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STUDENT REPORT

USING THE PROGRAM RESEARCH AND
DEVELOPMENT ANNOUNCEMENT IN
COMMAND, CONTROL, COMMUNICATIONS,
AND INTELLIGENCE PROGRAMS

MAJOR MARK STASIAK 86-2375
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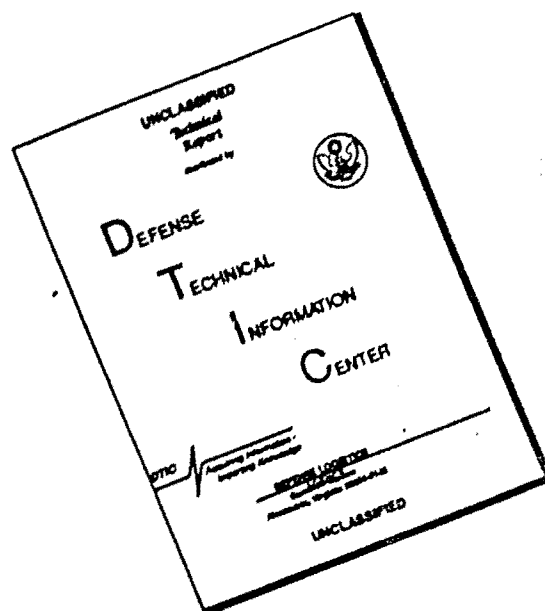
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REPORT NUMBER 86-2375

TITLE USING THE PROGRAM RESEARCH AND DEVELOPMENT ANNOUNCEMENT IN
COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE PROGRAMS

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Submitted to the faculty in partial fulfillment of
requirements for graduation.

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<p>The program research and development announcement (PRDA) is a relatively new contracting method. Information on the PRDA for program managers is limited. This paper examines the PRDA in light of policy and experience. Based on the results of that examination, the paper develops guidelines for program managers to apply when deciding to use the PRDA in command, control, communications, and intelligence laboratory programs. A definition and a model of the PRDA are developed from policy and the author's experience. The study concludes that published guidance contains adequate guidelines to define and execute the PRDA. The policy includes the essential information, that a program manager needs, to consider and decide on using the PRDA.</p>			
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PREFACE

I have been interested, practically and academically, in the program research and development announcement (PRDA) for a few years. I was very glad to be given the opportunity to do this research.

Even though the PRDA is a small part of the program manager's tool kit, it has been a significant factor in accomplishing certain research and development acquisitions. The two cases in this paper highlight the PRDA's value. In the first case, for example, other acquisition methods could not obtain the desired research and contractual results. In the second case, the PRDA represented the bulk of the initial contracts awarded in the entire technology program. With the potential for \$30,000,000 worth of contracts, it also represented a significant portion of the laboratory's budget. Yet, there are few PRDA experts in the acquisition management field.

When I left Rome Air Development Center (RADC) I took with me a lot of RADC's experience base. Some of that experience was unique because I was the only program manager intimately involved with both cases. This paper gave me the chance to return some of my experience to RADC. I hope that it will help future program managers.

I take sole responsibility for the form, format, and content of this paper; however, I could not have completed the research without the help of a great number of people. For their direct or indirect aid, I thank them all. It would be impossible to thank everyone, but I would like to express my appreciation to a few who were especially helpful. First, a special "thank you" to Mr. Ray Urtz for his confidence in me. He "hired" me to manage a major PRDA, supported my work, and sponsored this research. Second, I would like to thank Ms. Carla Wallaesa who provided absolutely outstanding support as the contracting specialist and as a team member on one of the major PRDA programs. Without her extra effort the program would have faltered on many occasions. Her contributions on policy matters made possible both the acquisition and this research. Third, to all the project managers involved in the two cases cited in the research, I say thank you. Their professionalism made the acquisitions happen, made my job easy, and made this research possible. Fourth, I would like to thank my faculty advisor, Major Roger Wickert. He contributed critical comments on my thoughts and drafts. Most importantly, I thank Regina, my wife. In addition to helping make my English sufferable, she has always supported me, especially when I needed it the most and deserved it the least.



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ABOUT THE AUTHOR

Major Mark Stasiak began his military career in 1968 as an electronics technician. He was commissioned a second lieutenant in 1971 after completing the Airman Education and Commissioning Program. Through that program he received his Bachelor of Science, Mathematics and Computer Science, from Colorado State University.

Upon graduation from Officer Training School, he served as a computer programming officer in the Strategic Air Command (SAC). After two tours in SAC, he attended the Air Force Institute of Technology where he earned a master's degree in operations research. Since then he has been assigned to various positions in the Air Force Systems Command (AFSC).

His AFSC assignments have included tours at the headquarters and unit levels. Early assignments included jobs at the headquarters in the Deputy Chief of Staff, Plans and Programs as a scientific analyst and computer policy manager. During his next assignment to the Foreign Technology Division, he had the opportunity to manage a number of engineering research contracts. At the conclusion of this assignment, he attended the Program Manager Course at the Defense Systems Management College.

Major Stasiak's next assignment took him to Rome Air Development Center (RADC). There he managed research and development programs in computer technology. As Assistant Chief, Command and Control Software Technology Branch, he was involved in the first two program research and development announcements (PRDA) at RADC.

A graduate of Squadron Officer School, Major Stasiak is currently a student at the Air Command and Staff College.

Major Stasiak and his wife, Regina, are natives of Detroit, Michigan. They have two children, Paul and Sarah.

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EXECUTIVE SUMMARY

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REPORT NUMBER 86-2375

AUTHOR(S) MAJOR MARK STASIAK, USAF

TITLE USING THE PROGRAM RESEARCH AND DEVELOPMENT ANNOUNCEMENT IN
COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE PROGRAMS

I. Purpose: To examine the program research and development announcement (PRDA) in light of policy and experience. Based on the results of that examination, to develop guidelines for program managers to apply when deciding to use the PRDA in command, control, communications, and intelligence (C3I) laboratory programs.

II. Objectives:

- a. To define the program research and development announcement (PRDA).
- b. To define the policy on the use and implementation of the PRDA.
- c. To describe past applications of the PRDA in the C3I laboratory that add to the definition and understanding of its use and implementation.
- d. To develop a program management model of the PRDA process based both on policy and experience.
- e. To discuss the application, use, and policy of the PRDA in C3I laboratory programs.

CONTINUED

III. Discussion: First, a definition of the PRDA was extracted from published policy and guidance. The primary source for this information was found to be Air Force Systems Command (AFSC) Federal Acquisition Regulation (FAR) Supplement 17.93, "Program Research and Development Announcement." The FAR describes the PRDA as, "...a Commerce Business Daily (CBD) announcement of AFSC interest in specific areas of research and development contracting." (1:138) It also describes restrictions on the use of the PRDA. The definition does not contain a description of the PRDA execution process.

Second, a model of the PRDA was developed. The model describes the execution of a PRDA as processes, events, and documents. The model is derived from published guidance and can be expanded based on experience.

Finally, the model was expanded based on the author's experience with the PRDA at RADC. Two cases were examined. This led to the formulation of additional processes, events, and documents in the model.

IV. Findings:

a. The basic guidelines for making a decision to use and implement the PRDA are found in published policy. The guidance is contained in AFSC FAR Supplement 17.93, AFSC Pamphlet 70-4, and RADC Regulation 70-17.

b. Published guidance, taken collectively, provides a complete set of the necessary guidelines.

c. The guidance in published policy describes a logical process. Further, the process has been applied, and worked well in actual PRDAs.

V. Conclusion: The published guidance contains adequate guidelines to define and execute a PRDA. The policy includes all the essential information required to decide on the use of the PRDA in a C3I laboratory program.

VI. Recommendations:

a. Program managers should review the entire set of PRDA policy and guidance publications.

b. A graphic model of the PRDA process, based on all the policy documentation, should be included as an attachment to RADCR 70-17.

Chapter One

INTRODUCTION

The program research and development announcement (PRDA) is a relatively new contracting method. It was first used in Air Force Systems Command (AFSC) in 1931. It has been used at Rome Air Development Center (RADC) only since 1934.

Information regarding the PRDA is evolving. During RADC's first PRDA acquisition very little information was available. There were no experts and the only published guidance was an AFSC supplement to the Federal Acquisition Regulation (FAR). The first RADC regulation was based on the experience gained from that acquisition. It was published just before the project concluded.

Today, information for program managers is still limited. There are few experts because applications have been confined to a small number of programs. Official guidance, although expanded since 1981, is still limited to a few publications. Lessons-learned have not been documented and the PRDA is not included in program management handbooks.

The intent of this study was to determine if a set of guidelines for using the PRDA could be developed. This would be done by examining the published guidance and the author's experience. This paper documents the research and provides information about the PRDA for program managers.

This chapter introduces the study. It describes the purpose, objectives, and the methodology of the research. It also provides an overview of the organization of this paper. Finally, it discusses limitations on the use of the results of the research.

PURPOSE

The purpose of this paper is to examine the PRDA in light of policy and experience. Based on the results of that examination, the paper develops a set of guidelines for program managers. These guidelines could be applied when deciding to use the PRDA. In particular, this paper is intended for audiences in Air Force laboratories. It is primarily directed to program managers involved in laboratory research of command, control, communications, and intelligence (C3I) technologies.

OBJECTIVES

The objectives of the research are:

- a. To define the program research and development announcement (PRDA).
- b. To define the policy on the use and implementation of the PRDA.
- c. To describe past applications of the PRDA in the C3I laboratory that add to the definition and understanding of its use and implementation.
- d. To develop a program management model of the PRDA process based both on policy and experience.
- e. To discuss the application, use, and policy of the PRDA in C3I laboratory programs.

METHODOLOGY

In order to develop guidelines, published policy was examined and an "objective" definition of the PRDA was extracted. Additionally, a "subjective" expansion of the definition was developed based on the author's experience with the PRDA in C3I laboratory programs. Finally, a model was developed based on both the published policy and the author's experience.

ORGANIZATION

This paper is organized into five chapters. Following this introductory chapter, Chapter Two begins the development of a policy-based (objective) definition of the PRDA. First, the evolutionary development and current state of the published policy are described. Second, a definition of the term "PRDA" is developed. Building on the basic definition, Chapter Three completes the objective definition by developing a process-oriented model. Based on guidance, in regulations and pamphlets from the national to the local level, the model describes the process, flow, and documents used to effect a PRDA acquisition. Constraints, in addition to those imposed by the basic definition, are also described. The policy model outlines a basic process for PRDA acquisitions, but it is incomplete from a program management perspective. The model is, therefore, expanded in Chapter Four. The process, flow, and documents of the model were re-examined in light of actual applications. Additions to the model were based on the author's experience as manager of C3I programs that used the PRDA. Finally, Chapter Five provides a summary of the research and recommendations.

Throughout the paper, guidelines and lessons-learned are brought to the reader's attention. These represent the author's observations on policy (guidelines) and practice (lessons-learned). For readability, these are set off from the text. The model, guidelines, and lessons-learned are listed in appendices. Appendix A contains a graphic representation of the model in

Chapter Three and Chapter Four. Appendix B lists the guidelines and lessons-learned from throughout the text.

LIMITATIONS

The following limitations should be considered before applying the results of this research.

a. Limited history. As was stated previously, the use of the PRDA is limited. It was first used in test cases beginning in 1981 and has been used at RADC only since 1984. Also, it has been used in a limited number of acquisitions. For example, it had been used only twice at RADC at the time this research was conducted.

b. Limited data. Information on cases other than those discussed in Chapter Four is not available. Cumulative, numeric reports of announcements, contracts awarded, contracts by type, and contracting lead times for PRDAs are reported to AFSC (RCS: SYS-PMP(Q) 8301). These statistical reports were not used in this research.

c. Limited policy. The policy researched in this effort was limited to RADC and AFSC publications. One of the publications is AFSC Pamphlet 70-4. Although pamphlets are generally neither directive in nature nor considered policy, this pamphlet does contain AFSC guidance on the use of the PRDA. Additionally, Air Force and AFSC have not published any regulations (other than an AFSC Federal Acquisition Regulation supplement) on the topic of the PRDA.

d. Limited lessons-learned. Lessons-learned have not been documented. Discussions with the AFSC policy focal point indicated that experience with the PRDA influenced published policy and guidance. Separately documented lessons-learned were not maintained.

Chapter Two

DEFINITION OF PRDA

Guidance for program managers on the PRDA is found in published policy. The entire set of policy on the PRDA evolved over the last five years. Information contributing to the formulation of the policy came from the Department of Energy, Air Force test cases, and the Federal Acquisition Regulation (FAR). (8)

This chapter examines the development of the policy and presents a definition of the PRDA. The definition is extracted from the policy and will be used as the starting point for the model in subsequent chapters.

The policy is important to program managers for two reasons. First, it defines the PRDA in regulatory and procedural form. The definition and implied constraints form a foundation for using the PRDA. Second, the policy is valuable to program managers for what it does not contain. Knowing what is not included can help the program manager understand the extent of available formal authority. It also provides insights for interpreting policy.

HISTORY OF POLICY DEVELOPMENT

Although the PRDA is a recent development, the basic definition and implementation policy were methodically developed. The initial policy within the Air Force was generated in 1981 by the Air Force Systems Command (AFSC) as a FAR supplement. The original concept and process were based on a Department of Energy procurement regulation that described a similar acquisition tool. (8) The AFSC policy, in its latest form, has been published as AFSC FAR Supplement 17.93. The supplement is an addition to the FAR having no corresponding subparts in either the FAR or the Air Force supplement to the FAR.

GUIDELINE: Policy matters on the PRDA are the responsibility of the contracting function from local offices to Headquarters AFSC. Policy determinations above that level are only in the area of consistency with other, non-PRDA policies.

The FAR supplement establishes basic policy carrying the legal weight of the FAR and AFSC regulation. AFSC expanded on this policy only in a pamphlet (AFSC Pamphlet 70-4, AFSC Guide for PRDA).

AFSC Pamphlet 70-4 provides information for offerors and procedures for contracting offices. Some sections of the pamphlet are taken directly from

the FAR supplement, but essentially the two documents complement each other. For example, the "Definition of the Program" paragraph in AFSC Pamphlet 70-4 is essentially a paraphrase of the "Definition" and "Applicability" paragraphs in AFSC FAR Supplement 17.93. On the other hand, the pamphlet, by providing procedures, expands the general discussion of small business participation given in the FAR. An even more distinct difference between the two documents is in the area of protection of proprietary information. While the FAR is silent in this area, the pamphlet discusses the topic at length. (1, 2:1-2) The complementary nature of the two documents is not surprising. Both are monitored and maintained by the same person at AFSC. (8)

GUIDELINE: Although tightly coupled, it should be noted that each document (AFSC FAR Supplement 17.93 and AFSC Pamphlet 70-4) is incomplete guidance on its own. Additionally, to resolve policy questions at both the FAR and AFSC levels only AFSC Procurement (PK) need be contacted.

While the initial policy was being developed, AFSC allowed several test cases. These tests contributed to the policy in its present form; however, a separate body of information regarding those tests (other than statistical data) was not maintained. (8)

Using the available policy, when AFSC controls on the PRDA's use were removed, Rome Air Development Center (RADC) applied the PRDA for the first time in January 1984. This led to the formulation of an RADC policy in June 1984 (RADC Regulation 70-17, Program Research and Development Announcement).

All the information regarding the PRDA is captured in these three documents (AFSC FAR Supplement 17.93, AFSC Pamphlet 70-4, and RADC Regulation 70-17). These documents have evolved from, and were tested in, actual acquisitions. Since they were products of experience, they tend to reflect the needs of the acquisitions that were on-going. There are advantages and disadvantages to this situation.

The advantages are that the policy:

- a. Provides a legal basis for conducting a PRDA.
- b. Defines the PRDA in programmatic terms.
- c. Describes a basic implementation process that has been exercised.
- d. Describes the current contracting perspective of the PRDA.

The disadvantages are that the policy:

- a. Evolved on the basis of historic cases and it may yet be evolving.
 - b. May not adequately address current acquisition needs.
 - c. Was developed and maintained in the contracting functional area.
- Thus, it may not provide a complete set of guidelines for a program manager.

PRDA DEFINITION

The most fundamental definition of the PRDA is found in the Federal Acquisition Regulation (AFSC FAR Supplement 17.93) which states, "A PRDA is a Commerce Business Daily announcement of AFSC interest in specific areas of research and development contracting. The purpose of the synopsis is to provide information with respect to submitting proposals in these areas." (1:138)

The PRDA differs from other Commerce Business Daily (CBD) announcements in two key respects. First, current policy restricts PRDA contracts to work in basic research (Program Element (PE) 6.1), exploratory development (PE 6.2), and some categories of advanced development (PE 6.3A, not for system development). (1:138) This restricts the type of research and development, and it explicitly constrains funding sources.

GUIDELINE: The work to be done and the funding sources must be in program elements 6.1, 6.2, and/or 6.3A.

Second, proposals may be expected from potential bidders. While this seems obvious from the wording of the definition, it has particular meaning for PRDA program managers. Unlike other CBD announcements, the PRDA announcement leads to direct submission of proposals. Specifically, this impacts the program manager because the announcement is not to be considered or treated as a request for proposals (RFP) as covered by FAR 15.4. (1:138) That is, an area of interest is announced, but proposals are not requested against a description of work to be done as in the case of an RFP. Further, even though there is not a request for proposals, proposals received are not considered or treated as unsolicited proposals. (1:138) That is, all proposals are treated as responses to a government advertisement. This led one project manager to the interesting, although theoretically incorrect, conclusion that the PRDA must be like "soliciting for unsolicited proposals." (5)

In theory, the government is merely announcing an intent. Although this could lead to a contract on the basis of the CBD synopsis (without RFP, statement of work, etc.), there is an official procurement action only after a source is selected. (3:3)

GUIDELINE: While the PRDA may appear in practice to be "soliciting for unsolicited proposals," three items should be remembered. First, a PRDA is an announcement of the government's intent to do research in a technological area. Second, the government will accept proposals, but an RFP will not be issued. Third, issuing the PRDA does not constitute a procurement action.

Because there is no ongoing procurement action:

- a. The program manager is free of certain restrictions (e.g., limited discussions with offerors) that accompany other acquisitions. (2:1)
- b. The program manager may not have the formal authority that accompanies other acquisitions.

c. At the point when a procurement action is initiated, the program manager will have to be prepared to proceed immediately to negotiations as if a procurement had been ongoing.

LESSON-LEARNED: Even though an official procurement action is not initiated until source selection, the program manager should view the PRDA as if it were an active procurement. A great deal of documentation is required in a short period of time once the procurement is activated. The program office should prepare as much documentation as possible well in advance (also see Chapter Three, Initiating a Procurement).

There is another unique aspect to the PRDA that is not obvious from the wording of the definition. The scope paragraph of the FAR points out that "The PRDA procedure is not intended to replace existing contracting procedures where a request can be sufficiently defined for solicitation." (1:138) This has been interpreted to mean that the PRDA can be the acquisition method of choice if other means of obtaining proposals have been exhausted or they are not applicable. (6) This means the PRDA may be used in cases where "...research and development is required within broadly defined areas of interest...but it is difficult, if not impossible, to describe in any reasonable degree of detail the nature of the work." (1:138) That is, the "what" of the problem can be described, but the "how" cannot (or, for specific reasons, will not) be described. This can occur for four reasons (1:138; 2:1):

- a. There are many possible approaches to solving the problem.
- b. A broad spectrum of potential offerors should be involved.
- c. Offerors may be uniquely qualified to work part, and possibly only part, of the problem; and this cannot be determined in advance.
- d. It is desirable to examine unique, creative solutions.

GUIDELINE: Other approaches to the research and development problem must be considered and found inadequate. The PRDA may be used if the problem is such that it cannot be satisfied through other means. It may also be used if it is desirable to open the acquisition to a broad range of offerors, to generate many different proposed solutions, to accept partial solutions, or to examine unique and creative solutions.

CONCLUSION

The fundamental definition of the PRDA, found in AFSC FAR Supplement 17.93, describes a unique research and development acquisition tool. On the basis of only an announcement to do work in a specific area, offerors may submit proposals and the government can enter into contracts. It is a useful acquisition tool.

The PRDA is useful because it is a unique capability. It gives the program manager a method of contracting for research and development that

might otherwise be difficult or impossible to achieve. The usefulness is extended by the relatively simple and direct regulations that have evolved regarding its use.

The definition discussed to this point addresses the applicability of the PRDA. Published policy goes on to describe its use. In the next chapter that portion of the policy will be examined. The definition will be expanded into a process-oriented model.

Chapter Three

THE POLICY MODEL

Published policy, from the FAR to the local level, describes the implementation of the PRDA. The description is primarily directed to contracting specialists but provides a process model for program managers. The model can be described as actions, documents, and a flow of events.

Within the constraints of the basic definition (Chapter Two) the program manager may make a decision to use the PRDA and then implement that decision. Implementation can be considered in two separate phases. It begins with a pre-announcement phase. In this phase the decision and preparations are made to use the PRDA. This is followed by an announcement phase. In this phase the announcement is published and proposals are received and evaluated. The second phase concludes when a procurement action is initiated.

This chapter describes a policy-based model of the PRDA process. The model is presented in the two phases identified above. It represents a synthesis of information from all the policy and guidance documents.

PRE-ANNOUNCEMENT PHASE

The pre-announcement phase begins with a determination to use the PRDA, and it concludes with the publication of a synopsis in the Commerce Business Daily (CBD). During this phase key participants are identified. They range from the program manager to an approving authority, and they include action officers from various functional offices. Key documents in this phase include a written "determination to use" letter, a Program Implementation Request and Authorization (AFLC/AFSC Form 2916), and the CBD synopsis.

Determination to Use

Prior to using a PRDA a "determination to use" must be written and approved. (1:139) This letter is written by the program office and must include:

- a. The conditions (discussed in Chapter Two) that support the conclusion that the PRDA is appropriate to use. (3:1)
- b. Specific facts and conclusive explanations that support the decision to use the PRDA. (1:139)

c. Joint approval by the director of contracting and the activity commander. (1:139)

GUIDELINE: Approval authority is vested in both contracting and command authority. Local approval is allowed up to \$10,000,000; AFSC approval is required above that amount. (3:1) This threshold has been interpreted to apply to distinct efforts within a PRDA. (6)

The approved "determination to use" is the program manager's authority to proceed. It allows the program office and contracting office to prepare and release the announcement.

Review, Approvals, and Funding

When the "determination to use" is approved, the program office generates a Program Implementation Request and Authorization, AFLC/AFSC Form 2916. (3:1) This form is reviewed and processed but not approved/disapproved until source selection is complete. (3:1) It acts as a place holder to document initiation of a project, reserve funds, and to start bookkeeping activities.

GUIDELINE: The AFLC/AFSC Form 2916 submitted during the pre-announcement phase is only a place holder. It initiates work but will be replaced when the actual size and scope of individual projects can be more reasonably determined at source selection.

Preparation of the Announcement

When approval is obtained, the contracting office prepares a CBD synopsis. (3:1) The program office prepares the technical input and the contracting office completes the announcement by adding a log number and other data. The other data include statements concerning evaluation criteria, allowable costs, focal points for technical and contractual matters, and administrative data. (3:1) The synopsis will be used to announce the PRDA and will be used later as the basis for source selection. (1:140, 3:3)

LESSON-LEARNED: The CBD synopsis is a critical document in the PRDA process. In addition to announcing the PRDA, it is used in source selection. The source selection determination must be consistent with the synopsis. It is important to write the synopsis carefully both because it is small and concise (e.g., no model contract) and it must define the problem adequately.

The pre-announcement phase concludes with the publication of the PRDA in the CBD. This event also marks the beginning of the announcement phase.

ANNOUNCEMENT PHASE

Once a synopsis has been published, the PRDA process follows a path similar to that of other advertised, negotiated research and development

acquisitions. During this phase, emphasis shifts first to the offerors, then to the program office, and finally to the contracting office.

Initially there is a period in which offerors review the announcement and prepare proposals. Proposals received by the government are evaluated. Evaluation may lead to source selection, negotiation, and contract award.

This is a time of intense activity for the program office. While the actions mentioned above take place, the program office also prepares all required procurement documentation. This documentation would normally be generated before the program is advertised (in a non-PRDA); but, as was pointed out previously, procurement is initiated only after successful source selection. Some documentation may depend on which proposal is selected. The program office may not be able to prepare all the documentation until it is very late in the phase. The end of this phase is, therefore, marked by the requirement to rapidly create all procurement documentation.

The phase ends when a procurement is initiated. At that point, the bulk of the activity shifts to the contracting office. That office performs negotiations, audits, contract writing, and begins a contract file. The program office takes a supporting role in these activities.

Distribution of Information

Early in the announcement phase, emphasis is placed on attracting and notifying sources. The intent is to inform a broad range of qualified participants (2:1) and to encourage competition. (3:2) In addition to the CBD announcement, notices are directly distributed to possible sources, and discussions may be held on technical and contractual items.

Copies of the announcement are widely distributed. All sources making a request based on the CBD synopsis receive copies. (3:2) The government also identifies other sources and sends copies to them. The program manager and the contracting officer may send copies to any source they believe to be qualified. (3:2) And the Small and Disadvantaged Business Utilization Specialist sends copies to firms that are qualified in the technology capability areas associated with the requirements in the announcement. (3:2) This wide distribution allows for many possible sources to participate but also creates the need for additional information.

Offerors will seek additional information which expands on the material in the announcement. Discussions with offerors are encouraged, but policy restricts discussions in two ways. (2:1)

The first restriction is to ensure fairness to all competitors. Discussions are, therefore, limited to clarification of technical and contractual requirements. (2:2; 3:1)

LESSON-LEARNED: Additional information should be standardized as much as possible. This insures that all offerors receive the same information.

The second restriction specifies that discussions with an offeror must cease when that offeror submits a proposal. (2:2)

LESSON-LEARNED: The cutoff on discussions with offerors has been interpreted very broadly. If an offeror submits multiple proposals against various portions of the PRDA, then discussions are stopped only for those technical areas where a proposal is actually submitted. (6)

Receipt and Handling of Proposals

As proposals are received, they are treated much the same as non-PRDA submissions with a few procedural exceptions. As usual, proposals are accepted by the contracting office, logged, and distributed to the program office. (3:2) There are, however, four unique handling procedures.

First, proposals are sent to the program office with a cover letter that requests a technical evaluation and a source selection determination. (3:3) The cover letter specifies the evaluation criterion which is the same for all PRDAs: "...an offeror's proposal must provide new or unique concepts, ideas, or approaches to qualify for evaluation and consideration for award." (3:6) This criterion is unusual because, as the FAR states, "New and creative solutions to the technical problems presented by the Air Force are of primary interest. No further evaluation criteria will be used in source selection." (1:140) A judgement of "new and creative" will, however, be made in light of cost as related to technical factors.

The second unique handling procedure involves the distribution of cost proposals. Cost proposals are distributed with the technical proposal. (1:140) They are not evaluated on their own, but costs are considered simultaneously with technical factors. This differs from the non-PRDA case where costs are considered only after technical evaluation is completed.

A third procedure that differs from those in other procurements is the handling of proposals received after the closing date of the PRDA. Late proposals are treated as valid and must be evaluated. (3:3) The submission closing date is a target and not a cutoff date as in other procurements. A subjective judgement is allowed that may exclude some proposals if they are received "too late" (meaning that evaluation could not be completed in time to meet the expected contract award date). (1:141)

LESSON-LEARNED: Establish a firm cutoff date for evaluations. This date is based on the program's target date for contract award.

The last unusual procedure involves unsolicited proposals. If an unsolicited proposal is received and it addresses the PRDA topic, then it too will be evaluated as part of the PRDA. (1:142) These unique handling procedures have implications for the evaluation process.

Evaluation and Source Selection

After proposals are logged and sent to the program office, the evaluation process begins. This process resembles non-PRDA evaluations and source selection, but differs in some important ways.

Unlike many other acquisitions, the source selection authority may choose any number (none, one, many) of proposals for negotiation and contract award. (3:3) Selection is based on the "best buy" concept (technical merit and costs as related to technical factors). (3:3) It is also based on the unique principle that all PRDA proposals are "acceptable" (i.e., they meet the "new and creative" criterion), but only those chosen by the source selection authority for negotiations are "successful." (2:2; 3:3) Since it is not necessary to establish a competitive range (1:141), debriefing "unsuccessful" offerors is different than most other acquisitions.

Debriefings for unsuccessful offerors do not contain technical or cost discussions. Since all proposals are acceptable, debriefings address only the format of the proposal or a discussion of "how the offeror might improve future submissions." (2:2)

Another interesting feature of the evaluation process is the gathering of additional information about proposals. The contracting officer may request clarification or do fact finding. (3:3) But best and final offers need not be requested. (1:141) This is because, unlike other acquisitions, a determination of competitive range for source selection is not made. (1:141)

Other than these few special features, the evaluation process proceeds as other research and development evaluations and source selections. Providing a source is selected for negotiations, the process then continues in the same manner as other procurements.

Initiating a Procurement

The last step in the announcement phase is the initiation of a procurement action. It is at this step a Purchase Request, AFLC/AFSC Form 36, is submitted. (3:3)

The purchase request leads to a number of other documents and actions. For example, the program office updates the Program Implementation Request and Authorization, AFLC/AFSC 2913 (see previous discussion, Review, Approvals, and Funding). They also obtain authority to negotiate (Determinations and Findings, Technical Program Plan, Work Package Directive, etc.). (1:141) The contracting office notifies the successful offeror(s) and initiates a contract file(s). (3:3) In general, the program and contracting offices perform the usual procurement activities and prepare the usual procurement documents.

CONCLUSION

The PRDA is somewhat different than other acquisitions. Those things that make it different stem from the fact that there is not an on-going procurement action until a source is selected.

Because there is no on-going procurement action, the program manager has certain freedom in dealing with the program. For example, the program office may have open discussions with offerors. They may also accept and evaluate proposals that are submitted after the announcement close-out date. Additionally, there is no technical competition because evaluations are based on the single criterion of "new and creative" solutions within the framework of the "best buy" concept.

On the other hand, because the government intends to award contracts in the announced areas, the program manager must control and structure a program without the formal authority of an on-going procurement. This includes encouraging competition, producing all required procurement documentation, and insuring fair treatment of all offerors.

The PRDA is a powerful tool which can be used to address certain technical problems. The power derives from the definition and a flexible, unique implementation process. However, merely following the procedures in the published policy and guidance will not insure that the PRDA completely meets the needs of the program. There are additional aspects of a PRDA that can contribute to its success. These additional aspects are discussed in the next chapter.

Chapter Four

MODEL EXPANSION

This chapter concludes the development of the process model. Additional information, from program management experience, is added to the policy-based description in previous chapters. The added information is based primarily on the author's work with programs that used the PRDA as a major part of their overall acquisition strategy.

Before the process model is re-examined, two cases are briefly described. The cases are significant for two reasons. First, they represent the initial applications of the PRDA in the C3I laboratory (Rome Air Development Center, RADC). As such, they represented a test of the policy and a learning experience for the program office. Second, they are the only two cases that were documented with the intention of establishing a body of knowledge about the use of the PRDA.

CASE HISTORIES

Descriptions of the two cases are presented below. Each case is described in two ways. Initially an overview of the program and the acquisition is given. This overview is followed by a description of the significance of the case to this research.

Case I: RADC Artificial Intelligence (AI) Research Program

The RADC AI Research Program was the first use of the PRDA in the C3I laboratory. The announcement was published in early 1984 and a contract awarded in the summer of the same year.

Program Description, Case I. The program office used the PRDA after the program was unsuccessfully advertised using a request for proposal (RFP). Management concluded that the RFP format did not, and could not, yield adequate responses. They then looked at the PRDA as a means of addressing the research program's needs. (4) Since this met the basic criteria (Chapter Two) for using the PRDA, a "determination to use" was drafted and approved. An announcement was published and a significant response was generated from industry and academia.

The PRDA was to explore AI research in three areas: basic research, applied laboratory research, and methods of providing current and continuing

education in the technology. RADC intended, further, to distribute the contracted work and resulting expertise among multiple suppliers.

Offerors proposed a number of solutions. These ranged from those that concentrated on the management of consortia, to those that concentrated on technology development. All were acceptable and presented "new and creative" solutions. The selected (i.e., successful) source proposed a best buy for the Air Force that balanced all aspects of the program.

The successful offeror's proposal pointed out a shortcoming in the PRDA policy. The program office took great care in preparing descriptions of the technical program and costs, but they had no direct way of addressing potential management risk. Management risk is not highlighted in the PRDA policy. Fortunately, the offeror discussed management in the proposal. And, the program staff prepared to manage risk by placing the necessary emphasis on this area in negotiations and program execution.

Significance, Case I. This program has two characteristics that made it valuable to the development of a PRDA process model and lessons-learned.

First, this case underscores the value of the criteria for using the PRDA (Chapter Two) and the "determination to use" process (Chapter Three). The PRDA was not available when this program was conceived; however, experience showed it was the correct method for this acquisition. Other methods could not produce adequate results.

The second characteristic was the lack of direction in the policy regarding risk reduction in eventual contracts. The flexibility of the PRDA and its abbreviated announcement (i.e., a statement of work, etc. do not accompany the announcement) do not directly present opportunities for incorporating risk reduction in the acquisition. Emphasis is placed on technical aspects.

CASE II: RADC STRATEGIC DEFENSE INITIATIVE (SDI) BATTLE MANAGEMENT C3 TECHNOLOGY PROGRAM

This program was the second use of the PRDA at RADC. It represented a portion of RADC's SDI battle management C3 research.

Program Description, Case II. During acquisition strategy discussions (December 1984 to January 1985), a decision was made to break out specific technology work in the overall SDI battle management program to be acquired with a PRDA. In late February 1985, a "determination to use" was approved and the PRDA was published. Contracts were awarded beginning in August.

A large number of awards were contemplated. Not only was SDI a topic of intense interest, but the PRDA was structured to cover many of the technologies RADC included in the SDI battle management C3 program. A single announcement was prepared that covered all relevant topics. The PRDA included

topics such as battle management computer system operations, computer system design, distributed systems, software engineering, artificial intelligence, communications, reliability and maintainability, and other research areas important to the SDI program.

It was the program office's intention that the PRDA would provide research of the collective needs of the SDI program. It was also intended to provide research in individual technology areas. This dual emphasis allowed offerors to cross or combine technologies in their proposals as well as to stay within a specific area. The program office expected a large response because this approach allowed considerable freedom in the offeror's ability to respond.

Management prepared for a large response by creating a special staff to manage the PRDA. The staff consolidated the administrative workload and provided common support to the four primary program management offices that shared the PRDA. The staff office also provided review and management of the entire PRDA process.

When the announcement phase was drawing to a close, the staff office was phased out. Individual program offices submitted purchase requests and took control of their projects.

Significance, Case II. This program was significant to this research for two reasons.

First, the program office planned the use of the PRDA. They reviewed the overall program and justified the PRDA on the basis of the work to be done and the desired response (see Chapter Three, Determination to Use).

Second, the acquisition process needed to be controlled because it was large and complex. The PRDA staff controlled the acquisition, provided knowledgeable information distribution, and contributed specialized expertise on the use of the PRDA.

ADDITIONS TO THE MODEL

Experience with the PRDA highlighted additional parts of the process model not specified in the policy. This section lists additions to the model based on experience in the preceding cases.

Additions to the Pre-Announcement Phase.

During this phase the program team is built and information is created. Teams and information are important elements of the process and impact the eventual contracts. The following activities were important in the two cases described above.

Develop an Acquisition Strategy. Developing an acquisition strategy supported both the building of a project team and the decision to use the PRDA in Case II. The process brought together all interested and involved participants. The results of the strategy building process provided the documentation used to support the decision to use the PRDA.

LESSON-LEARNED: Prior to selecting the PRDA as the acquisition method, develop an acquisition strategy for the program.

Develop Program Teams and Communications. In both cases, the development of an acquisition strategy contributed to the formation of strong project teams. The newness of the PRDA (Case I) and the size and complexity (Case II) of the projects continued drawing additional participants to the teams. The growth of the projects and the intense interest could have led to problems in team cohesion and communications.

The program office overcame these potential problems through an extensive communications campaign. In Case II, for example, the staff office held briefings and established special communications channels. Among these channels were focal points (contracting, technical, and management), informal status reports, and a series of memos on various aspects of the project and its administration. These kept the program visible and all participants informed.

Team building and communications were essential to the success of the projects. For example, Case II involved almost 300 proposals evaluated by approximately 125 evaluators from at least seven different offices. Contract awards occurred about 5 months after the CBD announcement. (7) Rapid and accurate information transfer promoted the necessary teamwork to complete a project of this magnitude.

LESSON-LEARNED: Develop communications and build a cohesive team early in the project. Institute information channels and forms tailored to program and management needs.

Draft Data Items, Reporting Schedules, and Specifications Early. In both cases it became important to develop information about deliverables. This information proved useful to the offerors and the government.

The program office, at the request of the contracting office, drafted data items, reporting schedules and specifications early in the PRDA process. Because information exchange with offerors is encouraged, these drafts were made available to all offerors. Contractors used the drafts in developing their proposals. The program office prepared negotiation notes based on the drafts. The drafts proved to be very close to the final contract requirements and were used by the contracting office to write contracts.

LESSON-LEARNED: Draft data item descriptions, reporting needs and schedules, and specifications early in the PRDA process. These serve two purposes. First, because discussions are encouraged with offerors, they may be

distributed to potential sources. However, to keep the competition fair, these documents should be standardized and offered to all sources. Second, they will be useful when contracts are being prepared. They may be used in negotiations and in drafting the actual contract.

Additions to the Announcement Phase

During this phase, information flows between and among the program office, functional staffs, management, and offerors. The teams and communications established in the previous phase contribute to the smooth flow of information during this phase but may not be sufficient. Additional information and controls become important.

Develop and Control Internal and External Information. In the cases described earlier, the program office found it important to develop, standardize, and make available management and technical data. For management, they constructed status reports. For contractors, they developed a detailed description and explanation of the technical requirements of the CBD synopsis. This description was distributed with copies of the announcement to every source that responded to the CBD synopsis or was identified by the government. In both instances, a single PRDA focal point controlled the content and distribution of the documents.

Managing and controlling information proved valuable. Through these activities, the program office insured that everyone worked from the same data base. This was important because the built-in flexibility of the PRDA tends to promote technical excursions. The not-in-procurement status of the PRDA tends to confuse or dilute the program manager's formal authority. The program manager can take control of the information resource and exercise significant program control. In the cases described above, taking control of the information helped to overcome the tendencies for excursions and lack of formal authority.

LESSON-LEARNED: Maintain control of the program data base by establishing a minimum number of focal points. Allow the focal points to coordinate and control all information in their specialty area. Direct all information requests through the focal points.

CONCLUSION

Using the PRDA is complicated by the compression of the acquisition schedule and the flexible nature of the PRDA itself.

Experience with the PRDA showed that a successful PRDA is not a matter of merely following the guidance in the regulations. Planning, building a project team, and generating and controlling information are important additions to the process model.

Chapter Five

SUMMARY

This research examined the Program Research and Development Announcement (PRDA) from the perspectives of policy and experience. The goal of the research was to develop a set of guidelines for program managers. The guidelines developed in this paper consist of a definition of the PRDA and a process-oriented model. Throughout the paper, guidelines and lessons-learned, based on the author's experience with the PRDA, were added to the definition and the model.

This chapter summarizes the findings of the research and draws a conclusion regarding the goal of the research. The chapter concludes with recommendations.

FINDINGS AND CONCLUSION

During the course of this research, it became apparent to the author that a basic set of guidelines for the PRDA exists in published policy.

The published policy, taken collectively, contains sufficient information to determine when the PRDA should be used. It also explains how to execute that decision. Furthermore, the policy describes a logical process that has been used and works in application. However, the policy does not address general program management guidelines. Experience with the PRDA indicated that planning, team building, communications, and establishing management requirements are important to a successful project. These items, however, are not unique to the PRDA. Their use in the PRDA process enhances the policy model and provides insights to the process that are beyond the scope of the policy.

In conclusion, this research found that published policy contains adequate guidelines to define and execute a PRDA. The policy includes all the information required to decide to use the PRDA. The decision can be based on the definition, constraints, and execution requirements in the policy.

RECOMMENDATIONS

The results of this research led to the formulation of two recommendations:

a. It is recommended that program managers review the entire set of PRDA policy documents. Each of these documents describes only a portion of the PRDA. In order to understand all aspects of the PRDA, the three documents (AFSC FAR Supplement 17.93, AFSCP 70-4, and RADCR 70-17) must be read as a set. These should be read for guidance, noting that the AFSC pamphlet is an information document and not a directive.

b. It is recommended that a graphic model of the PRDA be included as an attachment to RADCR 70-17. A model, similar to the one developed in this paper (Appendix A), has two benefits. First, the model provides a single-source overview of the entire PRDA process. It ties together the pieces of the PRDA found separately in all the policy documents. Program managers could use the model as an introduction to the overall process and as a guide to researching the policy. Second, a graphic model provides an easily read and understood format. It concentrates the reader's attention directly on the complete process; it excludes details which can and should be found in the text of the regulation.

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Appendix A
GRAPHIC PRDA MODEL

This appendix contains a graphic representation of the PRDA model. It is an abbreviated form of the PRDA model developed in Chapter Three (The Policy Model) and expanded in Chapter Four (Model Expansion). The model is based on published guidance and the author's experience.

The model is graphically represented in the following manner:

- a. The vertical axis labels participants in the PRDA process.
- b. The horizontal axis is a time line. Process flows from left to right.
- c. The following conventions are used:
 - 1) Actions and documents specified in published guidance are shown in solid-line boxes.
 - 2) Actions and documents based on the author's experience are shown in broken-line boxes.
 - 3) Guidelines and lessons-learned are referenced by G.x and L.x, respectively. The "x" denotes the sequential occurrence of the guideline or lesson-learned in the text and corresponds to the numbering in Appendix B.

IRDA PROCESS MODEL

PRE-ANNOUNCEMENT PHASE

CONTRACTING
AND OTHER
OFFICES

PROGRAM
OFFICE

Review policy
(G.1,2,3)

Develop acquisition
strategy
(G.3,4,5 L.6)

Team Building (L.7,9)
Communications (L.7)
Documentation (L.1,8)

OFFERORS

POLICY

- Must be PE 6.1, 6.2, 6.3A
- Cannot be solicited by other means
 - Need many approaches
 - Need broad range of offerors
 - Uniquely qualified offerors
 - Seeking creative solutions

IRDA PROCESS MODEL

PRE-ANNOUNCEMENT PHASE

CONTRACTING AND OTHER OFFICES

Contracting and
approval authority
approve the
"Determination to
Use"

Hold AFLC/AFSC
Form 2916, begin
bookkeeping

PROGRAM OFFICE

Write the
"Determination to
Use"
(G.6)

Submit Program
Implementation
Request and
Authorization (AFLC/
AFSC Form 2916)
(G.3,4,7 L.1)

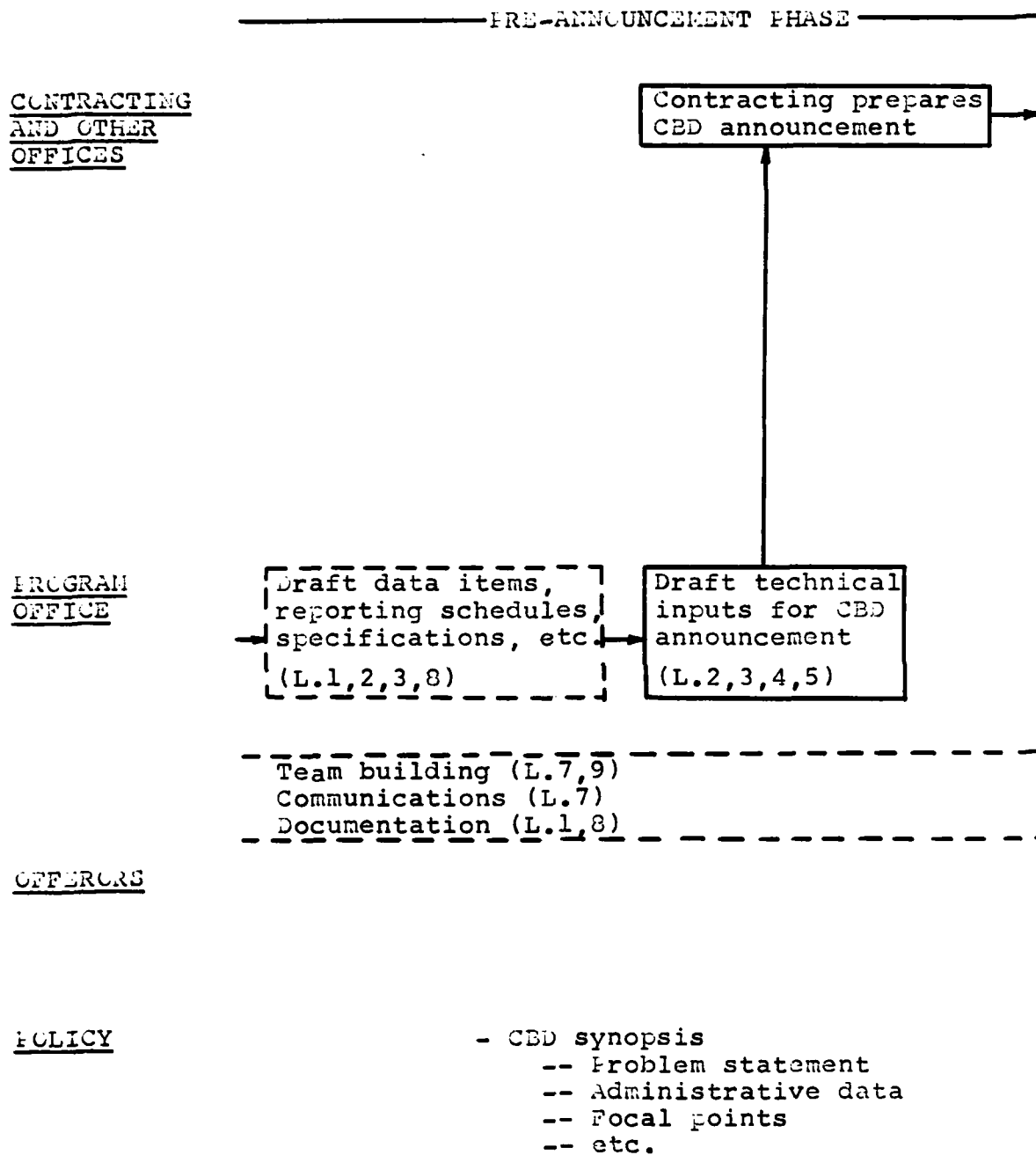
Team Building (L.7,9)
Communications (L.7)
Documentation (L.1,8)

OFFICERS

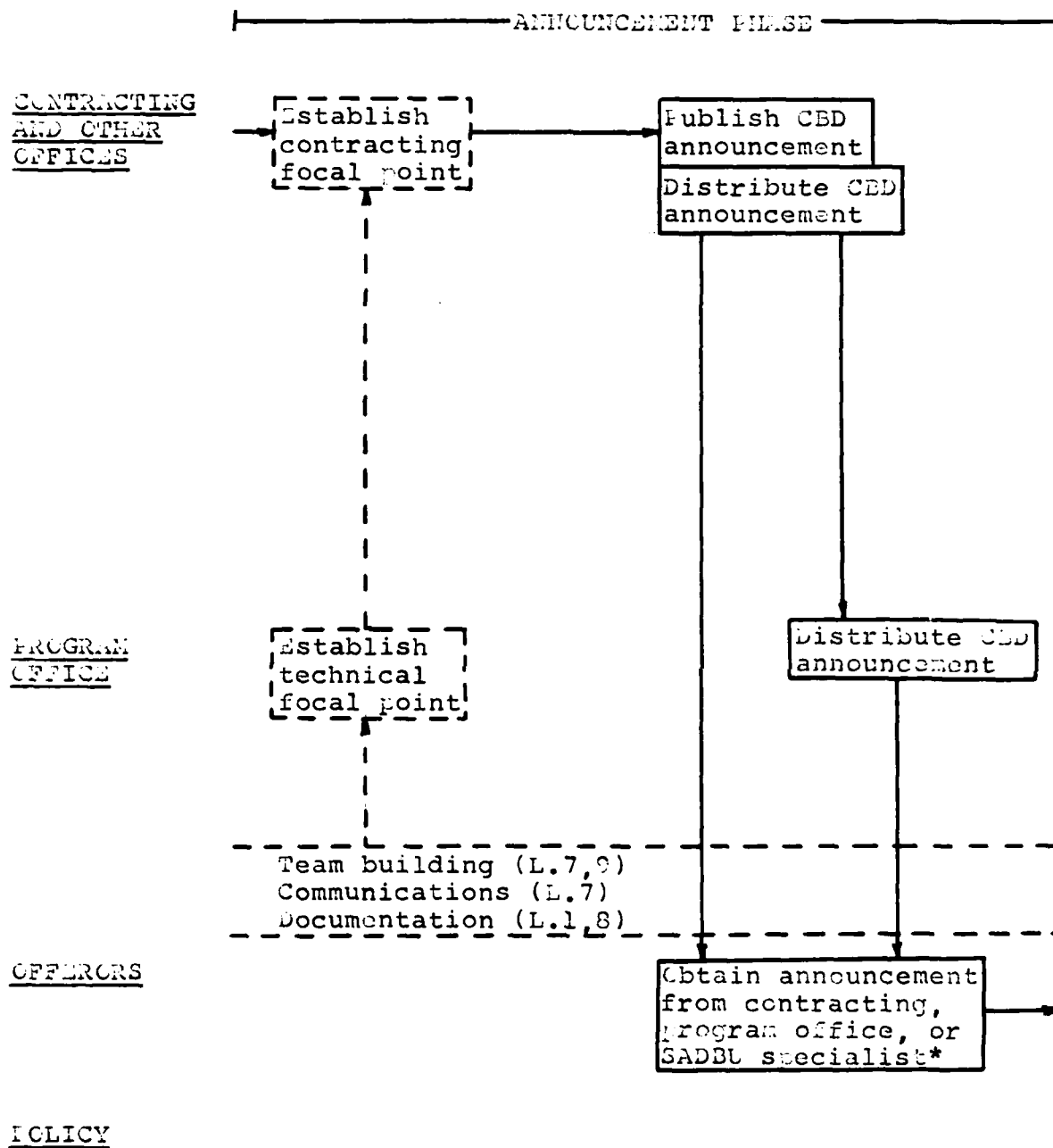
POLICY

- Dual approval by Contracting and Commander
- AFLC/AFSC Form 2916
 - Sufficient funds for at least one contract
 - Place holder, to be updated later

IRDA PROCESS MODEL

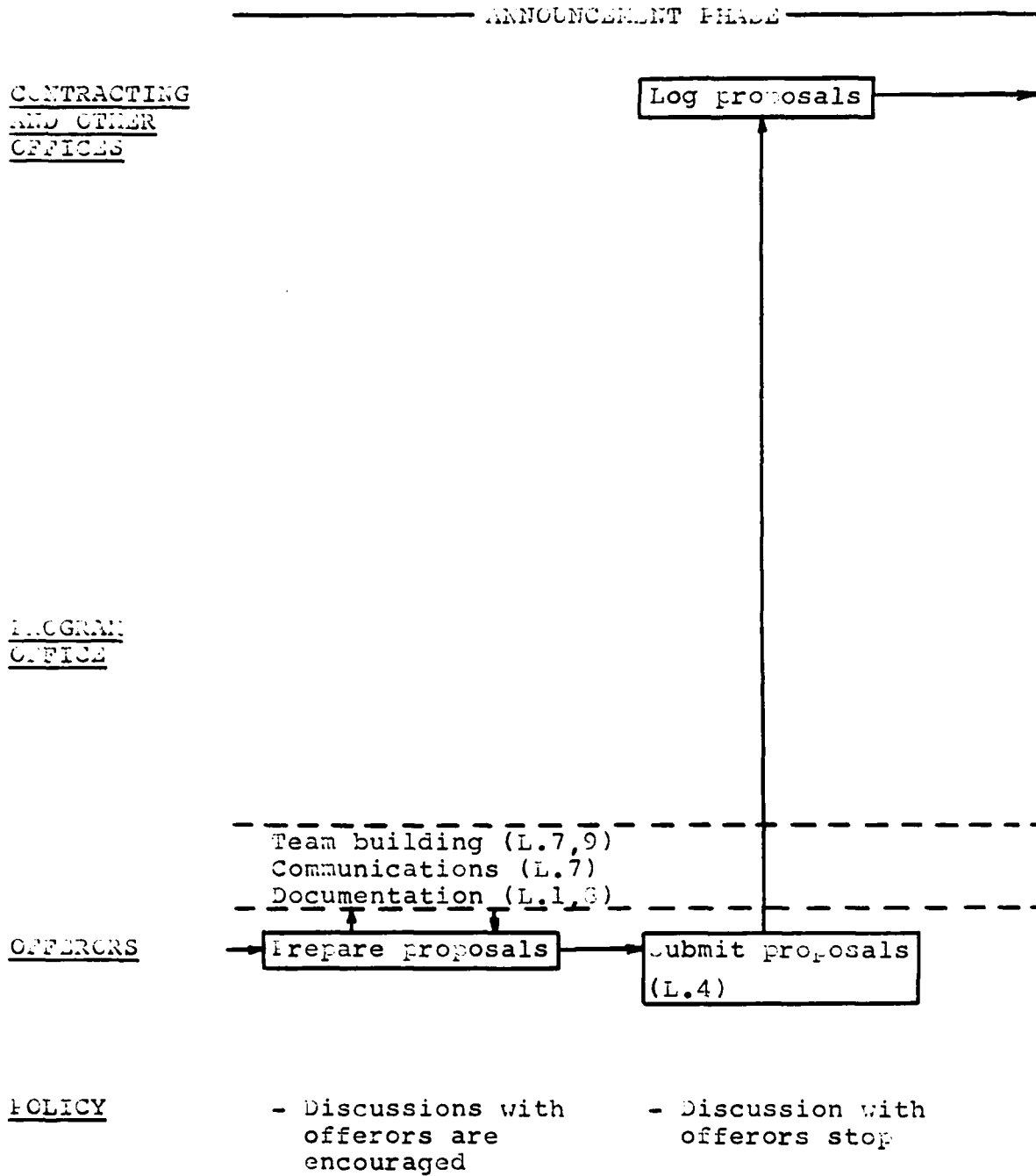


IRDA PROCESS MODEL

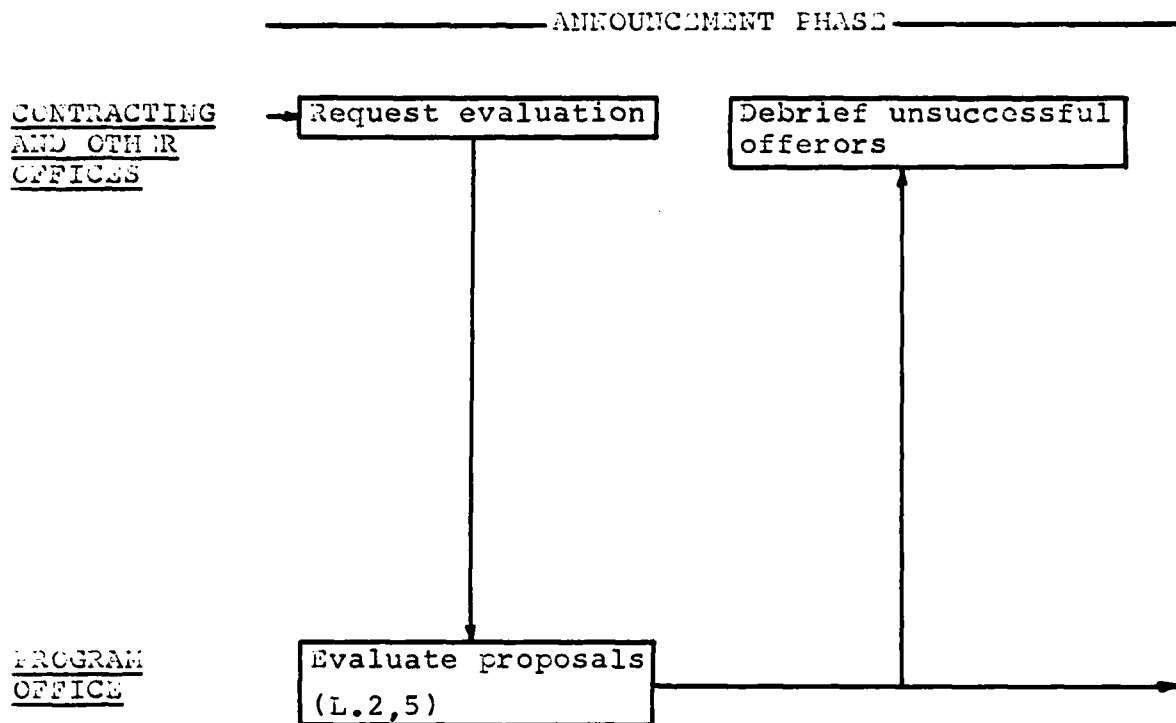


*Small And Disadvantaged
Business Utilization
specialist

PRDA PROCESS MODEL



FRDA PROCESS MODEL



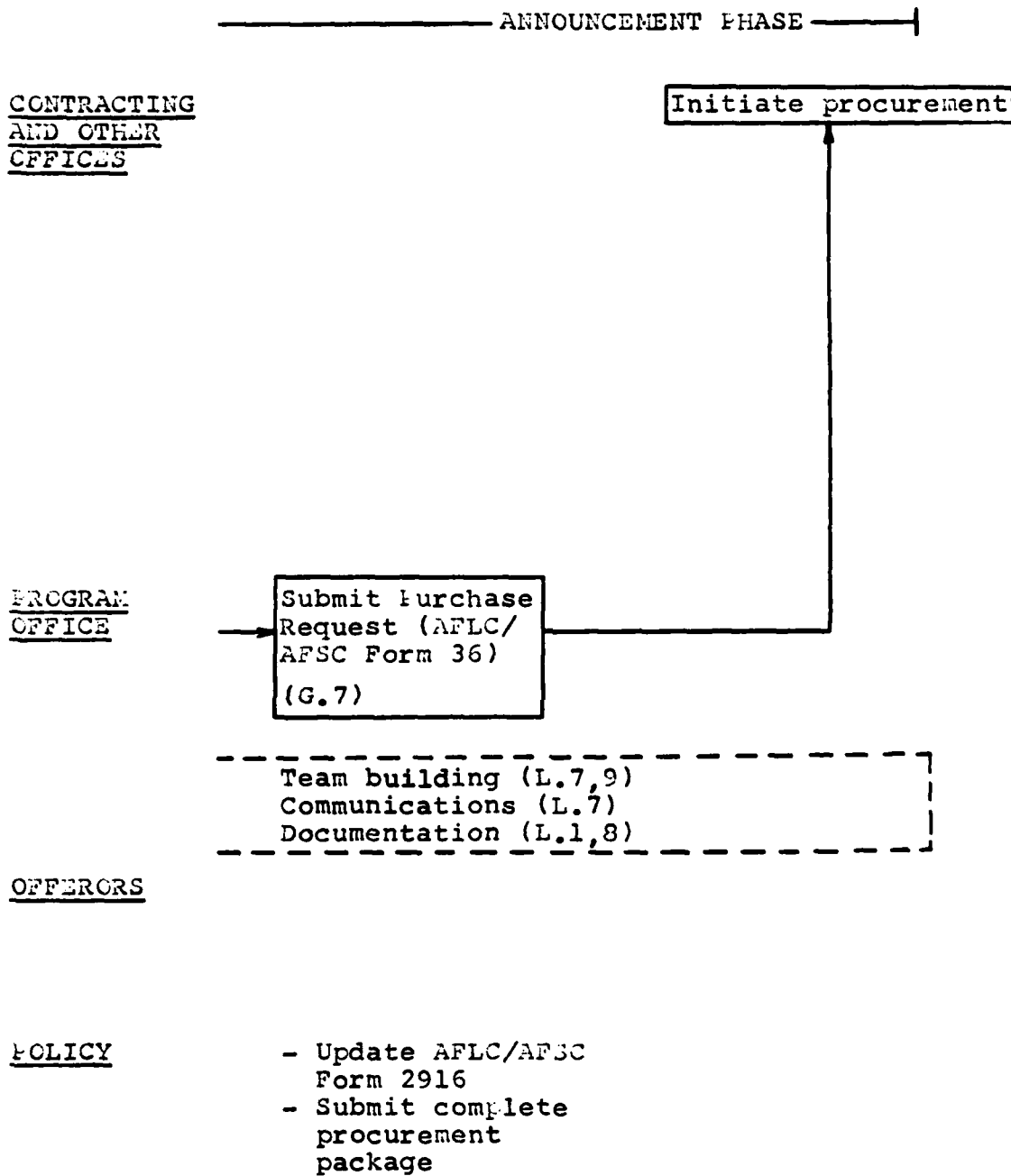
Team building (L.7,9)
Communications (L.7)
Documentation (L.1,8)

OFFERORS

POLICY

- Single evaluation criterion
- All proposals are acceptable
- "Best buy"
- Cutoff date
- Debriefings
 - Format
 - How to submit in the future
- Proposals received too close to contract award date may be excluded from evaluation

IRDA PROCESS MODEL



Appendix B

GUIDELINES AND LESSONS-LEARNED

This appendix lists the guidelines and lessons-learned from throughout the paper.

The guidelines and lessons-learned are the author's observations on the PRDA process. Guidelines refer to observations on policy and its interpretation. Lessons-learned refer to observations on the execution of the PRDA. All observations were made during the execution of Case I and/or Case II (Chapter Four).

The appendix organization provides references to the text and Appendix A, Graphic PRDA Model. A guideline is identified by "G.x" where the "x" refers to its sequential appearance in the text. A lesson-learned is identified by "L.x" where the "x" refers to its sequential appearance in the text. These identifiers are not found in the text but are used in Appendix A. Major topic headings are included to provide a cross reference to the text.

Chapter One -- Introduction

Chapter Two -- Definition of PRDA

History of Policy Development

3.1 GUIDELINE: Policy matters on the PRDA are the responsibility of the contracting function from local offices to Headquarters AFSC. Policy determinations above that level are only in the area of consistency with other, non-PRDA policy.

3.2 GUIDELINE: Although tightly coupled it should be noted that each document (AFSC FAR Supplement 17.93 and AFSC Pamphlet 70-4) is incomplete guidance on its own. Additionally, to resolve policy questions at both the FAR and AFSC levels only AFSC Procurement (PK) need be contacted.

PRDA Definition

3.3 GUIDELINE: The work to be done and the funding sources must be in program elements 6.1, 6.2, and/or 6.3A.

3.4 GUIDELINE: While the PRDA may appear in practice to be "soliciting for unsolicited proposals," three items should be remembered. First, a PRDA is an announcement of the government's intent to do research in a technological area. Second, the government will accept proposals but an RFP will not be issued. Third, issuing the PRDA does not constitute a procurement action.

L.1 LESSON-LEARNED: Even though an official procurement action is not identified until source selection, the program manager should view the PRDA as if it were an active procurement. A great deal of documentation is required in a short period of time once the procurement is activated. The program office should prepare as much documentation as possible well in advance (Also see Chapter Three, Initiating a Procurement).

3.5 GUIDELINE: Other approaches to the research and development problem must be considered and found inadequate. The PRDA may be used if the problem is such that it cannot be satisfied through other means. The PRDA may also be used if it is desirable to open the acquisition to a broad range of offerors, to generate many different proposed solutions, to accept partial solutions, or to examine unique and creative solutions.

Conclusion

Chapter Three -- The Policy Model

Pre-Announcement Phase

G.6 GUIDELINE: Approval authority is vested in both contracting and command authority. Local approval is allowed up to \$10,000,000; AFSC approval is required above that amount. (3:1) This threshold has been interpreted to apply to distinct efforts within a PRDA. (6)

G.7 GUIDELINE: The AFLC/AFSC Form 2916 submitted during the pre-announcement phase is only a place holder. It initiates work but will be replaced when the actual size and scope of individual projects can be more reasonably determined at source selection.

L.2 LESSON-LEARNED: The CBD synopsis is a critical document in the PRDA process. In addition to announcing the PRDA, it is used in source selection. The source selection determination must be consistent with the synopsis. It is important to write the synopsis carefully both because it is small and concise (e.g., no model contract) and must define the problem adequately.

Announcement Phase

L.3 LESSON-LEARNED: Additional information should be standardized as much as possible. This insures that all offerors receive the same information.

L.4 LESSON-LEARNED: The cutoff on discussions with offerors has been interpreted very broadly. If an offeror is submitting multiple proposals against various portions of the PRDA, then discussions are stopped only for those technical areas where a proposal is actually submitted.

L.5 LESSON-LEARNED: Establish a cutoff date for evaluations. This date is based on the program's target date for contract award.

Conclusion

Chapter Four -- Model Expansion

Case Histories

Additions to the Model

L.6 LESSON-LEARNED: Prior to selecting the PRDA as the acquisition method, develop an acquisition strategy for the program.

L.7 LESSON-LEARNED: Develop communications and build a cohesive team early in the project. Institute information channels and forms tailored to program and management needs.

L.8 LESSON-LEARNED: Draft data item descriptions, reporting needs and schedules, and specifications early in the PRDA process. These serve two purposes. First, because discussions are encouraged with offerors, they may

be distributed to potential sources. However, to keep the competition fair, these documents should be standardized and offered to all sources. Second, they will be useful when contracts are being prepared. They may be used in negotiations and in drafting the actual contract.

L.9 LESSON-LEARNED: Maintain control of the program data base by establishing a minimum number of focal points. Allow the focal points to coordinate and control all information in their specialty area. Direct all information requests through the focal points.

Conclusion

Chapter Five -- Summary