

DATA ITEM DESCRIPTION		Form Approved OMB No. 0704-0188 Exp. Date: Jun 30, 1986	
1. TITLE HARDWARE DIAGNOSTIC TEST SYSTEM DEVELOPMENT PLAN		2. IDENTIFICATION NUMBER DI-ATTS-80005	
3. DESCRIPTION/PURPOSE 3.1 The Hardware Diagnostic Test System (HDTs) Development Plan describes the contractor's plan for developing and integrating a hardware fault diagnostic and test capability for system/subsystem/equipment. It provides a controlled statement of the contractor's plan for producing and developing the diagnostic software and hardware diagnostic test devices which satisfy the functional, performance, and			
4. APPROVAL DATE (YYMMDD) 850610	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) G/T213	6a. DTIC REQUIRED	6b. GIDEP REQUIRED
7. APPLICATION/INTERRELATIONSHIP 7.1 The Hardware Diagnostic Test System Development Plan provides the contractor with the means to coordinate, control, and monitor progress of the development effort. It provides the Government with knowledge of the schedule, organization and resource allocation planned by the contractor. It is a basic tool with which the Government can monitor the contract work effort.  7.2 This data item description (DID) satisfies the requirements of paragraph 5.1, DOD-STD-1701(NS)			
8. APPROVAL LIMITATION		9a. APPLICABLE FORMS	9b. AMSC NUMBER G3611
10. PREPARATION INSTRUCTIONS  10.1 <u>Source document.</u> This applicable issue of the document cited herein, including its approval date and dates of any applicable amendments and revisions, shall be as reflected in the contract.  10.2 The HDTs development plan shall consist of ten sections with appropriate subsections. The format shall be as follows.  Section I - <u>Introduction</u>  Section II - <u>Organization and Responsibility</u>  Section III - <u>Management and Technical Controls</u>  Section IV - <u>Resources</u> 4.1 Personnel 4.2 Training 4.3 Data Processing Equipment  Section V - <u>Software Development Schedule</u>			

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## 3. DESCRIPTION/PURPOSE (Cont'd)

operational requirements of the system/subsystem/equipment. It is used to approve the contractor's approach for a Hardware Diagnostic Test System (HDTS), and to monitor and evaluate the contractor's progress while developing the HDTS.

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## 10. PREPARATION INSTRUCTIONS (Cont'd)

- Section VI - Monitoring and Reporting
- Section VII - Documentation
- Section VIII - Development Approach
  - 8.1 Engineering Practices
  - 8.2 Operating Practices
- Section IX - Development and Test Tools
- Section X - Security Controls and Requirements

10.3 The content of each section shall be as follows.

10.3.1 Section I. Introduction. This section shall describe the scope, purpose, application and authority of the development effort. This should include a brief overview of the management philosophy and methodology that will be used on the project.

10.3.2 Section II. Organization and Responsibility. This section shall describe the organization, responsibilities and structure of the groups that will be designing, producing and testing all segments of the software system. It shall also identify the name and management position of each supervisor.

10.3.3 Section III. Management and Technical Controls. This sections shall describe the management and technical controls that will be used during development, including controls for insuring that all performance and design requirements have been identified and implemented.

10.3.4 Section IV. Resources.

10.3.4.1 Personnel. This section shall identify the level of manpower allocated to each task shown in the development schedule, including numbers, duration of assignment, and required skills. This includes administrative and logistic support personnel. If known, personnel assigned to software development tasks shall be listed by name. This section shall also identify security clearance requirements and plans for obtaining the necessary security clearances for personnel working on the software system (if applicable).

10.3.4.2 Training. This section shall identify training required for people working on the project and dates by which the training must be completed.

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## 10. PREPARATION INSTRUCTIONS (Cont'd)

10.3.4.3 Data Processing Equipment. This section shall identify requirements for the use of data processing equipment to support the development of computer programs and their subsequent testing. It shall also describe the plan for assuring that the necessary hardware is available at the appropriate times.

10.3.5 Section V. Software Development Schedule. This section shall present a graphic and narrative description of the scheduled events and milestones of the software development effort. The schedule will be updated to reflect additional detail as the project moves through successive phases of the development cycle. By Preliminary Design Review, this section shall include a development schedule for each computer program and data base. The graphic description shall be a chart identifying schedules for the following:

- a. All deliverables;
- b. Preparation of management and test plans;
- c. All levels of testing;
- d. Reviews, including major reviews and other internal milestones;
- e. Transition to life-cycle support activity.

The chart should illustrate a relationship with hardware schedules. Critical paths shall also be identified.

10.3.6 Section VI. Monitoring and Reporting. This section shall describe the procedure for monitoring and reporting the status of program development. It shall also describe the manner in which problems and recommended solutions to problems will be reported.

10.3.7 Section VII. Documentation. This section shall describe the approach for developing computer program documentation and will identify the documentation that will be produced. This shall include the plan for developing test-planning documentation, the Software Requirements Specification, the System/Subsystem Specification, the Program Specification, Software Manuals and any other documentation.

10.3.8 Section VIII. Development Approach.

10.3.8.1 Engineering Practices. This section shall describe the engineering practices that will be applied to the development of software. These practices include standards, conventions, procedures, rules for programming, design and other disciplines affecting development. At a minimum, procedures for implementing the following practices shall be described:

- a. Programming and data base standards;
- b. Top-down design methodology;
- c. Design walk-throughs.

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## PREPARATION INSTRUCTIONS (Cont'd)

10.3.8.2 Operating Practices. This section shall describe the operating practices that will be applied to the development of software. These include the following;

- a. Use of Unit Development Folders;
- b. Techniques for ensuring that all performance and design requirements have been implemented;
- c. Means of ensuring modularity, ease of modification, and capacity for computer program growth;
- d. Methods and procedures for collecting, analyzing, monitoring and reporting on the timing of time-critical computer programs;
- e. Means for ensuring that the software/data processors/peripheral equipment interfaces are adequate;
- f. Criteria for determining when a development unit should be entered into configuration control;
- g. Means of controlling master copies of computer programs, data bases and associated documentation during development (including their relationship to the Configuration Management Plan);
- h. Rules for interface definition.

10.3.9 Section IX. Development and Test Tools. This section shall identify the special tools and techniques that will be used during development and testing of the computer programs. Some examples are as follows:

- a. Special simulation;
- b. Data reduction;
- c. Code optimizers;
- d. Code auditors;
- e. Special utility programs;
- f. Software security test tools.

10.3.10 Section X. Security Control and Requirements. This section shall identify security controls that will be used during software development (e.g., physical security, document access controls, computer access controls, etc.). It shall also describe the method of implementing and maintaining the security controls. It shall also identify and unique security problems and installation security requirements.