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STATEMENT OF
AMERICAN PATENT LAW ASSOCIATION
FOR THE RECORD OF HEARINGS
CONCERNING INSTITUTIONAL PATENT AGREEMENTS
BEFORE THE
MONOPOLY SUBCOMMITTEE OF THE SENATE SELECT
COMMITTEE ON SMALL BUSINESS

June 21, 1978

The American Patent Law Association has members nation-wide including judges, law professors, and lawyers. Its members constitute about half of the lawyers in the United States who are involved in intellectual property matters. They come from private, corporate and government patent law practice. Its members represent a complete and full cross-section of client interests. APLA maintains a continuing awareness as to the need for intellectual innovation and industrial creativity.

We very much appreciate your invitation to speak to the operation of government patent policy, because we believe it to be of fundamental concern to the larger issues of:

*Enhancing economic growth and development,

*Maintaining a favorable balance of payments and trade for the United States, and

*Improving technology transfers.

Decline in Innovation Threatens Economic Expansion and Technological Superiority of the United States

We believe the operation of government patent policy to be most critical at this time because of the generally reported decline in innovation. On May 31 of this year, The New York Times reported that Stuart E. Eizenstat, the President's chief domestic policy advisor, advised the President in part:

> There has recently been perceptible decline in the kinds of industrial innovation needed to insure both economic expansion of our industrial sector and continued U.S. technological superiority.

Impressive statistics support this viewpoint. The proportion of gross national product (GNP) devoted to R&D is declining in the United States while increasing in Japan and Germany. In the U.S., it declined from over 3% in the mid-60's to 2.2% today; in Japan, it rose from 1.5% in the mid-60's to over 2% today. The growth rate of R&D spending in the U.S. is around 4.5%, 21% in Japan, and 15% in Germany.

There are other indicators as well. The share of U.S. patents issued to foreign applicants has doubled in the last 14 years. Capital investment is growing more slowly in the U.S. than it is elsewhere: 14% in the U.S., 30% in Japan, 20% in Germany, and the U.S. trading position, even in high technology products, has deteriorated.

In view of these alarming trends, it is appropriate that the Congress address the federal government's expenditure of billions of dollars for research and development. How can these expenditures be directed and handled so as to have the maximum favorable impact on the economy?

One significant aspect of such an inquiry is certainly government patent policy.

Institutional Patent Agreements As Part of Overall Government Patent Policy

The current part of this Subcommittee's hearings deals with Institutional Patent Agreements (IPA's). We are aware that the government/university interface creates situations unique to IPA's. However, certain underlying principles apply across-the-board to government patent policies whether federal funds be used to support R&D in universities, other not-for-profit organizations or profit-oriented corporations. We therefore find it convenient first to address those underlying principles; their applicability to IPA's will be apparent. Later we shall discuss some issues unique to IPA's.

Government Patent Policy -- Diverse Views

Government patent policy is a highly emotional issue as to which advocates generally take one of two extreme positions: (1) that the government should acquire title to inventions developed under its R&D activities (the "title"

policy), or (2) that the inventing contractor should retain title to such inventions with the government acquiring a free license to utilize the invention for governmental purposes (the "license" policy). Congress has legislated inconsistently on this policy issue, applying differing guidelines and policies sometimes to government agencies, sometimes to individual programs of an agency, and sometimes to R&D programs which cross agency lines.

Moreover, this issue is not only an emotional one but is highly complex, involving interrelationships between economic, scientific, business and social considerations. To illustrate this complexity, both supporters of the license policy and supporters of the title policy used the same illustration to support their conceptions in the 1965 patent policy hearings before Senator John L. McClellan. The government title proponents cited the example of penicillin as illustrating the achievement of price reduction and widespread competition where no one possessed exclusive patent rights to that drug. The license policy proponents responded, however, that penicillin was discovered in 1929 and was not made available until 1944, and only then after the government paid for its commercialization. It was argued that had patent rights been available, industry would have marketed the drug much sooner.

The issues also become clouded because of the emotionalism involved with allegations of "windfall profits" going to government contractors, concerns regarding "government giveaway policies," and hints of valuable technology being suppressed by industry. These concerns have far too often controlled government patent policy issues, yet we are aware of no factual basis that would give credence to these concerns. On the contrary, government-supported studies negate them. More specifically, approximately 10 years ago, the Federal Counsel for Science and Technology supported the largest, most thorough study ever conducted on the issue of government patent policy --commonly referred to as the Harbridge House Report. This report made the following findings:

*Government ownership with an offer of free public use does not alone result in commercialization of research results.

*A low overall commercial utilization rate of government-generated inventions has been achieved (approximately 12 percent); that rate doubled, however, when contractors with commercial background positions were allowed to keep exclusive commercial rights to the inventions.

*"Windfall profits" do not result from contractors retaining title to such inventions.

*Little or no anti-competitive effect resulted from contractor ownership of inventions because contractors normally licensed such technology, and where they did not, alternative technologies were available.

Policy Should Be Tested By How Well It is Designed to Maximize Commercial Utilization and to Minimize Administrative Burden

In view of these studies, we believe that a rational, sensible government patent policy should address the real issues that confront the R&D sponsoring agencies, rather than the emotional issues. The problems are not those of "windfall," "giveaway," "suppression" or adverse competitive effect. They are, rather, those of encouraging commercial utilization of the results of government sponsored research so that the public will receive its benefits, and of reducing the administrative work-load to the extent consistent with the overall public interest.

Patent Incentive Encourages Private Development of Government Funded Inventions for Benefit of Public

The idea that what the government pays for belongs to the people is not only appealing, it is true. The question is: What instrumentalities can be brought to bear to maximize the possibilities that the people will indeed have available the fruits of their government's expenditures? Non-exclusive licenses to undeveloped inventions, offered by the government or anyone, have few takers, whereas patent ownership or

exclusive licenses of sufficient duration are much more likely to attract the money and talent needed to make and market real products to meet consumer needs.

The aforementioned Harbridge House report asks a key question as to whether permitting firms to retain exclusive rights will, on balance, promote invention utilization better than acquisition of title by government. The study data indicates that the answer is "yes" in at least such circumstances as (1) where the inventions as developed under government contract are not directly applicable to commercial uses and the inventing contractor has commercial experience in the field of the invention; and (2) where the invention is commercially oriented but requires substantial private development to perfect it, applies to a small market or is in a field occupied by patent sensitive firms and its market potential is not alone sufficient to bring about utilization.

A proper government patent policy should put real world economics first. It should be based on the premise that if the results of federally sponsored R&D do not reach the consumer in the form of tangible benefits, the government has not completed its job and has not been a good steward of the taxpayer's money. It should recognize that the right to exclude others conferred by a patent, or an exclusive license under a patent, may be the only incentive great

enough to induce the investment needed for development and marketing of products. Such a policy thus couples the power of the patent system with the power of federal research expenditures to meet the needs of society.

The nature and detailed provisions of Institutional Patent Agreements should be judged by how well they make use of these principles.

Availability of Best Qualified Industry to Conduct and Commercialize Results of Government Funded R&D is Adversely Affected by Unduly Restrictive Government Patent Policy

Industry, since it alone is capable of bringing an invention to practical public enjoyment, plays a vital role in effectuating the ultimate purpose of federal R&D funding. This can occur by operating under license from an institution having an IPA, or by itself carrying out R&D under direct federal funding and then following up to commercialization. There has been considerable discussion of the extent to which industry will cooperate in government R&D programs under a title policy, and there is a frequently quoted position that there are always corporations standing in line for government R&D contract monies. This often and in fact usually is true. This does not say, however, that those corporations, or segments of corporations, with the most advanced expertise in a particular R&D program will be the ones to accept R&D contracts, particularly when the contract is in a highly proprietary and commercial area of

the company or where considerable risk capital has been invested. In the hearings before the House Subcommittee on Domestic and International Scientific Planning and Analysis of the Committee on Science and Technology (94th Congress, Second Session), cases were cited where lack of proper proprietary protection resulted in the exclusion of significant corporate technical participation in governmental contract work. These were not directly related to IPA's, nor always limited to the "title" versus "license" policy, but the experience is clearly instructive on the subject. Although these cases are already of public record at pp. 1204-1207 of the report of the hearings, their significance is of sufficient relevance to the issue at hand that we quote them here, together with supplemental comments which accompanied them:

Case No. 1.—The Westinghouse Electric Corp. believes that they have made some very basic and fundamental discoveries in the technique of maintaining and regulating an arc discharge in a gaseous medium. The discoveries which Westinghouse Electric have made in connection with arc discharge resulted from their studies over the years of the phenomena of arc discharge. It appeared to technical representatives of Westinghouse Electric that these recent discoveries could well have application to the development of high-velocity wind tunnels capable of producing velocity of the order of Mach 15. Westinghouse Electric informally inquired of NASA whether or not a contract for research and development with NASA to apply their discoveries in the field of arc discharge to the development of a high Mach number wind tunnel would permit them to retain commercial rights in inventions made in the performance of such a contract. Westinghouse Electric appeared to believe that there would be further demand for such wind tunnels not only by the Government but by industry, and the retention of commercial rights in inventions would enhance their competitive position in supplying wind tunnels, utilizing their techniques. Westinghouse Electric was advised that the only procedure to accomplish this objective is the waiver under subsection 305(f) of the NASA Act, as implemented by NASA regulations. These regulations provide for the granting of waiver by the Administrator of NASA upon recommendation of the NASA Inventions and Contributions Board, and therefore any specific action cannot be foretold. These regulations do provide that waiver may be granted if it is shown that the invention has only incidental utility in the conduct of activities with which the Administration is particularly concerned, and has substantial promise of commercial utility. It would appear that any invention in the field of wind tunnel design would not be said to have only incidental utility in the conduct of activities with which NASA is concerned. Accordingly, this provision for waiver offered little promise that a waiver of the Government's rights in these inventions could be obtained.

Another provision for waiver is where it is shown that the invention is directed specifically to a line of business of the contractor with respect to which contractor's expenditure of funds in the field of technology to which the invention pertains has been large in comparison to the amount of funds for research and development work in the same field of technology expended under the contract of the administration in which the invention was conceived or first actually reduced to practice. It would appear that any invention in the field of wind tunnel design would not be likely to qualify under this provision. None of the other provisions for waiver appeared to offer better hope to obtain commercial rights. Accordingly, Westinghouse Electric now has the matter under consideration. It should be added that Westinghouse Electric has contracts with NASA in fields of technology where their commercial position is not so critical.

Case No. 2.—The Electric Storage Battery Co. was requested by McDonnell Aircraft Co., prime contractor for Project Mercury, to accept a subcontract for the development of a battery to be used in Project Mercury. Since the research and development to be undertaken pursuant to this request would parallel the Electric Storage Battery Co.'s own sponsored research program, and since the inventions emanating from this undertaking would be subject to the patent provisions of the National Aeronautics and Space Administration Act, Electric Storage Battery refused to enter into this subcontract with McDonnell Aircraft Co. Had it not been for the development of an alternative power supply by another NASA contractor, the refusal of Electric Storage Battery to take a subcontract with McDonnell Aircraft merely because of the NASA patent provisions could have seriously impaired or delayed Project Mercury.

Case No. 3.—The Motorola Co. has made certain discoveries in photographic processes and techniques which appear to have substantial promise of commercial utility. These discoveries in photographic processes and techniques were made

independently of any Government sponsorship and are presently the exclusive property of the Motorola Co. It appears, however, that these photographic processes and techniques may have application in the solution of problems of photography in space exploration, and officials of the Motorola Co. approached NASA to suggest a research and development contract to apply these techniques to problems in outer space photography but desired to ascertain whether such an NASA contract would result in the Government acquiring title to any of these inventions.

The answer to the foregoing question depends upon whether these inventions have been "actually reduced to practice," a matter not easily ascertainable. It is the policy of NASA not to acquire, except by direct purchase, rights in inventions that have been actually reduced to practice prior to the placing of a contract with NASA. Because the investigations undertaken by Motorola are still in an experimental stage, some questions remain as to whether or not their present state of development would, in each case, be considered as an "actual reduction to practice." Moreover, the Motorola Co. desires to continue their own research and development program in the commercial applications of these new photographic techniques and processes, and therefore desires to retain commercial rights to all new inventions. The NASA patent provisions leave in doubt the desirability of making a proposal to NASA to support such investigation.

Case No. 4.—The General Electric Co., under contract with an agency of the Department of Defense, had successfully completed the basic research and study to indicate the applicability to missile guidance of certain phenomena previously discovered by the General Electric Co. relating to superconductivity. NASA desired to join with the Department of Defense in applying these discoveries in superconductivity to space vehicle guidance. This joint sponsorship would, of course, necessitate the incorporation in the contract of the special NASA patent provisions which are less favorable to the contractor than those of the Department of Defense. The contractor refused to take the contract under such joint sponsorship, and presumably this investigation, if undertaken, will have to be supported solely by the Department of Defense. It should be added that the General Electric Co. is participating under research and development contracts with NASA in many other areas of research and development, and their reluctance to accept NASA's support in this specific case was undoubtedly attributable to their reluctance to grant any rights in the background inventions involved in this undertaking.

Case No. 5.—Narmco Industries, Inc., of San Diego, Calif., was requested by NASA to undertake some research investigations bearing upon the development of new structural materials for outer space application which would involve the impregnation into plastic or metal structures of fibers or disk-like flakes of ceramic or glass materials. Narmco would be responsible for the development of the end material but would be required to seek from the glass or ceramic industries the improved fibers and disk-like materials which were to be incorporated into the plastic or metal matrix. On investigation, Narmco found that the glass and ceramic industries were reluctant to participate in this program if their participation would subject them to the patent provisions of the NASA Act. Because of these difficulties, this proposed investigation did not materialize. However, it is understood that Narmco has accepted contracts with the Departments of the Air Force, Army, and Navy for the above research and development investigations.

Case No. 6.—The Associated Piping Engineering Co., of Compton, Calif., has apparently developed, independently of any Government sponsorship, a novel process for welding tungsten containing alloys. It appears that the process developed by Associated Piping could be applied to tungsten or molybdenum to achieve a NASA objective which is important in our space program. The NASA patent provisions, which would be required to be contained in such a contract, are presently delaying the placing of a contract with this firm. It appears that Associated Piping has a well-established proprietary position in this field. Not only would they be required to give the Government patent rights, if they were to enter into a contract, but would also be required to convey information developed under such a contract and background information under conditions where they may be made available to the public.

Case No. 7.—The Lesona Corp., subsidiary of Patterson-Moof Corp., was approached by NASA to develop a carbon dioxide analyzer for use in Project Mercury. Lesona, the owner of patents for this subject matter, had granted an exclusive license to another firm under all inventions covered by its patents and all improvements therein. Under the NASA patent provisions required in the proposed NASA contract, the Government would acquire exclusive rights in in-

ventions made in the performance of work under the contract and Lesona could be held to have violated the terms of its exclusive license agreement. Even though Lesona wanted to accept the NASA contract, the officials of the company decided that it would be in the best interests of the company to refuse the work with NASA.

The foregoing examples typify the difficulties encountered as a result of the patent provisions of the National Aeronautics and Space Administration Act. However, there is reason to believe that many other industrial firms are reluctant to do business with NASA because of the patent provisions of the act. NASA would not be aware of this reluctance because these firms have not been seeking business with NASA. We understand that the Industrial Nucleonics Corp. has, in testimony before the Congress, indicated their reluctance to do business with the Atomic Energy Commission because of the patent policy of AEC. We also understand that Industrial Nucleonics, for the same reason, will not do business with NASA. It is also understood that the Garrett Corp., of Los Angeles, would be unwilling to accept contracts with NASA in fields of technology related to their commercial business if inventions would be likely or necessary in the fulfillment of the work requirements of the contract. We also have reason to believe that Statham Instruments, of Los Angeles, would refuse to accept research and development contracts of NASA in certain fields of technology.

Because of its particular applicability to the problem at hand, the subcommittee desires to draw attention to an elaboration of a case cited in the foregoing. This case involves one of the leading space research organizations, and the communication here reproduced is from one of the Nation's best known industrial scientists.

GENERAL ELECTRIC CO.,
Syracuse, N.Y., December 17, 1959.

Hon. ERWIN MITCHELL,
Chairman, Patent Subcommittee, Committee on Science and Astronautics, House of Representatives, Washington, D.C.

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For many years various elements of the General Electric Co., principally its research laboratory and general engineering laboratory, have been conducting studies of superconductivity phenomena in the field of cryogenics; i.e., studies of the electrical conductivity characteristics of materials which have been cooled to temperatures near absolute zero. For about 10 years, such studies were financed solely by General Electric Co. These tests and studies indicated the feasibility of using supercooled materials to produce a gyroscope which should have significantly greater accuracy than conventional gyroscopes. In the course of this research and development work, several inventions have been conceived and either actually reduced to practice, or constructively reduced to practice, by the filing of patent applications in the U.S. Patent Office.

In March of 1959, the Boston Ordnance District, Ordnance Department, U.S. Army, awarded contract DA-19-020-ORD-4831, which authorized General Electric to perform certain exploratory research directed toward the ultimate development of such a cryogenic gyroscope. In the above contract, the above prior General Electric inventions were excluded from the license grant of the "patent rights" article.

In October 1959, negotiations were started to supplement the initial contract by authorizing further work to include the final evaluation of the gyroscope motor and bearing devices, the completion of a laboratory model gyroscope which was then in an advanced stage of construction, and an evaluation of the motor and bearings when combined in one device. We were advised that approximately half of the financing for this further work was to be supplied by NASA, and that as a consequence, the NASA "property rights in inventions" clause must be included in the contract.

Some of the inventions excluded from the license grant of the original contract had not been actually reduced to practice at the time this proposed supplemental

agreement was under negotiation. To accept the supplemental agreement with the NASA "property rights in inventions" clause would have meant that when these inventions were first actually reduced to practice, they would become the exclusive property of the United States, subject to some possibilities of waiver, of which, however, General Electric could not, under NASA procedure, be contractually assured.

The future of such cryogenic gyros is not known with certainty at this time. They appear to have applications of interest to the commercial business of the General Electric Co. as well as potential applications for Government purposes. The patent rights represented by the inventions in question represent means by which General Electric may hope partially to recover the sums expended by it in this and related developments, not all of which have been successful, and to develop additional capital to continue research which will lead to future developments. For these reasons, the NASA terms were not acceptable to and were not accepted by the company.

As a result of subsequent negotiations, a contract with a non-NASA agency has been received which contains nonoppressive patent provisions and which permits the cryogenic work to go forward. While the parties were pleased that they could achieve this desirable end, such an alternative would not be available in every case. We believe, however, that it is clearly not in the national interest that NASA sponsorship of work in this field and under these circumstances be frustrated by a statutory requirement that it insist on patent provisions which, as prior testimony before this committee will show, most research oriented companies consider unfair, unreasonable, and unnecessary for any proper governmental purpose.

Very truly yours,

GEORGE L. HALLER.

The subcommittee's record contains evidence of other industrial firms, large and small, which have acknowledged reluctance to do research and development business with the Space Administration.

Finally, the subcommittee cannot ignore the candid and near-unanimous sense of disapproval which is being expressed for the current patent section of the Space Act by private enterprise. The ground swell of opposition to this part of the law, which has arisen in the relatively short period of 15 months of NASA operation, is remarkable. Even if there were no concrete evidence that the patent provisions of the Space Act are slowing down U.S. efforts to forge ahead in space exploration, this blanket dissatisfaction with the current law would be cause in itself for serious reappraisal.

As further examples, Harbridge House documented twenty-one cases of refusal to participate in NIH projects because of HEW patent policies.

IPA's Encourage Private Funding of University Research, Thus Supplementing Federal Funding

The reluctance of industry to expend money and talent where a reasonable patent incentive is not available is understandable. A company's resources are limited, and must be placed for the best balance of risk and return. The reluctance manifests itself in one or more of three principal ways where the patent incentive is lacking or where proprietary work is put at risk:

1. Taking a direct government R&D contract is inhibited.

2. Funding research at universities, or cooperation with them, is inhibited.

3. Use of corporate capital and personnel to develop a product for the public is inhibited.

The first and third points have been discussed above. The second point is of great significance to the well being and effectiveness of university research. As well stated by Senator Birch Bayh in his recent letter of May 1, 1978 to Mr. Foster A. Fettig, Office of Federal Procurement Policy, Office of Management and Budget, in the absence of a government patent policy vis-a-vis universities

similar to that now followed by DHEW and NSF (viz., use of Institutional Patent Agreements),

> ... not only would it be largely impossible for ... universities to obtain private investment in the further development of their inventions, but it would also severely handicap their efforts to obtain funding for research from non-federal sources (i.e. private industry) quite apart from any licensing efforts.

Private funding of university research is a valuable add-on to government funding in a number of ways:

*It enhances the general research capability of universities, upon which the government is dependent for much of its R&D results.

*It makes the taxpayer's dollars go further by supplementing federal funding.

*A private company's expertise and enthusiasm are brought to bear on a research program.

*Involvement of a private company in a program enhances the probability it will ultimately produce a product for consumer enjoyment.

We cannot stress too strongly that university/industry cooperation is absolutely vital to the success of government sponsored R&D. Enhancement, rather than discouragement, of this cooperation is and should be a policy goal of Institutional Patent Agreements.

The June 5, 1978 issue of Chemical and Engineering News, at pages 12-13, reported on the main concepts of a new biomedical research policy now in the process of formulation by Secretary Califano of the Department of Health, Education and Welfare. One of these concepts is:

> Close touch between those who are doing the very best basic work and those engaged in the vital task of applications research.

Although the report does not mention IPA's, since most applications research is done by industry, it is apparent that IPA's play, and should continue to play, a very large and positive role in accomplishing this contact between basic and applied researchers.

IPA's Place Administrative Burden Where It Belongs

Turning now to a very practical value of Institutional Patent Agreements, it should be noted that they shift a large part of the manpower and cost of administration away from the government to the institution that has, and in fact is required to have, an adequate technology transfer capability. The government generates approximately 30,000 contracts and grants each year. About 8,000 inventions are reported annually. If there were to be a government-wide title policy, the burden of protecting the resulting inventions through the filing of patent applications in the United States and foreign countries would be extremely heavy on the government

agencies involved. Once patents are issued, there would follow the necessity to advertise and license such patents, develop related technology packages, and, if the licenses were royalty bearing, to enforce the patents against unlicensed users. The government is ill-equipped to take on such an administrative load.

The Institutional Patent Agreement places the initial responsibility for commercializing research results on the inventing institution --which has the most interest in and knowledge of the invention of its own creation. Then, through "march-in" rights, the IPA limits the administrative burden only to those inventions that ultimately appear to be or prove to be commercially important.

March-In Rights Are Seldom Used, But Ensure Commercialization When Necessary

It has been claimed that "march-in" rights do not really protect the public's interest because such rights have been available to the government for more than 10 years and, as yet, have not been utilized. The conclusion drawn, therefore, is that such rights are ineffective. This is an erroneous conclusion. The "march-in" rights were developed to take care of and address the problems that would arise if the institution, retaining the patent rights, fails to see to it that an invention is commercialized when in fact that invention is capable of being commercialized. It is because

these problems are largely illusory, and not actual, that the "march-in" rights have not been utilized. If and when these negative effects occur as a result of allowing a contractor to retain title to an invention of commercial importance, the "march-in" rights are there, and we believe they should be there, to address them.

There are two principal ways to achieve effective use of "march-in" rights. One is for the government to create a large technical and legal bureaucracy to monitor them. The other is to allow the marketplace to work. We believe the latter is by far the better approach. Thousands of patents are now subject to the government's "march-in" rights. That these have seldom if ever been exercised is, as indicated above, a consequence of lack of need to do so. If a competitor of one holding such a patent, or exclusive license under such a patent, wishes to practice the invention, he will in the normal course of doing business first determine that there is a patent blocking his way, second determine whether it is valid or invalid, and if valid, will third approach the patent holder for a license. Fourth, if rebuffed or if the terms are unsatisfactory, he will approach the government agency with a request that it determine that the "march-in" rights should be exercised. Further, he will give to that agency the information available to him concerning

failure of the patent holder or exclusive licensee to commercialize, and his own ability to meet the market need in an appropriate manner.

If an invention is of actual commercial importance, there is actual and real market incentive for "march-in" rights to protect the public interest. If there is no commercial importance, this will be indicated by the fact that no one is interested in having such "march-in" rights exercised by the government.

The foregoing is not to imply that the government should have no mechanism to monitor the practical results of IPA's. However, we need better information than now exists, and the monitoring should seek to determine both the positives and negatives of IPA's. We do believe that a large bureaucracy is not necessary to accomplish this effort and that market forces will aid in the process.

Conclusion

In short, we favor a government patent policy, including Institutional Patent Agreements, with the following characteristics:

1) A simple and uniform system that minimizes the administrative burdens on the government and on the business and research communities; and

2) a system that provides incentives and conditions necessary to achieve the maximum utilization of inventions made with government support.

In closing, we are not ashamed to quote from the Constitution, which empowers the Congress to establish a patent system "to promote the progress of ... the useful arts." The system exists as an incentive that can create the market pull necessary to change government research and development expenditures into products which are actually made available to the public. Isn't that the purpose of the multi-billion dollar annual federal research and development budget?