DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
Requirements Allocation Sheets	DI-GDRQ-81222

3. DESCRIPTION/PURPOSE

3.1 Requirements Allocation Sheets (RAS) are used to translate functions into design requirements. The analysis of functional flow diagrams is documented on requirements allocation sheets.

4. APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
910626	A/MICOM		

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 requirement as delineated in the contract.

7.2 This DID should be used when a multi-contractor relationship exists and there is a need for commonality of this data among the contractors.

7.3 This DID supersedes DI-S-3605.

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER
		A6657

10. PREPARATION INSTRUCTIONS

10.1 Content. The RAS shall contain an analysis of each function or group of functions depicted on the functional diagrams with the following requirements:

10.1.1 The title and number of the drawing containing the functional diagram from which the functions being analyzed originated. When the RAS are used to document the analysis of the functions on the end-item maintenance sheets enter the nomenclature and number of the configuration items. The number shall be the applicable configuration item number or index number.

10.1.2 The name and number of each box on the referenced functional diagram in numerical sequence. Subfunctions which evolve as a product of the RAS analysis but which are not identified as discrete functions on the functional diagram may be identified to minimize unnecessary diagram expansion. Functions shall be expanded by listing these subfunction only when additional design requirements are generated.

(Continued on Page 2)

11. DISTRIBUTION STATEMENT

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

Block 10, Preparation Instructions (Continued)

10.1.3 The design requirements which result from the analysis of the function identified in 10.1.2 above shall be developed and expanded in detail to provide technical criteria for recommending and evaluating methods of satisfying each functional requirement in terms of a given combination of equipment, facilities, and personnel. These requirements are developed in equal depth for maintenance functions reflected on the maintenance sheets as well as operational and maintenance functions identified on functional diagrams. The design requirement entires shall establish functional and design requirements for enclusion in the design sheets; initiate recognition of intrasystem and intersystem interface requirements and facility requirements; and initiate recognition of personnel requirements. Design requirement entries shall include:

10.1.3.1. Description of the function to address the following:
a. The necessity of the function.
b. The timeliness of the functions being accomplished at this point in the sequence of activities.
c. The engineering characteristics of this function related to the engineering characteristics of another function.

10.1.3.2. Specific design characteristics created by the function (e.g., input, output, performance values, and allowable quantitative tolerances). Include maintenance requirements, as applicable, such as checkout limits, calibration limitations and requirements, accessibility requirements and limiting prerequisites such as identification of pressurized and toxic environments, critical disassembly requirements, etc.

10.1.3.3. Requirements which constrain or have significant influence on design such as power, physical dimension and weight, controlled and natural environment, and human performance capabilities and limitations. Time constraints either created by or constraining the function shall be identified. Illustration of such constraints might be computation - solving times, countdown or event timing, and time budget allocations established as a part of system availability or effectiveness studies.

10.1.3.4. Allocated and derived requirements for engineering specialty disciplines such as reliability, safety, maintainability and transportability.

Block 10, Preparation Instructions (Continued)

NOTE: Functional and technical interface requirements evolving from analysis of the function shall be separately identified to facilitate interface surveillance and correction. The requirements describing the interface shall be specific and qualified. Where intersystem interface is specified, the configuration of that system shall be specified together with the technical characteristics of the interface. (Where the above requirements are products of trade study reports or other backup studies, specifications, etc., a specific reference to those documents shall be made).

10.1.4 The facility requirements imposed by the design requirements in 10.1.3 above shall identify:

10.1.4.1 Controlled and natural environmental requirements (e.g., temperature and humidity ranges, illumination and noise levels, wind and snow loading, precipitation, penetration and abrasion effect and atmospheric pressure).

10.1.4.2 Utility requirements (e.g. power (electrical, hydraulic, etc.)) air conditioning, ventilation and heating to be required by the facility.

10.1.4.3 Civil, structural and architectural requirements. Requirements for structures shall be in terms of functional requirements, induced environment and minimum dimensions. Requirements for space, access, and mounting in existing structures shall be described in terms of minimum dimensions necessary to accommodate the equipment.

10.1.4.4 Facility equipment, if identified earlier in system engineering.

10.1.5 The equipment identification shall include the following:

10.1.5.1 The short-form nomenclature of the end item of aerospace vehicle equipment (AVE), operating ground equipment (OGE), maintenance ground equipment (MGE), aerospace ancillary equipment (AAE), or facility equipment or items of equipment for which a design sheet or applicable detail specification is not required. Once nomenclature is used against a given function or within a given function, the item may be identified thereafter by number, if available.

10.1.5.2 The configuration item number, applicable detail specification number, or index number corresponding to the nomenclature.

Block 10, Preparation Instructions (Continued)

NOTE: Items necessary for the support of the mission not identified on design sheets or detail specifications shall be identified by an index number. A list of these items shall be included (e.g., locally procured/base procured (LP/BP) technical operating equipment, special tools, common hand tools, greases, lubricants, abrasives, etc.). The list shall contain the Federal stock number (FSN) and LP/BP coding or the manufacturer's identification if the FSN is not available and usage and quantity are recommended. The list shall identify the specific item and reference the RAS on which the requirement for the item originated. Index numbers shall identify each item in the list to provide an appropriate reference number for the RAS. These index numbers should not duplicate CEI numbers.

10.1.6 The personnel and training equipment requirements shall be included for the functions that are not to be completely automated and those that involve personnel. The following shall be included:

10.1.6.1 The human performance task requirements which constrain or significantly affect accomplishment of the requirements stated in 10.1.2 and 10.1.3 above. These requirements shall be specified to the level of technical depth that shall facilitate identification of human engineering requirements and procedure development. Detail task identification and analysis shall be a separate but correlated effort. Procedural instructions shall not be included. Task requirements shall be identified by alpha-numeric extensions of the function number in 10.1.2. above (e.g., function 3.1.2 would have corresponding tasks numbered 3.1.2.n with task breakdown numbered 3.1.2.a.1, etc).

10.1.6.2 The elapsed time required to accomplish the task in seconds minutes, hours, or days to the first decimal. Use S=sec., M=hour, D=day (e.g., 3.5S means 3.5 seconds).

10.1.6.3 For the task requirements outlined in 10.1.6.1 above which demand human performance, include the following, as applicable:

a. Crew coordination; i.e., if the task requires more than one person, define the coordination requirement including the communications necessary, if any, and number of personnel involved.

Block 10, Preparation Instructions (Continued)

b. Job knowledge; i.e., state whether or not the theory of operation is required or just an understanding of the procedures necessary to accomplish the task.

c. Making decisions; i.e., if the task requires judgement or decision, summarize the action and the criteria which control that action.

d. Safety procedures; i.e., if the task requires more than normal caution to prevent injury to personnel or equipment malfunction, summarize the procedural criteria which will minimize risk.

e. Performance under stress; i.e., if the personnel actions are to be performed under time or technical stress, summarize the significant conditions under which stress occurs.

f. Skill demands for critical tasks; i.e., define perceptual, judgemental, and motor demands.

g. Define sustenance and other life support requirements imposed by the functions and design requirements.

10.1.6.4 The training and training equipment requirements to indicate the extent of training required and whether training equipment or aids are required as well as the recommended type for the functions and tasks identified in 10.1.2 and 10.1.6.1 above. The following codes shall be used to indicate the extent of training required:

X - Requires no training
A - Requires a general familiarization through discussion or demonstration.
B - Requires a briefing on the knowledge or job task to meet the job requirements; does not need to apply the information received.
C - Requires a briefing on the knowledge or job task to meet the job requirements; needs to apply the information received in a non-job like situation such as written tests or verbal problem-solving situations.
D - Requires a briefing on the knowledge or job task; needs to perform or apply representative portions of the job task or knowledge in a job-like situation either on actual equipment or trainers.
E - Requires a briefing on the knowledge or job task; needs to perform the complete job task or apply the knowledge in a job like situation on actual equipment or trainers.

Block 10, Preparation Instructions (Continued)

F - Same as E. but performed a sufficient number of times to ensure proficiency in all phases of performance.

NOTE: The training equipment or aids recommended shall be one of the following three classes: Class 1 includes trainers such as (1) mission simulator, (2) part-task trainer, (3) training attachments; class II includes actual AVE, OGE, MGE, or facility end items and parts and components thereof; and class III includes training aids such as (1) animated panels, (2) cutaways, (3) exploded or site displays, (4) training films, (5) charts and transparencies. Requirements for mobile training units (MTUs) shall be identified. For training equipment end items, the configuration item number or applicable detail specification shall be included.

10.1.7 Procedural data requirements shall be included for functions which produce complicated or hazardous requirements involving personnel. All information shall be specific to provide a means for assuring that the contractor has considered available data and, where not available, has programmed development of the procedural data.

10.2 Identifying information. Appropriate identifying information including the revision letter, date, approval document number, and page number shall be included on each RAS.

10.3 Format. The RAS format shall be contractor selected. Unless effective presentation would be degraded the initially used format arrangement shall be used for all subsequent submissions. The format arrangement suggested in figure 1 shall be used as a guide.

REQUIREMENTS ALLOCATION SHEET	Functional Diagram Title & No. _____ or Nomenclature & No. of CEI _____ (A)			Equipment (E) Identification		PERSONNEL AND TRAINING EQUIPMENT REQUIREMENTS (F)				Procedural Data Requirements (G)
Function Name & No (B)	Design Requirements (C)	Facility Requirements (D)		Nomenclature (E1)	CEI or Detail Spec or Index or Master Control Nr. (E2)	Tasks (F1)	Time Req (F2)	Perform. Reqmts (F3)	Trg & Trg Equip Req (F4)	

Revision _____ Date _____ Approval _____ Document No. _____ Page No. ___ Of ___

Figure 1. Requirements allocation sheet