test participants.

(2) Any end-of-training comprehension test administered to test participants before test data-gathering begins.

f. Equipment involved .

(1) Description of mockup or equipment on which tests will be conducted (including material to be used and type of fabrication, dimensions, and cross-reference to drawings or sketches).

(2) Identification of other, non-system equipment involved in tests (including all equipment to be worn, carried or otherwise borne on the body of test participants such as weapon, communications equipment, headgear, survival equipment, protective mask and night vision equipment).

g. Data collection . Detailed description of the instrumentation or other means which will be used to obtain raw data on each of the performance measures. Identification of forms, if any, that will be used for recording data. Description of the frequency and means by which data on environmental variables and other extraneous factors will be collected.

h. Data reduction . Detailed descriptions of techniques to be used for transformation and combination of raw data, statistical techniques to be employed and assumptions pertaining to the use of each (e.g., normally distributed), and confidence levels selected.

i. Data analysis . Explanation of how the data collected will be used in:

(1) Human performance error analysis (e.g., "calculating operator error rate for mission-critical tasks").

(2) Identifying incompatibilities among human performance and equipment.

(3) System safety analysis.

(4) Logistics and maintainability assessment(s).

(5) Calculating system reliability, availability, and effectiveness.

j. Test reporting. Identification of tests for which a "Human Engineering Test Report", DI-HFAC-80744, is planned and tentative date(s) of initial submission.

4. End of DI-HFAC-80743B.