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A QUALITATIVE ANALYSIS OF THE ELEMENTS REQUIRED FOR THE SUCCESSFUL IMPLEMENTATION OF THE "ROLLING DOWN-SELECT STRATEGY"

THESIS

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THESIS

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Abstract

This research explored the elements required for the successful implementation of the "rolling down-select strategy." Inspired by Lightning Bolt 10, this study investigated five acquisitions which have or are in the process of implementing the "rolling down-select strategy." The results suggest several elements which appear to contribute to the successful use of the "rolling down-select strategy." These findings can be used by acquisition planners to aid in determining whether or not the "rolling down-select strategy" is a viable strategy for their particular acquisition.

A QUALITATIVE ANALYSIS OF THE ELEMENTS REQUIRED FOR THE SUCCESSFUL IMPLEMENTATION OF THE "ROLLING DOWN-SELECT STRATEGY"

1. Introduction

In today's post cold war era, the military is facing massive downsizing and huge budget cuts. "The defense budget measured in constant 1995 dollars, has declined from a peak of $390 billion in 1985 to $252 billion in 1995--a reduction of about 35 percent (GAO 1995a). These cuts in defense spending are further exacerbated by public perceptions that poor military management of the acquisition process is wasting scarce tax revenues. As the GAO reports, "Congress has long been concerned that acquisition practices at federal agencies are wasteful and add billions to acquisition costs. For example, cost overruns of more than 100 percent have been reported in the Defense Department (DOD) programs" (GAO 1995b). The desire to change the public's attitude towards the military coupled with criticism of its management practices have placed the DOD acquisition process under fire and subject to close scrutiny.

According to GAO report HR 95-1, the Department of "Defense is committed to reforming its major weapons systems acquisition process (involving

about $80 billion a year) and has begun to reassess many of its most expensive weapon programs for opportunities to cutback to meet anticipated shortfalls in funding (GAO, 1995c). The Department of Defense and Congress have instituted many programs designed to address the weaknesses in weapons systems acquisition. In trying to make these changes and improve the process, the DOD "has adopted an acquisition strategy that calls for proving technologies before incorporating them into the procurement process" (GAO, 1995c). One effective way to accomplish this task is by using what is known as the "rolling down-select strategy" (RDS).

Background

The "Rolling Down-Select Strategy" (RDS) is an acquisition approach which is not commonly used, but it has been used on major weapons acquisitions. It first employs full and open competition and results in awards to several contractors for the first phase of the contract. The field of contractors is then selectively narrowed down through the design, development and EMD phases. Throughout the process, each contractor's proposal is evaluated against the contractor's performance to decide which contractor will be selected "down" to the next phase. This process results in award to a single contractor for full scale production. When this techniques is used, unique procedures must be followed to maintain and protect proprietary source selection information, while

still allowing the government to periodically assess and provide feedback to the selected contractors as they continue performance through the acquisition phases to production.

Problem Statement

One of the first decisions acquisition personnel need to make when developing their acquisition management plan is which source selection method to use for their particular acquisition. This is not an easy decision, and any guidance which could assist the acquisition personnel in their decision would be helpful. No empirical research on the elements required to implement the "rolling down-select strategy" has ever been done. Therefore, acquisition professionals contemplating implementing RDS have very little guidance on when to implement this strategy. This thesis hopes to provide guidance which acquisition planners can use to help decide if their program should implement the "rolling down-select strategy." To do this, this study will examine the elements required for the successful implementation of the "rolling down-select strategy."

This research was conducted using a case-study methodology. Information was obtained through open-ended interviews conducted with personnel from each of the case study subjects. Results of this exploratory research will provide insight to decision-makers on deciding whether or not to

use the "rolling down-select strategy" based on the elements of their program. Further, this study's results will provide a foundation for further research into the use and implementation of the "Rolling Down-Select-Strategy.

Investigative Question

One investigative question and four propositions guided this exploratory case study research. The question and the elements that made up the propositions are described below. The question was, "what are the characteristics of an acquisition program that make it a good candidate for applying the "Rolling Down-Select Strategy?"

Below, I suggest several characteristics which appear to be necessary for the successful application of this strategy. The first element is that a program must be a large, state-of-the-art development program. The program must be on a scale to warrant the use of the "rolling down-select strategy." For simple programs it would be more efficient to use traditional "total program" acquisition. A technology must be so advanced that it would be too risky to trust just one contractor to develop and produce it on a single award. Once this proposition is resolved, acquisition personnel will be able to determine if their program should use RDS based on the level of technology as a criterion.

Next, it appears a clear separation between phases is required in order for RDS to work. Consequently, the acquisition must be capable of being broken up into distinct phases where contractors can be down-selected from one phase to

the next. A clear separation between phases makes it possible for the government to evaluate each contractor based on each phase alone. There is a question as to whether or not this characteristic is necessary; however the results of the study of this proposition should resolve any doubt about this point.

Since contractor evaluation is an integral part of the process, clear performance targets and performance evaluation criteria must be established early in the process. Specifically, programs which opt for this strategy must have levels of performance to be targeted and evaluated. More objectivity, clear performance targets and evaluation criteria are a necessary requirement for RDS to function effectively. The analysis of this proposition should provide program managers with a better understanding of how clear performance targets and evaluation criteria relate to the successful use of the "rolling down-select strategy."

Finally, for RDS to succeed, there must be sufficient incentive within each phase to maintain multiple efforts. The government must be receiving some type of benefit from the RDS process to continue using it for successive phases. In addition, the contractors must be compensated enough to want to keep competing for the next phase. The results suggest that if there are not enough funds, or other tools to provide incentive to the contractor, that the "rolling down-select strategy" will not succeed.

Summary

This thesis is aimed to provide a clearer understanding of what elements are required to successfully implement the "rolling down-select strategy." The results of this research should effectively improve the acquisition process by providing guidance which acquisition personnel can use when trying to determine if the "rolling down-select strategy" should be used on their program. This thesis begins with a review of the existing literature and information on the "rolling down-select strategy" in chapter 2. The research design and methodology for analysis are included in chapter 3. Chapter 4 includes an analysis of the results of this research. Finally, the thesis is concluded in chapter 5 where the conclusions and recommendations for future research are discussed.

2. Literature Review

This chapter explains the "rolling down-select strategy" as a means of improving the acquisition process. It begins with a discussion of acquisition reform in general, and follows with a description of the "rolling down-select strategy" (RDS). Next, the advantages and disadvantages of RDS are presented along with a discussion of existing knowledge concerning the conditions for using the "rolling down-select strategy." Next, propositions concerning the elements necessary for a successful "rolling down-select" are explored. The chapter concludes with a discussion of the research objectives for this thesis.

Acquisition Reform

"DOD's acquisition reform program was established to reduce acquisition costs while maintaining technological superiority" (GAO, 1995d). When an acquisition program fails, there is a major financial loss to the Government. The Government can no longer afford to accept the risks of such a loss. A 1995 General Accounting Office report suggests that one of the objectives of acquisition reform is to cut down on the risk of program failure (GAO, 1995c). Therefore, the Government is looking for ways to reduce this risk.

One of the primary focuses of risk reducing acquisition reform is the Government's increased emphasis on performance. Fading are the days of

telling a contractor exactly how to design a major weapons system and accepting the risk that the design will not work. We are increasing our emphasis on performance based acquisition. Further, we are increasing our reliance on commercial items. When we buy a commercial product off the shelf, we are more confident that the product will be available and we are also more confident of the product's performance.

"Rolling Down-Select strategy" - an initiative of Acquisition Reform.

In 1992, the GAO reported that high risk acquisition strategies were being used. These strategies involved "acquisition of weapons based on optimistic assumptions about the maturity and availability of enabling technologies" (GAO, 1995a). Contractors were selected for acquisitions based on their proposal and their perceived ability to fulfill the contract. However, these premature selections of a single contractor to produce a system before the technology is proven tend to increase risk. These risks may be avoided by adopting alternative acquisition strategies.

Acquisition reform measures have addressed these alternative acquisition strategies. The idea is to keep evaluating our current system and try to find ways to make it more efficient and effective. In 1996, an Integrated Product Team created Lightning Bolt #10. This "Lightning Bolt is an initiative to reduce the time from requirements definition to contract award" (McCarter 1997). One of the initiatives listed in Lightning Bolt 10 was the "rolling down-select strategy."

Description of Rolling Down-Select Strategies

Lightning Bolt 10 gives a thorough definition of Rolling Down-select.

> A rolling down-select uses a structured source selection for the initial award of multiple contracts, all of which include options for the follow-on segment of the program. The evaluation and selection of the contractor(s) to continue in the follow-on effort occurs during the performance of the first segment. For example: the pre-Engineering & Manufacturing Development (EMD) phase for a major weapon system would authorize multiple contractors to proceed with design (usually completing at a normal point in design such as Preliminary Design Review) and include a priced or unpriced option for the subsequent phase. The government would use the pre-EMD phase to technically evaluate each contractor's design, relying on graded technical and program reviews as the basis for the evaluation. These reviews would be structured in such a way as to avoid technical leveling while providing the information necessary to aid in the down-select. Near the end of the pre-EMD phase, each competitor would be asked to submit a definitive proposal for the option effort. The government would then conduct an informal selection process, exercising a single option for the completion of EMD. This approach is applicable to all competitive multi-phased acquisitions. ("Lightning Bolt 10," 1997:17)

Key terms used in the "rolling down-select strategy" from the NASA supplement to the FAR can be found in Table 1. Generally, the "rolling down-select strategy" is best suited for multi-phased acquisition. The term down-select is defined in the National Aeronautical and Space Administration's supplement to the FAR, which states that down-selection is "the process of selecting contractors for phases subsequent to the initial phase from among the preceding phase contractors" (NASA, 1997). A down-select happens when a contractor is selected down to the next phase of the procurement process.

In her article in NCMA's T.I.P.S. magazine, Barbara D. Connelly-Fratzke gives another definition of the "rolling down-select strategy.

A progressive competition/down-selection method refers to a planned series of competitions for a total program involving sequential phases. Each phase has successively fewer awards among a group of competitively selected participating contractors, finally resulting in a single award for the development and/or production of the system. (Connelly-Fratzke, 1992:1)

Table 1. DOD Rolling Down-Select Definitions

TERM	DEFINITION
Down-selection	In a phased acquisition, the process of selecting contractors for phases subsequent to the initial phased from among the preceding phase contractors (NASA, 1997: 4467)
Major System	"That combination of elements that will function together to produce the capabilities required to fulfill a mission need" (FAR)
Phased Acquisition	A program comprised of several distinct steps or phases where the realizations of program objectives requires a planned, sequential acquisition of each step or phase. The phases may be acquired separately, in combinations, or through a down-selection strategy (NASA, 1997: 4467)
Progressive Competition/ ("rolling down-select strategy")	A strategy where a solicitation is issued for all phases of this program. The initial phase contracts are awarded, and the contractors for subsequent phases are expected to be chosen through a down-selection from among the preceding phase contractors. In each phase, progressively fewer contracts are awarded until a single contractor is chosen for the final phases. Normally all down-selections are accomplished without issuance of a new, formal solicitation. (NASA, 1997: 4467)

According to Lt. Col. Joe Shearer, one of the originators of the "rolling down-select strategy" on the Joint Defense Attack Munitions (JDAM) program,

there is a key distinction between a normal down-select and the rolling down-select. As he points out, the term 'rolling' applies to the fact that in this process there is a continuous evaluation of the contractor's performance. During the phase, each contractor's performance is continuously evaluated against his proposal and established selection criteria. By the time the phase is complete the Government is able to roll to the next phase by down-selecting the contractors based on their continuous evaluations.

This process was used on the JDAM program. This program was set up using three Government teams as shown in Figure 1. One team was responsible for working with McDonnell Douglas, another with Martin-Marietta, and a Core team was responsible for evaluating the performance of both contractors along the way (Shearer).

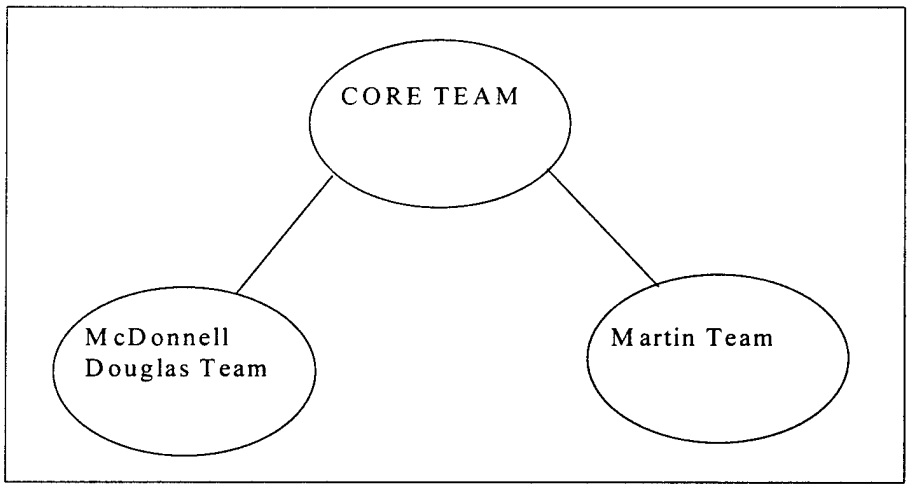

Figure 1. JDAM Evaluation Structure

Theoretically, one can select five or six contractors for concept exploration. Then maybe three or four contractors will be down-selected for the program definition and risk reduction phase. Then maybe two or three contractors will be down-selected for the engineering and manufacturing development phase. Finally, one contractor makes the final down-selection and enters production, fielding/deployment, & operational support. The key being that during each of these phases the contractors are being evaluated on their actual performance.

A memorandum from General Timothy P. Malishenko, presents an example where the "rolling down-select strategy" is used for the evolved expendable launch vehicle (EELV):

> EELV is employing a down-selection strategy whereby four contractors are performing the first program module (Low Cost Concept Validation--LCCV), two contractors will perform the second program module (Pre-Engineering and Manufacturing Development--Pre-EMD), and one contractor will perform the third program module (EMD). (Malishenko, 1996)

Lt. Col. Shearer points out that for the JDAM project there were two phases of EMD, an "efficiency phase", and a "testing phase" and one phase of production as can be seen in Figure 2. In the first phase of EMD. the contractors were required to improve their product and make it more affordable. The most promising proposals were selected to enter the first phase. Each contractor's performance was evaluated against his proposal and preset selection criteria

continuously during the phase. The source selection began with seven contractors presenting their proposals. McDonnell Douglas and Martin Marietta were chosen to compete in the first phase. Based on the continuous evaluation of its performance during the first phase and the fact that it was able to make its system more affordable, McDonnell Douglas was down-selected to take the system to testing and production.

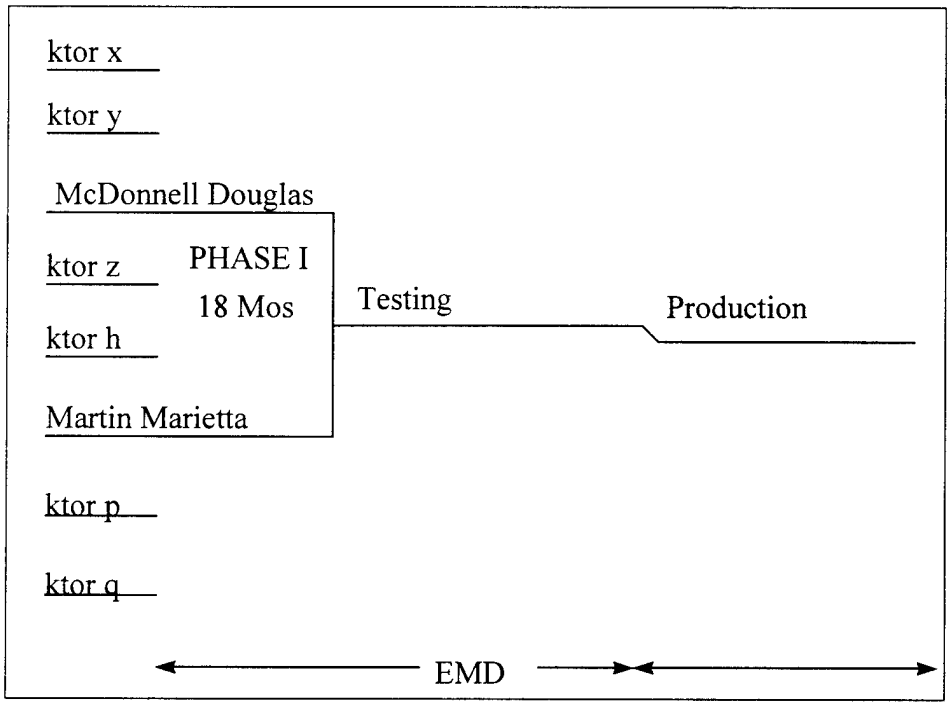

Figure 2. JDAM Rolling Down-Select Process

The Solicitation Process for the "rolling down-select strategy"

To better understand the "rolling down-select strategy" it is helpful to see the solicitation process involved in a rolling down-select. Connelly-Fratzke

describes the process in detail. She describes the "rolling down-select strategy" as a "planned sequence of competitions for successive phases of a total program" (Connelly-Fratzke, 1992). For the initial phase, what normally happens is that there will be full and open competition allowing all prospective contractors to compete for award for the initial concept exploration phase. To implement the first phase, the Government submits an initial solicitation notice specifying that the "rolling down-select strategy" phased approach will be used. Included in the solicitation are the criteria that will be used for evaluation for all the phases. This information is also put in the executive summary letter, and sections L and M of the solicitation. The contractors respond to this notice by presenting evidence that they are able to design, develop, build, and produce the system. As Connelly- Fratzke terms this, the contractor must be "capable of seeing the project through to completion" (Connelly-Fratzke, 1992). Contractors are selected by the Government based on how well their proposals, as well as their performance during the phase, satisfy the evaluation criteria.

For subsequent phases the Government posts a synopsis that "identifies the procurement as one phase in a multiple phased progressive competition/down-selection in which the Government only expects contractors previously involved to be likely to successfully compete for award of the next phase" (Connelly-Fratzke, 1992) However, a contractor who was not in prior phases may enter the solicitation process at a later phase. A "new" contractor that enters the competition for a later phase is provided with "data and

information that exactly replicates the solicitation provided to the previously involved competitors" and any other information furnished by the Government to all involved competitors (Connelly-Fratzke, 1992). For the subsequent phases, all offerors must "demonstrate an acceptable level of 'system maturity;' or 'system equivalency' in comparison to the previous phase contractors" (Connelly-Fratzke, 1992). This demonstration of maturity is included in the contract for the initial phase. For contractors entering at later phases, they are given these requirements, along with reasonable time to fulfill them. During the acquisition phases, the synopsis for the next phases "should be released early enough to permit new potential offerors to plan for the system maturity demonstration" and it should include detailed descriptions/specifications, "and the approximate time-frame within which new potential offerors will be offered the opportunity to demonstrate their proposed systems' maturity" (Connelly-Fratzke, 1992). Formal source selection procedures outlined in FAR Subpart 15.6 are used to decide which contractors will participate in the next phase (Connelly-Fratzke, 1992). In this manner, contracts are awarded to fewer contractors for each subsequent phase until one contractor is awarded the contract for full-scale production of the system. Table 2 contains a synopsis of the unique characteristics of the "rolling down-select strategy" for major systems, developed by General Timothy Malishenko, it is an addendum to his 24 May, 1996, general memorandum concerning the use of the "rolling down-select strategy."

Table 2. Unique Characteristics of the "Rolling Down-Select Strategy"

Definition: A planned series of competitions for a total program involving sequential phases - The notice of contract action synopsis, the initial phase acquisition RFP and the initial contract must explain Government's intent to conduct progressive competition/down-selection for the "total" system, i.e., sequential competitions among those who successfully demonstrate system performance requirements of preceding phases -- Proposal prep instructions must address total system acquisition, for all phases, in general terms -- Evaluation factors for award must include evaluation criteria for the total system -- At each phase, Government reevaluates remaining contractors' abilities to proceed to next phase -- Ultimately, one contractor is chosen to "produce" the system - At the beginning of any phase, all interested contractors are given chance to demonstrate their ability to perform and thus be considered for the next phase award, but it is "improbable" new potential offerors can successfully complete -- Each subsequent synopsis of proposed contract action and solicitations describes the methodology being used in the multiple-phased progressive competition/down-selection and that the government only expects contractors from previous phase to be able to successfully compete - Any new potential offerors are given copies of the initial synopsis, solicitation, proposal preparation instructions, evaluation criteria, etc., but no new "formal" solicitation (RFP) is required for second and subsequent phases - "Proposals" for subsequent phases can be deliverables from a previous phases . However, simplified letter RFPs may also be issued for subsequent phases, along with a "model" contract - Evaluation and selection of sources for subsequent phases is accomplished using formal source selection procedures (Malishenko, 1996)

Advantages of "Rolling Down-Select Strategy"

According to Mike Zsak, a representative from the Office of the Secretary of Defense for Acquisition and Technology, "the DOD acquisition process provides a framework for the management of programs consisting of a series of phases that are designed to reduce risk, ensure affordability, and provide adequate information for decision making" (Zsak, 1996). Rolling down-selects

improve on this idea and offer many possible advantages as well as possible disadvantages to the acquisition process.

One of the stated advantages of the "rolling down-select strategy" is that it speeds up the acquisition process. In the past, when there was a need for a down select, a planned series of competitions was held. The early interpretation of the competition in contracting act "required unrestricted solicitation after each phase" in this process (Malishenko, 1996). This re-opening of competition between each phase increased acquisition times "up to four additional years for five phase programs." For this reason, the Department of Defense introduced the RDS. As General Malishenko states, this strategy "eliminated gaps between phases, eliminated [the] requirement for new, formal solicitation for each phase, shortened the acquisition life cycle," and it "retained [the] tenet of full and open competition" (complying with CICA requirements). In this action item, General Malishenko set the precedent for the removal of the requirement for justification and approval in the Evolved Expendable Launch Vehicle (EELV) program (Malishenko 1996). Because there is no longer a requirement for Justification and Approval, the rolling down-select can roll from phase to phase with smaller gaps between phases. Figure 3 shows how the "rolling down-select strategy" saves time. This figure shows a down-select without using the rolling strategy and a down-select using the strategy. The normal down-select strategy, there is a large gap at the end of each phase, during which proposals are evaluated and contractors are chosen. For the "rolling down-select strategy" there is a smaller

break in between phases because the contractors are evaluated on their performance during each phase, as well as on their final proposals at the end of each phase. By the time the next phase comes around the Government already knows who it will be down selecting based on its continuous evaluation of all contractors. There is no longer a need for a time demanding separate source selection or long evaluation period between phases. Because of this decreased gap, there is a time savings.

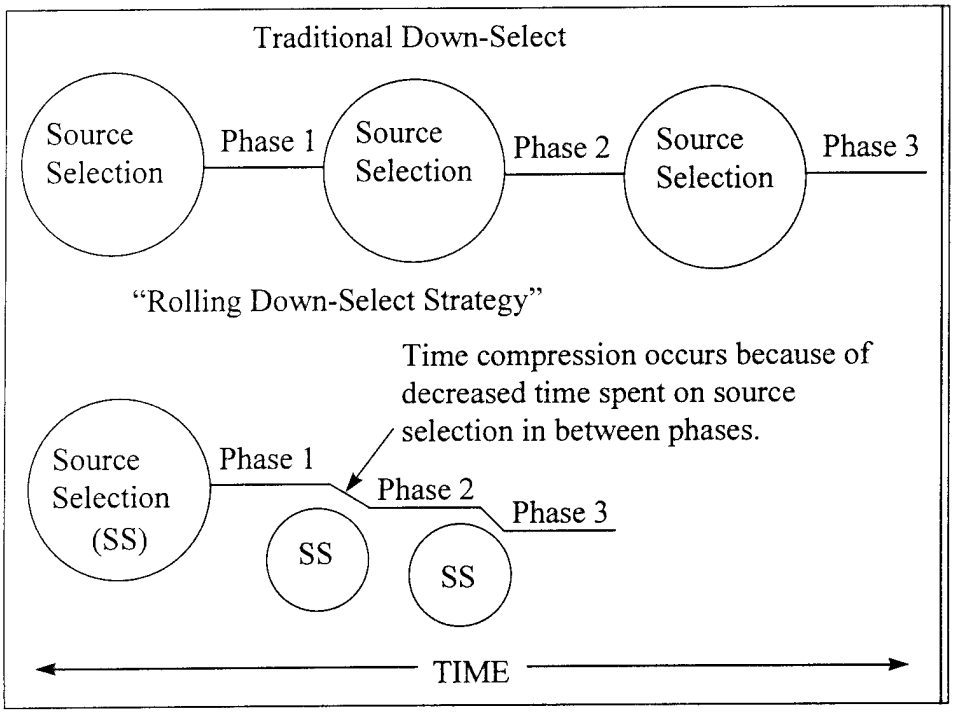

Figure 3. Time Savings of the "Rolling Down-Select Strategy"

The "rolling down-select strategy" can also reduce the contractor's performance risk. According to AFFAR appendix AA, "the objective of the major source selection process is to select the source whose proposal has the highest degree of credibility and whose performance can be expected to best meet the Government's requirements at an affordable cost (price)" (AFFAR 102). The rolling down-select process, decreases the risk of awarding a complete contract to a contractor who is unable to perform. In a process where an award is made to a single contractor the government is often constrained and without options. If the contractor is unable to perform the project, there are few choices besides terminating the program and beginning a new procurement. However, using the "rolling down-select strategy," the contractor's performance is evaluated during the phase, and if a contractor is unable to perform satisfactorily, he will not be down-selected for the next phase. For instance, if contractor X is down-selected to continue from the concept exploration phase for a new tactical fighter, but then is unable to turn his design into a prototype in the program definition and risk reduction phase, the government can choose to not down-select him for the engineering and manufacturing development phase because of his inability to perform. This ability to exclude the contractor from the next phase makes it possible for the government to eliminate incompetent contractors and keep only competent contractors. In this way, the government increases the chance of selecting a contractor who can best perform the contract, and reduces the risk of failure.

Another advantage of the "rolling down-select strategy" is that it reduces the risk of relying on a single solution. With a few contractors working on more than just one solution to a problem there is an increased likelihood of a more responsive solution. The rolling down-select strategy provides the Government with more feasible options to meet the system requirements. For instance, when there is one contractor with one solution, if that solution is fatally flawed, the system cannot be built. However, when more solutions are taken into the later stages of their development, the Government can better determine which solution is best. Through the use of rolling down-select, the good solutions will shine and the flawed solutions will fail before the final award has been made.

Another advantage of the "rolling down-select strategy" is that there is improved performance from continued competition. According to Lt Col Michael Heberling, "competition can reduce prices, improve quality, and minimize technical risk." The "rolling down-select strategy" takes competition into the phases of the acquisition process. Because of this prolonged competition during the acquisition cycle, the forces of the market improve the acquisition. This can lead to reductions in cost, improved quality, and decreased risk. For example, in an acquisition where a single contractor is given the award in phase one, competition stops upon award. Because of this, many contractors charge exorbitant prices for changes to the contract after award has been made. In RDS, contractors are motivated to keep their prices down and produce the

highest quality that they are capable of producing because they are still vying for the contract.

Another advantage of the "rolling down-select strategy" is the reduced risk associated with incremental development. RDS increases the likelihood of being able to take advantage of technological breakthroughs from the incremental development of solutions. Technology is changing fast. The "rolling down-select strategy allows for new technology to be added to acquisition in between phases with greater ease than does traditional continuous acquisition. For instance, in single award continuous acquisition, if there is a technological breakthrough which changes the program requirements after contract award, changes will have to be made to the contract. Using RDS, if there is a technological breakthrough after phase I, only the requirements for the contractors going on to phase II will have to be changed to incorporate it. This decreases the risk of the system being outdated by the time it is fielded.

Disadvantages of the "Rolling Down-Select Strategy"

As advantageous as the "rolling down-select strategy seems to be, it is not without its disadvantages. These disadvantages mainly point to the cost of RDS. One disadvantage is the increased cost of awarding multiple contracts. This includes the cost for documentation, data, people, resources, and overhead. The administration costs for a normal acquisition are multiplied by the number of contractors working on the phase. For instance, the more contracts

you have, the more contractors you have to monitor and evaluate. Monitoring and evaluating multiple contractors requires multiple resources time and money. This makes the "the rolling down-select strategy" more expensive. Figure 4 illustrates the increased costs involved with the "rolling down-select strategy"

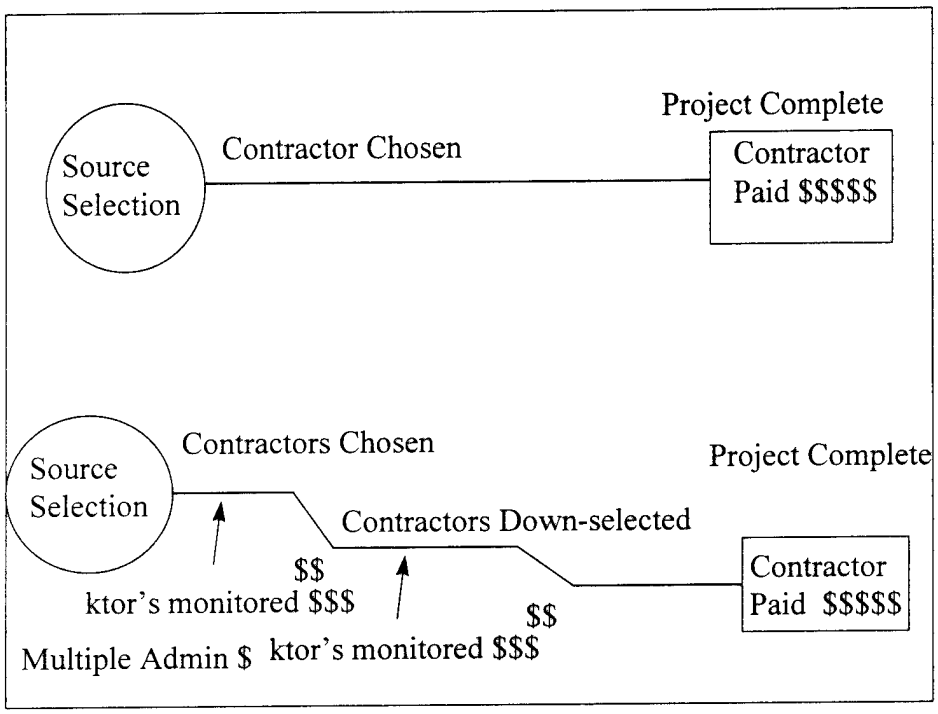

Figure 4. The Cost of the "Rolling Down-Select Strategy"

Another disadvantage of the "rolling down-select strategy" is that in today's downsizing of the Department of Defense, multiple monitoring may not be possible. System program offices are expected to do "more with less," so there are very few idle personnel in SPOs who can be used to monitor the additional contractors. As was the case on the JDAM effort, there was a team of

government representatives required for each contractor on the job, in addition to an overall core team. The jobs of each government team was to interface with the assigned contractor on a daily basis. Because of this daily interaction, the government teams were able to be responsible for only one contractor apiece. This aspect of RDS requires SPOs to be larger, so that there will be enough people to work with each of the contractors. These multiple monitoring efforts are a disadvantage because they are increasingly difficult to accomplish under downsizing efforts.

Another disadvantage of the "rolling down-select strategy" is that there is less incentive for contractors to stay on. As Barbara Connelly-Fratzke points out, during each of the acquisition phases, contractors are reimbursed for their costs, but they do not receive large profits. It is not until the final production award that the contractors will be given the opportunity to make any substantial profit (1992 : 10). For contractors who have established markets in the civilian sector, there may be little incentive to participate in the down-select process if it is possible to get higher return in the commercial marketplace. In a single award acquisition, contractors compete with little to no return except for the one who is awarded the contract. However, the competition period lasts only until one contractor is chosen to receive the award. Through the "rolling down-select" strategy, the competition can last a few phases before a single contractor gets the award. The contractors only reap return for their efforts if they are awarded the final contract for full-scale production. At the same time, production numbers often

decrease on defense acquisitions, as was the case for the B-2, C-17 and C-5. In light of programs such as these getting canceled, lowering their production lots, or never making it to full-scale production, production dollars seem harder to get. This dimming light at the end of the tunnel may cause some contractors not to compete on RDS contracts because of the protracted time and effort with little return.

Conditions for Use of "Rolling Down-Select Strategy"

Part 15 of the FAR (draft dated 1997) describes the Multiphase acquisition technique as follows:

> (a) General. Multiphase source selection may be appropriate when the submission of full proposals at the beginning of a source selection would be burdensome for offerors to prepare and for Government personnel to evaluate. Using multiphase techniques, agencies may seek limited information initially, make one or more down-selects, and request full proposals from a limited number of offerors.
> (b) First phase notice. In the first phase, the Government shall publish a notice (see 5.205) that provides a general description of the scope or purpose of the acquisition, identifies the criteria that will be used to make the initial down-select decision, and solicits responses. Alternatively, the Government may issue a solicitation that provides a more specific description of the supplies or services to be procured. The notice or solicitation may also inform offerors of the evaluation criteria or process that will be used in subsequent down-select decisions. The notice or solicitation shall contain sufficient information to allow potential offerors to make an informed decision about whether to participate in the acquisition. The notice or solicitation shall advise offerors that failure to participate in the first phase will make them ineligible to participate in subsequent phases.
> (c) First phase responses. Offerors shall submit the information requested in the notice or solicitation described in paragraph (b) of this section. Information sought in the first phase may be limited to a statement of

qualifications and other appropriate information (e.g., proposed technical concept, past performance information, limited pricing information).

(d) First phase evaluation and down-select. The Government shall evaluate all offerors' submissions in accordance with the criteria in the notice or solicitation and make either a mandatory or advisory down-select decision.

(1) The Government may make a "mandatory" down-select if it identified the criteria or process that will be used to evaluate offers in all phases and requested sufficient information (including cost information) for there to be binding offers. A mandatory down-select allows the Government to prohibit offerors from participating in subsequent phases based on the evaluation criteria set forth in the notice solicitation.

(2) If the Government did not request sufficient information for there to be binding offers that the Government could accept without further submissions, the Government must make an "advisory" down-select, the Government shall-

(i) Request selected offerors provide a proposal for the next phase of the acquisition;

(ii) Inform offerors not selected that, based on the offeror's initial submission, they are unlikely to receive an award and provide them supporting rationale. Such offerors may, at their option, submit a proposal for the second phase which the Government must evaluate; and

(iii) Debrief offerors as required by 15.805 and 15.806 only when they have been formally excluded from the competition. Advisory down-selects do not constitute such exclusion.

(e) Subsequent phases. Additional information shall be sought in the second phase so that a mandatory down-select or competitive range determination can be performed or an award made without discussion. If the criteria to be used in making decisions in the second phase were not stated in the original notice or the solicitation, they shall be identified to all remaining offerors at the start of this phase. If desired, the Government may conduct additional phases.
(FAR 15.103).

OMB Circular A-109 requires using a phased approach when acquiring major systems (OMB, 1976). The focus of this study's analysis of the "rolling down-select strategy" is based on major weapon systems. The FAR defines major weapon systems as systems where

a) Department of Defense is responsible for the system and the total expenditures for research, development, test, and evaluation for the system are estimated to be more than $75,000,000(based on fiscal year 1980 constant dollars) or the eventual total expenditure for the acquisition exceeds $300,000,000(based on fiscal year 1980 dollars)
b) A civilian agency is responsible for the system and total expenditures for the system are estimated to exceed $750,000 (based on fiscal year 1980 constant dollars) or the dollar threshold for a "major system" established by the agency pursuant to Office of Management and Budget Circular A-109, entitled "Major System Acquisitions," whichever is greater; or
c) The system is designated a "major system" by the head of the agency responsible for the system.

However, there are many types of weapons systems ranging from fighter aircraft to reconnaissance satellites. The "rolling down-select strategy" has been used on aircraft like the Spaced Based InfraRed Systems (SBIRS), Evolved Expendable Launch Vehicle (EELV), Embedded Global Positioning System/Inertial Navigation System (EGI), the Joint Direct Attack Munitions (JDAM), and other major weapons systems. It has yet to be documented what program characteristics lend themselves to the "rolling down-select strategy."

Elements for a successful "Rolling Down-Select Strategy"

To this point, there has been no empirical research establishing or identifying the elements necessary for a successful "rolling down-select strategy." In this study, I will examine several elements which appear to increase the likelihood of a successful rolling down-select. The first element is that a program must be a large, state-of-the-art development program. The Defense Manufacturing Management Guide for Program Managers defines state of the art

as " a material or process [that] has had some factory usage, but was recently developed and is available from only one or a limited number of sources. These types of processes often provide the potential for cost or time savings" (1989: 6-4). The program must be on a scale to warrant the use of the "rolling down-select strategy." For simple programs it would be more efficient to use traditional "total program" acquisition. When dealing with state-of-the-art programs, more contractors bring more possibilities for insight, and increase the chances of success. A technology must be so advanced that it would be too risky for one contractor to develop and produce it on a single award.

The next element required to make the "rolling down-select strategy" work is that there must be a clear separation between phases. Although one of the advantages of RDS is time savings, there must still be a clear distinction between phases. In this way, contractors will know when to stop and start work, and they will know what to focus on without overlap. In addition, for RDS to be set up, the acquisition must be capable of being broken up into distinct phases where contractors can be down-selected from one phase to the next. A clear separation between phases makes it possible for the government to evaluate each contractor based on each phase alone.

Next, it appears that success in RDS requires clear performance targets and performance evaluation criteria. Each contractor must know exactly what he must do to be down-selected to the next phase. The Government must spell out what they are looking for and how they will evaluate each contractor. The

acquisition must lend itself to the establishment of levels of performance to be targeted and evaluated. This will deter protests and make the acquisition run more smoothly.

The next element is that there must be sufficient incentive within each phase to maintain multiple efforts. The government must be receiving some type of benefit from the RDS process to continue using it for successive phases. In addition, the contractors must be compensated enough to want to keep competing for the next phase. These incentives are necessary to keep both players in the game. If either party becomes disinterested, then the benefits of the "rolling down-select strategy" will decrease.

Research Objectives

This literature review presented the existing literature on down-selects. According to government contracting representatives, such as SMC's Linda Barnard, there is no definitive guidance on the "rolling down-select strategy." There is a need for definitive guidance which contracting officers can use to decide if their acquisition should employ the "rolling down-select strategy." To date, the literature does not provide guidance for determining when a rolling down-select would be best implemented. This exploratory study will try to begin to answer one very important question: Under what conditions can the "rolling down-select strategy" be used? In other words, what elements are required to

make it work? This researcher expects that the programs studied will contain all of the elements contained in Table 3.

Table 3. Propositions for this Research

Proposition 1: RDS can only be effectively applied to programs that push the state-of-the-art
Proposition 2: RDS can only be effectively applied to programs that have the capability for clear separations between phases
Proposition 3: RDS can only be effectively applied to programs that have the capability for clear performance targets and performance evaluation criteria
Proposition 4: RDS can only be effectively applied to programs which have sufficient incentive within each phase to maintain multiple efforts.
To answer this question, I will research the elements required for a successful down-select.

3. Methodology

This exploratory research was a study of the elements necessary for a successful implementation of the "rolling down-select strategy." The need for this study was based on the lack of existing information concerning this new strategy and the need for more direction and guidance in its use. This thesis provides guidance on the appropriate application of the "rolling-down-select strategy," and thereby provides guidance to help assess the suitability of a new program for the use of this strategy.

Organization of Chapter

This chapter covers the design of this research. The design was first employed by Ms. Vicki Fry in her investigation of commercial business practices. It begins with the rationale for the use of a case study methodology. This particular research design relies heavily on Yin's components of a case study design (1) research or investigative question(s) and their related propositions; (2) unit of analysis; (3) logic linking the data to the propositions; and (4) criteria for interpreting findings (1984:29). The chapter then goes on to discuss how the quality of the research was maintained. Finally, this chapter covers the case study protocol that was used for this research.

Case-Study Design

This research attempted to ascertain the elements required for a successful rolling down select process. According to Robert Yin, a case study design is appropriate for asking an exploratory "what" question (Yin, 1984:7). Since this study was attempting to isolate those program elements which contribute the most to the successful implementation of the "rolling down-select strategy," it was believed that case study was the most appropriate research design (Fry, 1995).

According to Cooper and Emory, case studies emphasize full contextual analysis of a limited number of events or conditions and their interrelations (1991: 142). Case studies emphasize detail, making them useful when it comes to problem solving (Cooper and Emory, 1991). Yin makes reference to a case study as an "empirical inquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (1984: 23).

The "rolling down-select strategy" can only be studied as it is used in acquiring a system. By itself it is only a strategy. It is not until it is actually implemented that it can be seen in action. Therefore, the "rolling down-select" strategy can only be studied within the context of actual acquisitions (Fry, 1995).

The design of this study was based on a modified case-study design implemented by Vicki Fry in her 1995 thesis on commercial practices. Like Fry's thesis, this study followed the elements of a historical research approach which, in part, relied on interviews for its research data (1995: 60). This study was done using documents from contract files and telephone interviews with Government personnel working on the acquisitions. The nature of the acquisition process is such that direct observation was not possible (Fry, 1995).

Because there has been no empirical research of the elements required for the successful implementation of the "rolling down-select strategy," this research was by default exploratory. According to Cooper and Emory exploratory research is conducive to developing hypotheses or questions for further research (1991 : 140). This was one of the goals of this research. There has been no empirical evidence presented which could facilitate formation of any hypotheses in this area. Nor has there been enough data to explore any such hypotheses in this area. A survey approach would not have worked for this research because there have been only a limited number of acquisitions which have used the "rolling down-select strategy".

Consequently, the case study method was determined to be the most appropriate research approach for this study. This method was used to answer a "what" question – namely, what are the elements required for the successful implementation of the "rolling down-select strategy?" Answering this "what" question through a sterile survey or any other method would not have been

practical. Through the use of open-ended interviews, contracting officers were given the opportunity to explain the elements that they saw as being necessary for their acquisition, as well as the reasons they chose this strategy. Trends in their responses, were used to make hypotheses for future research (Fry. 1995).

Research Design

The research design is the plan for the types and sources of information to be selected to answer the research question (Cooper and Emory, 1991:138). It is a structure for establishing the relationships between the study's variables. Cooper and Emory also define the research design as a blueprint for the outline of all procedures from the hypothesis to the analysis of data (1991 : 139). This section covers Yin's research design elements important to case-study methodologies. These elements are (1) research question(s) and their related propositions; (2) the unit (s) of analysis; (3) logic linking the data to the propositions; and (4) criteria for interpreting the findings (1984:29). Table 4 shows the research variables related to these propositions.

Investigative Question. "What are the characteristics of an acquisition program that make it a good candidate for applying the "Rolling Down-Select Strategy?"

Proposition 1. This researcher believed that acquisitions must be state of the art to best benefit from the "rolling down-select strategy." A program must be on a scale to warrant the use of the "rolling down-select strategy." For simple

programs it would be more efficient to use traditional "total program" acquisition. When dealing with state-of-the-art programs, more contractors bring more possibilities for insight, and increase the chances of success. A technology must be so advanced that it would be too risky for just one contractor to develop and produce it on a single award.

Proposition 2. This researcher thought that acquisitions must have a clear separation between phases to use RDS. Although one of the advantages of RDS is time savings, there must still be a clear distinction between phases. In this way, contractors will know when to stop and start work, and they will know what to focus on without overlap. In addition, for RDS to be setup, the acquisition must be able to be broken up into distinct phases where contractors can be down-selected from one phase to the next. A clear separation between phases makes it possible for the government to evaluate each contractor based on each phase alone.

Proposition 3. This researcher believed that acquisitions must have clear performance targets and performance evaluation criteria to be suitable for using the "rolling down-select strategy" Each contractor must know exactly what he must do to be down-selected to the next phase. The Government must spell out what it is looking for and how it will evaluate each contractor. The acquisition must be capable of being evaluated at different targeted levels of performance. This will deter protests and make the acquisition run more smoothly.

Proposition 4. This researcher thought that acquisitions must have sufficient incentive within each phase to maintain multiple efforts in order to implement the "rolling down-select strategy." The government must be receiving some type of benefit from the RDS process to continue using it for successive phases. In addition, the contractors must be compensated enough to want to keep competing for the next phase. These incentives are necessary to keep both players in the game. If either party becomes disinterested, then the benefits of the "rolling down-select strategy" will decrease.

Table 4. Research Variables

Variable	Proposition	Definition
Tech-Level	1	The level of technology of the system.
Phase-Separation	2	The ability to separate the program into clear phases.
Clear-Targets	3	The existence of clear performance targets.
Ktor-Incentive	4	The incentive level contractors were given to perform

Units of Analysis. The data used to answer the investigative question were collected from structured interviews with procurement personnel who participated in the five Air Force Material Command (AFMC) acquisitions which have used the "rolling down-select" strategy. The focus of the interviews was on the conditions present in the acquisition strategy before and after the "rolling down-select strategy." This covered the program from the initial mission need to RFP and through the various program phases. The cases ended with the final award to the production and deployment contractor. To complete this research, contracting officers were also questioned concerning post-award issues (Fry, 1995).

The scope of cases consisted of major weapons systems acquisitions under AFMC for many reasons. First of all, according to an Air Force Material Command FY contracting summary, in Fiscal Year 1993, AFMC was responsible for 77.5 percent of all Air Force contracting dollars. (AFMC Contracting Summary,1994:12). AFMC was also chosen because it was an accessible target sample. The home base for this research was the headquarters for AFMC located at Wright-Patterson Air Force Base. Because this research was done so close to the headquarters of this major command, it was readily accessible for the research (Fry, 1995).

Potential cases for this research were identified through telephone interviews with representatives from Space and Missile Command (SMC), Aeronautical Systems Command (ASC), and Engineering Systems Command (ESC). From these calls, five known acquisitions which had employed the

"rolling down-select strategy" were identified. Representatives from each of these five acquisitions were contacted and scheduled for interviews. Interviews for acquisitions involving personnel at Wright-Patterson Air Base were conducted in person. Interviews for acquisitions involving personnel located off-site were conducted by telephone. A standardized interview guide was used in both instances (refer to Appendix A).

Links of Data to Propositions. The data for this analysis was collected during a six week interview period. Each of the acquisition representatives was contacted via telephone and scheduled for an interview. Then, each representative was sent a copy of the interview questions to be used to solicit information. Then interviews were conducted. The data collected were linked to the propositions through pattern matching. Yin (1994), and Miles and Huberman (1984), both suggest the use of pattern matching for this purpose. Pattern matching was used here to connect the data to the propositions and aid in analysis. As Miles and Huberman point out, pattern codes are "explanatory or inferential codes, that identify an emergent theme, pattern, or explanation that the site suggests to the analyst" (1984:67). According to Yin, pattern matching is one of the best strategies for analyzing case studies. He points out that this strategy "compares an empirically based pattern with a predicted one (or with several alternative predictions)" (Yin, 1994 : 106).

Pattern coding was used in this research throughout data coding and analysis to aid in the final analysis. Using the investigative question, propositions, and variables, the researcher developed a preliminary list of codes prior to data collection, as suggested by Miles and Huberman. Codes were assigned initially to the data from each interview or review of documentation. As new themes arose from the interviews or documents, they were added to the list of pattern codes before the next set of data was collected. By assigning and revising codes during the research, data was continually analyzed as suggested by Miles and Huberman(1984: 63). Once all the data was collected, final pattern codes were assigned (Fry, 1995).

Due to the exploratory nature of this research, three descriptive techniques were used to analyze the data (Miles and Huberman, 1984:215). The first effort was to identify and finalize themes or patterns in the data. Miles and Huberman state that to identify a theme or pattern, the researcher has to "isolate something that happens a number of times and (b) that consistently happens in a specific way" (1984: 215). The next step was to count the number of occurrences of the codes. Third, the themes were categorized based on similarities and differences in the data.

Criteria for Interpreting Findings. The generalizability of the results of the findings of this research is limited to AFMC major weapons systems acquisitions.

Protections of Quality

In order to ensure that the standards of quality for construct validity, internal validity, external validity, and reliability were upheld, measures suggested by Robert Yin were taken. To ensure construct validity, Yin's recommended chain of evidence procedure was used. This process involved developing and maintaining a case study database from which the research report can cite relevant portions. As Yin notes, this "is to allow an external observer—the reader of the case study, for example—to follow the derivation of any evidence from initial research questions to ultimate case study conclusions" (1994:98).

Internal validity was upheld through the use of pattern matching. According to Yin, the use of pattern matching makes sure that inferences made about collected data are accurate. This technique was also employed to rule out alternative explanations. External validity was taken care of through the analysis of multiple cases. Multiple cases revealed any existing replication or absence of phenomena across cases. To protect the quality criterion of reliability, Yin recommends using a case study protocol and database as was done in this research (Yin, 1994).

Case Study Protocol

Yin's case study protocol method was applied to this research. Applicable elements were (1) study overview; (2) data sources; (3) case study questions; and (4) the case study database.

Study Overview. Research participants were mailed a copy of the interview and informed of its purpose. They were given time to read through the interview questions in plenty of time for them to have all necessary information at interview time.

Data Sources. Data for this research was taken from AFMC representatives' responses to interview questions. The questions addressed the perceptions of all AFMC contracting personnel involved in the five acquisitions. FAR 2.101 defines a contracting officer as "a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings" (FAR). Program manager refers to the individual responsible for all parts of the acquisition as a whole. The perceptions and decisions of contracting officers and program managers were important to this study. Interviews were conducted with a mixture of contracting officers and program managers from each acquisition. Contract file documentation was solicited and used to fill in the blanks where questions could not be answered.

Case Study Questions. The questions asked during the interview were designed to address the investigative question under investigation. As Yin (1994) recommends, the questions served to remind the researcher of the data to be collected. The questions asked during the interview were open-ended and dynamic to encourage the interviewee to respond freely. Follow-up questions were usually contingent on responses to initial questions.

Database. Data collection in the field was documented via notes. Data points from interviews and documents were collected and put on note card. Note cards from each source were coded differently to maintain linkage with the source of the data. The note cards were kept track of through the alpha code, which referenced the case; three numbers, which referred to a document or interview for that case; and two numbers referring to a data point on that document. Data on each card was patter coded. An example note card would be A-012-05. This refers to data point number five on interview number twelve of acquisition A.

Summary

The purpose of this research was to explore the elements which are necessary to make the "rolling down-select strategy" work. This research began with a hypothesis of the necessary elements and it was hoped that the findings would support a firmer hypothesis for the necessary elements as well as shed light on any element which were not thought of. This research direction was stimulated by the lack of guidance in this new area.

Yin's (1994) suggestions helped to ensure the quality of this research. Five AFMC major weapons system acquisitions using the "rolling down-select strategy" were analyzed. Using multiple case studies and a broad investigative question made possible the discovery of interesting findings with external validity. Pattern matching upheld internal validity while the case-study protocol ensured reliability (Fry, 1995).

The results of this exploratory effort are presented and analyzed in chapter four. These findings will aid in future quantitative research after more acquisitions using RDS have been instituted and completed. The results will also aid acquisition strategy planners in deciding whether or not the "rolling down-select strategy" would be appropriate for their acquisition.

4. Results and Analysis

Five acquisitions were analyzed in detail in this exploratory research to determine the elements a program needs to successfully implement the "rolling down-select strategy." This chapter begins with a background on the acquisitions used as cases for this research. It then goes on to provide a summary of the data that was collected and analyzed. This is followed by an analysis of the findings concerning the investigative question and the related propositions identified in Chapter 3.

Overview of Cases

Telephone interviews with representatives from Space and Missile Command (SMC), Aeronautical Systems Command (ASC), and Engineering Systems Command (ESC) identified the five cases that fit the scope of this study. The five programs studied were: the Evolved Expandable Launch Vehicle (EELV), the Embedded GPS/INS (EGI), the Joint Direct Attack Munition (JDAM), the Joint Air-To-Surface Standoff Missile (JASSM), and the Space Based Infrared System (SBIRS-HI).

All but one of the acquisitions studied were major weapons systems acquisitions which incorporated the "rolling down-select strategy" to streamline their acquisition. The one outlier, the EGI program was an acquisition for the upgrade of internal navigation systems for the department of defense's aircraft inventory. EGI also varied from the other acquisitions in that the "rolling down-select strategy" was employed to respond to a protest which was made after their original source selection.

It is interesting to note that the programs used slight variations of the "rolling down-select strategy." The JDAM and JASSM programs used the "rolling down-select" process as defined by Lightning Bolt 10. In these two programs, single solicitations were issued at the beginning of the programs and contract options were used to down-select the contractors to the next phase. EELV, EGI, and SBIRS-HI used the process as implemented by NASA and Barbara Connelly-Fratzke in here 1992 TIPS article. These three programs issued new solicitations between each phase. This difference resulted in a longer source selection period for these three programs. The variation in these programs was instrumental in developing the set of elements required for the "rolling down-select strategy."

Personnel from all five program offices had little if any prior experience with the "rolling down-select strategy." In 1993, acquisition professionals developing the acquisition plan for the Joint Direct Attack Munition presented their version of the "rolling down-select strategy" to the Secretary of the Air Force for Acquisition (SAF/AQ). The SAF/AQ approved this strategy and it was implemented on the JDAM program. After seeing how successful the strategy worked for JDAM, the SAF/AQ directed the strategy be used on the JASSM program. The program manager for JDAM later became the program manager for JASSM. For EELV and SBIRS-HI, the acquisition planners learned of the acquisition strategy from NASA and the SAF/AQ. After analyzing their programs, they decided to incorporate the strategy to streamline their acquisition approach. EGI had no intention of using the "rolling down-select strategy" until their was a successful protest. When the protest was upheld, EGI had chose to use the "rolling down-select strategy" to continue competition into the phase rather than restart the source selection process. With the exception of EGI, all of these

acquisitions chose RDS with the ideas of acquisition reform, and streamlined acquisition.

Table 5 includes a summary of the data collected in this research. The data is configured to the study's pattern codes. These pattern codes are defined in Appendix A.

Table 5. Summary of Data

CODE	EELV	EGI	JDAM	JASSM	SBIRS-HI
State-Simple	No	No	No	No	No
State-Practice	No	Yes	No	No	Yes
State-Art	Yes	No	Yes	Yes	No
State-Exp	No	No	No	No	No
Tech-Lev-nec	Yes	No	Yes	Yes	No
EZ-Sep	Yes	Yes	Yes	Yes	Yes
EZ-Sep-Nec	Yes	Yes	Yes	Yes	Yes
Clr Targ	Yes	Yes	Yes	Yes	Yes
Clr-Targ-Nec	Yes	Yes	Yes	Yes	Yes
Ktor-Inc	No	No	No	No	No
Ktor-Inc-Nec	No	No	No	No	No
Ktor-comp-CP	No	No	Yes	Yes	Yes
Ktor-Comp-FF	Yes	Yes	No	No	No
Ktor-Comp-Nec	Yes	Yes	Yes	Yes	Yes
Ad Comp Nec	Yes	Yes	Yes	Yes	Yes
Perf-Bse-Spec	Yes	Yes	Yes	Yes	Yes
Dev-Time >18<24	Yes	Unknown	Yes	Yes	Yes
Poss-Cost-Sav	No	No	Yes	Yes	Yes
HI-Risk	Yes	Yes	Yes	Yes	Yes
Lo-Fund	Yes	Unknown	No	Yes	No
Min-Sched-Imp	Yes	Yes	Yes	Yes	No

Investigative Question

For this study, the fundamental research question was: What are the characteristics of an acquisition program that make it a good candidate for applying the "Rolling Down-Select Strategy?" In order to answer this question, we must first look at initial propositions, and the elements discovered in the research.

Proposition 1. This proposition was based on the belief that acquisitions must be state of the art to best benefit from the "rolling down-select strategy." Three of the cases, EELV, JDAM, and JASSM were state of the art. Two of the cases, EGI and SBIRS-HI, were state of the practice. All but one of the cases, felt that the high level of technology involved in the system played a big role in the decision to use RDS.

All of the cases felt that a requirement for RDS should be that the system be at least state of the practice and at most state of the art. All of the cases in this study believed that it would be a waste of resources to use RDS on simple state systems. The JDAM program manager mentioned that he felt that the use of the "rolling down-select strategy" on an experimental system was not advisable. JDAM representatives believed that using RDS on an experimental system would make it harder to measure progress because of the theoretical nature of experimental systems.

Proposition 2. This proposition expressed the belief that acquisitions must have a clear separation between phases to use RDS. This proposition was supported by the fact that all five programs agreed with the idea that a clear phase separation was critical. A representative from EELV said that clear separation of phases was necessary to aid in evaluating key cost, schedule and

performance parameters. SBIRS-HI felt that it was necessary to have clear separation between phases to allow for breakpoints where contractors could be down-selected between.

Proposition 3. This proposition was based on the belief that acquisitions must have clear performance targets and performance evaluation criteria in order to be able to use the "rolling down-select strategy." The data supported this proposition. All five cases used clear performance targets and performance evaluation criteria and felt that they were necessary elements for RDS. Although clear performance targets and performance evaluation criteria can be seen as necessary elements for all acquisitions, they need to be explicitly clear for RDS. In this strategy, there are multiple evaluations, and sometimes multiple teams of evaluators. Even slight ambiguity in the targets or evaluation criteria could skew the acquisition (Fry , 1995).

Proposition 4. This proposition expressed the belief that acquisitions had to be able to provide sufficient incentive within each phase to maintain multiple contractor efforts. The results of this inquiry was that all cases felt that there was no need for additional incentive. However, these results were based on the assumption that contractors were responsible for their own proposal and associated costs. In reality, contractors would be incentivized to continue to compete for award as long as their costs were being covered. This discovery led the researcher to focus on the question of whether or not the contractor was compensated for his expenses. This focus resulted in support for this proposition. All five cases felt that the competing contractors in phase needed to be compensated for their expenses. Two of the cases, EELV and EGI provided their contractors with firm fixed fee contracts. The other three cases used cost plus reimbursement contracts to compensate the contractors.

Other Findings

During the course of the interviews, case representatives being interviewed identified what they felt were the necessary elements for RDS. These suggestions were cross-referenced and compared during further interviews and analysis.

Sufficient Competition was seen as a requirement for the implementation of the "rolling down-select strategy." This idea was supported by all cases. Every participant felt that it was crucial for there to be at least two competing contractors for RDS to work. Although this requirement may seem obvious, it is a key consideration. When doing the initial acquisition planning, personnel need to make sure that their market survey results in at least two viable competitors to use RDS.

Performance Based Specifications were seen as a necessary element for the use of the "rolling down-select strategy." All five cases felt that performance based specifications were necessary for RDS to be used. Performance based specifications are necessary because there must be differences in each contractor's performance which can be evaluated.

A Development Time between 18 and 24 months was seen as a necessary element to use RDS. Four of the cases agreed with this idea, while EGI did not have the experience to determine the proper development time. The four cases in agreement felt that this time period made it possible to perform the source selection and get the best product. Less time might not be long enough while more time would be hard to manage. JDAM felt that if a program's development time was too long the acquisition personnel could not effectively evaluate and manage the program. JASSM felt that if the development time was

shorter it would be too difficult to effectively evaluate and down-select contractors.

A Possible Cost Savings was seen as a necessary element by three of the five cases. JDAM, JASSM, and SBIRS-HI all felt that a potential cost savings was necessary to warrant the use of RDS. This cost savings was seen in the form of a possible reduction in life-cycle costs or large unit buys. All three of these acquisitions were realizing a cost savings and felt that this savings made the use of the "rolling down-select strategy" worthwhile.

A High Risk Acquisition was deemed a necessary element by all five cases. All five cases felt that RDS was an effective strategy for mitigating risk whether it be technical risk or other types of risk. A five acquisitions felt that a high risk acquisition would be an excellent candidate for RDS because of the "rolling down-select" strategies ability to handle that risk. The cases felt that the breakpoints between phases and the review, feedback, and monitoring of the contractors made the personnel more aware of the risks involved so that they were able to better manage them.

Limited Initial Funding was seen as an element which would make an acquisition a candidate for the "rolling down-select strategy". Two of the cases, JASSM and EELV, agreed with this statement. The rest of the cases either disagreed, or did not know if limited initial funding would make a project a candidate. The two acquisitions felt that the use of RDS helped them overcome their low funding and budget cuts. JASSM and EELV pointed out that the competition into phase allowed them to set affordability as one of their evaluation criteria and lower their costs.

An Acquisition which needs to Minimize Schedule Impact was viewed as an necessary element for RDS. Four of the five acquisitions felt that the

"rolling down-select strategy" could be used to minimize the schedule impact on an acquisition. EGI actually used RDS to minimize the schedule impact of a protest. The other 3 acquisitions felt that RDS shortened their schedule by streamlining their efforts. SBIRS-HI was the only case which felt that RDS lengthened their schedule.

Conclusion

This chapter consisted of the results of the data collected to analyze the investigate question and related propositions to determine the necessary elements required to implement the "rolling down-select strategy." The conclusions of this research as well as recommendations for future related research as this technique matures are the subject of Chapter 5. The research conclusions provide guidance to acquisition professionals to aid in their decision of the best acquisition plan for the program.

5. Conclusion

The Department of Defense (DOD) must improve its weapons systems acquisition. As a part of acquisition reform under a section of Lightning Bolt 10, the "rolling down-select strategy" was introduced. RDS is a new acquisition approach aimed at streamlining the acquisition process. Because of the newness of this acquisition approach, there are many questions to be answered on this subject. The focus of this research was to aid acquisition planners in deciding whether or not they should use this strategy based on their particular acquisition. This exploratory research attempted to uncover the elements required to implement the "rolling down-select strategy."

The findings are somewhat varied. This variety was possibly due in part to the nature of exploratory research and the relative newness and limited use of this technique. At the same time that some findings were varied, many trends cut across the cases. This exploratory research revealed a set of elements which are necessary for the use of the "rolling down-select strategy". In addition, further analysis of the data indicated that there are certain elements of a program which are not necessary, but lend themselves to the use of RDS. The research conclusions are grouped into two categories: the elements required for the implementation of the "rolling down-select strategy", and elements of programs which would benefit from the use of RDS. This research was exploratory; therefore, findings and conclusions are preliminary. This chapter will conclude with ideas for future research and some final thoughts.

Elements Required to Implement the "Rolling Down-Select Strategy"

Analysis done during this exploratory research indicated that the following elements were necessary elements to successfully implement the "rolling down-select strategy." Table 6 includes a listing of these elements.

State of the Art or State of the Practice technology is a necessary element to implement RDS. The technology must be either state of the art or state of the practice to use the "rolling down-select strategy." The acquisition must be of a sufficient technological state to warrant the use of the "rolling down-select strategy." At the same time, the acquisition must not be of such a high technological state that it is not possible to measure and evaluate progress. All cases studied agreed that an acquisition's technology must be either state of the art or state of the practice to use RDS.

There must be a clear separation between phases to implement the "rolling down-select strategy." Acquisitions must be structured to be broken up into distinct phases for RDS. There must be breakpoints between phases where contractors can be down-selected to the next phase. This clear separation is also necessary so that the contractors can be evaluated and maintained during manageable fragments of time. All of the cases felt that a clear separation between phases was a necessary element for the "rolling down-select strategy."

There must be clear performance targets and performance evaluation criteria for RDS to be successful. Acquisitions must lend themselves to selecting clear targets and evaluation criteria for making down-select decisions. The targets and evaluation criteria must be clear and known to both the competing contractors as well as the Government evaluators. Because of the fact that multiple contractors are being evaluated at the same time there

must be clear targets and evaluation criteria which can be used to fairly evaluate all sources. Without clear targets and evaluation criteria provided to each contractor, the Government becomes susceptible to possible protests and a flawed acquisition process. All cases interviewed agreed that clear performance targets and clear performance evaluation criteria were necessary for the "rolling down-select strategy" to be successful.

There must be sufficient funding to compensate the contractors for their efforts for RDS to work. The acquisition must have enough funding to compensate multiple contractors for their work done during the phase. For this to be accomplished, Government cost estimators need to calculate the total costs involved in the acquisition and estimate the costs required for each contractor. If their are insufficient funds to down-select more than one contractor, this strategy is not practical. In all of the acquisitions studied, the contractors were compensated through either fixed price, or cost plus contracts. All of the acquisitions felt it was necessary to have sufficient funds to compensate the competing contractors for their work in phase.

Adequate competition must exist for the "rolling down-select strategy" to be used. At least two qualified sources must exist for the "rolling-down select strategy" to be used. Although it may seem obvious that sufficient competition is a necessary element for RDS, it should not be overlooked. As a checklist for acquisition planners to use when deciding whether or not to implement RDS, the need for adequate competition may be a box which can be checked easily, but it still must be checked for RDS to work. When doing the market survey for an acquisition, acquisition planners need to ensure that there are two viable sources who can compete in phase for this acquisition. All cases made it a point to

mention that adequate competition was a requirement for the "rolling down-select strategy" to be used.

The specifications must be performance based to make RDS work. Performance based specifications give the contractor discretion on how to fulfill the terms of the contract. Performance based specifications are necessary to make it possible for the contractor's performance to be distinct enough to be evaluated by the Government selectors. Design based specifications provided by the Government lend themselves to a single contractor award because the Government can be held liable for defective specifications by the contractor using them. All cases researched mentioned that performance based specifications were necessary for RDS to work.

Table 6. Required Elements

1. **State of the Art or State of the Practice**
2. **There must be a clear separation between phases**
3. **There must be clear targets and evaluation criteria**
4. **There must be sufficient funding to compensate the contractors**
5. **Adequate competition must exist**
6. **The specifications must be performance based**

Programs Which would Benefit from RDS

Table 7 includes a list of the programs which would benefit from the use of RDS.

Programs with a development time between 18 and 24 months could benefit from the use of RDS. Programs with a development time less than 18 months may not lend themselves to evaluating multiple contractors fairly and effectively. Programs longer than 24 month development time might make provide too much excess information and investment and make it more difficult to make evaluations and down-selections. Four of the five cases felt that a program with a development time between 18 and 24 months would benefit from the use of the "rolling down-select strategy."

Programs with a possible cost savings could benefit from the use of RDS. Programs with long life cycles or large batch costs could benefit from the use of the "rolling down-select strategy." Because of the evaluations and feedback in phase opportunities for cost savings can be taken advantage of as they are seen. In addition, the fact that affordability is often an evaluation characteristic during in-phase competition, sources are motivated to cut costs and look for new ways to provide a more affordable product to the Government in order to be down-selected to the next phase. Three of the cases analyzed felt that programs with a possible cost savings could benefit from RDS.

Programs with High Risk could benefit from RDS. The "rolling down-select strategy" is able to mitigate many types of risk. The breakpoints between phases and the continued competition into the phases allows the Government to mitigate the risk of program failure. The review, feedback and monitoring of the contractor also makes it possible to manage risk. Programs which contain high

risk areas could benefit from the "rolling down-select strategies" mitigation of this risk. All cases felt that high risk acquisitions could benefit from RDS.

Programs with Limited Initial Funding could survive if the "rolling down-select strategy" is used. Programs with minimal or insufficient funding could possibly remain viable by using RDS. The phased approach of the "rolling down-select" strategy provides a time period from entry into one phase until the breakpoint before the next phase where acquisition personnel can apply for more funding based on the programs staged success. Two of the cases were hit by budget cuts and RDS made it possible for them to take their program through a program definition-risk reduction phase while they were waiting for more funds. At the same time, the affordability evaluation enhanced by the competition in phase made it possible for the programs to lower their costs and meet their funding levels.

Programs attempting to minimize schedule impact could be successful by using the "rolling down-select strategy." The "rolling down-select strategy" provides a potential for time savings through the rolling evaluation process. By the time the phase is complete, the decision of who will be down-selected to the next phase is either already complete, or almost complete. This process makes it possible to take a program from one phase to the next without a long period in between phases to evaluate and down-select sources. In addition, in acquisitions where there has been a protest, it is possible to institute RDS to move forward with the acquisition without redoing the source selection as EGI did. Four of the cases felt that an acquisition which needed to minimize schedule impact could benefit from the use of RDS.

Table 7. Programs Which Would Benefit

1. A Development Time Between 18 and 24 Months
2. A Possible Cost Savings
3. High Risk
4. Limited Initial Funding
5. Attempting to Minimize Schedule Impact

All of these conclusions will help acquisition planners to better implement the "rolling down-select strategy." The purpose of the Lightning Bolt 10 acquisition reform initiative, which includes RDS, is to reduce life cycle time and streamline the acquisition process. By implementing this technique when these elements are present, acquisition professionals ensure the best opportunity for the successful implementation of this acquisition reform technique, the "rolling down-select strategy." Successful implementation may mean a streamlined acquisition process and reduced life cycle time.

Recommendations for Future Research

One of the goals of this exploratory research was to shed light on the "rolling down-select strategy" and lay a foundation for further research . The following are some suggested related research topics. Some ideas are to validate and expand the preliminary findings of this study. Other possible research topics delve into related aspects. The "rolling down-select strategy"

was a fairly new derivation of traditional acquisition techniques. This study should be conducted again after this technique has been in existence for several years.

Research Validation. This research discovered the elements required for the "rolling down-select strategy" to be successful. The support for these elements was preliminary. Further research should be conducted to validate these findings. This research explored the "rolling down-select strategy" acquisitions used by AFMC only. Future research could expand the study to other major commands in the Air Force, or other branches of the Department of Defense. A wise candidate would be a study and comparison of the National Aeronautical and Space Administration's use of RDS compared with the Air Force's.

Source Selection Sensitive. One of the aspects of the "rolling down-select strategy" a single source is not awarded a contract until the final phase. During each phase sources are still being evaluated for selection. Because of this continuous source selection, all each contractor's information is source selection sensitive until final award. Research could be conducted into whether or not a policy needs to be developed for this source selection sensitivity and any other requirements of RDS.

Quantitative Analysis. At the time this research was conducted, there were not enough acquisitions which used the "rolling down-select strategy" to quantifiably evaluate this thesis. When there are a sufficient number of acquisitions which have used RDS, a sample should be tested statistically. A quantitative analysis could be done to determine exactly how important each of the required elements are to RDS. A statistical analysis could also be done to compare and contrast the traditional acquisition approach to RDS based on cost

and schedule overruns once a sufficient number of RDS acquisitions are completed.

Advantages/Disadvantages. At the time this exploratory research was conducted interviewees were unable to clarify the advantages or disadvantages of the "rolling down-select strategy" versus a traditional acquisition approach. The response to questions of a cost or time savings was that the acquisition personnel were unable to quantify if there had been a cost or time savings or other advantages or disadvantages at the program's stage. In the future, after these acquisitions are completed and more acquisitions use RDS this topic could be researched. There were a few possible advantages discovered during this research. Possible advantages are cost savings, time savings, reduced risk of awarding a contract where a contractor was unable to perform, more feasible options to meet system requirements, increased performance, and a better product. Some possible disadvantages are cost increases because of more contractors to evaluate and visit, schedule delays, and more required man-hours. When questioned about the necessary elements such as more manpower to work a SPO, all of the cases said that they did not have to hire any more workers but all of the personnel had to work longer hours. Research into the advantages and disadvantages of the "rolling down-select" strategy should be taken up at a later date when more acquisitions are complete and acquisition personnel can determine whether or not they had savings or losses.

Education and Training. Research should be done to look into how well acquisition personnel are trained and exposed to new acquisition techniques. AFMC personnel indicated in interviews that they had been given little if any exposure to this acquisition technique. AFIT's PCE program should be researched to determine if acquisition approach alternatives are being taught or

explored. Research should be conducted to determine whether or not the continuing education courses are preparing acquisition personnel to devise or use new acquisition techniques when necessary.

Develop a New RDS Technique Based on Qualities of Current Variations. This research discovered that variations of the "rolling down-select strategy" strategy are currently being used. Research could be conducted to analyze each variation and determine what mix of these variations would provide the optimal benefits of the strategy. Research could be conducted to develop an entirely new acquisition strategy based on RDS and traditional acquisition approaches. Research could also be conducted to determine whether or not the entire acquisition process should be changed.

Final Thoughts

In today's post cold war era, the Department of Defense (DOD) must take action in the face of massive downsizing and huge budget cuts. The Department of Defense is attempting to take action through action through acquisition reform measures such as the "rolling down-select strategy." RDS is a new acquisition approach aimed at streamlining the acquisition process. Because of the newness of this acquisition approach, there are many questions to be answered on this subject. The focus of this research was to aid acquisition planners in deciding whether or not they should use this strategy based on their particular acquisition. This exploratory research uncovered the elements required to implement the "rolling down-select strategy."

This exploratory research revealed that there are a set of elements which are necessary for the use of the "rolling down-select strategy". In addition,

further analysis of the data indicated that there are certain elements of a program which are not necessary, but lend themselves to the use of RDS. These elements can now be used by acquisition planners to decide whether or not their acquisition should use the "rolling down-select strategy."

Appendix A: Case Study Pattern Codes

Table 8. Pattern Codes

Pattern Code		Operational Definition
State-Simple		State of the Simple: The date indicates that the technology in the system being acquired was simple.
State-Practice		State of the Practice: The data indicates that the technology in the system being acquired was state of the practice.
State-Art		State of the Art: The data indicates that the technology in the system being acquired was state of the art.
State- Exp		State of the Experimental: The data indicates that the technology in the system being acquired was experimental.
Tech-Lev-nec		Technology level necessary: The data indicates that the level of technology of the system played a big role in the decision to use RDS.
EZ-Sep		Easy to separate: The data indicates that the program was easy to separate into phases.
EZ-Sep-Nec		Easy separation was necessary: The data indicates that program personnel felt it was necessary for the program to be easily separated into phases.
Clr-Targ		Clear Targets: The data indicates that there were clear performance targets and criteria which were used in making down-selections
Clr-Targ-Nec		Clear Targets Necessary: The data indicates that clear performance targets were necessary for RDS
Ktor-Inc		Contractor Incentive: The data indicates that the contractors were given extra incentives to compete for successive down-selection
Ktor-Inc-Nec		Contractor Incentive Necessary: The data indicates that program personnel felt that it was necessary for contractors to be given extra incentive to continue to compete.
Ktor-comp-CP		Contractor Compensation Cost Reimbursement: The data indicates that the contractors were compensated for all their costs through a cost reimbursement contract.
Ktor-comp-FF		Contractor Compensation Fixed Price: The data indicates that the contractors were compensated through a fixed priced contract.
Ktor-Comp-Nec		Contractor Compensation Necessary: The data indicates that program personnel felt that it was necessary for the contractors to be compensated for their work during the phase.
Ad-Comp-Nec		Adequate Competition Necessary: The data indicates that the program personnel felt that adequate competition (at least two sources) was a necessary element for RDS
Perf-Bse-Spec		Performance Based Specifications: The data indicates that the program personnel felt that performance based specifications were necessary for RDS.

Table 8 (Continued)

Pattern Codes		Operational Definitions
Dev-Time >18 <24		Development Time: The data indicates that a planned development time of 18-24 months was necessary for RDS
Poss-Cost-Sav		Possible Cost Savings: The data indicates that program personnel felt that it was necessary for their to be a possible cost savings through lower life cycle costs, or large production numbers to benefit from RDS.
Hi-Risk		High Risk: The data indicates that program personnel felt that it was necessary for a program to have a lot of risk which needed to be mitigated to benefit from RDS.
Lo-Fund		Low Funding: The data indicates that program personnel felt that a program with minimal to adequate funding would benefit from RDS.
Min-Sched-Imp		Minimize Schedule Impact: The data indicates that the program personnel felt that a program where there was an upheld protest would benefit from RDS by minimizing the schedule impact.

Appendix B: Interview Questions

The following questions were used to structure the data collection process.

1. What program were you involved in?
2. Did this program use the "rolling down-select strategy?"
3. Had you ever previously been exposed to this strategy?
4. How did you learn about the existence "rolling down-select strategy?"
5. Where did you find guidance to implement the "rolling down-select strategy?"
6. Which document did you find to be most helpful in terms of guidance?
7. Whose decision was it to use the "rolling down-select strategy?"
8. In developing the acquisition development timeline for the program was it decided at the outset that the traditional acquisition approach or some other method of source selection besides the "rolling down-select" would be applied?

IF YES:

9. What was the original source selection procedure that you considered if the "rolling down-select strategy" was not the first choice?

IF NO

9. Why was no consideration given to another method?
10. What were the characteristics or features of the system being acquired that led to a decision to use the "rolling down-select strategy?"
11. Reflecting on how this program went, or compared to other programs, was the "rolling down-select strategy" a wise choice for this acquisition?
12. Why?

13. Does the anticipated length of the development period influence the decision to use the "rolling down-select strategy?"

IF YES:

14. Which of the following projected completion times (compared to completion times for other acquisitions) appear to be applicable to the "rolling down-select" strategy?

Short Medium Long Extremely Long

15. What stage/phase is this program currently at?

16. How long has this program been in existence

17. How long did this source selection take to complete, or if it is not yet complete, how long will it take?

18. How would you describe the level of funding for this program compared to other programs?

Minimally Funded Adequately Funded Well-Funded Extremely Well-Funded

19. What total dollar funding amount did you base question 18's evaluation on?

20. In developing the budget did you have to make special allowances for the costs imposed by the "rolling-down-select strategy?"

21. What additional costs seemed to be brought on by this process compared to a single award source selection?

22. What was the level of technology involved in this program?

Simple State of the practice State of the art Experimental

23. Did the level of technology being incorporated into the weapons system play a big role in the decision to use the "rolling down-select strategy?

24. Did the level of technology employed in the production processes play a big role in the decision to use the "rolling down-select strategy?"

25. Was a clear separation between phases necessary to use the "rolling down-select strategy?"

26. Was this acquisition easy to separate into phases for the use of the "rolling down-select strategy?"

27. What was the nature of the performance targets and criteria which were used in deciding which contractors would be down-selected to the next phase?

28. Were there clear performance targets and criteria to use in deciding which contractors would be down-selected to the next phase?

29. Were contractors given special incentives to continue to compete to be down-selected to successive phases?

30. What were the contractors compensated for?, eg proposals, all costs. . .

31. What was the form/type of contract were signed with the contractors?

32. What are the necessary elements a program needs to use the "rolling down-select strategy?"

33. What characteristics of a program would lead you to think that it may be a candidate for the "rolling down-select strategy?

34. Would the presence of one of these characteristics be sufficient or is there some minimum set of characteristics that is required?

35. Are there any elements that this program did not have that could have been beneficial to the "rolling down-select strategy?"

36. If you had it to do over again, would you select the "rolling down-select strategy" on this acquisition?

37. Why?

38. Should the Air Force ever use the "rolling down-select strategy" in the future?

39. If so, on what type of program?

40. What were the advantages of using the "rolling down-select strategy" as opposed to another source selection technique?

41. Was there a cost savings, if so how much, and what caused it

42. Was there a time savings, if so how much, and what caused it?

43. Do you feel that there was a reduced risk of awarding a final contract where the contractor was unable to perform?

44. Did the "rolling down-select strategy provide you with more feasible options to meet the system requirements and reduce the risk involved with a single contractor single solution acquisition?

45. Did the continuing of competition into the program phase increase performance?

46. Did the "rolling down-select strategy" make it easier to take advantage of technological breakthroughs because of separate contracts for separate phases?

47. What were the disadvantages of using the "rolling down-select strategy" as opposed to another source selection technique?

48. Was there a significant increased cost associated with the "rolling down-select strategy, if so, how much, and what caused it?

49. Did the use of the "rolling down-select strategy" require a larger SPO or more manpower?

50. Are you aware of any other programs that have employed the "Rolling Down-Select Strategy?"

51. Do you have any other comments or suggestions concerning the "rolling down-select strategy?"

Bibliography

Air Force Material Command. Air Force Material Command FY93 Contracting Summary. (6 April 1994).

Barnard, Linda. Contract Representative, SMC/MTKA, Los Angeles AFS. Telephone Interview. 18 February 1997.

Connelly-Fratzke, Barbara. "Progressive Down-selection in the Acquisition of Major Systems," Topical Issues in Procurement Series (T.I.P.S.) 3(12), : 1-13 (December 1992)

Defense Systems Management College. Defense Manufacturing Management Guide for Program Managers 3rd Edition. April 1989.

Department of Defense. "Federal Acquisition Regulation (FAR); Part 15 Rewrite-Phase I." Federal Register 61(178); 48380-48394 (12 September 1996).

Fry, Vicki A. An Investigation of the Problems in Analyzing Prices of State-of-the-Art Commercial Items. MS thesis, AFIT/GCM/LAS/95S-5. School of Logistics and Acquisition Management, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1995 (AD-A301338).

Gansler, Jacques S. Affording Defense. Massachusetts: MIT Press, 1989.

General Accounting Office. High Risk Series: Defense Weapons Systems Acquisition (Letter Report). Washington DC: GPO, February 1995 (GAO/HR-95-4)

- - - - -. Acquisition Reform Implementation of Title V of the Federal Acquisition Streamlining Act of 1994. Washington DC: GPO, February 1995 (GAO/NSIAD-97-22BR)

- - - - -. High Risk Series: An Overview. Washington DC: GPO, February 1995 (GAO/HR-95-1)

- - - - -. Acquisition Reform: DOD Begins Program to Reform Specifications and Standards. Washington DC: GPO, February 1995 (GAO/NSIAD-95-14)

General Services Administration. Federal Acquisition Regulation (FAR) Chicago IL: Commerce Clearing House (September 1996).

- - - - -. Air Force Federal Acquisition Regulation (AFFAR) Chicago IL: Commerce Clearing House (September 1996).

Heberling, Michael. Defense Acquisition Strategy : Development and Execution AFIT:1993.

"Major System Acquisitions." Office of Management and Budget Circular NO. A-109. Washington DC: Office of Management and Budget, April 5, 1976.

Malishenko, Timothy P. Staff Summary Sheet. SAF/AQCS. 22 May 1996.

McCarter, Ben et al. "Rolling Down-select." Lightning Bolt 10. 1997.

Miles, Matthew B. and A. Michael Huberman. Qualitative Data Analysis: A Source of New Methods. Thousand Oaks CA: Sage Publications, 1984.

National Aeronautical Space Administration. "Rewrite of the NASA FAR Supplement (NFS)" Federal Register 62(20); 4466-4469 (30 January 1997).

Shearer, LT COL Joseph. Contract Representative, AFMC F-22 SPO. Wright-Patterson AFB OH. Interview. 6 March 1997.

Yin, Robert K. Case Study Research: Design and Methods. Thousand Oaks CA: Sage Publications, 1994.

Zsak, Mike. Risk Management and the DOD Acquisition Process. Email file. OUSD(A&T)/DTS&E).

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This research explored the elements required for the successful implementation of the "rolling down-select strategy." Inspired by Lightning Bolt 10, this study investigated five acquisitions which have or are in the process of implementing the "rolling down-select strategy." The results suggest several elements which appear to contribute to the successful use of the "rolling down-select strategy." These findings can be used by acquisition planners to aid in determining whether or not the "rolling down-select strategy" is a viable strategy for their particular acquisition.

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AFIT RESEARCH ASSESSMENT

The purpose of this questionnaire is to determine the potential for current and future applications of AFIT thesis research. **Please return completed questionnaire** to: AIR FORCE INSTITUTE OF TECHNOLOGY/LAC, 2950 P STREET, WRIGHT-PATTERSON AFB OH 45433-7765. Your response is **important.** Thank you.

1. Did this research contribute to a current research project? a. Yes b. No

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a. Yes b. No

3. **Please estimate** what this research would have cost in terms of manpower and dollars if it had been accomplished under contract or if it had been done in-house.

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4. Whether or not you were able to establish an equivalent value for this research (in Question 3), what is your estimate of its significance?

a. Highly Significant b. Significant c. Slightly Significant d. Of No Significance

5. Comments (Please feel free to use a separate sheet for more detailed answers and include it with this form):

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