There are various forms of intellectual property and intellectual property rights that can arise in relation to Government procurement contracts. Developing computer software or hardware may result in trade secrets protectable as “restricted rights” in software or “limited rights” in technical data. Those software and data are also subject to copyright protection. And, if the underlying development gives rise to “inventions,” then patent rights may accrue. These categories of intellectual property are distinct from one another under the regulations, but they often arise from a common set of events. Sorting through those events and the regulations is important for contractors and the Government to ensure that intellectual property rights are correctly asserted. These issues are particularly current with respect to patent rights in the light of recent decisions from the U.S. Supreme Court addressing basic patent principles, as well as decisions from the U.S. Court of Appeals for the Federal Circuit and a U.S. District Court addressing patent principles in the unique context of contracting with the Federal Government.

Accordingly, this Briefing Paper will describe in simple, practical terms what the core requirements are for creating, protecting, and allocating patent rights under Government contracts as well as how to sort out patent rights from other intellectual property rights under those contracts. The Paper also addresses the issues of authorization and consent and indemnification in patent litigation under Government contracts.

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Patent Rights

Broadly, and somewhat simplistically, the patent laws cover inventions (discoveries) of new, nonobvious, and useful things, processes, and designs (as well as certain varieties of plants). This is described in 35 U.S.C.A. § 101, with respect to “utility” patents, as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Similarly, the patent provision with respect to design patents, 35 U.S.C.A. § 171, provides:

Whoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor....

There are some obvious (and less obvious) limits on the scope of what is patentable, with the general notion being that laws of nature (gravity), physical phenomena (ice), and abstract ideas (a trip to the moon) are not patentable. Thus, for example, Albert Einstein could not have patented “E=mc²” because it is a “manifestation of...nature, free to all men and reserved exclusively to none.”6 The application of the laws of nature may, however, be patentable (e.g., an antigravity machine). Similarly, mathematical algorithms may not be patentable standing alone, but may be patentable when incorporated into a process, such as a computer program.

In all events, if you meet the qualifications for patentability, then you may obtain a patent, which in the United States is a legal monopoly on the invention for 20 years.7 That means essentially that no one else may make, use, sell, or reverse engineer your invention. At least that is the theory. The quid pro quo is that the essence of your invention, described in the patent itself as a series of “claims,” is published for all the world to see. Therefore, the monopoly granted to you by the patent laws is only as good as your ability to police your invention and to sue those who would infringe it, remembering also that your patent is a target for others to invent around.

This raises the question that most companies should systematically consider: whether—when it develops something that would qualify for a patent—a company will patent the development or whether, instead, it will hold the development closely as a trade secret? Trade secret disclosures and “monopolies” are largely in your control. Answering this question requires an informed decisionmaking process, from the beginning of development, that considers at least these factors:

(1) Is the Government the only market? If so, there may be less reason to patent because, as discussed below, the Government can use your invention or have your competitors do so. Limited or restricted data and software rights may be more valuable.

(2) How easy will it be to reverse engineer the item? If it is easy, obtaining patent protection may be the better approach. If not, then holding the development closely as a trade secret may be best.

(3) What is your real will and ability to police and to litigate patent infringement as opposed to your will and ability to control your trade secrets?

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Application To Government Contracts

Considering what is patentable in the context of Government contracts means recognizing that inventions may well occur during the performance of a Government contract, particularly if it is a contract for research, design, or development. In turn, this raises the question as to the allocation of patent rights between an inventor and the Government.

Historically, the tendency of Government agencies was to take title to inventions that arose during performance of a Government contract. Over time, Congress recognized this was a disincentive both to the development and commercialization of promising technology because contractors could not take advantage in the commercial marketplace of their discoveries. This led to the passage in 1980 of the “Bayh-Dole Act,” which grants to nonprofit organizations and small businesses the right to elect to retain title to inventions developed under federally funded contracts, grants, or cooperative agreements, with the Government acquiring a nonexclusive, irrevocable, paid-up license. In 1983, a presidential memorandum extended this allocation of rights to large businesses and profitmaking organizations.

This presidential policy was adopted by the Federal Acquisition Regulation and forms the basis for FAR’s policy on patents, which is that the contractors generally will have the right to retain title to inventions made in the performance of work under a Government contract and the Government will obtain a broad license. There are statutory exceptions to this policy, principally for contracts with the Department of Energy and the National Aeronautics and Space Administration, which are required by statute to take title, although these requirements can be (and often are) waived.

The FAR’s provisions on patents are contained in FAR Subparts 27.2 and 27.3, with the implementing clauses at FAR 52.227-1 through 52.227-13. The Department of Defense follows the FAR closely, with a few minor supplementary provisions in Defense FAR Supplement Subpart 227.3. In contrast, due to their statutory antecedents, the DOE and NASA have different and more comprehensive requirements in their FAR supplements.

The triggering event under the FAR for determining a party’s rights is whether there has been a “subject invention,” which is an invention conceived or first actually reduced to practice in the performance of work under a Government contract or subcontract. Achieving a subject invention further triggers disclosure and election responsibilities for contractors.

Subject Invention

A “subject invention” comprises four elements under the FAR definition. It is (1) “any invention of the contractor” (2) “conceived” or (3) “first actually reduced to practice” in (4) “the performance of work under a Government contract.”

The term “invention” as used in this regulation is defined differently than in the patent statutes. It is “any invention or discovery that is or may be patentable or otherwise protectable” under the patent code. Therefore, contractors need to take a liberal view of whether something they discover during the course of a Government contract may be patentable because, as discussed below, the contractor’s rights to assert title will depend upon whether it discloses a subject invention, and a subject invention need not be one that, with any certitude, is patentable. The other important point to recognize about the FAR definition is the disjunctive between conceived or first actually reduced to practice. That is, the Government will obtain rights and the contractor will have obligations with respect to a subject invention either if it was conceived during the course of a Government contract or conversely if it was first reduced to practice under a Government contract even if it was conceived previously.

There is a body of patent law addressing the issue of conception, although the issue appears to arise relatively infrequently in Government contracts. The general principle is that the invention must be sufficiently concrete in the mind of the inventor that it could be reduced to practice.
The date of conception is the date when the inventive idea is crystallized in all of its essential attributes and becomes so clearly defined in the mind of the inventor as to be capable of being converted to reality and reduced to practice by the inventor or by one skilled in the art.

The problem with this definition of “conception” is that it is hard to establish when this occurs absent some physical manifestation of the idea—such as an internal development record or laboratory notebook (a notoriously unreliable format). Accordingly, there is a corollary practical requirement that there be some physical proof of conception. Ask yourself the question: What procedures does my company have for rigorously and systematically documenting conception or reduction to practice?

There is also a body of patent law on the issue of when something has been reduced to practice, with variations on what that means depending upon the type of invention. In essence, reduction to practice occurs when an invention has been embodied in some form that demonstrates the invention’s “workability.” The extent of building or testing that must be conducted to demonstrate whether the invention works depends upon the kind of invention. The workability of simple inventions may be discernible merely by looking at them, while other inventions may be tested in laboratories, while in some cases (notably involving aircraft) courts have held that inventions have to be demonstrated under actual operating conditions. Generally, the courts apply a commonsense approach, which “prescribes more scrupulous testing under circumstances approaching actual use conditions when the problem includes many uncertainties.” However one determines workability, if it exists for the first time in the performance of a Government contract (or subcontract)—and if the invention relates to the work under the contract—then it will be a subject invention.

Filing a patent application is considered by the U.S. Patent and Trademark Office to be a constructive reduction to practice, but the subject invention definition hinges on the first actual reduction to practice. This distinction is important if the invention is conceived and the patent application filed independent of any Government contract (e.g., under an independent research and development project) but the workability of the invention is demonstrated for the first time under a Government contract. In this circumstance, the invention is a subject invention even if the patent has already issued because the first actual reduction to practice occurs under the contract.

If something is a subject invention, then it fits within the allocation of rights under the three FAR patent rights clauses. Those clauses are FAR 52.227-11, “Patent Rights—Retention by the Contractor (Short Form),” which generally is used when the contractor is a small business or a nonprofit; FAR 52.227-12, “Patent Rights—Retention by the Contractor (Long Form),” which is used with entities that are not small businesses or nonprofits; and FAR 52.227-13, “Patent Rights—Acquisition by the Government,” which is used infrequently.

These clauses must be “flowed down” to all subcontractors, regardless of tier, that are performing experimental, developmental, or research work. And, as with the standard data rights clauses, the flowdown patent rights clauses are intended to allocate rights and obligations between the subcontractor and the Government, not between the subcontractor and the prime.

■ Disclosure

The rights the Government obtains in a subject invention depends, however, in the first instance on the nature and timing of the contractor’s disclosure of the invention. The principles are straightforward. If a company first conceives of or first reduces to practice an invention under a Government contract, then it must disclose that invention to the Government promptly in accordance with the contract’s requirements. If the company makes this disclosure, then it may elect to keep title to the patent, with the Government getting a “Government purpose” license in the invention. Even if the company declines title to the disclosed invention, it will still get a license to the patent.

These disclosure requirements are described in the patent rights clauses. For contractors that are other than small businesses or nonprofits,
the “long form” clause, FAR 52.227-12, requires a contractor initially to disclose a subject invention to the Contracting Officer “within 2 months after the inventor discloses in writing to Contractor personnel responsible for patent matters or within 6 months after the Contractor becomes aware that a subject invention has been made, whichever is earlier.”

The two-month trigger assumes there is someone within the contractor’s organization (or perhaps an external patent counsel) responsible for patent matters. If not, then the six-month period applies by default.

This disclosure takes the form of a “written report” that not only identifies the contract under which the invention was made as well as who the inventor is, but also provides technical details sufficient to convey “a clear understanding…of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention.” Additionally, the disclosure must identify and describe any publication, sale, or public use of the invention.

The DOD has a standard form—DD Form 882, “Report of Inventions and Subcontracts”—that should be used to make these disclosures. But regardless of whether you do business with the DOD or not, this disclosure obligation cuts across all federal procurements and obligates contractors to have a process in place for tracking and describing each stage of development. Having such a process is important not only for patent reporting purposes, but also for determining whether an item, component, process, or software has been developed at private expense at the lowest practicable component level; those are the touchstones for limiting and restricting the Government’s rights in technical data and computer software. Stated differently, all companies doing business with the Government ought to have a uniform method, form, and process for tracking development even if they never intend to patent.

### Election

The next step is the contractor’s election to retain title or not. Under the “long form” clause, FAR 52.227-12, used where the contractor is other than a small business or a nonprofit, this election must occur within eight months of the initial disclosure (either the 2-month or 6-month disclosure) and often is made by companies at the same time as the initial disclosure. In all events, the election must be made. Even if the contractor declines to take title, however, it will “retain a nonexclusive, royalty-free license throughout the world in each subject invention.” This license extends to the contractor’s domestic subsidiaries and affiliates and includes the right to grant sublicenses. It is not, however, transferable without the approval of the agency except as part of a corporate succession.

Election brings with it further obligations for the contractor to pursue and maintain patents—or risk losing title. Specifically, the Government may obtain title notwithstanding a contractor’s election if the company fails to file its initial patent application, in the United States, within one year after its election or fails to file for foreign patents within 10 months of the initial U.S. patent application. The Government also may obtain title if the contractor “decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend” a patent on a subject invention. The figure at the top of the following page illustrates these timelines under FAR 52.227-12.

### Failure To Disclose

As noted, if a contractor discloses an invention but either it elects not to retain title or the Government later obtains title, then the contractor still will retain a license to the patent. On the other hand, if the contractor fails to disclose in the first instance—and if the Government acts within 60 days after learning of the contractor’s failure to disclose—then the contractor loses all rights in the subject invention and receives no license. Thus, the only prudent course for a contractor that is concerned about its patent rights is to disclose all subject inventions, recognizing again that the definition under the FAR of subject inventions includes inventions that “may” be patentable. Stated differently, when in doubt about whether an invention is patentable, disclose it. If, on the other hand, the result of a development effort is plainly not an invention,
it need not be disclosed. It may nonetheless be protectable as a trade secret.

There is a practical caveat to these principles: If the Government is the only market for the contractor’s subject invention—i.e., there is no, or is not likely to be any, commercial application—then a patent arguably has little value to the contractor because the Government in all circumstances will at least have a generous license to the subject invention. This Government license is “a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.”

**Continuing Obligations**

In addition to these disclosure and election requirements, the FAR requires contractors to file continuing reports. For example, the “long form” clause, FAR 52.227-12, requires (a) interim reports every 12 months from the date of contract listing the subject inventions developed and stating that all subject inventions have been disclosed, (b) a final report, within 3 months after completion of the contract work, listing all subject inventions and listing all subcontracts at any tier containing a patent rights clause, and (c) periodic reports on the utilization of a subject invention or efforts.
at obtaining utilization that are made by the contractor or its licensees or assignees.48

As noted earlier, the contractor also has the obligation, if it elects title, thereafter to file patent applications and to pay for maintenance fees.49 In the event the contractor fails to do so, the Government may take title, although the contractor—having made a proper initial disclosure—will still retain a broad license.50

**Authorization & Consent**

It makes sense as a matter of policy and practicality that, if a contractor is performing work for the Government, there be limits on a third party’s ability to sue that contractor for infringement and thus potentially stop a Government program. A federal statute, 28 U.S.C.A. § 1498(a), is designed to avoid this problem in certain circumstances. Under the statute, if a patented invention is used “by or for the United States,” then (1) exclusive jurisdiction exists in the U.S. Court of Federal Claims for suit by a patent owner against the United States, not against the contractor, with the remedy being money damages but no injunctive relief; and (2) an alleged infringing contractor has an affirmative defense to a district court action by the patent holder.

The extent and nature of both the jurisdiction and affirmative defenses under 28 U.S.C.A. § 1498(a) were the subject of a comprehensive and thoughtful decision issued by the U.S. District Court for the Middle District of North Carolina in *Madey v. Duke University*.51 There, the university asserted § 1498(a) as an affirmative defense against a lawsuit brought by a former employee for infringing two of his patents in work performed at a university laboratory operated under Government grants. As discussed in that decision, both jurisdiction under 28 U.S.C.A. § 1498(a) and the affirmative defense depend upon proof that the contractor’s (or grantee’s) use was “for” the United States, which under § 1498(a) is a two-part test. That is, the invention has to be used “for the Government and with the authorization or consent of the Government.”52

“For the Government” means that the use is in furtherance and fulfillment of a stated Government policy, which serves Government interests and is for the Government’s benefit.53 “Authorization and consent” means the Government has either expressly or impliedly consented to infringement of a patent.54 Implied authorization and consent can occur in various ways, including Contracting Officer direction, specifications or drawings that necessitate infringement, or Government knowledge of the infringement.55

Express authorization and consent is more common and is most often found when the Government incorporates the standard “Authorization and Consent” clause, FAR 52.227-1, into a company’s contract. This clause comes in two forms—a broad authorization and consent and a more narrow one. Broad authorization and consent is contained in Alternate I to the clause, which is to be used in all research and development contracts. It states:

> The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.

The more limited authorization and consent of FAR 52.227-1 is used otherwise56 and covers the use of a U.S. patent:

> (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontract with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer....

This more restricted authorization and consent will be construed narrowly by the courts because, as a limited waiver of sovereign immunity, it should not be construed so as to “find consent and impose potential liability on the Government where the terms of the ["Authorization and Consent"] clause are not fully met.”58 This means that, as a matter of fact, the infringing party must prove as its affirmative defense not only that there was authorization and consent but also that all of the uses of the patented invention fall within the scope of the Government’s consent, i.e., the requirements of the contract or research grant. In *Madey*, for example, the district court denied the university’s motion for summary judgment,
holding that while the university was entitled to rely on 28 U.S.C.A. § 1498(a) as an affirmative defense, a trial would be required to determine whether Government agencies awarding research grants had authorized and consented to the use of patented inventions and whether all such use was for the Government.59

**Patent Indemnity**

Notwithstanding authorization and consent, a contractor may ultimately be liable to indemnify the Government for any damages found in a 28 U.S.C.A. § 1498(a) action. There is a specific “Patent Indemnity” clause, FAR 52.227-3, that provides for indemnification upon prompt notification to the contractor of the infringement action against the Government.60 Logically, the FAR instructs that the “Patent Indemnity” clause is *not to be used* when there is broad authorization and consent granted or in contracts for supplies or services that are uniquely governmental—i.e., “clearly are not or have not been sold or offered for sale by any supplier to the public in the commercial open market.”61 Prime contractors and subcontractors should scrutinize their “flowdown” provisions to ensure patent indemnity provisions are used appropriately and should reject them when they are not.

**Patent Rights vs. Data Rights**

Although the same development activity under a contract may give rise both to a subject invention and to technical data or computer software in which the Government will obtain rights under the contract’s data rights clauses,62 those two forms of intellectual property rights are distinct from one another under the regulations. That is, the Government will obtain its patent rights according to the patent rights clauses and its “data rights” license rights according to the separate data and software rights clauses. The data rights clauses both under the FAR and the DFARS state:63

> Nothing contained in this clause shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government under any patent.

Therefore, while development may support both data rights and subject inventions, a contractor must be aware that there are different disclosure and marking regimes64 under the patent rights clauses and the data rights clauses. These requirements must remain distinct from one another or else a contractor may risk losing either its right to patent title or license or its ability to assert limited or restricted rights for items that were developed at private expense prior to a Government contract.

**GUIDELINES**

These Guidelines are intended to assist you in understanding how to recognize and address your obligations and rights with respect to patents under Government contracts. They are not, however, a substitute for professional representation in any particular situation.

1. Remember that if your company conceives of or first reduces to practice an invention under a Government procurement contract that includes the standard patent rights clauses, then you must disclose that invention to the Government promptly in accordance with the contract requirements.

2. If you make this disclosure, then you may elect to keep title to the patent or not, in your discretion. If you elect to retain title, the Government will still get a very broad license to practice the patent. But even if you decline title, you will still get a complete license to the patent.

3. Ensure that your company has in place a procedure requiring engineers and other personnel engaged in development work to track and to record on a standardized form the progress of development regularly (monthly, for example) at the lowest component level. Tracking development this way will help assure that you will know when an item, component, process, or software has been “developed” for data rights purposes and whether you may also have a reportable “subject invention.”

4. Establish a position within the development side of your business with responsibility for reviewing all developmental activity and being a liaison with intellectual property counsel.
This will help ensure that subject inventions are recognized so that they may be timely and properly disclosed.

5. Make certain that you have a process for disclosing subject inventions to Contracting Officers under Government contracts, again using a standardized form—either a DD Form 882 for DOD contracts or a form patterned after the 882 for other agencies. Typically, these procedures should involve coordination between your company’s engineering, legal, and contracts departments.

6. Make sure that your process also encompasses the regular reporting on subject inventions required by the FAR patent rights clauses, including the interim and final contract reports on subject inventions as well as required reports on invention utilization.

7. Consider establishing a group or committee responsible for deciding whether to file patents on subject (or any) inventions or whether instead to hold the development as a trade secret. This decision invites an analysis of the potential commercial marketplace, the ease of reverse engineering, and your company’s ability to police and enforce patent rights.

8. Ensure that the contract and subcontract organizations are attuned to reviewing solicitations and “flowdown” terms and conditions for conformance to the FAR patent rights clauses, authorization and consent alternates, and patents indemnity provisions.

REFERENCES


11/ FAR 27.302.


13/ See 48 C.F.R. subpt. 927.3 (DOE); 48 C.F.R. subpt. 1827.3 (NASA).

14/ FAR 27.301.

15/ FAR 27.301 (emphasis added).

16/ See, e.g., Technitrol Inc. v. United States, 440 F.2d 1362 (Cl. Ct. 1971).

17/ FAR 27.301 (emphasis added).

18/ FAR 27.301.

19/ Technitrol, Inc. v. United States, 194 Ct. Cl. 1362, 1436 (Cl. Ct. 1971) (quoting 1 Walker Patents § 45).


22/ Id.
25/ FAR 27.303(a).
26/ FAR 27.303(b).
27/ FAR 27.303(c).
28/ E.g., FAR 52.227-12, para. (g).
29/ Compare FAR 52.227-12, paras. (g)(1)(patents), with DFARS 252.227-7013, para. (k) (technical data).
30/ E.g., FAR 52.227-12, paras. (b), (c).
31/ E.g., FAR 52.227-12, paras. (d), (e).
32/ FAR 52.227-12, para. (c)(1) (emphasis added); see also FAR 52.227-11, para. (c)(1).
34/ FAR 52.227-12, para. (c)(1); see also FAR 52.227-11, para. (c)(1).
35/ FAR 52.227-12, para. (c)(1); see also FAR 52.227-11, para. (c)(1).
36/ DFARS 253.303-882.
37/ See FAR 52.227-11, para. (f)(2), 52.227-12, para. (f)(2), (5).
38/ See e.g., DFARS 252.227-7014, para. (a)(7); 227.7203-4(b); DeVecchio, “Licensing Computer Software,” Briefing Papers No. 04-3, at 7 (Feb. 2004).
39/ FAR 52.227-12, para. (c)(2); see also FAR 52.227-11, para. (c)(2) (within two years of disclosure).
40/ FAR 52.227-12, para. (e)(1); see also FAR 52.227-11, para. (e)(1).
41/ FAR 52.227-12, para. (e)(1); see also FAR 52.227-11, para. (e)(1).
42/ FAR 52.227-12, paras. (c)(3), (d)(3); see also FAR 52.227-11, paras. (c)(3), (d)(2).
43/ FAR 52.227-12, para. (d)(4); see also FAR 52.227-11, para. (d)(3).
44/ E.g., FAR 52.227-12, para. (d), (e).
46/ FAR 27.301.
47/ E.g., FAR 52.227-12, para. (b).
48/ FAR 52.227-12, paras. (f)(7), (f)(8), (h).
49/ E.g., FAR 52.227-12, para. (d).
50/ E.g., FAR 52.227-12, paras. (d), (e); see FAR 52.227-12, para. (j) (regarding “march-in rights”).
52/ 28 U.S.C.A. § 1498(a) (emphasis added).
53/ 413 F. Supp. 2d at 607.
54/ Id.
55/ Id. at 609.
56/ See FAR 27.201-2.
57/ FAR 52.227-1, para. (a).
58/ 413 F. Supp. 2d at 609.
59/ Id. (also holding that the university was not entitled to assert a defense that it was using the patented inventions under the license granted to the Government by the Bayh-Dole Act because such “Government license defense” belongs to the Government, not a private third party).
60/ FAR 52.227-3, para. (b).
61/ FAR 27.203-1(b).
62/ FAR 52.227-14; DFARS 252.227-7013, -7014.
63/ FAR 52.227-14, para. (i); DFARS 252.227-7013, para. (i), -7014, para. (i).