

## DATA ITEM DESCRIPTION

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1. TITLE Schematic Block Diagrams		2. IDENTIFICATION NUMBER 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) 910626	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) A/MICOM	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
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.  (Continued on Page 2)			
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.  (Continued on Page 2)			
11. DISTRIBUTION STATEMENT  DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.			

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**Block 7, Application/Interrelationship (Continued)**

7.3 This DID supersedes DI-S-3607.

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**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.

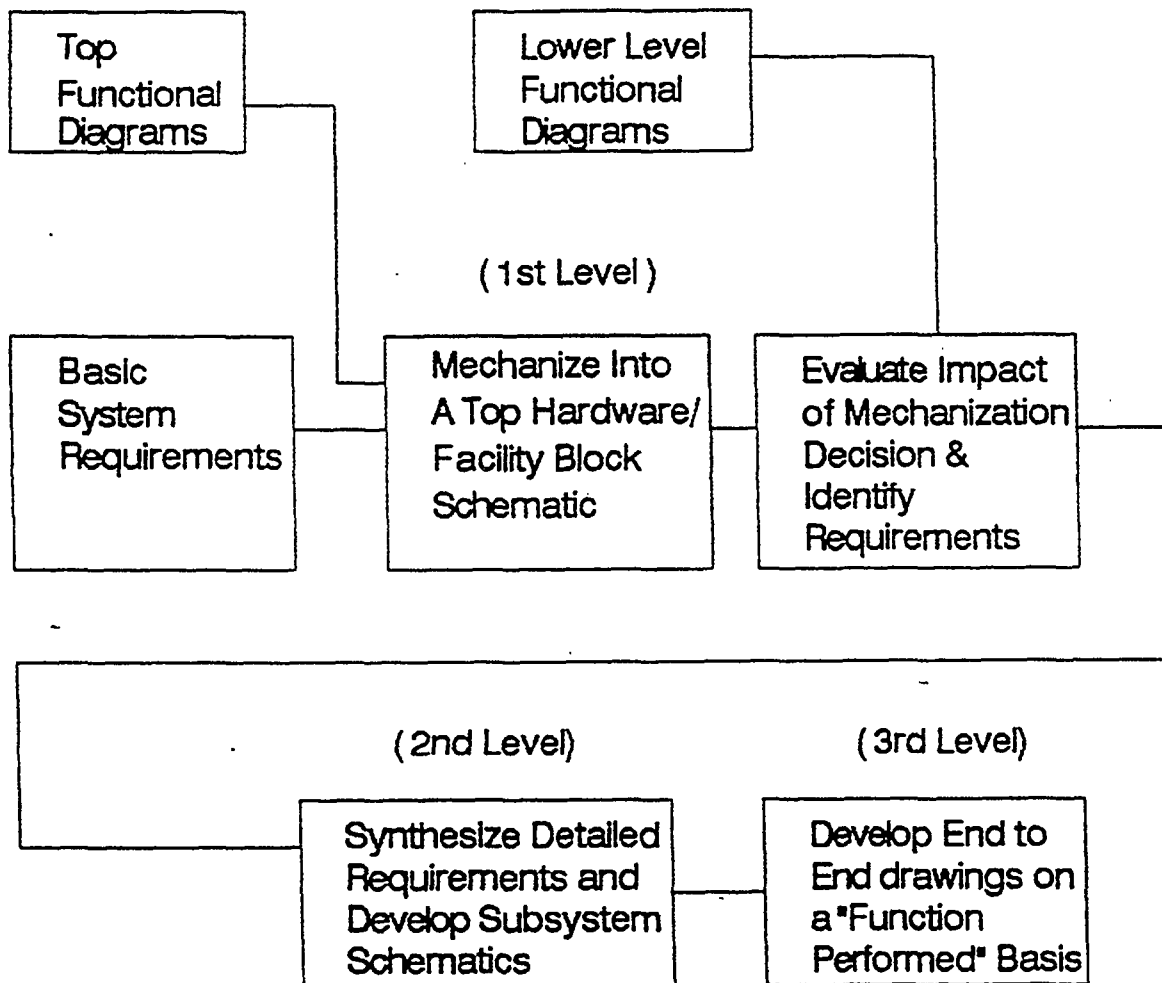


FIGURE 1. Basic technique for developing schematic block diagrams