Statement by Norman A. Robins
Vice President, Technological Assessment and Strategic Planning,
Inland Steel Company
Before the Subcommittee on Interior and Related Agencies
of the House of Representatives Committee on Appropriations
February 4, 1987

My name is Norman A. Robins. I am Vice President, Technological Assessment and Strategic Planning, for Inland Steel Company, but I am here today in my role as Chairman of the Steel Industry/Federal Laboratories Initiative, formerly known as the Keyworth Initiative.

I am pleased to once again have the opportunity to appear before you on behalf of the Initiative. This is the third time that I have had this pleasure, but it is the first time I can say that I am optimistic that some significant experimental work may actually soon begin.

Of the approximately $9.1 million that Congress has appropriated to the Department of Energy for the Initiative thus far, the Department had, up until two weeks ago, released only about half a million dollars, which went to Argonne National Laboratory for preliminary work on the electromagnetic casting of sheet steel. Just two weeks ago, the Department released another million dollars for this effort, which accounts for the optimism I expressed before, but there has still been no work started on the two other major parts of the Initiative -- direct steelmaking, and thermomechanical processing.

You may recall that the purpose of this Initiative is to try to apply some of the advanced technology and scientific expertise residing in the national laboratories to the development of "leapfrog" technology for the U. S. steel industry -- not only as a means of enhancing the long-term competitiveness of the steel industry, but also to serve as a model of how the capabilities of our national laboratories can be brought to bear on the improvement of our industrial competitiveness in general.

The Initiative arose out of an early 1984 meeting of the President's Commission on Industrial Competitiveness, at which the suggestion was made by "Pete" Love, chairman of National Steel Company, that such use of the national laboratories could both serve the needs of U.S. industry and meet the need expressed previously by the Packard report for a new mission for several of the laboratories. Jay Keyworth, also a member of the Commission, as well as Science Advisor to the President, called the top technical people of the steel industry together to determine if such a possibility was realistic. Although extremely skeptical at first, the industry people became convinced through subsequent discussions and interaction with the laboratory scientists that it was. We then organized four task groups to define an appropriate program, which was completed by the end of the summer in 1984.

The program defined was a two-year exploratory program involving primarily Argonne and Oak Ridge National Laboratories and the National Bureau of Standards, with $10 million per year to be spent at the two national laboratories and $2.5 million per year at the NBS. The industry

contribution to this program was to be the equivalent of fifteen full-time industry scientists working in the laboratories, not just to aid in the work itself, but also to provide insight into the realities of applying technology in the manufacturing environment and to facilitate the transfer of the technology after it was developed. In today's terms, this industry contribution is valued at well over $2 million per year.

Unfortunately, Mr. Keyworth was unable to get the money for the Initiative into the President's budget for either FY85 or FY86. In fact, despite the fact that it was initially sponsored by one of its own members, the Administration has generally been unsupportive of the idea. However, by this time, we in the industry had become enthusiastic about it, and so we went directly to the Congress for support. Congress responded by appropriating $7.1 million for FY86 in December of 1985, even though the Department of Energy testified against it. However, the President promptly deferred the expenditure, and it was not until Congress passed a supplemental appropriations bill in June of 1986 that the money became available to DOE.

Thus, in June, 1986, we had a spendable appropriation of $7.1 million, enough for about 9 months of work; we had a program for the Initiative that had been developed by a highly capable multi-skilled team of industry, university, and national laboratory scientists; we had the expressed willingness of the American Iron and Steel Institute, which represents more that 50 steel companies, to participate in the Initiative under the terms of the legislation by providing direct cost-sharing in the form of industry scientists assigned to work in the laboratories; and we had the interest and involvement of the management and technical people at the national laboratories to get on with the work.

You might have thought that these circumstances would have led to a rapid startup of the program -- but they didn't. The Department of Energy felt that it needed to reexamine the technical base of the program, breaking it into pieces to be implemented separately; that it needed to interpose its own hired technical consultants between the industry experts and the laboratory work; and that it needed to manage the program pretty much on its own, relegating the industry's role to essentially that of an advisor -- and these are only three of the more odious features of the Management Plan that DOE initially drew up for the Initiative. This approach to what was intended to be a working partnership between the industry and the national laboratories was not workable, and so we could not accept it. We have spent the last seven months since then working with DOE to try to develop a management approach that could work. After many discussions and several redrafts of the management plan, we are now much closer to agreement. In fact, I believe that the plan we end up with will set a new standard for cooperative ventures between the DOE and industry in general. I think that it was in recognition of this, and of the time that has been wasted so far, that DOE recently released the additional $1 million to Argonne.

I should point out that, even with the limited effort thus far, there have been some accomplishments at Argonne. Scientists there have demonstrated that the waves created on the surface of a molten metal by high velocity gas flowing over the surface can be suppressed by electromagnetic fields -- which is important to the ability to achieve

sufficient rates of heat transfer to solidify the molten steel strip before it leaves the electromagnetic "mold" of the caster. More importantly, they have also demonstrated that an electromagnetic field can support molten metal, which lends considerable credence to the overall concept of electromagnetic casting. Because of these "head start" experiments, Argonne is ready to expand the activity to planned levels as fast as DOE releases the funds.

Now that we are finally at the point where real work is beginning, it is appropriate to consider what additional funding will be required in FY88 to support it. In addition to the initial appropriation of $7.1 million dollars in FY86, Congress last year appropriated $2 million for FY87 (House Joint Resolution 738, Continuing Appropriations FY 1987). I understand that last week the Department of Energy asked Congress to rescind $1 million of this $2 million FY87 appropriation, but to do so would certainly hamper the orderly implementation of the full Initiative.

At the time of the FY87 appropriation, it was stated (Congressional Record, H 10880, October 15, 1986) that "...The managers agree that the annual Federal commitment of about $7,500,000 for the steel initiative is a reasonable target but, because of the availability of funds previously deferred, only $2,000,000 is required in fiscal year 1987 to meet that commitment." Naturally, I am pleased at this recognition of the necessity and desirability of continued funding for the Initiative. However, I would be remiss if I did not point out that the program that was developed by the industry/university/ national laboratory teams actually requires about $10 million per year. Nevertheless, in view of the fact that work in earnest is only now getting underway, I believe that an appropriation of $7.5 million will be adequate to support the effort through FY88. With the total amount of funds then available over the next 20 months (to October 1, 1988), we would be able to fully implement not only the work on electromagnetic casting, but also the work on the other two legs of the Initiative that I mentioned earlier -- direct steelmaking, and thermomechanical processing. There are some in the industry, myself included, who believe that these other areas, especially direct steelmaking, have the ultimate potential of being of even greater value to the industry than electromagnetic casting. In fact, we had heard at one time that the Japanese were undertaking a $65 million program on direct steelmaking.

Finally, in addition to the appropriation, there is one other matter concerning the Steel Initiative on which I would like to solicit your help. Under current law, certain problems exist in the protection of information generated by the Initiative. Under the Freedom of Information Act, information actually generated through government-funded research, such as at a national laboratory, even though only partially government-funded, is available to the public. "The public," in this instance, as I understand it, could include foreign governments, foreign companies, and foreign universities, which certainly does not support the desire to enhance the relative competitiveness of U.S. industry. If the Initiative is to meet its Congressional intent to generate information which can benefit the U. S. domestic steel industry in preference to steel industries outside the U. S., changes in current law, or exceptions from current law for the Initiative, may be required. I am hopeful that some means for accomplishing this through legislation may be found, and I earnestly solicit your support of it to enable the Initiative to meet its intended objectives.

Thank you very much.

PROPRIETARY RIGHTS IN THE COMPETITIVE ERA

This paper was prepared by Professor Ralph C. Nash, Jr., George Washington University, who is a member of the Procurement Round Table ("PRT") Board of Directors. The PRT is a non-profit corporation whose purpose is to inform the public and the Congress about the federal procurement process, to study and report on procurement issues, and to make recommendations for improvement to the federal procurement system. The members of the PRT Board of Directors, who serve pro bono and as private citizens, have extensive experience and background in a wide range of Federal Government procurement areas.

HISTORICAL BACKGROUND

In the 1950s the Department of Defense was the first agency to recognize the need for a contractual policy on proprietary rights. Initially, it promulgated a policy permitting contractors to protect such rights by not delivering proprietary data relating to Government products. While this policy has been successfully used by NASA and some other civilian agencies since that time, DoD quickly concluded that it was unacceptable because such data was needed to maintain and operate military hardware. As a result, in 1964 the Department of Defense adopted a new proprietary rights policy that struck a delicate balance between the needs of the military services and the desire of their contractors for protection of proprietary rights.

This 1964 policy promised that the procuring agencies would honor rights to technical data pertaining to items, components or processes "developed at private expense" if contractors would deliver such data to the Government for use in operating, maintaining and repairing military hardware. In addition, contractors agreed they would not claim proprietary rights to technical data pertaining to items, components or processes developed as a part of the performance of Government contracts (excluding items, components or processes developed during IR&D/B&P efforts) and to certain categories of data such as form, fit and function data, and operation and maintenance manuals. The Government also implicitly agreed to pay a fair price for proprietary data it agreed to honor in those cases where it was necessary to buy proprietary rights to carry out its procurement mission (by specifically acquiring rights in data only under narrowly circumscribed conditions). The delicate nature of this balance was demonstrated by the fact that the policy contained a unique deviation provision prohibiting approval of deviations by the military services and requiring all deviations to be granted by the ASPR Committee.

This policy was honored, in the main, by the military services and industry for a decade and a half in spite of continual tensions. The major complaints were that industry was claiming proprietary rights in far more data than called for by the contract clauses and that the services were obtaining rights to proprietary data through mandatory "predeterminations" of rights not permitted by the policy. To deal with these problems, the contractual Rights in Technical Data clause grew longer and more complex but the fundamental policy remained essentially as it had been devised in 1964. In the late 1970s essentially the same policy was applied to computer software as it was added to the standard contract clause. It is interesting to note that one of the factors underlying the long adherence to this policy was the fact that the crucial term "developed at private expense" was never defined -- with the result that there was always uncertainty as to the precise scope of the protection being afforded to contractors.

The delicate balance collapsed in the early 1980s. One of the major factors in this collapse was the growing pressure, culminating in the adoption of the Competition in Contracting Act in 1984, for increased competition in defense procurement. Another factor was the adverse publicity from the procurement of spare parts at arguably excessive prices. A third factor has been the increased unwillingness of contractors selling commercial products and computer software to agree to the policy of giving the Government unlimited (i.e., commercial as well as Governmental) rights to technical data and computer software developed in the performance of Government contracts. As a result of these forces, the Secretary of Defense rescinded the strict deviation policy in August 1983 -- permitting the services to formulate new policies. The result has been that the full pressures of the competitive procurement process have been exerted more and more frequently by the Government to obtain greater rights in proprietary technical data and computer software.

At the same time, the agencies failed to devise a single proprietary data policy for inclusion in the Federal Acquisition Regulation. Since DoD and the civilian agencies could not agree on the basic premises supporting a unified policy, it was agreed that separate regulations would be issued. This has led to the creation of a FAR proprietary rights policy for the civilian agencies and a DoD FAR Supplement (DFARS) for the military services. At the time this paper was written, the FAR provisions were awaiting issuance and a revised DFARS has been published for comment.

Industry responded to this chaotic situation by turning to Congress for relief; and Congress, frustrated by the inability of the Government to promulgate a unified policy, passed two statutes in 1984 dealing with rights in technical data (P.L. 98-

525 covering DoD and P.L. 98-577 covering all civilian agencies except NASA). The DoD statute was amended in 1986 by P.L. 99-661 to provide further guidance on proprietary data policy. These statutes attempt to restore the balance that existed in the proprietary rights area in the 1960s and 1970s and should provide the foundation for the new proprietary rights policy of the 1980s. While they are dissimilar in minor respects, they should not prevent the Government from adopting a unified policy in the FAR. However, at the present time, the two policies in the FAR and the DFARS will remain as separate policies.

This paper suggests a totally new proprietary rights policy that will serve the Government into the 1990s. It proposes a rights in technical data policy as covered by the statutes and a rights in computer software policy which is outside of the scope of the statutes. It accepts neither the current statutes nor the old DoD policy as valid but strives to attain a new balance.

BASIC POLICY GOALS

A policy that can survive in the new competitive era must attain three major policy goals.

1. Provide the Benefits of Competition

The new policy should attempt to preclude contractors from creating a sole source position in the long-term manufacture of a product designed and developed under a Government contract. There can be little question that the Government needs to bring the full force of competition to bear on its procurements in order to obtain the products it needs within the amount of funds available. The benefits of competition have been well documented in Kratz & Gansler, Effective Competition During Weapon System Acquisition, NCMA Challenge Monograph Series, Vol. 1 (1985). This goal can usually be achieved, however, without destroying a contractor's proprietary rights. The following techniques are documented in Nash & Rawicz, Patents and Technical Data (Geo. Wash. Univ. 1983) as being usable for this purpose:

a. Competitive copying -- providing competitors performance specifications and samples of the product to be used in submitting competitive offers for the product in subsequent procurements. This technique is now mandated for spare parts procurements in 10 U.S.C. 2320(d).

b. Form, fit or function specification -- permitting competitors to design new products against the original performance specifications.

c. Licensing -- requiring the developer to license competitors or to grant the Government the right to sublicense competitors.

d. Leader-follower -- requiring the developer to establish a second source by subcontracting a portion of the production quantity or by licensing.

e. Specific acquisition -- purchasing the necessary rights in technical data to permit its use in competition.

f. Reverse engineering -- preparing detailed manufacturing drawings by analysis of the product without use of the proprietary drawings.

While none of these techniques can be used to obtain competition in all situations, they have all been used effectively by the military services in specific procurements. (DFARS 217.7201-2 contains limited guidance on the use of some of these techniques.) Thus, there are numerous techniques available to obtain competition without taking away all proprietary rights of contractors.

2. Protect Proprietary Rights

An equally important goal is that the policy protect the proprietary rights of contractors. It should be understood that contractors seeing a strong commercial market for their products will not give up all proprietary rights to those products in order to sell them to the Government. There are two broad classes of contractors that fall in this category: specialty subcontractors and vendors of software. If faced with a demand for Government unlimited rights in technical data and computer software, they can be expected to i) refuse to sell to the Government, ii) add a significant premium to the price, or iii) redesign so as not to use the proprietary information. None of these courses of action benefit the Government and all can be expected to increase the price of the design and development effort.

Fortunately, the Government does not need unlimited rights to carry out its mission. Under the present DoD policy, the procuring agency is given only two choices --to accept the data or software with proprietary markings (limited or restricted rights) agreeing to restrictions on its use or to take unlimited rights to use the data and to disclose it at will. The FAR policy provides a third choice -- to permit complete withholding of the proprietary data. However, another, superior choice is readily available -- to take full rights to use the data for Governmental purposes while preserving the commercial rights in the contractor. The Final Report of the President's Commission on Defense Management (June 1986) (the Packard Commission) makes the following recommendations in Appendix I:

a. Except for data needed for operation and maintenance,

the government should not, as a precondition for buying the product, acquire unlimited rights in data pertaining to commercial products or products developed exclusively at private expense. If, as a condition of the procurement, the government seeks additional rights in order to establish competitive sources, it should normally acquire lesser rights (such as directed licensing or sublicensing) rather than unlimited ones. The rights least obtrusive to the private developer's proprietary position should be selected.

b. The government should encourage a combination of private and government funding in the development of products. Significant private funding in this mix should entitle the developer to ownership of the resulting data, subject to a license to the government permitting use internally and use by contractors on behalf of the government. If government funding is substantial, the license should be on a royalty-free basis; otherwise, it should be on a reduced or fair-royalty basis. Whenever practicable, the rights of the parties should be established before contract award.

c. If products are developed exclusively with government funding, the contractor/developer should be permitted to retain a proprietary position in the technical data (a) not required to be delivered under the contract or (b) delivered but not needed by the government for competition, publication, or other release. Use by or for the government should be without additional payment to the contractor/developer.

These recommendations point the way to a new policy that will protect essential proprietary rights.

3. Simplicity

A third goal is of equal importance. The present DoD regulations and contract clauses are far too complex to be understandable. The new FAR is shorter and clearer but remains difficult to interpret. The regulations are problematic primarily because they do not contain clear explanations of the policies relating to very difficult issues. The contract clauses are complex because they are single omnibus clauses to be used for both research and development and manufacturing contracts and for both technical data and computer software. As a result, they are probably the longest clauses in the entire Government contracting process and certainly the most complex clauses currently in use. There is great doubt if either the regulations or the clauses are understood by even the seasoned veterans of the procurement profession.

Simplicity is necessary because the issue of proprietary

rights is one which is raised on a day-to-day basis in the negotiation and administration of contracts. The personnel charged with these responsibilities are generally not legally trained and cannot be expected to deal with esoteric legal terminology and undefined provisions. They need contract provisions and regulatory guidance that they can comprehend and work with. The Report of the Packard Commission recommends that this problem be addressed by preparing separate clauses for computer software and for manufacturing contracts.

ELEMENTS OF A NEW POLICY

The following elements are suggested for inclusion in the new policy for proprietary rights. Each element is discussed in terms of the current statutes and regulations and the prior experience that has been attained in using the policy.

1. Issuing a Single Regulation

One of the major goals of the FAR system was to provide uniform guidance to the Government and its contractors on procurement policy. Technical data and computer software are the major areas where the Government has been unable to formulate such policy. The Packard Commission identifies this problem and makes the following recommendation:

> The FAR System (a single uniform regulation applicable to all agencies, with supplements by agencies as needed) should be used to cover data rights. Without the discipline of a uniform system, similar terms and concepts are defined and treated differently. The differences are not justified. The FAR should provide common definitions of basic terms, since there is no apparent reason for agencies to use different definitions, a practice that causes great confusion.

Unfortunately, the statutes are not helpful in this area. Both of the statutes passed in 1984, while somewhat dissimilar in language, contained a requirement that they be implemented "as part of a single system of Government-wide procurement regulations." However, the DoD statute was change by P.L. 99-661 in 1986 to call for implementation in the DFARS. Thus, Congress has become part of the problem of arriving at a single unified regulation. The DoD statute should be amended to permit the FAR to contain the fundamental policies of the Government on technical data and computer software. Included in this new FAR should be all major alternative policies which are necessary for DoD and other agencies in the acquisition of hardware for their own use. Special policies can then be adopted by the DFARS and other supplemental regulations.

The FAR should also contain guidance on the methods of

obtaining competition on proprietary products without violating proprietary rights. As discussed above, these techniques are covered, in a limited way, in DFARS 217.7201-2. However, there is no coverage of this subject in the FAR with the result that civilian agencies are given no help when they face this difficult problem.

2. Separating Technical Data From Computer Programs

Recent studies of proprietary rights policy have concluded that clarity could be achieved and a more effective policy implemented by separately treating technical data and computer software. See the Report of the Packard Commission and the recent report of the Software Engineering Institute, Technical Report CMN/SEI-86-TR-2, Proposal for a New "Rights in Software" Clause for Software Acquisitions by the Department of Defense (Sept. 1986). The reasoning supporting this recommendation is that most computer programs are more like hardware than technical data since they are end products which generally function as a part of an operating system. Thus, they are not used to reproduce (manufacture), operate or maintain hardware as technical data is used, but rather are products which need technical data to tell the users how they are to be operated and maintained. (Some software, such as Computer Aided Manufacture ("CAM") software, drives a machine to make a part--like a drawing is used to manufacture a part.) Furthermore, the entire legal structure that has been developed in the commercial world to protect rights in computer programs (basically the techniques of the copyright law) is different than that used by the Government to protect rights in technical data. Thus, separate treatment of technical data and computer programs will permit the Government to more closely follow the commercial model in procuring computer programs.

The difficulty with the recommendation of the Packard Commission and the Software Engineering Institute is that they propose separate policies for technical data and computer software while their reasoning is based on the difference between technical data and computer programs. Under current policies, software comprises both computer programs and computer data bases. Most computer data bases, however, are much more like technical data in that they are compilations of information. Thus, it makes more sense to continue to treat computer data bases in the same way that technical data is treated. (Some data bases are an integral part of a program and should be treated as programs.) A further problem in this area is created by the current DoD policy which includes software documentation as technical data rather than as computer software. Software documentation relating to computer programs is an integral part of such programs and often contains the most valuable proprietary information possessed by the contractor. Recognizing this fact, the policy should treat software documentation of programs in the

same manner that it treats the computer programs. This is the position adopted by the FAR in spite of the fact that the current statutes define technical data to include computer software documentation (but give no further guidance on the treatment of computer software). For the purpose of clarity, the statutes should be amended to alter this definition. It is believed that such statutory change can be readily achieved since the statutes merely adopted the current DoD definition without considering the implications with regard to computer software.

In summary, it is recommended that the Government promulgate separate policies and contract clauses covering:

a. Information concerning items or processes such as technical data, computer data bases, and software programs which are substitutes for technical data, such as CAM software, and

b. End items such as computer programs, documentation of these programs, and computer data bases that are an integral part of a computer program.

This paper includes no further discussion of the policy that should be adopted for computer programs and their documentation.

3. Protecting Commercial Rights in Technical Data

The 1964 technical data policy adopted by DoD provided that all data would be provided with either "limited rights" or "unlimited rights" and gave unlimited rights to all data that pertained to an item, component or process not developed at private expense which did not fall within any of five listed categories: i) data resulting directly from performance of any Government contract or subcontract requiring research and development work, ii) changes to Government-furnished data, iii) form, fit or function data, iv) operation, installation, training or maintenance manuals and v) public domain data. The civilian agencies have followed a similar policy of taking unlimited rights in a large amount of technical data. This sweeping policy of taking unlimited rights was very restrictive of the proprietary rights of contractors since "unlimited rights" were defined as the --

> rights to use, duplicate, or disclose technical data, in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to do so.

Since proprietary rights in technical data are in the nature of a trade secret, this full right to disclose the data to the public gave the Government the right to effectively destroy the trade secret and, hence, to destroy the commercial value of the data. While a copyright could be preserved in such cases, there is

generally little commercial value in the copyright on technical data.

In recent years, the attitude of some Government agencies with regard to proprietary rights which derive from work on Government contracts has changed. It is being recognized more widely that there is public value in permitting contractors to retain commercial rights in innovative work done on Government contracts so that they can exploit such technological advances in the commercial marketplace, both in the United States and abroad. It is reasoned that the public gains through more domestic employment and a better balance of payments position. Further, it has been argued that the contractor that created the innovation is the most likely to exploit it and hence the most likely to provide the new technology to the American consumer. This reasoning has already resulted in the total change of Government contracts patent policy which now calls for the contractor to retain all commercial rights to inventions made in the course of performing Government contracts. See Public Law 96-517 (35 U.S.C. 200 et seq.) and the President's Memorandum on Government Patent Policy, Feb. 18, 1983. The same reasoning is applicable to rights in technical data.

The first recommendation of the Packard Commission, set forth above, partially adopts this reasoning. However, the current DoD statute, 10 U.S.C. 2320(a)(2), contains two provisions which muddy the waters in this area. These provisions state:

> (A) In the case of an item or process that is developed by a contractor or subcontractor exclusively with Federal funds, the United States shall have the unlimited right to -
>
> > (i) use technical data pertaining to the item or process; or
> >
> > (ii) release or disclose the technical data to persons outside the government or permit the use of the technical data by such persons.
>
> (G) The Secretary of Defense may -
>
> > * * * *
> >
> > (ii) agree to restrict rights of the United States in technical data pertaining to an item or process developed entirely or in part with Federal funds if the United States receives a royalty-free license to use, release, or disclose the data for purposes of the United States (including purposes of competitive procurement).

The civilian agency statute, 41 U.S.C. 418a(b)(1), contains equally troublesome language. This statutory language may require amendment or clarification to permit the Government to adopt a policy which gives broad protection to the commercial rights of contractors.

The policy that should be adopted to accomplish this purpose of protecting commercial rights is to provide for an intermediate type of right between limited rights and unlimited rights. This new type of right should permit the contractor to treat all data generated on a contract as proprietary giving the Government the right to use the data for internal purposes and requiring the licensing of other contractors to use the technical data to achieve competition on Government procurements. In lieu of the licensing requirement the policy could permit the Government to sublicense others for this purpose. The former technique is preferable because it permits the contractor to deal directly with the companies using the data and saves the Government from being in the undesirable position of having to serve as a middleman in the negotiation of the terms of the license. In either case, the contractor should be required to provide technical assistance to licensees to ensure that they are able to use the data to successfully manufacture the product. The license granted by the contractor would, of course, be limited to work for the Government and would prohibit use of the technical data on commercial or foreign work. It would apply to all data originated in the performance of the contract without regard to the source of funds. Thus, it would preclude the current situation where contractors claim rights to portions of the data delivered under their contracts and the parties then enter into lengthy negotiations over the propriety of placing limited rights legends on specific items of data. The Air Force has used licensing policies of this nature for a number of years with considerable success and the adoption of such a policy was recommended by the OSD Technical Data Rights Study Group in its report, Who Should Own Data Rights: Government or Industry? Seeking a Balance (June 1984).

While the FAR contains no mention of this type of policy, the proposed DFARS includes recognition of both types of licensing. It provides in the standard technical data clause for "Government purpose license rights" giving the Government the right to license competitors of the contractor to use the data only for competition on Government contracts. Such rights are used in three situations under this proposed policy:

a. If the contractor has funded over 50% but not all of the development cost of the item, component or process, and the contracting officer does not determine that unlimited rights are required (DFARS 227.472-5(b)),

b. If the contractor is a small business firm or nonprofit organization that agrees to commercialize the technology and that has funded part but not all of the development cost of the item, component or process, and the contracting officer does not determine that unlimited rights are required (DFARS 227.472-5(b)),

c. If the contractor has funded less than 50% of the development cost of the item, component or process and agrees to commercialize the technology, and the contracting officer determines that the Government does not need unlimited rights (DFARS 227.472-7).

Proposed DFARS 227.474-3 also permits the use of direct licenses from the contractor to competitors but it states that such provisions are generally not appropriate for other than high-dollar-value procurements. These provisions are a first step in the recognition of these licensing techniques. However, they are confusing and almost completely lacking in guidance for contracting officers who are expected to implement them. They also adopt the most difficult licensing technique (the Government sublicense) as the standard technique, relegating the preferable technique (direct licensing) to a subsidiary role.

The difficult problem which has not been addressed by any of the studies or discussions of a licensing policy is whether it should be applied to all technical data generated on a contract. It has generally been assumed (by the Air Force, for example) that licensing is applicable to technical data that would otherwise be limited rights data, i.e., data meeting the test of pertaining to items, components or processes developed at private expense. The Packard Commission Report and the proposed DFARS go further in suggesting that licensing is a viable technique for data created with "mixed funding." This is in response to the requirement of the statutes that a policy be adopted for such data. See, for example, the new statute, 10 U.S.C. 2320(2)(E), stating:

(E) In the case of an item or process that is developed in part with Federal funds and in part at private expense, the respective rights of the United States and of the contractor or subcontractor in technical data pertaining to such item or process shall be agreed upon as early in the acquisition process as practicable (preferably during contract negotiations), based upon consideration of all of the following factors:

(i) The statement of congressional policy and objectives in section 200 of title 35, the statement of purposes in section 2(b) of the Small Business Innovation Development Act of 1982 (15 U.S.C. 638

note), and the declaration of policy in section 2 of the Small Business Act (15 U.S.C. 631).

(ii) The interest of the United States in increasing competition and lowering costs by developing and locating alternative sources of supply and manufacture.

(iii) The interest of the United States in encouraging contractors to develop at private expense items for use by the Government.

What is proposed here is to go further and apply the licensing policy to all technical data without regard to the source of funding--even that data generated entirely with Government funds.

If this new licensing policy is adopted as a third type of right, the issue arises as to when a contractor would qualify for this type of right in lieu of giving the Government unlimited rights. Here the current patent policy can be used as guidance. This policy allows commercial rights to be taken away from the contractor by giving the Government "march-in rights" in 35 U.S.C. 203 if such action is necessary --

(a) because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of subject invention in such field of use;

(b) to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;

(c) to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or

(d) because the agreement required by section 204 [giving preference for United States industry] has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204.

Similar tests could be used in deciding whether a contractor was entitled to license rights or in providing in the contract clause that the Government was entitled to subsequently take unlimited rights. In addition, the policy should permit the Government to take unlimited rights (subject to compensation for technical data that met the private expense test) if it was determined that sufficient competitors were not willing to enter into the license arrangement in order to compete for the Government work. This right is necessary to protect the Government in those situations

where the commercial marketplace is so competitive that competitors are unwilling to enter into licenses because of the potential restrictions that such licenses might place on their future commercial products.

In summary, it is recommended that the Government adopt a completely new standard policy permitting the Government to use all technical data relating to items, components or processes developed on Government contracts for internal purposes and requiring the contractor to license companies to use the data on Government competitions. This policy would apply without regard to the source of the funding of the development work. The limited rights and unlimited rights policies would be left in place for broad types of technical data not related to hardware, such as final reports on research contracts, and for those situations where the direct licensing policy was not appropriate or could not be agreed to.

4. Compensation for Licensing of Competitors

If the licensing policy recommended above is adopted, there remains the question of what compensation should be paid to the contractor for the licensing of competitors. The DoD statute appears to permit payments of royalties if the licensed data is private expense data or mixed funding data. Conversely, it appears to preclude payment of royalties if the data is Government expense data. The civilian statute is silent on this issue. If this policy is followed, the procuring agency and the contractor will be forced to agree on which category is applicable to each item of data generated on the contract. This cumbersome procedure should be avoided, if possible, since it is currently one of the most unproductive aspects of the Government's technical data policy. (Data validation challenges are consuming substantial resources of both the agencies and their contractors and are of questionable productivity in achieving the long-term mission of the agencies.) Thus, it is highly desirable to arrive at a policy that will base the compensation of the contractor on some factor other than the amount of contractor expense or mixed expense data that is included in the package provided to a competitor.

Fortunately, there is another basis for determining the compensation of a contractor that agrees to license competitors. The payment of a royalty for such a license can be properly viewed as fair compensation for the successful completion of a development effort. Furthermore, a policy that regularized such royalty payments would provide a powerful new incentive to contractors to develop products that were suitable for high volume production over a long period of time. It is exactly this type of new incentive that might serve the Government well in a period of budget stringency.

The questions would undoubtedly be raised as to whether the regular payment of such royalties would add to the overall cost of the procurement process and would result in undue profits to development contractors. With regard to profits, this is a particularly appropriate time to consider the adoption of such a policy in view of the fact that the proposed new DoD profit policy, promulgated in 50 Fed. Reg. 43200, significantly reduces the rate of profit on research and development work. Thus, the payment of a royalty to the developer when a product is produced by another contractor can be seen as a way of balancing the apparently inadvertent reduction of profits in this area. Further, it is a particularly good way of paying profit since it only pays for success. With regard to the question of whether this proposed policy would add to the overall cost of the procurement process, it must be recognized that the royalty would only be paid in selected circumstances. If licensees of the contractor were forced to compete with the contractor, the royalty would only be paid when a licensee won the competition. In this situation, the royalty can be seen as a modest competitive advantage which the Government is willing to give the contractor that developed the product. This competitive advantage would not be large enough to permit the contractor to include exorbitant costs in the price with the result that the payment of the royalty would still provide the major advantage of competition to the Government. The Kratz & Gansler Monograph indicates that in the past, the original developer has frequently won such competitions at substantially reduced prices. If this were to occur under the proposed policy, the Government would not pay the royalty at all. Further, the adoption of this royalty policy might greatly facilitate the achieving of competition because development contractors would regularly agree to license their technical data and to assist their licensees in using the data to manufacture hardware. Considering all of these factors, it can not be determined whether this proposed policy would increase or reduce the overall cost of procurement. However, it does not appear that it would entail substantial additional costs and there is some likelihood that the better incentives and greater competition would result in an overall decrease in costs.

The question of the amount of the royalty must also be addressed. The amount should be established at a rate between 1% and 5% of the price of the manufacturing contract based on two factors -- i) the overall technical competence which the contractor brings to the development effort and ii) the projected needs of the agency for the product being developed. A high royalty rate within this range is warranted when the contractor is providing the Government with a highly skilled development team that has a long history of success in the product area. Generally, such a contractor might be expected to have a portfolio of patented inventions or of private expense technical data that would otherwise be furnished with limited rights, but this would only be one element in this part of the determination.

A high royalty rate would also be warranted if the Government anticipated a relatively low expenditure of dollars in the production phase since this would provide the contractor a low base for computation of the royalty. It might be necessary to include an adjustment feature in the agreement in the event the Government's original estimate of its needs turned out to be highly inaccurate.

In summary, it is recommended that the Government adopt a policy that will compensate its development contractors by paying them a royalty when one of their licensees manufactures hardware which they have successfully developed. This royalty will provide additional incentive for successful development and will reward them for assisting a licensee in becoming a successful manufacturer.

5. Controlling the Techniques Used to Obtain Competition

As discussed earlier, there are a number of techniques available to achieve competition without violating the proprietary rights of contractors. However, the guidance on the use of these techniques is quite sparse and there appears to be a lack of understanding of all of the alternatives available to contracting officers. As a result, the military services have used several techniques in recent years which have created great antagonism among their contractors. Two techniques in particular have been seen as unfair methods of obtaining rights in proprietary data -- i) placing a time limit on limited rights and ii) requiring a contractor to submit alternate proposals granting the Government unlimited rights to data delivered under the contract. Neither of these techniques is necessary to achieve competition on military procurement and they should both be banned. At the same time, as recommended above, substantial guidance should be given on the legitimate techniques -- competitive copying, use of form, fit or function specifications, leader-follower, specific acquisition and reverse engineering -- as well as on the licensing technique recommended above.

Placing a time limit on proprietary rights proved to be a highly controversial technique when it was first used by the Air Force in 1983. The proposed time limits varied from two to five years and appeared to have no relationship to the expected period of time that the proprietary information might have commercial value. Thus, they were seen as arbitrary ways of using the Government's bargaining power to deprive contractors of legitimate proprietary rights. Unfortunately, the DoD statute contains very cryptic language on this subject. 10 U.S.C. 2320(c) states:

> (c) Nothing in this section or in section 2305(d) of this title prohibits the Secretary of Defense from prescribing standards of determining whether a contract

entered into by the Department of Defense shall provide for a time to be specified in the contract after which the United States shall have the right to use (or have used) for any purpose of the United States all technical data required to be delivered to the United States under the contract or providing for such a period of time (not to exceed 7 years) as a negotiation objective.

There should be no objection to a policy that removes stale proprietary legends from data. However, arbitrarily short time periods are an unfair means of taking away a contractor's rights without compensation. Proposed DFARS 227.474-4 ameliorates this problem somewhat by providing that the Government will normally receive Government purpose license (rather than unlimited) rights upon the expiration of the limited rights. However, since the entire issue has generated an undue amount of friction with little commensurate benefit to the Government, this policy should be abandoned and the statutory provision repealed if that is thought necessary.

The requirement for alternate proposals giving up all proprietary rights was adopted as standard policy by the Navy and has been used by all of the military services. It is a way of using the full force of competition to obtain a low price for a contractor's proprietary rights. This would appear to be inconsistent with a policy of honoring proprietary rights and may be prohibited by the statute. See 10 U.S.C. 2320(a)(2)(F) stating:

> (F) A contractor or subcontractor (or a prospective contractor or subcontractor) may not be required, as a condition of being responsive to a solicitation or as a condition for the award of a contract, to sell or otherwise relinquish to the United States any rights in technical data except --
>
> (i) rights in technical data described in subparagraph (C) [correction or change data, form, fit or function data, manuals or public domain data]; or
>
> (ii) under the conditions described in subparagraph (D) [release for emergency repair or use of a foreign government under restricted conditions and with notice to the contractor].

This statutory provision is included in proposed DFARS 227.472-4 without supplementation. Minimal additional guidance is included in DFARS 227.473-2. DoD should directly acknowledge that this technique is an undesirable means of obtaining competition and should ban its use.

It can be seen from this discussion that there is a great need for guidance on the ways to obtain competition without violating proprietary rights. Until such guidance is given, the forces driving for competition will impel procuring activities to try new techniques to obtain proprietary rights without adequate compensation to the contractor. What must be communicated is that the Government is far better served if it enlists the contractor's assistance in obtaining and using the proprietary information. In this way, the contractor can be used to provide technical assistance and effective competition can be more readily attained.

In summary, the Government should ban time periods on limited rights and competitive alternate proposals requiring unlimited rights. Further, substantial guidance should be issued on the acceptable ways of obtaining competition without violating proprietary rights.

SUMMARY OF REQUIRED ACTIONS

The specific actions required to implement the recommendations contained in this paper are:

1. Adopt a FAR section on technical data and computer programs containing the basic policies to be used by all agencies. This will require a joint effort by DoD and the civilian agencies. In order to simplify the issues, Congress should be requested to adopt a single statute relating to technical data.

2. Write the FAR so that it contains separate guidance and separate contract clauses for (i) information relating to items or processes such as technical data, most computer data bases, and software programs which are substitutes for technical data, and (ii) end items such as computer programs, documentation of these programs, and computer data bases that are an integral part of a computer program. The policies for the procurement of rights in the second category should be coordinated throughout the Government since many agencies now purchase such items.

3. Include in the FAR a new standard technical data policy giving the Government the right to direct the contractor to license the right to use technical data when competition is required. This will require an amendment to the data statutes and substantial new regulatory guidance to aid contracting officers in the implementation of the policy.

4. Include in the FAR guidance on the computation of the royalty that will be paid for the Government license to use technical data for competitive procurement purposes. This guidance will probably be general in nature since each agency will have to coordinate the royalty payment with their profit

policy on research and development contracts. The data statutes should be amended to permit such royalties when no proprietary data is involved.

5. Include in the FAR guidance on the techniques that are available to obtain competition without violating proprietary rights and ban the use of arbitrary time limitations on proprietary rights and the solicitation of alternate proposals giving up all proprietary rights.

-oOo-