DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
FAILURE DATA AND TRACEABILITY RECORD	DI-RELI-80807

3. DESCRIPTION/PURPOSE

3.1 This data will be accumulated, over a period of time, to form a data base of failures for an equipment program. The data base will be used to produce various failure reports.

4. APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
890428	G/Y223		X

7. APPLICATION/INTERRELATIONSHIP

7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated by the specific and discrete task requirements as delineated in the contract.

7.2 The data specified herein will be used in conjunction with the data specified in DI-E-5331, Engineering Document Record.

7.3 This DID supersedes DI-R-5375C.

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER
		G4690

10. PREPARATION INSTRUCTIONS

10.1 Reference Documents. 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 Format.

10.2.1 Media. The data shall be prepared on a non-labeled, 9-track magnetic tape, 1600 BPI, 80 characters/record, 10 records/block, EBCDIC format, or an ASCII format, IBM compatible, 5 1/4" floppy disk.

10.2.2 Record Sequencing. The data shall be represented by a Header Record for each equipment and for each different type of test performed, in addition to Records 1 and 2 for each failure that occurs. Records 1 and 2 shall immediately follow the associated Header Record. The data shall be sequenced in order of their Header Number and Failure Number.

10.2.3. Labelling. The media shall contain a label stating the time period that the data represents, contractor name, contract number, program name, point of contact and the numbers of the first and last Header Numbers contained on the media.

(Continued on Page 2)

11. DISTRIBUTION STATEMENT

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

BLOCK 10. PREPARATION INSTRUCTIONS (continued)

10.3 Content.

10.3.1 Header Record. A Header Record is required for each unit tested and every type of test being performed, whether or not any failures were detected. For example, if twenty-five equipments are to be built, and are to be subjected to Burn-In, Contractor Acceptance, and Probability Ratio Sequential Test (PRST) tests only, twenty-five Header Records, representing each equipment, are required for Burn-In, twenty-five Header Records are required for Contractor Acceptance, and a Header Record is required for each equipment selected to go through PRST. All data shall be left justified within the fields unless specified otherwise. If the data is not applicable or not available, N/AP and N/AV should be used respectively. No fields should be left blank. Each Header Record shall contain the following eleven fields:

10.3.1.1 Field 1 (Cols. 1-6) HEADER NUMBER. Enter the number of the Header Record. This number will begin at 000001 (for the first Header Record prepared) for each type of test and be incremented by one each time a different Header Record is prepared. For example, if a contract calls for testing to be done for Burn-In, Contractor Acceptance, Reliability Qualification Test (RQT), and PRST, a Header Record with the Header Number 000001 will be prepared for each of these types of tests. No two numbers shall be the same within a type of test. The data in this field shall be right justified and zero filled.

10.3.1.2 Field 2 (Cols. 7,8) FAILURE NUMBER. This field will be zero filled.

10.3.1.3 Field 3 (Cols. 9-28) PART NUMBER OF UNIT TESTED. Enter the part number for the unit (e.g., equipment, nomenclatured assembly) being tested as it appears in the engineering documentation. If the equipment under test has various configurations, the appropriate dash number to exactly identify the specific configuration shall be included as part of the part number. Any National Security Agency (NSA) drawing in the engineering documentation shall begin with the characters ØN (the first character is a numeric zero).

10.3.1.4 Field 4 (Cols. 29-34) SERIAL NUMBER. Enter the serial number of the unit under test and right justify the data in this field. This field shall contain only integer values.

10.3.1.5 Field 5 (Cols. 35-54) CONTRACT NUMBER. Enter the contract number for the contract under which this data is being prepared. An example is MDA904-83-C-0123.

10.3.1.6 Field 6 (Cols. 55-60) BEGINNING DATE. Enter the date for the first day the equipment is being tested for a particular type of test. The year shall be entered in columns 55 and 56, a two-digit number for the month shall be entered in columns 57 and 58, and the day of the month shall be entered in columns 59 and 60. For example, the proper code for 9 November 1983 would be 831109. This field shall contain only integer values.

10.3.1.7 Field 7 (Col. 61) TEST CODE. A list of test codes to be used are found in Table 1.

10.3.1.8 Field 8 (Cols. 62-67) ENDING DATE. Enter the date that the equipment completed a particular type of test. Do not enter the date the equipment failed (unless it also completed the test that day). The data shall be coded as specified for Field 6.

10.3.1.9 Field 9 (Cols. 68-75) DURATION OF TEST. Enter the total number of hours of testing that the unit was submitted to the conditions of a particular type of test before completion. This time does not include the time the unit was in other types of tests or troubleshoot time. The number shall be entered with the decimal point in column 73, and the tenths of the hour entered in column 74 and 75.

BLOCK 10. PREPARATION INSTRUCTIONS (continued)

10.3.1.10 Field 10 (Cols. 76-79) BLANK FIELD. These columns shall be left blank.

10.3.1.11 Field 11 (Col. 80) RECORD CONTROL. The letter H shall be entered in this column.

10.3.2 Failure Data Record. A Failure Data Record (consisting of Records 1 and 2 below) is required for every failure detected during testing.

10.3.2.1 Record 1. Record 1 of each entry shall contain:

10.3.2.1.1 Field 1 (Cols. 1-6) HEADER NUMBER. Enter the number that appears in Field 1 on the Header Record. This number will link the Failure Data Record with its associated Header Record. The data in this field will be right justified and zero filled.

10.3.2.1.2 Field 2 (Cols. 7-8) FAILURE NUMBER. This number will begin at 01 for the first failure of a particular unit for each specific type of test and is incremented by one each time another failure occurs. If two or more parts fail at the same time, a Failure Data Record is completed for each failure and each is assigned a unique failure number.

10.3.2.1.3 Field 3 (Cols. 9-24) FAILED PART NUMBER. Enter the part number, as it appears in the engineering documentation, for the part in which the failure has occurred. Any NSA drawing in the engineering documentation will begin with the characters ØN (the first character is the numeric zero).

10.3.2.1.4 Field 4 (Cols. 27-31) PART REFERENCE DESIGNATOR. Enter the part reference designator for the failed part (e.g., R1, CR4, C5, etc.).

10.3.2.1.5 Field 5 (Cols. 32-46) SUBASSEMBLY PART NUMBER. Enter the part number for the subassembly on which the failed part is used. The number should be entered as it appears in the engineering documentation to include any dash numbers in the case of tabulated assemblies. Any NSA drawing in the engineering documentation will begin with the characters ØN (the first character is a numeric zero).

10.3.2.1.6 Field 6 (Cols. 47-51) NOMENCLATURED SUBASSEMBLY REFERENCE DESIGNATOR. Enter the reference designator for the nomenclatured subassembly on which the failure was detected. Include any appropriate dashes (e.g., E-EDT).

10.3.2.1.7 Field 7 (Cols. 52-57) NOMENCLATURED SUBASSEMBLY SERIAL NUMBER. Enter the serial number of the nomenclatured subassembly identified in Field 5 above. Right justify the data within the field. This field shall contain only integer values.

10.3.2.1.8 Field 8 (Cols. 58-66) EQUIPMENT NAME. Enter the name of the equipment and/or ancillary (e.g., KG-84, KY-65, RCU, etc.).

10.3.2.1.9 Field 9 (Cols. 67-72) EQUIPMENT SERIAL NUMBER. Enter the serial number of the unit under test. Data should be right justified.

10.3.2.1.10 Field 10 (Cols. 73-78) DATE OF FAILURE. Enter the date on which the failure was detected. Use columns 73 and 74 for the year, columns 75 and 76 for the month and columns 77 and 78 for the day of the month. This field shall contain only integer values.

BLOCK 10. PREPARATION INSTRUCTIONS (continued)

10.3.2.1.11 Field 11 (Col. 79) TEST CODE. A list of the test codes to be used are found in Table 1.

10.3.2.1.12 Field 12 (Col. 80) RECORD CONTROL. Enter the numeral 1 in this column.

10.3.2.2 Record 2. Record 2 of each entry shall contain:

10.3.2.2.1 Field 13 (Cols. 1-6) HEADER NUMBER. Enter the number that appears on the Header Record in Field 1 on Record 1. The data in this field will be right justified and zero filled.

10.3.2.2.2 Field 14 (Cols. 7-8) FAILURE NUMBER. Enter the number that appears in Field of Record 1. The data in this field will be right justified and zero filled.

10.3.2.2.3 Field 15 (Cols. 9-13) VENDOR CODE. Enter the Commercial and Government Entity (CAGE) five digit code (per Federal Supply Code for Manufacturers Handbook, H4-1 and H4-2) for the manufacturer of the failed part.

10.3.2.2.4 Field 16 (Cols. 14-30) MANUFACTURER'S PART NUMBER. Enter the manufacturer's part number for the failed part. Any NSA drawing in the engineering documentation will begin with the characters ØN (the first character is a numeric zero).

10.3.2.2.5 Field 17 (Col. 31) TEST CODE. A list of the test codes to be used are found in Table 1.

10.3.2.2.6 Field 18 (Cols. 32-36) DATE LOT CODE. Enter the date lot code for the failed part.

10.3.2.2.7 Field 19 (Cols. 37-43) TEST TIME TO FAILURE. Enter the total length of time in hours that the unit was subjected to the conditions of that type of test before it failed. The decimal point shall be placed in column 41. If more than one failure occurs in a type of test, the time to failure is cumulative. For example, if an equipment failed after 20 hours of burn-in testing, was fixed, put back into Burn-In, and failed again 55 hours later, then one Header Record would be prepared for the equipment to show it went through burn-in and the first Failure Record would show "Time to Failure" as 2 hours and the second Failure Record would show 75 hours in "Time to Failure".

10.3.2.2.8 Field 20 (Cols. 44-74) FAILURE DESCRIPTION. Enter any information necessary to describe the failure. If abbreviations are used, they should conform to MIL-STD-12. The contractor is responsible for deciding on the words to be used. In the event the failure was caused by workmanship, test equipment, or the cause could not be determined, use one of the following respectively: WORKMANSHIP, TE, CNV.

10.3.2.2.9 Field 21 (Cols. 69-74) TROUBLE FAILURE REPORT NUMBER. Enter the Trouble Failure Report Number.

10.3.2.2.10 Field 22 (Cols. 75-79) TEMPERATURE AT FAILURE. Enter the temperature at which the failure occurred. Enter either a plus (+) or (-) in column 75. Enter the temperature in columns 76-78 and either an "F" for Fahrenheit or a "C" for Centigrade in column 79. Right justify and zero fill the temperature in columns 76-78.

10.3.2.2.11 Field 23 (Col. 80) RECORD CONTROL. Enter the number 2 in this column.

BLOCK 10. PREPARATION INSTRUCTIONS (continued)

TABLE I. Type of test code.

CODE	TEST
1	Nomenclatured Assembly Electrical Test
2	Equipment Electrical Debug
3	Burn-In
4	Pre-Acceptance (Pre-Burn-In)
5	Acceptance - Contractor (Post Burn-In)
6	Acceptance - DCAS (Defense Contract Audit Service)
7	RQT (Reliability Qualification Test)
8	PRST (Probability Ratio Sequential Test)
9	RFI (TEMPEST) Test
A	AGREE (Temperature Cycling and Vibration) Test
B	Temperature and Altitude Test
C	Sinusoidal Vibration
D	Humidity Test
E	Receiving Inspection
F	Subassembly Test
G	Thermal Vacuum
H	Thermal Cycling
I	Pyro Shock
J	Random Vibration
K	Acceleration
L	Vibration
M	Immersion
N	COLT (Cipher Output Line Test)
O	Bench Burn-In
P	System Operation Test
Q	Quality Conformance Test
R	Functional (Board Level)
S	Software ATP (Acceptance Test Procedure)
T	High/Low Temperature Test
U	Survivability/Vulnerability (S/V)
V	Acoustical Noise
W	Bench Handling Shock
X	Spares
Y	Reburn-in (for equipment that passed Burn-In, failed in some later test, and had to be burned-in again)
X	Manufacturing Board Test
@	Transient Shock
+	EMI (Electromagnetic Interference)/EMC (Electromagnetic Capability) Test
&	Altitude
%	Rain
/	EMP (Electromagnetic Pulse)
$	Salt Fog
*	Dust
#	All Equipment Production Reliability Acceptance Test (RAT)
!	Fungus
-	Accelerated
=	Input Power Test

BLOCK 10. PREPARATION INSTRUCTIONS (continued)

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12345678911111111112222222222333333333344444444445555555555666666666677777777778
         01234567890123456789012345678901234567890123456789012345678901234567890


000001000N503800                132MDA904-83-C-0123    8302213830318  158.00    H
000001010N508522          CR9  0N503810        E-DVH   422KG-84    001   83022331
0000010178730JAN1N4148         38442J  32.00BD CONTACTS MISALIGNED   N/AV  + 71C2
000001020N047204          Q5   0N057316        E-BEC   N/AVKG-84   002   83030231
00000102N/AVJAN1N4147          38142J  110.00WORKMANSHIP             N/AV  +023C2

000001000N503800               132MDA904-83-C-0123     8303255830325    0.00    H

000002000N241700               18MDA904-83-C-0123      8302153830304    0.00    H

000002000N241700               18MDA904-83-C-0123      8303066830306    0.00    H

000003000N5076002             157MDA904-83-C-0123      830302 830418  143.00  3 H
000003010N190212        3 U2  0N241622        E-DTE    512KG-81    005   830303 1
0000030134371 M3901611040M  8233B   15.20IMPROP  LOGIC OU           84001 +023C2

000085000N517453              426MDA904-83-C-0123      8402105840210  000.00    H
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FIGURE 1 Sample Failure Data and Traceability Record