

SESSION GUIDE SEASON 2023, EPISODE TWENTY FAR PARTS 34 & 35: MAJOR SYSTEMS & R&D

I. Introduction

This chapter brings us to some of the more "glamorous" portions of government contracting: major systems contracting and research and development contracting. When we think of these topics, most of us probably think of huge weapons systems and space-age, cutting-edge scientific research. While these issues do indeed fall under major systems and research and development, respectively, they are certainly not the only things in those categories! Research into improvements on mundane, existing systems is just as important as the flashier types of research. Similarly, upkeep on major systems already in place is extremely important. **FAR Parts 34 and 35** deal with all these topics, and more!

So what is a "major system?" **Part 2** defines it, in part, as a "combination of elements that will function together to produce the capabilities required to fulfill a mission need." There also are some dollar thresholds that must be reached to earn the rank of "major" as well. That's pretty unenlightening on its own; luckily, the FAR gives us some examples. We'll dive into those in detail in just a moment; for now, suffice to say that there are three different ways a system can be designated a major system, and for any of those three ways, the components of the system may be anything except construction or other improvements to real property.

Part 35 is inextricably linked with **Part 34** and tells us so directly in **35.000**. **Part 35** prescribes the policies and procedures for acquiring research and development (colloquially known as R&D) services that often are integral to major system acquisition, among other things. You might wonder why we have an entire FAR Part dedicated to this very specific subset of contracting. The reason lies in **35.002**. In R&D contracting, we are not procuring supplies or services with some set amount or goal which can be precisely described in advance. Instead, we are still working toward a goal, but we do not know for certain how long it will take to accomplish that goal, nor exactly how expensive it might be. We will explore the differences between regular contracting and R&D contracting after we conclude our discussion of **Part 34**.

II. Major System Acquisition

When must the U.S. Government utilize specialized major system acquisition procedures? The answer can be found in an important circular issued by the Office of Management and Budget (OMB) on April 5, 1976. This circular, referenced in the FAR as **A-109**, informs us that major system acquisition procedures should be reserved for programs that meet three criteria: (i) they must be directed at and critical to fulfilling an agency mission, (ii) they must require the allocation of relatively large resources, and (iii)

they must be so complex that "special" management/oversight attention is required. **A-109** also tells us that agency heads can add other relevant criteria and establish dollar thresholds at their discretion. **FAR 34.003(c)** echoes these criteria.

Over time, more detailed criteria were developed and promulgated within the FAR and via DoD Instructions as to what specific triggers were necessary to meet to qualify a procurement as a major system acquisition.

Question 1 – What is the current dollar threshold for a Non-DoD major acquisition system? [Hint: check out **2.101** for this one!]

A. Major System Acquisition Procedures

We can now define a major system, but what's the point of having special procedures for major system acquisition? **34.002** tells us that we have these procedures to help agencies acquire major systems in the most economical, timely, and effective manner possible. These systems are generally so large and complex that using standard contract management procedures might be too risky.

Interestingly, the FAR does not actually prescribe any specific major system acquisition procedures. Instead, it outlines the desired outcomes for major system acquisitions, and leaves design of the nittygritty procedural elements to the agency head or other designated official. **34.003(a) and (b)**. These agency procedures, for example, require the establishment of a program manager ("PM") position.

PMs are responsible for developing acquisition strategies for each major system procurement. **34.004**. They work in cooperation with COs to implement those strategies, particularly with respect to promotion of competition. **34.005-1(a)**. Ultimately, however, the CO is responsible for the regular CO duties we've discussed in previous chapters, including pre-solicitation notifications, issuing solicitations, and similar duties. **34.005-2**.

As a rule, solicitations for major system acquisitions should avoid dictating specific systems to fulfill the agency need. Instead, they should describe the Government's technical and programmatic needs and encourage prospective offerors to offer unique technical solutions that satisfy those needs. **34.005-2(b)(1)**.

Question 2 – Under what circumstances is a contracting officer permitted to include in a solicitation "Government specifications or standards" in a major system acquisition? [Hint: Check out **FAR 34.005-2**]

Major system acquisitions generally include four separate phases. COs can award contracts for each of these phases independently; a major system acquisition need not be some giant, all-encompassing contract that spans the entirety of the development cycle. In fact, major system acquisitions are often broken into smaller contracts to promote the greatest amount of competition. Each development phase has its own heading in **34.005**; these phases occupy **34.005-3** through **34.005-6**. Each phase also has its own contract requirements, which the relevant subsections detail.

Question 3 – What are the four development phases for a major system acquisition?

Subpart 34.1 prescribes a few extra policies and procedures for a very specific aspect of major system acquisitions. This subset has to do with industrial resources developed under Title III of the Defense Production Act. This Act authorizes the Government to use various forms of assistance to help private companies expand production capacity and supply of national defense-related industrial resources.
34.100. Since this type of industrial development isn't really something most private companies would undertake on their own, it is Government policy for the Government to pay for any testing and qualification required for such industrial resources.
34.102. We can find the actual procedures for testing and qualification of these industrial resources in 34.103. COs should insert the clause at 52.234-1 in *all* contracts for major systems and items of supply; it's likely that industrial materials subject to this Subpart will come up in a major system acquisition. COs need to be sure to cover all foreseeable eventualities, so this clause is mandatory.

B. Earned Value Management Systems

Earned Value Management Systems (EVMS) may sound a little like "word salad" to some of us. However, its definition clears up the meaning considerably. **FAR 2.101** defines an EVMS as "a project management tool that effectively integrates the project scope of work with cost, schedule, and performance elements for optimum project planning and control." In other words, an EVMS is just a way for the Government to make sure that the contractor is working as efficiently as possible on a major system. An EVMS is required for all major system acquisitions in the development phase, although the Government may also require it for other acquisitions. **34.201(a)**. (**OMB Circular A-11** established this requirement before the FAR was even a twinkle in the Government's eye.) COs must require contractors to submit EVMS reports monthly *at minimum* when an EVMS applies to a contract. **34.201(c)**. But what if somebody wants to make an offer on a solicitation requiring an EVMS, and this prospective offeror doesn't have an EVMS already in place, or has an EVMS that doesn't comply with the Government's standards? Can this prospective offeror still make an offer? The short answer is yes.

34.201(b) specifically indicates that lack of an adequate EVMS does not automatically eliminate an offeror, although it may make the proposal less competitive, depending on the evaluation criteria. Moreover, the offeror will still need a compliant EVMS to perform the contract, and will have to submit a comprehensive plan for compliance to the CO. Thus, one should be fully operable at the time of award. Sometimes the solicitation will require offerors to submit an EVMS plan as part of their proposals. In that case, the CO will determine whether the proposed EVMS plan is adequate *before* contract award. **34.201(e)**. Additionally, all EVMS requirements that apply to a prime contractor also apply to a subcontractor. **34.201(d)**. The specific standards with which any EVMS must comply are in Electronic Industries Alliance Standard 748, or **EIA-748**.

So how does the Government determine whether an EVMS is adequate? Whenever an EVMS is required, the Government must conduct an Integrated Baseline Review (IBR) to determine if the proposed EVMS is adequate. **34.202(a)**. An IBR is designed to verify the technical content of an EVMS, as well as the realism of related schedules, performance budgets, and resources. We use the IBR to ensure that everybody is on the same page with respect to risks in performance plans and underlying management control systems. The end goal of the IBR is to formulate a plan to handle all risks associated with the EVMS. **34.202(b)**. The Government and contractor (or offeror) conduct the IBR jointly, using the five assessment criteria in **34.202(c)**. While the five criteria are specified in the FAR, the timetable and actual conduct of the IBR are not. Those two things are up to the individual agencies, so agencies should create procedures to deal with IBRs. **34.202(d)**. We can find direction regarding EVMS-related solicitation provisions and contract clauses in **34.203**.



Question 4 – What are the five IBR assessment criteria we mentioned above?

III. Research and Development Contracting

According to **35.002**, the purpose for research and development contacting is "to advance scientific and technical knowledge and apply that knowledge to the extent necessary to achieve agency and national

goals." **35.002** goes on to note that most R&D contracts are directed toward goals that often cannot be precisely described in advance, unlike regular contracts for supplies or services. Note that **Part 35** only applies to R&D that is for the direct benefit of the Government. **35.003(a)**.

A. Research and Development Contracting Procedures

Part 35 prescribes specific procedures for R&D contracting. In doing so, it occasionally modifies a few of the procedures we've learned about in previous chapters. However, most of these modifications are simply the addition of an extra step or two in the process, not a complete change. This is particularly true with respect to publicizing requirements. From our discussion of **Part 5**, we already know that certain contract and pre-contract actions must be publicized. **35.004** adds a few more publication requirements to the **Part 5** requirements. Specifically, it requires the Government to constantly seek out and develop information on sources (including small businesses) that are competent to perform R&D work. The Government seeks out such sources in a variety of ways, including using the government-wide point of entry (GPE) and providing points of contact within agencies to potential R&D sources. **35.004(a)**.

The information the Government obtains from these publication requirements helps the Government to draft statements of work more effectively. Statements of work are always important, but they take on an even greater role than usual in R&D contracting. **35.005(d)** actually lists specific areas that may require this extra attention. In particular, it states that SOWs in an R&D contract must address the area of exploration (for basic research) or the end objectives (for development and applied research) in a manner that does not hamper a contractor's ability to innovate. **35.005(a)**.

Question 5 – What is the difference between basic research and applied research? [Hint: check out **35.001** and **35.005(b)**]

As you may have guessed, some contract types are better than others for R&D contracting. We probably wouldn't use a Firm-Fixed-Price contract for R&D contracting, because the risk would be so lopsided that we wouldn't get any offerors! R&D contracting thus presents somewhat of an exception to the Government's usual preference for fixed-price contracting. **35.006(c)**. While the Government still prefers to transition cost-reimbursement R&D contracts to fixed-price production contracts (**35.006(e)**), or to simply use Fixed-Price Level-of-Effort contracts if applicable (**35.006(d)**), it also recognizes that these contract types might not be practical. **35.006(d)**. If you need a refresher on contract types at this point, go back to our discussion of **Part 16**!

Another difference between R&D contracting and regular contracting occurs during the precontract/solicitation phase. In regular contracting, solicitations are normally distributed to as many potential sources as possible so the Government can promote as much competition as possible (or practicable, anyway). However, R&D is tricky because it requires contractor competency in specific areas. The qualification bar is much higher for an R&D contractor than for other contractors, simply because of the basic technical requirements R&D requires. **35.007(a)**. Performance of most supply contracts and services can be assessed on the basis of the deliverables, without necessarily considering the qualifications of the contractor. Did the supply meet the specifications? Did the services accomplish the stated purposes? In contrast, it is difficult to evaluate the end product of research and development in a vacuum, so the Government must depend on the experience and expertise of the contractor. Thus, the Government is directed to solicit proposals from technically qualified sources, and not necessarily the general public. **35.007(b)**. Solicitations should also require offerors to describe their technical and management approaches (**35.007(c)**), as well as several other factors that are relevant to R&D (**35.007(e) and (f)**). Additionally, COs must ensure that offerors fully understand the details and complexity of the work the Government requires. **35.007(g)**. R&D is complicated and fraught with uncertainty; the Government therefore wants to find as much certainty as it can in the details.

Question 6 – What are the six example evaluation factors pointed out in **35.007**? Why do you think the FAR specifically points them out?

Solicitations aren't the only way the Government can obtain R&D services from the private sector. The Government can also use Broad Agency Announcements, or BAAs. (You may recall that we touched on these very briefly during our discussion of **Part 6**.) BAAs are useful when the Government wants to acquire basic or applied research, but that research isn't related to the development of any specific system or hardware. **35.016(a)**. BAAs are geared more toward general scientific study and experimentation instead of more particular improvements to existing systems or more pointed research. The content of a BAA is much the same as the content of a solicitation (**35.016(b)**); similarly, the evaluation process for proposals received pursuant to a BAA is much the same as the evaluation requirements for BAAs are also essentially the same as for a regular solicitation; in fact, **35.016** makes frequent reference to the publication requirements and procedures in **Part 5**.

So how are R&D contracts actually awarded? The process is substantially similar to the processes in **Part 15**. In fact, **35.008** makes specific reference to **Part 15** and directs COs to use certain portions of that Part to aid in contract award. **35.008(d) and (e)**. The award of an R&D contract is primarily based on the technical ability or innovative approach of the offeror, since there are generally few precise production specifications or service requirements in R&D contracting. **35.008(a)**. Thus, the CO should review the

evaluation factors in the solicitation with an eye toward how those factors fit into the technical ability or innovation the Government needs for the specific R&D at hand. **35.008(b)**.

Once the R&D contract is awarded, the administration of the contract becomes even more like that of any other contract. Two major additional requirements stand out, though: subcontracting and scientific and technical reports. Because the award of an R&D contract is so dependent upon the technical and scientific know-how of the contractor, the contractor may not subcontract any scientific or technical work without the prior knowledge of the CO. Simply telling the CO about subcontracting does not count as the CO's prior knowledge; the contractor and CO must discuss any subcontracting plans in depth, and the CO is permitted to obtain an agreement regarding such plans. **35.009**. Further, for all R&D contracts, the contractor *must* furnish scientific and technical reports as a permanent record of the work performed under the contract, and to ensure compliance with the objectives of the contract. **35.010(a)**. Agencies should make these reports available to other Government activities, as well as to the private sector where applicable. **35.010(b)**.

As far as most other issues go, R&D contracting is virtually indistinguishable from other contracting. Patent rights (**35.012**) and insurance (**35.013**), specifically, are only addressed by referencing other parts of the FAR—**Part 27** and **Part 28**, respectively, to be precise. Data and property issues are in a similar situation. For the most part, **Part 27** governs data in R&D contracts. However, **Part 27** does not say anything about *delivery* of data. Since data is really the point of a lot of R&D contracting, R&D contracts should specify what technical data will be delivered and how it will be delivered. **35.011**. **Part 45**, which we will discuss in a later chapter, governs Government property and title to that property. **35.014(a)** notes that **Part 45** applies to all R&D contracts. **35.014(b)**, (c), and (d) add a few extra provisions, though, since **Part 45** doesn't address some of the situations that arise frequently under R&D contracts.

Question 7 – How is the delivery of technical data under a **FAR Part 35** R&D contract differ from a standard non-DoD **FAR Part 15** supply contract? [Hint: check out **FAR 35.011 and FAR 52.227-14**]

Question 8 – When (if ever) does the contractor automatically receive title to scientific equipment purchased under an R&D contract? [Hint: check out **35.014(b)**]

B. Contracting with Specific Entities

We know that the Government is permitted to be a little pickier about who it contracts with in R&D contracting. This permitted pickiness often results in contracting for R&D with specific types of organizations. These organizations include educational institutions, nonprofit organizations, and

federally funded research and development centers (FFRDCs). In general, the rules for contracting with educational institutions and nonprofit organizations are the same as the rules for contracting with any other organization. **35.015**. FFRDCs are where things start to look different. **35.017** tells us how FFRDCs are established, when they should be used, and what procedures are applicable to them.

First, though, what's the point of an FFRDC? We have lots of contractors with pretty serious technical and scientific capabilities out there. Why not just use them? FFRDCs exist to meet a specific long-term research or development need which would be impractical or inefficient for contractors (or the agencies themselves) to meet. **35.017(a)(2) and (4)**. FFRDCs are usually not operated or managed by the Government; instead, they are usually operated by universities, other nonprofits, or even for-profit companies, although the FFRDC must be an "identifiable separate operating unit" of the operating organization. **35.017(a)(3)**. Perhaps most important, an FFRDC is a center of expertise that can provide Independent Verification and Validation (IV&V) and objective advice regarding a major system without creating a conflict of interest, since the FFRDC will not be competing to create that system.

Before establishing an FFRDC, agencies must jump through several hoops. FFRDCs are a large undertaking, and we don't want to establish them prematurely. Thus, an agency must first ensure that no other alternative source exists that would satisfy its requirements. **35.017-2(a)**. It must also ensure that the Government itself has the expertise to evaluate the FFRDC's work. **35.017-2(c)**. These are only two of the ten hoops an agency must jump through before establishing an FFRDC—again, FFRDCs are a big deal! Other hoops include notifying the Executive Office of the President, Office of Science and Technology Policy (**35.017-2(d)**), and obtaining approval from the head of the sponsoring agency (**35.017-2(j)**). Note that creation of new FFRDCs for certain agencies and Secretaries is subject to Congressional approval; a list of these agencies, as well as the procedures for obtaining approval, is in **35.017-7**.

Question 9 – Which agencies and Secretaries are affected by these restrictions?

To ensure that the FFRDC fulfills its mission, and to ensure that the Government can periodically reevaluate it, the Government and the FFRDC should create a written agreement of sponsorship when the FFRDC is established. These agreements can take many forms, but must *always* be written. **35.017-1(a)**. The specific issues addressed in a sponsoring agreement will vary based on the situation, but **35.017-1(c)** contains five issues which every sponsoring agreement *must* address. These issues include a statement of purpose, how the FFRDC will handle money, whether the FFRDC can accept work from an entity other than the agency that established it, and similar topics.

Once the FFRDC is established, any work placed with it must be within the "purpose, mission, general scope of effort, or special competency" of that particular FFRDC. **35.017-3(a)**. If an organization other than the sponsor is permitted to place work with the FFRDC, the sponsor organization remains

responsible for that work, at least with respect to whether the work complies with the mission of the FFRDC. **35.017-3(b)**. As we know, FFRDCs are subject to review. The sponsor conducts those reviews, before establishment of the FFRDC and during its operation. **35.017-4(a)**. If a sponsor no longer needs an FFRDC, then the sponsorship may be transferred to another Government agencies (or several agencies); if the sponsorship isn't transferred, then the FFRDC will be phased out. **35.017-5**. The National Science Foundation (NSF) maintains a master list of FFRDCs, so primary sponsors must report certain information about their FFRDCs to the NSF. **35.017-6**.

Question 10 – What five things should an FFRDC review include? [Hint: check out 35.017-4(c)]



Discussion Questions

1.	What is a Title III Industrial resource? [Hint: check out 52.234-1]
2.	When may a contract for full production of major systems be awarded? [Hint: check out 34.005 - 6]
3.	What is the contract type "order of preference" when the use of cost and performance incentives are desirable and practicable? [Hint: check out 35.006]
4.	What type of procurement agreement(s) should the Government use if the stated purpose of a research and development program is for other than "the direct benefit or use of the government"? [Hint: Check out 35.003].
5.	Where did the use of FFRDCs originate? Name a technology developed at a FFRDC during this period. [See Resources]

6. **FAR Question:** As we learned in our discussion of **FAR Part 6**, the CO is the Government official responsible for ensuring competition in situations where the Government knows it has a limited number of contractors that have the skills, experience, and capabilities to perform. Who is responsible for promoting and sustaining full and open competition in in a Major Systems Acquisition, according to **FAR 34.004** and **FAR 34.005-1**?

Answer Key

Answer 1 – The current dollar threshold for a non-DoD major acquisition system is \$2.5M!! Programs below that threshold may also be designated a "major system" by the head of the agency responsible for the system. See 41 U.S.C. 109.

Answer 2 - A contracting officer may include "Government specifications and standards in a solicitation for a major acquisition system when the agency mandates the use of a specific subsystem or other components.

Answer 3 – The four development phases for a major acquisition system are: (i) concept exploration, (ii) demonstration/validation, (iii) full scale development, and (iv) full production.

Answer 4 –

- 1. Ability of the project's technical plan to achieve the objectives of the scope of work
- 2. Adequacy of the time allocated for performing the defined tasks to successfully achieve the project schedule objectives
- 3. Ability of the Performance Measurement Baseline to successfully execute the project and attain cost objectives, recognizing the relationship between budget resources, funding, schedule, and scope of work
- 4. Availability of personnel, facilities, and equipment when required, to perform the defined tasks needed to execute the program successfully
- 5. The degree to which the management process provides effective and integrated technical/schedule/cost planning and baseline control

Answer 5 – "Basic research" emphasizes on achieving specified objectives and knowledge rather than on achieving predetermined end results prescribed in a statement of specified performance characteristics. "Applied research" normally follows basic research, attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques, and attempts to advance the state of the art.

Answer 6 – The six example evaluation factors are: (i) the offeror's understanding of the SOW, (ii) the approach proposed to accomplish the scientific and technical objectives of the contract or the merit of the ideas or concepts proposed; (iii) the availability and competence of experienced engineering, scientific, or other technical personnel; (iv) the offeror's experience; (v) pertinent novel ideas in the specific branch of science and technology involved; and (vi) the availability, from any source, of necessary research, test, laboratory, or shop facilities.

Answer 7 – In an R&D contract, the contracting officer must specify the technical data that the contractor must deliver under the contract, since the standard data clauses required by part 27 do not require the delivery of any such data.

Answer 8 – The contractor will automatically obtain title to scientific equipment if the contractor obtain the CO's advance approval the equipment costs less than \$5,000 and acquired on a reimbursable basis.

Answer 9 – Pursuant to 10 U.S.C. 2367, the Secretary of Defense, the Secretary of the Army, the Secretary of the Navy, the Secretary of the Air Force, the Secretary of Homeland Security, and the Administrator of the National Aeronautics and Space Administration are affected by these restrictions.

Answer 10 – An FFRDC review should include: (i) an examination of the sponsor's special technical needs and mission requirements that are performed by the FFRDC to determine if and at what level they continue to exist; (ii) consideration of alternative sources to meet the sponsor's needs; (iii) an assessment of the efficiency and effectiveness of the FFRDC in meeting the sponsor's needs, including the FFRDC's ability to maintain its objectivity, independence, quick response capability, currency in its field(s) of expertise, and familiarity with the needs of its sponsor; (iv) an assessment of the adequacy of the FFRDC management in ensuring a cost-effective operation and (v) a determination that the criteria for establishing the FFRDC continue to be satisfied and that the sponsoring agreement is in compliance with 35.017-1.

Discussion Questions Answer Key

- "Title III industrial resource" means materials, services, processes, or manufacturing equipment (including the processes, technologies, and ancillary services for the use of such equipment) established or maintained under the authority of Title III, Defense Production Act (50 U.S.C. App.2091-2093).
- 2. A full production may be awarded when the agency reaffirms the mission need and program objectives and grants approval to proceed with production.
- 3. The order of preference for contract type when the use of cost and performance incentives are desirable and practicable is fixed price incentive and cost plus incentive fee contracts in that order of preference.
- 4. Grants or cooperative agreements should be used when the principal purpose of the transaction is to stimulate or support research and development for another public purpose.
- 5. The use of FFRDCs originated in World War II. The development of radar and nuclear weapons through the Manhattan Project are two technologies developed at an FFRDC during this time.
- 6. The program manager has this responsibility.

APPENDIX

All of the following materials are linked and can be found via the Links Document or online.

DoD EVMS Interpretation Guide

Department of Defense Earned Value Management System Interpretation Guide from March 2019. Earned Value Management (EVN) is a DoD program management tool which allows government and industry program managers to assess cost, schedule and technical progress on programs to support joint situational awareness and informed decision making.

FFRDC Overview

Federally funded research and development centers (FFRDCs) background and issues for Congress published by the Congressional Research Service in December of 2017 and updated in April 2020. This report analyzes the government supported research and development that is conducted by a wide variety of performers, including federally owned and operated laboratories, universities, private companies and other research institutions.

NDIA IPMD Intent Guide Version D

National Defense Industrial Association Integrated Program Management Division's August 2018 publication of Earned Value Management Systems EIA-748-D Intent Guide. This guide is applicable to government or industry for the purpose of documenting how an earned value management system complies with the standards.

OMB Circular A 109

OMB Circular from April 1976 to the Heads of Executive Departments and Establishments concerning Major System Acquisitions. The purpose of the circular was to establish policies to be followed by executive branch agencies in the acquisition of major systems.

USCG Major System Acquisition Manual

United States Coast Guard's Acquisition Directorate regarding their Major Systems Acquisition Manual (MSAM) from December 2021. The purpose of the manual is to revise acquisition policies and procedures and provide updated guidance for the implementation of the Department of Homeland Security Acquisition Management and Review Process.

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