DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188

1. TITLE	2. IDENTIFICATION NUMBER
Schematic Block Diagrams	DI-GDRQ-81223

3. DESCRIPTION / PURPOSE

3.1 Schematic Block Diagrams are used as the basis for displaying functional and technical requirements and interfaces. As such, they support the design synthesis, integration, and interface compatibility functions.

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 or exchange of this data among the contractors, or when there is a special requirement for this data to support technical reviews and audits.

8. APPROVAL LIMITATION	9a. APPLICABLE FORMS	9b. AMSC NUMBER
		A6658

10. PREPARATION INSTRUCTIONS

10.1 <u>General</u>. The Schematic Block Diagrams shall be prepared to identify (1) intersystem relationships (e.g., a command/control system, interface with a strategic weapon system, etc.); (2) intrasystem relationships including the relationship between constituent elements of a subsystem (e.g., in a communication subsystem interfaces between closed-circuit TV, work station intercom, remote site communication, spacecraft communication, etc.) and (3) subordinate detailed schematics as required to augment (1) and (2) above. The essential characteristics of a schematic is to delineate by symbols (schematic, architectural, electronic, mathematical, structural, mechanical, etc.) the features and relationships of end items, subsystems, and subsystems components and parts.

10.2 <u>Content</u>. The Schematic Block Diagrams shall show the functional interfaces and apportionment or requirements between major systems, within the system between the elements of the system (equipment, personnel, facilities), and between end items, end-to-end and closed-loop relationships; and the maintenance or check out aspects of the proposed design. Sufficient detail shall illustrate how the design requirements are to be met.

11. DISTRIBUTION STATEMENT

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

Block 7, Application/Interrelationship (Continued)

7.3 This DID supersedes DI-S-3607.

Block 10, Preparation Instructions (Continued)

As system definition progresses, the schematic diagrams shall be
updated to incorporate new requirements such as maintainability
features, self-test capability, read-out indications, monitoring
capability, critical pressures voltages, and other quantitative
expressions of system performance.

10.3 Characteristics. The Schematic Block Diagrams and significant
elements within the diagrams shall be uniquely identified to provide
the basis for:

     a. Generating a family of lower-level-of-detail diagrams
traceable from the top down or from the bottom up.

     b. Collecting and apportioning effective Requirements Allocation
Sheets requirements or trade-study requirements against applicable
system or subsystem equipment.

     c. Identifying major intersystem and intrasystem requirements
and interrelationships.

10.4 Developing schematic diagrams. The basic technique for
developing schematic block diagrams is illustrated in figure 1.

     a. The first-level schematic diagram shall be complete for the
subsystem on subsystems being developed. The schematic shall depict a
"closed loop" including a block depiction of intersystem interfaces.

     b. The second-level detail diagrams shall be technical
expansions of the first-level diagram and shall relate contract and
items within the subsystem. Input and output expansion shall be
related to the interfaces expressed in the first-level diagrams.

     c. The third-level detail diagrams shall be organized
functionally to define significant end-to-end system logic across all
hardware and facility interfaces involved (e.g., power subsystem,
launch control, flight sequence, malfunction detection and control,
etc). Hardware designators established in first- and second-level
detail schematics shall be used against the logic elements to depict
interfaces with facilities and equipment and maintain a traceable
relationship to the other schematic diagrams. For the time critical

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Block 10, Preparation Instructions (Continued).

function in any system (e.g., computer sequencing, launch control, staging, etc.) to be accomplished, time shall govern the layout of the drawing; i.e., reading from left to right begins with the initial functions and proceeds so that the operations sequence of all applicable hardware is clearly shown.

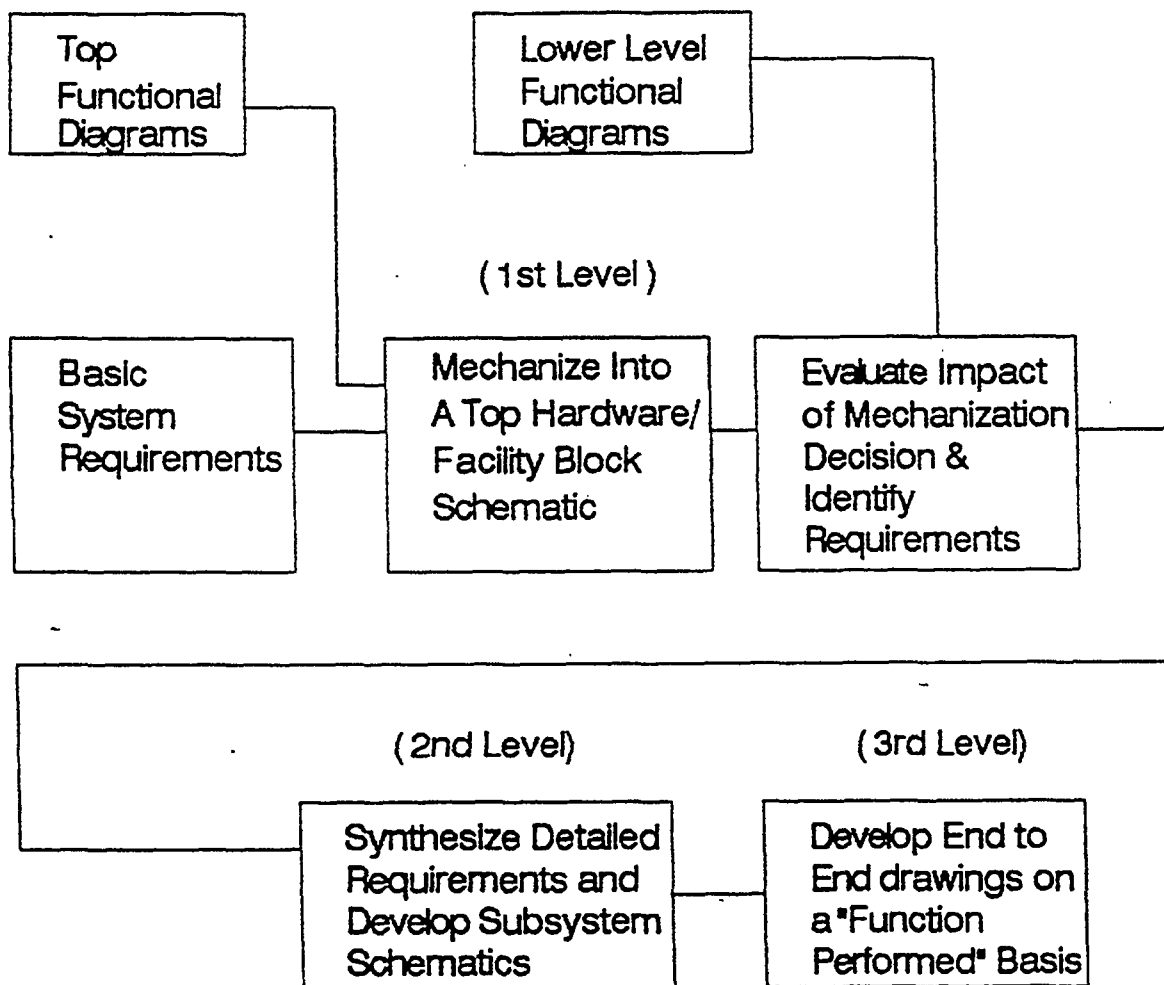   d. The third-level detail diagrams shall have significant wave forms, voltage levels, pressure, etc., appropriately noted in the diagrams.

FIGURE 1. Basic technique for developing schematic block diagrams