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Reviews and Configuration Audits

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Reviews and Configuration Audits

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REVIEWS AND CONFIGURATION AUDITS

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ACKNOWLEDGMENT

This EIA Bulletin No. CMB6-6, "Reviews and Configuration Audits," is presented by the Electronic Industries Association G-33 Data and Configuration Management Committee. It has been prepared to provide a textbook for use at the undergraduate level to teach the reviews and audits portion of the Configuration Management Curriculum being developed by the Education and Training Task Group.

Appreciation is extended to Ronald Van Buskirk, Hughes Aircraft, Space and Communications, principal author and editor. Appreciation is also extended to Bill Dean, Air Force Institute of Technology; Calvin Brown, Defense Systems Management College; Deborah Cornelius, USMICOM; Joyce Posik, Hughes Aircraft Co.; Jeffrey Duval, Air Force Systems Command, for their review and suggestions.

The figures in this text are based on samples provided by a number of defense contractors and by the Department of Defense. The writer of this text wishes to acknowledge the contributions of these sources; without their help it would have been difficult to generate the degree of detail provided. The samples provided have been modified in most cases to delete information elements peculiar to that company's system which could distract from the current illustration and/or to add data elements to improve the utility of the illustration. Therefore, there is no assurance by any of the companies, the EIA or by the authors that use of these exact forms will provide an adequate configuration control system.

FOREWORD

Configuration Management (CM) is the special name that has been coined to describe those specialized management practices used by industry and the Department of Defense (DoD) to define and control items (sometimes referred to as Configuration Items or CIs) in their inventories. The overall intent of configuration management is to support the establishment of a product service network for all items being developed and to assure the continued serviceability of the items as changes are made throughout their service life.

The configuration of an item is defined in both functional and physical terms. Functional requirements establish the performance the item is expected to achieve; the physical requirements define the specific design and appearance of the item to be built. In practice, an item being developed is described, and its development governed, primarily by its intended functional characteristics. Following development, however, an item being produced for customer use is primarily described and governed by its physical characteristics, although the functional characteristics continue to be controlled.

The practices we follow with configuration management are nothing startling or brand new. Basically, they are common sense management concepts that have been formalized into set practices to address the peculiarities of managing large inventories of units in multiple product lines. For convenience sake in describing the practices, CM is divided into four functional areas: identification, audits, control, and status accounting. Each of the four functions has a specific purpose and a specific area of emphasis.

- I. Common sense tells us to define what we want the product to do, or what it should look like, before we sign a contract to buy it. Through configuration identification, we obtain certain documentation that is used to define both the performance we desire from the design under development and the design of the interchangeable production items we want to buy. The documentation will also define the exact design for which a servicing capability must be established and maintained.
- II. If we are one of the contracting parties, common sense (and business law, too) tells us that the other party to the contract should not be allowed to change the contract without informing us of all the considerations and obtaining our agreement to the change. Through configuration control, we require that the full impact of a proposed change be determined before we make a decision on each change to the contractual (baseline) configuration identification. We are also constraining the design activity from making changes without the concurrence of the management activity.
- III. If we want to manufacture a consistent product and have the capability to service it, common sense tells us that we must have a means of recording and tracking the production definition (paper) used to manufacture the unit as well as the

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configuration of each unit our company produces. Through **configuration status accounting**, we follow up on the results of other configuration management activities to keep track of the current configuration identification documents, the current configuration of the delivered units, the status of changes being reviewed, and the status of the implementation of approved changes.

- IV. If we have specified some requirements that the product must meet, common sense tells us that we must check at some point in time to be sure that those requirements are met. Through **configuration audits**, we verify that the design activity has proven that the items, as designed, meet or exceed the specified performance and that the design specified in the configuration documentation exactly matches the configuration of the (production) unit being audited and about to be delivered.
- V. This text will cover the details of the configuration review and audit functions. Identification, control, and status accounting are covered in other textbooks. It is the intent of the authors that this review and configuration audits text will serve a broad general population of personnel engaged in development, manufacturing, and distribution of both commercial and military items. The figures in this text provide illustrations of practices that might be required and sample formats that might be used in accomplishing reviews and audits. You will have to make the decisions about the exact content and practices appropriate to your project and/or facility based on the information contained in this text.
- VI. The general concepts herein apply during the design and delivery of products to various types of customers and include policies and procedures which must be monitored for the continued support and service of your products. The Department of Defense (DoD) represents a major customer of such goods and services; consequently, a highly structured program utilizing configuration control along with the related configuration management disciplines exists in the environment of military item acquisition. The author, however, has tried to avoid too much emphasis on DoD-related systems and requirements; where specific DoD requirements are discussed, an attempt has been made to indicate that such is the case.

OBJECTIVE OF THE COURSE

The objective of this course is to provide an in-depth understanding of the concepts and principles involved in the Review and Configuration Audit process. It is intended for an individual who has completed a basic introductory course in CM and who requires the deeper knowledge of a CM practitioner rather than a superficial overview.

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CHAPTER 1

INTRODUCTION

What are technical reviews and audits? The technical reviews (sometimes referred to as design reviews) and product audits described in this text are conducted to help ensure a controlled evolution of the product from its conceptual to production phase. They also help assure that the design and final product conform to approved requirements defined in specifications and engineering drawings.

Technical review and product audit practices described in this text are based on Government requirements. This emphasis is made because the Department of Defense (DoD) represents a major customer of goods and services and because the referenced specifications and standards reflect good business practices refined over many years of usage. For commercial companies producing items for other companies or the public, many of these reviews and audits may not be formally implemented. They are, however, an integral and essential part of the systems engineering process. Technical reviews and audits can range from very formal reviews by customer and contractors to very informal technical reviews concerned with product and/or task elements that involve only internal company management and product development personnel. All reviews and audits share the common objective of evaluating the technical adequacy of the evolving design and its ability to meet known technical requirements.

Familiarity with the purpose, scope and format of these reviews and audits is useful to any engineer or manager in commercial or non-government product development. While the formal structure and complexity of these reviews or audits may not apply to companies supplying consumer products, these reviews and audits represent good engineering and business practices. Each review and audit should be identified, scheduled, and scoped in the development of any new product. The material given here will help consumer-oriented companies to identify minimum requirements that must be met. It will also allow them to tailor technical reviews and audits to their cost and schedule objectives and maximize their product quality, safety, and customer satisfaction.

Technical reviews and product audits are a series of meetings, usually held internally by the company during the design and development process. The purpose of these meetings is to critically examine the product requirements, design, configuration, design documentation, test program planning, test data, and product configuration. In specific cases, the customer participates.

Why do we need technical reviews and audits? As the acquisition of a product progresses through its life cycle, the design of the item becomes more mature and, therefore, more defined. The systems engineering process helps identify the major subsystems and Configuration Items (CI) for the system and flows down the stated operational requirements to each CI, so that the CI can be designed in such a way as to fulfill its part of the system requirements. At appropriate and designated times in the development process, the requirements for each CI are baselined and its configuration identification placed under

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configuration control. The progress of the development of the requirements and of the detailed design and the assessment of the ability of the CI design to achieve the stated requirements must be continuously monitored. This is accomplished by conducting technical design reviews and configuration audits as system and CI designs evolve. The reviews and audits are the means of monitoring the progress and readjusting the development of the system design if required. Design reviews are a part of any technical performance measurement program. Design reviews must cover all related design and design specialty disciplines.

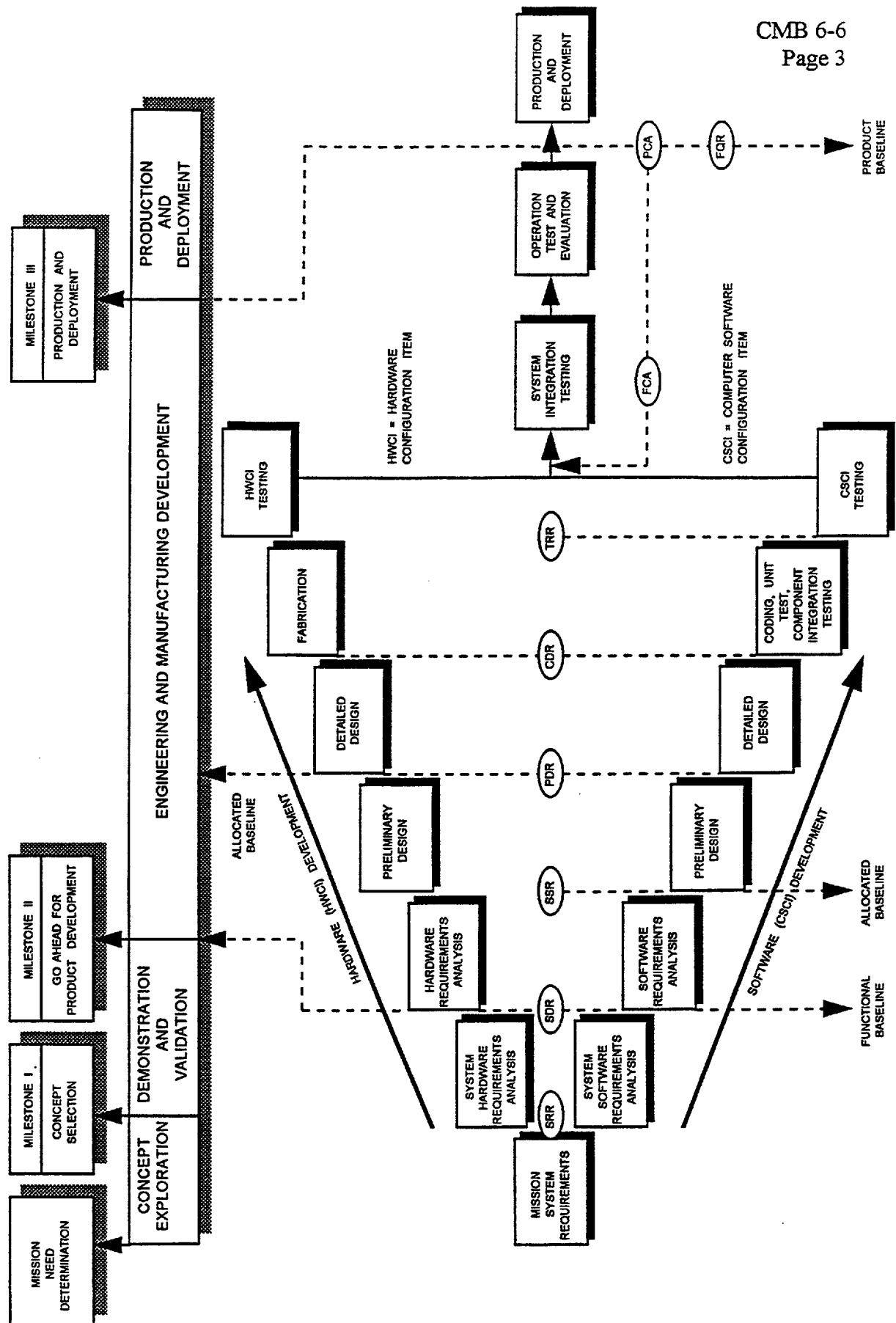
Figure 1-1 illustrates the relationship of technical reviews and configuration audits to the system development cycle. Although the systems engineering process is iterative and cannot be precisely related to acquisition phasing, the location of design reviews depicted on Figure 1-1 indicates the normal timing for a given system by acquisition phase.

The precise scheduling of all formal technical reviews and audits for each configuration item or aggregate of configuration items will normally be included in the System Engineering Management Plan (SEMP) and in statements of work for the contracts. The need for formal reviews is specified by the Government in MIL-STD-1521B, "Technical Reviews and Audits for Systems, Equipments, and Computer Software." The requirements of this standard should be tailored to such factors as program complexity, level of inherent technical risk, number of participating contractors, etc. For a non-complex system, some reviews may not be required, or if required, may be limited in scope. This tailoring should result in development contracts specifying application of a tailored MIL-STD-1521B that reflects a limited-scope technical review effort.

When configuration audits are specified by the Government in the Statement of Work (SOW), the requirements of MIL-STD-973, Configuration Management are imposed. As with technical reviews, the scope and application will be tailored to the product and its complexity. The number and depth of formal technical reviews and audits should also be dependent upon the CI technical risk level (new design versus commercially available, or the degree of any modifications). For example, a newly developed item may require the majority of the review topics/items and audits suggested in MIL-STD 1521B and MIL-STD-973. A commercially available configuration item with the appropriate documentation (i.e., verified test results, specifications, drawings, etc.) may require reviews or audits limited to the additional requirements defining its use in this system and its interfaces. In the case of modified designs, one must consider the degree of the modifications and effect on technical risk; reviews and audits would normally be limited to the modifications and their interfaces.

Although no two programs will have exactly the same design review schedule, they will all share common design review requirements.

**FIG. 1-1 SYSTEM DEVELOPMENT CYCLE
WITHIN THE SYSTEM LIFE CYCLE**



The technical reviews are an integral part of the customer oversight of the contractor's systems engineering process. Again, these reviews occur at points during the design development when it is determined that the evolving technical design has completed a distinct stage of its development and that the products of this stage should be reviewed before the development proceeds into the next stage. The reviews are used to provide management and/or the customer the visibility and technical understanding required so that they can be assured that the system design appears to be in compliance with the specified requirements.

Configuration management becomes involved in the early reviews to (1) make sure that the draft requirements documentation (normally specifications) defines the expected product performance before the documentation is baselined, and (2) monitor the implementation of the contractor's configuration management processes to assure that proper controls are being invoked. At the reviews occurring later in development, configuration managers are primarily concerned about design problems which may lead to engineering changes to the baselined documents.

Technical reviews provide oversight during the development process and are primarily concerned with requirements, whereas the configuration audit process involves the examination and verification of the CI's conformance to its approved functional and physical characteristics. A series (one for each CI, and sometimes one on the overall system) of technically-oriented configuration audits is conducted near the conclusion of the development program, or in some programs initial production, to verify achievement of the specified CI requirements and to validate the documentation (by comparing the CI with its technical documentation) defining the product design.

The schedule for technical reviews and audits is extremely important. If they are conducted too early, the item for review will not be adequately defined. Conversely, if the review is too late, the program commitments could have been made erroneously and correction will be both difficult and costly. For planning purposes, a good method for scheduling technical reviews is to relate them to the documentation requirements. For example, schedule a Preliminary Design Review (PDR) after the hardware development specifications (Type B) or software design documents and software test plan are available, since the essence of the PDR is to assess the contractor's approach to meeting the requirements of these documents. Scheduling of audits is dependent not only on documentation availability, but also on hardware/software availability and the completion of the acceptance and qualification tests.

The time frame for reviews and audits will vary depending on the requirements associated with a particular program. The schedule for each review or audit may be requested from the offeror as part of the proposal, or as part of the System Engineering Management Plan (which can be part of the proposal). But as stated previously, the timing of reviews and audits is dictated by the program status.

Technical reviews and audits - General requirements. Technical reviews and configuration or product audits are the keys to assuring conformance to approved requirements documents and approved baselines. Whether required by the customer or internal company management, they are formalized techniques for producing a hardware or software product that meets customer requirements or needs. They help keep everyone on track in terms of agreed to specifications, prove that the product meets those specifications, warns management of trouble spots so that corrective action can be taken, and result in a smooth and effective program. Of course, as with any of the practices described in this text, intelligent and cost effective decisions are needed to tailor the right balance of control and monitoring with risk, schedule, and cost. Regardless of how much or how little effort in the review and audit process is selected by the program and configuration managers, a conscious decision based on the material presented in this chapter is essential for a good program and product.

Again, the principal function of technical reviews and audits is to provide customer and company management with data for determining the design status, identifying problem areas, approving production of hardware, conducting trade-off studies, requesting changes to specifications, and establishing test programs involving the different types of equipments that are combined to form a system.

Technical reviews and audits can range from very simple, straightforward meetings to complex and expensive operations involving dozens of people. More complex reviews and product audits may require advance preparation beginning months before the meeting and continuing for months after the review or audit is completed. Of course, this effort is concurrent with the routine tasks of analysis, design, development, testing, and fabrication. Design reviews are enormously important to the successful design, development, and production of new equipment because in preparing for the review, both the company's and customer's engineers must challenge and justify all key aspects of the design. Thereby, they may detect any serious potential defects before production or field operation of the equipment. The results of these reviews can be numerous tasks to be completed, extensive data preparation, and reports on the status of action items issued to correct hardware or data deficiencies. Some of the areas examined during these reviews are the following:

1. Correct parts applications, including adequate derating and safety factor margins.
2. Alternative designs that may be simpler, less expensive, more reliable, or better performing.
3. Performance characteristics.
4. Reliability analysis.
5. Ease of fabrication, maintenance, and servicing.
6. Ability to survive exposure to the anticipated environment: vibration, launch, shock, salt spray, high humidity, high vacuum, fungus, micro-meteoroid impacts, etc.
7. Need for redundant circuits or components for critical areas.
8. Interface compatibility with other equipments in the system.
9. Identification and evaluation of critical failure modes.
10. Electromagnetic or mechanical interference with other equipments in the system.

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Remember that preparation for the design reviews and audits occurs during the entire project and not for just the period preceding each meeting. The purpose of the preparation period before the design review is to schedule, organize and collect data to substantiate what has already been done during the project effort. If the requirements have not been built into the project all along, then they cannot be put there during preparation for the review. If a company is finding that many tasks have to be completed on an emergency basis before the meeting, then management should review project operations and prepare new guidelines and procedures for eliminating these deficiencies.

Another important point to keep in mind is that satisfactory completion of each review and audit meeting results in customer or project authorization to proceed to the next stage of the product development or production. Failure to satisfy the customer or management may result in schedule delays until the deficiencies at each stage are corrected. For example, in some projects, a written directive from the customer is required before the company can begin prototype fabrication. Even though the parts, facilities, and personnel are ready to go, these cannot legally be put into use until authorization is received by the contracts administrator. Any delay at this point can result in wasted or unproductive labor and unnecessary standby expenses that must inevitably cause potential cost overruns and delivery schedule problems.

An extremely important aspect of reviews and audits is the corrective action items that result. These items are usually short tasks that must be completed by a project member to correct a design, hardware, or data deficiency. The date for completing the action item is always recorded, and an individual is given responsibility for overseeing all the action items and personally reviewing their status. When an action item is not being completed as planned, he or she follows it up by determining the problems involved and by taking steps, such as assigning additional people, to expedite its completion. The following are examples of action items:

1. To redesign an amplifier to provide higher gain because its performance is marginal with the current value.
2. To revise a procedure to incorporate additional steps for a test.
3. To find a more reliable transistor for a circuit.
4. To add internal test points to the equipment.
5. To add a redundant switching circuit to a key component because of its critical nature to the successful operation of the equipment.

An example of the action item form is provided in Chapter 4.

CHAPTER 2

ACQUISITION PROCESS

Throughout any design process, systems engineering is used to identify and define the functional characteristics of system hardware, software, facilities, data, and personnel. It is an interactive process of analysis and design, with the objective of satisfying an operational mission need in the most cost-effective manner. The systems engineering process is used to analyze mission requirements and translate them into design requirements at successively lower levels.

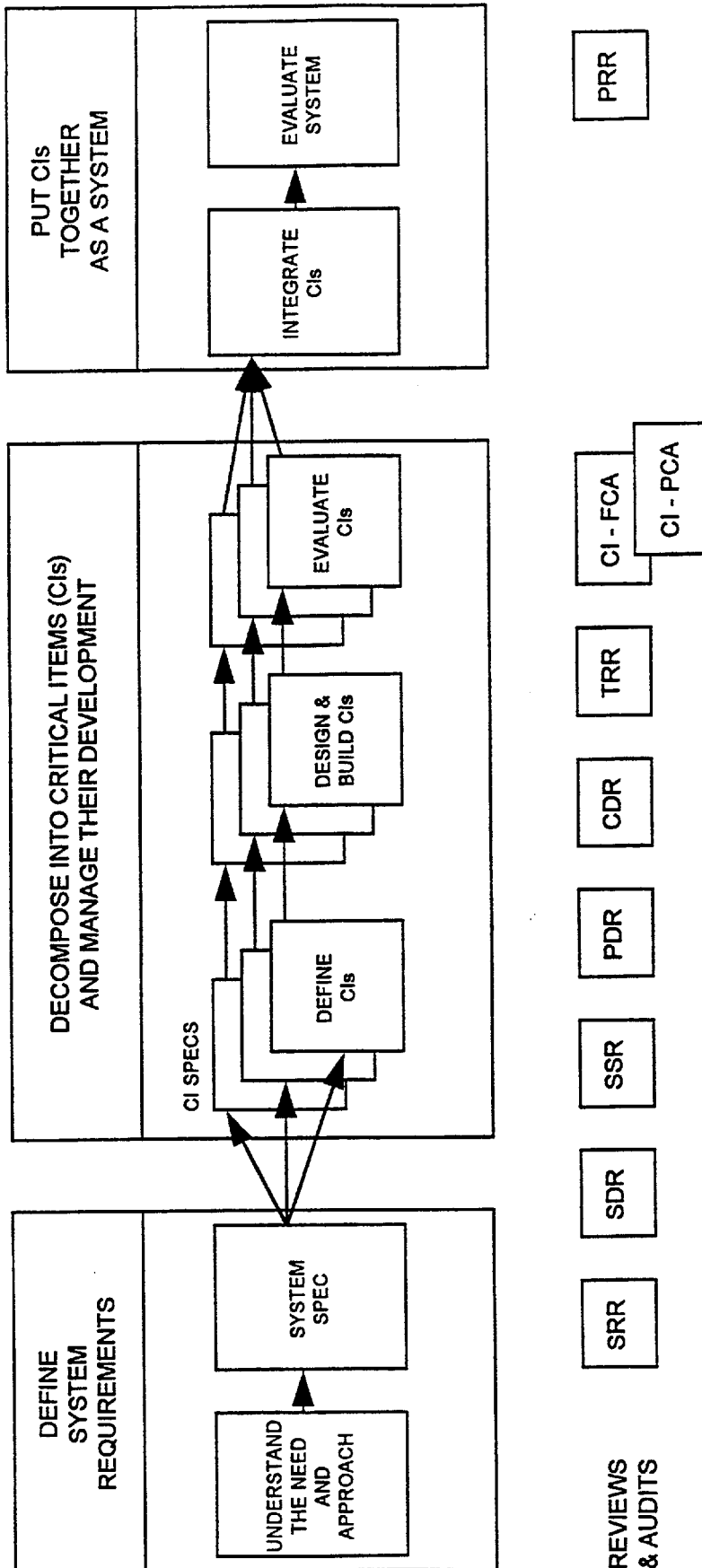
This chapter discusses systems engineering in the context of the Department of Defense (DoD) acquisition process. Included is a description of government acquisition policies and the life cycle of a typical system as it relates to the systems engineering process.

System Life Cycle. The acquisition process for major defense systems is depicted in Figure 1-1. An example of how this would be applied to a particular acquisition is shown in Figure 2-1. Generally, within DoD, major systems are defined as systems anticipating funding levels of more than \$200 million in research, development, test, and evaluation or \$1 billion in procurement. The process begins within each service's ongoing mission area analysis effort which extends until the acquisition decision memorandum (Milestone 0) certifying mission need. The program then enters the Concept Exploration (CE) phase, during which all reasonable system alternatives are explored. The next phase is Demonstration/Validation (D/V), during which the preferred system concepts are selected and tested to identify risk areas and demonstrate that all experimental efforts have been completed. The program then enters the Engineering & Manufacturing Development (EMD) phase, where system detailed design and test are performed. Following the Milestone III review, the system enters the Production phase, during which the actual production takes place, prior to the start of the Operation and Support phase. In the Operation and Support phase, modifications and product improvements are usually implemented.

At the end of each of the first four phases, the need for the program is recertified by the Secretary of Defense (SECDEF) or the Service Secretary, as required, before additional resources are authorized. Specifically, at each review, the decision authority can choose to continue the present phase, proceed to the next phase, or cancel the program. In special cases the SECDEF can also direct a DoD program to omit CE and/or D/V and proceed with EMD.

Although this system life cycle is based upon government requirements, it may also be applied to commercial programs, because it represents the logical progression of an item's development from its concept through production.

FIG 2-1 REVIEWS & AUDITS ARE PART OF A SYSTEMIC PROCESS



• THE MISSILE ITSELF NEEDS TO BE EVALUATED TO ENSURE IT MEETS SYSTEM SPECIFICATION REQUIREMENTS, DESIGN DOCUMENTATION, AND IS READY FOR PRODUCTION IN LARGE QUANTITIES

• CIs NEED TO BE EVALUATED TO ENSURE THAT THEY MEET THEIR SPEC REQUIREMENTS AND ARE BUILT TO ACCURATE DESIGN DOCUMENTATION

• CIs NEED TO BE DESIGNED AND MANUFACTURED

• MISSILE REQUIREMENTS NEED TO BE BROKEN DOWN (DECOMPOSED) INTO MANAGEABLE UNITS:

- WARHEAD, HWCI
- PROPULSION, HWCI
- GUIDANCE, HWCI
- GUIDANCE, CSCI

• NEED A MISSILE WITH SPECIFIC CAPABILITIES

• NEED A MISSILE

EXAMPLE;

Concept Exploration/Definition (CE) Phase. Concept Exploration is initiated when the Secretary of Defense (SECDEF)-approved Mission Need Statement (MNS) is included in the service Program Objectives Memorandum (POM) and extends to the program decision authorizing initiation of the D/V phase. A Program Decision Memorandum (PDM) documents the SECDEF endorsement of a proposed new start and normally indicates the program's designation as a major system. During CE, system concepts are defined and selected for further development.

The government program office, working through private industry and DoD research and development agencies, identifies all reasonable system alternatives that may satisfy the mission need. The Program Manager then selects for further development those that meet cost, risk, schedule, and readiness objectives.

Alternative system design concepts are explored through competitive, parallel, short-term contracts; alternative methods of logistic support are examined through logistic support analysis; and producibility is analyzed through producibility engineering and planning. Contractors are provided with operational employment intentions, mission performance criteria, and life cycle cost (LCC) estimating factors. Affordability is assessed and early gross life cycle cost estimates of the competing alternatives are made. Design to cost constraints also dictate producibility/production efficiencies required.

The industry's systems engineering activity during this period is based on system requirements provided with the statement of work (SOW). These requirements are translated into alternative design concepts through functional analysis, synthesis, and trade-off analysis. For each segment of the design concept, allocated requirements, interface identifications, and technical budgets are produced as systems engineering products. The industry output is reviewed by government program management for:

- ▶ Capability of the proposed system to meet the mission need and program objectives, including resources required and associated risk levels
- ▶ Benefits to be derived by trade-offs among technical performance, operational effectiveness and suitability (system effectiveness), life cycle cost (including age and operation), and schedule (time to develop, manufacture, and field)
- ▶ Relevant development experience and performance record of each competitor and the competence of competitors' key systems engineering and design personnel.

System descriptions, and associated risk, cost, and development time estimates, are used by the government to establish a functional baseline, usually in the form of a system specification (Type A) (refer to MIL-STD-490A). This baseline should not constitute selection of a specific design concept, but rather identification of feasible, affordable ranges of cost and system effectiveness. Proper identification is essential to an effective acquisition

strategy since real competition requires a system specification which can be met by more than one design concept.

Demonstration/Validation (D/V) Phase. The D/V phase Request For Proposal (RFP) contains the functional baseline, management approach, and the SOW describing the scope of the contractor effort. After proposal evaluation and contract award, systems engineering becomes a contractor effort, often by two or more contractors.

The objective in the D/V phase is to identify and analyze major system alternatives, examine risky subsystems, and determine whether to proceed with Engineering Manufacturing Development (EMD). The product of this phase is normally the allocated baseline, a set of firm and realistic subsystem performance specifications that meets the operational and support requirements. The allocated baseline is also referred to as the "design requirements," "design to", or "development" baseline. It incorporates technological approaches developed to satisfy requirements established at the system level by the functional baseline.

As the systems engineering process progresses from the functional to the allocated baselines, required configuration items (CIs) are identified. The process includes trade-off analyses to ensure that the system will satisfy the functional baseline with the best possible balance of LCC, schedule, and system effectiveness. Logistic support analyses are conducted to identify and analyze logistic support alternatives for the system. The selected support alternative is documented in the Integrated Logistics Support Plan (ILSP).

Elements of the proposed system are continually assessed to identify areas of technical uncertainty that must be resolved in later program phases (risk assessment). Critical components may be prototyped to reduce risk. A System Design Review (SDR) is held at the end of the D/V phase (or early in the EMD phase) to review the preliminary allocation of requirements to hardware CIs, data CIs, computer software CIs (CSCI), personnel, and facilities.

Engineering Manufacturing Development (EMD) Phase. To initiate the EMD phase, the government selects the best proposal(s) and negotiates a development contract with the contractor(s). More than one contractor may be retained through EMD to maintain the competitive environment of D/V, reduce program risk, or provide multiple production sources, as the acquisition strategy dictates. The purpose of the EMD phase is to provide the design documentation necessary to go to rate production and the Integrated Logistics Support (ILS) documentation necessary to field rate production and fully support the system. This is done by completing detailed design and demonstrating that reliability, producibility, supportability, and performance requirements have been met. Continual assessment of risk using technical performance measurement and cost schedule control system criteria is also characteristic of this phase. The EMD design activity is based on development specifications.

The Preliminary Design Review (PDR) is held prior to the start of detailed design. It provides approval of the development specifications (Type B). The Software Specification Review (SSR) normally follows the SDR but precedes the PDR for computer software CIs.

The SSR establishes the allocated baseline for software CIs. Logistic Design Reviews may also be conducted as an integral part of these reviews.

A Critical Design Review (CDR) is conducted for each CI before the design is released for production of test articles or prototypes. These CI CDRs may culminate in a system CDR examining the completeness of preceding CDRs and ensuring adequacy of interfaces among the CIs.

Systems engineering activities change considerably in nature after CDR and consist primarily of resolving interface compatibility problems and solving technical problems discovered during development testing. Following the CDRs, the Test Readiness Review (TRR) is also held for software CIs to review the contractor's readiness to begin system CI testing. Systems engineering activities also include auditing engineering documentation (drawings and specifications), auditing system test activities (test procedures, set-ups, and data), configuration control activities, and completion of the verification process.

The EMD phase provides verification of operational effectiveness and suitability before deployment by testing the system or equipment in its intended operational and support environment. The test results are evaluated in reviews and audits intended to confirm that the system design is sufficiently mature to proceed with production and support activities that initiate operational use.

The Functional Configuration Audit (FCA) is conducted on each CI before Milestone III. The CI must represent the configuration released for production and demonstrate compliance with the development specification. Each CI is subjected to a Physical Configuration Audit (PCA). The PCA may be accomplished in the EMD phase, but is usually done in the beginning of the Production phase on the first deliverable CI that is built on production tooling. Once it has been established that each production article is built in accordance with the product specifications, the PCA is complete. After the PCAs for all the CIs are completed, a system-level PCA is accomplished and the product baseline for the system is established. A system level Functional Configuration Audit using operational testing and evaluation information is held at the end of the EMD phase or at the earliest time that adequate test results become available.

The output of EMD is a tested design that meets contract requirements and the documentation necessary to enter the Production and the Operation and Support phases, including product, process, and material specifications (Types C, D, and E), Production Plan, ILSPs, and an RFP for the Production phase. Leader and follower contractors are selected and second source qualification procedures are established where called for by the program's acquisition strategy.

Production Phase. The primary objective of the Production phase is to produce and deliver an effective, fully-supported system at an optimal cost. In a production run where many items are to be delivered, manufacturing is usually accomplished in two segments. The first segment starts with low-rate production of initial product batches or blocks. During the

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second segment, the rate increases to peak rate production as necessary changes resulting from initial operational use, experience, review, audits, testing, and production experience are incorporated.

Operation and Support (O&S) Phase. The O&S phase starts with deployment of the system and continues until disposal (which marks the end of the system life cycle). The major activities during this period include introducing modifications and product improvements as necessary throughout deployment as well as supporting the fielded system with items such as tools, spare parts, and technical documents.