# DATA ITEM DESCRIPTION

Form Approved
OMB No. 0704-0188



| 1. TITLE | 2. IDENTIFICATION NUMBER |
|---|---|
| COVERT CHANNEL ANALYSIS REPORT | DI-MISC-81345 |

3. DESCRIPTION/PURPOSE

3.1 The Covert Channel Analysis Report documents the results of a covert channel analysis on a trusted computing base (TCB).

| 4. APPROVAL DATE (YYMMDD) | 5. OFFICE OF PRIMARY RESPONSIBILITY (OPR) | 6a. DTIC APPLICABLE | 6b. GIDEP APPLICABLE |
|---|---|---|---|
| 930702 | G/C71 | | |

7. APPLICATION/INTERRELATIONSHIP

7.1 This Data Item Description (DID) contains the format and content preparation instructions for the data product generated under the work task described by 3.2.3.1.3, 3.2.4.4, 3.3.3.1.3, 4.1 and 4.1.3.1.3 of DOD-5200.28 STD, Department of Defense Trusted Computer System Evaluation Criteria.

7.2 This DID is applicable to any trusted computer acquisition that calls for a Covert Channel Analysis Report as specified by DOD-5200.28 STD, Department of Defense Trusted

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| 8. APPROVAL LIMITATION | 9a. APPLICABLE FORMS | 9b. AMSC NUMBER |
|---|---|---|
| | | G6935 |

10. PREPARATION INSTRUCTIONS

10.1 Source Document . The applicable issue of the documents cited herein, including their approval date, and dates of any applicable amendments and revisions shall be reflected in the contract.

10.2 Format. Document the Covert Channel Analysis as follows:

a. Cover Sheet. Shall contain Title, Contract Number, Procuring Activity, Contractor Identification, Acquisition Program Name, disclaimers (as provided by the procuring activity contracting officer), date, version number, security classification, and any other appropriate descriptive data.

b. Errata Sheet. Shall contain sheets delimiting cumulative page changes from previous versions.

c. Table of Contents. Shall contain paragraph numbers, paragraph names, and page numbers.

d. List of illustrations, diagrams, charts, and figures.

e. Glossary of abbreviations, acronyms, terms, symbols, and notation used, and their definitions.

f. Executive Summary, not to exceed two pages, that briefly describes the Covert Channel Analysis Report.

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11. DISTRIBUTION STATEMENT

Distribution Statement A: This DID is approved for public release. Distribution is unlimited.

Block 7, APPLICATION/INTERRELATIONSHIP (Continued)

Computer System Evaluation Criteria (TCSEC) for TCB Classes B2 (Structured Protection), B3 (Security Domains), or A1 (Verified Design) products and their equivalent systems.

7.3 The information required by 10.3 is required for all class products and their equivalent systems applicable to the DID as a whole. In addition, the information required in 10.3.1, 10.3.2, and 10.3.3 are necessary for various classes of products and their equivalent systems.

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Block 10, PREPARATION INSTRUCTIONS (Continued)

g. Introduction.
h. Body of the Report.
i. Attachments.
j. Appendices.
k. Bibliography. List reference sources and applicable documents
l. Subjective index..

10.2.1 Specific format instructions.

a. Abbreviations and acronyms shall be defined when first used in the text and shall be placed in the glossary.

b. Pages shall be numbered separately and consecutively using Arabic numerals. Blank pages shall be numbered.

c. Paragraphs shall have a short descriptive title and shall be numbered consecutively using Arabic numerals. Numbering schemes beyond the fourth level (e.g., 4.1.2.5.8) are not permitted.

d. Chapters shall begin on an odd-numbered (right hand) page.

e. Column headings shall be repeated on subsequent pages if tabular material exceeds one page.

f. Fold out pages shall be kept to a minimum.

g. Paper shall be standard 8 1/2 x 11 inches, white, with black type. The type font shall be standard 10 pitch pica or courier, 12 pitch elite, or equivalent font. Either blocked text (left and right justified) or ragged right (left justified only) shall be used.

h. At least one inch margins shall be provided all around to allow for drilling and binding.

i. Either single- or double-sided printing shall be used. If double-sided, the document shall be printed or typed head-to-head, front-to-back.

j. The report shall be provided in standard three-ring binders for ease of maintenance.

10.3 Content. The Covert Channel Analysis Report shall contain the following:

a. A brief description of the TCB on which the analysis is performed. It shall also provide a synopsis of the analysis performed. A series of charts, diagrams, lists and/or figures may be used to illustrate the major points.

Block 10, PREPARATION INSTRUCTIONS (Continued)

b. Identification and description of the techniques used to determine the existence of covert channels (e.g., actual measurement, engineering estimates, mathematical projections).

10.3.1 Classes B2 and above products and their equivalent systems. A Covert Channel Analysis Report is required at the B2 level and above. At this level, the analysis is restricted to covert storage channels. The following shall be included in this section:

a. A description of the identified covert storage channels and the determination of the maximum bandwidth of each identified covert storage channel.
b. Identification of trade-offs involved in restricting the use of identified covert channels.
c. A list of all the auditable events that may be used to detect the exploitation of a known storage channel.
d. The bandwidths of known covert storage channels whose use is not detectable by the TCB's auditing mechanisms.

10.3.2 Classes B3 and above products and their equivalent systems. At the B3 level, the scope of the covert channel analysis is expanded to include timing channels in addition to storage channels. The following shall be included in this section:

a. The identified covert timing channels and the determination of the maximum bandwidth of each identified covert timing channel.
b. The identified trade-offs involved in restricting the use of identified covert timing channels.
c. A list of all the auditable events that may be used to detect the exploitation of a known timing channel.
d. The bandwidths of known covert timing channels whose use is not detectable by the TCB's auditing mechanisms.

10.3.3 Class A1 products and their equivalent systems. At this level the Covert Channel Analysis Report shall include:

a. Formal methods in the analysis of the channels.
b. Justification of the continued existence of identified covert channels.