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IMPLEMENTATION OF NATO GUIDELINES
ON INTELLECTUAL PROPERTY RIGHTS

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EXECUTIVE SUMMARY

Increased standardization and interoperability of NATO weapons is now a major goal of the DoD. The success of the cooperative programs necessary to achieve this goal will in large measure depend on the extent to which defense industries in the United States and the other NATO countries can agree to share their Intellectual Property (IP). IP covers a broad range of technical knowledge and expertise, much of which companies consider to be private information that alone distinguishes them from their competitors.

In early 1978, the Council of National Armaments Directors promulgated a set of guidelines for transfer of IP under NATO cooperative programs. Soon thereafter, LMI was asked to suggest actions that the DoD could take to implement the guidelines and to make cooperative programs generally more attractive to industry.

The guidelines require the United States and the other NATO governments to be able to ensure transfer of IP among themselves and/or their designated contractors. In our view this requirement can best be satisfied not by the U.S. Government itself acquiring and transferring IP, but rather by international company-to-company transfers subject to Government oversight and review.

This report recommends four actions that the DoD with the cooperation of other NATO countries can take to facilitate IP transfers in NATO cooperative programs. The first recommendation is a three-part IP policy for NATO-related acquisitions whereby (a) contractors would be contractually committed to license the use of IP needed for cooperative programs; (b) contractors would be allowed to select a licensee and negotiate a reasonable license fee and

(c) contractors would retain their IPR. We believe that such a policy would motivate the U.S. defense industry to seek out cooperative opportunities with European firms and thereby contribute to the development of government-to-government cooperative arrangements. The second recommendation is to give a source selection preference for NATO standard items. Such a procedure would provide a major incentive to industry to seek out candidates for standardization. The third is to encourage supranational buys of items to be used by NATO members. If military requirements can be rationalized, a central procurement using international competition offers rapid standardization. The fourth is to improve the exchange of information about NATO needs between governments and industries. To harness industry energy for finding candidates, knowledge of needs, schedules, and budgets will be very helpful.

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1. INTRODUCTION

BACKGROUND

NATO weapons standardization has become a formally stated goal of U.S. defense and foreign policy. Both the 1976 and 1977 Military Appropriations Authorization Acts state that equipment procured for the use of U.S. NATO forces should be "standardized" or "interoperable" with that of other NATO members.¹ In addition, the military imperative for increased interoperability and standardization has become increasingly evident during 1977 and 1978.² As a result, the Department of Defense (DoD) has extended its efforts to achieve NATO standardization.

Recognizing that much of the capability needed to make standardization a reality resides in the U.S. defense industrial base, the DoD sought ways of motivating American firms to participate more fully in NATO codevelopment, coproduction, and licensing efforts. A major issue surrounding industrial participation is the transfer of intellectual property (IP) and intellectual property rights (IPR) from one NATO industry to another directly or through government channels. IP includes much of what U.S. industry considers private information that makes a company unique. (The scope of IP and IPR is defined more fully below.) This perceived uniqueness must be protected if industry is to take a broader role in NATO standardization.

¹Public Law 94-106, section 814 (a)
Public Law 94-361, section 802 (a) (1)

²Testimony heard by the Special Subcommittee on NATO Standardization, Interoperability and Readiness of the House Armed Services Committee, May-November, 1978.

In early 1978, Study Group AC-94 of the NATO Council of National Armaments Directors (CNAD) promulgated a set of guidelines for transfer of IP under NATO-sponsored cooperative programs.³ Soon thereafter, LMI was asked to suggest what actions the DoD should take to implement these guidelines and to make NATO cooperative programs more attractive to industry. This report contains the results of that study.

MAJOR ASSUMPTIONS

Status of the NATO IP Guidelines

The guidelines promulgated by AC-94 represent the nearly final efforts of a 15-nation panel. Their status as of the end of the study period (December 1978) was a "provisional acceptance" by the CNAD.⁴ AC-94 is, at the time of this report, in the process of reviewing their intent with the NATO Industry Advisory Group. This review may result in some changes to the guidelines for re-presentation to CNAD, but no important modifications are anticipated. Accordingly, we have assumed that the guidelines are accepted by each NATO nation as a commitment to be executed by whatever law or regulatory process is appropriate.⁵

International Requirements

We assume that NATO as an entity, or any combination of NATO nations, possibly excluding the United States, is able to agree on a joint

³See Appendix II.

⁴Minutes of the April 1978 CNAD meeting.

⁵Insofar as LMI is aware, only the United States and the Federal Republic of Germany had initiated substantive efforts to implement the guidelines as of October 1, 1978 (See minutes of the October 1978 meeting of AC-94). Other country representatives have committed themselves to report implementation plans at an upcoming AC-94 meeting (February 1979).

requirement for a military procurement or acquisition. NATO has been working to develop an effective joint requirements generating mechanism for many years. Until recently, little progress had been evident. Earlier this year, the United States proposed a Preliminary Armaments Planning System (PAPS), which is a derivative of Circular No. A-109 ("Major System Acquisitions," April 5, 1976) of the U.S. Office of Management and Budget.⁶ In brief, it calls for initial examination of mission needs prior to the first acquisition phase (equivalent to Defense Systems Acquisition Review Council (DSARC) "0") and for consideration of alternative solutions in capability-oriented (as opposed to hardware-oriented) terms.⁷ These solution alternatives are to be examined and further refined over time (possibly into DSARC II or III equivalent phases) until agreement is reached on implementation of a specific hardware alternative to be produced and deployed by a military organization.

Disclosure Protection

In highly classified programs, disclosure protection issues can prove to be a significant impediment to successful IP transfer. We were unsuccessful in obtaining a rationale for, or data about, levels of permissible security disclosure permissible by the various NATO member governments. To fulfill our objectives within the given resource constraints,

⁶A comprehensive discussion of past NATO efforts to develop a joint requirements generating mechanism and the problems encountered may be found in the Final Report on "Rationalization" (Task Force 8), AC/281 (LTDP) Report (78) 8 of the Executive Working Group, Long Term Defense Program (Brussels: NATO) March 7, 1978. NATO Restricted.

⁷The DSARC process divides major systems acquisition into phases with milestone reviews at certain points. See DoDD 5000.1, December 1978 (draft) for a more detailed expression.

we had to assume that both European NATO governments and their contractors ordinarily are able to satisfy requirements for adequate disclosure protection.⁸

DEFINITIONS OF KEY TERMS

Patent - a legal instrument issued by a government securing to an inventor for a term of years (17 in the United States) the exclusive right to use his claimed invention.

Data - 1. "recorded information, regardless of form or characteristic, of a scientific or technical nature (excluding) computer software";⁹ 2. "(a) any unclassified information that can be used, or be adapted for use, in the design, production, manufacture, repair, overhaul, processing, engineering, development, operation, maintenance, or reconstruction of arms, ammunition, and implements of war on the U.S. Munitions List; or (b) any technology which advances the state-of-the-art or establishes a new art in an area of significant military applicability in the United States."¹⁰

Limited rights - "rights to use, duplicate, or disclose technical data in whole or in part, by or for the Government, with the express limitation that such technical data shall not, without the written permission of the party furnishing such technical data, be (a) released or disclosed in

⁸We decided early that the transfer of IP related to nuclear programs at any level of development would not be considered. This decision was based primarily on tight security restrictions and the difficulty of evaluating political issues related to transfer of nuclear technology.

⁹Armed Services Procurement Regulation (ASPR) 7-104.9 (1976 edition).

¹⁰International Traffic in Arms Regulations (ITAR), 22 CFR 125.01 (February 1976). Note that the ITAR definition is much broader than the ASPR definition.

whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture, or in the case of computer software documentation, for reproduction of the computer software, or (c) used by a party other than the Government, except for: (i) emergency repair or overhaul work only, by or for the Government, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure thereof outside the Government shall be made subject to a prohibition against further use, release or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government or for emergency repair or overhaul work by or for such government under the conditions of (i) above."¹¹

Unlimited rights - "rights to use, duplicate, or disclose technical data or computer software in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to do so."¹²

Know-how - knowledge resident in the experience and insights of individuals or in private writings legally protected as trade secrets or proprietary information.

Intellectual property (IP) - "inventions, trademarks, industrial designs, technical know-how, manufacturing information and know-how, techniques, technical data packages, manufacturing data packages and trade secrets" (includes patents, data, and know-how as defined in their broadest sense above).¹³

¹¹ASPR 9-201.

¹²ASPR 9-201.

¹³See Appendix I, Item 6.

Intellectual property rights (IPR) - the legal rights to IP; i.e., the ownership or control of the dissemination and use of IP.

License - a form of contractual instrument used for the controlled transmission of IP in exchange for money from an IPR owner or "licensor" to a recipient of "licensee."¹⁴

Foreground information - "information generated in the course of, or under, the program and includes any invention or discovery, whether or not patentable, conceived or first actually reduced to practice in the course of or under the program."¹⁵

Background information - "technical information necessary or useful to the program but generated outside of the program either in government establishments or by contractors employed to work on the program to the extent that such information pertains to the specific tasks undertaken by such contractors under the program."¹⁶

¹⁴See Appendix V.

¹⁵Harry M. Saragovitz and James A. Dobkin, "Patents, Technical Data and International Defense Agreements," Villanova Law Review 13 (1968): p. 479.

¹⁶Ibid.

2. COMPARISON OF DoD IPR POLICY AND NATO GUIDELINES

SUMMARY OF NATO GUIDELINES

The purpose of the NATO Guidelines on Intellectual Property is "to outline ways by which individual nations should adjust their policies and/or practices as may be required to ensure that they can comply with these principles in the field of Intellectual Property in a way that each nation decides is best suited to its situation."¹ The major points are summarized in Figure 1 under four subject headings: industry involvement, joint requirements formulation, cooperative arrangements, and IP available to cooperative programs. The government and industry representatives interviewed agreed that the most important portion of the guidelines belongs in the last category.

In order to be in a position to fulfill the principles, each defence authority must, in respect of all IP that is generated as the result of a national defence programme, either:

- (a) own the IP; or
- (b) ensure that otherwise it is in a legal position to grant or cause to be granted, on fair and reasonable terms, licences that transfer such IP and IPR to NATO governments and/or their designated contractors as may be required under existing or future co-operative agreements in which it participates.

Intellectual property in which defence authorities have neither ownership nor licence rights is often required to support national programmes. In order to be in a position to have access to and use of such IP in co-operative programmes, each defence authority must, in contracts pursuant to national programmes, ensure that it is in a legal position to grant or cause to be granted, on fair and reasonable terms, licences that transfer such IP and IPR to NATO governments and/or their designated contractors, as may be required under existing or future co-operative arrangements in which it participates.²

¹See Appendix II, p. II-4 (par. 5) The "principles" referred to here are a previous AC-94 product which established broad goals for the transfer of IP under NATO cooperative programs.

²See Appendix II, p. II-7 (pars. 10 and 11).

FIGURE 1

SUMMARY OF NATO IP GUIDELINE THRUSTS

INDUSTRY INVOLVEMENT

- SEEK WAYS TO MAKE COOPERATIVE PROGRAMS ATTRACTIVE TO INDUSTRY
- KEEP INDUSTRY INFORMED OF PLANS FOR COOPERATIVE PROGRAMS

JOINT REQUIREMENTS FORMULATION

- SEEK AGREEMENT WITHIN NATO ON MILITARY OPERATIONAL NEEDS, NEW WEAPON SYSTEM REQUIREMENTS, AND SCHEDULES FOR NEW WEAPONS DEVELOPMENT AND PRODUCTION
- DISCLOSE INFORMATION CONCERNING REQUIREMENTS AND R&D PROGRAMS AMONG NATO NATIONS SO THAT OPPORTUNITIES FOR COLLABORATION CAN BE IDENTIFIED

COOPERATIVE ARRANGEMENTS

- EMPLOY MUTUALLY BENEFICIAL LICENSING AGREEMENTS
- SUPPORT PROCUREMENT ARRANGEMENTS DESIGNED TO ACHIEVE AN EQUITABLE AND COMPETITIVELY DETERMINED FLOW OF DEFENSE TRADE

IP AVAILABLE TO COOPERATIVE PROGRAMS

- ANTICIPATE NEEDS FOR TECHNOLOGY TRANSFER IN EXPANDED COOPERATIVE PROGRAMS
- FOSTER EARLY MUTUAL EXCHANGE OF TECHNOLOGICAL INFORMATION
- IN CONTRACTS WITH U.S. FIRMS, ASSURE ABILITY TO TRANSFER TECHNOLOGY AND KNOW-HOW TO NATO COOPERATIVE PROGRAMS ON APPROPRIATE TERMS
- NEGOTIATE CONDITIONS OF USE OF TECHNOLOGY IN COOPERATIVE PROGRAMS ON CASE-BY-CASE BASIS; RECORD RESULTS IN MOU
- ASSURE THAT ALL CURRENT AND FUTURE RELATED COOPERATIVE INDUSTRIAL ACTIVITIES MAY BE SHARED AMONG PARTICIPATING NATIONS
- WITH RESPECT TO IP EITHER GENERATED UNDER DoD CONTRACTS OR IN WHICH THE DoD HAS NEITHER OWNERSHIP NOR LICENSE RIGHTS, BE ABLE TO GRANT OR CAUSE TO BE GRANTED, ON FAIR AND REASONABLE TERMS, LICENSES THAT TRANSFER IP/IPR TO EUROPEAN NATO GOVERNMENTS/FIRMS AS NEEDED UNDER COOPERATIVE AGREEMENTS
- DON'T ALIENATE RIGHT TO GRANT OR CAUSE TO BE GRANTED LICENSES THAT TRANSFER IP/IPR TO OTHER NATO NATIONS/FIRMS
- SECURE (WHEN POSSIBLE) IP AND IPR OWNED BY THIRD PARTIES AND REQUIRED TO IMPLEMENT COOPERATIVE AGREEMENT
- ACQUIRE IP SO AS TO FACILITATE SALES TO NATO COUNTRIES NOT IN PROGRAM AND OTHER THIRD COUNTRIES
- BE ABLE TO EXCHANGE IP SUBJECT TO LIMITATIONS ON DISCLOSURE: E.G., SECURITY

Hence, the guidelines call for participating governments to be legally able to ensure transfer of IP, owned or unowned, to other participating governments/firms. Furthermore, the fact that industry must play some role in this transfer process is fully recognized. In addition, the guidelines urge that cooperative programs be structured so that necessary IPR-imposed restrictions (1) not impede other cooperative programs and (2) not impede sales of hardware and IP to other NATO and non-NATO countries.³ Payment of fees for use of IP is also contemplated.⁴

DoD IMPLEMENTATION REQUIREMENTS

To respond to the key mandates of the NATO guidelines, the DoD must either (a) acquire all needed IP or IPR itself; or (b) when cooperative programs can benefit from privately owned IP, find a way to require transfer of the IP under license, at a reasonable cost to the program, without removing the owner's incentive to continue participating in DoD-sponsored activities.

Total government ownership of IP is inappropriate for several reasons. First, the cost is likely to be very high, since much IP is considered nearly priceless by its owners. Second, the Government has no adequate mechanism for assimilating much IP, especially the know-how segment. The technological and administrative resources that would be necessary to acquire this know-how would require a substantial additional investment even if the owners were willing to sell it. Third, under the current interpretation of the Freedom of Information Act, data to which the Government has unlimited rights are "records" rather than "property." Such data could be acquired by anyone

³ See Appendix II.

⁴ Direct reference to payment of fees is not made in the guidelines, but the necessity for payment for appropriate fees is acknowledged in the previous AC-94 IP principles.

at essentially no cost and without restrictions as to use. If this interpretation remains unchanged, the Government's acquisition of unlimited rights to privately held technical data would severely diminish both the economic value of the data and any incentive for the owners to continue development at their own expense.⁵

Therefore, the transfer of IP is preferable to total ownership. For the transfer to be successful, three conditions must be met: (1) industry must be provided with enough incentive (perhaps in the form of additional earnings) to make the IP available; (2) the process must be controlled, so that only IP intended to be shared is transferred; and (3) the cost to the Government of the total IP transfer process must be reasonable. The balance of this report explains how the transfer process should be implemented. Some of the guidelines' secondary requirements, e.g., third party sales, were also examined and are addressed in Appendix III.

CURRENT DoD IP POLICY⁶

Figure 2 compares DoD's IP policy with that defined by the NATO Guidelines.⁷ Note that the NATO guidelines cover more types of IP, in particular, know-how and certain portions of background IP not formally addressed by the

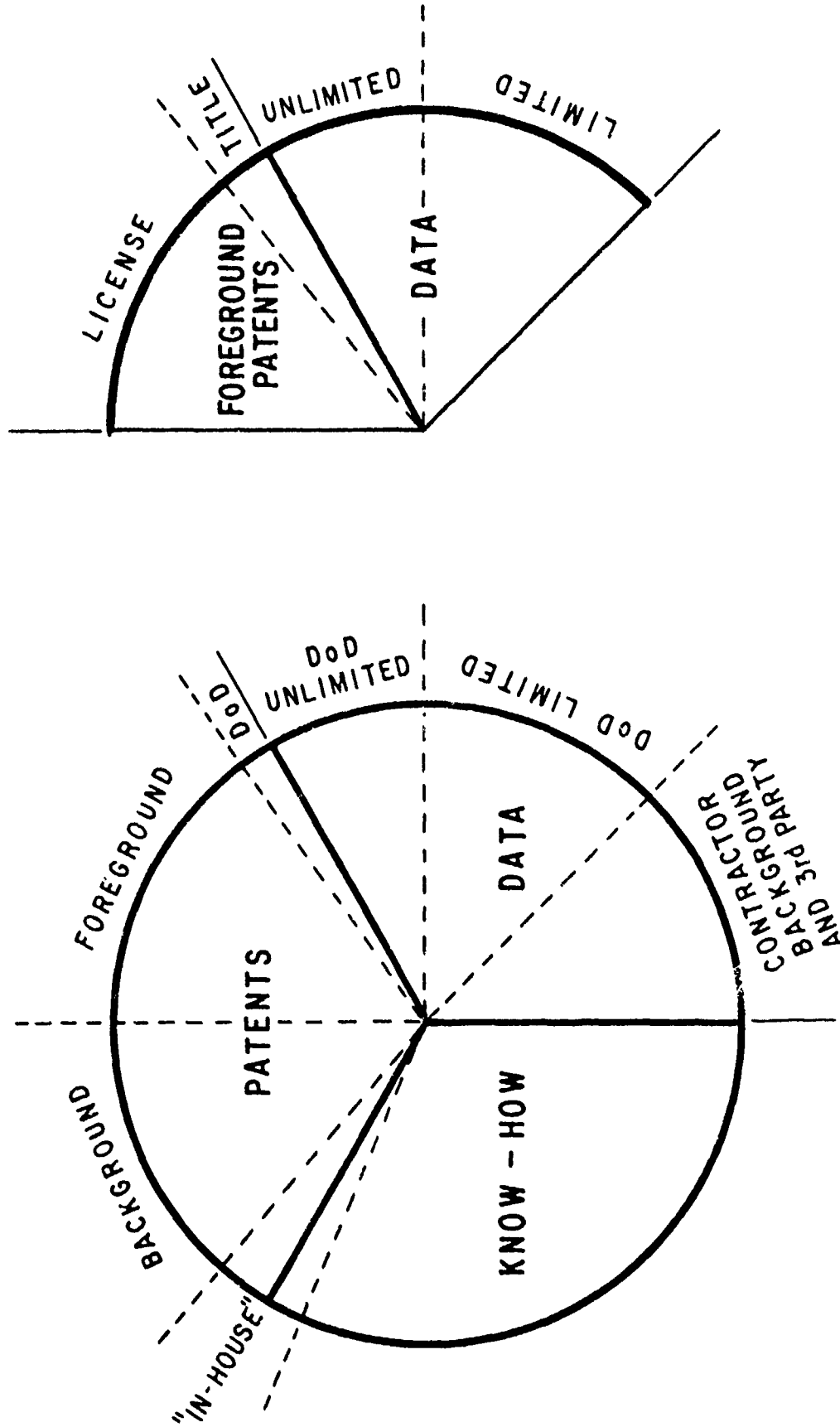
⁵A more comprehensive description of the Freedom of Information Act's impact on IP/IPR ownership appears in the next section.

⁶The key elements of DoD IP policy are contained in Section 9 of the ASPR. Six DoD Directives are also pertinent: 2010.6 (March 11, 1977); 3100.3 (September 27, 1963); 5230.11 (June 19, 1973); 2000.9 (January 24, 1974); 5530.3 (November 3, 1976); and 2140.2 (January 5, 1977). The "NATO Agreement on the Communication of Technical Information for Defense Purposes" (Brussels: NATO, April 1971) clarifies this policy for IP transfers under government-to-government agreements.

⁷This figure is not intended to provide a quantitative representation of the amounts of various segments of IP addressed by each policy. Its purpose is simply to identify the various segments addressed in each case.

FIGURE - 2

NATO GUIDELINES IP POLICY vs ASPR/DAR IP POLICY



IP FOR NATO
COOPERATIVE PROGRAMS

IP ADDRESSED
BY ASPR/DAR POLICY

DoD policy. This apparent disparity is due largely to a basic difference in orientation.

The NATO guidelines have as a major objective the transferability of IP among nations in an environment characterized by considerable separation of markets and different levels of technological advancement. Although there may be some overlap (a mutual opportunity for sales to the same third country, for example), transferor and transferee are likely to have separate markets, limited by national boundaries. This creates a climate in which IP transfer becomes more feasible, because it can be undertaken without a significant change in the transferor's competitive position domestically.⁸ Further, there is likely to be considerable disparity between the know-how possessed by the transferor and the transferee either because of substantive differences in technological capability within given equipment areas or because of a small technology base generally on the part of the transferee. These differences make the transfer of all forms of IP critical to the success of NATO cooperative programs.

By contrast, the transfer of IP has not been a key objective of DoD policy, largely for two reasons. First, the DAR/ASPR was developed for a single market, in which predominantly U.S. companies have historically competed and privately owned IP has been jealously guarded. Second, American companies are assumed to have relatively uniform levels of know-how within specific equipment areas, so there has not been a compelling need for major transfers of IP to fulfill DoD acquisition needs. Thus, the DAR/ASPR has emphasized acquisition of (1) rights to patents and data required to effectively operate and maintain purchased systems and equipment and

⁸It is acknowledged that, under certain conditions, international IP transfer may tend to diminish competition within domestic economies.

(2) rights to other patents and data as necessary to permit procurement of systems and equipment on a competitive basis.

Some Federal acquisition personnel have consistently asserted that contractor and Government engineers have roughly equivalent knowledge of specific systems and equipment design and operation disciplines, and hence no formal policy for acquiring such knowledge is needed. But others have argued that Government procedures for acquiring second sources for equipment, spares, and repairs have been only modestly successful at best, because there is no commitment by the original developer to provide know-how. The spares breakout program, in which spares are acquired directly from original subcontractors instead of the prime, is apparently an exception. On the other hand, very little IP is necessary to operate that program.⁹

Several recent studies of DoD IP policy have suggested extended use of IP to generate competition. One study proposed the domestic implementation of a concept known as directed licensing. This consists essentially "of having the Government obtain from a weapon system developer, at the time of issuance of the development contract, a contractual commitment for rights to production data and an agreement to license whomever the Government designates to produce the weapon system during any or all production runs, following initial production by the developer."¹⁰ However, the main objective of this proposal for

⁹The minimum necessary elements of IP required are the prime part number, vendor part number, and national stock number if it exists. An outline drawing and minimal form, fit, and function data are helpful but not essential.

¹⁰Gregory A. Carter, Directed Licensing: An Evaluation of a Proposed Technique for Reducing the Procurement Cost of Aircraft (R-1604-PR) (Santa Monica: The RAND Corporation), December 1974.

increased domestic use of IP transfers primarily through firm-to-firm licenses was lower production price rather than weapons standardization. Other studies have recommended broader use of IP transfers to increase competition and reduce prices within segments of the U.S. defense industrial base.¹¹

Because IP has considerable economic value in relation to rapidly changing defense technologies, DAR/ASPR policy in this area continues to be debated. Some of the same issues would have to be resolved in the NATO context and so are discussed briefly in the following paragraphs.

a. Patent filing. Patents have become less important to the overall IP transfer process in recent years because the number of them filed under domestic prime contracts and at large has declined.¹² LMI interviews suggest that one reason for this may be industry's desire to protect its discoveries by other means and avoid the inconveniences and costs associated with the patent filing process.¹³ Another factor may be that the process of policing contract clauses requiring reporting of inventions is complex, and hence frequently difficult to carry out with the resources available to most DoD contracting officers.

¹¹G.R. Hall and R.E. Johnson, Competition in the Procurement of Military Hard Goods (P-3796-1) (Santa Monica: The RAND Corporation), June 1968; and R.E. Johnson, Technology Licensing in Defense Procurement: A Proposal (P-3982) (Santa Monica: The RAND Corporation), November 1968.

¹²Data reflecting this trend were acquired from Mr. Frank Lukasik, Hq. AFSC/SAT. See also R.F. Dickenson, "Licensor/Licensee Cooperative Research," The Law and Business of Licensing (New York: Clark Boardman Co.) pp. 506.161-506.165; and Deborah Shapley, "Electronics Industry Takes to 'Potting' Its Products for Market," Science 202 (November 24, 1978) pp. 848-849.

¹³Indeed, DoD's inclination to protect its contractors from liabilities associated with patent infringement has provided a sound basis for this concern.

b. The "private expense" criterion. Current DAR/ASPR policy uses the criterion of private expense to determine which technical data are to be acquired under DoD contracts with limited rights. Numerous questions about its use remain.

"...contracting officers may refuse to recognize limited rights in a process or technique which is in a 'known art' or 'public domain'. These cannot have been developed by the contractor at private expense... Suppose a firm obtains all its revenues from the sale of military hardware to the Government; are any of its expenses private?... Is this purely an accounting question of which expenses were incurred in the development of civilian products? The answer depends in part on who takes the risk... The firm has private expenses to the extent that they are not specifically funded and identified under a Government contract. But it is not easy to specify the boundary of the resulting limitation on Government rights. Should elements of private expense be permitted to 'contaminate' entire articles which were mainly developed at Government expense? Should drawings and specifications containing any element of data developed at private expense be limited in toto? Under present policy, a single legend limits the use of a whole drawing, even though it may contain much that was not developed at private expense."¹⁴

c. The "predetermination" procedure. Under a procedure called "predetermination of rights in technical data," data which the offeror intends to deliver with limited rights are identified prior to contract award, if feasible, and an agreement to that effect is incorporated into the contract.¹⁵ Predetermination can be advantageous to both sides by settling difficult questions about data rights in advance, while the parties have considerable freedom of choice. However, industry spokesmen have expressed concern that the clause could be used to deprive manufacturers of what would otherwise be defensible rights in data under the private expense criterion. That is,

¹⁴James W. McKie, Proprietary Rights and Competition in Procurement (RM-5038-PR) (Santa Monica: The RAND Corporation) June 1966, pp. 28-30.

¹⁵See McKie, "Proprietary Rights," pp. 30, 31.

limitation or non-limitation by prior agreement may determine who gets the contract.

d. The "h" clause. This clause, which is included whenever the pre-determination procedure is followed, requires that the contractor notify the Government in advance if he intends to use any components furnished by vendors who will not turn over all data with unlimited rights.¹⁶ Its purpose is to prevent the Government's being "locked-in" to a sole-source vendor without its consent. However, it has been argued that the clause has effectively created a motive for considerable informal pressure by prime contractors, with Government backing, on subcontractors to surrender some rights in data.

e. The Freedom of Information Act. Finally, it should be mentioned that the Freedom of Information Act is having a less than desirable impact on existing DoD IP policy. Under the Act, nearly anyone can obtain almost free of cost, unlimited rights technical data in the possession of the Government. This phenomenon has resulted in the formation of companies for the purpose of finding and selling these data to domestic and foreign clients.¹⁷ From the point of view of the developers of data which the DoD acquires with unlimited rights and many DoD officials, this free access effectively negates

¹⁶See McKie, "Proprietary Rights," pp. 30, 31.

¹⁷Such a company is N.A.S.A. (Newport Aeronautical Sales Association) of Newport Beach, California. According to its advertising brochure, N.A.S.A. "offers the availability of American manufacturers' blueprints and specifications on nearly all United States military and commercial aircraft... (including the) latest revisions, updates, and changes on each blueprint currently used by the United States military." Aircraft for which blueprints and manuals are available include the C-141, A-4, A-7A, A-7D, B-52, CH-47, F-4B, F-4C, F-4D, F-4E, F-4J, F-14, F-15, and F-111.

the economic value of the data and, in the long run, tends to diminish industry's incentive to produce IP under DoD contracts.¹⁸

U.S.-EUROPEAN NATO IP TRANSFERS UNDER EXISTING DoD POLICY

Earlier Programs

Through the years, a considerable amount of IP has been transferred from the United States to Europe under various firm-to-government and firm-to-firm international agreements.¹⁹ In March 1959, the Lockheed Aircraft Company entered into a licensing agreement with the Federal Republic of Germany, under which a certain set of German licensee firms would manufacture 210 F-104Gs with the aid of a technical data package and technical assistance supplied by Lockheed. Within two years, Lockheed had concluded similar licensed production agreements with Canada, Japan, the Netherlands, Belgium, and Italy. IP transferred included copies of all data used by Lockheed to manufacture the aircraft, interpreted for the licensee, as required, by means of a technical liaison. Certain material, including master tools, a few sets of major assemblies, and several sets of detail parts, also was transferred.

¹⁸Historically, DoD unlimited rights data (URD) have been legally interpreted as "valuable property" of the Government, their export subject to either the ITAR or the Export Control Act. Such URD have customarily been given to U.S. firms having a valid need, as long as they legally committed themselves to clear export of any of the URD through either the ITAR or the Export Control Act. DoD's primary concern in such transactions has been that the URD was definitely an intangible asset of significant economic value and hence, should be treated as such, especially with regard to export control. However, recent URD releases under the Freedom of Information Act have been on the basis that the data are "agency records" and, as such, should be accessible to the general public. This interpretation effectively nullifies the requirements of the ITAR and Export Control Act with respect to DoD URD, and the problem will remain unresolved until an adequate court test of the "valuable property" versus "agency records" definitions is undertaken.

¹⁹The examples mentioned in this section are described in greater detail in Carter, Directed Licensing (see footnote 10 above).

In April 1966, the U.S. State Department approved a license agreement between Sikorsky in the United States and Agusta in Italy, under which Agusta would build the Sikorsky-developed S-61 helicopter. All appropriate patents, data, and know-how, along with a large amount of material, were transferred under this firm-to-firm agreement. In May 1966, a similar license was granted to Westland Helicopters, Ltd. of the United Kingdom to produce the S-61. An extensive amount of technical data, including basic stress information and calculations and a complete set of tool designs, was transferred. Due to Westland's previous experience as a licensee, little technical assistance was necessary.

In September 1963, Agusta negotiated a license with Bell Helicopter to produce the Bell Model 205A utility helicopter in Italy. A fairly standard data package was transferred. In 1965, an agreement was negotiated between Bell and the Federal Republic of Germany, which subsequently chose Dornier as the prime contractor under the agreement. Considerable data and technical assistance were supplied. In February 1965, the Northrop Corporation licensed the Spanish aircraft manufacturer of CASA to build the F-5 lightweight jet fighter. The agreement was approved by the U.S. State Department in May 1965. In December 1969, the Sikorsky Aircraft Division of United Aircraft Corporation entered an agreement with the German Government under which the Germans were licensed to manufacture 133 Sikorsky CH-53D/G helicopters for their own use. VFW-Fokker was selected as the prime German contractor for the CH-53D/G. The IP package subsequently transferred included considerably more than the normal amount of technical assistance because the Germans were under tight time constraints to complete the production program quickly.

All these firm-to-firm and firm-to-government production licensing arrangements were considered successful. Although not made under any well-defined international IP transfer policy, they illustrate the importance of firm-to-firm exchanges to successful IP transfer and, in particular, the key role of know-how or technical assistance.

F-16 Arrangements

The F-16 aircraft coproduction program involves large transfers of IP from the United States to Belgium, the Netherlands, Denmark, and Norway. Under this program, the four European countries (called the European Participating Governments) will purchase about 350 F-16s from the U.S. Government. However, according to a coproduction agreement specified in an MOU between the U.S. and the European Participating Governments, portions of these aircraft, amounting to 40 percent of their value, will be produced within the four European countries. In addition, these countries will produce 10 percent of the value of the 650 F-16s being purchased by the U.S. Government and 15 percent of the value of all F-16s sold to third countries in the future. Most U.S. material and technical assistance required by the European production effort is being supplied by the prime contractor, General Dynamics.

The conditions of IP transfer for this effort are specified via two mechanisms: the MOU and the General Dynamics contract. The key features of the MOU are paraphrased below:

- a. The U.S. Government grants a royalty-free license to the European Participating Governments for all IP generated under the General Dynamics contract (foreground information).
- b. The European Participating Governments grant a royalty-free license for all contract-generated IP (foreground information).
- c. The United States Government agrees to assist the European Participating Governments to obtain background information and technical assistance from U.S. firms involved, as necessary.

- d. Certain items of advanced technology (e.g., commercially sensitive items) are exempted from technology transfer.

These provisions are clearly in the spirit of existing DAR/ASPR IP policy. Note that the United States Government is unable to guarantee availability of certain background information and know-how, as called for in the AC-94 guidelines. Several other more recent codevelopment and coproduction program MOUs have incorporated a similar approach to data developed at private expense. Language typically used specifies that "each participant will use its best efforts to provide the other... the right to obtain on fair and reasonable terms for the purposes of the cooperative... program and for its defense purposes the use of privately owned or controlled technical information..."

The key IP provisions of the contract between the U.S. Government and General Dynamics are:

- a. The contractor agrees to consortium production capability sharing. Specifically, it agrees to establish a capability for manufacture by European consortium manufacturers.
- b. The contractor agrees to provide technical assistance when required to European manufacturers.
- c. All data generated by the prime contractor are submitted with unlimited rights.
- d. Predetermination of rights in subcontractor technical data is deferred.
- e. The U.S. Air Force also defers ordering of technical data.

These provisions represent a contractual agreement (which is not separately priced) to transfer all necessary prime contractor patents, data, and know-how. At the same time, the deferred predetermination of subcontractor data rights reflects certain risks to the program.

A Modified MOU Structure

During the past year, the U.S. Navy and the German Government have worked out a new IP transfer arrangement for inclusion in MOUs, which is currently being tested.²¹ The arrangement eliminates the division of rights based on foreground and background technical information and establishes a system based on restricted and unrestricted rights. "Unrestricted rights" apply to program information that a participating government may furnish to other participating governments without incurring liability to a third party. "Restricted rights" apply to program information that a participating government may not furnish to another participating government without incurring liability to a third party. This is essentially equivalent to technical information developed at the private expense of industry involved in the eventual IP transfer.

Under this approach, all industry prime offerors are required to express their intentions regarding the following features of the complete manufacturing data package, which they would have to provide for transfer to participating governments or their designated contractors: (1) technical information to be provided with unrestricted rights and royalty-free; (2) technical information to be provided with restricted rights; (3) fair and reasonable terms for providing restricted rights technical information; (4) criteria and rationale for these terms. This technical information together with technical assistance as necessary are typically offered as a priced contract option, which can be exercised at any time by various participating governments during the first few years of the program. In this way,

²¹Further information can be obtained from Mr. Frank Nieman, Patent Counsel, Office of Naval Research.

participating governments can defer purchase of the entire IP package until a clear need is indicated.

This approach should permit participating governments to obtain a manufacturing data package free of intolerable restrictions on them and offering fair and reasonable terms to the contractor. In this way, government risk is reduced. At the same time, if the component of restricted rights information is too large, or if a contractor owns certain IP which he will not transmit through the U.S. or foreign governments under any circumstances, these facts will be exposed at the outset, and the cooperative program may be terminated as necessary, at minimum cost.

The Option to License

During the past year, the DoD has also begun to experiment with another IP transfer mechanism. Under this arrangement, a Government option to license production of a given contractor's design to another contractor is incorporated into the limited production contract with the original contractor.²² To date it has not been applied to any well-defined cooperative arrangements. Its apparent intent has been to permit the DoD to be able to guarantee availability of appropriate IP for domestic or international transfer at some future time. The contractor is required to transfer a total production IP package at some future unknown time, to a presently unknown set of licensees, at a somewhat arbitrary, nonnegotiated royalty rate, which does not take into account his transfer-related costs. While the licensing option

²²This approach has recently been used in domestic contracts for the DIVAD Program. Also, it is very similar to the directed licensing approach described by Carter (see footnote 10 above). However, while the goal of directed licensing was to introduce price competition among mostly domestic contractors, the goal of the option to license is to permit the DoD to ensure transferability of a complete IP package to another NATO country.

does give the Government considerable flexibility, it exposes the original contractor to considerable risk. Two or three contractors have accepted it, but industry generally perceives it as "rather heavy handed". And those few acceptances were reported to be cases where very little privately-owned IP was involved and the likelihood of an eventual exercising of the option was low.

Characteristics Common to Transfers

Several characteristics are common to the various types of IP transfers described above.

- a. They all reflect the importance of industry involvement and, in most cases, the extensive firm-to-firm interaction necessary to successful IP transfer.
- b. Transfers generally have involved fairly mature production-related IP. The transfer of IP during earlier development phases calls for certain different problems and concerns.²³
- c. Consistent with the lack of comprehensiveness in existing DoD international IP transfer policy, past IP transfer arrangements have been determined largely on a case-by-case basis and have varied markedly in their approach.

²³See Chapter 4, p. 4-1, "IP Transfer Issues as a Function of Acquisition Phase."

3. RECOMMENDED CHANGES IN DoD POLICY

RECOMMENDATIONS FOR NATO IP POLICY

The recommendations are action-oriented solutions to the problems of IP transfer. Few substantive steps appear to have been taken by any NATO country to eliminate IP-related barriers to cooperative development and production programs. Indeed, the prevailing European attitude especially is one of "let's wait and see if the rationalization - standardization - interoperability push is more than just words." Implementation of any of the LMI recommendations would be a clear signal of a U.S. commitment to progress through cooperation and a positive influence on NATO members' attitudes toward cooperative programs involving the U.S.

Further, the recommendations do not assume a specific government acquisition structure and would therefore be amenable to consideration by other NATO members. Preliminary analysis suggests reasonable compatibility with the acquisition systems of at least the four largest NATO allies. Both the recent emphasis on bilateral "blanket" MOUs and our interviews with European industry representatives support the idea of a uniform multinational approach to implementation of the IP/IPR guidelines.¹ Additional study of these possibilities should be undertaken, perhaps in conjunction with AC-94 or another NATO entity.

¹See, for example, "Memorandum of Understanding between the Minister of Defense of the Federal Republic of Germany and the Department of Defense of the United States of America concerning the Principles Governing Mutual Cooperation in the Research and Development, Production, Procurement and Utilization of Defense Equipment," November 1978. MOUs are discussed further in Chapter 4.

RECOMMENDATION 1: COMMIT/MOTIVATE INDUSTRY TO TRANSFER IP

In NATO related acquisitions, the following three actions should be taken in concert to guarantee availability of necessary IP to NATO cooperative programs in a manner which uses legal and policy procedures acceptable to both government and industry participants.

- 1-1. The contract should include a provision committing the contractor to transfer, as necessary for the success of the cooperative program, portions of the IP developed for, or used in, performance of the contract, under license at a fair and reasonable price.
- 1-2. When making such a transfer of IP to a NATO European program participant, the contractor should be permitted to choose the licensee within stated national boundaries, subject to U.S. Government review.
- 1-3. The contractor should be permitted to retain rights to all foreground and background IP (all patents, data, and know-how) developed under, or used with respect to, the contract effort, except for:
 - a. IP related to operating and maintenance (O&M) procedures
 - b. IP necessary to operate a spares "breakout" program.

IP of types (a) and (b) should be sold to the Government with unrestricted rights.

Applicability: Criteria for NATO-Related Acquisitions

The revised IP policy in Recommendation 1 applies whenever any one of the conditions listed in Figure 3 is present.

The first condition is that the United States Government determines the acquisition is NATO-related and a statement to this effect is incorporated into the RFP. Such a determination would probably be made on the basis of a NATO-wide requirement, identified perhaps by means of the Preliminary Armaments Planning System. It would be reasonable for information of this kind to be made available to the NATO contractor community. Contenders for award could then expect international firm-to-firm cooperation to be required, either before final award or during the performance period.

FIGURE 3
DEFINING CRITERIA FOR A NATO RELATED ACQUISITION*

- WHEN DETERMINED BY USG AND INCORPORATED IN RFP
- WHERE U.S. CONTENDER FOR AWARD CAN SHOW THERE EXISTS ANOTHER NATO NATION REQUIREMENT WHICH IS THE SAME OR SUBSTANTIALLY THE SAME
- WHERE U.S. CONTENDER FOR AWARD CAN SHOW USG-VERIFIABLE EVIDENCE OF A POTENTIAL NATO REQUIREMENT AND USG CONCURS IN DEFINITION OF REQUIREMENT

*ABSENT SUCH A SHOWING, ORDINARY ASPR/DAR RIGHTS IN DATA CLAUSES APPLY TO THE PROCUREMENT

The second and third conditions are somewhat more subtle. It has already been pointed out that the defense ministries of the various NATO nations have found it difficult to resolve their differences as to the timing of defense hardware investments, mission requirements for essentially similar hardware, and strategic and tactical doctrine. A dominant theme in our interviews was industry's belief that it could accommodate some of these differences by adjusting the timing and technology of its products. The second and third conditions under which the revised IP policy may apply are therefore expected to motivate industry to make the contributions to standardization (or at least interoperability) it believes it is capable of making.

The second condition is that industry be given the advantage of the revised IP policy when it, as contender for award, can show that the same, or substantially the same, item has been or is going into the inventory of another NATO nation. With this advantage, U.S. industry could, as either a licensee of a foreign manufacturer or as a seller to a foreign government, find a way to "mate" the requirements of the U.S. and the foreign buyer. Given that "open door" MOUs permit foreign firms to really compete in the U.S., they would also have an incentive to seek the same sort of opportunities.

Taking the process one step further, we arrive at the third condition under which the revised IP policy is applicable: if the contender for award can show to the satisfaction of the DoD verifiable evidence of a potential second nation requirement likely to lead to an eventual multinational use of the offered item. This effectively motivates the contractor to search for applications of its items to other nation's needs earlier in the acquisition cycle. The idea is in many ways analogous to the liaison between American industry and the military services at the earliest needs definition

period that has reinforced their partnership in the technical review of program concepts.

As noted in Figure 3, the regular DoD IP provisions will apply when none of the above conditions exist.

1-1: Commit Contractor to Enter License

This recommendation is the cornerstone of the implementation of the AC-94 Guidelines. When a provision committing a contractor to enter a license is included in a U.S. Government contract, the Government can assure the availability of the IP for NATO cooperative programs. Absent retention of IP and licensee selection by the contractor, this practice has already been tried in the U.S., but well before a cooperative program has been well defined.² Hence, it is not completely new. It is also a requirement in the Federal Republic of Germany's development contract regulations (ABEI) and has been successful according to German Ministry of Defense personnel.³ A similar contract commitment is in use in the United Kingdom, under the "International Collaboration Clause."⁴ In each of these instances, the government selects the licensee. In Germany, the contractor is normally consulted, and he can, but allegedly rarely does, veto the first choice if it is a severe threat to his competitive position. There are also criteria for establishing the reasonableness of the license fee in the German regulations.

²Recall the DIVAD Program example described in Chapter 2, p. 2-16.

³Federal Republic of Germany National Procurement Regulation, "General Terms and Conditions for Development Contracts with Industrial Firms" (ABEI), Nr. 3, Ausgabe 30, August 1966.

⁴Procurement Executive Ministry of Defense (UK) "International Collaboration Clause," DEFCON 126, June 1973.

Implementation of Recommendation 1-1 takes the form of a contract option which can be exercised by government. When the option is exercised, the contractor enters into negotiation for a license with a licensee for all or part of a system or item. Normally, a license requires enough IP transfer so that a licensee can produce as does his licensor; needed patents, data, know-how and technical assistance as required are provided in exchange for money. While the licensee usually pays, payment by a licensee government is a possible alternative.

Provisions for multiple licensees may be considered. Limitations on the time of exercise of the option and on the scope of the subject to be transferred must be defined. Protection of the transferred IP, maybe guaranteed by licensor and licensee governments, is required. The issue of on-going use of the IP, i.e. is it permitted or not, must be addressed. Re-transfer to a second tier must be agreed to or prohibited. A mechanism to resolve disputes (usually arbitration) must be included. The mechanism of configuration control and capacity to accommodate technical change, or a prohibition of technical change, need to be addressed. The "level" of IP as to piece parts and vendor-supplied material, its specification, and the like cannot be omitted.⁵ The clause committing the contractor to license should probably contain an outline of, or suggest a minimum set of clauses for the resultant license.

⁵Real experience indicates parts substitution in high-technology items is a frequent source of licensor-licensee problems.

1-2: Let Contractor Choose Licensee⁶

By its very nature, IP is difficult to transfer. In spite of the layperson's perception that engineers and scientists have an answer, understood and written down, the fact is that a significant portion of IP is "art". The phrase "state of the art" is not accidental. To transfer information to another person or group requires a certain level of competence in the receptor. The selection of a licensee demands careful evaluation. When one transfers what is often otherwise held to distinguish one from a competitor to another who can thereby become a competitor, one chooses the recipient with great care and subject to any available reasonable legal control. Given the necessary technical cooperation required for a successful IP transfer, an incompatible licensor-licensee pairing can be severely detrimental to a cooperative program.

We recognize the importance of government involvement in cooperative programs in which there are major firm-to-firm interactions in order to balance self-centered profit-making attitudes and approaches, and to ensure that the individual firms' strategies for IP transfer do not conflict with overall program goals. The U.S. Government must have some voice in the licensee selection for NATO programs. Therefore, when a contractor is allowed to select a licensee, the DoD contracting officer should be permitted to review the reasonableness of the choice. The standard of review applied could

⁶This recommendation is heavily supported by COESIA comment. See for example the Council of Defense and Space Industry Associations (CODSIA) letter to Mr. Dale Church, Deputy Under Secretary of Defense for Research and Engineering (Acquisition Policy) of June 8, 1978, containing comments on the "NATO" Guidelines.

be similar to the judicial standard used in analogous situations; it would extend only to the reasonableness of the case and not constitute approval.⁷

The contractor-licensor should negotiate the license fee. Putting a price on IP can never be an exact science. "Front-end" or "going-in" financing is often used when it is difficult to assign a measure of IP value to a delivered unit, or when the number of units that will finally be delivered is in question. The costs of IP transfer can be estimated and tend to be in proportion to the complexity of the IP and product. As in most industrial pricing situations, competition finally regulates IP values.

Like the choice of a licensee the license fee should be reviewed by the contracting officer. Again, approval is not implied, only the contracting officer's judgment that the fee collected (if licensor) or paid (if licensee) is reasonable.

Having the contractor choose the licensee allows normal business interactions to determine the details and costs of IP transfers. Owners of the IP are the best judges of its monetary and technical value and the provision for Government review ensures the fairness of the transaction.

Implementation of this recommendation could be limited by two factors. One is that in some countries, it is customary for the recipient government to choose the licensee. This is part of the "chosen instrument"

⁷An analogous situation would be a judicial review of the awarding of a public contract to the "lowest responsible bidder." Recognizing that this type of award involves a certain amount of discretion, the courts have held that "it would be improper for the court to override the decision unless it appeared that by the exercise of sound judgment the authority could not reasonably have reached the decision it did." *Austin v. Housing Authority of Hartford*, 122 A.2d 399 at 404 (1956). Clarifying their position further, the Court has stated that, "... the discretion in making the award is particularly broad, and will not be interfered with by the courts if exercised on a rational basis, without fraud or palpable abuse." *Modjeski and Masters v. Pack*, 388 S.W.2d 144 at 147 (1965).

practice and is particularly common in countries where industry is de facto or formally rationalized. While no regulation expressly dealing with licensee selection or constraints could be found, such limitations do exist because of a lack of technically qualified sources.⁸ The other potentially restrictive factor is the U.S. Department of Justice, which may impose restrictions on territorial allocation, product tie-in, and trademark use. The fact that the only customers for weapon systems and equipment are selected governments appears somewhat to reduce the potential for such restrictions.⁹

The provision for Government review of IP transfers did not generate serious concern among the industry representatives interviewed, as long as outright approval was not required. More concern was expressed over potential delays caused by the review process, since most licensee selections and fees would probably be found reasonable.

1-3: Let Contractor Retain IPR

This recommendation is the quid pro quo for committing the contractor to license. The merits of contractor retention of IPR are considerable and were confirmed by our interviews. IPR, while not a balance sheet entry, is considered a "real life" important asset by almost all contractors. Some perceive it as the only margin of difference between them and competitors.

⁸"National Practices in NATO Countries Regarding Proprietary Rights in Co-operative Research and Development Programs," Brussels: NATO, 1978.

⁹Antitrust Division, United States Department of Justice, Antitrust Guide for International Operations, January 26, 1977, pp. 33-36. Further discussion of the antitrust issue appears in Appendix IV. In general, this area is worthy of further study.

Leaving IPR with contractors is consistent with moves to make doing business with government more similar to, and thus competitive with commercial enterprise. It is also a practice of the British and German Governments.¹⁰

This recommendation recognizes the importance of the profit motive in industry decision-making. It is similar in spirit to the current DoD policy of leaving all rights with the contractor under its Independent Research and Development Program.¹¹ While such a policy may be controversial, some have argued that it is the basis for most of the technological superiority of the U.S. defense industrial base.¹²

¹⁰Under the Federal Republic of Germany's policy, the contractor retains all IPR but commits to license all necessary IP to a second source at a fair and reasonable price as specified by the German Government. In practice, the Government's choice of a second source has been subject to a de facto veto of the primary source contractor. This veto has typically been exercised when the primary contractor regarded the second source as a head-to-head competitor. The license fee is effectively paid by the Government and typically includes some (relatively small) payment for foreground information. Typical license fees under such an arrangement are 3-5 percent plus some front-end money when warranted. (ABEI, pars. 12, 13, 14).

¹¹This policy may be summarized as follows: "...it is DoD policy not to seek rights in intellectual property originating from IR&D because this would inevitably discourage businessmen from making expenditures to develop products designed to meet the needs of the Government. Thus, the expectation of earnings from inventions and new development is a major incentive to those who spend money for research and development. A policy of requiring rights in such inventions and developments, it is said, would smother this incentive because a defense contractor would know that rights in data resulting from its research efforts would pass to the Government for use in enabling other companies to compete with the original developer in connection with future sales to the Government. The company originating a new product would face the prospect that profits from future sales could go to competitors who paid nothing for, and made no contribution to, the expensive and often painstaking research and developmental effort which culminated in the product." (Harold H. Cord and Michael J. Cicchini, "Independent Research and Development (IR&D) - Half a Loaf," Air Force Law Review 16 (1974) 100-115.

¹²Cord and Cicchini analyze several aspects of the DoD's IR&D program that have been debated since its inception. For an analysis of the program's technical evaluation process, see Lt. Col. Earl H. Talley and Lt. Col. John T. Viola, "Independent Research and Development: The Technical Evaluation Process," Study Project Report PMC 77-2 (Fort Belvoir, Va.) November 1977.

Contractor retention of IPR simplifies Government IP management. It reduces the magnitude of the problem of leaking of Government-owned unlimited rights data under the FOIA, but clearly only for data falling under NATO-related acquisitions. This problem will remain unresolved for DoD unlimited rights data at large at least until its designation as "agency records" versus "valuable property" is legally resolved (recall Chapter 2, Footnote 18).

Implementation of this recommendation would not be without some controversy. There may be some criticism that it calls for "giving away" IPR that the taxpayer has rightfully paid for. However, this argument is countered by the opinion held by many industry representatives that without know-how, the foreground and background information that is delivered to the Government isn't of much use anyway.¹³

Industry retention of IP in NATO-related acquisitions would reduce the amount of unlimited rights data available free of charge to most European governments under existing bilateral data exchange agreements. It is unclear whether the amount of data involved is significant enough to warrant a negative reaction by these governments. While their access to physical delivery of a data package via government channels would be diminished, its availability to certain of their industries, along with necessary know-how, would be guaranteed. Moreover, the increased cost of this IP due to payment for U.S.-industry-generated foreground information should be quite minimal. Also, it should be noted that both Britain and Germany are already accustomed to not receiving delivery of domestically generated IP.

¹³The practice, instituted a few years ago, of deferring delivery of data to the U.S. Government until it has a specific need, and requiring the contractor to incorporate any changes that have occurred in the interim in drawings to be delivered has helped somewhat to ameliorate this problem. It still remains significant, however.

Finally, there could be some problem in the identification of industry background IP used with respect to NATO-related programs versus foreground IP generated under previous ordinary domestic U.S. acquisitions. This is not unlike the problems of identifying limited versus unlimited rights data or IR&D versus standard R&D program IP, and should not be a major impediment to LMI's recommended approach.

Under the suggested revised policy, two kinds of IP are still to be sold to the Government with unrestricted rights: IP related to operations and maintenance procedures (e.g., handbooks, drawings, and the like) and IP necessary to operate a spares "breakout" program. The spares "breakout" policy permits government acquisition of parts not manufactured by the developer or producer directly from the field of competitive component suppliers. In fact, in most license agreements, the "level" of IP transferred rarely reaches below the "level" of purchased finished parts (see Chapter 2, Footnote 9). IPR for this "breakout" level is most frequently retained by the component supplier and not transferred to the prime contractor or the government.

Our interviews indicate that U.S. industry would accept these exceptions. The IPR that provides the uniqueness and perceived strength of individual enterprises excludes that needed for operating and maintenance or provided by parts suppliers.

Even with the combination of retention of rights, licensee selection, and royalty setting, some contractors advised LMI that their IP would never be for sale. Presented with the requirement even of a reasonable license, they would refuse to accept. If this is the case, some degradation in the numbers of contenders for award might result. However, given the

general business pragmatism that was frequently expressed to us by many contractors, that "if that's what it takes to sell, that's what we'll do", we conclude that a diminished contender base is not a serious hazard for DoD if these recommendations are implemented.

Overall Impact

Under Recommendation 1, the data package delivered to the U.S. Government and other participating governments would contain only IP related to operations and maintenance and "breakout." The contractor, on the other hand, would be responsible for seeing that the licensee performs as successfully as he did, and for transmitting IP and IPR as necessary to meet this goal.¹⁴

Some U.S. firms that already have adjusted to the new character of European defense markets, in which direct sales and FMS transactions are giving way more and more to coproduction and licensing arrangements. These firms are aggressively exploiting these new markets by looking for European licensees and have recognized the high return on investment on this type of transaction. They believe that under a commercial license, there is enough corporate control of the IP transfer to minimize their risk. On the other hand, many defense industry firms interviewed are not familiar enough with European markets to appreciate the opportunities here and regard the IP transfer risks as too large. Because the markets are not impressively large and hence the magnitude of potential profits is not spectacular, they attach a low priority to them. They do not recognize that, while limited in magnitude, the potential profits require little or no new investment, and from this standpoint are very respectable.

¹⁴The importance to industry of having direct firm-to-firm IP/IPR transfers as opposed to transfer of data packages via government channels was recognized by the 1978 Defense Science Board Summer Study.

Recommendation 1 would provide a remedy to this problem by motivating the U.S. defense industry to seek out cooperative opportunities with European firms. In this process, it could provide valuable assistance in the development of government-to-government cooperative arrangements by helping to seek out those conditions necessary for a successful cooperative arrangement, e.g., compatible timing of mission requirements, and compatible levels of know-how between licensor and licensee.

Under Recommendation 1, the limited-unlimited rights dichotomy is no longer germane to NATO cooperative programs. Hence, numerous problems and issues related to this dichotomy need no longer cause concern. For example, under existing policy, predetermination of rights in data is frequently deferred with respect to subcontractor data, and ultimately, the data are usually transferred to the government with limited rights (e.g., recent F-16 experience), since subcontractor private expense data are typically so critical to their existence. The issue of the Government getting limited/unlimited rights to subcontractor data would be even more intense with respect to European subcontractors. They commonly fear that their IP, if transmitted into U.S. hands, could be used to make defense items more cheaply, due to U.S. capital-intensive manufacturing processes and economies of scale. Under Recommendation 1, the predetermination process and related issues are avoided. Subcontractors retain all IPR except that necessary to permit the prime to adequately execute his integration responsibilities. Hence, U.S. and European subcontractor discontent regarding prime coercion under the "h" clause is avoided, and the U.S. Government, while effectively locking itself into a domestic sole source, avoids the risks associated with not knowing what data it will get with limited versus unlimited rights.

Another benefit of Recommendation 1 is that the contractor himself is responsible for safeguarding his IP subject to a successful transfer of a specified capability. Accordingly, the U.S. Government need not be concerned about indemnifying the contractor against foreign unauthorized use of his IP. The risk of unauthorized use is borne by the contractor and by choosing his licensee with care, he can minimize this risk.¹⁵

While the revised IP policy under Recommendation 1 would tend to lock the U.S. Government and other cooperative program government participants into a U.S. domestic sole source, it is not at all clear that this would significantly diminish competition for industrial participation in the program. First, in many existing cooperative programs, especially the larger ones such as the F-16, the Government is essentially locked in already. Furthermore, once a successful international transfer of IP has been made, there should be at least one European source who has roughly the same amount of know-how with respect to the given class of equipments as the U.S. developer. Hence, some opportunity for competition remains but within a NATO-wide, as opposed to a U.S., environment. In addition, this potential for international competition should not impede the willingness of the U.S. transferor and European transferee to cooperate, since the markets that they face, while overlapping more and more, are by no means identical.

One can question whether the DoD can effectively use IP in its possession to generate competition. Indeed, McKie indicates that

...There is scattered evidence that for products or for processes of any complexity--those most likely to involve 'proprietary' techniques under the old definition--the manufacturing drawings themselves are not enough, even though prepared in good faith by the

¹⁵A discussion of historical experience in and current policy regarding the safeguarding of IP against unauthorized use under international defense agreements appears in Saragovitz and Dobkin, "Patents," pp. 460-471; 477-486 (see Chapter 1, Footnote 15).

manufacturer. There commonly seem to be some shop practices, plant layout, tooling, pragmatic experience, and know-how which cannot be transferred by the 'data' medium. When alternative sources are developed in such circumstances it has generally been necessary for this supplementary know-how to be transferred by a process of in-plant schooling or direct training, master tooling, observation--a direct contact between originator and transferee. Other manufacturers, especially job shops having little design capability themselves, can work from drawings alone when the article embodies only manufacturing processes that are known to every practitioner of competence and which are obviously necessary. In that case the manufacturer would need the drawings mainly for size and shape information, and for performance specifications--the 'size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements,' which earlier were referred to as 'form, fit, and function' data.

A parallel difficulty often encountered in transfer of manufacturing drawings for competitive procurement has been that the firms that can really use them without further supplementary information do not want to follow them exactly, preferring to substitute improvements here and there from their own design shop. The firms that do want to use the drawings to make identical copies are often unable to do so because they lack the technological capability to back up the drawings with their own processing know-how. Firms possessing proprietary rights in processes and know-how usually wish to protect their information regardless of any inability of competing firms to use it to produce identical copies, since the information may have much wider application than that.¹⁶

Recommendation 1 can be implemented if the regulatory and contract language recommended in Chapter 5 is adopted. It can be adopted by the DoD within its own authority, and its acceptance would both motivate industry to participate in NATO acquisitions and make DoD IP policy essentially consistent with that of the United Kingdom and the Federal Republic of Germany with respect to NATO cooperative programs. While this recommended policy revision would apply only to NATO-related acquisitions for the U.S., a similar policy applies to domestic acquisitions as well in some of the other NATO countries. In view of recently signed MOUs which open the U.S. defense market to the

¹⁶McKie, "Proprietary Rights," pp. 39, 40 (see Chapter 2, Footnote 14).

other countries and vice versa (e.g., Britain and Germany), this new commonality of IP transfer procedures would potentially have the additional benefit of encouraging British and German firms to contend in the U.S.

RECOMMENDATION 2: GIVE SOURCE SELECTION PREFERENCE TO STANDARD ITEMS

Under this recommendation, a contender under any designated U.S. Government acquisition program who offers an item or system which is in use or being acquired by another NATO partner, and which satisfies the technical requirements of the RFP and has a delivery schedule and cost within the competitive range, would be given an important preference (as designated in the RFP) in the source selection process. Such a preference should be large enough to assure contract award, because the contractor is already in the competitive range. For example, on a 100-point scale, the contender might be given a 25-point preference.

Potential contenders under this arrangement would include U.S. or foreign companies having previously sold the item to a European NATO government, or a U.S. or foreign firm as a licensee or a licensor. LMI interviews here and abroad indicate that this preference would, in general, provide a real, unambiguous motivation to U.S. and European industry to compete internationally and cooperate via license or joint venture as necessary to contend. No technical or cost compromise is contemplated here, only an advantage to a common item.

This preference policy has the attractive property of encouraging firm-to-firm IP transfers when an intergovernment cooperative program has not necessarily been defined. On the other hand, it has some potentially undesirable features. For example, westbound (i.e., to the U.S.) transfers of IP could potentially be slowed by European country export control regulations, especially if the given country's government is not participating in the

acquisition. In addition, the policy could cause some reduction in competition, since firms not presently operating internationally may be slow to participate. Finally, there is likely to be an inherent, unquantifiable preference on the part of DoD source selection evaluators for U.S. domestic items. These last two factors are correctable, however, and the majority of industry representatives interviewed did not believe they would significantly detract from the preference policy over the long run.

Implementation of Recommendation 2 alone, without any other efforts to implement the NATO IP guidelines, would be a major step toward NATO standardization. Given the door-opening effect of recently negotiated and planned bilateral MOUs, it could beneficially alter contractor contention patterns in many NATO countries. It is urged that this same recommendation be implemented in countries which are parties in such MOUs.¹⁷

Only a DoD-generated regulatory provision is necessary to implement this preference policy.

RECOMMENDATION 3: ENCOURAGE SUPRANATIONAL BUYS

A supranational acquisition process for multinational needs is an attractive, potentially controversial approach to satisfying the NATO IP guidelines and would be a major step toward standardization.¹⁸ This process is envisioned as follows:

1. Each nation defines its requirement.
2. Nation requirements are matched, rationalized, and made to fulfill common technical and time criteria.

¹⁷LMI's reading of the US-FRG MOU would seem to require the FRG to do so.

¹⁸This concept has also been endorsed by Thomas A. Callaghan, Jr., U.S./European Economic Cooperation in Military and Civil Technology, Revised edition (Washington, D.C.: The Center for Strategic and International Studies, Georgetown University) September 1975.

3. Funds from each participating government are provided to NATO for the portion of the total buy that will receive.
4. The contract competition is managed by NATO, and selection is made from the total NATO defense industrial base, or at least from those countries who are financing the acquisition.
5. The winning contractor performs under NATO contract management and delivers to NATO, which¹⁹ allocates end items to nations as per the original planned share.

NATO itself or one of its derived procurement entities, e.g., NICSMA, might perform the contract management function. A new organization might be created for this purpose or perhaps a military unit such as SHAPE could be adapted to do the job. Alternatively, an ad hoc organization such as the one formed to develop and produce the Panavia Tornado aircraft might be formed.

Under this arrangement, the revised IP transfer policy of Recommendation 1 would apply; i.e., IP would be retained by the contractor, and NATO, as a buyer, would ask for a commitment to license and for review of the licensee choice and license fee. As under Recommendation 1, IPR for operation and maintenance spares breakout would be made available to the buyer under the contract.

We recommend U.S. participation in supranational buys. It would require no change in DoD IP policy since the Government would not have a contract management role.

Given that efforts are already underway among NATO members to establish a process for matching requirements (e.g., the Preliminary Armaments Planning

¹⁹This process is a natural extension of the "Families of Weapons" (FOW) or "Program Package" (PP) scenario currently supported by DoD and described in Chapter 4. Under FOW, the first two steps above are completed and a given nation is assigned to contract for development with other participating nations abstaining from parallel competitive developments. Under the supranational buy approach, a supranational acquisition authority would, instead, be formed to conduct an international competition. In this case, each participating member's defense industrial base could itself elect to develop or not, and no implicit restraint on competing developments need apply.

System), and doctrine and tactics (e.g., the Long Term Defense Program), the step to an international acquisition process centered around a NATO-run acquisition management entity seems most worthy of consideration. There are precedents for such an arrangement e.g., NADGE and improved HAWK programs, and other supranational programs are either planned or underway. Moreover, the size and scope of NATO-operated programs seem to be increasing. Two current cases are illustrative: the recent satellite communication ground station procurement from a U.S. contractor, and the pending E-3A (AWACS) program which is immense in terms of cost, time, and importance. These programs suggest that solutions to the various institutional impediments to supranational buys can be found.

Endorsement of, and participation in, a supranational acquisition would be perceived by NATO partners as a major step forward in U.S. support of the alliance. The opening of NATO buys to competition from the entire NATO defense industrial base would perforce be frightening to some members' "chosen instruments", but perhaps an agreement (required in the RFPs) to subcontract in proportion to members' financial contributions to the program or on an annualized basis would remove that objection. Some other hurdles remain, e.g., the sometimes perceived abdication of sovereignty to NATO inherent in such an arrangement. For example, can the U.S. really allow NATO to buy for it? Can other nations? There is no existing bureaucracy for this purpose, no adequate body of acquisition capability, no contract management on such a level. Contractors interviewed voiced real concern that no forum for resolution of disputes is available and that solvency and even promptness of payment were valid worries. What currency is to be used, and how stable will contract values stay when currency fluctuates? Would the U.S. Congress allow funds to go to a NATO or other supranational body; could the U.S. GAO audit,

or should they? The study team found U.S. industry more receptive to resolution of these questions than the Government. Europeans (though a small sample in government and industry) were more pragmatic. Many felt that they were already solving the problems inherent in supranational buys and pointed to a variety of quadrinational programs in place as evidence.

It has been suggested by the 1978 Defence Science Board Summer Study that the U.S. enter the standardization arena rather carefully. LMI would suggest that, consistent with this recommendation, the U.S. and European NATO countries jointly fund a modest supranational R&D program under which IPR would remain with the contractor but NATO would receive a commitment to license. Such a program could bring about existence of a growing body of IP which NATO itself could make available for future transfer among its members while providing a testing ground in which problems of supranational program management could be addressed.²⁰

RECOMMENDATION 4: IMPROVE GOVERNMENT-INDUSTRY INFORMATION EXCHANGE

One of the U.S. industry's major concerns regarding NATO cooperative programs is that it is not kept sufficiently informed about these programs, particularly during earlier planning phases, to orient its investment strategies to the NATO cooperative program market. It is therefore recommended that a mechanism be developed for the international publicizing of multinational requirements and budgets for NATO in a manner similar to that in which the DoD currently publicizes its R&D needs, program budgets, acquisition plans, and specific proposal requirements. This would serve to promote competitive international industrial teaming and to provide the widest spectrum of technology within NATO to prospective NATO cooperative programs.

²⁰The concept of a NATO managed R&D trust fund is explored further in Appendix IV.

To harness the capability of industry to adopt its products to requirements for multinational use necessitates that industry know what is needed and when. The scope and content of Preliminary Armaments Planning System results should be circulated. While security restrictions must continue, provision for appropriate clearance for industry must be arranged. The A-109 style "needs/solution" alternatives available to any government will be enhanced if more of industry has access to the problem needing solution. In essence, broader international knowledge can extend the range of competing alternative solutions.

In the U.S., industry independent research and development is programmed using information about DoD budgets, acquisition plans and R&D needs. It has appeared to be successful and provides a reservoir of technical capacity focused on perceived needs, the time they will be needed, and the costs likely to be required to satisfy the needs. To allow for the same process with respect to NATO industry, interviewees felt that an extension of this background need, timing, and budgetary information into the NATO cooperative program realm was needed. Specifically, U.S. industry interviewees feel that insufficient knowledge is available to them regarding the scope, content, and intent of MOUs. This opinion applies to both "umbrella"-type and program-specific MOUs.²¹

Accordingly, we recommend that the DoD with the cooperation of other NATO governments establish and maintain a NATO requirements information mechanism.

LMI's examination of export control laws and other IPR-related regulations in the Departments of State, Commerce, Justice, as well as in DoD, led

²¹In contrast, the few foreign firms interviewed were of the opinion that their government kept them readily informed and sought their advice and counsel as MOUs were prepared.

to the other suggestions for government policy changes. These suggestions which require Congressional, State Department, Justice Department, or Treasury Department action to be implemented, are presented briefly in Appendix III.

4. RECOMMENDED IP POLICY IN RELATION TO
DoD's PRIORITY COOPERATIVE PROGRAM SCENARIOS

DoD's PRIORITY SCENARIOS

According to recent statements by the Under Secretary for Research and Engineering, DoD's efforts to promote NATO rationalization, standardization, and interoperability in the coming months and years should be based on the following three priorities:

1. The signing of MOUs by the U.S. and various European NATO partners to permit European companies to compete on an equal basis with U.S. companies for development and production of DoD's new weapons and equipment, and vice versa.
2. Dual production, a scenario under which U.S. or European firms produce under a coproduction or licensing arrangement certain key items or systems which have already been mostly developed by the other side. (This scenario is to be used only in the short term, for a few systems, including MOD FLIR, STINGER, and Copperhead.)
3. "Program packages" (PP) or "Families of Weapons" (FOW), a scenario under which participating NATO countries jointly rationalize military requirements, exchange plans for national equipment schedules, allocate responsibility for development of specific equipments to specific countries, and subsequently share production of the developed equipments on appropriate terms.

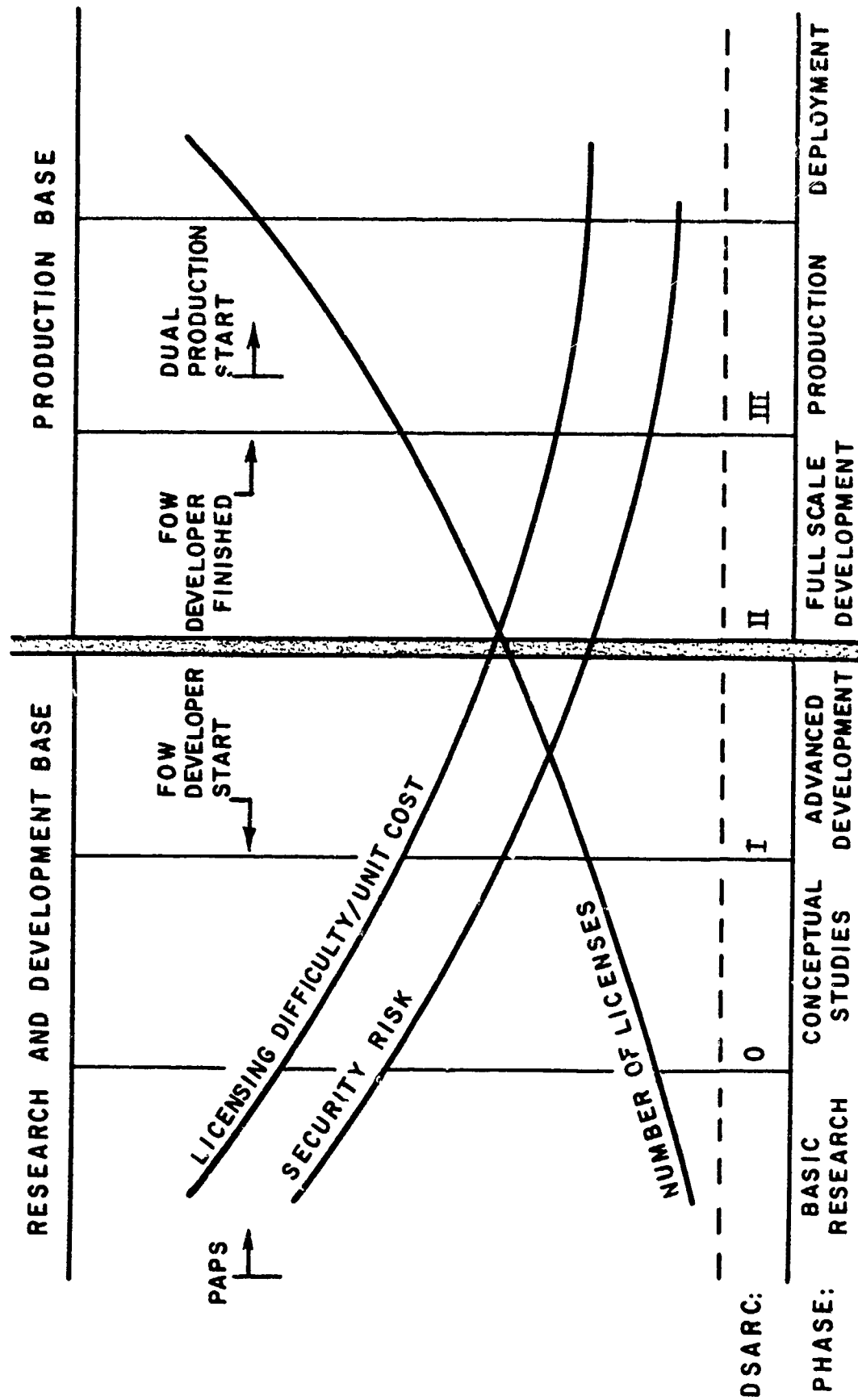
This chapter examines the role of IP transfer in the acquisition cycle generally and the effects of the recommended IP policy (Chapter 3) on each of these scenarios.

IP TRANSFER ISSUES AS A FUNCTION OF ACQUISITION PHASE

The nature of IP and the way it is transferred depend on when the transfer occurs in the acquisition cycle. Figure 4 illustrates the usual

¹These cooperative scenario descriptions are paraphrased from comments by the Under Secretary for Research and Engineering, Dr. William Perry, to the 1978 Defense Science Board Summer Study Group, July 31, 1978.

FIGURE - 4
 DEPENDENCE OF IP CONSIDERATIONS ON ACQUISITION PHASE



phases of this cycle. It begins with early cognitive and conceptual effort and matures through the reasonably well defined phases shown, ending with deployment and support of the weapon. DSARC Milestones 0 through III are shown, as is the point at which PAPS would typically begin.² Certain points within the Dual Production and FOW scenarios (to be discussed later) are also shown.

The curves represent the results of interviews with industry and licensing organizations regarding the nature of IP at different points in the cycle. The IP which arises early is usually quite generic and frequently cannot be identified with a specific system. Its financial and technical value is unknown. The data and know-how components of early IP are difficult to distinguish and transfer to others. Consequently, early licensing is an unlikely and infrequent occurrence. Not until about DSARC II (or an equivalent level of equipment definition) does licensing become realistic or frequent. After definition is extended, the ease of licensing and the numbers of license rise. This fact can also be confirmed by considering the content of the IP itself. Early IP provides the knowledge to design or create something and is the basis for important advances in the state-of-the-art of the final hardware. Late IP gives the transferee the ability to duplicate something without detailed knowledge of how it was designed. It is "finished product" knowledge, the transfer of which is least damaging to the transferor in terms of advancing the transferee as a competitor. Accordingly, companies are much more inclined to transfer late IP, since its loss is less critical to their long term business health.³ Because of the usually larger sales volumes

²See Footnote 7, p. 1-3.

³Indeed, one of CODSIA's recent recommendations was that products and not technology should be licensed (see Chapter 3, Footnote 6).

during the later acquisition phases, the unit price of late IP is lower, though the full price can be large.

MEMORANDUMS OF UNDERSTANDING (MOUs)

The signing, by the U.S. and its NATO allies, of MOUs designed to allow European companies to compete on an equal basis with U.S. companies and vice versa, represents a firm DoD commitment to facilitate military trade. In general, these MOUs include provisions for modifying or waiving the Buy American Act, the Cost Accounting Standards, and various other U.S. regulations, which tend to impede contention by foreign firms for DoD business. Examples are the recent MOUs between the United States and the United Kingdom and between the United States and the Federal Republic of Germany. These MOUs are bilateral and non-program-specific.

Although these MOUs are clearly in the spirit of NATO industrial cooperation, many DoD officials believe that they may not be enough to open the U.S. defense market to European firms, because European firms are simply not competitive in many equipment areas. Implementation of Recommendation 2 (source selection preference for standard items) could help remedy this problem. If there were a policy of source selection preference for an item in use or being acquired by another NATO country, European firms meeting the requirements would be much more motivated to familiarize themselves with DoD's acquisition process and to contend in U.S. domestic acquisitions. They would tend to attach a higher priority to analysis of DoD needs and to spend internal funds in order to have their product chosen to be within the competitive range (on technical and cost bases) in the source selection process.

Of course, U.S. firms would probably respond to this policy by forming joint ventures with other European developers of existing NATO equipment or offering licensed production with these European firms as the licensor. While

this practice might not be quite as desirable as totally European production of an item, it could give new impetus to European development efforts and provide a new source of revenues for offsetting European R&D and nonrecurring production costs. In any case, the result is likely to be a much higher potential for equipment standardization.

DUAL PRODUCTION

Under the dual production scenario, European NATO industry would participate in the production of several specific systems the development of which has already been undertaken in the United States and is largely complete (e.g., MOD FLIR and STINGER). DoD personnel view dual production as a short-term solution, which would no longer be needed if the FOW scenario (to be examined below) were successfully implemented. Anticipated benefits of dual production are that: (1) the NATO partners do not have to waste money on duplicative R&D; (2) the latest technology is put into production; (3) the by-product of a cross-servicing capability in the field is attained; and (4) some efficiency can be achieved in production lines.⁴

The Chapter 3 recommendations would have little impact on dual production as defined above, since the few weapon items affected have their contractual relationships already defined and in place. However, this would not be the case if dual production were redefined to include those future occasions when:

1. Industries in the U.S. and one or more NATO European countries cooperate in production of a weapon system or item via a coproduction or licensing arrangement.
2. "Late" IP (related primarily to the production capability and only secondarily to the design capability) is transferred from the U.S. firm(s) to the European firm(s).
3. The dual production arrangement is not necessarily part of a government-to-government cooperative program (e.g., the F-16) and has not necessarily been preceded by any conscious allocation of development responsibilities by governments.

⁴See Under Secretary Peiry's comments referred to in Footnote 1 above.

A dual production arrangement of this type might typically be undertaken on the initiative of NATO industries alone in anticipation of future common requirements. An example is the arrangement between General Electric and SNECMA of Paris to jointly produce the powerful CFM-56 aircraft engine in anticipation of future common requirement by the United States and various European governments.⁵

While this modified dual production scenario is not included among those currently of significant interest to DoD, it has merit as an avenue to standardization. Moreover, the revised IP transfer policy of Recommendation 1 would provide a major incentive to U.S. industry to undertake such arrangements on a broad scale. American firms would take the initiative well before specific DoD requirements had matured, to gain insight into potentially similar European requirements, and would make initial arrangements with appropriate European firms for later joint production. As the DoD requirement matured, the American firm would endeavor to show that one or more of the criteria for a NATO-related acquisition applied, so that it could receive the benefit of the revised IP policy.

PROGRAM PACKAGES (PP)/FAMILIES OF WEAPONS (FOW)

Under the PP scenario, a group of NATO countries would jointly agree to rationalize military requirements using a system such as PAPS, exchange national equipment need schedules, and allocate responsibility for development of commonly needed equipments to specific countries, thereby avoiding

⁵Some development was also undertaken by each industrial participant under the arrangement, but the IP transferred via license dealt largely with production techniques.

duplicative R&D efforts.⁶ A typical PP might be air-to-surface missiles. Sub-packages within this PP to be developed by different program participants might be short-range missiles, medium-range missiles, etc.

Implementation of a PP calls for participating countries to sign a binding agreement in which respective tasks and obligations are specified. A prerequisite to participation is the existence of a pertinent military requirement in the country concerned. When responsibilities are allocated, one country or group of countries is chosen as sponsor for development of each sub-package. This responsibility includes serving as acquisition authority, guaranteeing availability of all IP generated in the course of developing the sub-package, and sharing production of the developed sub-package, as appropriate, with other national participants. In addition, the sponsoring country for each sub-package agrees to:

1. carry out its acquisition management responsibilities in accordance with a jointly determined time schedule;
2. provide financing for the development work for which it is responsible;
3. report progress periodically to a Joint Management;
4. refrain from imposing a levy for recoupment of R&D costs when it sells the developed sub-package to other participants; and
5. ensure that industries of all participating countries are allowed to compete for development of the sub-package as long as they have the requisite technology and industrial capability and can meet necessary security requirements.

Each PP participant will, in general:

1. refrain from conducting any parallel competitive development of a sub-package for which another country has been chosen sponsor;

⁶A primary source for this description was a presentation entitled "Impact of International Programs on Acquisition Policy", by Dr. V. Garber, Director, International Programs, OUSDR&E, to the 1978 Department of Defense Acquisition Conference, November 21, 1978.

2. plan for adoption of all developed sub-packages within the PP for which its own armed forces have a requirement;
3. use identical components with the PP, wherever possible; and
4. make available technology potentially germane to sub-packages for which it is not the sponsoring country, for the purpose of exclusive application within the given PP.

Each participant is entitled to pursue research and evaluation activities independent of the PP in order to preserve its own capability of judgment. For each PP, a Joint Management will be established to steer and control the implementation of the PP. The sale of developed sub-packages to non-NATO countries will require arrangements making allowance for the interests of participating countries.

A key feature of the PP/FOW concept is that the PP or weapons family be small enough (e.g., air-to-surface missiles) so that the continuum of design and production IP pertaining to this PP and resident within the industries of PP participants is reasonably homogeneous. If this condition is met, the "hole" left in the development base or reservoir of IP of a PP participant when it refrains from developing a sub-package for which another participant is chosen sponsor will not be too large. Ideally, the hole will be small enough to be filled via two means:

1. the use of subcontractors in development of a given sub-package, from countries other than the one sponsoring that sub-package;⁷ and
2. the transfer of production and considerable design IP from the development prime contractor, who is highly likely to be a resident (or even a chosen instrument) of the sponsoring country, to the industries of the other participants chosen for licensed production.

While the LMI team detected some reservations about the workability of the PP concept on the part of both government and industry personnel

⁷Interview with Under Secretary Perry, "It's the Management Superstructure that's Strangling the Process," Armed Forces Journal International, July 1978, p. 34.

throughout NATO, DoD is taking the lead in initiating use of the scenario.⁸ It is viewed as a workable plan for achieving specialization in the development and production of weapons systems, in order to get more out of what the Europeans invest in R&D, and its impact on the U.S. defense industrial base considered modest.⁹ A MOU among the "big four" NATO participants (United Kingdom, France, Federal Republic of Germany, and the United States) for the first major PP was in negotiation as this report was being completed.

EFFECTS OF RECOMMENDED IP POLICY

Recommendation 1, if implemented, could have a very positive effect on the implementation of PPs in which the United States is a participant.

⁸Reservations about certain features of the PP concept were expressed by various interviewees in U.S. industry, European industry, and European governments.

There was some fear in U.S. industry that the rationalization of requirements and choice of one sponsoring government, with high likelihood of a domestic prime developer, might severely reduce profit potential within various sectors of the U.S. defense industrial base. Industry, in response, might shift its attention to other potential markets, with the result that entire capabilities could be lost in certain defense technologies.

Some Europeans felt that because of all the factors upon which there must be agreement, the PP concept is most difficult to implement, even within Europe, because of significant differences between its countries in quality of defense industrial base, amount of military funding, and degree of needs definition. Some hope was expressed that these differences could be reconciled in an Independent European Program Group (IEPG) forum but it was felt that inclusion of the United States in such a scenario would appear to impose too many demands for it to be workable. There was also some European concern that the United States, upon receiving a sub-package item developed in Europe, could produce it under license more cheaply than the European developer for sale to third parties. Also, there was a practical concern that the military leadership of countries refraining from development would have difficulty interacting with the developing contractor.

Finally, there was some concern that the licensing of a sub-package developed in Europe to a U.S. licensee might be anti-competitive. In this case, only one firm in the U.S. could receive both production and design IP for a major sub-package, thereby becoming a domestic sole source. While this may be viewed with some concern, the anti-competitive effect can be diminished by broader use of U.S. subcontractors by the sponsoring developers initially. The potential for international competition remains and should be strengthened by the PP concept.

⁹See Under Secretary Perry's comments referred to in Footnote 1 above.

Figure 5 compares the flow of IP from the United States to European governments/firms under existing DAR/ASPR policy and under the revised policy for a sub-package for which the U.S. has been chosen lead developer or sponsor. Once this sub-package is developed, the DoD cannot now guarantee the availability of all relevant IP to other program participants, to permit licensed production and the filling of holes in their reservoirs of design know-how, specified by the PP agreement. As shown in the upper flow network, the DoD can only apply its "best efforts" to ensure that the background IP and know-how of the developer necessary to meet these requirements are made available. Hence, under existing policy, use of the subcontractors in participating countries may have to be relied on to a greater extent to ensure that holes in European design know-how do not develop.¹⁰ In any case, transfer of sufficient production know-how from the developer to permit successful European production could remain a problem.

As shown in the lower Figure 5 IP flow network, implementation of Recommendation 1 would largely solve this problem. While the U.S. Government would receive a much smaller data package to be transmitted via European government channels to appropriate European industry recipients, all IP necessary to ensure that these firms could produce the developed item and fill gaps in design know-how would be supplied by the original developer as licensor under his licensing commitment to the U.S. Government.

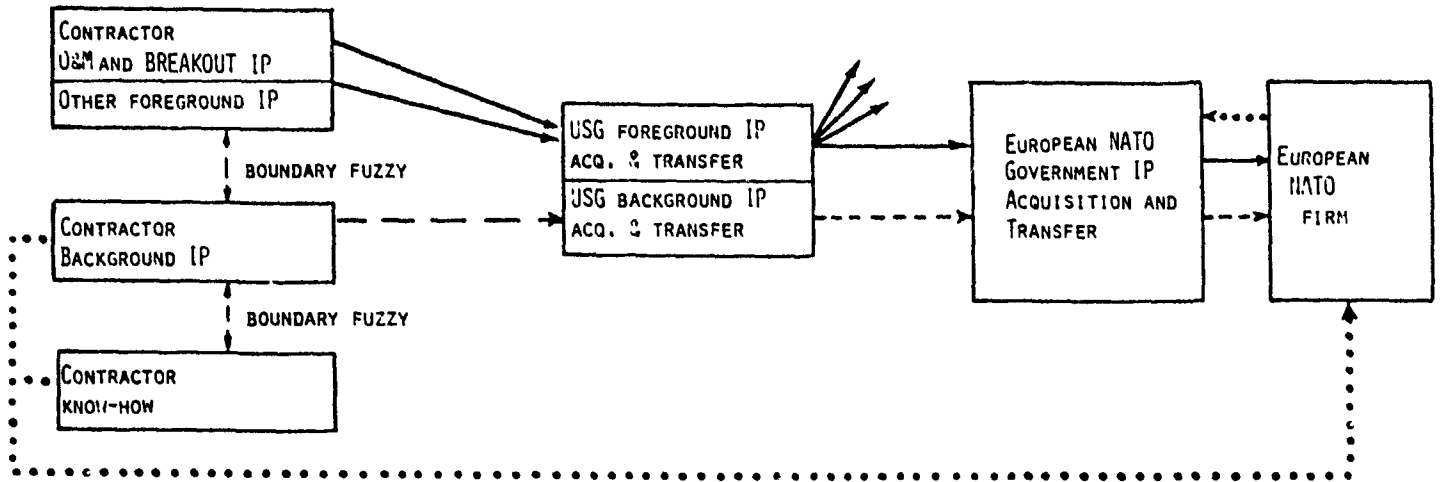
There is a most important point to be made here. A critical element of the PP concept is that gaps in the technology bases of nonsponsoring

¹⁰ Recall from Chapter 3 that there can be additional problems in attracting European subcontractors under existing DoD policy, due to their practice of retaining IP in domestic European acquisitions and particular dislike for the idea of submitting data with unlimited rights to the U.S. Government.

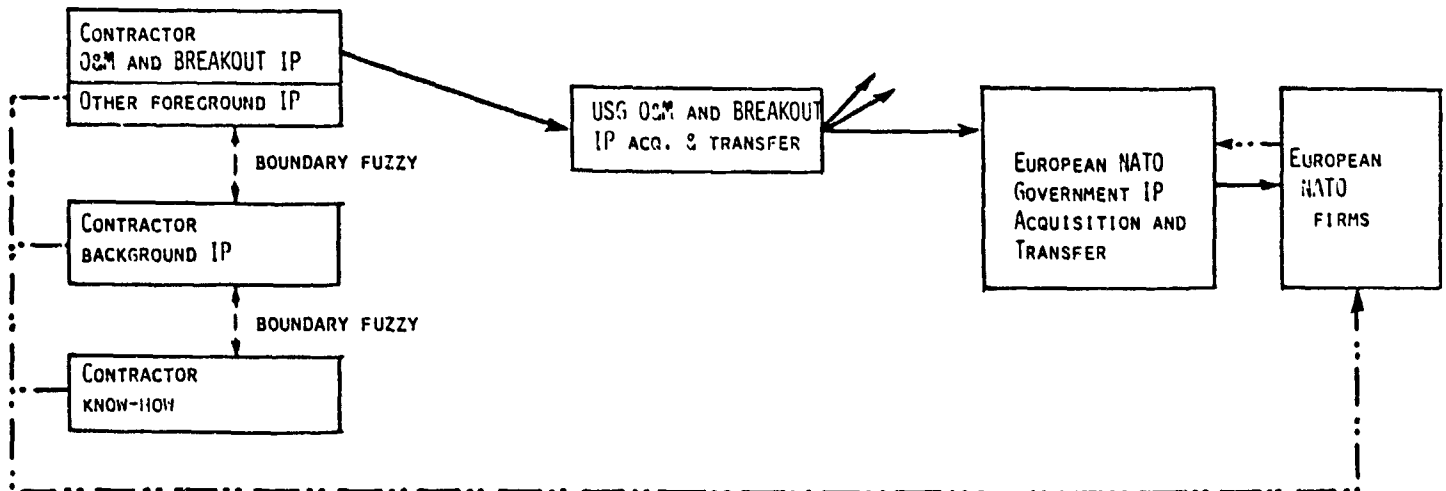
FIGURE 5

IP TRANSFER IN THE PROGRAM PACKAGE SCENARIO

CURRENT ASPR/DAR APPROACH



APPROACH UNDER RECOMMENDATION 1 REVISED IP POLICY



KEY:

- 1) —————> IP TRANSFERRED WITH UNLIMITED RIGHTS
- 2) - - - - -> IP TRANSFERRED WITH LIMITED RIGHTS
- 3) - - - - -> IP TRANSFERRED WITH LIMITED RIGHTS & ONLY IN EMERGENCIES
- 4) ······> IP TRANSFER TOTALLY SUBJECT TO CONTRACTOR DISGRESSION (CONTRACTOR IS ONLY PARTY HAVING UNLIMITED RIGHTS TO IP (USG CAN ONLY APPLY BEST EFFORTS TO SEE THAT IT IS PROVIDED))
- 5) - ······> IPR RETAINED BY CONTRACTOR BUT CONTRACTOR COMMITTED TO LICENSE USE OF IP AT FAIR AND REASONABLE PRICE

participating countries will be filled by transfer of necessary IP from the sponsoring country. Specifically, both "late" production-related IP necessary to permit second source production and "early" design-related IP necessary to sustain a growing design capability in the technology base of the non-sponsoring participant will be transferred. However, while the transfer of production IP is common and not regarded by the transferor as posing a significant threat to its international competitive position, this is certainly not the case with the "early" design IP. U.S. industry is not inclined to transfer this IP.¹¹ This problem could be particularly acute in view of the large element of know-how in earlier design IP and the importance of firm-to-firm interaction and technical assistance in order to ensure complete transfer.¹²

Implementation of Recommendation 1 would provide a practical means of overcoming this difficulty. It commits the developer to transfer both early and late IP under this scenario and it should provide him enough of an incentive, in the form of retention of IPR, to be willing to transfer earlier design IP, effectively guaranteeing a European competitor in future related acquisitions.

¹¹See Footnote 3 above.

¹²The "Bucy Report" confirms the importance of technical assistance and know-how in transmitting a "technical ability to design, optimize, and produce a broad spectrum of products in a technical field." (Report of the Defense Science Board Task Force on Export of U.S. Technology, "An Analysis of Export Control of U.S. Technology - A DoD Perspective (Washington, D.C.: Office of the Director of Defense Research and Engineering) February 4, 1976, p. 1.

5. RECOMMENDED CHANGES IN THE ASPR/DAR

To implement the AC-94 guidelines, the DoD must either own the IPR and transfer them for cooperative programs, or assure that the IP may be transferred. A successful implementation must also take into account the deeply rooted concerns of industry with respect to the IPR resident in each firm.¹ To accomplish these goals, LMI recommends the following additions to the DAR.

3-804.1 NATO and NATO Standardization Related Acquisitions

3-804.1 General. This policy shall apply when any one of the following three criteria have been found to be satisfied. Notice of these criteria shall be included in any RFP reasonably susceptible of providing an item or service which can be standardized within the NATO forces:

1) When it has been determined by the Contracting Officer that there is a requirement for the item or service which is also a requirement of another NATO country, to be satisfied by this acquisition or otherwise, or

2) When the Contracting Officer has determined that there is another NATO nation requirement for the same or substantially the same item or service based on information supplied by a contender for this award by a contender who is determined to be within the competitive range (see 3-805.2)

3) When the Contracting Officer has determined that there is a reasonable possibility of there being another NATO nation requirement in the time span of the contemplated acquisition based on information

¹AC-94 Report 31 July 1978 re NATO Industry Advisory Group Comments.

supplied by a contender for award who is determined to be within the competitive range (see 3-805.2).

3-804.2 Special Source Selection Measure for NATO Standard Item or Service. In an acquisition where this policy is to apply, as set forth in 3-804.1, the contenders for award who are otherwise determined to be in the competitive range (3-805.2) and who are offering an item or service which is or which may become, as determined by the Contracting Officer, a requirement of another NATO nation, the contenders for award so offering shall be given a significant preference over offerors not offering a NATO-related item or service. Such preference shall normally be large enough to assure award to the offeror of a NATO standard item or service given that other evaluation factors are in close proximity as between contenders.

3-804.3 Other Than U.S. Contenders. No distinction shall be made between the offerors based on national origin if the offeror is a contender whose principal place of business is within a country which has executed with the U.S. a bilateral MOU providing for free access to contend for U.S. acquisitions.

3-804.4 Special IP Provisions for NATO Standardization Acquisitions.

1) In order to execute Government commitment to NATO cooperative programs and in acquisitions where a criterion of 3-804.1, above, has been satisfied, a special IP policy shall apply. In general, IP rights will be left with the contractor and as consideration the Government will acquire a right to use such IP in the form of an option to require a license transaction between the contractor and another NATO nation contractor on reasonable terms. Accordingly, in such cases the provisions of 9-107, 9-109, and Parts 2, 3, 4, 5, and 6 of Section 9 of

this regulation do not apply and the following language shall be included in lieu of those parts in every acquisition defined as described above:

"Insofar as the contractor is entitled to dispose, the contractor shall grant the Government a non-exclusive and assignable right of use for military purposes all the contractor's patent rights and applications, data, designs, processes, and other know-how, developed in or necessary to the execution of the contract. The Government may transfer such right to another NATO government or require the contractor to provide the same IP to a contractor of another NATO country."

2) In the event the contractor is required to transfer the patents, data and know-how which is subject to the Government's right to use, the contractor shall do so by means of a license which shall be to a licensee found reasonable by the Contracting Officer and for a remuneration from the licensee to the contractor also found reasonable by the Contracting Officer. In assessing the reasonableness of the licensee selection and the remuneration, all circumstances of the case shall be taken into account, including but not limited to the following:

- a) the fee or profit already paid to the contractor for creation of the IP;
- b) the predicted military value of the IP;
- c) the technical assistance to the licensee that will be necessary to enable the licensee to effectively use the transferred IP;
- d) the value of the IP provided by the contractor and not identifiable as created in the performance of government contracts;

e) royalties paid by the Government or contractor to others for IP included in the transferred IP;

f) other fees paid for or received by the contractor from transactions involving the same IP;

g) the review by the Contracting Officer of the licensee selected by the contractor will duly consider the capability of the licensee to use the IP in an effective manner, to protect the IP from unauthorized disclosure or use, the licensee's engineering, technical or production skills necessary to apply the IP, and the potential impact on competition as a result of the license arrangements as between licensor and licensee;

h) the approvals required for export of IP under 22 CFR. Parts 121-128;

i) such other provisions of the license agreement as appear to deviate from normal license provisions as used between contractors in international agreements.

APPENDIX I

BIBLIOGRAPHY

APPENDIX I

BIBLIOGRAPHY

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APPENDIX II

NATO GUIDELINES ON INTELLECTUAL PROPERTY

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GUIDELINES ON NATO INTELLECTUAL PROPERTY

INTRODUCTION

1. NATO standardisation and interoperability of systems and equipment in the armaments field can become a reality only through co-operation in spirit and practice between and among its members in development and production programmes. This co-operation can only flourish in a climate of information and technology generously exchanged.

2. This technology often represents valuable assets in each nation's treasury. Its exchange and use, therefore, must be fostered by mutual trust and confidence which rests on the secure knowledge that terms and conditions of disclosure will be scrupulously observed.

3. Defence authorities within NATO, in the earliest stages of national and international defence programmes, and in all subsequent stages, must think in long range terms and must plan for the possibility of future or extended international co-operation. They must seek ways to make co-operative programmes attractive to industry and to other partners. They must anticipate needs for the transfer of technology in expanded co-operative programmes, and must take deliberate steps to assure the availability of essential technology.

4. NATO has set forth a set of principles (see Attachment) to serve as a foundation for enhancing co-operative programmes.

PURPOSE

5. The purpose of these guidelines is to outline ways by which individual nations should adjust their policies and/or practices as may be required to ensure that they can comply with these principles in the field of Intellectual Property in a way that each nation decides is best suited to its situation.

DEFINITIONS

6. The term Intellectual Property (IP) is used in this paper to include inventions, trademarks, industrial designs, copyrights and technical information including software, data, designs, technical know-how, manufacturing information and know-how, techniques, technical data packages, manufacturing data packages and trade secrets.

7. The rights to use or have used IP or termed Intellectual Property Rights (IPR) include rights derived from patents, trademarks, copyrights, industrial designs, contract clauses, disclosure in confidence techniques or other means of control of IP.

EXISTING POLICY

8. It is the existing policy of NATO and its member nations that equipment procured for national forces ought to be standardised or at least interoperable with equipment of other members of the North Atlantic Treaty Organisation. In realising this policy the defence authorities of each member NATO nation should in their development and procurement programmes for both major and minor equipment:

- (a) consider NATO Allies' systems, system derivatives, sub-systems and components early in the development cycle, weighing the advantages of standardisation in terms of Alliance combat effectiveness as well as impact on national forces;
- (b) seek agreement within NATO on military operational needs, new weapon system requirements and schedules for new weapons development and production, based on agreed NATO doctrine and operational concepts;
- (c) employ, when necessary, mutually beneficial licensing agreements with NATO Allies to achieve standardisation or to facilitate interoperability;
- (d) support procurement arrangements with NATO countries designed to achieve an equitable and competitively determined flow of defence trade within NATO;
- (e) pursue a mutually co-operative and beneficial policy regarding exchange of information with NATO partners to foster an early mutual exchange of technological information leading to development and adoption of standardised or interoperable weapon systems and equipment by NATO countries.

AIM OF PRINCIPLES

9. In particular, these principles (see Attachment) recognise that:
- (a) information concerning requirements and research and development programmes must be disclosed among the NATO nations so that appropriate international programmes to further standardisation or interoperability can be identified and negotiated between the NATO nations;
 - (b) in contractual dealings with their respective national industries, nations must assure that technology and know-how can be transferred to NATO partners for co-operative programmes on appropriate terms;
 - (c) the nature of use and conditions surrounding this technology must be negotiated by the participating nations on a case-by-case basis and must for each case be clearly set forth in a written arrangement such as a Memorandum of Understanding; and

- (d) the availability of IP must be such that all current and future related co-operative industrial activities may be shared among the participating nations;
- (e) industry should be kept appropriately and timely informed of plans for co-operative programmes.

IMPLEMENTATION

10. In order to be in a position to fulfil the principles (see Attachment), each defence authority must, in respect of all IP that is generated as a result of a national defence programme, either:

- (a) own the IP; or
- (b) ensure that otherwise it is in a legal position to grant or cause to be granted, on fair and reasonable terms, licenses that transfer such IP and IPR to NATO governments and/or their designated contractors as may be required under existing or future co-operative agreements in which it participates.

11. Intellectual property in which defence authorities have neither ownership nor licence rights is often required to support national programmes. In order to be in a position to have access to and use of such IP in co-operative programmes, each defence authority must, in contracts pursuant to national programmes, ensure that it is in a legal position to grant or cause to be granted, on fair and reasonable terms, licences that transfer such IP and IPR to NATO governments and/or their designated contractors, as may be required under existing or future co-operative arrangements in which it participates.

12. Participating nations in a co-operative defence programme must make, with appropriate changes, arrangements similar to those in 10 and 11 above.

13. Defence authorities must not alienate their right to grant or cause to be granted, licences that transfer IP and IPR to other NATO nations and/or their designated contractors, unless it is clear that such IP and IPR will not be required for any co-operative programme.

14. Each defence authority must, as a prerequisite to participating in a particular co-operative programme, secure the availability of IP and IPR that are owned by third parties and required to implement its part of the programme. If this prerequisite cannot be achieved, the defence authority should immediately notify its co-operative partners. Such availability is not to apply to commercial off-the-shelf items that will be readily available, at reasonable prices, in one or more participating countries.

15. Each nation participating in a co-operative programme is normally concerned that there will be a sharing of the overall industrial activity which it considers equitable having regard, inter alia, where appropriate to:

- (a) the nature of the particular programme and the known restrictions imposed by IPR;

- (b) the origin and nature of the technology regardless of whether it is governmentally or industrially owned;
- (c) desires for competition; and
- (d) work sharing arrangements of other co-operative programmes.

It is important, therefore, that arrangements be made as early as practicable in an endeavor to ensure that IP will not prevent such work sharing as may be agreed between participants for all phases of the co-operative programme including any post production phase. Similar arrangements should be made to facilitate sales to NATO countries not participating in the programme and to other third parties.

16. In order to promote co-operative programmes, defence authorities and industries must be able to exchange information subject to limitations on disclosure or use. Information thus limited must be clearly marked as such. Defence authorities and industries receiving such information must strictly observe such limitations under adequate procedures and must ensure that others authorised to receive it do likewise. In addition, there must be adequate arrangements for dealing with requests for modification of such limitations.

17. These guidelines will be updated from time to time in the light of experience gained by nations in applying the principles and practices at Attachment. To this end, nations should report to NATO the difficulties and experiences in implementing these guidelines.

ATTACHMENT

NATO INTELLECTUAL PROPERTY PRINCIPLES
IN THE FIELD OF LICENSING AND CO-PRODUCTION FOR THE
PURPOSE OF ARMAMENTS STANDARDISATION OR INTEROPERABILITY

1. NATO nations should promote the exchange of information on national requirements and R&D activities to help preclude overlapping effort and enhance the feasibility of future standardisation and interoperability. Exchange of technical information related to R&D activities should be under bilateral or multilateral arrangements which define the field of information and the purpose of the exchange, e.g. for evaluation and assessment. The arrangements should provide that the information may not be disclosed or used for any other purpose without the specific consent of the participant which supplied it.

2. Governments should take all steps possible to ensure that technical information made available to them or to their firms by other governments or firms are used only for the purpose for which it is made available and will not otherwise be used or disclosed. This principle extends only to information disclosed under government auspices.

3. Before embarking on a new programme on a national basis, the government should first consider:

- (a) whether its requirements can be met in whole or in part by a weapon system or component equipment already in development or production and be prepared to adopt that system or component unless the premium for so doing is excessive; and/or
- (b) whether it should make arrangements to participate in an on-going development programme; and/or
- (c) whether it is possible to proceed from the outset on a collaborative basis with other member nations.

4. At the earliest stage of a programme and at each subsequent stage, steps should be taken to ensure through appropriate contractual arrangements or options that if other NATO nations later wish to participate in research, development or in production, they will not be prevented from doing so by non-availability of rights to Intellectual Property. This applies whether the programme is carried out on a national or collaborative basis. The arrangements in earlier stages should look forward to the requirements of all later stages.

5. In national contracts with industry relating to research and all programme stages there should at least be provisions for the government to use information generated under the contract to promote international collaboration in any subsequent work under the programme and for the contractor to grant such licenses as may be necessary to fulfil any international collaborative arrangement. Such licenses should be on fair and reasonable terms approved by the governments. To the extent feasible, guidance criteria should

be established on the terms and conditions that should apply to NATO programmes in various circumstances.

6. Where a government transfers its own IPR to any person, agency or organisation for exploitation, adequate safeguards should be taken to ensure that the rights will be available to promote standardisation and interoperability of defence equipment on terms no less favourable than those that would otherwise have been granted by the government.

7. Before concluding an MOU for a collaborative programme that will involve the licensing of rights owned by industry, governments should ascertain by consultation with industry, or otherwise, whether there are any known existing obligations or other reasons which would prevent or restrict the required licensing. Governments should use their best endeavours to overcome any obstacles to such licensing, e.g. by seeking re-negotiation by the parties concerned of existing licenses.

8. Necessary license agreements with or between owners of IP known to be involved in a collaborative production programme should be signed no later than the relevant intergovernmental MOU. Proposed terms of such license agreements between firms should be notified to the participating governments so that they can determine that the terms are acceptable. The agreements should cover the possible IPR requirements for the whole of the collaborative programme and its post-production phase, including technical data and spares required for repair and maintenance, whether on a national or common logistic support basis. They should not be so restrictive as to limit the ability of governments to invite competitive tenders for work especially repair and maintenance work, relating to items of equipment covered by the collaborative programme. To the extent feasible, the same principle should apply to collaborative programmes involving research and development.

9. MOUs should be drawn up in clear and precise terms based on NATO guidelines and principles. The drafting and negotiating of MOUs should be guided by personnel who have long-term background and expertise in such work.

10. In the case of a joint or shared research programme in a particular field, each participant should have access to and use for at least the purposes of its own armed forces, all information generated in the course of the programme. This should be without charge unless a significant imbalance of financial, technical or other contributions and benefits does not justify this. Access to and use of background information should be on fair and reasonable terms under cover of an arrangement offering the originator adequate safeguards.

11. In the case of a collaborative development programme, each participating government should arrange that background information available to it and its firms involved in the programme which is required for the development phase of the programme as defined by the parties, will be made available as necessary to the other participants, subject to the rights of third parties. Unless there is a significant imbalance of financial, technical or other contributions or benefits, this should be without charge to avoid, where possible, mutual payment of royalties between participating governments and contractors.

12. Regarding the outcome of a collaborative development programme, the participating government should arrange that each of them obtains user rights covering both foreground and background information. The scope of use of such rights and the terms upon which they will be made available are matters for negotiation on a case-by-case basis.

13. In setting up a collaborative programme the participating governments should aim to obtain an equitable overall arrangement with due regard for all factors. Those factors include both the advantages of standardisation and interoperability and the costs, work sharing and other benefits to those governments.

14. Collaborative arrangements should include provisions which will allow other NATO nations to join on reasonable terms with a view to further enhance standardisation and interoperability. New participants must, however, be prepared to accept an established programme and not expect materially to change its objectives.

15. When a nation sells equipment that it has developed at its own expense, it should be prepared to allow the purchasing country the right, free of charge, to make modifications or improvements and to carry out overhaul or repair. In addition, the right to manufacture spares should be allowed on fair and reasonable terms. There should also be reciprocal rights to make use of modifications and improvements on appropriate terms. In the interests of standardisation and interoperability, there should be close consultation on modifications or improvements and appropriate arrangements made as regards configuration control responsibility.

16. Governments should undertake to keep industry appropriately informed about their plans in the field of armaments with a particular view to co-operation in achieving standardisation and interoperability. Prospective international firm-to-firm agreements relating specifically to defence products or work should be notified to national governments who should use their best endeavours to ensure that the terms of the agreements do not obstruct the achievement of standardisation and interoperability including common logistic support.

17. Governments should take prompt and appropriate action to seek amendments or waivers to their laws, regulations, policies and practices, which prevent or delay the implementation of the principles laid down in this paper.

18. MOU's relating to collaborative programmes should define the scope of user rights in relation to sales to NATO countries. Export sales should be organised by arrangement between the parties. Such arrangements should take into account, inter alia, contributions made by the parties to the total programme and the work sharing arrangements for the participating governments' defence production with a view to ensuring that there is an equitable sharing of the benefits from the programme and that NATO standardisation and interoperability are enhanced. There should normally be no restrictions on sales to NATO countries. It is recognised that sales to non-NATO countries will be subject to political considerations of the individual countries concerned.

19. Where there is competitive international selection of NATO standard equipment from the equipments developed nationally, all participants in the competition should be assured that the utmost care will be taken to safeguard their intellectual property during and after the evaluation of offers and, in appropriate cases, that unsuccessful competitors will be compensated usually by licensed production on appropriate terms.

20. Governments should assist other NATO participants in a collaborative programme in negotiations with national firms on the terms for use of IPR, including, if so requested, negotiating on their behalf.

21. Licensing fees or royalties should take account of the value of the contribution made to the programme by the intellectual property involved and the benefits gained by the licensor. In the long term it should be the aim to establish a system of ceilings on licensing fees or other charges. In establishing such a system of ceilings the need for economising defence resources and facilitating international negotiation should be main considerations.

APPENDIX III

SIX ADDITIONAL SUGGESTIONS TO ENHANCE STANDARDIZATION

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SIX ADDITIONAL SUGGESTIONS TO ENHANCE STANDARDIZATION

ALLEVIATE ANTITRUST CONCERNS

Given the long and complex development of antitrust law in the United States and Europe, it is not surprising that contractors frequently expressed misgivings to us over IP transfer arrangements which skirted the edges of the antitrust boundaries (see also Appendix V). Questions arise whenever a license is bounded by territory or sales recipients, or is otherwise restrictive of competition. The normal interactions called for in licensing arrangements deals sometimes make partners of competitors, a significant antitrust concern. Such concerns, we were informed, have been a major impediment to U.S. firms' participation in military products consortia, both here and in Europe. License activity short of actual participation in the consortium is also restricted by some managements because of potential problems with the license liaison.

If antitrust concerns are to be alleviated, the U.S. Government's own role in the license or consortium plan must be carefully evaluated. If the overall interests of the United States were clearly to be enhanced, the process might be permissible under the law. Both the Departments of Defense and Justice should pursue this matter further.

SIMPLIFY THE ITAR FOR NATO

The Department of State Office of Munitions Control promulgates the ITAR, which provides, in part, that sale of IP is subject to restrictions and that prior approval in the form of an export license is required.

The process is relatively complex and is alleged to be slow. Further, ITAR do not treat NATO members differently from many other foreign governments.

We suggest that the ITAR be modified to permit an export registration similar to the Department of Commerce general export license, providing certain criteria are met by the NATO country to whom the export is to be made. The last point is important, because industry would no longer be responsible for the other nation's treatment of the IP, and the transfer process could be accelerated.

Under the revised procedure, a licensor would be required to register a description of the IP transferred, or an acceptable list of hardware, data, and the like that were transferred. Certain critical technology might still be retained in the "munitions list" as subject to prior approval, but the majority of the IP transferred to qualified NATO countries would probably be freed from such control.

The criteria for the recipient NATO government could be defined as met by the execution of an MOU or treaty when the USG is satisfied; or perhaps a biannual review might be undertaken to assure continuing compliance with the criteria. The criteria include at least the following: (1) an adequate security system for the protection of classified and sensitive government and industrial information; (2) a body of law and regulation adequate to protect and restrict dissemination of "critical technology" as measured by the utility of such information, to a third party; (3) agreement to reasonable restraints on the sale or transfer of IP or derivative products to certain third countries or others; and (4) agreement that a reciprocal freedom to transfer IP to the United States subject to similar criteria would be permitted.

Our interviewees agreed almost unanimously that adoption of this suggestion would be perceived as a highly significant step toward assisting NATO IP transfers.

One potential problem with modifying the ITAR in this way would be the implicit need to discriminate among the NATO partners, not all of whom might be able to meet the above criteria. Even the evaluation of the recipient NATO countries might pose difficulties. However, the easing of IP transfers in both directions would benefit all countries concerned, and this would probably outweigh the difficulties. In fact, real implementation of the two U.S. "priority" scenarios will need some easing of the export license process because both scenarios presume prompt transfers of IP.

A coordinated Department of State and DoD effort would be required, and Congressional review would almost certainly be appropriate to implement this suggestion.

PERMIT SOME THIRD PARTY SALES

Recipient NATO countries meeting the criteria outlined in the previous section would be permitted to sell to other NATO countries who are likewise qualified. Further, sales to non-NATO countries who met the same criteria and were "measured" for compliance might be considered acceptable.

Nearly every interviewee, in the United States and Europe, government and industry, agreed that the right to sell beyond the individual licensee-licensor governments was an imperative license requirement. Many arguments are given, but nearly all of them are based on the issue of scale; few countries can afford the luxury of supplying only their own forces. The current U.S. limitations on third party sales, so far unilateral, are perceived as unduly restrictive or even "naive". Given the current balance of

payment position of the United States and concerns over maintaining employment, this perception can be understood. However, no one interviewed could fault the U.S. rationale of supporting human rights and disarmament as meritorious goals, but few felt that not selling peacekeeping arms would help either goal be met.

The momentum of the Independent European Program Group (IEPG) and the United States exclusion from the consortia in Europe are in large measure perceived to be the result of the U.S. third party sales restrictions. It is LMI's view, based on interviews and other research, that Europe will "go it alone" unless the United States accommodates some reasonable scope of sales beyond NATO for the products of IP of NATO consortia.

The non-NATO industrial allies of the United States, e.g., Japan and Israel, may find the NATO nation preference in this and the previous suggestion less than desirable. An extension of the same basic logic to those countries seems to be a possible resolution.

USE LICENSE FEES FOR R&D

To attract private funding of R&D which may be relevant to NATO standardization needs, the concept of "plowing back" the proceeds of NATO license arrangements to industry, tax-free, is suggested. Its implementation would require Department of Treasury and Congressional action in concert with DoD. This suggestion is more pertinent to early, as opposed to late, IP (see Chapter 4).

Under this concept, contractors would license IP (of their own volition or as contractually required) to a NATO national licensee, and if income from the license were invested promptly and directly in R&D for NATO-related needs, the income would be free of taxation. Implementation of this suggestion would provide a means by which U.S. industry could maintain its technological lead

in an environment of increased licensing and easier exchange of technological information. Also, the NATO constraint would promote early industry attention to NATO needs and standardization. The earlier R&D are focused on common requirements, the more likely standardization becomes. The abandonment of a solution is unlikely because large investments have already been made. We were advised by a number of interviewees, especially military, that any important incentive to early consideration of multinational needs would be desirable to avoid this "commitment based on investment" position. Such a procedure is consistent also with the fundamental logic of A-109.

Some negative reactions from non-NATO allies with significant technological industrial bases might become evident if license fees were used for R&D. Administration could be complex. The question of R&D relevancy is a hard one to answer, and "tracking" of funds may be difficult. Further, the Congressional attitude toward a tax preference is always unpredictable.

PROVIDE TAX BREAK FOR CONTRACTOR LICENSE INCOME

Another incentive to licensing would be to allow the contractor receiving income as a licensor to a NATO partner to retain that income tax-free. This suggestion was enthusiastically endorsed in our interviews. Further study and the participation of other governmental elements are indicated. It is an initiative which the U.S. industry and NATO partners would perceive as a real commitment to NATO. The IP transferred would quite likely increase, since one segment of industry seems to feel licensing is a "sale of last resort" and almost any other form of sale generates more income.

LET GOVERNMENT SHARE IN LICENSE INCOME

This proposal would allow the Government to share the license revenue paid by a European licensee to an American licensor, especially when the

United States has largely financed the effort and is itself purchasing the system or item. There are two advantages to this. First, it makes the Government a "party in interest," and that encourages to the process; second, some recovery of non-recurring costs is possible. As to the foreign country and contractor licensee, the U.S. and its contractor appear with a common interest. License fees can be large enough to be significant. Industry expressed to us an expectation that this could motivate more Government assistance in "selling" licensed production.

Some negative possibilities are evident; the Government might adversely influence fee determination, and the ratio of Government/industry shares would be difficult to negotiate. It is also likely that funds paid to the Government would revert to the general fund and not directly benefit a DoD project. Foreign governments who possess a "free" data exchange commitment might object if part of the IP fees were to be paid to the U.S. Government. Administration of such a suggestion could become complex.

APPENDIX IV

A NATO R&D TRUST FUND

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One approach to establishing the feasibility and credibility of a NATO supranational acquisition organization would be for the United States and its NATO partners to jointly fund a modest supranational R&D program to develop a body of IP that NATO itself could make available for future transfer among its members. A prototypical program might have the following characteristics:

1. The U.S. Government contributes to the R&D trust fund in a ratio of 1:1 with the totality of European NATO funding.
2. The U.S. and European NATO industries submit competitive proposals for basic research under the following restrictions:
 - a. U.S. industry has access to all U.S. program funding.
 - b. European industry has access to total (European and U.S.) program funding.
3. Foreground and background rights are retained by the contractor, but the contractor, in turn, commits to license all IP necessary to another source as directed by NATO (same as Recommendation 1).

The program could be managed and research topics chosen in a manner similar to the way in which the DoD's IR&D program is currently managed.¹

Such a program could give NATO, as an acquisition entity, access to a growing body of IPR to support its PAPS and NATO MENS process. It would also provide an opportunity for the European NATO countries to advance their defense research base with a minimal threat to the U.S. defense research base. It could be tailored with specific restrictions such as (2b) above, which

¹See Cord and Cicchini, "Independent Research and Development (IR&D) - Half a Loaf," The Air Force Law Review 16 (1974): 100-115; and Talley and Viola, "Independent Research and Development: The Technical Evaluation Process," Study Project Report PMC 77-2 (Fort Belvoir, Va.) November 1977.

seeks to make the program more attractive to European industry by giving it competitive access to total program funding with protection from the dominant U.S. defense industrial base via guarantee of European funds.

APPENDIX V

FUNDAMENTALS OF LICENSING

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Licensing of IP, whereby individuals make their patents, trademarks, know-how available to other individuals for a consideration, is an important part of the technology transfer process. Domestically, licensing is often the essential connector between scientific advances and their practical application; internationally, it is generally the vehicle for transferring already applied technology.

THE GROWTH OF INTERNATIONAL LICENSING

The international licensing of IP became increasingly prevalent following World War II. Several factors contributed to a postwar environment hostile to traditional forms of technology trade and conducive to the growth of licensing agreements.

In the particular field of weapons technology, barriers began to surface in Europe in the late 1950s. A recovered Europe began to chafe under the aggressive U.S. arms sales policies that had replaced the military grant system. It was said that U.S. military sales to Europe would aggravate foreign exchange problems, constrict employment, and erode the military-technological base. American weapon manufacturers began to encounter an increasingly cold reception in European markets.

Another factor that contributed to the growth of licensing was the political instability that characterized much of the postwar world, particularly the emerging third world. Direct investment, always a risk, became decidedly more risky in those countries experiencing political convulsions.

Licensing expanded in response to the narrowing opportunities in international trade. National constraints on trade, both political and economic, clogged the traditional avenues of export sales and direct investment. Business with significant international markets and those seeking expansion into foreign markets turned to licensing as the only option remaining for penetration of those markets.

Licensing has been characterized as the middle-risk ground between export sales and direct investment. The potential for the misuse of licensed IP makes licensing riskier than sales. The IP could be divulged or abused. Most important, the license makes a potential competitor able to compete in fact.

On the other hand, the hazards of licensing a corporately unrelated foreign firm are generally less than those associated with ownership of overseas production facilities. Ownership most certainly does not exclude a license relationship (as in the case of subsidiaries and affiliates), but does change the mix of the risk.

Precise data on receipts to U.S. firms from licensing agreements are difficult to obtain because of the absence of consolidated statistics on existing agreements. However, the following table represents a reliable approximation of the growth of royalties and fees paid to U.S. companies from abroad since 1961.

<u>Year</u>	<u>Total Receipts</u> ¹	<u>Independent Foreign Firms</u> (billions \$)	<u>Subsidiaries, Affiliates & Branches</u>
1961 ²42	.26	.16
1967 ²79	.35	.44
1974 ³	3.67	.80	2.87

¹Receipts include payments for services rendered, film and television rentals, rentals of tangible property, and payments for the sale or use of intellectual property.

²Enid Baird Lovell. "Appraising Foreign Licensing Performance" Studies in Business, Policy, No. 128 (New York: The Conference Board, 1969), p.5.

³Vincent D. Travaglini, "Licensing, Joint Ventures Aid Technology Transfer," Foreign Business Practices (Washington: Government Printing Office, 1975), p. 65.

The table reveals the remarkable growth in overall receipts since 1961. Significantly, it also shows a shift in volume from independent to related companies' transactions. Receipts from independent foreign companies comprised 62 percent of total receipts in 1961. However, by 1974, independent companies accounted for only 22 percent of total receipts. In its 1969 report on foreign licensing, the Conference Board noted the shift towards equity relationships in licensing and predicted that the trend would continue.

GOVERNMENT POLICIES

Government policies towards licensing generally are directed towards the macro effects of licensing on immediate and long-range national goals. the technology transfer aspect of licensing is important to the expansion of a nation's technological base and ultimately to the achievement of long-term societal goals. Licensing also promotes certain short-range politico-economic goals, such as reducing unemployment and managing the trade balance.

Thus, until recently, U.S. controls on the export of capital acted as an incentive to licensing for U.S. manufacturers in certain cases. Similarly, foreign government restrictions on the importation of certain technological end items and/or capital have encouraged licensing by foreclosing other trade options.

BUSINESS OBJECTIVES IN LICENSING

Rarely does a business view technology transfer as the sole objective of a licensing agreement. Rather, the transfer represents a means of achieving broader business objectives. These objectives vary considerably, depending upon size, volume of sales, capital structure, etc. Generally, however, firms that do license their IP enter into such arrangements to secure one or more of the following objectives:

- to penetrate or retain markets closed to direct sales and/or investment because of government policies
- to penetrate or retain markets that would otherwise be inaccessible because of resource constraints, e.g., scarcity of capital
- to maximize return on IP assets which would otherwise lay idle or underutilized, including obsolescent IP
- to recoup part of R&D costs on IP

to enter or expand into foreign markets without incurring the risks or costs inherent in direct investment

to establish an enduring relationship with an overseas partner for benefit, particularly in technology sharing.

SUBJECT MATTER OF LICENSES

Traditionally, the subject matter of licensing agreements has included three distinct categories of rights in IP: patents, trademarks, and know-how. Only patents and know-how are discussed here, because trademarks have little significance in military procurement.

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Patents

A patent is a grant of certain monopoly rights conferred by a government on an inventor in virtue of his invention and enforceable for a certain period of time, and only within the territorial limits of the country in which it was granted. The monopoly granted to the patentee excludes others from making or using the invention by enabling the patentee to bring suit for infringement. In this sense, a patent cannot prevent infringement, but it does provide for redress.

A patent system is primarily a tool of public policy. An inventor agrees to make his invention public in return for a monopoly grant. In theory, the patent system provides sufficient incentive for the growth and rapid dissemination of scientific knowledge. Conversely, it removes some of the incentive to keep scientific advances secret.

There is evidence that patents are becoming less important in the technology transfer process. In a recent survey of companies involved in international licensing, the Business International Corporation found that licensing companies often ranked patents below know-how in their value as assets. Several factors may account for this situation:

- the length of time, high cost, and the difficulty associated with the patent process
- the cost of policing the patent after issuance
- the vagaries of the judicial system which tries patent infringement cases
- the relatively short monopoly grant.

Know-How

The other major right usually granted in a license is know-how. Know-how is a peculiarly American term, which is receiving growing acceptance

in international contracts. It is a generic term, embracing everything necessary to implement the licensing objective exclusive of patents and trademarks. Included may be trade secrets, manufacturing processes and techniques, specifications, charts, formulae, drawings and blueprints, marketing techniques, and professional advice. The list is nonexhaustive. Essential to the value of know-how is that it not be readily known or available to the public.

Know-how is a critical component in most licensing agreements because it is generally necessary to utilize the patents licensed in the agreement. In fact, it has become increasingly common for licensing agreements to contain only know-how without patents.

The Restatement of Torts defines know-how as "any formula, device or compilation of information which is used in one's business and which gives an opportunity to gain an advantage over competitors who do not know or use it." Thus, know-how is exclusionary like a patent, granting a type of monopoly in that those who do not possess its knowledge cannot use it. However, know-how differs from patents in three significant aspects:

- The monopoly is de facto, as opposed to de jure.
- The monopoly is maintained indefinitely, as long as the know-how remains generally unknown.
- Some degree of secrecy is essential to the value of know-how; once commonly known, its value is destroyed.

The importance of know-how in licensing cannot be overstated. It is often essential to permit use of any patents licensed under an agreement. Moreover, with companies turning away from the patent system and relying increasingly upon know-how rights to protect their unpatented items and processes, know-how licensing can be the only means of transferring certain technologies.

Know-How and DoD Policies

Technical data and assistance, including drawings, specifications, and personnel training, are normally classified generically as know-how under foreign licensing agreements. However, the DoD defines know-how more narrowly and distinguishes it generally from technical data and assistance.

Know-how for the DoD is generally restricted to knowledge of an intangible nature; e.g., managerial competence, engineering expertise, or company experience. The DoD usually does not, and in most cases is constrained from, acquiring know-how that exceeds contract data requirements. This is primarily a factor of the intangible nature of certain know-how.

Though ASPR 9-201 defines data broadly as "recorded information, regardless of form or characteristic," the definition acts to constrict DoD's know-how acquisition to recorded information. Unrecorded know-how is generally beyond DoD's reach, because, in most cases, it does not possess an industrial or manufacturing infrastructure capable of absorbing and retaining the information. Such a capability is usually not a part of the Department's mission. In addition, the very intangibility of the know-how often precludes specific identification of needed know-how.

THE LICENSE

The legal vehicle of the licensing agreement is the license itself. An IP license is a contract whereby the owner of IP--the licensor--agrees to make available his IP, along with the specific rights required for its use, to another entity--the licensee--for the specified purposes set out in the license, subject to any restrictions, and for a consideration. Foreign licenses invariably are written documents, due to the complexity of the issues and relationships involved, language barriers, and statutory mandates in certain jurisdictions.

The license establishes or renews a relationship between the licensor and licensee. Licenses can be negotiated on a government-government, government-company, and company-company basis. Between private firms, the agreement may be between unrelated firms or between firms associated in some manner, as in the case of subsidiaries, affiliates, or equity-participating firms. As pointed out above however, private U.S. companies have shown a distinct preference in recent years for licensing with some equity involvement. Equity licensing provides the licensor with a greater degree of control over the licensee, thereby minimizing problems arising directly from the licensee's actions and performance.

There are two basic forms of license agreements. The consolidated license conjoins under a single contract all of the rights granted and obligations incurred. Separate clauses account for the differing nature of patent and know-how rights.

The other type of licensing agreement is essentially a group of separate but complementary licenses designed to address the different rights and obligations distinctly, but when taken together form a "whole" agreement.

Neither type of agreement is necessarily "correct" in any given situation. Questions of foreign taxes, separability of provisions, exactitude of meaning, and many other considerations may affect the decision to consolidate or to separate.

Regardless of the type of agreement to be employed, both types of licenses essentially provide the same product: viz., an agreement to transfer IP and IPR to another party in exchange for a consideration.

Though there is no formal, required list of clauses necessary to a license, the following clauses are typical of U.S.-EEC license agreements.

- identify and legal address of parties
- "whereas" clause identifying licensor as owner of IP
- definitions of key words
- grant clauses
 - Scope
 - definition of IP involved
 - sub-license rights, if any
 - exclusivity, degree of
 - territorial limitations, if any
- technical assistance
- consideration
 - down payment, front end payment
 - royalties; base, computation, and duration
- exchange of related IP developed during license period by either party
- patent infringement
 - third party infringement - action to be taken by which party to the license
 - licensor/licensee as defendants - liability of parties
 - initial fee
 - royalties, base and computation
- confidential information, terms of protection
- term of patent protection
- term of license
- termination provisions
- audit rights of licensor
- warranty of utility of IP
- reporting requirements
- arbitration
- governing law and language

- force majeure, protecting both parties from liability for breach when an independent force fulfillment of license terms; e.g., labor strike, expropriation
- commitment of licensee to exploit license
- other clauses which may address unique aspects of the relationship or serve to further define the understanding; e.g., separability waiver
- name and address for official notices.

DETERMINING THE LICENSE CONSIDERATION

Determining the amount to be paid to the licensor is a complex procedure. A license consideration often contains two types of payments: an initial fee or down payment, and a continuing royalty derived from an agreed upon base. However, licenses can be negotiated without initial fees, and, in some cases, the royalty payment is a flat one-time payment.

The primary factor in determining the amount of the license consideration is the value of the technology supplied, to both the licensor and licensee. In its report on licensing, Business International Corporation described the following checklist used by a major U.S. electronics firm in determining the value of its license technology.

- Licensor's cost in development. This does not necessarily reflect present market value, particularly because of the declining value of technology as it ages, and thus is not always a reliable indicator.
- Licensee's cost to develop technology independently. This provides a far more accurate reflection of market value.
- Patented items. The monopoly protection offered by law may bid up the price of technology containing patents.
- Ratio of projected fee to projected licensee return on license. If the ratio is too high, the licensee will have less incentive to enter the agreement.
- Availability of alternative sources of similar technology. If alternate suppliers exist, there will exist a downward pressure on the price of the technology.

The Down Payment

Generally, the amount of the down payment is disassociated from the value of the technology per se. Instead, it is computed on the basis of tangible costs incurred in the negotiation and implementation of the license agreements. Among these costs may be:

- reproduction of plans, drawings, blueprints, and manuals
- administrative expenses (staff associated at home office with communications, postage, telephone, etc.)
- training programs for licensee personnel
- corporate equipment utilized in implementing the license; e.g., communications and office machines
- costs incurred which are peculiar to the licensee's country
- personnel costs, including salary, travel, and other expenses; e.g., management and engineering consultations.

Sometimes, however, the down payment exceeds these out-of-pocket expenses and includes a token figure for recoupment or R&D or an initial payment on the royalties for the technology.

The down payment, where appropriate and not discouraged, gives the licensor considerable leverage over the licensee. Since the sum is usually sizable, the licensee is encouraged, if not forced, to begin immediate utilization of the transferred technology. In turn, this promises early returns to the licensor in the form of royalties.

Royalties

By far the most common type of consideration employed in licensing is the royalty. As previously stated, royalties are of two types: single lump-sum and continuing. The latter is generally preferred because of the difficulties in determination of a lump-sum, and because the licensor loses leverage.

There are numerous bases for the computation of royalties, among them:

- percentage of gross sales
- percentage of net sales
- specific rate for each item manufactured
- specific rate for each item sold
- specific rate for increased value of a product which utilizes licensed product
- rates based on measurement & values.

The most common basis for assessing royalties is as a percentage of sales, gross or net. The figure which most frequently appears is 5 percent of net or gross. It has been argued, however, that a formula should be avoided. One author has suggested that 25 percent of gross profit should be the prior basis of computing the percentage on sales, with adjustments being made from there depending upon size of the margin.¹

Frequently, licenses contain provisions for minimum and maximum royalties. Both act as an incentive to the licensee to maximize utilization of the licensed property. Minimum royalties provide for flat payments regardless of output, thereby discouraging casual production. Maximum royalties provide an output or sales ceiling above which royalties are not assessed. This acts as an incentive to maximum production.

ANTITRUST AND LICENSING

A final major factor to be considered in international licensing is the impact of antitrust laws on licensing agreements. The antitrust laws of both the United States and the European Economic Community (EEC) affect licensing agreements between the two economic communities. Because of the inherently

¹Robert Goldscheider, "International Licensing from the American Point of View," in International Licensing Agreements, ed. Gotz M. Pollizien and Eugene Langen (New York: The Bobbs-Merrill Co., Inc., 1973), pp. 482-3.

anticompetitive nature of license agreements (patent and know-how monopolies), a natural tension exists between licensing and antitrust.

The Sherman and Clayton Antitrust Acts control individuals within the jurisdiction of the United States and U.S. individuals operating abroad. Regulation 17/62, which implements Articles 85 and 86 of the Treaty of Rome, is the governing antitrust authority within the EEC. Both sets of laws set stringent standards for competition. Their purpose is to prevent the deleterious effects of anticompetitive behavior.

Following is a list of practices which may or will entail violations of the U.S. and EEC antitrust laws.²

- Field of use restrictions - Licensing various technologies selectively with the effect of restraining competition in an industry.
- Price fixing - Attempt by licensor to determine selling price of licensee's product.
- Tying restrictions - Coercing licensee to purchase unpatented items from the licensor as a prerequisite to a patent grant, except in certain circumstances where legitimate reasons rule otherwise (e.g., to ensure quality control from a great distance).
- Territorial limitations - Restricting licensee's sale of licensed product to a specific area (restriction of production to a specific area is, however, legal). Territorial restrictions are particularly precarious when patent rights are not involved.
- Prohibiting challenge of patent validity - The licensor cannot estop the licensee from questioning validity of patent, under license.
- Anticompetitive clauses - The exaction of a promise not to compete is likely a per se violation.

Another aspect of licensing and antitrust requiring attention is the joint venture. Joint ventures represent a pooling of resources and a sharing of risks and profits by two or more individuals who enter into an enterprise

²Antitrust and licensing has been treated extensively relating to licensing. This data is based on Goldschiefer, "International Licensing," pp. 458-69.

for mutual benefit. The joint venture may be consummated between independent companies through the creation of a third entity. An example of this would be ARAMCO, the Saudi Arabian oil production company, which until recently was owned jointly by Exxon, Mobil, Texaco, and Standard of California. Joint ventures can also occur between equity participating companies, with either minority or majority control.

Although joint ventures are not per se an antitrust violation, the cooperation of two or more competitors in an enterprise invites the scrutiny of the Justice Department. The nature of the joint venture can provide the opportunity and the incentive to individuals for anticompetitive behavior.

The impact of antitrust in commercial licensing can be considerable. Its impact upon NATO standardization is less clear. It should be understood, however, that the goal of weapons standardization through technology sharing and rationalization of technological and industrial base of the West may be inimicable to goals of maintaining vigorous competition within and between industries.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Increased standardization and Interoperability of NATO Weapons is now a major goal of the DoD. The success of the cooperative programs necessary to achieve this goal will in large measure depend on the extent to which defense industries in the United States and the other NATO countries can agree to share their Intellectual Property (IP). IP covers a broad range of technical knowledge and expertise, much of which companies consider to be private information that alone distinguishes them from their competitors.		

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ABSTRACT (continued)

→ In early 1978, the Council of National Armaments Directors promulgated a set of guidelines for transfer of IP under NATO cooperative programs. Soon thereafter, LMI was asked to suggest actions that the DoD could take to implement the guidelines and to make cooperative programs generally more attractive to industry.

The guidelines require the United States and the other NATO governments to be able to ensure transfer of IP among themselves and/or their designated contractors. In our view this requirement can best be satisfied not by the U.S. Government itself acquiring and transferring IP, but rather by international company-to-company transfers subject to Government oversight and review.

This report recommends four actions that the DoD, with the cooperation of other NATO countries, can take to facilitate IP transfers in NATO cooperative programs. The first recommendation is a three-part IP policy for NATO-related acquisitions whereby (a) contractors would be contractually committed to license the use of IP needed for cooperative programs; (b) contractors would be allowed to select a licensee and negotiate a reasonable license fee and (c) contractors would retain their IPR. We believe that such a policy would motivate the U.S. defense industry to seek out cooperative opportunities with European firms and thereby contribute to the development of government-to-government cooperative arrangements. The second recommendation is to give a source selection preference for NATO standard items. Such a procedure would provide a major incentive to industry to seek out candidates for standardization. The third is to encourage supranational buys of items to be used by NATO members. If military requirements can be rationalized a central procurement using international competition offers rapid standardization. The fourth is to improve the exchange of information about NATO needs between governments and industries. To harness industry energy for finding candidates, knowledge of needs, schedules, and budgets will be very helpful.