



TECHNICAL REPORT

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Configuration Identification for Digital Computer Programs

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JUNE 1981

CONFIGURATION MANAGEMENT

BULLETIN No. 4-2

Configuration Identification

for

Digital Computer Programs

NOTE: CMB4, published in 1971, which was originally conceived to cover CM for Digital Computer Programs is currently being revised and superseded with a family of CM Bulletins as follows:

CMB4-0 CM for Digital Computer Programs
(Will supersede CMB4)

CMB4 to be revised

CMB4-1 CM for Digital Computer Programs (Definitions)
(Supersedes Bulletin No. 4A)

CMB4A is available; will
be renumbered and re-
titled CMB4-1

CMB4-2 Configuration Identification for Digital Computer
Programs

Published June, 1981

CMB4-3 Computer Software Libraries

Published February, 1981

CMB4-4 Configuration Change Control for Digital Computer
Programs

To be drafted

Engineering Department

ELECTRONIC INDUSTRIES ASSOCIATION

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CONFIGURATION IDENTIFICATION FOR
DIGITAL COMPUTER PROGRAMS

PREPARED BY
G-33 DATA AND CONFIGURATION MANAGEMENT COMMITTEE

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May 1981

FOREWORD

EIA Bulletin No. 4-2 is presented by the Electronic Industries Association G-33 Data and Configuration Management Committee to provide identification guidelines pertaining to Configuration Management for Computer Resources. Document content was derived from both Government and Industry sources and compiled, coordinated and edited by the Computer Resources Task Group (CRTG) of the G-33 Committee.

Comments or suggestions may be forwarded to:

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We extend our thanks and appreciation to the members of the Computer Programs Subcommittee and the full G-33 Committee who have cooperated by providing their time and talent to contribute to this bulletin.

The G-33 Committee and its subcommittees will continue to devote their efforts to the advancement of knowledge and understanding of the subject of configuration management. Therefore, we invite your comments on this bulletin and welcome your suggestions concerning publication of additional information to aid contractor management in the effective conduct of configuration management.

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1. GENERAL

There are two aspects of configuration identification that must be considered. First, is the identification of the computer program, as described by technical data/documentation during its life cycle. Second, is the associated identification of the computer program by means of a tag, usually its name (mnemonic), and/or a unique number and other selective identification characteristics which correlate the specific code to its documentation and enable traceability back to the development requirements. The first aspect of this identification is an evolutionary process, which occurs over the life cycle of the computer program, while the second is usually accomplished by selecting and applying a scheme which ensures that each element is identified with its own unique identifier.

Contractors use such technical data/documentation to manage the development of computer programs on a day-to-day basis. Configuration management planning is based upon the establishment of reference points for specific milestones during a configuration item's life cycle. At these milestones, a "snapshot" of the data required for program management is made. The snapshot data are designated as configuration documentation (technical descriptions), while the milestone is designated a baseline.

2. COMPUTER PROGRAM LIFE CYCLE

The evolutionary aspect of identification occurs as each computer program proceeds through the many phases of its life cycle. There may be iterations of one or more of these phases before the end of the life cycle is reached. A typical sample computer program life cycle is presented in Figure 1.

The relation of the computer program life cycle phases in the classical bottom-up implementation to the more recent top-down implementation is shown in Figure 2. In the classical implementation, the phases are typically sharply defined and sequential, i.e., analysis, design, coding checkout, and unit test are completed before integration can begin. In the top-down implementation some of these activities are modified, the most noticeable being the integration phase. Since the computer program components are continually being integrated as development occurs, a separate integration phase is not required.

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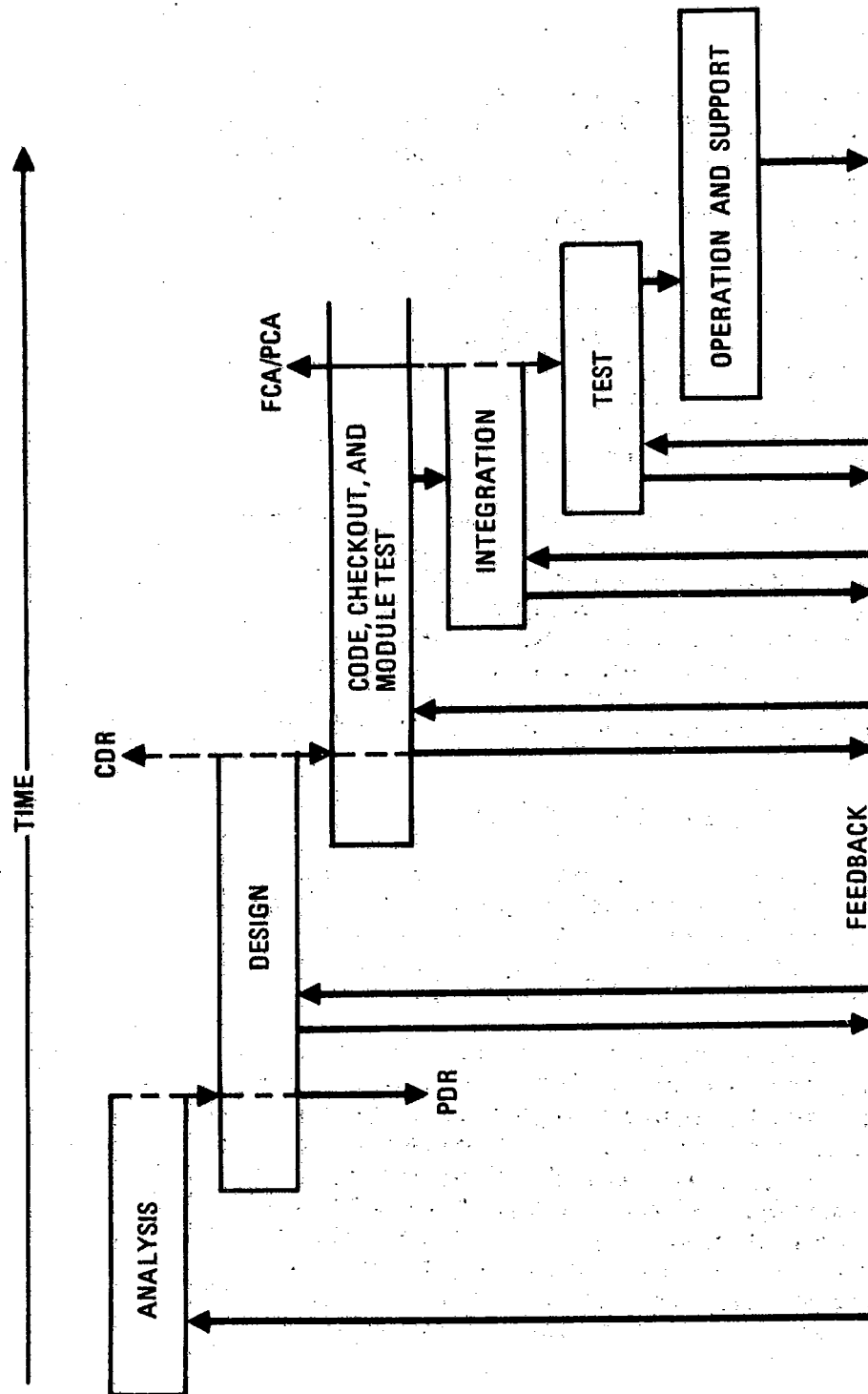


Figure 1. Computer Program Life Cycle