

DATA ITEM DESCRIPTION			Form Approved OMB No. 0704-0188	
2. TITLE Multiplex Interface Control Document (MICD)		1. IDENTIFICATION NUMBER DI-MISC-80343		
3. DESCRIPTION/PURPOSE 3.1 The Multiplex Interface Control Document (MICD) establishes the requirements for the transfer of data and details the electrical interfaces, hardware, and software for various equipments that employ one or more MIL-STD-1553B multiplex bus(es).				
4. APPROVAL DATE (YYMMDD) 870417	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) A/AVSCOM	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATIONSHIP 7.1 This DID contains the format and content preparation instructions for the data product generated by the specific and discrete task requirement as delineated in the contract. 7.2 This DID is applicable to systems and subsystems which provide MIL-STD-1553B interfaces as the basic input and output communication interface.				
8. APPROVAL LIMITATION		9a. APPLICABLE FORMS		9b. AMSC NUMBER A4099
10. PREPARATION INSTRUCTIONS 10.1 <u>Reference documents.</u> The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract. 10.2 <u>General.</u> The Multiplex Interface Control Document (MICD) identifies, defines, and controls electrical and physical interfaces related to the multiplexing of data and the transmission of multiplexed data over a MIL-STD-1553 data bus. Message structure and data word formats are to be standardized and controlled by the MICD. 10.3 <u>Title page.</u> The title page sample format is illustrated in Figure 1. 10.4 <u>Message/data word formats.</u> Message structure and data word format shall be as depicted on the standardized sheets detailed in Section 80 of MIL-HDBK-1553. 10.5 <u>MICD outline.</u> The MICD shall be in the sample outline and paragraph numbering depicted in Figure 2. The MICD shall be on 8 1/2 x 11 inch sheets and shall incorporate the following content and format requirements: <p style="text-align: right;">(Continued on Page 2)</p>				
11. DISTRIBUTION STATEMENT DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.				

10. PREPARATION INSTRUCTIONS (Cont'd)

10.5.1 INTRODUCTION10.5.1.1 Purpose

This section establishes the requirements for the transfer of data over a MIL-STD-1553 data bus and identifies the systems or subsystems involved, in general terms (e.g., Ultra-High Frequency (UHF) radio and other on-board systems).

10.5.1.2 Responsibility

This section identifies the Government agency that is the custodian of the MICD and that is the point-of-contact for comments, changes, or additional copies.

10.5.1.3 Scope

This section describes the boundaries or the extent of the interfaces included in the MICD.

10.5.1.4 Functional Summary

a. Unit Functional Summary. This section describes the unit for which this interface is being defined. This description includes the basic functions performed and the modes of operation. (For a System MICD, a Functional Summary for each unit shall be included.)

b. Control Display Unit (CDU) Functional Summary. This section, if applicable, describes the control functions and display functions required in conjunction with the unit's operation. This section shall not define the implementation of these functions or whether the CDU is a stand-alone or integrated CDU. The CDU display page formats are not included. (For a System MICD, a Control Display Unit Functional Summary, for each unit which interfaces with the CDU, shall be included.)

10.5.1.5 Notes

a. Glossary.

b. Definitions.

10.5.2 APPLICABLE DOCUMENTS

This section provides a listing of publications, instructions, specifications, standards, and other documents applied to or used in the preparation of the MICD. This list includes the document number, title, and date. The documents shall be listed in the following order:

- a. Armed Forces Publications (Army, Navy, Air Force, etc.)
- b. Government Standards and Specifications (MIL-STD, etc.)
- c. Commercial Standards (ANSI, IEEE, SAE, etc.).
- d. Commercial Publications (any publications not generated by the above agencies.)

10. PREPARATION INSTRUCTIONS (Cont'd)

If conflicts or incompatibilities exist between documents, then a brief description of the conflict or incompatibility shall be included along with the rationale for establishing the precedence of one document (or requirement) over another.

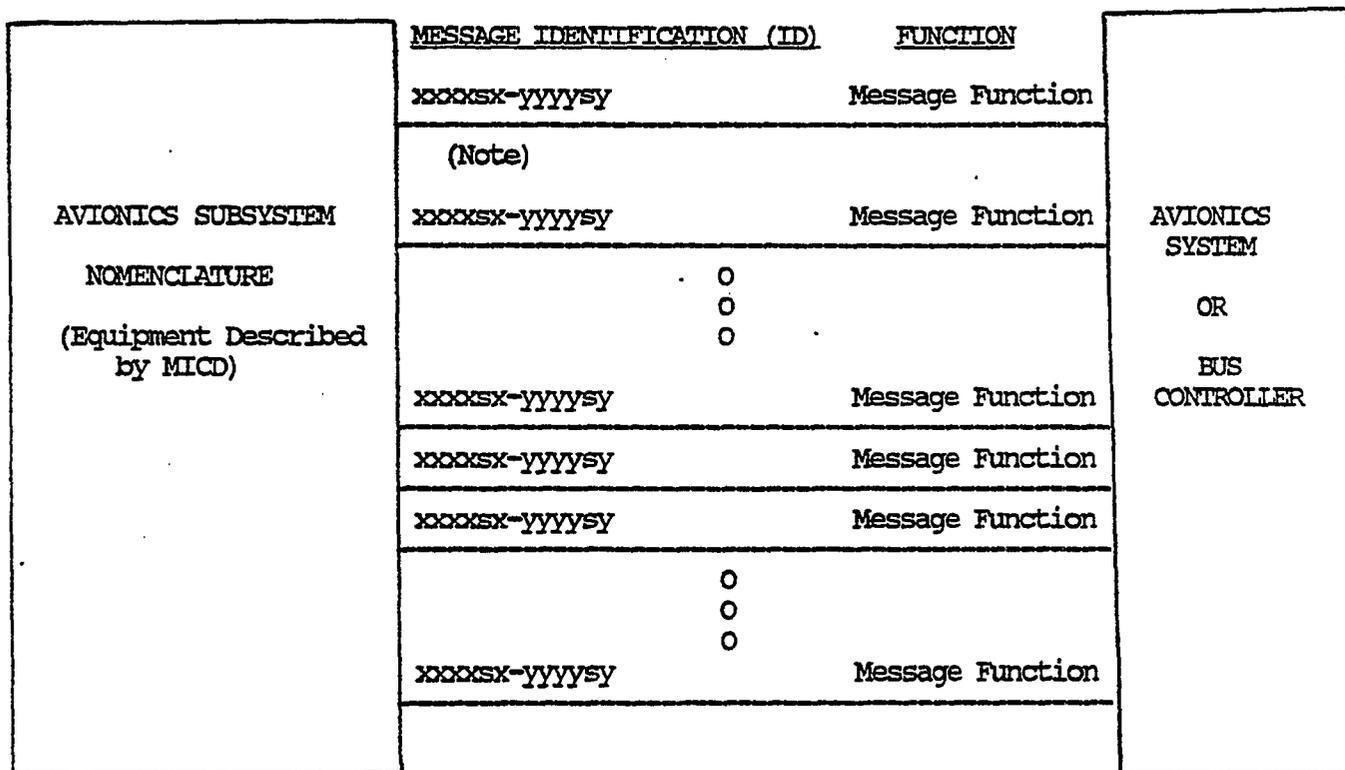
10.5.3 INTERFACE REQUIREMENTS

10.5.3.1 Physical Characteristics. This section defines any physical or electrical characteristics beyond the scope of MIL-STD-1553 ((e.g., Remote Terminal (RT) address selection method, or coupling method)).

10.5.3.2 Protocol. This section defines any protocol requirements which are beyond the scope of MIL-STD-1553 (e.g., mode codes).

This section also describes protocol features as message subaddress assignments, error processing and recovery functions, major and minor frame timing constraints (including duty cycle), and status and validity bit usage.

10.5.3.3 Interface Diagrams. This section includes an overview of the interface in the form of the following block diagram:



Functional Block Diagram

10. PREPARATION INSTRUCTIONS (Cont'd)

Note 1: Message Format as defined in Section 80 of MIL-HDBK-1553 Multiplex Applications Handbook.

10.5.3.4 System Conventions. This section of the MICD describes any system conventions specific to the system (e.g., aircraft body coordinates).

10.5.4 MESSAGE DESCRIPTIONS

This section subdivides into two subsections: Receive Messages and Transmit Messages. Within each subsection, messages are to be ordered by alphabetizing the message identification (sort on source and source subaddress within the message ID).

10.5.4.1 Receive Messages. This section describes the set of messages received by the unit. (For a System MICD, messages received by each unit shall be included). Each message shall be described as follows:

a. The overview of the message shall be depicted and the MIL-STD-1553 message structure provided (a tabular listing of all command, status, and any data words, including word name, word number, description, and the page number where the detailed description for that word can be found); a message description briefly characterizing the message and clarifying its use; transmission criteria (the rate at which the message is to be transmitted on the bus and any restrictions to that criteria); and the message functional or structural relationship (i.e., any cause/response interactions imposed on the system due to the message, such as a hardware/software action in response to a mode code).

b. Following the message overview is a detailed description of each word in the MIL-STD-1553 message using the format described in Section 80 of MIL-HDBK-1553 Multiplex Applications Handbook. (For a System MICD, detailed descriptions of data words need not be repeated for identical messages. The data words should be cross-referenced on identical messages).

10.5.4.2 Transmit Messages. This section describes the set of messages transmitted by the unit. (For a System MICD, messages transmitted by each unit shall be included). The format of this section is the same as the format in 10.5.4.1.

10. PREPARATION INSTRUCTIONS (Cont'd)

DOC. NO.	REV.
<p>MULTIPLEX INTERFACE CONTROL DOCUMENT</p>	
<p>FOR</p>	
<p>DESIGNATION</p>	
<p>EQUIPMENT NOMENCLATURE</p>	
<p>(EQUIPMENT NOMENCLATURE ABBREVIATION)</p>	
<p>MONTH/YEAR</p>	
<p>(DISTRIBUTION STATEMENT)</p>	

FIGURE 1. Multiple Interface Control Document Title Page Sample

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FIGURE 2. Multiplex Interface Control Document Outline Sample