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ACQUISITION STRATEGY *Guide*

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This guide provides, in a single source, outlines the factors that a program manager and the team should consider in structuring, developing, and executing an acquisition strategy. A process shows the development and execution of the acquisition strategy together with criteria for evaluating a proposed strategy. In addition, two samples of the Acquisition Strategy Report (ASR), in Appendix C, reflect a critical part of the acquisition strategy.

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PREFACE

The Department of Defense policy requires that military Program Managers (PMs) develop a tailored acquisition strategy that will provide the conceptual basis of the overall plan that a PM follows in program execution. A strategy that is carefully developed and consistently executed is one of the keys to a successful program. It is a difficult and challenging task to blend the multitude of requirements for a system acquisition into an acquisition strategy that also represents a consensus among the organizations that influence or are influenced by the program.

The purpose of this Guide is to provide, in a single source, information that PMs should find useful in structuring, developing, and executing an acquisition strategy. A process for developing and executing an acquisition strategy is provided together with criteria for evaluating a proposed strategy. However, this Guide alone does not provide the PM with a definitive acquisition strategy for ones particular program. Well informed, educated, and innovative applications and judgments concerning the particular mission need are necessary to structure a successful acquisition strategy. PMs should continue to seek guidance, data, and assistance from available sources as they prepare and revise their acquisition strategy.

Thanks are due to Mr. Norman Bull and Mr. Carleton Cooper of Information Spectrum, Incorporated, for extensive support in preparing the third edition to this Guide under contract DAHC35-93-D-0017. Thanks are also due to those members of the Defense Systems Management College faculty who reviewed that update during its development and provided constructive suggestions for improvement.

The Defense Systems Management College is the controlling agency for this Guide. Comments and recommendations relating to the text are solicited. You are encouraged to mail such comments to us on the pre-addressed tear sheet located at the back of this Guide.

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INTRODUCTION

1.1 DEFINITION

An acquisition strategy[1] is a business and technical management approach designed to achieve program objectives within specified resource constraints. It is the framework for planning, organizing, staffing, coordinating, and leading a program. It provides a master schedule for research, development, test, production, fielding and other activities essential for program success, and for formulating functional strategies and plans.

The Program Manager (PM) is responsible for developing and documenting the acquisition strategy, which conveys the program objectives, direction, and means of control, based on the integration of strategic, technical, and resource concerns. A primary goal in developing an acquisition strategy is the minimization of the time and cost of satisfying an identified, validated need; consistent with common sense, sound business practices, and the basic policies established by Department of Defense Directive (DoDD) 5000.1.

The strategy is initially structured during the Concept Exploration (CE) phase of the program to provide an organized and consistent approach to meeting program objectives within known constraints. The acquisition strategy is documented in the Integrated Program Summary (IPS), Single Acquisition Management Plan, or similar form starting at Milestone I. Once developed, the acquisition strategy is modified as necessary throughout the acquisition cycle.

A good acquisition strategy is realistically tailored to the program objectives and constraints, and is flexible enough to allow innovation and modification as the program evolves. The strategy balances cost and effectiveness through development of technological options, exploration of design concepts, and planning and conduct of acquisition activities. These elements are directed toward either a planned Initial Operational Capability or retention for possible future use, while adhering to a program budget. The strategy should be structured to achieve program stability by minimizing technical, schedule, and cost risks. Thus the criteria of realism, stability, balance, flexibility, and managed risk should be used to guide the development and execution of an acquisition strategy and to evaluate its effectiveness. The acquisition strategy must reflect the interrelationships and schedule of acquisition phases and events based on a logical sequence

[1] A closely aligned program document is the Acquisition Plan (AP) required by the Federal Acquisition Regulation/Department of Defense Federal Acquisition Regulation Supplement (FAR/DFARS) that focuses on procurement/contracting processes to implement the acquisition strategy. The performance of acquisition planning as documented in the AP is the responsibility of the PM. The plan is prepared, coordinated and updated by the contracting officer under procedures established by the head of the contracting activity, with approval of the AP as determined by the Component's Senior Procurement Executive. Reference DFARS 207.103 (f) and Department of Defense Instruction (DoDI) 5000.2 pages 11-D-1-7 and 11-D-2-3. The similarity of names is a potential source of confusion between the two documents.

of demonstrated accomplishments, not on fiscal or calendar expediency.

1.2 BACKGROUND

Office of Management and Budget (OMB) Circular No. A-109 (now replaced by OMB A-11), which applies to all federal executive agencies, states that an acquisition strategy should be developed and tailored "as soon as the agency decides to solicit alternative system design concepts that could lead to the acquisition of a new major system." Further, it states that steps should be taken to "refine the strategy as the program proceeds through the acquisition process." In general terms, the Circular describes a variety of considerations that such a strategy might include.

The Department of Defense (DoD) requirement for an acquisition strategy is contained in DoD Regulation 5000.2-R. Development, approval, and execution of the acquisition strategy constitute an essential part of the program milestone review process. The initial Acquisition Strategy is part of the Milestone Review documentation approved by the Milestone Decision Authority (MDA) at Milestone I prior to program initiation. Such approval is critical to the program, for it is a prerequisite to issuance of the Acquisition Decision Memorandum and/or release of the formal solicitation for the next program phase. On an exception basis, the milestone review authority may require a formal review meeting on the Acquisition Strategy prior to approval.

1.3 ACQUISITION IMPROVEMENT INITIATIVES

Past and present Administrations and Congresses have taken many initiatives to improve the acquisition of defense systems. Several such actions occurred during the 1980s: the Acquisition Improvement Program in DoD, the Federal Acquisition Regulations (FARs) from the Office of Federal Procurement Policy, the Packard Commission Report, and the Defense Management Review directed by the President. Some of the important legislation related to the above as well as later reviews and developments include the following:

- Department of Defense Authorization Act, 1986, P.L. 99-145 (defines the terms "procurement command" as they apply to each service).

- Military Retirement Reform Act of 1986, P.L. 99-348 (creates the position of Under Secretary of Defense for Acquisition with specific responsibilities stated in later amendments).

- National Defense Authorization Act for Fiscal Year 1987, P.L. 99-661 (states preference for non-developmental items (NDIs) and establishment of baseline descriptions).

- National Defense Authorization Act for Fiscal Years 1990 and 1991, P.L. 101-189 (quantification of articles procured as "Low Rate Initial Production").

- National Defense Authorization Act for Fiscal Year 1991, P.L. 101-510, contains Defense Acquisition Workforce Improvement Act (identifies education and training needs of persons serving in acquisition positions in the DoD; and updates functions of Component Acquisition Executives).

- National Defense Authorization Act for Fiscal Year 1993, P.L. 102-484, (addresses national technology and industrial base, reinvestment, and conversion; and national defense manufacturing technology program).

• Federal Acquisition Streamlining Act (FASA) of 1994, P.L. 103-355 (provides numerous procurement reform measures).

• Information Technology Management Reform Act of 1996 (Clinger-Cohen Act) P.L. 104-106 (requires federal agencies to improve the way they select and manage information technology resources).

Flowing directly or indirectly from these and earlier reviews and laws, a number of strategies and control methods either came into being or were strengthened to make the acquisition process more efficient. Examples of the strategies include Evolutionary Acquisition (EA), NDI Acquisition, Pre-Planned Product Improvement (P^3I), and acquisition of commercial items on commercial terms. Examples of the control methods include the Planning, Programming, and Budgeting System; Selected Acquisition Reports; Defense Acquisition Board deliberations; and the Defense Resources Board deliberations.

Acquisition reform is a current initiative underway to improve the acquisition of DoD systems. The FASA legislation is one of the tangible results of acquisition reform thus far. This act is focused on simplifying the procurement process and removing impediments to efficient and effective program management. Further, it promotes and provides for increased use of commercial practices and commercial products in DoD systems acquisition.

Of particular importance is employment of Integrated Product and Process Development (IPPD) concepts. Integrated Product Teams (IPTs) are key to the IPPD concepts, and their use is directed for program management and oversight functions, including efforts to develop an acquisition strategy. Equally important is the need to apply the methods established for reengineering the acquisition process.

1.4 BENEFITS

Below, paragraphs 1.4.1 through 1.4.5 present five primary benefits which accrue from the development and maintenance of a comprehensive acquisition strategy.

1.4.1 Organized and Consistent Approach

The acquisition strategy serves as a master checklist ensuring that all important issues and alternatives are considered. At any point in the acquisition process, the strategy must address the entire remaining portion of the program, with primary emphasis on the next program phase. Documenting the acquisition strategy is a means of performing adequate strategic planning in the beginning and throughout the program, thereby reducing potential diversions from program objectives which could have adverse cost, schedule, and technical consequences.

1.4.2 Decision Aid

An up-to-date acquisition strategy, reflecting current conditions, acts as a decision aid in several ways. The strategy assists in: prioritizing and integrating many diverse functional requirements, evaluating and selecting important issue alternatives, identifying the opportunities and times for critical decisions, and providing a coordinated approach to the economical and effective achievement of program objectives.

1.4.3 Means of Achieving Agreement

The acquisition strategy serves as the basis for preparing the plans and activities to accomplish the program. It becomes a

contract between the PM and the MDA for achieving program objectives and goals. The acquisition strategy also documents the tailoring of acquisition alternatives that are expected to be executed. Thus, it is the basis from which all functional planning proceeds. It should be noted that key elements of the acquisition strategy are also stated in the Acquisition Program Baseline.

1.4.4 Guide and Baseline on Rules/Assumptions

The acquisition strategy documents the ground rules and assumptions under which the program was undertaken. It guides and documents progress achieved as it is updated and therefore provides a documented audit trail for succeeding PMs. It also serves as a standard by which superiors in the chain of command can measure program progress in terms of their program responsibilities.

1.4.5 Basis for Consensus

When the acquisition strategy is reviewed and approved, a credible, realistic approach to the conduct of the program can be established and advocated from the Military Department up through Office of the Secretary of Defense (OSD) to the White House and Congress. The acquisition strategy can be the vehicle for building a consensus, and providing the recognition that the developed approach is optimal in terms of either acquiring and deploying the system or equipment, or developing a Technical Data Package for possible later use.

2

ACQUISITION STRATEGY CHARACTERISTICS

2.1 CHARACTERISTICS/CRITERIA

An acquisition strategy must provide the basis for meeting program objectives, and must act as an aid in gaining program acceptance and support. Accordingly, five characteristics are required for a credible acquisition strategy: realism, stability, resource balance, flexibility, and managed risk. This section provides a working definition of each criterion, why it is important, what pressures work against it, and the steps necessary to achieve it.

2.1.1 Realism

An acquisition strategy is realistic if the program objectives are attainable and the strategic approach to satisfying them can be successfully implemented with reasonable assurance. Realism cannot be easily quantified, but there are some measurable properties. For example, a two-fold increase in present performance may be more realistic (attainable) than a three-fold increase. Ranking methods and probability and statistical analyses are practical measurement techniques.

Only a realistic approach will elicit support for the program at all levels. A strategy that is unrealistic can result in continuous turmoil and crises and may lead to ultimate failure. With mounting evidence that certain milestones are not attainable, the first reaction is to try "Band-Aid" approaches, such as shifting funds from another area or deferring the work. Even if such temporary measures work, the activities that were "taxed" may then be placed in an underfunded position. Deferred activities can cause interface and scheduling problems, leading to more temporary patches. The best way to avoid such a situation is to set requirements related to technical, cost, and schedule factors well within capabilities. Simply stated, the acquisition strategy should represent a conceptual plan that is neither too optimistic nor too conservative — another way of defining realism.

The PM must recognize that there are pressures in his role that work against realism. Some of the more common forms of pressure are cited below.

Competing Alternative Approaches. An immediate goal of a PM is to gain program acceptance and to see that it is approved, funded, and started. This requirement often induces unrealistic conditions such as matching or exceeding the claimed capability or milestones of a competing approach, or accepting beyond state-of-the art performance requirements based on an insupportable analysis of a future threat.

Acceptance of an Inflexible Set of Requirements. This stance does not permit tradeoffs, and forces the PM to force-fit an acquisition strategy, introducing unrealistic conditions.

Strategy Directed by Higher Authority. Pressures on the PM from the upper echelons may lead to an acquisition strategy

with limited alternatives and insufficient planning, or introduce over-optimism with regard to schedule and resource requirements.

Low Program Priority Within The Service. A low priority program may tempt the PM to recite doctrinally correct program concerns and avoid documentation of relevant interests and concerns.

PM Reaction to Micro-Management. The PM may adopt a "close to the vest" syndrome, so that minimal details of the conceptual approach are presented, which in turn reduces the guidance available to functional managers in their efforts to support the program.

Strong Competition. Competing systems or strong high-level opposition to the program may induce the PM to counter by introducing unrealistic goals or management approaches in the acquisition strategy.

There is no simple formula for achieving realism. It entails detailed study of the threat, assessment of the state-of-the-art in all technology areas, review of past performance on similar acquisitions or systems, a survey of industry capability, followed by the attainment of a consensus once the analysis is complete. Studies take time and resources, but since realism is such an important criterion for a successful strategy, every effort should be made to support this undertaking in critical areas.

2.1.2 Stability

Acquisition stability is the characteristic that inhibits negative external or internal influences from seriously disrupting program progress. These negative influences frequently cause changes in cost, schedule, or performance requirements that can threaten the achievement of milestones. It would be naive to assume that any significant program will not encounter situations that can change the course of the program to some extent. Some of these situations may be well beyond any strategic program control — e.g., a greatly increased threat capability of a potential enemy that seriously negates the operational value of the system under development.

Any change in critical system or acquisition parameters can ripple throughout the program, cause serious disruptions, reduce confidence in program estimates and assumptions, increase government and contractor risk, and reduce morale and motivation. Frequently, when a major change is made, as in funding, a "downstream" parameter such as operational readiness or logistics support bears the brunt of the change, and system operational capability can be significantly affected. However, there are many potential causes of instability that can be countered to some extent by a carefully designed acquisition strategy.

Five key factors work against stability:

- The Funding Process. A number of exogenous factors may produce changes to the yearly funding levels. The changes may require program stretch-outs, a reduction in operational capability, or reduced production quantities.

- Requirements Changes. The perceived threat level may change or the user may desire more or less capability, which may result in disruption of technical progress.

- Changing Acquisition Policy or Philosophy. Changing administrations, executives, or political climates can result in revised policy, which may exert pressures to

change the strategy to conform to the new thinking.

• Industry Risks. Contractors may be faced with an untenable risk or profit position through buy-in, loss of a major contract, or failure to modernize. This may require additional money and time, and possibly new contractor sources.

• Organizational and Personnel Changes. These changes may result in lack of continuity, lack of accountability, loss of audit trail, and/or changes in directions, processes, and procedures.

Three elements related to acquisition strategy can enhance program stability:

• Direction. A strategy must impart a sense of knowing where you are going, and when and how you are going to get there by delineating program objectives, approaches, and control procedures.

• Advocacy. Initial targets for program changes are programs without high-level support. Know who the initial supporters are, keep them informed, and cultivate new supporters.

• Commitment. Strive for agreements that cannot easily be canceled. If the government establishes an agreement with an external party, then a measure of stability is achieved. Two significant examples are a Memorandum of Agreement with a foreign government for joint development or future delivery, and a Multi-Year Procurement contract.

2.1.3 Resource Balance

Resource balance is a condition of equilibrium between and within major program objectives that are competing for resources. The achievement of cost, schedule, and performance requirements uses resources of time, people, facilities, and money — all of which are limited. Under Acquisition Reform, implementing cost as an independent variable (CAIV) requirements facilitate the achievement of this resource balance. The degree of balance is not usually measured directly, but it can be measured in terms of risk in meeting objectives. In this sense, a balanced program is one for which all the risks are approximately equal, where the risk measure includes establishment of priorities and assessment of damages in case of failure.

The PM must respond to high-level direction, which often presents conflicting demands. For example, consider the following set of program objectives: the acquisition cycle time must be reduced, operational testing under realistic conditions must be held to a realistic minimum, and high performance and readiness must be achieved. Overemphasis on one objective could jeopardize the chances of meeting other objectives. By understanding the priorities, relationships, risks, and required resources for each objective, the PM can develop a strategy that provides the necessary balance and the justification to say "No," or "Yes, but ....," with conviction when changes by the user, headquarters, contractors, or others, are requested.

Parochialism is probably the major pressure working against balance. Just as the PM must do everything legitimately possible to ensure that the program is successful, functional managers operate from the same premise. The PM must recognize that the user wants the best-performing system and wants it quickly; financial offices in Headquarters want to lower cost; and the contractor wants to lower risk. In addition, external situations can occur that may have a severe impact on balance. Examples include the emerging importance of environmental impacts, energy concerns indu- -d

by fuel shortages, and reduced funding because of the economic climate.

Understanding the mission requirements and priorities of objectives is a key factor in achieving balance. Resources must be allocated to achieve a required level of capability with acceptable risk. A third factor is the amount of resources — rarely enough to "comfortably" do everything.

2.1.4 Flexibility

Flexibility is a characteristic of the acquisition strategy related to the ease with which changes and failures can be accommodated without significant changes in resource requirements. A strategy that allows for no change in approach is one that is destined to be challenged by events. As with the other characteristics discussed, there rarely is a single measure that can be used to quantify flexibility. One useful analysis approach can be called "what if?" — a form of contingency planning. Examples are:

- What if a drop-out occurs with one development contractor?

- What if the technical development of the XYZ component fails?

- What if a new technology becomes available?

- What if Congress cuts the program budget by 15 percent?

- What if the only capable contractor does not modernize its plant or equipment?

- What if a certain activity is completed 6 months later than planned?

Through such analyses, areas where flexibility is needed can be identified and measures can be taken to provide "back-up," or alternative approaches to meeting objectives.

One of the most predictable occurrences in an acquisition program is change. Flexibility enables the PM to deal with change — to bend but not break. Without flexibility, changes can throw a program out of balance, leading to instability, unrealistic approaches, insufficient resource allocations, and intolerable management problems.

As indicated in the discussion of stability, those who review a program should be given a strong feeling that the acquisition strategy is directed toward successful accomplishment, with all major areas addressed. That does not mean that all approaches are so firmly fixed that changes or failures cannot be accommodated. Indeed, identifying the areas where change or failure is possible and employing approaches to deal with them are signs of good strategic planning. However, some reviewers may insist that a strategy must be firmly cast to exclude such possibilities. Frequently there are pressures against maintaining "reserve resources." If the nominal schedule estimates indicate a five-year development, that is what the user may insist upon, even if such a schedule allows no "slack" for dealing with any significant problems.

The first step in developing a strategy with sufficient flexibility, of course, is to identify areas in which there is a significant probability that changes and failures could occur. Not everything can be covered; otherwise the strategy becomes so flexible that it offers no firm basis for proceeding. One might adopt the approach that any significant potential change or failure with a subjective probability of occurrence of 20 percent or more should be addressed through

a flexible strategy. This type of approach provides a direct lead-in to risk analysis which is addressed in paragraph 2.1.5 below.

Seven examples of ways to achieve program flexibility are presented below.

- Requirements Flexibility. Work closely with the user/user representative and comply with DoD 5000.2-R provisions for evolutionary requirements generation. This will allow for flexibility within the Operational Requirements Document (ORD) and enhance the potential for tradeoffs.

- Contract flexibility. Contracts can be written to provide needed flexibility in areas of uncertainty, reducing potential risk for both the government and the contractor because of changes. One common example is the use of price-escalation indices to adjust for economic changes. Another example is a variable pricing provision related to varying quantities.

- Functional Flexibility. Ideally, the acquisition strategy and supporting plans should be flexible enough to accommodate inevitable personnel turnovers, and allow for varying preferences in tactical implementing procedures on the part of new managers.

- Funds Management. As a general rule, the PM should not firmly allocate all resources at the start of a funding period. The maintenance of some unallocated funds (management reserve) provides a degree of funding flexibility.

- Preplanned Product Improvement (P^3I). In technology areas of high risk and uncertainty, it may be prudent to plan for block changes of known emerging technology through the P^3I approach.

- Design Flexibility. Since approximately 60 percent of the life cycle cost (LCC) of a system is due to logistics support considerations, and approximately 30 percent is due to production considerations, each design should reflect an optimum balance among performance, producibility, and logistic supportability.

- EA. Evolutionary acquisition is an alternative approach that can be applied to weapon system and/or automated information system development. It entails plans for development of the core system (e.g., the prime mover or platform), together with a supporting strategy to achieve operational requirements via an incremental development process. Refer to the *Joint Logistics Commanders Evolutionary Acquisition Guide.*

2.1.5 Managed Risk[2]

Risk management is concerned with the identification of uncertainties that threaten cost, schedule, and performance objectives, and the development and implementation of actions to best deal with those uncertainties within established limits. Every program is subject to uncertainties that may result in failure to achieve cost, schedule, or performance objectives. Exposure to these adverse possibilities constitutes acquisition risk.

Sources of acquisition risk may appear endless to the PM. They can generally, however, be grouped into external and internal categories.

External risks originate from factors usually outside the control of the PM, and they

[2]The information in this section generally follows the procedures and philosophy stated in the AFMC *Acquisition Risk Management Guide.*

are often associated with those requirements and constraints that define the program limits. They include:

• Threat and Requirements. Changes in the threat or a poorly defined requirement can result in redefinition of program performance objectives.

• Funding. Significant changes in funding levels can force stretch-outs, performance reductions, or worse case, cancellation. The acquisition strategy is developed based on an assumption of a certain level of funding.

• Contractor. Programs are subject to adverse impact when events such as labor strikes or financial difficulties affect a contractor's ability to function.

• Politics. PMs may receive "help" from external sources (service headquarters, OSD, Congress, etc.) that direct the program to assume certain cost and/or schedule constraints whose result will significantly increase the risk of meeting program objectives. Though the PM may not be able to deflect these fact-of-life directions, one must still understand how and where and to what extent they impact program risks.

Internal Risks are those over which the PM has more direct control. They result from decisions made within the Program Management Office that affect cost, schedule, performance, and technology approaches to be used when the acquisition strategy is developed or modified. They include:

• Requirements. Ill-defined or changing requirements create program risk, a risk which is particularly acute in the area of software development. Prototyping and other internal actions by the PM can mitigate the risk or the impact of the risk.

• Technology. Risks resulting from the use of immature technologies to achieve previously unattained performance levels. The more the program incorporates immature technology, the greater the uncertainty of cost, schedule or performance projections.

• Design and Engineering. Risks associated with the ability to translate technological capabilities into reliable hardware and software configurations.

• Manufacturing. Risks reflecting the ability of the government[3], and/or the contractor, to build the designed system to performance and quality standards.

• Support. Risks associated with achieving reliability, availability, and maintainability objectives.

• Cost and Schedule. Accuracy of the cost and schedule estimating process, along with their supporting assumptions, impacts the level of cost and schedule risks incurred. Risks are also infused into the schedule because of a critical path, a singularly constraining event, or a high level of concurrency.

Since program risk is directly related to uncertainty in the program's ability to meet cost, schedule, and performance objectives, it can only be measured relative to these objectives, and within the context of the program's acquisition strategy. Change the strategy and, generally, you change the risk. The acquisition strategy should provide for program risk, and form the basis for an effective risk management program.

[3]The government may be directly involved in production via a government shipyard or aircraft depot facilities, or indirectly through the establishment of performance standards in a solicitation.

2.2 IDENTIFICATION/DESCRIPTION OF CRITICAL ELEMENTS/OPTIONS OF AN ACQUISITION STRATEGY

A major function of the acquisition strategy is to document the ground rules and assumptions under which the program was started, and by which future decisions will be gauged. The acquisition strategy should address the interrelationships of each of the following 11 essential elements of a program, plus other items critical to the program's success, yet strive to minimize inevitable redundancy with other program documentation.

2.2.1 Mission Need

For each Mission Need Statement (MNS) receiving favorable consideration at Milestone 0, as reflected in an ADM, the user or user's representative plays a crucial role in preparing for program milestone reviews. Prior to Milestone I and each subsequent milestone, the role is that of translating the broadly stated need into quantified operational performance parameters. This is accomplished through development and revision of the ORD. As noted in DoD 5000.2-R, these parameters are to be stated as Objectives and Thresholds. They will be displayed in several program documents and will serve as a basis for cost-schedule-performance trade-offs. A well-defined acquisition strategy serves as a guiding compass in the trade-off analyses.

2.2.2 Contracts

The strategy should address the types of contracts which are planned for succeeding phases of the program, together with types of contract incentives and the incentive structures. All contemplated deviations and waivers should be addressed. The content of this section may be liberally used in the Acquisition Plan (AP), which is a companion and supporting document.

2.2.3 Test and Evaluation (T&E)

The strategy should address key aspects of the T&E approach which will require special management focus by the PM in order to reduce program risk. The T&E portion of the strategy is concerned with the type, amount, and timing of testing in sufficient detail to provide a strategic outline for those who develop the Test and Evaluation Master Plan (TEMP). A few example topics are: critical technical parameters, critical operational issues, critical facility requirements, special test resources, live fire testing, and/or test range scheduling issues.

2.2.4 Technology

The technology portion of the strategy should address the transition of critical technologies that must be applied to the developing systems, as well as the strategies to reduce technological risk, in sufficient detail to provide a strategic outline for those who develop the Systems Engineering Management Plan (SEMP). Examples are: technology demonstration programs, pre-planned product improvements, and/or the utilization of non-developmental items (NDIs) (with emphasis on commercial items) to reduce technological risk. This portion of the strategy should also address the key aspects of the software development approach, identify the mission critical computer resources, and identify related planning and support issues.

2.2.5 Software Development

The acquisition strategy should address key aspects and risks of the proposed software development approach, and how the chosen software development approach

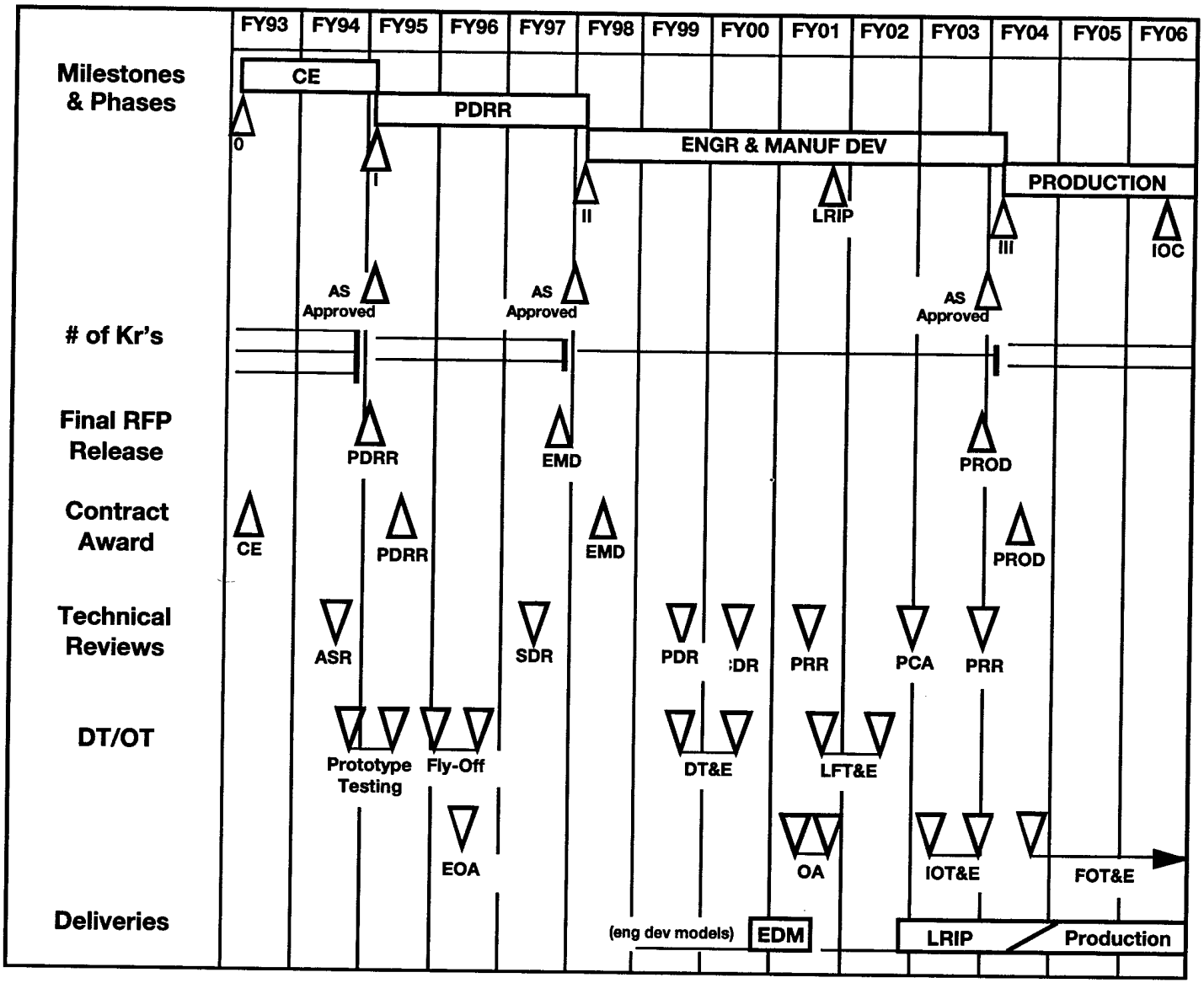

Figure 2-1. Program Structure (Example)

supports the system-level acquisition strategy. Enough information should be included to provide a strategic outline for those who develop the Computer Resources Life-Cycle Management Plan (CRLCMP) in accordance with DoD 5000.2-R.

2.2.6 Logistics Support

The strategy should address key aspects of the logistics support (LS) program which will require special management focus by the PM in order to reduce program risk, providing sufficient detail to act as a strategic outline for those who develop the Support Plan (SP). In this regard, logistic support should be a *performance requirement* in the solicitation and the contract, like almost every other program contract item including spare parts. Place the burden on the contractor to respond to interchangeability; interoperability; and form, fit, and function requirements. A few of the possible topics for inclusion in the AS are: support concept; site survey; interim contractor support; test equipment; and/or maintenance and operator training.

2.2.7 Production

The production portion of the strategy is concerned with ensuring the contractor's design is producible and that timely industrial capability will exist to provide the hardware (and associated software) within stated goals. This planning should also provide a strategic outline for those who develop the Manufacturing/Production Plan. Possible issues for inclusion in the strategy are: establishing feasibility, assessing risks, identifying capable manufacturers and manufacturing technology needs, capabilities of the industrial base, availability of critical materials, and the transition from development to production. Further issues are: the production processes, quality assurance procedures, personnel, and facilities. Strategy alternatives may include phased procurement, low-rate initial production, productivity enhancement, and production concurrency with testing.

2.2.8 Risk Management

As noted in Section 2.1.5, program risk is a measure of the probability and consequence of not achieving a defined program goal. Risk assessment is the underlying analysis approach for acquisition strategy development. It provides one basis for determining conformance of the four previously noted criteria — realism, stability, resource balance, and flexibility. In fact, it can be argued that the four criteria are elements necessary to minimize program risk through the acquisition strategy.

OMB Circular A-109 (now replaced by OMB A-11), DoDD 5000.1 and DoD 5000.2-R specifically direct that the risk issue be addressed. However, risk is not always easy to assess, since the probability of failure and the consequence of failure are often not exact, measurable parameters and must be estimated by statistical or other procedures. While formal risk analysis procedures deal with the "known knowns" and "known unknowns," there is also the issue of the "unknown unknowns." Here, only qualitative assessments are usually possible. Yet, accepting this limitation, a well-reasoned risk assessment dealing with the "known unknowns" provides a structure for selecting strategy alternatives and should be a major element in the decision-making process.

Four references on risk assessment procedures that provide more specific detail are:

Risk Management — Concepts and Guidance, March 1989 (currently being updated),

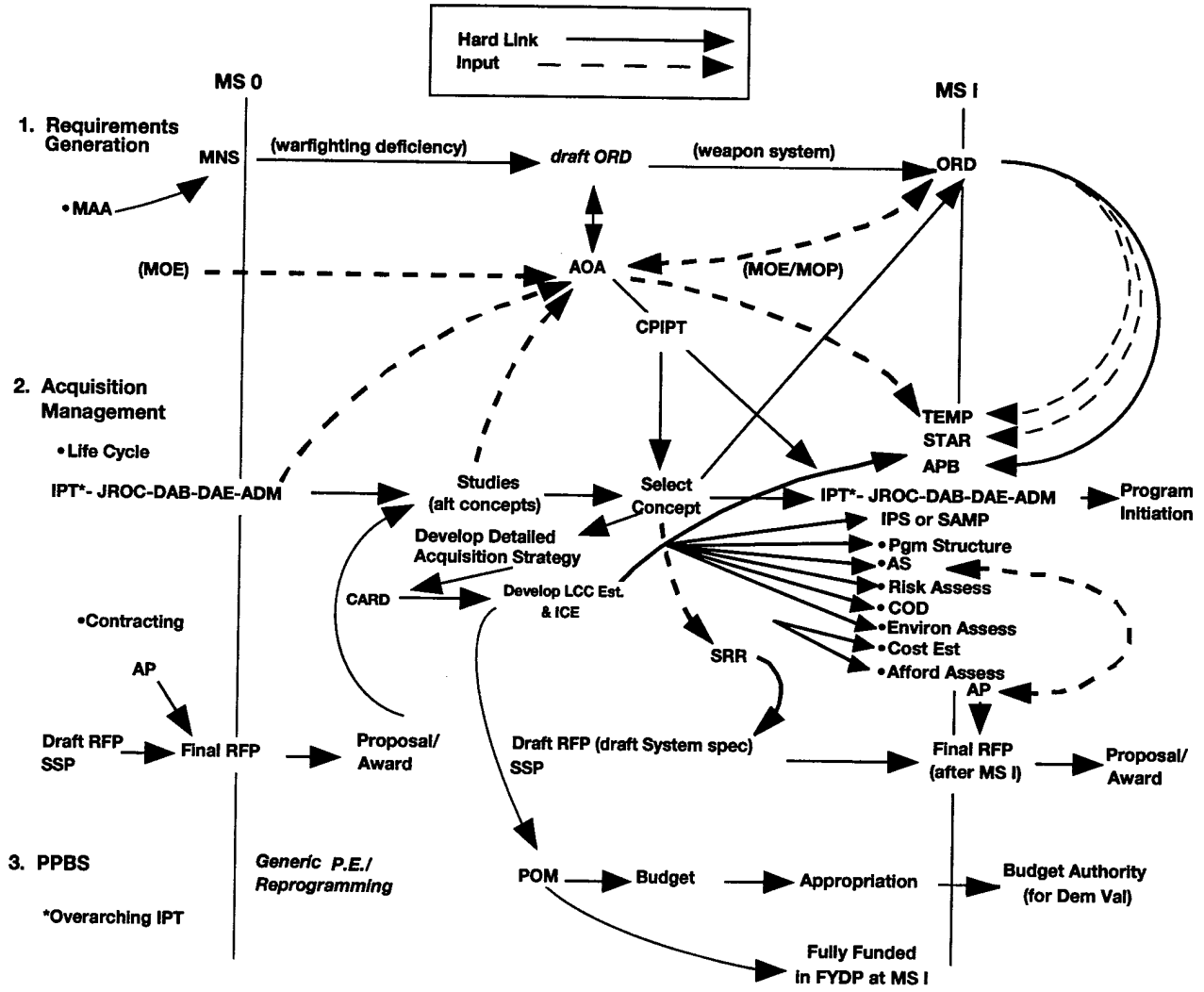

Figure 2-2. Three Major Decision Making Support Systems Concept Exploration

Defense Systems Management College, Ft. Belvoir, Va.

Kockler, Frank R., Thomas R. Withers, James A. Poodiack, & Michael J. Gierman, *Systems Engineering Management Guide*, January 1990, Defense Systems Management College, Ft. Belvoir, Va.

Acquisition Risk Management Guide, August 1992, Air Force Materiel Command (AFMC).

Johnson, Norman E., Risk in the "Acquisition Process - A Better Concept," *Program Manager*, Vol. XXIII, No. 5, pp. 39-41, Defense Systems Management College.

2.2.9 Program Management

The strategy should reflect the IPPD Process. It should also describe the key aspects of the program management structure (i.e., key events and related schedule) designed to reduce program risks, in sufficient detail to act as a strategic outline for those who develop the Program Management Plan (PMP). Examples include joint program aspects, matrix support, integrated program teams, total quality management, laboratory support, and planned changes to program office structure at specific points during the life of the acquisition program. The strategy should include the planned delineation between government and contractor responsibilities, e.g., government furnished equipment, information, and property; system integration; system testing, etc.

2.2.10 Funding

The strategy should describe the principal source of funds for development, production and fielding. Other subjects would include applicable joint funding agreements, highlights of the affordability study, and known funding or affordability constraints. The description should include the planned annual funding totals, by appropriation, for the prior year, current year, Future Years Defense Program and cost to complete. Affordability analysis will run to the end of production.

2.2.11 Structure and Schedule

The structure and schedule portion of the acquisition strategy must define the relationship among acquisition phases, decision milestones, solicitations, contract awards, systems engineering design reviews, contract deliveries, T&E periods, production releases, and operational deployment objectives. It must describe the phase transitions and the degree of concurrency entailed. It is a visual overview and picture presentation of the acquisition strategy. In accordance with DoD 5000.2-R, the program schedule and structure must be depicted on an event-driven time line diagram similar to the example shown in Figure 2-1.

2.2.12 Life Cycle Cost

The concept of cost as an independent variable (CAIV) must be used in establishing the acquisition strategy. Per DoD 5000.2-R, the acquisition strategy shall address methodologies to acquire and operate affordable DoD systems by setting aggressive, achievable cost objectives and managing achievement of these objectives. Cost objectives shall be set to balance mission needs with projected out-year resources, taking into account anticipated process improvements in both DoD and defense industries.

A strategy that considers the total cost to the government over the entire cradle to grave life cycle of the system is necessary to provide balance and perspective to the

program in consideration of the performance and schedule requirements to avoid suboptimization.

2.3 RELATIONSHIP TO OTHER DOCUMENTS

Documents which strongly influence the development and update of the acquisition strategy include the DoD 5000 series, OSD policy statements, federal law, the MNS, the ORD, the Defense Planning Guidance, the Program Objectives Memorandum, and the System Threat Assessment Report. The acquisition strategy in turn influences a major portion of the program documentation including the following planning documents: the AP (which contains major portions of the acquisition strategy), the SEMP, the TEMP, the Manufacturing Plan, the CRLCMP, and the SP. Figure 2-2 shows some of these planning documents and their interrelationships. Also, Figure 2-2 reflects the interactions of the three major decision-making support systems leading to program initiation. Over time, these plans become means for coherently executing the acquisition strategy.

The acquisition strategy is fully documented in the IPS, modified IPS, Single Acquisition Management Plan (SAMP), or whatever Milestone Review documentation package agreed upon by the PM and MDA. Specifically, one or more portions of the acquisition strategy are reflected in the following documents: SAMP, Program Structure, Program Life-Cycle Cost Estimate Summary, Risk Assessment, Environmental Analysis, Affordability Assessment and Cooperative Opportunities Document.

3

ACQUISITION STRATEGY DEVELOPMENT AND DOCUMENTATION

3.1 INTRODUCTION

Acquisition strategy development is a logical, systematic way of transforming an operational mission need into a comprehensive, top-level plan to guide the acquisition program team in satisfactorily fulfilling the mission need. The development process involves a series of steps with many iterations that consist of identifying, analyzing, and resolving issues related to the elements (identified in Chapter Two) of an acquisition strategy. The product of the process is documented in a form agreed upon by the PM and Milestone Decision Authority (MDA), and constitutes part of the program's required documentation.

The acquisition strategy is developed during the CE phase of the acquisition cycle. The principles applicable to the IPPD concepts, IPTs and the reengineered acquisition oversight and review process will be used where it makes sense. The development effort may take place prior to the formal establishment of a program office and assignment of a PM. Thus, the task may fall on either a special task force/group appointed following Milestone 0, or the initial program office cadre assigned by the Service in advance of program approval. The initial strategy covers the entire acquisition cycle, providing substantial detail on the events of the program phase following the next milestone review, and less detail on the subsequent program phases. After the initial acquisition strategy is approved, it is updated, as necessary, throughout the system acquisition cycle. The acquisition strategy is part of the program documentation (i.e., the IPS, SAMP, etc.) required at each milestone review after Milestone 0.

The remainder of this chapter includes sections on the acquisition strategy development process; the product (AS), its documentation, approval, and flow down to other program plans; and analysis tools that can be used in acquisition strategy development.

3. 2 ACQUISITION STRATEGY DEVELOPMENT PROCESS

Sections 3.2.1 and 3.2.2 below describe the general process and the detailed process for developing an acquisition strategy.

3.2.1 General Process

This section presents a process that can be used to develop an acquisition strategy. The process consists of logically and systematically completing a number of steps beginning with identifying and clarifying the mission need and ending with gaining approval of the selected acquisition strategy. Completing each step involves identifying, analyzing, and resolving numerous issues related to the elements of an acquisition strategy by using problem-solving and decision-making tools and techniques. One way of structuring the acquisition strategy development process is by following the sequence of steps shown in deployment flow chart format, Figure 3-1. Note

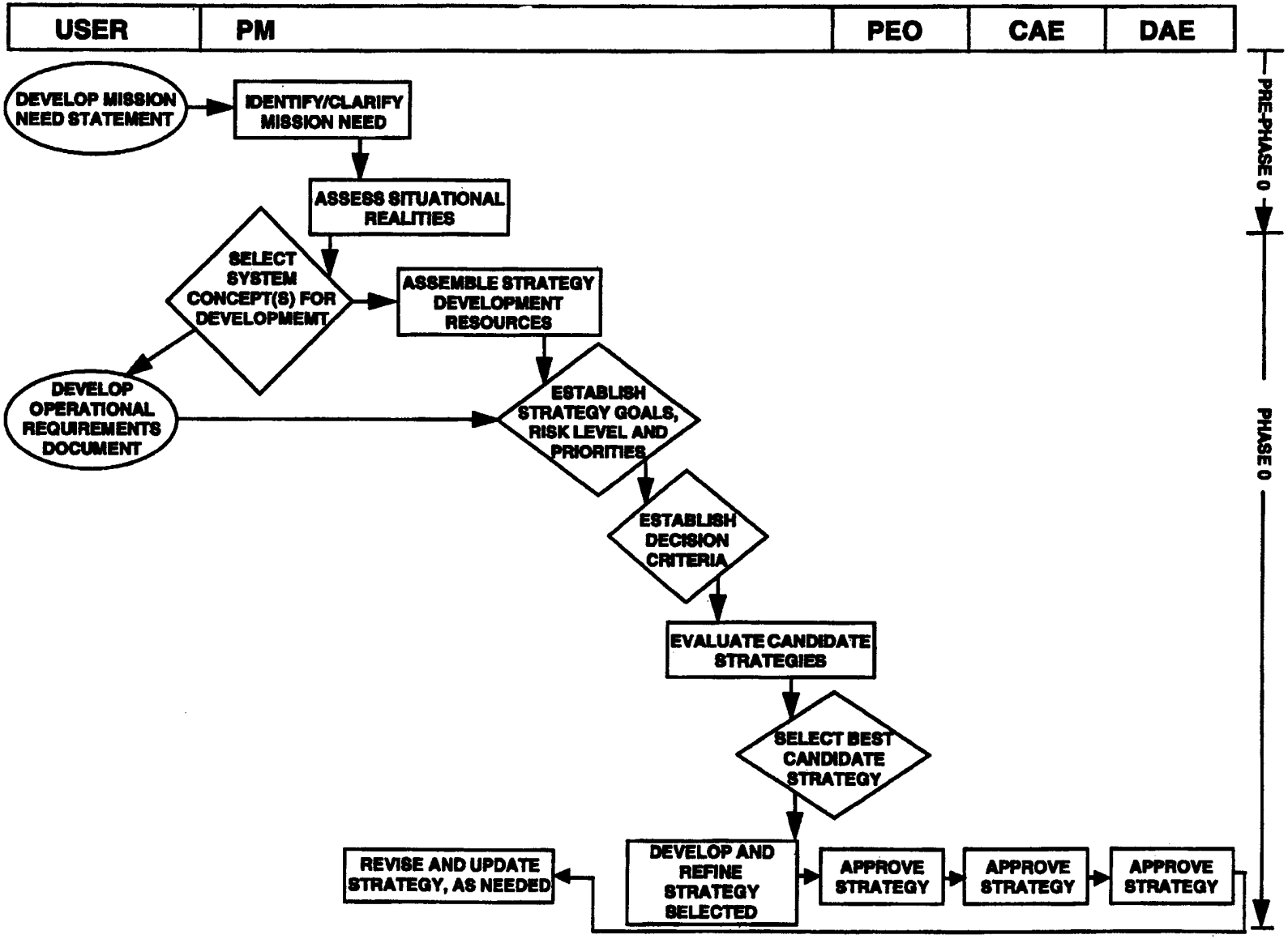

Figure 3-1. Acquisition Strategy Development Process

that the figure displays the acquisition strategy development and approval activities, together with the office responsible and approximate position for each activity in the acquisition strategy development process. Not shown are the iterative loops performed during the process due to specific issues addressed, and trade-off decisions made. The chart also shows the individuals who are the final decision makers for each step in the case of an ACAT I program. Of course, other valid methods of developing a program acquisition strategy can be used as long as they provide for comprehensive treatment from a system perspective of how the mission need will be satisfied.

Software is available to aid in the preparation of ASs. Of particular note is the Joint Acquisition Management System (JAMS) which has many features including acquisition document construction and specific text recommendations. Points of contact include the Army's Simulation, Training and Instrumentation Command (STRICOM); and the Naval Air Warfare Center, Training and Simulation Department (NAWCTSD); both residing in Orlando, Fl. The DoD contractors are The Analytical Sciences Corporation (TASC), Fort Walton Beach, Fl, and Metters Industries, Incorporated, Orlando, Fl.

3. 2. 2 Detailed Process

The following detailed process of developing an Acquisition Strategy is based on the steps shown in the deployment flow chart, Figure 3-1. By using this logical, systematic process, the criteria of realism, stability, resource balance, flexibility, and managed risk can be integrated into the acquisition strategy. The acquisition strategy development process includes the following steps:

- Identify the mission need.
- Assess the situational realities.
- Select system concept(s) for development.
- Assemble strategy development resources.
- Establish strategy goals, risk levels, and priorities.
- Establish decision criteria.
- Identify specific candidate strategies.
- Evaluate candidate strategies and select best one.
- Further develop and refine selected strategy.

These steps are discussed in turn in the following subsections.

3. 2. 2. 1 Identify the Mission Need

- What is the requirement?
- What is the urgency?
- How is the system to be used?

The primary goal in the development of an acquisition strategy shall be to minimize the time and cost of satisfying an identified, validated *need* consistent with common sense, sound business practices, and the basic policies established by DoDD 5000.1 The mission need is the consequence of a deficiency in current or projected capabilities, or of a technological opportunity to establish new or improved capabilities. It must be certified by validation and approval authorities. The MNS is expressed in broad operational terms as determined

by the user. The strategy developer must clearly understand the mission need and ensure that it is well articulated to all participants in the acquisition process.

The PM or the leader of the pre-Milestone I task organization (henceforth also referred to as the PM) should also review and analyze other documents related to the MNS, such as the threat analysis studies, and provide feedback to the user or user's representative. The PM should also attempt to establish the approximate priority of the need, and later the program, within its own Service and DoD. This information establishes a decision framework that will enhance strategic trade-off.

3. 2. 2. 2 Assess the Situational Realities

- What is the threat reality?
- What is the economic environment?
- What are the political realities?
- What is the program's relationship to other programs?
- What are the technological opportunities?
- What are the cost, schedule and performance realities?
- What are the review and documentation realities?

The situational realities faced by the program include the system-related performance, cost, and schedule requirements; the general review requirements and procedures associated with the DoD acquisition process; the impact of other programs' acquisition strategies; completed or pending studies of topics related to the AS; and the resources (time, money, and experienced people) available to complete the strategy development.

Each program's strategy development must proceed in its own particular acquisition environment. The PM must know where the program stands in that environment at any particular time. Some programs may have strong documented support from the beginning, with relatively few disturbing influences to hinder them. However, most programs have critics with their own audits and reports. There may be segments of Congress that oppose the program from a need, financial, or political viewpoint. A program may also have opponents within OSD, the other Services, or even its own Service, who have, or believe they have, valid reasons for their positions. Within DoD, GAO, CBO, etc., audit reports and estimates may exist that take issue with a strategy element within the program. For example, existing contract relationships may be viewed in a negative context by an OSD office as opposed to the view by the sponsoring Service; or there may be a disagreement on Service compliance with a policy or rule by the Inspector General (IG) or a single member of Congress. The PM, with a full understanding of how the program fits into the national objectives and DoD priorities, should work with the operational users, OSD and Service Staffs to do all that is legitimately proper to ensure the program's success. The development of an effective acquisition strategy, that considers situational realities, is a key way to counter opposition and enhance the likelihood of achieving program goals.

3.2.2.3 Select System Concept(s)

- What concepts are possible?
- What concepts are feasible?

Table 3-1. Resources for Acquisition Strategy Development

- Acquisition Strategy Development Funding and Time
- Facilities and Management Information Systems
- Mission Analysis Studies
- Concept Study Results
- Cost, Schedule, Technology Studies, Audit Reports (pro and con)
- Strategy Development Team
  - PM
  - Technology Manager
  - Business Manager
  - Logistician
  - User
  - Special Consultants
  - Contracting Officer
  - Others, as appropriate

• Which concept(s) will most likely result in satisfying the mission requirements?

Following mission need approval, appropriate consideration must be given to selection of a system concept using the conclusions flowing from an analysis of alternatives (AOA). These results must be subjected, in turn, to an affordability analysis. The end result provides top-level program requirements and the basis for the development of an event driven acquisition strategy.

3.2.2.4 Assemble Strategy Development Resources

• What human resources are required?

• What funding resources are required?

• What information resources are required?

• What time commitment is required?

Strategy development will require resources — people, time, money, and information. Table 3-1 is a check list of resources that normally are required for effective strategy development prior to Milestone I. Strategy must be developed in a concurrent, interactive, and integrated manner, rather than as a collection of separate inputs that can lead to functional discord. While all the participants in the strategy development are important, a seasoned technical manager and a knowledgeable and experienced business manager are key players, since the technical and business strategies often control critical accomplishments.

The user will have the knowledge, experience, and capability to ensure adequate consideration and compliance with operational concepts. User personnel are the PM's key link to the operational community, and therefore they must have a thorough working understanding of the mission needs, operator biases, and the acquisition process.

3.2.2.5 Establish Strategy Goals, Risk Levels, and Priorities

• How will this program be streamlined?

• How many sources will be used in each acquisition phase?

- What type of contracts will be used?

- How long will it take to award contracts?

- What are our cost goals?

- What type of testing and how much will be done and how long will it take?

- What logistics support approach will be used?

- What software development approach will be taken?

- Based on the system concept selected, what are the initial technical, cost, schedule, and support risks?

- What are the options for mitigating identified risk areas?

When the mission need is thoroughly understood, an assessment of the situational realities has been performed, and the resources for strategy development are available, the strategy development can actually begin. Program-specific strategy goals or objectives should be listed and prioritized (e.g., foster the use of performance specifications or seeking out solutions involving NDIs). The difficulty of achieving each goal should be broadly assessed, as should the consequences of not achieving the goals. This assessment, together with the prioritization, provides a basis for assigning initial risk levels pending the program's development of a full risk management effort. At this stage, risk levels may be mostly qualitative (e.g., high, medium, and low) without full quantitative analysis of consequences and probabilities. However, to the extent feasible, the risk levels should be determined quantitatively. The initial risk levels then provide direction for developing strategy alternatives that can concentrate resources effectively.

3.2.2.6 Establish Decision Criteria

- What factors will be used?

- What weights, if any, will be assigned to each factor?

- What other considerations will be used in selecting the best candidate strategy?

Given that the program requirements have been established, priorities and initial risk levels assigned, decision criteria should be established for application to candidate strategies as they are being developed. The strategy development process can then be considered to be a classical decision problem, that is, one of resource allocation with multiple objectives.

Such problems are not easily solved, especially when so many potential future impacts are unknown or not fully understood. It is here that the strategy criteria discussed in paragraph 2.1 become important for guiding the decision-making process, i.e., realism, stability, resource balance, flexibility, and managed risk. Based on these criteria, an assessment is made of how well the stated objectives/requirements can be met.

3.2.2.7 Identify Specific Candidate Strategies

- What are some specific candidate strategies?

- Do these specific candidate strategies satisfy the requirement?

- What are the schedule and documentation impacts of combining milestones or phases?

- What are reasonable time estimates for conducting developmental and operational testing?

• Are the candidate strategies affordable using CAIV?

The strategy developer must identify candidate approaches for ensuring that each program objective and requirement is met. The selection of strategy alternatives should be driven by the mission need with consideration of the situational factors, goals, priorities and risk. Major DoD issues and alternatives applicable to an acquisition strategy are discussed in the DoD 5000 series directives. A list of acquisition-related terms and topics is provided in Appendix A. The list includes strategy-related items such as concept sources, design-to-cost, guarantees, incentives, leader-follower, phased acquisition, etc., one or more of which may be appropriate topics for inclusion in the acquisition strategy, depending on the specific nature of the acquisition program.

3.2.2.8 Evaluate Candidate Strategies

• Does each strategy satisfy the mission requirement and decision criteria?

• What are the advantages and disadvantages of each candidate strategy?

The decision criteria and decision model are applied to the identified candidate strategies. Such an evaluation cannot be performed in a mechanical fashion — the problems are complex, the uncertainties are substantial, and the criticality is high. While there are a number of mathematical, statistical, and economic tools available for such evaluation, judgment and experience must still play major roles. Equally important are information and data. These evaluations suggest **facts** necessary for complete assessment of alternative strategies are available. Sometimes relevant information is unobtainable. If information **crucial** to evaluating alternative strategies cannot be documented, then it must be **replaced by a valid assumption** and labeled as such. If an outcome will be unaffected regardless of whether or not and assumption turns out to be factually accurate then that assumption **is not** considered "valid." A limited discussion of analysis tools is addressed later in this chapter.

3.2.2.9 Select Best Candidate Strategy

• Which candidate strategy best satisfies the requirement and decision criteria?

• Which strategy is chosen?

The best candidate strategy will have many facets, each representing an aspect of the program that has been determined to be important in light of the operational requirement and the development, testing, production, and support requirements. A multi-attribute utility decision test, using a matrix such as the one shown in Table 3-2, can serve as a useful tool in the process of selecting the best candidate.

3.2.2.10 Refine Selected Candidate Strategy

When the evaluation is completed, and the preferred candidate strategy is selected, it is further developed and refined. The refinement activity includes a review and reassessment of all elements as they apply to the requirement as well as the aforementioned criteria of realism, stability, balance, flexibility, and managed risk. Other factors are considered, as appropriate, and the selected strategy is further tailored in accordance with DoDD 5000.1 and DoD 5000.2-R.

3.2.3 Services' Acquisition Strategy Development Approach

The military Services follow the overall DoD policy guidance on developing a system acquisition strategy. However,

Table 3-2. Strategy Decision Test

Criteria	Rating		Strategies					
			A		B		C	
	Initial (1)	Normalized (2)	Probability (3)	Weighted Score (2) x (3)	Probability (4)	Weighted Score (2) x (4)	Probability (5)	Weighted Score (2) x (5)
I	8	40	0.60	24	0.95	38	0.50	20
II	5	25	0.90	22.5	.50	12.5	0.95	23.75
III	5	25	0.80	20	0.90	22.5	0.60	15
IV	2	10	0.50	5	0.90	9	0.60	6
Total	20	100		71.5		82.0		64.75

there is some variation in the way each Service executes the details of the acquisition strategy development process. The following are some of those variations.

3.2.3.1 Army

The Army PM decides who will assist him or her in developing the program acquisition strategy. As the acquisition strategy is being developed, the cognizant materiel developer (MATDEV), the same as the PM for purposes of this Guide, coordinates the strategy thoroughly with agencies that support the MATDEV and agencies that will use and support the system when it is fielded. The MATDEV also coordinates the acquisition strategy with the combat developer (CBTDEV), independent testers and evaluators, logisticians, the matrix support organization, the Human Systems Integration (HSI) Office, and the PM for Instrumentation, Targets, and Threat Simulators (ITTS). Other system-specific considerations may make further coordination advisable.[4] The PM is also required to state needs in terms of performance specifications and indicate policy compliance in the AS or the AP as appropriate. This requirement is applicable for new systems, major modifications, technology generation changes, nondevelopmental items, and commercial items.[5]

3.2.3.2 Navy

The Navy PM uses selected members of his program team to develop the acquisition strategy, and follows the DoD 5000 series policy. Prior to developing a tailored AS for approval, the PM must discuss the proposed general tailoring approach with the respective Deputy Assistant Secretary of the Navy (DASN) for ACAT I, II, and III programs or the PEO/SYSCOM for ACAT IV programs. Tailoring must be consistent with the complexity, risk, dollar value, and visibility of the program.[6] As part of the approval process, the PM must obtain an endorsement of the ASR (Annex C of the

[4] Army Regulation (AR) 70-1.

[5] Army Implementation Plan for Blueprint for Change: Toward a National Production Base, of 23 Nov 1994, pp. 9 and 10; placed in effect by ASA (RD&A) memo of 2 Dec 1994, subj: Military Specifications and Standards Acquisition Reform, of 2 Dec 1994.

[6] SECNAVINST 5000.2A.

IPS) by the OPNAV Program Sponsor.[7]

3.2.3.3 Air Force

The Air Force FAR supplement requires the establishment of Acquisition Strategy Panels (ASPs).[8] ASPs are to be an integral part of the acquisition planning process within the Air Force. An Integrated Acquisition Strategy Process (IASP) is the Air Force Materiel Command's approach to formulation and selection of program acquisition strategies. An ASP is a critical part of any IASP within the Materiel Command.[9] The process consists of (1) convening a Strategic Roundtable (following identification of the requirement and Air Force commitment to the acquisition) to provide guidance on constraints and concepts; (2) conducting a Tactical Roundtable (following the first draft of the acquisition strategy) to provide advice in appropriate functional areas; (3) forming and using an Acquisition Strategy Panel to review and approve the acquisition strategy; and (4) conducting a Tactical Roundtable (led by the PM) to refine the acquisition strategy and to develop and harmonize functional plans and documentation. A concerted effort is made to obtain early industry involvement in program planning, while ensuring fair treatment of all potential industry sources.

3.2.3.4 Marine Corps

The Marine Corps PM is responsible for developing the acquisition strategy, and decides who else is to be part of the acquisition strategy development team. As part of the approval process, the PM coordinates the AS with the Marine Corps Combat Development Center, PEO, and the ASN(RD&A).[10] Marine Corps programs which have Navy fiscal sponsorship (i.e., aviation programs) must obtain an endorsement of the AS by the OPNAV Program Sponsor.[11]

3.3 PRODUCT

The AS is the major ***product*** of the acquisition strategy development process. It consists of the program structure, acquisition approach, and major tradeoffs. The ***product*** must be more than a report of actions already taken and decisions already made in the program. It should not dwell on a detailed description of the system under development except as the description pertains to the acquisition strategy. It should summarize and/or discuss prior tradeoffs among cost, schedule, and performance that were made to bring the program to its current state, including a description of strategy changes that have taken place since initial approval. It should describe the risk reduction tools used in the past, and those preferred or planned for future use. Of equal or greater importance, it must provide the broad program strategy for future trade-offs and program plans and actions, with special emphasis on the phase following the next major milestone review.

Likewise, the ***product*** must be more than a description or plan of contract types and contract actions past, present, and future. It must communicate the strategy to be followed in the technical development of the system, in the test and evaluation of the

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[7] OPNAVINST 5000.42D.
[8] Part 5307.104-91.
[9] AFMC Pamphlet 800-7, Integrated Acquisition Strategy Process (IASP).
[10] SECNAVINST 5000.2A.
[11] OPNAVINST 5000.42A.

system, in development of the integrated logistics support system, in the program management function. Appendix B provides two sample ASs; one is a program that is entirely developmental in nature, the other is an NDI program.

Following approval, the AS should be widely disseminated, so that it may act as a key coordination tool, assisting the PM in the program control function. To best achieve this end, the PM should strive to develop the AS as an unclassified document, if at all possible.

3.3.1 Documentation and Approval

An outline format for documenting an acquisition strategy is found in the DoD Deskbook at http://www.deskbook.osd.mil/ PMs are encouraged to tailor their acquisition strategy documentation as noted in Table 3-3 at the end of this chapter. A documented AS, when properly tailored and streamlined to reflect the key elements of a specific program, will prove useful in conveying a broad master plan for the successful accomplishment of an acquisition program. (See the examples in Appendix B.)

The AS is approved by the MDA. DoD 5000.2-R requires such approval prior to issuance of the formal RFPs for the next program phase.

3.3.2 Flow Down

The level of detail included in the initial acquisition strategy should be sufficient to serve as a roadmap for the entire program throughout the acquisition cycle and to serve as a basis for development of functional plans such as the AP, the SEMP, and the TEMP. This concept is discussed in more detail in Chapter Four.

3.4 ANALYSIS TOOLS APPLICABLE TO ACQUISITION STRATEGY DEVELOPMENT

This section addresses some of the analytical processes and tools and techniques that are useful for program management personnel in structuring acquisition strategies to support and feed into informed tradeoff decisions, given affordability constraints and the user's validated needs. Tradeoff decisions are, of course, made in the context of cost, schedule and performance.

3.4.1 Risk Analysis

Risk analysis, as a continuing function, is required by the current 5000 series directives. The risks associated with a program as it approaches a milestone, and the adequacy of risk management planning, must be explicitly managed. A risk management program must be developed and executed by the PM. The references listed in paragraph 2.2.8 contain a number of tools applicable to risk analysis.

3.4.2 Cost Analysis

Cost analysis is performed to assess the resource implications associated with the various program alternatives. Such resource implications are used and further developed in performing the COEA (now known as an Analysis of Alternatives (AOA)).

In order to perform a proper analysis of cost of an acquisition program, it is necessary to understand the various types of costs and the relationships existing among those different costs. In this regard, the concept of life cycle cost is extremely important. The life cycle cost reflects the total cost to the government for a program over its full life. It includes the cost of research and

development, investment, services, facilities, operating and support, demilitarization, disposal and long term waste management.

There are a number of cost analysis and estimation procedures. A key element applicable to all procedures is the availability of comprehensive, relevant, and accurate data. Such data should include detailed descriptions of the system or process under evaluation; associated economic, situational, and environmental factors; and costs and associated information on similar systems.

There are four generic types of cost analysis/estimation procedures, all of which are addressed in a variety of government, commercial, and professional association publications.

- Bottom-Up. Estimates are made at the lowest possible level of the system or process, and the engineering expertise of applicable organizations are used. These lower-level estimates are then aggregated and adjusted to account for such factors as integration, overhead, and administrative expenses. This technique requires fairly complete information at lower levels.

- Analogy. Current cost information on similar systems or processes is collected and modified as appropriate to account for variations from the system or process under evaluation.

- Extrapolation. Estimates are made by extrapolating from actual costs.

- Parametric Analysis. A broad base of applicable cost data is analyzed to develop relationships between cost elements and system or process characteristics. These are often called Cost Estimating Relationships (CERs).

All four methods can be used feasibly within a single program. When it can be applied, the bottom-up approach is usually the most accurate but also the most time-consuming and labor-intensive. The comparison methods (analogy and extrapolation) are often used to establish an initial baseline and to calibrate the other methods. The accuracy of parametric analysis depends on the data quality, the degree to which the CERs represent the instant case, and the strength of the derived relationships. This method is usually applied early in the program. Tools and techniques useful for cost analysis/estimation are available in the DoD cost analysis community. A comprehensive listing of such tools, entitled *Software Estimation Technology Report*, is published annually by the DoD Software Technology Support Center (Code OO-ALC/TISE), Hill Air Force Base, UT, 84056.

3.4.3 Schedule Analysis

In many respects the analysis of schedules has many of the characteristics of cost analysis. Data completeness, accuracy, relevancy, and quantity are important elements. Bottom-up, comparison, and parametric techniques are also applicable. For schedule analysis, there are a number of unique tools and techniques, including the following:

- Gantt and milestone charts.

- Line-of-balance (LOB) technique.

- Network scheduling.

- Time management techniques.

- Project management software applications.

Further information on scheduling tools and techniques can be found in the DSMC *Scheduling Guide*, May 1994.

3.4.4 Decision Analysis

Decision analysis is the process by which choices are made. Much theoretical work has been performed in developing methods to provide quantifiable measures for evaluating choices. With regard to acquisition strategy, the more sophisticated methods are usually limited because of the complex interactions (which make quantification difficult) and the data limitations that usually prevail. Nevertheless, the concepts of decision theory should be used in acquisition strategy development and execution to the maximum extent possible. A detailed description of the various decision analysis tools is beyond the scope of this Guide. The following is a listing of widely employed methods of analysis, that have proven to be useful in a broad range of DoD situations, and are generally understood by many in the defense acquisition community (see Hillier and Lieberman, below):

• Statistical Analysis. The most frequently used technique in this category is regression analysis which is employed for forecasting the expected value of a dependent variable, given the values of the independent variables. This method is used extensively in the area of cost and performance forecasting. Other statistical methods are probability theory, exponential smoothing, statistical sampling, and tests of hypotheses.

• Simulation and Modeling. This method is likely to involve the construction of a model that is largely mathematical in nature with individual elements whose behavior can be predicted, in terms of probability distributions, for each of the various possible states of the system and its inputs. The model is then activated by using random numbers to generate simulated events over time according to the appropriate probability distribution. The result is simulation of actual operations such as those involving a specific aircraft; and in the end, are nothing more or less than a relatively affordable technique of performing *sampling experiments* on a model of the system rather than on a yet to be built or fielded system.

• Mathematical Programming. Linear Programming (not to be confused with computer programming) is the most widely used method within this group. A common application involves the general problem of allocating limited resources among competing activities in the best possible or optimal way. All the mathematical functions in the model are linear. The most important area of application is production management (product mix, allocation of resources, plant and machine scheduling, and work scheduling) followed by capital budgeting. Mathematical programming also includes a number of other methods, the most widely used of which are nonlinear programming and dynamic programming. Other examples include network analysis, game theory, and integer programming.

Other lesser used methods that tend to have specialized applications in areas indirectly supporting the PM can generally be grouped under the category of Probabilistic Models. These methods would include the stochastic processes, queuing theory, inventory theory, and the Markovian decision process.

Two excellent references on decision analysis, trade-off analysis and related topics are *Introduction to Operations Research,* Fourth Ed., Hillier and Lieberman, Holden-Day, Inc., 1986; and, *Design to Reduce Technical Risk,* AT&T, McGraw-Hill, Inc., 1993.

TABLE 3-3

RECOMMENDED OUTLINE FOR THE ACQUISITION STRATEGY DOCUMENTATION

Consider The Following Outline As A Guide Or Model Only, To Be Streamlined and Tailored As Appropriate For Your Particular Program.

1 PROGRAM STRUCTURE (Not a history or weapon system description)

1.1 Planned Relationship Among Acquisition Phases, Decision Milestones, Solicitations, Contract Awards, Systems Engineering Design Reviews, Contract Deliveries, T&E Periods, Production Releases, And Operational Deployment Objectives.

1.2 Planned Degree of Concurrency and Phase Transitions

1.3 Planned Quantities to be Procured, By Fiscal Year and Phase (List)

1.4 Diagram of Program Structure and Schedule (See DoD 5000.2-R Appendix III, p. III-11)

2 ACQUISITION APPROACH

2.1 Overview

2.1.1 Mission Need

2.1.2 Program Management Plans

2.1.2.1 Delineation of Government/Contractor Responsibilities

2.1.2.2 Integrated Product/Process Teams

2.1.2.3 Matrix Support

2.1.3 Basic Acquisition Strategy Planned

2.1.3.1 Planned Approach (subsections as applicable)

2.1.3.1.1 Transition of Critical Technologies from Technology Demonstration Programs to Prototypes to Engineering Development Models

2.1.3.5 2.1.3.1.2 New Development Program

2.1.3.1.3 Non-Developmental Items

2.1.3.1.4 Evolutionary Acquisition

2.1.3.1.5 Pre-Planned Product Improvements

2.1.3.1.6 Commercial Off-the-Shelf (COTS)

2.1.3.1.7 Joint Program

2.1.3.1.8 International Program

2.1.3.2 Contracting Plans

2.1.3.2.1 State Compliance With the Policy on the Use of Performance Specifications (Army Only)

TABLE 3-3 (Cont'd)

- 2.1.3.3 Test and Evaluation Plans
- 2.1.3.4 Technology Plans
- 2.1.3.5 Logistics Support Concept/Plans
- 2.1.3.6 Production Plans
- 2.1.3.7 Description of Risk Management Program

- 2.1.4 Funding Plans
  - 2.1.4.1 Principal Source Used to Initiate Concept Studies
  - 2.1.4.2 Joint Funding Agreements
  - 2.1.4.3 Highlights of Affordability Study
  - 2.1.4.4 Funding and Affordability Constraints
  - 2.1.4.5 Chart of Planned Annual Funding Totals, by Appropriation
- 2.2 Streamlining Plans
  - 2.2.1 Program Phases
  - 2.2.2 Accommodation of Legislative Requirements
  - 2.2.3 Documentation
- 2.3 Sources
  - 2.3.1 Small Business and Small Disadvantaged Business
    - 2.3.1.1 Prospective Sources of Supplies and Services
    - 2.3.1.2 Concerns Regarding Labor Surplus Areas
    - 2.3.1.3 Plans to Create or Preserve Domestic Sources
  - 2.3.2 Contingency Support and Reconstitution Objectives
  - 2.3.3 Industrial Preparedness Strategy
  - 2.3.4 Relevant Capabilities of the Defense Industrial Base
- 2.4 Competition
  - 2.4.1 Plan to Maximize Competition
    - 2.4.1.1 Justification for Less Than Full and Open Competition
    - 2.4.1.2 Use of Repurchase Data to Increase Competition
  - 2.4.2 Breakout Plans/Results of Detailed Component Breakout Reviews
- 2.5 Contract Types
  - 2.5.1 Planned Contract Types Listed by Program Phase
  - 2.5.2 Considerations of Risk Assessment and Risk Sharing

TABLE 3-3 (Cont'd)

2.5.3 Incentive Structure

2.5.3.1 Contracts

2.5.3.2 Contractor Incentives to Improve Productivity

2.5.4 Deviations and Waivers

2.5.4.1 Existing

2.5.4.2 Contemplated

2.6 Planned Use of Fixed Price Contracts (A waiver signed by USD(A&T) must accompany the proposed acquisition strategy if a fixed price contract is planned for Phase II, EMD.)

3 MAJOR TRADE-OFF DECISIONS

3.1 Overall Trade-off Strategy

3.2 Summary of Prior Trade-off Studies

3.3 Decisions Required by the Milestone Decision Authority Prior to Release of the Formal Solicitation

3.4 Trade-offs to be Included in the Solicitations.

4

EXECUTION OF THE ACQUISITION STRATEGY

4.1 GENERAL

This chapter focuses on the elements to be considered in acquisition strategy execution, the flowdown from the strategy to the "functional strategies" to the functional plans, revisions to the strategy, and deviations from the strategy. Figure 4-1 is an event sequence chart of the execution process. It represents the iterative process associated with implementing and modifying a continuously evolving acquisition strategy, which is the subject of Section 4.2. Conversely, the actions associated with deviation from an approved acquisition strategy are addressed in Section 4.3.

4.2 THE EXECUTION PROCESS AND FLOW DOWN

The acquisition strategy is managed through execution and control of the functional *plans*. The three functions of control — direction, detection, and correction — describe the activities that are included in strategy management. *Direction* is the process of using resources (e.g., people, dollars, time) to implement plans. *Detection* is accomplished through the use of tools (briefly addressed in Chapter Three) to compare actual with planned results. *Correction* follows detection in those instances where action is required, and plans are changed as appropriate. Detection, the link between direction and correction, should include among its tools a management information system (MIS) to provide systematic verification of internal (government) and external (contractor or other government agency) performance in implementing functional plans. Areas to be considered include cost control, schedule control, technical management, managed risk, and contract management. PMs should ensure that their MISs are implemented early, and that they satisfy their needs and comply with statutory/FAR imposed reporting requirements.

Of the three general types of program documentation — requirements, decision, and functional — the acquisition strategy serves as requirements and decision documentation. It states what the PM believes must be accomplished to meet the stated objectives of the program, and it provides overall program direction. The acquisition strategy also serves as the source of objectives for functional implementation plans. It should not contain planning details but rather, should provide a clear understanding of the issues to be addressed throughout the life of the program. Thus, it can be characterized as a road map or "plan for planning."

Just as there is a flowdown from the system threat assessment, mission need statement and operational requirements document to the acquisition strategy, there is a very real flowdown from the acquisition strategy to functional strategies and documented functional plans. Figure 4-2 shows "functional strategies" linking the acquisition strategy and the functional plans. Further reference to DoD 5000.2-R, will

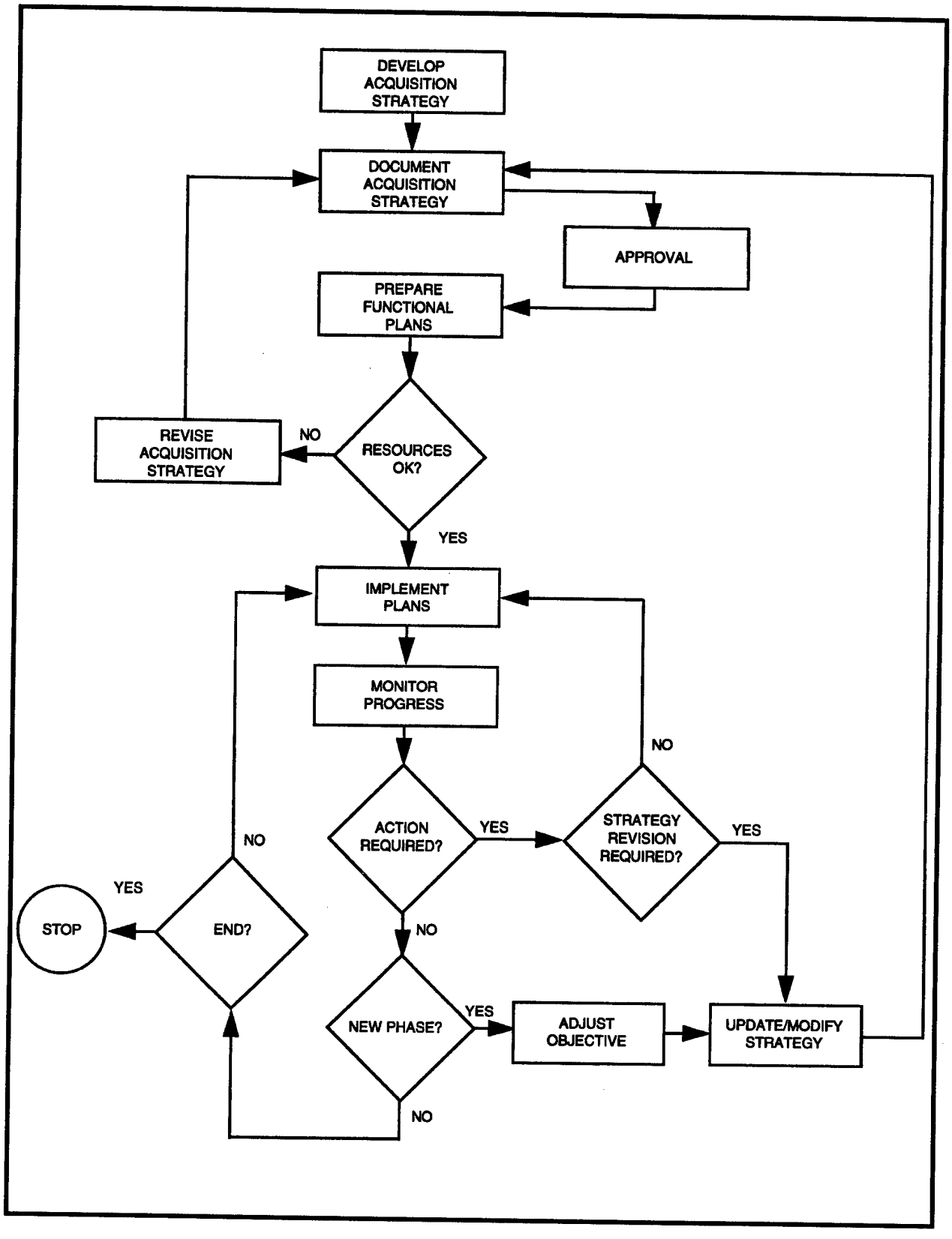


Figure 4-1. The Acquisition Strategy Development and Execution Process

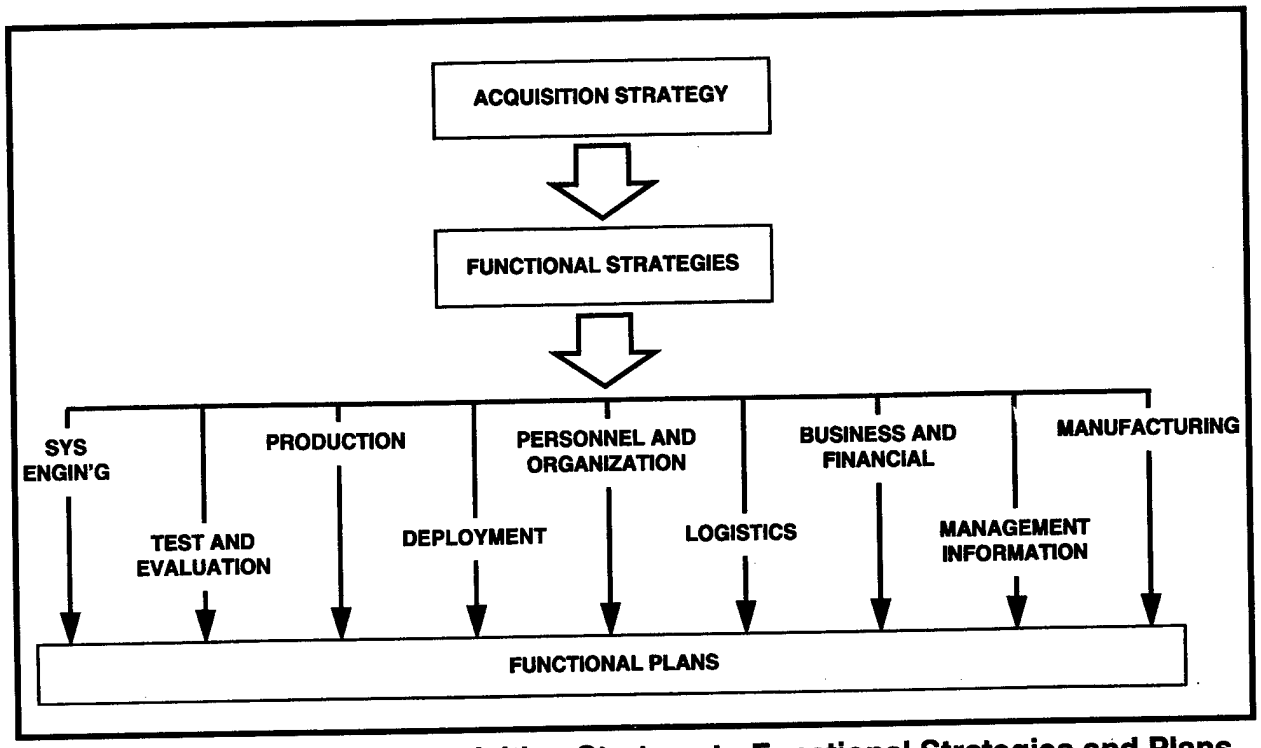


Figure 4-2. Flowdown of Acquisition Strategy to Functional Strategies and Plans

provide an overview of most of the required program documents including some of the functional plans. These required documents are divided into two categories, Milestone Documents and Periodic Reports. Included among the latter category is the AP. The AP is required by the FAR. Acquisition planning as documented in the AP is the responsibility of the PM with preparation of the plan usually being performed by the Contracting Officer. The AP must be approved before significant contractual actions are initiated. Although the AP is similar, in some respects, to the Acquisition Strategy, there is a fundamental difference; the strategy is broad and considers the main areas of the system life cycle, while the AP primarily addresses the contracting aspects of the program. The experienced PM will recognize that one of the advantages of an up-to-date acquisition strategy is that its information readily serves as the framework for the AP and the other functional plans. Please see footnote Number One in Chapter One of this Guide. In fact, current DoD policy authorizes the use of some paragraphs in the AS for the AP with documentation of both the AS and the AP in a single document called a SAMP.

4.3 DEVIATIONS FROM THE ACQUISITION STRATEGY

Even a good acquisition strategy, one which meets the criteria of realism, stability, resource balance, flexibility, and managed risk, is subject to changing circumstances beyond the scope of the plans laid out in the strategy. One of the consequences of preparing a comprehensive, useful acquisition strategy is the near-certainty that future events will require a modification to the strategy. When the need is urgent, and program risks can be better managed through deviations from the strategy, such deviations are appropriate. Deviations invariably introduce new risk into the program, and thus the program risk analysis should be updated in light of the new circumstances.

4.3.1 Examples

A few of the more significant events which may require deviations from the acquisition strategy are:

- Significant change in procurement quantities.

- Significant change in top level political support.

4.3.2 Action When Deviation Becomes Necessary

Deviations should be treated as interim actions dictated by pressing circumstances, and must be accompanied by actions to attain approval for an updated AS from the MDA without delay. The series of program actions which are necessary to execute a deviation can be summarized as follows:

- Conduct a risk analysis to justify deviation.

- Obtain approval for the deviation from PEO/MDA.

- Execute the approved deviation in order to manage risk.

- Communicate the deviation to appropriate government and contractor team members.

- Prepare proposed change to the AS, and other appropriate program plans.

- Submit proposed change for approval.

- Upon approval, promulgate the updated AS, and other plans to appropriate government and contractor team members.

- Advise all functional principals to update any remaining functional plans in accordance with the new acquisition strategy. These plans include the following:

  - Acquisition Plan.
  - Configuration Management Plan.
  - Computer Resources Life-Cycle Management Plan.
  - Hardness Assurance, Maintenance, and Surveillance Plans.
  - Human Systems Integration Plan.
  - Logistics Support Plan.
  - Life Cycle Cost Management Plan.
  - Manufacturing Plan.
  - Program Protection Plan.
  - Software Development Plan.
  - Systems Engineering Management Plan.
  - Technology Assessment and Control Plan.
  - Test and Evaluation Master Plan.
  - Training Development Plan.
  - Risk Management Plan.

Timely execution of this action sequence will ensure that all program team members are aware of the need to redirect their efforts to conform with the new acquisition strategy.

APPENDIX A
ACQUISITION RELATED TERMS*

Acquisition Plan (AP)
Advanced Concept Technology Demonstrator (ACTD)
Advanced Technology Demonstrator (ATD)
Affordability
Associate Contractors
Audits
Awards
Baselines
Best Commercial Practices
Budgeting
Capitalization
Competition
Competitive Alternative Development and Production
Competitive Prototyping
Component Breakout
Computer Aided Design (CAD)
Computer Aided Manufacturing (CAM)
Computer Resources
Concept Sources
Concurrency/Time Phasing
Concurrent Engineering
Configuration Item/Computer Program Configuration Item (CI/CPCI)
Contract –
Administration/Alternatives/Incentives/Methods/Negotiations/Types
Contractor Furnished Equipment (CFE)
Co-Production
Cost and Operational Effectiveness Analysis (COEA)
Cost as an Independent Variable (CAIV)
Cost –
Control/Estimation/Growth/Flyaway/Life Cycle/Models/Visibility
Criteria (Source Selection)
Critical Materials
Data Management
Deployment Requirements
Design-to-Cost (DTC) Goals
Design-to-Unit-Production Cost Goals
Economic Production Rates
Embedded Computer Resources
Energy Efficiency
Evolutionary Acquisition (EA)
Facilities
Facilities Construction
Federal Acquisition Streamlining Act (FAStA/FASA)
Foreign Military Sales (FMS)
Foreign Technology
Funding/Funds Needs
Funds Fencing
Government Furnished Equipment (GFE)
Government Owned/Contractor Operated (GOCO) Facilities
Guarantees
Hardness (Nuclear and Chemical)
Human Factors
Incentives
Information Technology Management Reform Act (ITMRA)
Independent Cost Estimates (ICE)
Independent Verification and Validation (IV&V)
Industrial Base
Industrial Modernization Improvement Plan
Industrial Resources Analysis
Integrated Product and Process Development (IPPD)
Integrated Product Team (IPT)

*A DSMC *Glossary of Defense Acquisition Acronyms and Terms* is available from the Government Printing Office, reference periodical number GPO-008-020-01354-4 ($11.00). To order, call (202) 512-1800.

Integration Contractor
Interim Contractor Support
International Defense Cooperation
Interoperability
Joint Program
Leader-Follower
Leasing
Licensing
Life Cycle Cost-Performance Integrated Product Team (CPIPT)
Logistics Support (LS)
Long Lead-Time Items (LLI)
Low Rate Initial Production (LRIP)
Maintenance Support Concept
Major Trade-offs
Make or Buy Decisions
Manufacturing Technology
Market Factors
Market Survey
Materials Priority (DX/DO)
Metrification
Military Construction
Multi-Year Contracts/Procurement
Objectives (National/Program)
Ownership Costs
Patents
Phase Acquisition
Post-Production Support
Precious Metals
Pre-Planned Product Improvement (P^3I)
Producibility
Producibility Engineering and Planning (PEP)
Production - Management/Planning/Rates
Productivity
Program Control
Progress Reporting
Prototyping
Provisioning
Qualified Suppliers
Quality
Quality Assurance
Rationalization, Standardization, and Integration (RSI)
Readiness/Sustainability
Recommended Exit Criteria
Recoupment
Reliability and Maintainability (RAM)
Reliability Growth
Risk - Analysis/Management/Reduction/Sharing
Safety and Health
Second Sourcing
Should-Cost
Simulations
Software
Sole Source
Solicitation
Specifications and Standards
Standardization
Streamlining/Tailoring
Subcontracting
Surge Capability
Survivability
Teaming
Technology - Base/Sources/Transfer
Test and Evaluation (T&E)
Threat Assessment
Thresholds
Total System Integration Responsibility (TSIR)
Total System Performance Responsibility (TSPR)
Transition to Production
Uncertainty
Vulnerability
Warranties

APPENDIX B*
EXAMPLES OF
ACQUISITION STRATEGY DOCUMENTATION

*Appendix B consists of two documents reformatted from the originals. They are intended for illustrative purposes only. Page location of specific text and charts varies somewhat from the originals.

ACQUISITION STRATEGY REPORT (ASR)

FOR THE

JOINT DIRECT ATTACK MUNITION (JDAM)

DEPARTMENT OF THE AIR FORCE
WASHINGTON, DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

24 APR 1995

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY

FROM: SAF/AQ

SUBJECT: Joint Direct Attack Munition (JDAM) Acquisition Strategy Report (ASR) Revision #1

Attached for your approval is the Acquisition Strategy Report (ASR) for the Joint Direct Attack Munition (JDAM) Program. This revised ASR reflects the results of the JDAM source selection, the updated program schedule, and the ADM direction to accelerate JDAM integration on the B-2. It also reflects the innovative acquisition reform initiatives incorporated as a result of JDAM's designation as a Defense Acquisition Pilot Program.

DARLEEN A. DRUYUN
Principal Deputy Assistant Secretary
(Acquisition & Management)

Attachment:
JDAM ASR Rev #1

INTEGRATED PROGRAM SUMMARY (IPS)
ANNEX C

ACQUISITION STRATEGY REPORT

FOR THE

JOINT DIRECT ATTACK MUNITION

Rev 1, 10 Apr 95

JDAM ACQUISITION STRATEGY REPORT

I. PROGRAM STRUCTURE

1. The Joint Direct Attack Munition (JDAM) is a program to provide the Air Force and Navy with an improved capability for general purpose and penetrating warheads. The Air Force is the Executive Service for JDAM. The JDAM system is a strap-on guidance kit to enhance the delivery accuracy of 2000 pound (MK-84 and BLU-109) and 1000 pound (MK-83 and BLU-110) inventory warheads. JDAM also provides an adverse weather delivery capability. The technical solution is to use an inertially guided, Global Positioning System-aided (INS/GPS) kit. The guidance units for the 2000 pound and 1000 pound kits will be common. The airfoil group for the 1000 pound kit may be smaller or the same as the one for the 2000 pound kit depending on which contractor design the Government selects. The Joint Programmable Fuze (JPF) program is a related program that will develop a programmable electronic fuze for JDAM, other guidance kits and dumb bombs. The programmable fuze is an ACAT III program, currently in development. Motorola is the prime contractor. JDAM includes an evolutionary Product Improvement Program (PIP) to enhance accuracy. The goal for JDAM PIP is to achieve autonomous, adverse weather accuracy comparable to that available from existing laser-guided bombs — approximately three meters circular error probable. The JDAM PIP was formerly called "JDAM 3."

This Acquisition Strategy Report (ASR) describes only the strategy for the basic JDAM; it will not address the detailed strategy for the JDAM PIP. The JDAM PIP will have a separate Acquisition Strategy Report and milestone review before a Demonstration/Validation (DEM/VAL) or EMD decision.

2. The JDAM Milestone I Review occurred on 1 October 1993. As a result, the Under Secretary of Defense (Acquisition) approved JDAM's entry into an 18-month, (DEM/VAL) Phase I. During the Defense Acquisition Board (DAB) there was agreement that the primary focus of Phase I would be on devising an affordable design and the manufacturing processes to produce a system that meets the operational requirement. This contrasts to a more conventional DEM/VAL, where the emphasis is on validating performance and reducing technical risk. The Phase I includes both a Critical Design Review and an initial Production Readiness Review. Concurrent with the Phase I contracted activities, the program office will refine the documentation, so that, after approximately 18 months, there can be a Milestone II decision for approval to build and test hardware. The DAB process for Milestone II will be streamlined to reduce documentation and oversight. This ASR is a post-Milestone I update to reflect program changes since the Milestone I submission.

A top-level overview of the current program plan is as follows:

a. The Air Force selected two contractors for Phase I. They are Martin Marietta and McDonnell Douglas. The Air Force awarded the two contracts for Phase I on 11 April 1994. During the 18 months of Phase I each contractor will design his guidance kits for the

2000 and 1000 pound applications and proof his manufacturing processes to build these kits. Implicit in this manufacturing proofing is establishing a foundation to provide both the Air Force and the contractor high confidence in what the ultimate production costs will be. The Air Force is also requiring the contractors to have an "end-to-end" technical demonstration during Phase I. The demonstration's objective is to verify that the designs will meet the threshold performance requirements. The exact nature of the technical demonstrations is up to each contractor.

b. The Government will select either Martin or McDonnell to complete the program (Phase II) after the first 18 month's performance. Phase II will consist of building production representative hardware, conducting development test and evaluation (DT&E/TECHEVAL) and supporting operational test and evaluation (OT&E/OPEVAL). The first guided weapon (2000 pound) testing will be from an F-16 to verify basic weapon functionality. The first guided test will be approximately eight months after the start of Phase II. Integration testing with the B-2 will follow the F-16 launches. The five launches from the B-2 will support a limited B-2/JDAM capability by the end of FY97. These B-2 launches will combine DT&E and IOT&E objectives. The JDAM 2000 pound kit's full development and operational testing will use a bomber and a fighter: the B-1 and the F/A-18. The 1000 pound kit testing will follow that for the 2000 pound kit. The Air Force will test the 1000 pound kit on the F-16 for initial weapons development testing, with follow-on development and operational testing on the F-22. Integrating and certifying the 2000 pound kits on additional aircraft will take place after development is over and JDAM is in production. These follow-on integrations will be the responsibility of the appropriate aircraft program offices.

c. The Government will base its decision to enter Low Rate Initial Production (LRIP) on available weapon DT&E results, an operational assessment, aircraft compatibility (physical, logical, and electrical) on JDAM designated aircraft and a second Production Readiness Review.

There will be two LRIP lots. The first lot, which will have an FY98 award date, will be for 1000 of the 2000 pound kits. The second LRIP will be in FY99.

d. Full rate production approval will come after the end of weapon operational testing on B-1 and F/A-18. The Air Force plans for the first full rate production award to be in FY00 for the MK 84/BLU-109 JDAM kits.

e. Table 1 presents the quantities of fully guided kits that the Air Force estimates it will buy for itself and the Navy over the program life. At this time the mix of 2000 pound and 1000 pound bomb kits is still to be determined.

Figure 1 depicts the overall JDAM Master Schedule including key milestones, contract award dates and deliveries. Figure 2 gives the aircraft test and integration schedule.

Table 2 provides the acquisition cycle milestone schedule for the events and activities leading to the downselection from two contractors to one.

Table 1. JDAM Quantities

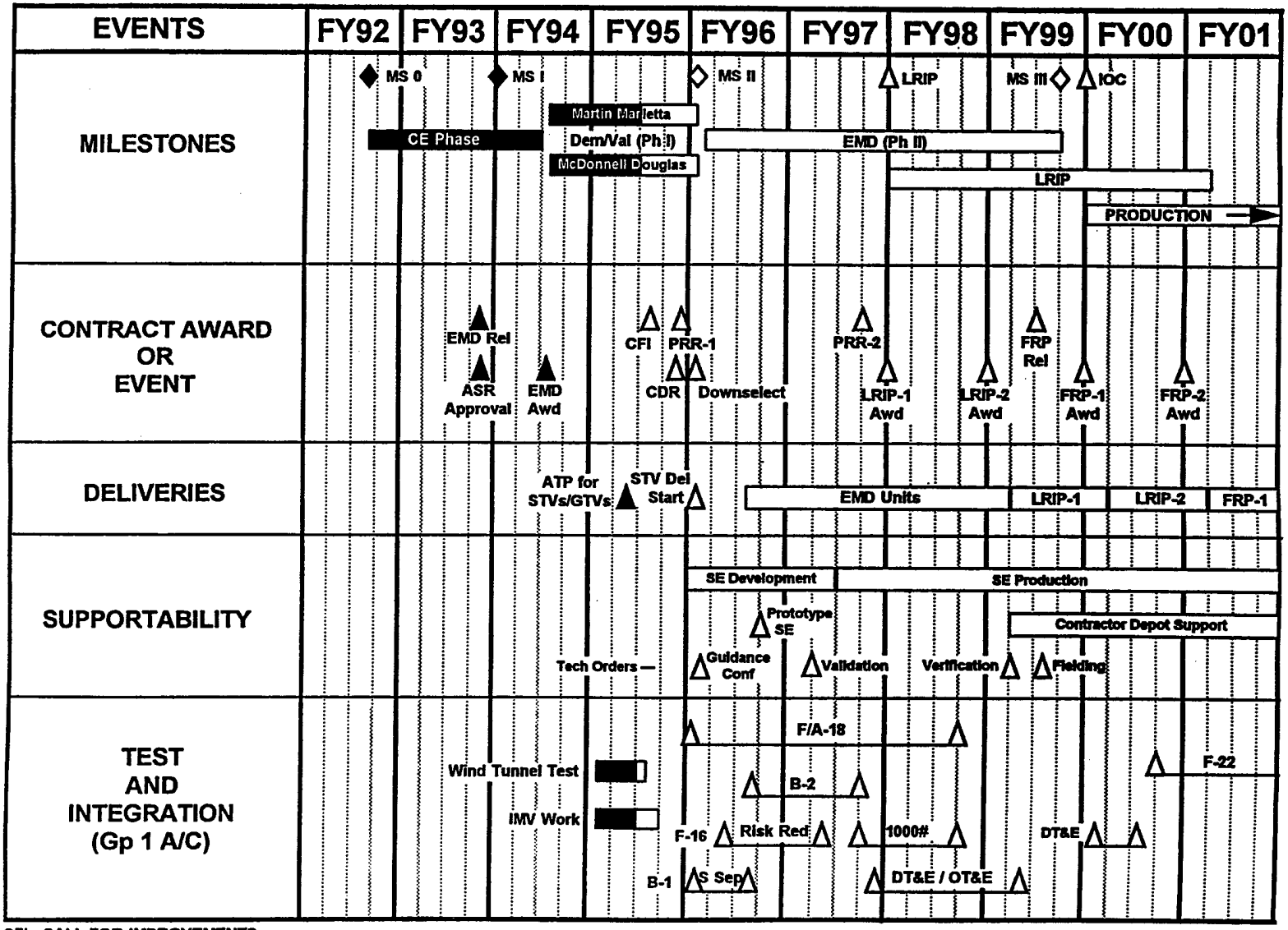
Fiscal Year	Program Phase	Weapon Kits (AF)	Weapon Kits (Navy)	Total Kits
94-95	Phase I	0	0	0
96-99	Phase II	264	114	378
98	LRIP 1	700	300	1000
99	LRIP 2	855	450	1305
00	FRP 1	2662	410	3072
01	FRP 2	4770	430	5200
02-to complete	FRP N	4900/yr	700/yr	5600/yr
Total Production		62000	12000	74000

Table 2. Acquisition Milestones

MILESTONE 0 DAB	JUN 92
MILESTONE 1 DAB	OCT 93
CONTRACT AWARD	APR 94
PRELIMINARY DESIGN REVIEW	JAN 95
CALL FOR IMPROVEMENTS	MAY 95
CRITICAL DESIGN REVIEW	JUL 95
PRODUCTION READINESS REVIEW-1	SEP 95
DOWNSELECT DECISION	OCT 95
MILESTONE II DAB	OCT 95
AWARD OF PHASE II OPTIONS	OCT 95

3. The JDAM PIP is currently in the concept validation phase. Four completed concept exploration studies identified two generic classes of alternative improvements to enhance the JDAM's accuracy. The first is to add a terminal seeker to the JDAM. This seeker could be an imaging infrared seeker, active millimeter wave, synthetic aperture radar, active laser or other viable technology. These seekers differ from one another in the degrees of adverse weather capability each offers, expected production cost, the difficulty of mission planning, and the maturity of the technology. Thus, the choice of which, if any, seeker to pursue for JDAM PIP depends on complex trade-off analyses and technical information about how each seeker type would perform against the targets-of-interest. The other possible solution is one that does not involve an improvement to JDAM guidance, but is a system solution. It would improve the other, non-weapon error sources that contribute to inaccuracies. For example, one could improve the target location error so that GPS-aided inertial guidance would be more accurate. This could be a direct improvement by enhancing the intelligence gathering infrastructure's ability to accurately locate targets. Or, it can be done indirectly by using the launch aircraft radar, combined with GPS, to provide a relative target position that would be more accurate and more timely than pre-mission

JDAM MASTER SCHEDULE



CFI - CALL FOR IMPROVEMENTS
ATP - AUTHORITY TO PROCEED

BB MSTSCH 033195

Figure 1. JDAM Master Schedule

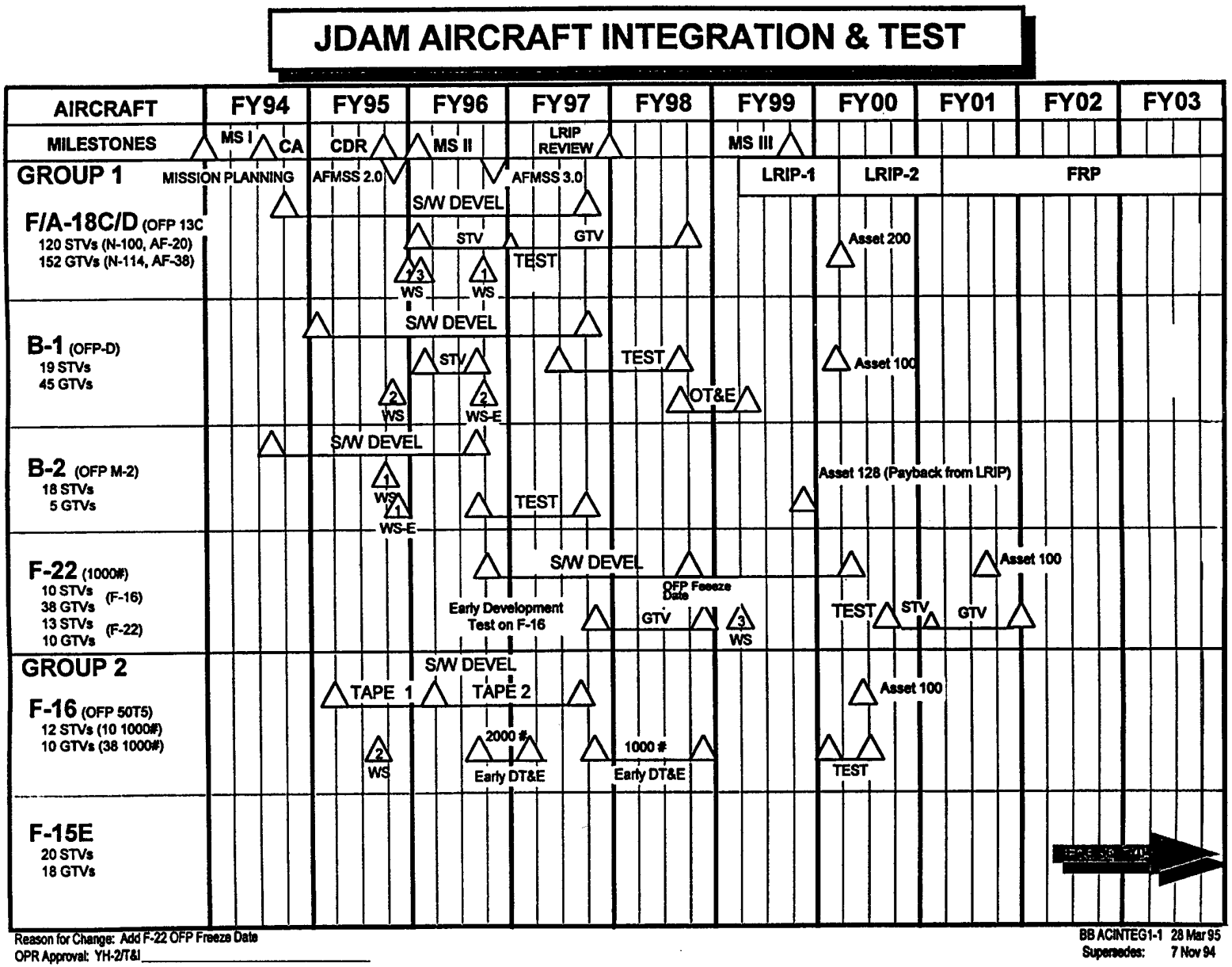


Figure 2. JDAM Aircraft Integration & Test

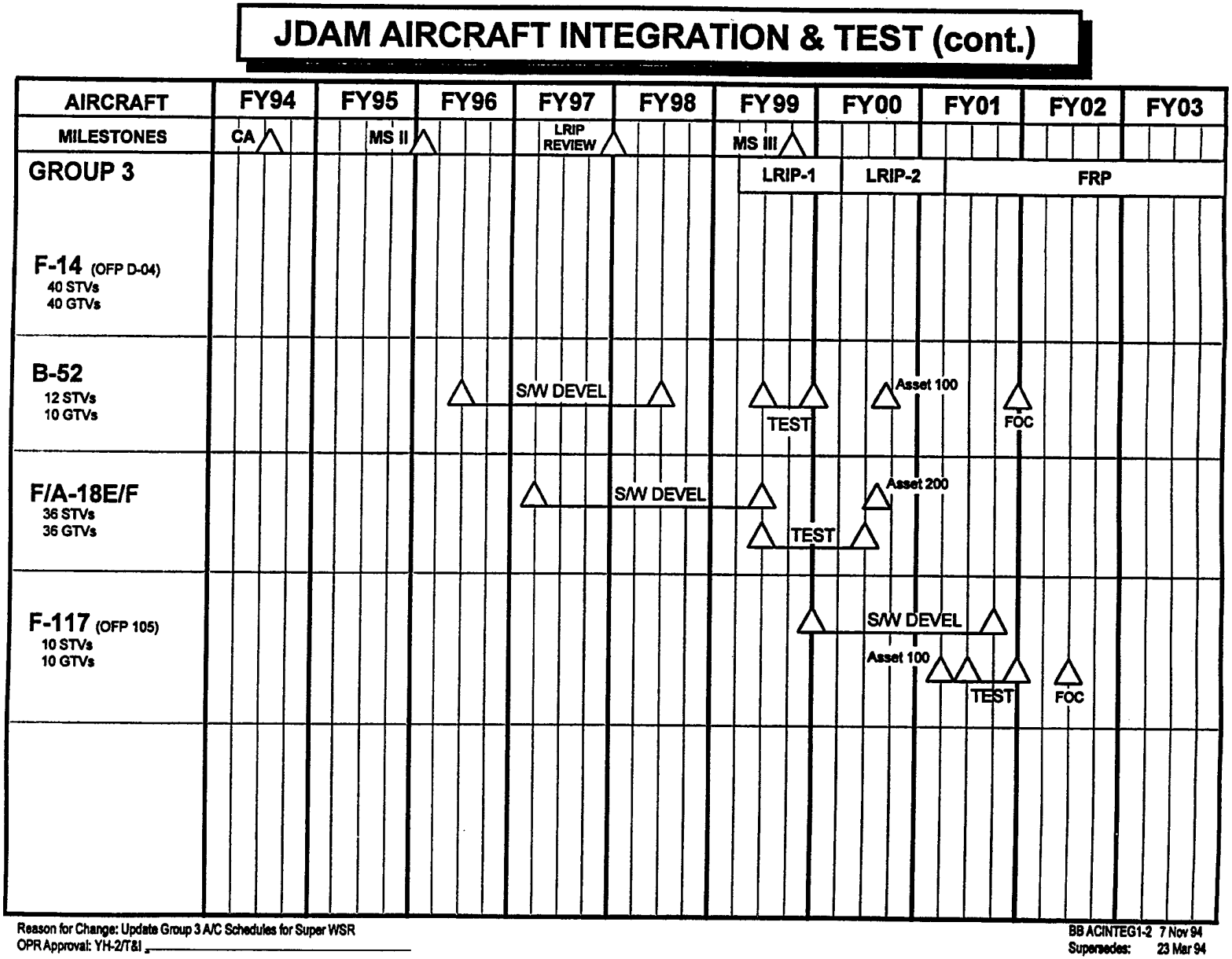


Figure 2. JDAM Aircraft Integration & Test (Continued)

targeting. Another approach would be to reduce the inherent GPS errors using a technique like differential GPS. While either (or a combination of approaches) could be an alternative to the seeker development, neither has been verified to work and be operationally realistic. Thus, the JDAM PIP is a planned improvement to JDAM, but the nature and timing for that improvement is not fully defined today. For planning and budgeting purposes the Air Force has assumed that JDAM PIP is a seeker that will be sufficiently mature to meet a Milestone I Review in FY99. Under that scenario, Figure 3 reflects the schedule relationship between JDAM and JDAM PIP.

4. The Joint Programmable Fuze (JPF), FMU-152/B, is related, but not tied, to JDAM. The purpose of the JPF program is to develop a new smart (programmable) fuze that will work with the laser guided bomb series, AGM-130/GBU-15 and unguided bombs as well as the JDAM. This fuze will have in-flight cockpit selectable multiple arming times and function delay times. It will be compatible with both general purpose and penetrating warheads. The JPF will also have a proximity burst capability when mated with the DSU-33 proximity sensor. Since the JDAM and JPF development programs are essentially concurrent, the Air Force will do the JPF development and operational testing with inventory warheads and guidance kits, rather than with JDAM. The JDAM program office will be responsible for JPF/JDAM integration testing with support and funding from the JPF Program Office. JPF/JDAM testing will be concurrent with the JDAM DT&E/IOT&E on a "tag-along" basis with IOT&E launches. Therefore, JDAM DT&E will start by using inventory fuzes (FMU-143 and FMU-139) because the JPFs will not be sufficiently tested when the first JDAMs begin testing. Later DT/OT will include the JPF. Figure 4 reflects the schedule relationship between JDAM and JPF.

II. ACQUISITION APPROACH

1. Acquisition Strategy. There are three salient aspects of the JDAM program that underlie the choice of acquisition strategy: (1) the pre-eminence of affordability as a requirement, (2) the selection of JDAM as a pilot program for Acquisition Reform and (3) guidance unit commonality with the Navy-led Joint Standoff Weapon (JSOW). This section will describe the acquisition strategy in terms of these three aspects.

a. JDAM is a low risk program from a technical point of view. The program has no unproven technologies; its electronic and mechanical aspects are not complex. The program office has high confidence that either Martin Marietta or McDonnell Douglas can build a JDAM that meets the threshold performance requirements. The chief issue for EMD is the manufacturing development rather than the engineering or technical performance. The JDAM Phase I development effort focuses on concurrently engineering the design and manufacturing processes as well as planning the production to make the system affordable. Achieving a low cost design and picking the contractor who can, in fact, manufacture the system at a low cost is the biggest single risk in the program. To mitigate this affordability or management risk the Air Force awarded two Phase I contracts, even though the inherent technical risk was low. The most important criterion for choosing the two contractors was the degree to which the contractors offered persuasive cases that they would have an affordable system. "Affordability" as well as the contractor team's Phase I

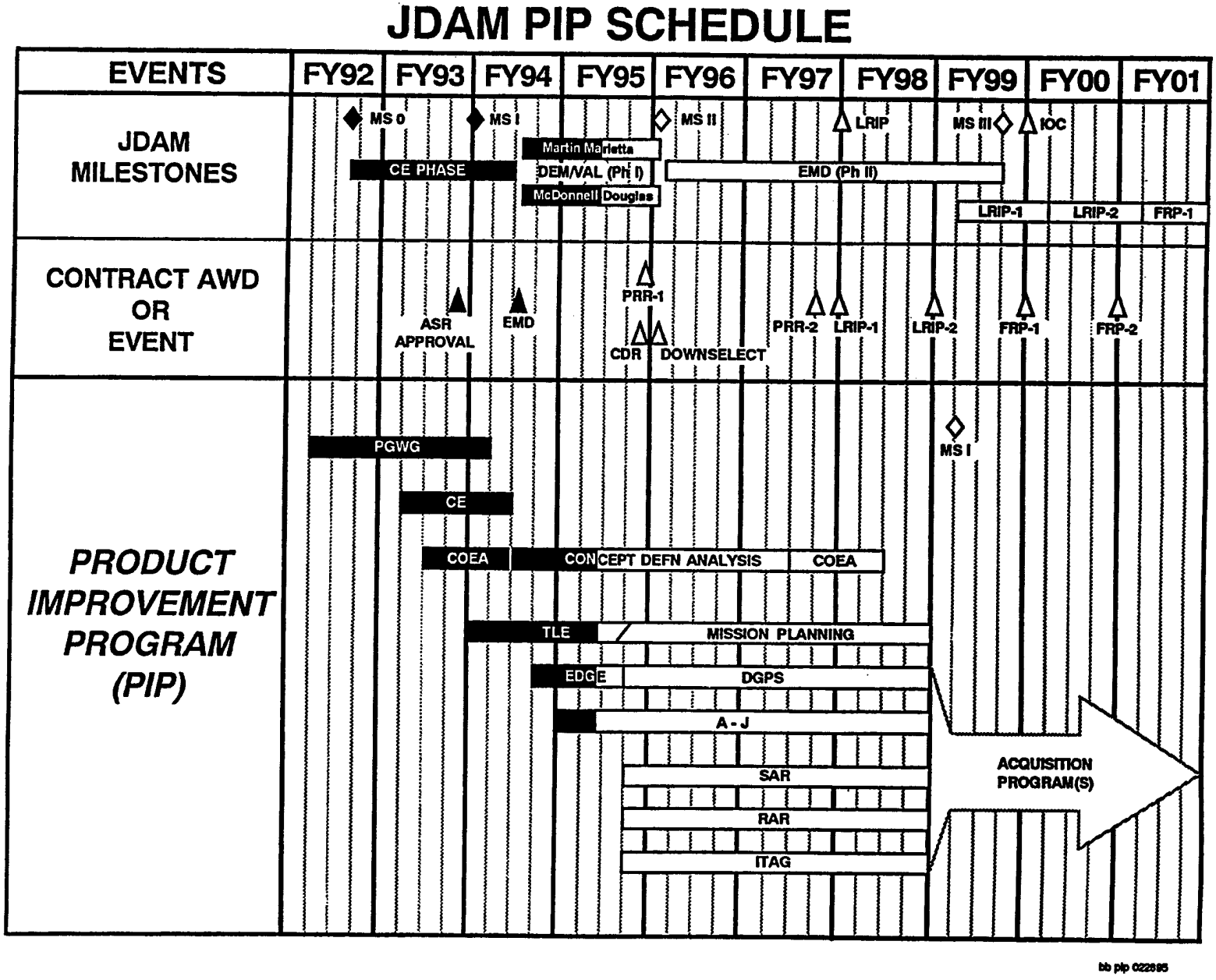


Figure 3. JDAM PIP Schdule

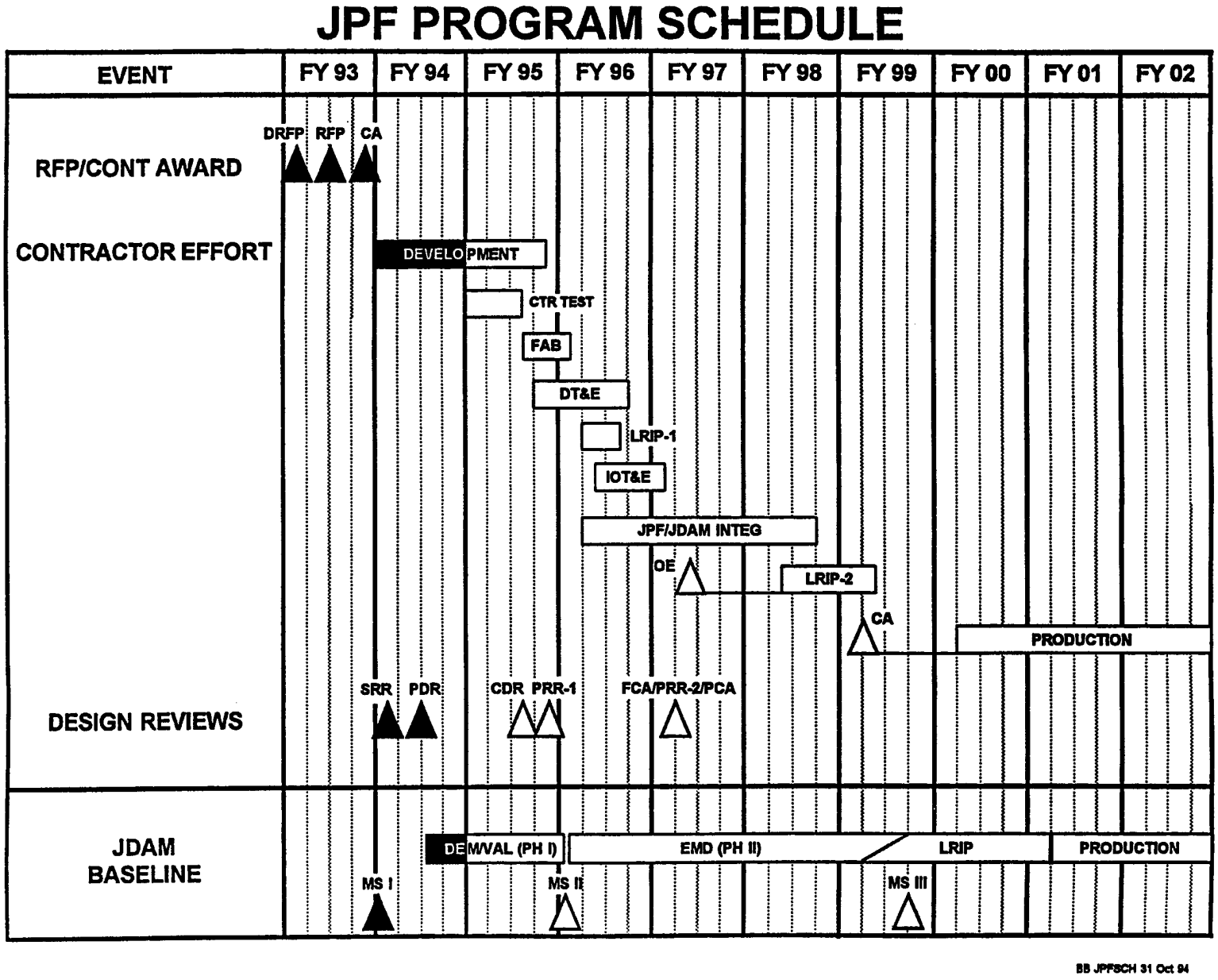


Figure 4. JDAM Program Schdule

performance **will, along with system performance**, be the factors in deciding which contractor will continue into Phase II.

b. The second salient aspect affecting the acquisition strategy is the fact that the Federal Acquisition Streamlining Act (FASA) of 1994 designated JDAM as one of DOD's Defense Acquisition Pilot Programs (DAPP) for implementing innovative acquisition reform initiatives on a trial basis. The thrust of both the legislation and the program office implementation is to emulate commercial buying practices insofar as possible. As a pilot program the JDAM program office has the authority to acquire the product using acquisition processes as if it were a commercial item. The main goal of JDAM's approach is to reduce the production cost of the end item by entering into a long-term, favored supplier relationship with the contractor. If the favored supplier approach does not produce the expected results, the acquisition strategy provides for future competition as described later in this document. Secondary goals are to reduce the Government costs of oversight and administration, reduce acquisition cycle time and lower development costs. Several of the specific streamlining initiatives are covered elsewhere in this report; while others are still in the formulative stages. Among those not covered elsewhere in the report are the following:

(1) Price-based negotiation. The program office believes that it will have enough information to determine that the prices are fair and reasonable, as well as establishing cost realism for both the Phase II development program and the first five lots of production without getting formal cost and pricing data. As changes accrue to the contracts the program office will continue to assess fairness and reasonableness without resorting to certified cost and pricing data. If this becomes impossible, the program office will request a waiver, as necessary, to obtain certified cost and pricing to get cost data for only that specific change.

(2) Removal of Government in-plant, in-process oversight during production. The program office is encouraging the JDAM contractors to produce the system in a commercial facility using commercial vendors. To facilitate this, the Statement of Work for production will be very short (approximately three pages) and contain only the requirement to produce the JDAM kits in accordance with the performance specification. As a result the program office does not envision the need for in-process Government oversight of the manufacturing processes or the vendors. There will, however, be a need for a Government representative to: perform factory acceptance tests by exercising the weapon's Built-In-Test (BIT) function; conduct annual lot acceptance and surveillance tests and; assess periodically compliance with the contract's general terms and conditions.

(3) "Rolling Downselect." The Source Selection Authority (SSA) for the JDAM downselect has approved a Source Selection Plan (SSP) that has a "rolling downselect" in lieu of the institutionalized source selection process. The nature of this rolling process is that each of the two contractors gets an evaluation of his performance (i.e., a report card) at three evaluation points during the first 18 months. Similar in concept to an award fee evaluation, this rolling downselect actually awards colors and risk ratings to each contractor using criteria and standards to which the contractor has total access. At the

conclusion of each evaluation period and unlike a normal downselect, the contractor gets candid feedback on the evaluation so that he can improve during the next period. It is these evaluations, together with the contractors' price commitments, that will provide the basis for the downselect. This approach is motivational to the contractors because they receive immediate feedback on real or perceived deficiencies (they know what specific area needs additional focus or attention, as well as the magnitude of the Government's concern (yellow or red color); and they receive positive feedback on those areas in which they excel (blue color). This feedback puts the contractors in more control of their destiny — which is also very motivational. In addition, this approach also avoids the unnecessary direct and opportunity costs of the contractor preparing, and the Government evaluating, a full blown Phase II technical proposal. The terms and conditions for Phase II will be pre-negotiated between the Government and the contractor so that the only detail before award is to fill in the prices and sign the contract modifications. Because of the unprecedented nature of this process and the goal of emulating commercial practice, we have asked both contractors, as a precondition for implementing this open process, to voluntarily waive their rights to protest the award either to the Agency, the GAO or through Armed Service Board of Contract Appeals (ASBCA). Both have agreed to do so.

c. The final salient aspect affecting the overall acquisition strategy is commonality with the Joint Standoff Weapon. The Milestone 0 and I DABs directed that JDAM "...use an INS/GPS guidance set common to JSOW...." At the same time, the JSOW Milestone II DAB directed that JSOW use an INS/GPS common to the JDAM. In both cases the DAB gave the Services the option to come back for approval if a study of the commonality options showed that an alternate course of action for the two programs was more cost-effective. In addition, the Milestone I JDAM ADM directed that the JDAM program plan for future competitive procurement of the GCU. The original intent of the ADM direction was to reduce JDAM and JSOW costs. In doing this, however, we discovered that we were forcing many "how-tos" and unnecessary constraints on our contractors. Subsequent advances in acquisition reform (no MIL-STDs/SPECS, commercial practices, etc.) have opened many other new areas for cost reduction. In conjunction with JSOW, we have learned that the most potential for lowering acquisition costs lies in aircraft operational flight programs (OFPs), mission planning modules, aircrew-to-vehicle interfaces, and use of contract incentives to lower production costs.

The JDAM and JSOW program offices, together with their contractors, have studied various options — everything from interchangeable hardware units (i.e., form, fit, and functionally equivalent) to no commonality. The results clearly indicate that developing and competitively procuring a common piece of interchangeable hardware is not advantageous from a technical, cost and legal standpoint. The strategy that makes the most sense is that the JDAM and JSOW programs reduce acquisition costs as described above, with emphasis on contract incentives to lower production costs. This approach does not preclude any future commonality actions, if necessary. JDAM'S strategy (Production Price Commitment Curve) and JSOW's strategy (cost incentive curve on their GEU) should keep the costs fair and reasonable and allow us significant cost reductions while not requiring subsystem competitive procurement at this time.

2. Government/Contractor Responsibilities.

a. Management. The Air Force Program Executive Officer for Conventional Strike Systems (AFPEO/TS) is responsible for executing the JDAM program. Working for the PEO is the JDAM Program Director at Eglin AFB, FL. The Director leads the Joint Program Office and is responsible for managing the program. The Air Force program office draws additional support from the Navy Program Office for Tactical Aircraft Systems (NPEO/T), the Aeronautical Systems Center, the Air Force Development Test Center, the Naval Air Systems Command, the Naval Air Warfare Center and other Government agencies. There are three noteworthy aspects to how the Air Force will manage the JDAM program.

(1) The first noteworthy aspect is that, for the Air Force, the aircraft program offices, not the JDAM program office, have the responsibility to budget for and integrate the JDAM on their respective launch platforms. Under the direction of, and with funding from the aircraft program offices, the aircraft prime contractors will develop the necessary hardware and software modifications to make JDAM work on their respective aircraft. The JDAM contractors' interfaces with the aircraft primes will be via Associate Contractor Agreements and their participation in a Joint Interface Control Working Group (JICWG). The Government-managed JICWG will establish, for each aircraft, an interface specification defining the mechanical, electrical, functional and logical interface details. These interfaces will be derivatives of existing interfaces (e.g., JSOW and/or the Tri-Service Stand-off Attack Missile) in order to minimize aircraft software development and hardware modifications. Once the Government defines them, these interfaces will become the blueprints describing what both the JDAM and aircraft primes must do to satisfy the requirements of the other. The JDAM design will accommodate the unique architectures of all the primary aircraft. JDAM will be integrated among them without hardware redesign.

(2) The second noteworthy aspect is that JDAM is using the MIL-PRIME acquisition approach that the Advanced Tactical Fighter Program pioneered. MIL-PRIME allows the contractor to tailor the work effort using the tasks and schedules that he feels are most appropriate for him. To implement MIL-PRIME, the Air Force gave each JDAM offeror a Statement of Work (SOW) outline, together with a Systems Requirements Document, as part of the Request for Proposal. Martin and McDonnell supplied their individual and different SOWs, Systems Performance Specification, Systems Engineering Management Plan (SEMP), Integrated Management Plan (IMP), and an Integrated Master Schedule (IMS) as part of their proposal. These documents (excluding the SEMP and IMP) became part of Martin's and McDonnell's contracts. The Government's contract performance monitoring now focuses on ascertaining the degree to which each contractor follows his plans and achieves the schedule and performance he has promised. After downselect there will be a single SOW, specification and set of plans for JDAM: the winning contractor's SOW, specification and plans.

(3) The third noteworthy aspect is that the Air Force is using a small, streamlined program office and integrated product teams to manage JDAM. Program office size will be approximately 30 percent less than comparable Air Force programs. Depending on the results of some of the streamlining initiatives associated with the pilot program — particularly those associated with reduced reporting and oversight — the program office

may be able to further downsize as development proceeds. In addition, the program office is organized into integrated product teams rather than as functional groups. Navy personnel are fully integrated into these teams. The purpose of this arrangement is to facilitate a more collaborative decision process within the joint office than what the process would be if Navy concurrence was focused exclusively on Navy-unique aspects of the program. Currently, many of the program office personnel are in one of two product teams — one for the McDonnell contract and one for the Martin contract. The primary function of the Government people on these teams is to help their respective contractor solve program issues; rather than to oversee or monitor his work effort. These Government team members work the interfaces with outside Government organizations; assist in the work effort, including making presentations during program reviews; and collaborate with the contractor in day-to-day technical and programmatic decisions. The team leaders have full delegation from the Program Director to make decisions that are within his authority. The team members, because of their role vis-à-vis the contractor, bear no responsibility for award fee determination nor for the downselect decision. **As a test case, the JDAM is implementing a pay-for-performance plan as part of the OSD implementation of the 1994 Federal Acquisition Streamlining Act. The JDAM implementation, aw aiting final approval, would offer bonuses to the program team depending upon how well the program met its cost, schedule and technical objectives. The process for determining the bonuses would very much parallel the process that the Department uses now for contractor award fees.**

b. Systems Integration. The JDAM prime contractor is responsible for system performance of the bomb guidance kits. He will design, develop, and produce the kit, and provide the required logistical support system. He will interface with the aircraft prime contractors through Associate Contractor Agreements (ACAs) and the Government-led Joint Interface Control Working Group.

c. Government Furnished Property. The Government will make available to the JDAM contractors 1000 and 2000 pound warheads, fuzes, test sites, instrumented test aircraft, telemetry encryptors, BIT/memory loaders and an Air Force Mission Support System.

d. Government Furnished Information. The Government has provided or will provide the JDAM contractors with the following information: a draft JDAM Interface Control Document; a top level requirements description for JSOW guidance; reduced and raw telemetry data the Government collects during flight testing; and an operations and support cost estimating munitions model.

3. Product Descriptions. The System Requirement Document (SRD) described the Government's system performance requirements. Both Martin and McDonnell translated the SRD into a system performance specification which became a part of each contract. During Phase I, the two specifications will evolve to reflect cost and requirements trades the contractors do as part of the design process. By the end of Phase I, the performance specifications will be stable, but different between the two contractors. For the winning contractor, the performance specification will describe the product the Government will test during Phase II.

4. Logistics Considerations.

a. Support Assumptions. Martin Marietta and McDonnell Douglas have agreed to propose, as an option, a simple, lifetime repair warranty that will be part of JDAM's purchase price. This extended warranty would cover the units for the shelf-life requirement which is 20 years. Under this concept the contractor repairs all failures (or replaces the unit) excepting those failures clearly outside his control (e.g. wartime damage, accident or mishandling, damage due to acts of God, etc.). When a series of like failures do occur, it will be up to the contractor to prove that the failures are isolated rather than systemic. Should the Government and contractor agree that a particular failure mode is a systemic one, then it is up to the contractor to identify the discrepant population and pay for a recall. Under this concept there will be no depot in the traditional sense — neither will there be Contractor Logistics Support (CLS) as it is traditionally defined. There will be no requirement to fund for depot spares, depot equipment and tech data packages. Sustaining engineering will also be greatly reduced. We believe the delta price for the warranty will be 5-10 percent. But until we actually get the prices at downselect, we are continuing to analyze organic depot support options.

Both the Air Force and Navy are planning to integrate JDAM into their existing support concepts. There will be two maintenance levels for the Air Force: organizational and depot. The Navy will have three levels: organizational, intermediate, and depot. The Services will work out the details of the logistics support concept during Phase I, but the following is a general outline of the plan:

(1) JDAM organizational maintenance for both Services will be simple "GO/NO GO" checks using Built-In-Test (BIT) on either the assembled round (on the ground or in the air) or the containerized kit. If a unit fails BIT it will go to the prime contractor (via the Naval Weapons Stations for the Navy) for repair.

(2) The weapon operational flight software will be field reprogrammable within the container using a memory loader verifier device. This device, which will be used for both BIT and reprogramming will be either one that already exists (e.g., AMRAAM or TSSAM) or the Common Munitions Bit and Reprogramming Equipment (CMBRE). The CMBRE is under development by San Antonio Air Logistics Center (SA-ALC/LDA).

(3) There will be no increase in either manpower allocations or skill levels required to maintain JDAM. The Services will incorporate maintenance training into existing classes.

(4) JDAM should not require any unique support equipment or tools to maintain it either in the field or on the carrier.

(5) Sustaining engineering will be planned to support software and hardware changes after the system is operational.

b. Reliability, Maintainability and Quality Assurance.

(1) Reliability. Both Martin and McDonnell have devised an approach for meeting the Government's reliability requirement. Using the principles of commercial acquisition, the Government requirements do not mandate specific procedures or templates the contractors must use to assure reliability (e.g. Environmental Stress Screening, parts control, etc.). Rather, the requirement is in terms of the end product reliability — with the "how-to" left to contractor discretion. Both contractors' reliability program plans include how they intend to "grow" reliability and give the Government confidence that the production design meets the requirement. In general, both contractors' plans emphasize designing reliability in from the start and using Test, Analyze, and Fix and extensive margin testing to increase reliability as the product matures. Engineering evaluation during Phase I will be a prominent tool in identifying reliability issues early so that needed changes can be incorporated before the Critical Design Review and DT&E. Although the system is relatively simple and will not experience extensive captive carry hours in operation, there will be a captive carry reliability program during development. Also, during development, there will be an out-of-the-container, long term storage reliability test. Operational testing will verify reliability in the operating environment. One important aspect is that the Government and the contractors have agreed that the price for the extended repair warranty will be based on the reliability specification rather than achieved reliability for the **first five production lots**. This gives the contractors an enormous incentive to do whatever is required to meet or better the specified reliability since any "excess" warranty money directly contributes to profit.

(2) Maintainability. Both Martin and McDonnell have separate approaches for meeting the Government's maintainability requirements, including software maintainability. The specific details of each contractor's approach differ, but both emphasize incorporating maintainability provisions into the Phase I design process, and both plan Phase I maintainability demonstrations. To aid software maintainability, JDAM uses ADA and will be reprogrammable at the field level through-the-container.

(3) Quality Assurance. The Air Force is encouraging the contractors to transition to commercially-accepted quality programs, **such as ISO-9000**, in lieu of tailored military-unique programs. The commercial programs should assure quality in the design process, software development, vendor components and the final hardware the contractor will deliver to the Government for test and, ultimately, production. The vision is that the contract will mandate that the contractor deliver a quality product, but will not prescribe what the Government thinks the contractor should do to deliver a quality product. **This in no way obviates either the need for the contractor to perform sufficient in-house testing to assure a high quality product or the Government's need to perform factory acceptance testing using BIT, annual acceptance testing, and surveillance testing.**

5. Reprocurement Data. The JDAM development contractor will provide the Government with unlimited rights for technical data and software developed under the contract; however, both Martin Marietta and McDonnell Douglas have identified many items within their systems that have limited or restricted rights. The Air Force does not intend to take delivery of any reprocurement data, unless the contractor breaks his price and schedule commitments to the Government or provides an unacceptable Production Price Commitment Curve for **Lots 6 through 10**. Paragraph 8c discusses this in more detail.

6. Acquisition Streamlining. Acquisition streamlining is one of the hallmarks of the JDAM program. The streamlining centerpiece is the MIL-PRIME approach. This approach gave both Martin and McDonnell the freedom to plan the development program in a way that made most sense to them considering their design, their internal management processes, and the Government's requirements. Both Martin and McDonnell were able (within some limits) to tailor the content and timing of specific tasks, the delivery data items and applicable standards and specifications as they saw fit. The limits that exist are some safety and aircraft integration-related tasks and deliverables that both contractors must do. Both are free to use commercial practices, processes, parts and standards. The Government has removed all MIL-STDs and MIL-SPECS from both contractors' statements-of-work. The Government's minimum requirements are centralized within the SRD; this document is derived from the JDAM Joint Operational Requirement Document (JORD). Both contractors proposed individual system (performance) specifications responding to the SRD. That specification is part of both contracts, but is not set in concrete. Both contractors will do cost and requirement trades during Phase I with only a limited number of "live-or-die" threshold requirements remaining sacrosanct.

a. The Government has devised the initial JDAM acquisition strategy in collaboration with industry over a two year period. As development progresses and the magnitude of the pilot program relief becomes clearer, the Government will continue to refine the acquisition strategy to make it simpler and more commercial-like. These refinements will happen with the full advice and consent of Martin and McDonnell.

b. Another streamlining initiative is the spreading of EMD work between Phases I and II. The Air Force decision to seek approval for an initial Milestone I (instead of the DAB-directed combined Milestone I and II) was motivated by a lack of specificity in the JDAM design and not by a need to reduce technical risk. The Phase I work is primarily focused on concurrent engineering of the JDAM design; that is, the focus will be on evolving a specific design along with the processes to manufacture and support it. Phase I will include both a Critical Design Review and an initial Production Readiness Review. Thus, what are normally EMD activities have been pulled forward to the DEM/VAL phase so that, after downselect and Milestone II, the building of production representative hardware can begin without further design work.

7. Sources. The prospective prime sources for JDAM are Martin Marietta and McDonnell-Douglas. The Source Selection Authority (SSA) selected these two contractors in a full and open competition, and the competition for Phase II is limited to these two contractors. A Justification and Approval (J&A) document will have to be provided for the sole source addition of the LRIP Lot 1 and 2 options. The SSA will limit competition for Phase II to these sources.

a. Subcontracting. The JDAM hardware design activity mostly entails integrating existing components available from vendors as either off-the-shelf or near off-the-shelf items. These vendor-supplied items make up approximately 60-70 percent of the JDAM hardware cost. The program office has encouraged both Martin and McDonnell to develop long term, favored supplier relationships with their subcontractors in order to foster a collaborative effort during Phase I. The program office will use the pilot program

relief to avoid mandating subcontract competition. The names of the major subcontractors are source selection information. **We will include them in an ASR revision after the downselect.**

b. Surge and Mobilization Objectives. There are no surge and mobilization objectives for JDAM.

(1) The program office did an extensive industry survey to determine the readiness of U.S. industrial capability to support JDAM. The survey focused on the makers of inertial measurement units and Global Positioning System electronics. The survey substantiated that the production base for these two critical components is ready to support the program.

(2) The JDAM Statement of Work requires each contractor to assess the industrial base from the perspective of his own design approach.

8. Competition.

a. Competition During Development. The Air Force selected two contractors for Phase I in a full and open competition among domestic sources. The primary purposes for competition during Phase I are to have an environment conducive to aggressive production cost reduction and to give the Government a contractor performance benchmark to help select the best contractor for the program. After approximately 18 months, the Air Force will select either Martin or McDonnell to build hardware for developmental and operational test. The added costs of continuing two contractors through the remainder of development are not warranted in light of the objectives the Government had for originally selecting two contractors; those objectives will be satisfied after 18 months.

b. Competitive Prototyping. During the competition and the Phase I portion of the program there will be prototyping of hardware, software and the key manufacturing processes sufficient to enter Phase II. **In particular, the two Phase I contractors will build at least one prototype unit to demonstrate transfer alignment of the inertial measurement unit, to validate performance of the control actuation system and the guidance algorithms and to verify communication between the weapon and the aircraft data bus.** Integral with this unit will be prototype software to communicate with the aircraft, acquire GPS and to do midcourse guidance. The contractors will also supply a prototype guidance unit that the Air Force will use to characterize and verify the performance of both the inertial measurement unit and the Global Positioning System receiver. This bench test unit will contain prototype software for the coupling and communication between the inertial unit and GPS receiver. The final required hardware prototype will be a packaging mock-up to show the packaging of the kit components within the available space. Finally, the initial phase has the requirement for the contractors to prototype their critical manufacturing processes and develop capability indices for them; the two contractors will differ on what specific processes they need to prototype.

c. Competition During Production. The Government does not plan to require competition during the first part of production. There will be a favored supplier relationship

with the prime contractor during the **first five lots**. Under this arrangement the Government would agree to exclusively use the prime contractor to produce JDAM in return for a long-term (five-year) price, quality/performance and schedule commitment from the prime. The commitment is a mutual one between the Government and the contractor and would occur before the competitive downselect. Once the agreement is made, as long as the prime fulfills his commitments, the Government will not question his price (i.e. ask him to justify it based on costs), seek a second source, or direct any sort of vendor competition. If the contractor fails to meet his price, quality/performance or schedule commitments on any of the **five production lots**, then the Government will not be bound to the agreement. We may elect to compete the system. In fact, if the contractor does not meet his price, quality/performance or schedule commitment, the contractor will **have to qualify a second production source within 18 months, and he will pay liquidated damages to the Government if the second source qualification goes beyond 18 months. With the Lot 4 proposal**, in order to assure the Government that the price is fair and reasonable, the contractor will provide a new Production Price Commitment Curve for **Lots 6 through 10.** If the Production Price Commitment Curve for **Lots 6 through 10** is unacceptable, the contractor will be required to deliver a Technical Data Package **prior to Lot 5.**

9. Contract Types. The current development contract is a Cost Plus Fixed Fee (CPFF) type for Phase I with CPAF options for Phase II. We selected the CPFF contracting type because of the development risk and the fact that the rolling downselect we described earlier provides ample motivation for contractor performance without our having to devote additional resources to award fee evaluation. In Phase II the CPAF contract type is more appropriate since we no longer have the competitive environment and the rolling downselect process of Phase I.

The focus of the Phase I and Phase II effort is on producing a design aimed at achieving a low average unit procurement price. This is done through the use of concurrent engineering, emphasizing the early implementation of production processes and lean manufacturing initiatives. Based on this concept, and with agreement from Martin and McDonnell, the Air Force will add Firm Fixed Price (FFP) options for LRIP Lots 1 and 2 prior to the downselect decision. The LRIP Lots 1 and 2 price proposal will be firm fixed price for Lots 1 and 2 with options for a lifetime repair/replacement warranty. The contract will contain an escalation clause that allows the contractor to propose an increase to his price any time before contract award when (a) there is an unexpected hardware change or changes resulting from the test program and (b) the magnitude of the change has increased the lot recurring hardware costs by 10 percent or more. Should the contractor invoke this clause seeking a price adjustment, he must satisfy the PCO that the cost delta is fair and reasonable, that the change resulted from the Phase II development test program, and that the delta exceeds 10 percent of the recurring hardware costs. If the contractor cannot satisfy the PCO, then he may invoke the normal disputes process.

In addition to the firm prices for the first two lots, the two contractors will submit Production Price Commitments in the form of a cumulative average price curve covering the estimated quantities for Lots 3 through 5. The Production Price Commitment Curve (PPCC) is not a firm commitment in the usual sense, but the contract contains powerful incentives

to motivate the contractor to fulfill his long term commitment. The next section describes these incentives as well as those for Phase II of EMD.

10. Incentives. The program office has established several incentives to motivate contractor performance. Phase II has an Award Fee that will motivate the contractor during the test phase of development. The focus of this award fee will vary by award fee period, but, in general the award fee will motivate contractor responsiveness in solving problems identified during testing and maintaining schedule. For production, there will be a series of "carrot and stick" incentives beginning with the Lot 3 firm fixed price contract. These are described below.

a. **For the estimated quantities of Lots 3 through 5,** if the contractor meets or improves his prices in the PPCC, the Government commits to him the following:

(1) Sole source contracts — no competition.

(2) No requirement for cost data to support his prices. To the extent that he achieves lower costs than he expected, he retains the difference as profit.

(3) Contractor configuration control. He may unilaterally make any changes he wants, so long as the change is transparent to the user (i.e., must continue to meet all specification performance requirements) and fully covered by the lifetime warranty. The contractor retains the responsibility to have traceability records so as to be able to identify the defective service inventory in the event of a systemic problem, and the contractor will notify us of any changes. Should any dispute arise among the Government and the contractor regarding questions of whether or not the change is a change to the performance spec, it will be handled in accordance with the disputes process stated in the contract. Under this concept the Government will not pay for any ECPs in production except as necessary when there is a change in the requirement.

(4) Removal of Government in-plant, **in-process** oversight during production once contractor quality system is verified to work.

b. If the contractor is unable to meet the Production Price Commitment Curve, the following restrictions and penalties will be invoked:

(1) Contractor will provide final JDAM technical data package to the Government, at no additional cost, within 12 months after submittal of a proposal exceeding the PPCC.

(2) Contractor will develop a second source, at no additional cost, within 18 months after submittal of a proposal exceeding the PPCC.

(3) Contractor will be required to submit cost and pricing data for any lot where his price exceeds his commitment.

(4) The Government will have the option of reverting to Government logistics support and Government configuration control.

(5) The Government will regain the option of reinstating in-plant, **in-process** oversight.

III. MAJOR TRADE-OFFS

There are no major trade-off decisions required now. Both contractors have a viable approach for meeting the operational requirements and the Air Force's cost objective. The Phase I contracts provide for multiple trade studies oriented toward areas where performance can potentially be traded for procurement cost. There will also be a series of trades looking in more detail at the impacts of commonality with JSOW as well as potential technical solutions to make JDAM more jam-resistant. The results of these studies may impact the Joint Operational Requirements Document, the System Performance Specification or the acquisition strategy. At the Milestone II DAB the program office will present any trade-offs that result in changes to the Joint Operational Requirements Document or the Phase II effort.

ACQUISITION STRATEGY REPORT (ASR)

FOR THE

NON-DEVELOPMENTAL AIRLIFT AIRCRAFT (NDAA)

NDAA
ACQUISITION STRATEGY
REPORT

1. Program Structure

a. Established by Law

The FY94 National Defense Authorization Act directed the Secretary of Defense to develop an acquisition plan leading to procurement of either a military or commercial non-developmental, wide-body airlift aircraft (NDAA) as a complement to the C-17 aircraft. In addition, the Federal Acquisition Streamlining Act of 1994 identifies NDAA as a Defense Acquisition Pilot Program.

b. Acquisition Decision Memorandum (ADM)

ADM dated March 25, 1994 and amended on December 4, 1994, tasked the Air Force to prepare a plan to competitively acquire NDAA as an alternative or supplement to C-17 procurement over a range of quantities up to a maximum of 14 million ton-miles per day. The ADM identified NDAA as an ACAT ID program for DAB oversight purposes but stated it was not a Major Defense Acquisition Program. Milestones 0, I, and II documentation and review requirements in DoDI 5000.2 were waived. The Air Force was directed to conduct risk reduction efforts prior to Milestone III up to a funding limitation of $20M. The ADM stated that a decision on the quantity and type of NDAA would be made not later than an integrated C-17/NDAA Milestone III Defense Acquisition Board (DAB); and, NDAA procurement could not proceed until completion of risk reduction activities, an NDAA capability comparison (a tailored cost and operational effectiveness analysis), and an NDAA source selection.

At the November 1994 Special DAB, the Air Force presented to the DAB principals the ground rules and assumptions used as a basis on which to proceed toward the November 1995 DAB. While November 1995 has always been defined as a MS III DAB, NDAA commercial aircraft have not undergone Air Force operational testing which is a statutory prerequisite for a MS III decision. The Special DAB recommended pursuing legislative test relief for this commercial aircraft program and as a fallback, NDAA would be defined as an low rate initial production (LRIP) program. Subsequently, DOT&E did not support legislative test relief. At the February 17, 1995 MS III Steering Committee meeting, the Air Force requested clarification on how to define the November 1995 milestone for NDAA. The Milestone III Steering Committee approved an approach where the November 1995 milestone would serve as a full rate production decision contingent on successful completion of operational testing and the Beyond LRIP Report after delivery of the first aircraft. Therefore, all NDAA DAB documentation, with the exception of test documents, reflect a full rate production decision.

c. Definition

1) The NDAA program is defined as two sets of requirements/aircraft designated as C-XX and C-XY.

a) As a supplement to the C-17, the NDAA C-XX (commercial, wide-body derivative version) will be required to carry bulk and oversize cargo.

b) As an alternative for the C-17, the NDAA C-XY (military derivative version) will be required to carry bulk, oversize, and outsize cargo, perform military-unique missions such as troop and equipment airdrop, and have roll-on, roll-off loading capability.

2) The NDAA procurement quantity and buy profiles are totally dependent on the decisions of the November 1995 DAB. Beginning with FY96, the program shares the Strategic Airlift funding line with the C-17. Funds programmed for future years will be shared based on the airlift mix decisions made in November 1995. The NDAA Request for Proposal states that if an NDAA contract is awarded, the offerors should assume that funding will be available to purchase at least one aircraft each year, and a minimum of one squadron will be procured. The Request for Proposal includes variable quantity option prices to provide flexibility to buy whatever quantities the budget will allow. The Air Force will conduct operational effectiveness and suitability tests on any aircraft modifications and/or military applications using the first aircraft delivered. The program schedule for deliveries is dependent on the commercial aircraft selected and the lead time associated with either the existing commercial production line or for modifications of a used aircraft.

d. Potential Results

The NDAA weapon system will support global reach and power projection objectives that satisfy the Mobility Requirements Study-Bottom Up Review Update (MRS-BURU) in conjunction with current and future airlift forces (including the Civil Reserve Air Fleet (CRAF)). The airlift requirements, quantity and type of cargo to be transported, will be based on the February 1995 definition of "Moderate Risk" for the MRS-BURU "nearly simultaneous" 2-Major Regional Contingency (MRC) scenario.

Depending on the results of the November 1995 MS III DAB review, the possible outcomes are as follows:

- Purchase additional C-17s only and no NDAA
- Purchase additional C-17s and C-XX NDAA
- No additional C-17s authorized and purchase C-XY NDAA Only
- No additional C-17s authorized and purchase C-XX NDAA Only
- No additional C-17s authorized and purchase a mix of C-XY and CXX NDAA

e. C-XY Program

1) Based on market analysis and responses from industry, the Lockheed C-5D (an updated C-5B) is the only known airframe which meets the military-unique C-XY requirements of the Operational Requirements Document (ORD).

2) Since the C-XY military-unique airlift requirement is viewed as an alternative to the C-17, C-5D procurement will not be initiated unless the Defense Acquisition Executive decides at the MS III DAB to limit C-17 production to 40 aircraft. Should C-17 production be capped at 40 aircraft, a separate procurement action will be required to address any remaining unfilled military-unique and outsize airlift requirements. A C-5D configuration description and CAIG Independent Cost Estimate (ICE) will be available for the DAB as well as cost and operational effectiveness information from the tailored COEA, the Strategic Airlift Force Mix Analysis (SAFMA). No other C-XY documentation will be prepared for the November 1995 DAB and there will not be a C-5D contract available for immediate award after the DAB.

3) This acquisition strategy report contains no further discussion on the C-XY acquisition strategy. If the MS III DAB elects to initiate a military-unique airlifter, detailed, program plans and documentation will be developed at that time. **The remainder of this report will focus only on the C-XX program.**

f. C-XX Requirements

Operational requirements are defined in the ORD dated January 12, 1995.

— Technical/Performance parameters are defined in the System Requirements Document (SRD); and, using a commercial business approach the offerors will recommend processes and deliverables. The C-XX requirement can be met by either a new or used commercial derivative aircraft capable of carrying bulk and oversize cargo to include the 5/4 ton truck and the Highly Mobile Multi-Wheeled Vehicle (HMMWV). The Army's new Family of Medium-sized Tactical Vehicles (FMTV) and existing 5-ton trucks are a desired cargo.

— The C-XX system includes aircraft systems and off-equipment contractor logistics support (CLS). The selected C-XX NDAA contractor will be required to provide both the aircraft and the associated support of the aircraft.

— The C-XX system will include initial period training provided by the contractor. Follow-on training will be provided via a separate acquisition/contract.

— The support concept for the C-XX will be organic on-equipment maintenance and contractor logistics support (CLS). The CLS approach includes overall management of the system, off-equipment maintenance, spares maintenance, support equipment maintenance, training courses/equipment maintenance, technical data (including manuals) maintenance, and any over and above workload. Spare and repair parts are included in the support contract.

2. NDAA (C-XX) Acquisition Approach

a. Overview

1) As stated in paragraph 1, the NDAA program is designed to provide the Air Force with a non-developmental airlift aircraft as an alternative for, or a supplement to C-17

procurement. The airframe to satisfy the C-XX may be a new or used non-developmental, commercial aircraft.

a) Due to the military application and operation of the strategic airlift mission, some missionization (i.e. military radios, compatibility with 463L pallets, loadmaster station, etc.) will be required to the C-XX aircraft. The contractor will be responsible for these modifications prior to delivery.

b) All items incorporated in C-XX aircraft must be in existence, with proven capability and performance, and suited for the purposes intended without further modification or development prior to application or installation.

c) The C-XX contractor will be the system integrator, delivering complete aircraft systems to include:

- Basic aircraft with options to purchase the total quantity required
- Initial training and testing
- A companion Contractor Logistics Support (CLS) contract to perform maintenance
- CLS contract options for follow-on maintenance and training

d) The contractor will be responsible for ensuring compliance with all applicable airworthiness directives (Federal Aviation Regulation (FAR) Part 25).

e) Candidate aircraft must retain the original commercial design heritage approved by the FAA and be FAA (Part 25) certified. Commercial aircraft will be supported by partial contractor logistics support (CLS) defined as organic (Air Force) on-equipment maintenance with all other support provided by the contractor.

2) MS III Full Rate Production Decision

a) The November 1995 DAB is complex for a variety of reasons and the Air Force requested a Special DAB in November 1994 to ensure that the DAB principles agreed with the acquisition strategy envisioned by the service. An integrated C-17/NDAA DAB in November 1995 (in conjunction with an NDAA source selection) will determine the future airlift fleet mix in addition to evaluating the full rate production readiness of C-17 and NDAA. A formal source selection on NDAA will be conducted by the Air Force and be completed before the November 1995 DAB, but the results will not be announced until after the DAB. In addition, NDAA and C-17 share a single funding line and both must be postured for award immediately following the DAB.

b) Prior to the DAB the Air Force Source Selection Authority will make an integrated "best value" NDAA selection at each of the C-17 breakpoints (i.e. aircraft quantities which correspond to squadrons). After a review of C-17 cost and performance, the DAB will determine if additional C-17s will be procured and if any NDAA are needed. Should a decision be made by the DAB to procure NDAA, the NDAA SSA will then announce the appropriate C-XX aircraft for the C-17 quantity selected by the Defense Acquisition Board

(DAB). Source selection sensitive information will only be provided in a masked form to the DAB to protect the sensitive nature of source selection material and the overall integrity of the source selection process.

c) Cost and Operational Effectiveness Analysis (COEA).

The Strategic Airlift Force Mix Analysis (SAFMA) is the tailored COEA of airlift alternatives to support the MS III DAB. The SAFMA will be conducted at HQ Air Mobility Command, Scott AFB, IL. As a tailored COEA, the SAFMA supports the DAB by examining the airlift system performance for mixed forces of C-17s and NDAA in combination with aircraft already in the programmed mobility force.

(1) The airlift requirements, quantity and type of cargo needed to be transported will be based on the February 1995 MRS-BURU.

(2) C-17, NDAA, and C-5D cost and performance data will be used to support the tailored COEA (SAFMA) and government program office estimates.

(3) The SAFMA will review the strategic airlift capabilities and previous analyses to provide background for making a MS III C-17 procurement decision.

(4) The SAFMA will also examine the airlift system performance for mixed forces of C-17s and NDAA in combination with aircraft already in the programmed mobility force.

(5) The SAFMA will evaluate the contribution of military unique requirements, capabilities, and missions that might influence a decision on a strategic airlift force mix.

3) Acquisition Strategy

a) The C-XX acquisition strategy is to conduct a full and open competition for both the FAA-certified aircraft system and the associated CLS. Both the aircraft and CLS contracts will be awarded to the same contractor.

— The Air Force plans to complete a best value source selection prior to the November 1995 DAB. C-XX offerors will have the opportunity to propose quantities at each of the potential MS III DAB C-17 breakpoints which equate to C-17 aircraft squadron sizes (40, 58, 72, 86, 100, 120, 132). These NDAA proposed quantities, when combined with the C-17 breakpoint quantity and the existing airlift fleet, must be able to deliver the MRS-BURU defined equipment. NDAA offerors may propose up to two aircraft configurations. In addition, two proposals may be submitted at the 40 C-17 breakpoint: (1) one which combines with 40 C-17s and the existing airlift fleet, and (2) one which combines with 40 C-17s, C-5Ds, and the existing airlift fleet to ensure all the outsize equipment movement requirements can be met. Thus, the source selection will produce a C-XX decision for each of the C-17 breakpoints, with two C-XX decisions at the 40 C-17 breakpoint. The NDAA Source Selection Authority will announce the C-XX decision after the DAB has determined the appropriate C-17 quantity.

— The operational effectiveness analysis tool used for SAFMA, the Mobility Analysis Support System (MASS), will be used analytically in the NDAA source selection. The Government will use the MASS model to validate NDAA offeror proposed quantities at each of the C-17 breakpoints and evaluate fleet effectiveness. Offerors were provided the opportunity to familiarize themselves with the MASS model prior to RFP release in order to optimize candidate fleet performance and generate proposed quantities.

— The NDAA selection will be based on a best value assessment of operational effectiveness (throughput and closure), aircraft characteristics, and operational support. Also important in the best value decision is the estimated operation and support cost which includes phase-in and 25 years of steady state operation. The Government will develop a MPLCC at each of the C-17 breakpoints using proposal information, MASS generated aircraft quantities, Government costs, and risk associated with the system proposed by each offeror. Adequate price competition is anticipated, so certified cost and pricing data will not be required.

b) Performance Verification (Testing)

— Because the C-XX NDAA will be FAA certified, test and evaluation (T&E) requirements will be limited. FAA certification will satisfy the majority of the test requirements. Minor missionization and suitability for operational use will be tested through a limited OT&E performed by AFOTEC on the first aircraft delivered. Operational Test and Evaluation (OT&E) will be patterned after the FAA Proving/Validation tests required for operators purchasing aircraft new to their inventory. Subsequent deliveries will be subject to approved test procedures based on commercial practices (Quality Inspection Reports, etc.).

c) Government Furnished Property (GFP)

Facilities at NDAA main operating base(s) (MOBs) may be provided to the contractor for support functions for the C-XX. The user has not selected the MOBs for the NDAA; therefore, the specific facilities available for contractor use on those bases cannot currently be identified. Offerors will provide facility requirements as part of their proposal for beddown and operation of their system. No other Government furnished property is envisioned.

d) Requirements for Contractor Data

The NDAA contract will specify commercial data to the maximum extent possible, including commercial flight and technical manuals. Engineering/support data requirements are structured to require access to data in lieu of delivery. The contract will include options for the data necessary to acquire training systems and for recompeting contractor logistics support.

b. Streamlining

The Federal Acquisition Streamlining Act of 1994, identified NDAA as a Defense Acquisition Pilot Program. Section 5064 of the Act encourages pilot programs to

seek additional waivers to regulations which impact program efficiency. The C-17/ NDAA ADM dated 25 March 1994 directs the program office to streamline the NDAA acquisition to the maximum extent practicable. The 14 Dec 94 ADM directs the OSD staff and the Air Force to jointly tailor and streamline documentation requirements for the Milestone III DAB.

1) On October 25, 1994, the Deputy Assistant Secretary of the Air Force (Acquisition) submitted to DUSD(A&T)/AR a package of NDAA regulatory waiver requests applicable to the C-XX aircraft, contractor logistics support, and training system contracts. A response to that request is pending. Based on direction provided at the NDAA Acquisition Strategy Panel, both versions of the DRFP and the RFP assume that the regulatory waiver requests will be granted.

2) With the concurrence of the February 17, 1995 MS III Steering Committee, a MS III DAB Documentation Integrated Product Team (IPT) has been established. This team, comprised of OSD, Air Force, and Program Office representatives will work to tailor and streamline both C-17 and NDAA MS III DAB documentation. One of the agreements already made is to perform the OSD CAIG Independent Cost Estimate using available market data and proposal data from each of the offerors.

3) In structuring the NDAA program, a consistent thread has been to maximize commercial practices and streamline wherever possible. The RFP and contract contain no MIL-STDs or MIL-SPECs and minimal data requirements. The test program is being defined to avoid redundancy with FAA inspections. Program oversight, reporting, and payment methods have been streamlined to more closely correspond to commercial practices.

c. Sources

1) On 24 March 1994, a Sources Sought Synopsis was published in the *Commerce Business Daily* (CBD). As a result of this synopsis, 11 potential offerors expressed interest in being considered as prime contractors for NDAA. The following is a list of potential offerors who are expected to respond to the C-XX RFP:

Offeror	**Location**
Boeing Defense & Space Group, Military Airplanes Division	Seattle, Washington
McDonnell Douglas Aerospace	Long Beach, California
Lockheed Aircraft Services Company	Ontario, California

2) There are no known small disadvantaged concerns capable of satisfying, as a prime contractor, the requirements envisioned for this acquisition. However, subcontracting opportunities do exist and offerors will be required to submit a subcontracting plan.

3) Since Milestones 0, I, and II are waived and the NDAA is a non-developmental item (NDI) program, there will be no prototypes or competition between prototypes. The MS III decision will determine the need for NDAA.

4) The screening criteria established for this acquisition include:

a) The offeror must propose a sufficient quantity of FAA certified aircraft.

b) The offeror must demonstrate sufficient expertise to handle the defined tasks across modification of design, test and evaluation, integration, logistical support, management, manufacturing and other areas as necessary to assure a successful program.

c) The offeror must have the financial, technical and manufacturing capabilities to handle the proposed task.

d) The offeror must possess the appropriate security clearances/arrangements to perform the defined task.

d. Competition

1) The C-XX acquisition strategy is for a full and open competition for the aircraft with partial CLS. The acquisition will be based on system performance requirements using a commercial business approach (based on commercial practices). There will be two simultaneous contracts awarded to the winning offeror, one for the aircraft and one for the associated logistics support.

2) The Air Force Supplement Appendix AA to the Federal Acquisition Regulation (Formal Source Selection for Major Acquisitions) is the service guidance that defines the competitive procedures which will be used for the NDAA C-XX source selection.

3) Industry has been involved in developing the NDAA acquisition strategy since the program's inception. Nine Government/Industry RFP working group meetings, representing approximately 90 hours of industry contact, have been held from June 1994 through February 1995. In addition, a DRFP was issued in November 1994 and an updated version in February 1995 to aid industry in understanding and providing feedback on the program. Contractors have all had access to the MASS computer model to assist them in defining their optimal aircraft configuration and assess how well their proposed aircraft could perform the required airlift.

4) Acquisition Milestones. The following table provides the C-XX acquisition schedule leading up to contract award. These milestones reflect the Integrated Acquisition Strategic Planning (IASP) process.

EVENT	DATE
Strategic Roundtable	1 Mar 94
Sources Sought Synopsis Published	24 Mar 94
Initial Pre-Solicitation Conference	7 Jun 94
Tactical Roundtable	1-2 Aug 94
Acquisition Strategy Panel	3 Oct 94
C-XX Solicitation Review Board	7-8 Nov 94

Draft C-XX RFP Release	10 Nov 94
Revised DRFP Release	7 Feb 95
C-XX Source Selection Plan Approved	20 Mar 95
Acquisition Strategy Report Approved	28 Mar 95
Final C-XX RFP Release	31 Mar 95
Receipt Of C-XX Proposals	31 May 95
C-XX Evaluation Complete	8 Sep 95
SSA C-XX Decision	Sep 95
DAB Committee Review	Oct 95
DAB	Nov 95
C-XX Award	Nov 95

e. Contracting Considerations

1) Two contracts will be awarded (to one contractor) for the acquisition and support of the system for the first 10 years of its intended 25-year service life. After award, the aircraft contract will be managed by a program office at Wright Patterson Air Force Base and the contractor logistics support contract will be managed by Oklahoma City Air Logistics Center. Both the aircraft and the CLS contracts will be Firm Fixed Priced (FFP) with Economic Price Adjustment (EPA) provisions.

2) The aircraft contract will be a ten-year (base year plus nine year option period) contract and the CLS contract will be a ten-year (base year plus nine annual options) contract. The CLS contract will be structured based on an existing commercial support infrastructure; however, to provide necessary flexibility, on-equipment maintenance will remain in-house. The CLS contract pricing strategy is quantity dependent and offerors will have the opportunity to propose firm-fixed unit prices for discrete flying hour ranges in addition to monthly rates for management of the Contractor Owned and Maintained Base Supply (COMBS) operation, heavy maintenance inspections, data, and common event procedures (i.e. paint, engine overhaul, etc.).

3) A FFP type aircraft contract is appropriate because of low technical risk due to off-the-shelf/operational aircraft, low risk for modifications, low schedule risk, and low cost risk.

4) A standard commercial material and workmanship warranty will be employed on the C-XX system covering the aircraft, all subsystems and components, and support equipment and spares. The period of performance will be proposed by the contractors. A mission capable supply rate guarantee/warranty will be required, based on the ability of the contractor to provide parts and subsystems when required. This will be measured in terms of mission capable supply rates.

5) Variable quantity pricing matrices will be used to accommodate flexibility in annual and total aircraft quantities. The delivered aircraft will include any modification or "missionization" defined in the offerors proposed approach (i.e., new commercial aircraft, refurbished commercial aircraft and/or modified military derivatives).

3. Major Trade-offs

a. The NDAA program was initiated to provide DOD alternatives for strategic airlift. The C-17 Milestone Decision Authority will decide the desired inventory quantity of C-17 and whether to acquire NDAA.

b. The C-XX RFP allows offerors to bid two aircraft configurations and the source selection will evaluate both configurations.

APPENDIX C
REFERENCES

The following is a partial list of relevant acquisition strategy references:

From DoDD 5000.1 of 15 March 1996:

Executive Summary, p. 6, Para 3.e.

From DoD 5000.2 -R of 15 March 1996:

Part 3. Para 3.3, Appendix III, p. III-11

From Defense Acquisition Deskbook, version 2.2, as of 15 December 1997 at http:// www.deskbook.osd.mil/

Comment Sheet
for
Acquisition Strategy Guide

This Guide was prepared as a working reference document for program management personnel. Comments, criticisms, and suggestions are solicited to assist us in maintaining the utility of the Guide in future updates. Use the space below to let the editors know how you think the handbook can be improved (i.e., recommended additions, deletions, corrections, or other suggestions). Attach additional sheets as necessary.

Whether or not you have comments or suggestions for future editions, we are very interested in your reaction to our efforts on this handbook. Please take a few moments to identify its strengths and weaknesses. In each box, enter a number rating as follows: 1–Excellent; 2–Good; 3–Fair; 4–Poor.

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☐ Contribution to your subordinates' job effectiveness

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13. ABSTRACT *(Maximum 200 words)*

This guide provides, in a single source, outlines the factors that a program manager and the team should consider in structuring, developing, and executing an acquisition strategy. A process shows the development and execution of the acquisition strategy together with criteria for evaluating a proposed strategy. In addition, two samples of the Acquisition Strategy Report (ASR), in Appendix C, reflect a critical part of the acquisition strategy.

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