DATA ITEM DESCRIPTION

Title: Tempest Control Plan

Number: DI-MGMT-81026A
AMSC Number: 9994
DTIC Applicable: N/A
Preparing Activity: CR
Applicable Forms: N/A

Approval Date: 20181109
Limitation: N/A
GIDEP Applicable: N/A
Project Number: MGMT-2018-044

Use/relationship: The Tempest Control Plan describes the management and spectrum control proposed for a development program for an equipment or group of equipments. The Tempest Control Plan is used to control and minimize potential Tempest problems.

1. This Data Item Description (DID) contains the format and content preparationinstructions for the data product generated by the specific and discrete task requirement as delineated in the contract.

2. This DID is applicable to all contracts requiring an Electromagnetic Compatibility Control Plan.

3. This DID supersedes DI-S-1828A.

Requirements:

1. Format. The Tempest Control Plan format shall be contractor selected. The format used for the initial submission shall be used for all subsequent submissions.

2. Content. The Tempest Control Plan shall contain the following:

2.1. Management control. This section shall identify the specific organization responsibilities, lines of authority, and control, and the contractor's plan (including milestones) for implementing control. The resumes of the responsible Tempest design engineering personnel shall be contained in this section.

2.2. Spectrum Control. This section shall contain a description of how all operationally intended signals from equipment(s) shall be limited to bandwidth and amplitude minimum levels consistent with the design requirements, interface considerations, and accepted engineering design practices. Specific items to be included, along with an explanation for each, are as follows:

2.2.1. Functional designator, purpose, and allocation of signal lines external to the equipment.

2.2.2. Signal amplitude.

2.2.3. Spectral content of signals.

2.2.4. Design constraints on external signals.

2.2.5. Proposed constraints on external signals.

2.3. Mechanical design. This section shall contain a description of how materials and construction methods selected for design provides inherent attenuation to compromising electromagnetic (and acoustic,if applicable) emanations which shall enable the equipment(s) to meet the requirements of the Tempest specification cited in the contract without conflictingwith other mechanical requirements. Specific items to be included,along with an explanation for each, are as follows:

2.3.1. Type and thickness of metal to be employed in the construction.

2.3.2. Construction technique(s)

2.3.3. Compartmentalization (RED and BLACK).

2.3.4. Filters and isolation amplifiers and buffers including mounting technique and type (mechanical design).

2.3.5. RED/BLACK consideration at equipment interface. Access, window, and ventilation ports.

2.3.6. Radio Frequency (R.F.) gasketing. Grounding concepts.

2.3.7. Mechanical design of any other factors which may affect the Tempest characteristics of the equipment(s).

2.4. Electrical/electronic wiring design. This section shall contain a description of the methods used in designing wiring layouts, both internal and external to the equipment(s), such that undesirable radiation and coupling effects are reduced to meet the Tempest requirements. Specific items to be included, along with an explanation for each, are as follows:

2.4.1. Functional designator, purposes, and location of critical internal and external signal lines.

2.4.2. Line designator and location of external connectors. Determination of line type

(RED or BLACK).

2.4.3. Physical separation (RED or BLACK).

2.4.4. Type of cabling.

2.4.5. Grounding concepts.

2.4.6. RED/BLACK power distribution considerations.

2.4.7. Design of any other wiring factors which may affect the Tempest characteristics of the equipment(s).

2.5. Electrical/electronic circuit design. This section shall contain descriptions that apply to all circuits that are capable of generating undesirable signal emanations. Specific items that shall be included, along with an explanation for each, are as follows:

2.5.1. Logic type,signal amplitude and signal rise and fall times.

2.5.2. RED interface circuitry input/output area) signal amplitude, signal rise and fall times, and design considerations.

2.5.3. Description and isolation characteristics of filters (including input/output impedances), isolation amplifiers and buffers.

2.5.4. Shielding and separation, proposed in the design and layout of multi-layer printed circuit boards.

2.5.5. Power supply design (RED/BLACK isolation).

2.5.6. Placement, grouping, separation, partitioning of circuits.

2.5.7. Grounding concepts.

2.5.8. Any other circuit design technique which may affect the Tempest characteristics of the equipment(s).

2.6. Research and Development Testing. This section shall contain a description of tests designed to verify the effectiveness of proposed control measures, if the tests are required by the contract.

Distribution statement A: Approved for public release. Distribution is unlimited.

End of DI-MGMT-81026A