U.S. DEPARTMENT OF COMMERCE

8/12

To : Marion

From: Norm

The meeting to discuss the attached was cancelled. We have a strong need to have it re-scheduled a.s.a.p. It should be attended by at least (in addition to myself and Dr. Mansfield), Jack, Lewis and Egils. If others are included I would like to be advised in advance.

cc: Jack
Lewis
Egils.

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June 14, 1983

MEMORANDUM FOR: D. Bruce Merrifield
Assistant Secretary
Productivity, Technology and Innovation

FROM: Norman J. Latker(S)
Director
Office of Federal Technology Management Policy

THROUGH: Egils Milbergs
Director
Office of Productivity, Technology and Innovation

SUBJECT: Draft System Plan for Managing Technology in Federal Agencies

We would like to discuss the status of our draft systems plan (copy attached).

It seems to us that implementation of a system plan similar to ours would be a timely and appropriate response to OSTP's Packard Report and the Business-Higher Education Report recommendations to expand government laboratory collaboration with industry. The main aspect of our plan is the establishment of focal points at laboratories with the authority to make "deals" with industry to fund the continued development of new products and processes they have evaluated under constraint analyses to have commercial potential. The laboratory authorities would include at least the ability to initiate RDLP's, seek venture capital, enter into collaborative research projects, share royalties with inventors and grant patent licenses or assign invention ownership rights as a quid pro quo for private sector guarantees to develop, participate in or contribute resources to further development. Organizations with technology transfer experience are supporting our continued development and implementation of the plan but are asking how it will be done. One of the strong messages we have also been getting is that laboratory technology transfer offices are being severely hampered in making "deals" by headquarters clearance procedures. We think this is the "micro-management" problem addressed in the Packard and the Energy Research Advisory Board Reports.

While the government in general has some of the authorities to make a "deal" an identified body of laboratory people with an assignment to management simply does not exist. We have been proceeding on the assumption that the focus would emerge by persuading patent operations to coordinate with the new

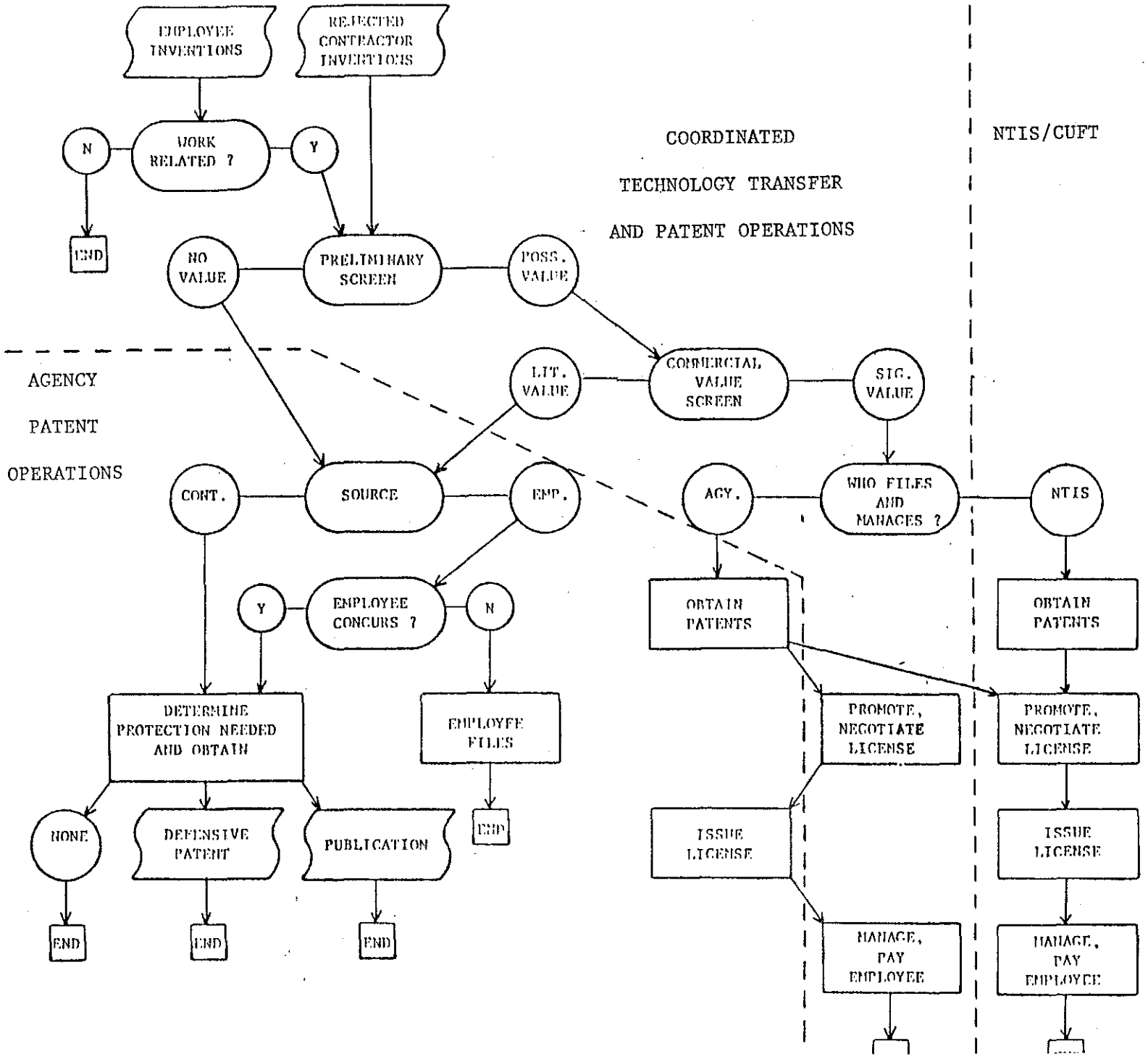
laboratory technology transfer offices designated under Stevenson-Wydler. It seems clear that Commerce does not have either the assignment or authority to make this happen. This is being complicated by resistance from some patent operations. Further, there is no, or vague, authority in the government to initiate RDLP's, seek venture capital, share royalties with inventors or enter into laboratory-industry joint ventures. So given even that coordination between these offices could be accomplished, we would still need to clarify their tools of operation.

We would like to discuss various approaches and resources, necessary to speed implementation of a finally devised systems plan. Clearly we would want to touch on:

a) Involving OSTP on our side including use of the FCCSFT Committee.
b) Gaining an appropriate assignment or authority from the Cabinet Council.
c) Necessary legislative and/or administrative initiatives.
d) Additional staff resources.
e) Resistance from patent operations.
f) Training new personnel for focus positions.
g) Appropriate involvement of NTIS licensing program in the final systems plan.
h) The Research Corporation proposal as it touches on laboratories.

We would appreciate some time on your calendar in the near future.

cc: Jack Williams
Lanse Felker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March 28, 1983

DRAFT

Proposed System for Managing and Transferring Patentable Technology

Introduction:

Two fundamental, long term trends in the U.S. economy are the growing reliance on higher levels of technology and increasing foreign competition for sales of products that use new technologies. It is becoming increasingly clear that the future of the economy, in both absolute and relative international terms, will be largely dependent on how well new technologies are put to use to create products, markets, jobs, and returns on investments. The Federal Government is both a primary supporter and a major performer of research and development. The future of the economy will depend, in part, on how well the inventions and new technologies that result from Federal efforts are put to use by the private sector.

In addition, three recent statutes and several other events or trends require a review of how the Federal Government protects and manages its inventions.

1. Small businesses and nonprofit organizations are now entitled to own inventions they produce with Federal R&D funding. This statutory right was established because of a general recognition that the public only benefits from an invention after a firm develops, produces, and markets it. A firm will only make the necessary investment if it is certain that it owns or has a license to use inventions with minimal delays. The right of ownerships is being extended to other recipients of Federal R&D funding by a Presidential Memorandum.

2. The Steveson-Wydler Act created a network of Technology Transfer Offices in the agencies with extensive R&D operations. These offices are charged with transferring technology developed by Federal agencies, in their own laboratories to the private sector. Even agencies that only develop inventions for their own use are required to have such a marketing or outreach function to stimulate the economy.

3. The Patent Office will be increasing the charges for services to $3,200 per patent kept active for its full life. The current Federal portfolio of about 28,000 patents will be exempt from these charges, but if the portfolio were to be recreated and maintained, the cost would be just under $90 million in Patent Office charges alone.

4. Less than 5% of the 28,000 Government-owned patents are licensed for commercial use. This is primarily because most of the inventions have little or no commercial value, a fact which discourages firms from sifting through the portfolio in hopes of finding an idea to exploit. It is also because most agencies have made little effort to seek private sector users for even their most important inventions.

5. In contrast to agency practice, the universities that produce a significant number of inventions are careful to invest in patent protection only for the ideas that appear to have significant commercial potential, and then actively promote their licensing. As a result, universities typically obtain royalty bearing licenses for about 40 percent of their patents.

6. The universities have created offices with the authority to promote and negotiate all aspects of an invention transfer. Over time, firms have gained confidence in dealing with these single points of contact, and closer industry/university cooperation has grown to the point of industry funded research partnerships.

7. Federal agencies, typically do not assess the commercial marketability of inventions before making patent decisions. The Patent Staffs retain the roles of deciding what to patent and negotiating licenses, while the Technology Transfer Offices with the most frequent outside contacts, have little to do with patent decisions or activities. American industry, presently under tight cost constraints, tends to avoid the resulting confusion, while foreign interests, frequently operating with government support, obtain and use important Federally funded developments.

8. There are no provisions for making the decisions that will be required to avoid paying Patent Office maintenance charges on low value patents. These decisions should be based primarily on commercial potential--a judgment best made by the Technology Transfer Offices.

An idealized plan

This proposed system has been developed as a basis for discussion. It is intended to operate on a decentralized basis, with agencies deciding whether this means at the departmental, bureau, or laboratory level.

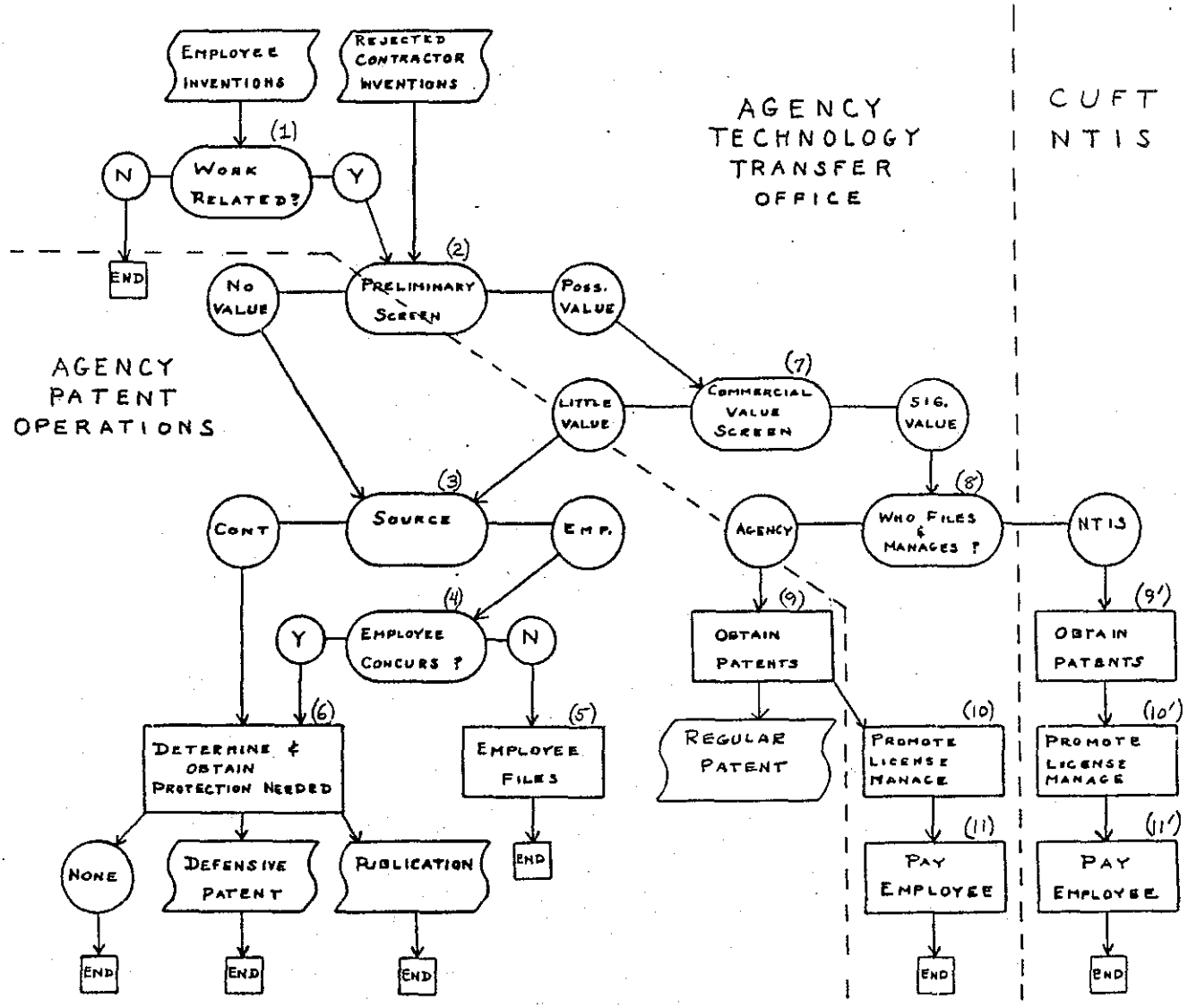
Step by Step Explanation

Chart 1 shows the proposed flow of decisions and actions. This is a general presentation that does not include some details. Domestic and foreign patent decisions are not shown separately, for example, but may be treated separately in practice. Some additional details or exceptions are noted in the explanations that follow.

The chart is divided into three segments by dotted lines. These segments show what would be the responsibilities of an agency Technology Transfer Office, an agency Patent Operations Staff, and the National Techncial Information Service (CUFT/NTIS).

PROPOSED SYSTEM FOR MANAGING AND TRANSFERRING PATENTABLE TECHNOLOGY

CHART 1



The process begins for an employee invention with a determination (1) of whether it resulted from assigned duties. If not, the employee would ordinarily own the invention outright and be free to do with it as he pleases. The existing PTO process for reviewing employee appeals would continue to resolve disputes between agencies and employees over whether an invention is work-related.

(Note: Under the proposed plan, agencies or NTIS would be able to accept non-work-related inventions offered by employees who want to benefit without doing their own patenting and licensing. These inventions would be handled just as if they were work-related. Under present policy, non-work related inventions are not managed by agencies even if offered by employees.)

The Government will initially own employee inventions that result from assigned duties as well as inventions renounced by contractors. These inventions will go through a preliminary screen (2) run by the agency Technology Transfer Office to determine if they may have commercial value. Commerce will develop simple and economical tests to separate the few inventions which may have commercial potential from the majority which clearly do not. Since part of the test will involve patent law, members of the agency Patent Operations Staff will participate in the preliminary screening process.
The inventions of contractors which are determined to have no commercial value will be separated from employee inventions (3).

An employee inventor will be given an opportunity to agree or disagree (4) with a no-value determination. If the employee does not concur, he will have the right to file for his own patent (5), so long as the Government is guaranteed free use rights.

Inventions that all agree have no commercial value will go to the Patent Operations Office where the extent of protection needed will be determined and obtained (6). The determination could be a defensive patent (as authorized by the proposed 1983 patent law amendments), simple publication to prevent others from patenting, or no protection at all. Emphasis will be on the lowest cost technique to meet the need.

An invention identified by the pre-screen (2) as possibly having significant commercial value will be reviewed by the commercial value screen (7). The commercial value screen is a "black box" for which the processes and criteria have yet to be worked out. It may consist of panels of experts with private sector knowledge. It may be a sequence of steps for progressively finer screening to control costs. And it may include attempts to find licenses. This step will require some degree of centralization because there are not enough experts for all the agencies to employ their own panels and produce

uniformly high quality decisions. We estimate that no more than 25 percent of all processed inventions will go through the commercial value screen. The screeing panel will make recommendations on both domestic and foreign filing. Commerce will participate in the screen because of its continuing contact with the invention marketplace.

Inventions found not to have significant commercial value will be handled just like inventions found to have no value by the preliminary screen. Employees can be expected to seek their own patents on a larger percentage of these since many of them may have some value.

The agency Technology Transfer Office will decide whether the agency Patent Operations Staff or NTIS should file a patent application for an invention of significant commercial potential (8). Once this determination is made, patents will be obtained if possible (9 & 9'), and promotion, licensing, and other management steps will be taken (10 & 10'). Once royalty or other payments are received, a substantial share will be transferred to the inventing employee (11 & 11').

(Note: An agency may opt to obtain its own patents, then transfer them to NTIS for promotion, licensing, and management. Alternatively, an agency might transfer a license to NTIS for management and inventor payment since this involves a specialized accounting system.)

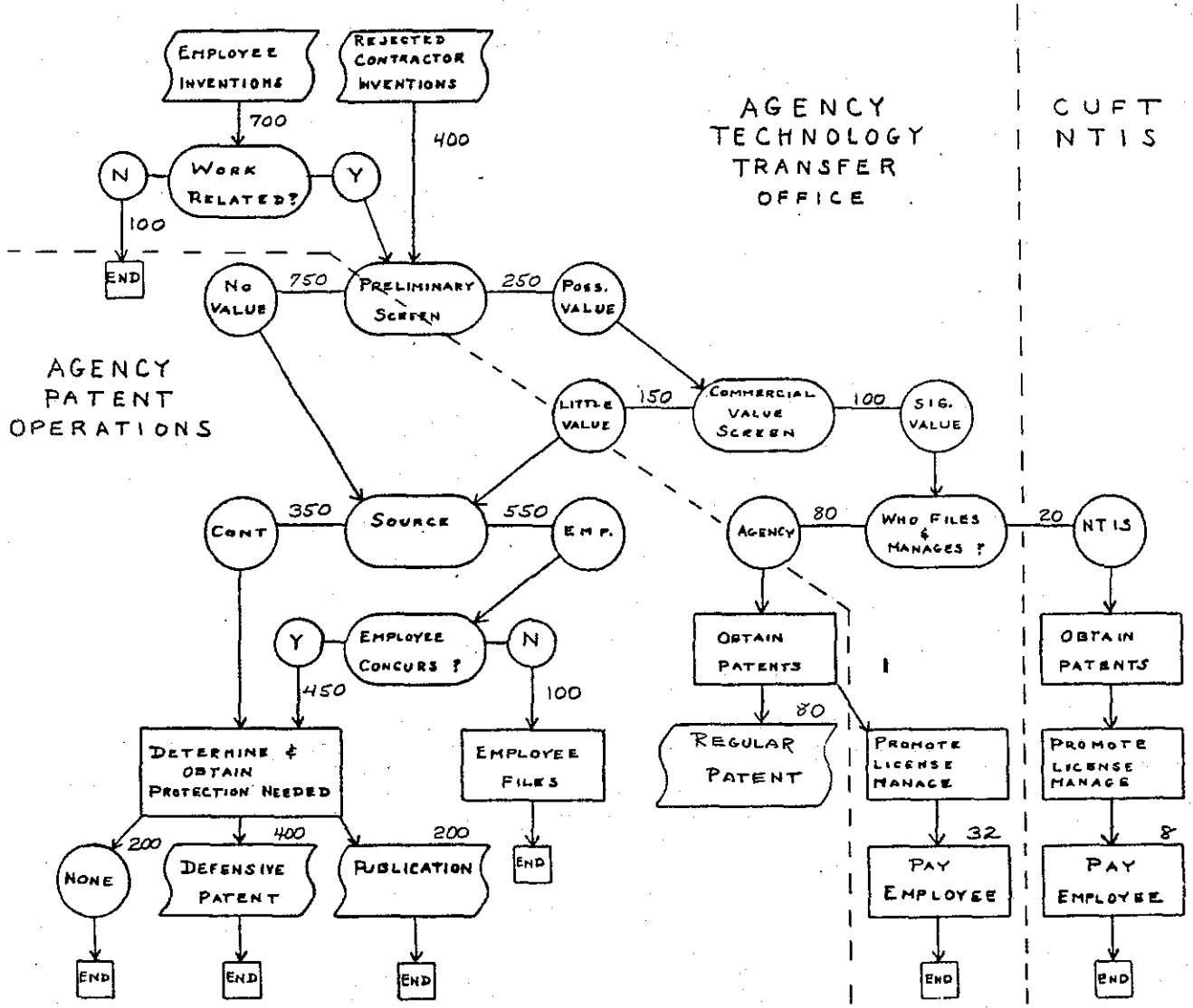
Estimated Volumes

Chart 2 shows an estimate of the volumes of inventions that might be expected for each decision or action assuming 700 employee and 400 rejected contractor inventions. Key summary estimates are based on 1000 inventions going through the preliminary screen. (100 inventions of the 1100 total are diverted to the employees because they are not work-related and the employees do not desire government handling.)

- 400 would be protected by defensive patents.
- 400 would need no protection or merely publication.
- 100 would be patented by employees.
- The Government would only apply for 100 regular U.S. patents plus an unestimated number of foreign patents.
- 40% of the patent portfolio would be licensed - a figure comparable with university practice.
- 75% of the inventions could be handled by low cost processes.

PROPOSED SYSTEM FOR MANAGING AND TRANSFERRING PATENTABLE TECHNOLOGY

CHART 2



These are, of course, are only estimates. They are based on published statistics for agency operations from 1970-76 and studies of university patent management.

Principles, assumptions, and the Government's interests

The Government can have five interests in patentable technology that results from Federal research and development funding. They are to:

1. Avoid payment of royalties if something bought by the Government includes the technology.

2. Promote private sector use of the technology if it has potential commercial value.

3. Preserve valuable foreign patent rights for domestic firms.

4. Ensure fair treatment and rewards for the inventing contractor or Federal employee.

5. Hold protection costs to a minimum.

This proposal has been developed to serve all of these interests. The system is based on the following principles and assumptions.

1. Agency technology transfer and patent operations should be closely coordinated to adequately serve all five interests.

2. Agency Technology Transfer Offices should be responsible for determining which Government-owned, patentable inventions have significant commercial potential or transfer value weeding the protection of regular patents, as well as promoting, licensing, and managing valuable patents.

3. Agency Patent Operations should be concentrated on obtaining lowest-cost protection of Government use rights, obtaining U.S. and foreign patents on commercially valuable inventions, and assisting in the licensing of patented technology.

4. Most valuable inventions of R&D contractors will be patented by the contractors. The few that contractors renounce will probably have little or no commercial value, but they should be reviewed to ensure that valuable rights are protected. In most cases, this review can be done quickly and economically.

5. Most inventions of Federal employees will have little commercial value. The majority of these can be identified with relative ease.

6. Agencies should obtain the lowest practical level of protection to defend against royalty payments for inventions with little commercial value. This should never be greater than a defensive patent to be authorized by the 1983 patent amendments. Employee inventions which may have significant commercial value should be reviewed carefully by a screening panel of experts who have current knowledge of private sector practice and needs. Regular domestic and perhaps foreign patents should be sought for inventions of significant value. Significant commercial value includes prospects of extensive sales to foreign governments.

7. Agencies should continues to manage and conduct the bulk of their own defensive activities, but under centrally developed and maintained criteria.

8 Agencies may elect to be responsible for promotion, licensing and royalty collection for valuable Government patents, or transfer them to NTIS for management.

9. A Federal employee inventor should be shielded from conflicts of interest but be entitled to a significant share of any royalties produced.

10. A Federal employee should have the right to file for patents on his invention if the Government decides not to.

Effect on agency Technology Transfer Office

The proposed system would ensure that Transfer Offices receive early notice of new ideas, a factor which can help in both evaluation and promotion. It would allow them to obtain the best available advice on the commercial value of inventions and establish priorities for the filing of domestic and foreign patent applications. (At present, there is evidence that valuable foreign rights are frequently lost.) It would give them the consolidated authority to negotiate technology transfers regardless of whether or not patents are involved. Finally, the university experience indicates that over the long run, it would lead to closer laboratory/industry collaboration through growing industry confidence in the transfer process.

Effect on agency Patent Operations Staffs

In the private sector, patent attorneys work for clients - either in other organizations or other components of their own organization. In a number of Federal agencies, the Patent Staffs act as their own clients - making final decisions on what to protect and what to license. Under the proposed system, the clients would become The Technology Transfer Offices and perhaps agency employee inventors.

For individual patent attorneys, the work should become more diverse and interesting. They would spend minimal time developing and supporting applications for low value patents. The regular patent applications they would handle, would be for significant inventions. The number of foreign applications would probably increase significantly. Some would be asked to assist the licensing process where the volume is expected to increase.

The proposed system would also open a second opportunity for advancement through The Technical Transfer Offices for those desiring to follow it. This may be an important consideration both as a matter of personal interest and because the new PTO fee structure can be expected to reduce the number of domestic applications the agencies can afford to file.

Employee Inventor Considerations

There appears to be a national trend toward allowing employee inventors in non-profit organizations to benefit from the revenue produced by their inventions as an incentive to promote both creativity and invention reporting. Techniques for doing this vary widely and include lump sum cash awards, percentages of royalties, and use of royalties to support an inventor's research program. This proposed system is designed to provide strong incentives through significant percentages of royalties.

Present Government employee patent policies have been formed by two important considerations - assumptions about employees' abilities to manage patents effectively and conflicts of interest. The proposed system would have the valuable inventions patented and managed by Government specialists. It is based on a presumption that these specialists with their knowledge, contacts, and resources can do a better job than a single inventor. The charts do not show a possible consultation link between the Technology Transfer Office and the inventor so he can provide any promotional ideas he may have.

The conflict of interest issue should be divided into two parts--pre-invention and post-invention. Prior to an invention, the prospect of financial rewards could lead to distortion of research or a distraction of the employee from his primary work. Such problems are common to any incentive system that rewards for part of a job to be performed. The proposal to reward for inventions is based on the assumption that more ideas will be developed and reported than under present policy and that the results would outweigh the posibility of research distoration.

The post-invention conflicts involve the competing demands for an employee's time and the possibility of his doing business with firms that also do business with the Government. Under the proposed system, there can be opportunities for both types of

conflicts, but they can be managed easily. Existing regulations that govern outside activities of employees are adequate to handle the competing time demands, and an employee should not be permitted to participate in any procurement or assistance award action that could use his invention.

Viewed this way, allowing employees to patent inventions which the Government does not believe have significant commercial value, should not lead to difficult conflict of interest situations. It may, however, allow inventors to promote some inventions more than the Government would. If will certainly cause the employees to feel they have been treated fairly.

Authorities

To make the system work, the following authorities would be used, some of which may exist today.

1. The PTO proposed defensive patent.
2. Authority for someone--preferably the Secretary of Commerce to prescribe how agencies will use the defensive patent.
3. Authority to specify the process and criteria for the pre-screen.
4. Authority to establish and operate the commercial value screen.
5. Authority to establish the rights of employees to their inventions which the Government determines not to be of significant commercial value.
6. Authority to ensure a uniform basis for payment to Government employee inventors of their share of the royalties.

1. Patent rights remain with the Contractor if he so determines.

Conclusion

This proposal is designed to be the basis for discussion to the end that a more effective technology management system is developed.

Proposed System for Managing and Transferring Patentable Technology

Introduction:

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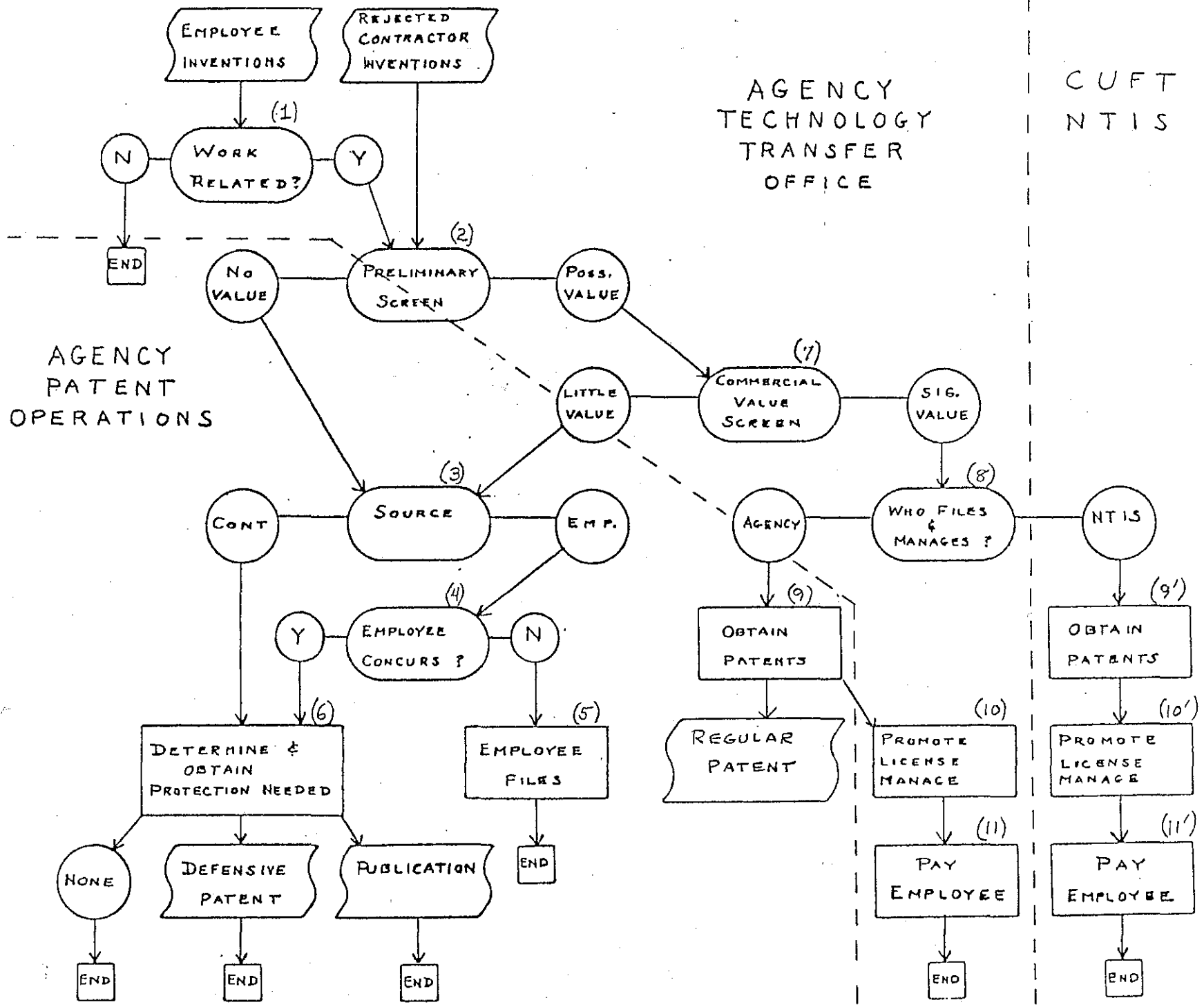

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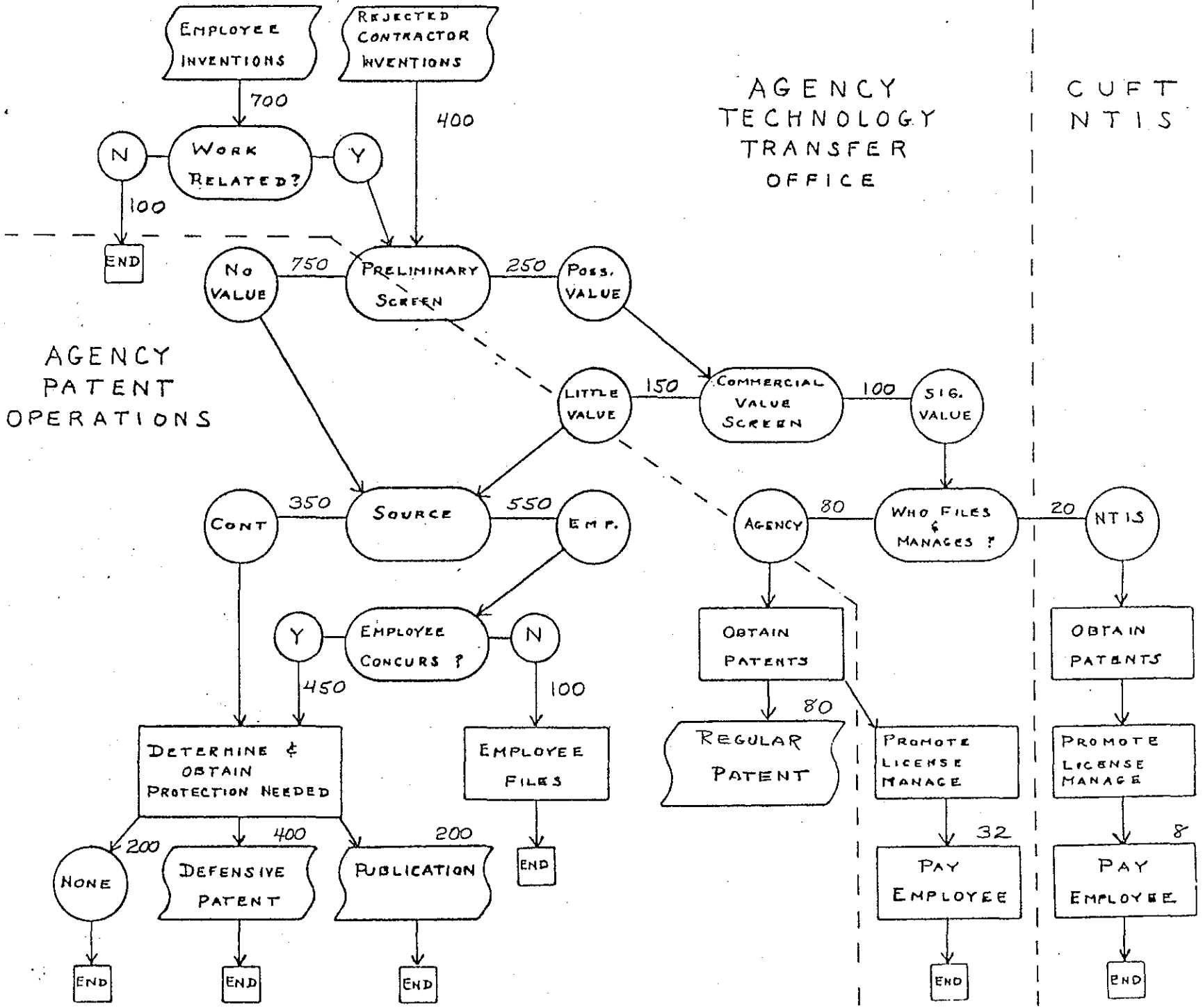

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For individual patent attorneys, the work should become more diverse and interesting. They would spend minimal time developing

and supporting applications for low value patents. The regular patent applications they would handle, would be for significant inventions. The number of foreign applications would probably increase significantly. Some would be asked to assist the licensing process where the volume is expected to increase.

The proposed system would also open a second opportunity for advancement through The Technical Transfer Offices for those desiring to follow it. This may be an important consideration both as a matter of personal interest and because the new PTO fee structure can be expected to reduce the number of domestic applications the agencies can afford to file.

Employee Inventor Considerations

There appears to be a national trend toward allowing employee inventors in non-profit organizations to benefit from the revenue produced by their inventions as an incentive to promote both creativity and invention reporting. Techniques for doing this vary widely and include lump sum cash awards, percentages of royalties, and use of royalties to support an inventor's research program. This proposed system is designed to provide strong incentives through significant percentages of royalties.

Present Government employee patent policies have been formed by two important considerations - assumptions about employees'

abilities to manage patents effectively and conflicts of interest. The proposed system would have the valuable inventions patented and managed by Government specialists. It is based on a presumption that these specialists with their knowledge, contacts, and resources can do a better job than a single inventor. The charts do not show a possible consultation link between the Technology Transfer Office and the inventor so he can provide any promotional ideas he may have.

The conflict of interest issue should be divided into two parts--pre-invention and post-invention. Prior to an invention, the prospect of financial rewards could lead to distortion of research or a distraction of the employee from his primary work. Such problems are common to any incentive system that rewards for part of a job to be performed. The proposal to reward for inventions is based on the assumption that more ideas will be developed and reported than under present policy and that the results would outweigh the posibility of research distoration.

The post-invention conflicts involve the competing demands for an employee's time and the possibility of his doing business with firms that also do business with the Government. Under the proposed system, there can be opportunities for both types of conflicts, but they can be managed easily. Existing regulations that govern outside activities of employees are adequate to handle

the competing time demands, and an employee should not be permitted to participate in any procurement or assistance award action that could use his invention.

Viewed this way, allowing employees to patent inventions which the Government does not believe have significant commercial value, should not lead to difficult conflict of interest situations. It may, however, allow inventors to promote some inventions more than the Government would. If will certainly cause the employees to feel they have been treated fairly.

Authorities

To make the system work, the following authorities would be used, some of which may exist today.

1. The PTO proposed defensive patent.
2. Authority for someone--preferably the Secretary of Commerce to prescribe how agencies will use the defensive patent.
3. Authority to specify the process and criteria for the pre-screen.
4. Authority to establish and operate the commercial value screen.
5. Authority to establish the rights of employees to their inventions which the Government determines not to be of significant commercial value.

6. Authority to ensure a uniform basis for payment to Government employee inventors of their share of the royalties.

Conclusion

This proposal is designed to be the basis for discussion to the end that a more effective technology management system is developed.

Washington, D.C. 20230
(202) 377-1984

June 14, 1983

MEMORANDUM FOR: D. Bruce Merrifield
Assistant Secretary
Productivity, Technology and Innovation

FROM: Norman J. Latker (S)
Director
Office of Federal Technology Management Policy

THROUGH: Egils Milbergs
Director
Office of Productivity, Technology and Innovation

SUBJECT: Draft System Plan for Managing Technology in Federal Agencies

We would like to discuss the status of our draft systems plan (copy attached).

It seems to us that implementation of a system plan similar to ours would be a timely and appropriate response to OSTP's Packard Report and the Business-Higher Education Report recommendations to expand government laboratory collaboration with industry. The main aspect of our plan is the establishment of focal points at laboratories with the authority to make "deals" with industry to fund the continued development of new products and processes they have evaluated under constraint analyses to have commercial potential. The laboratory authorities would include at least the ability to initiate RDLP's, seek venture capital, enter into collaborative research projects, share royalties with inventors and grant patent licenses or assign invention ownership rights as a quid pro quo for private sector guarantees to develop, participate in or contribute resources to further development. Organizations with technology transfer experience are supporting our continued development and implementation of the plan but are asking how it will be done. One of the strong messages we have also been getting is that laboratory technology transfer offices are being severely hampered in making "deals" by headquarters clearance procedures. We think this is the "micro-management" problem addressed in the Packard and the Energy Research Advisory Board Reports.

While the government in general has some of the authorities to make a "deal" an identified body of laboratory people with an assignment to management simply does not exist. We have been proceeding on the assumption that the focus would emerge by persuading patent operations to coordinate with the new

laboratory technology transfer offices designated under Stevenson-Wydler. It seems clear that Commerce does not have either the assignment or authority to make this happen. This is being complicated by resistance from some patent operations. Further, there is no, or vague, authority in the government to initiate RDLP's, seek venture capital, share royalties with inventors or enter into laboratory-industry joint ventures. So given even that coordination between these offices could be accomplished, we would still need to clarify their tools of operation.

We would like to discuss various approaches and resources, necessary to speed implementation of a finally devised systems plan. Clearly we would want to touch on:

a) Involving OSTP on our side including use of the FCCSFT Committee.
b) Gaining an appropriate assignment or authority from the Cabinet Council.
c) Necessary legislative and/or administrative initiatives.
d) Additional staff resources.
e) Resistance from patent operations.
f) Training new personnel for focus positions.
g) Appropriate involvement of NTIS licensing program in the final systems plan.
h) The Research Corporation proposal as it touches on laboratories.

We would appreciate some time on your calendar in the near future.

cc: Jack Williams
Lanse Felker

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Productivity, Technology and Innovation
Washington, D.C. 20230
(202) 377-1984

November 15, 1983

To Norm

MEMORANDUM FOR Jack Williams — OK Let's discuss JW 11/22

From: Norm Latker

Subject: Patent Licensing Program

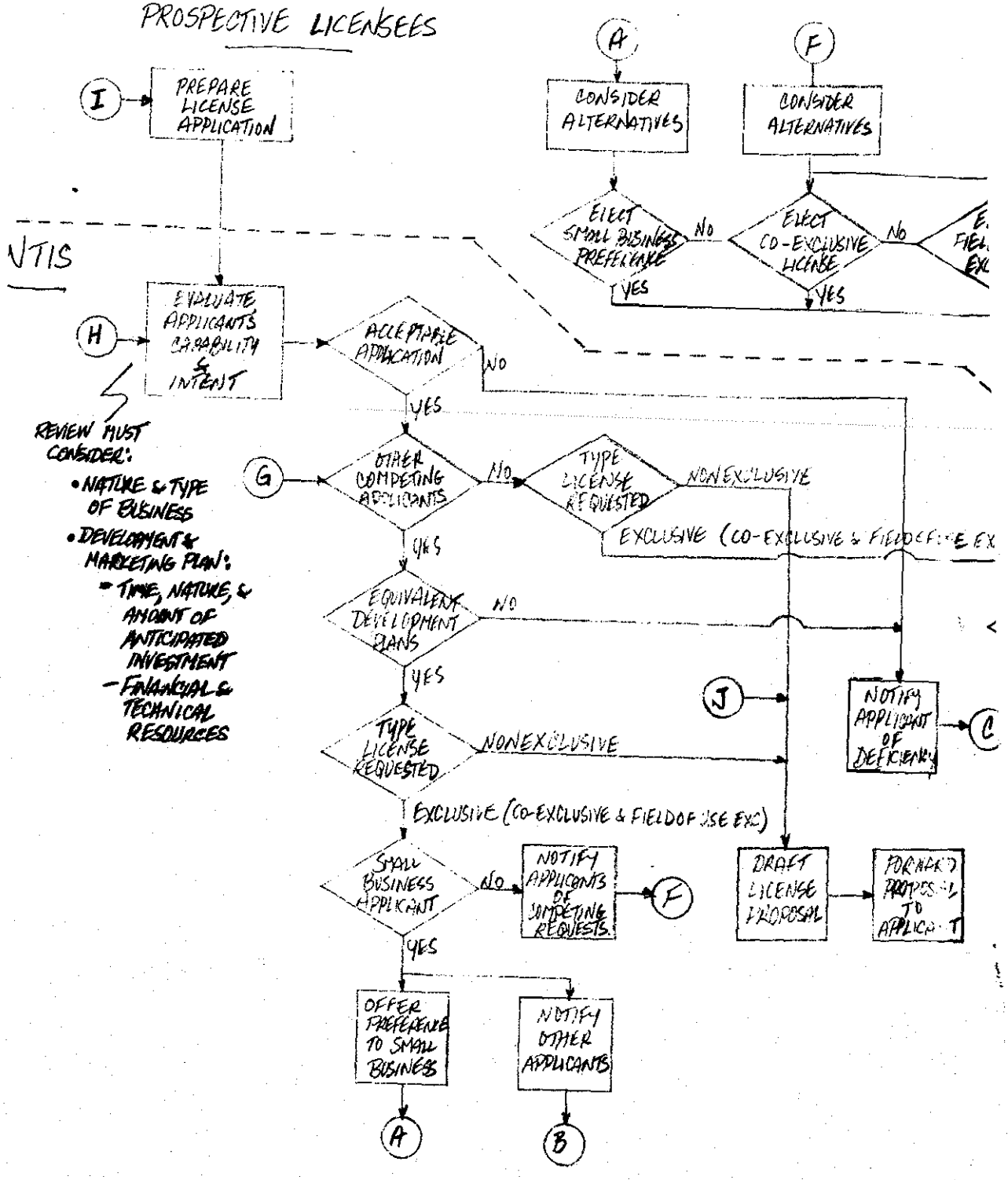
I do not believe that NTIS's patent licensing program has been reviewed to determine its impact on off-balance sheet development of its licensed inventions. I suspect that at best the program is neutral - neither ruling out or favoring off-balance sheet funding. But more likely the program is negative - biased away from off-balance sheet funding. This seems the case in light of the program's requirement that prospective licensees submit a development plan which must include;

(i) A statement of the time, nature and amount of anticipated investment of capital and other resources which applicant believes will be required to bring the invention to practical application; and

(ii) A statement as to the applicant's capability and intention to fulfill the plan, including information regarding manufacturing, marketing, financial, and technical resources.

If a prospective licensee intended to use a RDLP to finance development, it seems clear that it would have to be set out in its development plan. If the prospective licensee failed to do so, it would be most difficult to permit a RDLP's later use if the licensee's plan resulted in the grant of an exclusive license. This conclusion is based on the fact that the exclusive license is granted (after public comment) on the condition that the licensee follow the submitted plan. If the manner of financing development were to be later altered, this would amount to a major change in the plan that could be argued to require review of the license grant including the possibility of additional public comments.

PROSPECTIVE LICENSEES



Memorandum of Understanding

between

The National Institutes of Health

and

The National Technical Information Service

R. 109
File w/ NTIS NIH

Purposes

The purpose of this Agreement is to obtain patents in foreign countries on selected inventions in the custody of the Secretary of Health, Education and Welfare. The patents will be obtained to protect the interests of the United States, to encourage commercial utilization of the inventions, and to derive income from royalties for use of the inventions.

Another purpose of this Agreement is to establish a program under the existing incentive awards system, or other authority, which will provide for the payment of awards to employees whose inventions are covered by royalty-bearing licensed applications or patents.

Selection of Inventions and Countries

The National Institutes of Health (NIH) shall recommend to the National Technical Information Service (NTIS) the inventions in the custody of the Secretary

of Health, Education and Welfare that should be covered by foreign patents and the countries in which patent applications should be filed on each invention. After review and evaluation of the inventions recommended by NIH, NTIS shall select the inventions to be covered by patents and shall cause the required applications to be filed in countries selected by NTIS.

It is understood that all inventions in the custody of the Secretary of Health, Education and Welfare may not be made available under this Agreement.

Transfer of Custody, Funding and Patenting

The Secretary of Health, Education and Welfare shall transfer to the Secretary of Commerce custody of the inventions in those countries in which patent applications are to be filed pursuant to this Agreement. To the extent of available appropriations, NTIS shall fund the filing and prosecution of the applications and the payment of maintenance fees on the resulting patents. NTIS, however, in its sole discretion may discontinue the prosecution of any application or may decline to pay the maintenance fee on any patent when it is in the public interest to do so. Before discontinuing prosecution or declining to pay a maintenance fee, NTIS shall provide NIH with an opportunity

to continue the prosecution or to pay the fee.

NTIS shall enter into contracts with private law firms to assist in the filing and prosecution of patent applications pursuant to this Agreement, and by mutual agreement between the parties, may use the services of NIH staff patent attorneys to perform tasks involved in the filing and prosecution of the applications.

Source Evaluation Board

There shall be established a source evaluation board on which NTIS and NIH shall be represented. The board shall:

a. Evaluate the technical acceptability of private law firms that submit proposals in response to Department of Commerce requests for proposals on patent services to be performed under this agreement; and

b. Provide the Contracting Officer with a report on all firms that have submitted an acceptable proposal.

Licensing and Royalties

NTIS and NIH agree to use their best efforts to seek licensees under the applications that are filed and the patents that are obtained pursuant to this Agreement.

NTIS shall have the sole authority to enter into license agreements on the applications and the patents. However, NTIS agrees not to enter into any such agreement without prior review and approval of NIH, which shall be limited to policy considerations of the terms and conditions of the agreement which may affect present or contemplated NIH programs.

The license agreements may provide for initial fees and royalties to be paid by the licensees to NTIS. The fee and royalty income shall be used to offset cost of invention screening, selection, and development; the filing and prosecution of applications; the maintenance fees on resulting patent; and the expenses involved in promoting and licensing applications and patents so that these tasks shall become self-sustaining to the fullest extent possible. Any income received in excess of these costs shall be deposited as miscellaneous receipts in the Treasury.

Awards to Inventors

NTIS shall endeavor to establish a program under the incentive awards system set forth in 5 USC 4501-4503, or other authority, which would provide for the payment of incentive awards to inventors whose inventions

are covered by royalty-bearing licensed applications or patents. The awards would be made by a board on which both NTIS and NIH would be represented. The implementation of this Agreement, however, is not contingent upon the availability of such an awards program.

Termination

Either NIH or NTIS may terminate this Agreement upon thirty (30) days written notice to the other party.

In the absence of a written agreement between the parties, termination of this Agreement will not transfer to the Secretary of Health, Education and Welfare custody of inventions in foreign countries previously transferred under this Agreement to the Secretary of Commerce.

LAW OFFICES
ELLIOTT & PASTORIZA
PATENT, TRADEMARK AND COPYRIGHT CAUSES
831 WILSHIRE BOULEVARD
SANTA MONICA, CALIFORNIA 90401
EXbrook 3-0244
Area Code 213

WILLIAM J. ELLIOTT
RALPH B. PASTORIZA
NEAL C. JOHNSON
(ADMITTED IN SOUTH DAKOTA)

January 14, 1966

Lockheed Missiles and Space Division
P. O. Box 504
Sunnyvale, California

Gentlemen:

Re: Spectrolab - Reissue Patent No. 25,647
Dated September 22, 1964 -
"SOLAR CELL SYSTEM"

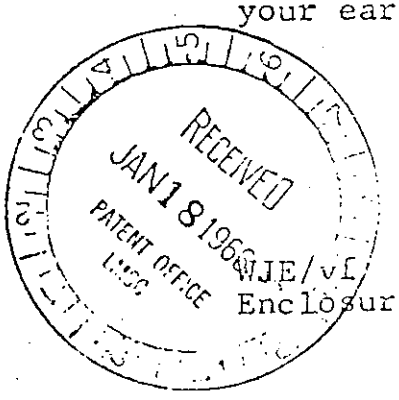
Our client, the Spectrolab Division of Textron Electronics, Inc., is the owner of certain patents and patent applications relating to solar cells and solar cell panels. It is our understanding that your facility manufactures such products. As a consequence of your activities in this field, you undoubtedly will be interested in our client's Reissue Patent No. 25,647, a copy of which is enclosed for your convenient reference.

Assuming you find the products you are producing or are contemplating producing have relevance to Reissue Patent No. 25,647, our client may be interested in granting a license thereunder. In any event, it appeared desirable to advise you of Reissue Patent No. 25,647; our client, of course, will be happy to consider any questions you may have with respect to the subject matter of this patent.

We will look forward to hearing from you at your earliest convenience.

Very truly yours,

ELLIOTT & PASTORIZA



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COMMENT

Free the campus entrepreneurs

BREATHLESS PHONE calls first thing in the morning; indecipherable typescripts bristling with spidery illustrations; wild-eyed magnetic levitationists turning up at reception—*New Scientist* has dealt with the British inventor in his most extreme forms. Lone inventors are by no means all nutters, but we can sympathise with anyone who has to deal with them all the time. That is one of the jobs of the British Technology Group (BTG), which the government created in 1980 by merging the National Enterprise Board with the National Research Development Corporation. The BTG's job, according to its latest annual report, is "to promote the development of technology throughout British industry and to advance the use of British technology throughout the world". To achieve this goal, the BTG has a priceless asset: a "first bite" at the patent rights and market opportunities of any invention developed in Britain's universities and government research laboratories.

Now the departments of education and industry—against the wishes of the Treasury—want to take away that first bite. They plan to give university researchers the chance to patent and exploit their own inventions (This Week, p 141). Such a move will provoke howls of rage within the BTG—"Britain will lose the fruits of its research", "where will inventors turn to for impartial advice"—and so on. But for once, the government is right in this move to "privatisation". Although it has mended its ways in recent years, the NRDC deserves some of the criticism that has come its way. It has been too complacent in collecting large sums of money from a few lucrative inventions, such as the cephalosporin antibiotics, and has not taken on enough risky new ventures. Indeed, its method of taking decisions is inherently biased toward caution. As one vice-chancellor said to *New Scientist* this week, "a government scientist does not stand to gain anything by backing a successful idea. But if he recommends support for an idea that does not work, he will hear all about it." Caution and innovation do not mix.

So what can be done? First, the government should not abolish the BTG. If anything, like the Patent Office, it probably needs more staff to deal properly with new ideas and to advise inventors. Most importantly, it needs to be able to tackle the "pre-development gap"—the time between an idea and a prototype. To develop ideas at this stage means taking risky decisions, so the BTG must have the cash to throw after promising ideas. And it must be prepared to lose a few million pounds in the process.

Where does this leave scientists at universities? Some innovation-inclined institutions, such as Salford and Heriot-Watt, already have the expertise to put inventions on the market. Others will have to learn, and some will get their fingers burned. Without the NRDC to blame, academics will have to take the task of innovation more seriously. The British Technology Group should be there to support them—but it should not have a monopoly on Britain's brains. □

The shadow of Zeta

TWENTY-FIVE years ago Zeta was heralded as proof that science had tamed the process that powers the hydrogen bomb—fusion. Cheap electricity would soon be issuing forth from reactors fed by an inexhaustible resource—seawater. It did not work out like that, and the world still awaits that scientific proof (this issue, p 166). The scientists involved blame the press and its lurid headlines for giving people the wrong impression about Zeta. But if the project's scientists—and the intellectual giants who ran Britain's nuclear programme at the time—weren't all that sure about the measurements, why did they call large press conferences (on 23 January, 1958) and flood the scientific press with detailed descriptions of the work? The answer to these questions lies in the intense international rivalry to be first with fusion, a rivalry that persists to this day. Also still with us is the "imminent" proof that fusion will work, not to mention the hyperbolic headlines. "Scientists achieve nuclear fusion", "US triumph in race to tame nuclear fusion", they said when Princeton turned on its large new experiment (*New Scientist*, 6 January, p 8). Well, not quite. Maybe next year, or the year after. In the meantime we can mark the anniversary of Zeta. It isn't rewriting history to say that the project was a successful one, albeit less spectacular than first thought. Perhaps next time. . . □

Scientists will be set free to sell their inventions

THE GOVERNMENT'S monopoly on inventions at British universities and publicly-funded research establishments seem set to end. In mid-February the Prime Minister should approve a plan by Sir Keith Joseph, the Education Secretary, to scrap the role of the British Technology Group (BTG) as a broker for public-sector research. But scientists seem uncertain about whether the idea is good for them—or the nation.

The plan, first proposed by the Advisory Council on Applied Research and Development, would allow research councils and individual scientists to get the chance to patent and market their own inventions. In the past the BTG has had first refusal on all inventions.

The government formed the BTG in 1981 by amalgamating the National Enterprise Board with the National Research Development Corporation. The group describes its function as "to develop technology in British industry, and to advance the use of British technology throughout the world". Last year it had an income of more than £26 million, and took on 47 new projects.

But the National Research Development Corporation has been widely criticised for failing to exploit inventions quickly enough, and for putting a bureaucratic stumbling-block in the way of innovative scientists. One survey, carried out for the Leverhulme Trust by the Polytechnic of Central London,

Michael Cross

found that the NRDC's success rate as less than half of that chalked up when a university or industrialist took over marketing.

But the report found that the NRDC had a much better record as a banker. The report, "Inventions from non-industrial sources," concluded that the corporation should simply lend money to inventors, with repayments depending on the success of the invention.

This kind of role would obviously be more in keeping with the Conservative government's non-interventionist stance.

The BTG could not comment on the government moves this week. But a spokesman said: "If the government took away the monopoly, the NRDC would have to be more selective in what it chose to exploit . . . this could mean that some inventions would be lost to the nation."

Reaction in universities was mixed. Professor John Ashworth, vice-chancellor of Salford University, said an end to the monopoly was inevitable. "Competition will be a good thing, although I suspect that some academics grossly underestimate the professional skills of the BTG, and will get their fingers burned marketing their own inventions."

Ian Dalton, manager of the successful research park at Edinburgh's Heriot-Watt University, defended the group. "I have always found the NRDC a pleasure to work with . . . but perhaps I have a more businesslike attitude than many."

The fate of the monopoly now lies with the Treasury, which is unhappy with some of Sir Keith's proposals. □

Britain goosed

A BRITISH attempt to stop the force-feeding of geese in France has met solid opposition from foie gras lovers in the European corridors of power.

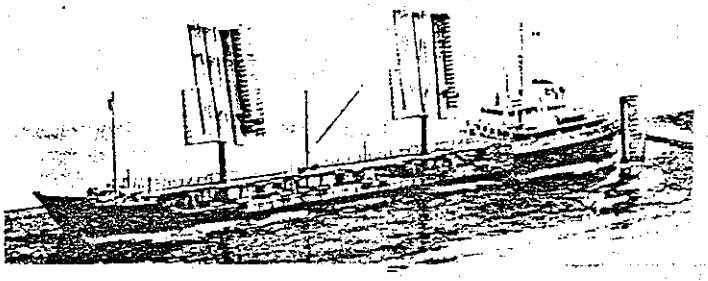
The environment commission of the European parliament, led by Marie Jeanne Pruvot, a French liberal, has concluded that the practice is not cruel and that there is no reason to ban it.

Pruvot's report is in line with the Council of Europe's findings way back in 1974. But it contradicts a British draft resolution put to the European parliament in 1980 by Labour MEP Richard Caborn.

Caborn says that the practice of force-feeding (which dates back some 4000 years) is "inhuman and intolerable"—even if the resulting fatty goose-liver is such a delicacy. Pruvot, however, cites a series of scientific findings to show that geese actually enjoy having their gullets stuffed with maize. Geese being force fed actually run to greet the person coming to administer their daily dose, says Pruvot.

Medically-speaking the goose suffers from boulimia, or a morbid desire for food. The process of cramming the goose lasts from eight to 20 days, during which time the goose is given a helping hand with swallowing 700-800 grams of maize a day.

In some European states it is illegal -ce-feed geese. Caborn's efforts were 'o bringing other nations into -ays the British," lamented foie gras producers' Pruvot says that depend on □



A model of the 20th-century clipper

Setting sail on wind-power with—the Pru

THE PRUDENTIAL Assurance company is about to spend £125 000 on a study into wind-powered cargo ships. The money will go on an invention that a British company thinks could save shipowners at least 20 per cent of their fuel bills.

The company, Walker Wingsail, has developed an aerofoil sail that should give twice as much thrust as a windjammer's rig. The idea is to provide auxilliary propulsion for commercial ships.

Many recent attempts to revive the "age of sail" have been infected with a dewy-eyed nostalgia for clipper ships. But John Walker, the founder and managing director of the company, says that hard economics should justify his design: "We are applying the latest marine and aerospace technology to design fully computerised wingsail systems."

The key word is "computerised". Conventional sailing ships cannot be economic cargo-carriers because of the large crews that they need. But in Walker's design, a computer and servo-motors keep the sails trimmed. Prutech, an offshoot of Prudential, is backing it. □

Museum-land's orphan finds a home

TWO of London's most venerated museums, the Geological Museum in South Kensington and its neighbour, the Natural History Museum, may merge—if the administrators of the two museums can agree terms.

The Geological Museum is an offshoot of the Institute of Geological Sciences and is funded through the Natural Environment Research Council (NERC). But its future has been uncertain since, three years ago, the headquarters of the institute moved to Nottingham.

In October the NERC suggested to the council of the IGS that the museum should either become independent or merge with one of its neighbours, the Natural History Museum or the Science Museum.

The council has since emphasised that any new arrangements must not make the Geological Museum any less open to the public. Moreover, the museum must keep its standing within the geological profession through an advisory panel, to which NERC wants to be party. And any new arrangements must also consider the interests of the museum's staff.

Last week the staff of the Geological Museum were told that the administrators wanted to merge with the Natural History Museum. The merger would allow the Natural History Museum to incorporate its large mineralogical, rock and fossil departments into its new partner's vast collections. The resulting displays could, to coin a phrase, truly become the greatest show on Earth. □

FOCUS

ICI is to build a 330,000t/a nitric acid plant at Billingham, Cleveland, where the company's Agricultural Division is based. Construction work, to be carried out by Société Chimique de la Grande Paroisse, is due to begin in early 1983. The end of 1984 is the target date for completion and the cost of the project is estimated at around £30M. Acid produced by the new plant will be used to manufacture ammonium nitrate fertiliser, which ICI markets under the brand name Nitram.

G. D. Searle & Co has concluded an agreement with Meiji Seika Kaisha Ltd, the major producer of antibiotics in Japan, for the exchange of potential anti-infective drugs and recombinant DNA-produced interferon. Through the deal, Meiji Seika will be able to co-market drugs manufactured by Searle in Japan and selected South-east Asian countries, while Searle will have rights to sell drugs made by its new partner in the USA, Canada, Australia, New Zealand and other specified regions. The two companies are to collaborate in developing interferon manufacturing technology, with G. D. Searle adding its know-how in recombinant DNA techniques to its Japanese partner's experience in the anti-infective drugs sector.

Norit NV of Holland has built a £10M plant in Glasgow for the production of activated carbon. Erected with the assistance of the Scottish Development Agency, the construction of the facility was undertaken by Crawford and Russell Ltd, part of the John Brown Engineers and Construction Group. Activated carbon produced at the plant will be of extremely high activity and purity and should find use in the purification of foodstuffs, pharmaceuticals and chem...

BOC Ltd is to invest £12M ... gas production fac... England, prod... existing ... Start...

Jenkin seeks end to NRDC research monopoly

An interdepartmental report to ministers, expected shortly, should recommend an end to the National Research Development Corporation's right to first refusal for the exploitation of work carried out with research council funding, according to Secretary of State for Industry, Mr Patrick Jenkin. If the report, which is being prepared by an interdepartmental working party headed by the Department of Education and Science, recommends retention of this right by the British Technology Group, which has absorbed NRDC, Mr Jenkin said he would need a great deal of persuasion that it should be accepted.

Giving evidence last week to the House of Commons Select Committee on Education, Science and Arts enquiry on biotechnology, Mr Jenkin said that the special position of NRDC had acted as a barrier to the transfer of technology and the participation of academics in industry. Many university departments which are doing work of interest to industry should have better direct contacts with companies, he said.

Criticism of NRDC's role in fostering innovation also came in an earlier hearing at which the Committee took evidence from three learned societies. According to Professor Derek Burke of Warwick University, NRDC's role in patent protection had been useful, 'but as middlemen with industry, they have not been so successful'. Mr Peter King, giving evidence on behalf of the Society of Chemical Industry, suggested that NRDC's insistence on competitive bids from industry had meant that some inventions were not taken up.

In his evidence, Mr Jenkin said that the government had implemented almost all the recommendations made in the 'Spinks' report on biotechnology. His department, he said, probably spend ... 2.5M/a in ... ghout £1... n given to ... s Pruteen ... elopment

... he said, ... do. An ... ent is to ... biotech- ... e warned ... 'patient ... commercial ... to talk in ... for major ... nology. ... Ronald ... ith Mr

of talks will be held in late June. Coleman also hinted at possible collaboration with Japan.

At an earlier hearing, the Science and Engineering Research Council's director of biotechnology, Dr Geoffrey Potter, also told the Committee that there 'are one or two sectors where we would like research proposals, but are not getting them'. SERC Secretary, Professor John Kingman, suggested that proposals may not be coming forward from universities because they cannot put up their share required under the dual-support system.

SERC, Kingman said, has a policy of not shifting the dual-support line (unlike the Medical Research Council, which earlier told the Committee it might do so – *C&I* 1982, p275). 'I don't think it is a lost cause to try to get more money from the UGC,' Kingman told the Committee. 'The argument for adequate funding will eventually prevail.'

A less sanguine view was taken by several of the academics giving evidence on behalf of learned societies. Professor S. J. Perry, from Birmingham University, said that the UGC had not been supporting scientific research adequately even before the present round of cuts. At his own university, cuts had been made across the board and he was losing six out of the 33 academic staff in his department (biochemistry). 'The research base is being eroded in a very positive way,' he said.

Professor Burke suggested that universities would lose the people who could easily get other jobs and be left with the less able academics, while Professor Charles Brown suggested that concentration of funding in centres of excellence could lead to the erosion of support for the enabling disciplines on which biotechnology depends.

Several of the witnesses at that hearing were sceptical about the value of masters' degree courses in biotechnology. Professor Brown said that they tended to train 'Jacks of all trades, when the emphasis should be on training high flyers'. Peter King said that the industrial view is that if someone is good, then the company will teach them their trade. 'The typical MSc course is not very good – it became popular during the 1960s as a way of avoiding unemployment for one more year.' At last week's hearing, Dr Coleman announced that SERC had now identified a need for half a dozen MSc courses in biotechnology. Dr Edward Parkes, giving evidence on behalf of the University Grants Committee, also emphasised the need for more academic courses in the field. These should mainly

Would like to talk to you about Celltech

JMc

Copies to JPS GHS ✓

BTG needs political impetus

Will the National Research Development Corporation (NRDC) keep its monopoly of university and research council-funded work, and hence maintain its position as the means by which academic research is commercialised? Its chairman, Sir Freddie Wood, does not know the answer, and is waiting for a political initiative to clarify NRDC's future.

In the past couple of years the old NRDC has been subsumed into the British Technology Group (BTG). This is intended to be a merger of the functions of NRDC and the National Enterprise Board (NEB), and was foreshadowed by the appointment of Wood as chairman of both bodies in 1981. But although they are now moving into one set of offices, have a corporate logo (and even a corporate tie designed by Sir Freddie) and share the same board members, NRDC and NEB are still separate legal entities. There was no sign in the Queen's speech of any plans to introduce legislation in the forthcoming parliamentary session to regularise the position. So both bodies will continue to drift on with the uncertainty over their future responsibilities casting a shadow on forward planning.

After many changes of role, the NEB side of the merger seems to have settled down as a forcing ground for high technology businesses. NRDC has always been more concerned with aiding projects, and at the moment has its monopoly of publicly-funded inventions. However, the creation of Celltech to handle Medical Research Council-funded inventions in the field of biotechnology has knocked a hole in this monopoly. A similar company is planned for Agricultural Research Council-funded biotechnology. Any future legislation regularising the position of BTG will have to take account of these moves, and also the views of several recent and forthcoming committees and working parties that have commented on the poor commercialisation of public research.

Most of NRDC's income comes from a few blockbusting inventions, notably the cephalosporin drugs and the pyrethroid insecticides. Unfortunately, the patents on the cephalosporins run out in 1983–84, which will mean a loss of about £8–10m pa in revenue for NRDC, equivalent to its whole 1982 surplus. There are projects in the pipeline that the Corporation is convinced will be big money-spinners, but supplying risk capital is inherently expensive, and it looks as if NRDC will have to eat into its £20m of accumulated reserves.

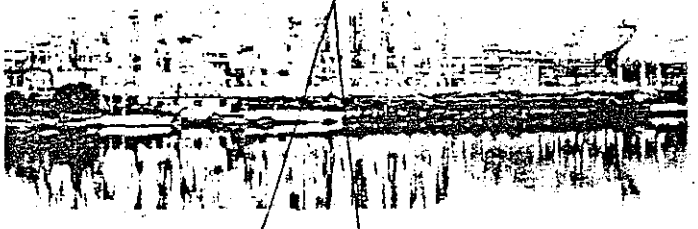
● Celltech has continued its rapid development by breaking into the Japanese market. The company has appointed the huge Sumimoto corporation as its exclusive agent in Japan for the next five years. The Japanese market for diagnostics is valued at more than £200m, and Celltech hopes to grab a stake in this with its monoclonal antibodies. The intention is to develop easily-automated assay systems using the antibodies. The first products that Sumimoto is selling, however, are anti-interferon (used for purification) and an interferon assay, which could give a market of £1–2m when commercial interferon production begins in Japan in 1984–85.

NEWS REVIEW

Shell opens the Stanlow SHOP

When the Shell Chemicals board sanctioned £100 m of investment at Stanlow on a Shell Higher Olefin Process (SHOP) plant, the petrochemical industry was in a reasonably happy state. That was in 1978; since then the 'second oil shock' has stood the industry on its head. Would Shell still make the same decision today, knowing about overcapacity?

The answer to that question, according to Shell Chemicals UK's managing director, Keith Walley, is a categorical 'yes'. The new plant is 'the very kind of investment we need to help us through our present difficulties'. It is more efficient than the plants it replaces, it uses a more widely available (indeed, overabundant) feedstock, and it opens new opportunities downstream.



Until now Shell has been producing its linear olefins (alkenes) by cracking waxes, usually from Nigerian crude oil, at its plants in France and Holland. The sources of suitable waxes have been dwindling in recent years, and the process is greedy in its use of energy. The SHOP process uses ethylene as its feedstock, which will be abundantly available when the Shell/Esso ethylene cracker at Mossmorran comes on stream. A prototype SHOP plant is currently being operated by Shell in the US, proving the efficiency and viability of the process.

With Mossmorran still a few years from completion and the recent ICI–BP deal reducing the ethylene glut, Shell has temporarily reprieved its naphtha cracker at Carrington, which was due to close.

The newly commissioned Stanlow plant was officially opened a few weeks ago, and next year it should reach its design capacity of 170 000 tonnes pa. The bulk of this output which Shell is currently active, so the plant completes the integration of these businesses from the North Sea to the end user. SHOP can also provide co-monomer for linear low density polyethylene (LLDPE) if required. Although Shell has no current plans to move into LLDPE production itself, several other European manufacturers are actively building plants and may represent another useful market. The SHOP process is flexible enough to produce tailored alkenes in the C_6 to C_{18} range, and opportunities could open up for several of these in other areas.

Keith Walley praised the managing engineers, Foster Wheeler, for getting the plant built on time and within budget, despite problems like the 1981 steel strike, bad weather and bottlenecks in the supply of some equipment. Of the materials supplied, 80 per cent by value came from the UK.

Jenkin attacks cartel

Performing the official opening of Shell's new plant at Stanlow, the secretary of state for industry, Patrick Jenkin, took the opportunity to criticise recent suggestions that the EEC should sanction a 'crisis cartel' amongst the European petrochemical manufacturers. Although prohibited by the Treaty of Rome, similar cartels have been set up, with EEC permission, to help the steel and textile industries. Jenkins believes

Biotechnology bugs the politicians

Two years on from the Spinks report on *Biotechnology*, a British biotechnological industry is beginning to take shape. Such a 'high tech' area is crucially dependent on its research base, but there are fears that this base is crumbling.

A couple of years ago, the politicians feared that Britain was lagging behind in biotechnology because of a lack of investment—our researchers were producing more ideas than the small band of entrepreneurs could take up. Now that strong research basis is itself threatened by lack of investment—in the form of university cuts and the squeeze on public sector research.

The House of Commons' new Education, Science and Arts Committee, in taking up the work on biotechnology started by its predecessor, was so worried by this erosion of the foundations of innovation that it has rushed out an interim report dealing with this aspect alone.

At the heart of the matter are some of the same problems that other committees have been investigating recently: the dual support system for the universities, and the lack of a coherent UK policy for science. 'The lack of coordination in governmental activities in relation to biotechnology noted by Spinks', says the Committee, 'seems to be but a reflection of a greater lack of coordination in the management of science generally'. Most of the innovations come out of universities and polytechnics, but because of cuts in the University Grants Committee (UGC) budget, this research is being adversely affected and the UGC has already had to provide £800 000 specially earmarked to protect centres of excellence in biotechnology.

Although the research is carried out in academic institutions, the 'lead' ministry is the Department of Industry (DOI)—yet the Committee discovered that there is no formal channel of communication between the DOI and UGC. Nine of the Committee's 21 recommendations are connected with this gaping hole in academic–industry links. The research councils are also advised to step up their support of research outside the UGC remit, both through research funds and through CASE awards and other postgraduate studentships, teaching companies *etc.* The DOI should be looking at tax incentives to encourage research in industry.

Getting academic research out into industry is a notorious problem. Criticism of the National Research Development Corporation (NRDC) has been rife and, indeed, its monopoly of public sector inventions has already been deliberately broken by the establishment of Celltech to commercialise Medical Research Council (MRC) research. The Committee recommends that NRDC's successor, the British Technology Group (BTG), should have its monopoly removed, and that academic scientists should be freer to take their inventions to the commercial world and to hold industrial consultancies.

However, there is a fly in the ointment—the Committee has uncovered 'a great deal of obstructiveness' from the MRC during the birth of Celltech. The report recommends that this should be urgently investigated before the Agricultural Research Council goes ahead with plans to set up its own Celltech analogue.

Lastly, the importance of 'catching 'em young' is stressed. The report does not suggest that biotechnology should be taught in schools—their role is to provide a sound basis in physical and biological sciences—but an awareness of the applications of biology should be inculcated, perhaps by industrial visits.

Storms in plastic world

When the Rubber and Plastics Processing Industry Training Board is wound up on 1 October, the chairman of its successor will be Jack Eccles, a leading trade unionist. The secretary of state for employment, Norman Tebbit, announced the appointment at the end of July and it was immediately greeted with dismay by the industry's trade association, the British Plastics Federation (BPF).

The BPF felt that the reorganised Plastics Processing Industry Training Board should have had an industrialist at its head, to maintain the industry's confidence. Jack Eccles is a member of the Executive Council of the General and Municipal Workers' Union and one of its regional secretaries. He has been a member of the TUC General Council since 1973.

● The BPF was lucky still to be in existence to complain to the minister. Speaking at the AGM, BPF's president, George Howd of Shell Chemicals, described 1981 as 'probably the most traumatic year in the Federation's 49 year history'. The effects of an over-ambitious programme and overstaffing were made far worse by an 'illegal diversion of BPF funds' by a 'trusted senior official'.

It was touch and go whether the Federation would survive into this year, but a slimmed down permanent staff and new management controls should pull it round. The BPF had planned to move out of its prestige Belgrave Square premises, but negotiations with a possible replacement tenant fell through, and the Federation does not now plan to move.

Corrigendum

Gow-Mac's new katharometer is the model 40-202,

National Technical Information Service
Center for the Utilization of Federal Technology
Patent Licensing

CUFT's Office of Federal Patent Licensing conducts the most active licensing program in the Federal Government. The program started in 1976 under cooperative agreements with the Departments of Health, Agriculture, Interior, and Commerce. Beginning in 1982 when licensing revenues approached $155,000, emphasis was placed on increasing exclusivity in new licenses so that companies would have maximum in - centive to invest their own funds in rapid commercialization. In FY 1986, licenses on new inventions were 65% exclusive. Recent activity is shown in the chart below.

In FY 1986, revenues tripled those of FY 1985, totaling $4.8 million, nearly $4 million over program costs.

CUFT's Office of Federal Patent Licensing
FY 1983 — 86 Activity

Inventions Publicized (Excluding those from DOD, DOE NASA)	476		
Inventions foreign filed to protect overseas marketing rights	61		
Fees and Royalties received	$8.1 million		
Commercialization pledges	$565 million		
	Exclusive and co-exclusive	Nonexclusive	Total
Licenses granted	82	86	168
. . . on previously licensed inventions	*3*	*49*	*52*
. . . on new inventions	*79*	*37*	*116*
Licenses granted 1976 — 1982	17	64	81

The agencies for which CUFT licenses generate about 10% of the Government's patents. As shown below , these CUFT licenses accounted for 33% of the licenses granted and 83% of the revenues for all agencies in FY 1984. It also is evident that the overall rate of use of Federal patents has doubled from the 1976 4% rate cited in a study prepared by the Federal Council for Science and Technology. Both CUFT and NASA have reached the 25-30% level which is equivalent to the best university programs.

CUFT also maintains a strong foreign patenting program. Its foreign patents now provide protection against foreign competition for about $60 million in export sales of U.S. licensees. Without this effort, foreign companies could use the U.S. Government technology covered in these patents without benefit to the United States.

Federal Patent Licensing Activity*
FY 1984

Licensing Agency	Annual Average Patents Issued **	Licenses Granted	Fees and Royalties	Licenses/ Patents Ratio
Defense	844	16	$24,000	2.0%
Energy	220	25	$53,700	11.3%
NASA	122	33	$98,000	27%
NTIS/CUFT (For Health, Agriculture, Commerce, Interior, and others)	121	36	$868,000	30%
	1307	140***	$1,044,000	10.7%

* Based upon an August 1985 GAO report (GAO/RCED-85-94).

** This average covers an eleven year period.

*** Includes 30 royalty-free, non-exclusive licenses granted by Agriculture and Interior.

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
OFFICE OF THE DIRECTOR

NOV 3 1982

MEMORANDUM TO: D. Bruce Merrifield
Assistant Secretary for Productivity,
Technology, and Innovation

SUBJECT: Patent Licensing

Historically, the foreign competitors of U.S. industry have had virtually unrestricted and free access to the results of R&D performed in government laboratories. In recent years, however, the NTIS Patent Licensing Program has developed an active foreign filing component to protect overseas markets for U.S. industry. Nearly half of the licenses granted by NTIS include foreign patent rights.

Unfortunately, the government continues to lose significant foreign rights, partly as the result of outdated Commerce regulations.

Thirty-five years ago, the Secretary of Commerce was given government-wide responsibility for the foreign filing and licensing of government inventions. This authority was rarely exercised due to our favorable trade balance and economic strength. In 1954, Commerce published regulations allowing inventors to receive foreign patent rights if the government does not foreign file within six months of the U.S. filing date.

Some agencies rely on this regulation to permit their employees to privately exploit their inventive work without restriction. Developments as diverse as medical and agricultural technology and weapons systems have been sold exclusively to foreign companies. Thus, U.S. companies have been denied access to foreign markets with developments paid for by corporate tax dollars. NTIS has recently been unable to give U.S. companies worldwide licenses because of inventors' elections to sell their foreign rights.

The Licensing Program relies upon cooperating agencies for timely disclosure of recently filed U.S. patent applications. Disclosure usually occurs well after U.S. filing, leaving little time for NTIS' technical and market evaluations and consultations with industry to make foreign filing decisions.

After six months, NTIS has to petition inventors to recover foreign rights for the government. There is considerable opportunity for inventors to pursue sweetheart deals; in a typical week, the Naval Research Laboratories had more than 180 visitors from Germany and Japan, but none from U.S. companies.

In the long term, there are a number of inventors' rights issues which are properly addressed by OPTI's Patent Policy group. For example, stimulation of the economy through incentive licensing is not a justification for rights acquisitions under Executive Order 10096, which controls policies government-wide.

In the short term, and with your concurrence, we will amend the troublesome regulations as indicated in the enclosed Action Paper. They are currently part of the PTO's Title 37 C.F.R. but the authorities for the regulations have been clearly delegated to NTIS by the Secretary. PTO Solicitor Nakamura and the Department's Patent Counsel, OGC have agreed that NTIS has the authority to proceed with changes that are deemed appropriate.

Joseph F. Caponio

Joseph F. Caponio
Acting Director

cc: Egils Milbergs
Norman Latker

PATENT LICENSING PROGRAM

Action Paper

Issues: Obsolete and inoperative DoC regulations are barrier to licensing.

Government employees can refuse to relinquish foreign patent prerogatives often acquired by failure of agencies to exercise foreign filing options.

U.S. companies are denied foreign use of U.S. government technology.

Background: 1947 - E.O. 9865 gave Secretary, DoC government-wide responsibility for foreign patent filing and licensing.

1950 - E.O. 10096 transferred Secretary's "9865" responsibilities to Government Patents Board.

1954 - DoC promulgated rules under PTO's Title 37 (Sections 101 and 102) citing "9865" authority:

- Secretary to license foreign patents with approval of Government Patents Board.
- Secretary to consult agencies to determine when government should foreign file.
- foreign rights left to inventors when government did not foreign file within 6 months of U.S. filing date.

1961 - E.O. 10930 abolished Government Patents Board and officially transferred "9865" functions back to Secretary.

1974 - Secretary delegated "9865" responsibilities to NTIS (DOO 30-7B).

1980 - P.L. 96-517 extended to all agencies "9865" authorities previously reserved to DoC.

Status of 1954 Regs: Inconsistent and nonuniform agency application.

Partially obsolete since 1961 abolishment of Patents Board.

PTO performs no relevant functions.

Authorities delegated to NTIS.

Inoperative since July 1981 (P.L. 96-517).

Agencies free to develop separate policies.

Recommend: Publish Federal Register notice deleting 37 C.F.R. 101 and 102.

This will remove DoC's endorsement, as lead agency, for six month foreign rights option which agencies and employee inventors assert.

Publish, as part of Title 15 DoC patent licensing regs, new rule which lengthens period government can opt to foreign file employee inventions.

This rule should include the Awards Program for Federal Inventors which extends the benefits of NTIS licensing successes to employees of agencies with cooperative licensing arrangements with DoC.

Should the Government Centralize Patent Licensing Activities

There are a dozen federal agencies which regularly obtain patents. Potential industry licensees are confronted with almost as many licensing policies, and varying degrees of cooperation in securing patent licensing rights from the government. Some agencies still do not grant exclusive licenses as a matter of policy.

While more contractors are being given rights to their own inventions, agencies continue to have considerable numbers of inventions flowing into the Government's patent portfolio from federal employees and, occasionally, from contractors who are uninterested in retaining ownership.

In the past, most government patents were obtained for defensive purposes to avoid payment of royalties for technology developed at government expense. The inventions covered by defensive patents are intended to meet unique agency needs.

The patent staffs of agencies filing defensive patents are primarily concerned with agency mission; licensing is, at best, a secondary consideration. These staffs do not possess the incentives, resources, technical skills, or industry perspectives to cull valuable inventions from the mass of defensive filings and effectively market results. While some agencies do have staffs whose job it is to promote agency developed technology, these staffs are not responsible for patent licensing.

Some of the patented inventions of government agencies could be of significant value for industrial and commercial development. However, screening inventions, identifying potential users, and promoting and negotiating licenses to achieve expeditious development requires unique, market-oriented capabilities not broadly available in government.

To be successful, a patent licensing activity must develop highly specialized skills, maintain extensive contacts throughout the scientific and manufacturing communities, and provide enough good wares in its invention inventory to attract the attention of serious prospective licensees. Individually, agencies do not possess the "critical mass" of experience or good inventions necessary for viable programs.

The research activities of some agencies overlap. Today, access to related patents of different agencies (and sometimes to related patents of the same agency) may require multiple negotiations.* Preferably, an interested firm or cooperative R&D consortium should be able to "one-stop-shop" for valuable domestic and foreign patent rights from the government.

*A few agencies transfer foreign patent rights to another federal agency but retain domestic patent administration, requiring interested firms to undertake separate proceedings to acquire effective worldwide coverage.

When conducting research, universities are more like government than industry; they produce patentable ideas but do not manufacture commerical products. In order to link research results to commerical utilization, universities have developed licensing functions to screen and market inventions. Foreign governments have also recognized the benefit of agressive licensing operations; successful foreign programs boast of significant commerical development and millions of dollars of royalty return to the governments. The United States is virtually the only major industrialized country without centralized licensing activities.

The National Technical Information Service (NTIS) performs centralized licensing functions for several agencies which voluntarily transfer patents to it. We propose to extend the university and NTIS concept to the government as a whole. This would result in a single unit for screening, promoting and licensing inventions with high commerical potential.

A central capability could contribute significantly to the process of identifying inventive concepts which warrant full patent coverage and commerical exploitation.

Recomendation: The Federal government should establish a single unit to administer its patents which have significant commerical potential. This unit would have patent screening, marketing, and ~~license administ~~ration as its primary responsbilities.

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UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Productivity, Technology and Innovation
Washington, D.C. 20230
(202) 377-1984

September 17, 1982

Mr. William Miller
35 East 75th Street
New York, N. Y. 10021

Dear Bill,

As you requested I asked the National Technical Information Service to search the Tech Notes and Government-owned inventions file in Energy Storage, Batteries and Transportation. NTIS came up with the attached eleven abstracts. A description of the NTIS patent licensing program is also attached.

In addition, we did a run of NASA inventions that are available for licensing. Three battery-related inventions are identified. Finally, Norm Latker of my staff suggested two individuals you may want to contact who maintain information on patents available for licensing:

Dr. Willard Marcy
Research Corporation
405 Lexington Avenue, 38th floor
New York, N. Y. 10174-0370 Tel: 212-907-9400

Mr. Robert Siegel
University Patents, Inc.
P.O. Box 6080
Norwalk, CT 06852 Tel: 203-846-3461

I hope this is helpful. Give my regards to Jimmy Stewart.

Sincerely,

Egils Milbergs
Director, Office of
Productivity, Technology
and Innovation

Attachments

Copy to Norm Latker

NTIS PATENT LICENSING PROGRAM

Summary

This NTIS program locates entrepreneurial firms willing to invest in unused patented government owned inventions if given the incentive of a patent license. After a four-year induction period to build inventory, gain experience and obtain national recognition, the increasing flow of royalty income from 77 licenses already negotiated will, by 1985, offset costs and thereafter return millions of dollars annually to the Government.

Of paramount importance is the stimulation of the national economy. As of March 1981, the incentives provided by license agreements already signed or in final negotiation have induced private sector commitments to invest approximately $50 million in further R&D and $84 million in new plant investment, adding possibly 2,000 new jobs to the productive work force. With five years of the program induction period completed, significant innovative stimulation of the economy through dormant government patent rights is assured.

Details

Prior to 1960, Government agencies conducting research and development filed for U.S. patents primarily for defensive purposes, and, upon infrequent request, these were licensed nonexclusively and royalty-free. As of 1972, only the AEC and NASA were doing appreciable foreign filing and licensing to protect valuable government technology against unlicensed foreign use.

Patents available nonexclusively to all provide an incentive to none. Promotion and marketing of patented technology had been negligible at most agencies. These factors contributed to a less than 5% licensing and utilization rate of Government inventions by the private sector.

In 1972, pursuant to the earlier Executive Order 9865, the President directed the Secretary of Commerce to obtain foreign patents on Government inventions and promote utilization through exclusive licensing. In 1973 and 1975, the Administration issued patent licensing regulations authorizing exclusive licensing of Government inventions, thereby, permitting valuable property rights to become an incentive for business entrepreneurs to attract venture capital, launch new products, expand business, and create new jobs. The Administration launched a small interagency program at NTIS to publicize and promote all government inventions. Cooperatively, the Departments of Agriculture, Interior, HHS, Air Force and the VA and NSF pooled their latent foreign rights with those of Commerce into the NTIS program of

invention evaluation, selective foreign filing, marketing, licensing, and incentive awards for federal inventors (to stimulate practical and commercial awareness among scientists in the cooperating agencies). This now provides a sufficient critical mass of good patented technology to sustain an efficient program of promotion and licensing. The centralization which has already occurred is yielding substantially greater utilization of Government invention technology.

Through royalty income to the Government, the program was planned to become self-supporting and recoup substantial technological expenses for the Government. A prototype for the program was provided by the non-profit Research Corporation of New York, which secured a similar critical mass by managing inventions for over 40 universities generating patents from research grants and contracts. After a long induction period, royalty income reached the $2 million level by 1976. In 1981, royalty income of $6.5 million returned $4.5 million to the universities. This equates to the creation of about $200 million in new business and many thousands of new jobs.

In England, the National Research Development Corporation's annual patent royalty income did not exceed $2.0 million for many years. Then the critical mass of experience and growing invention inventory pushed through the barrier, increasing royalties to $40 million. NRDC estimates annual private sector sales created by their licenses to be $250 million in the U.K., in addition to even greater new sales abroad.

The NTIS licensing program is a small program staffed by three professionals. It filed its first patents to protect foreign property rights for U.S. industry in 1976. The foreign patent inventory has increased to about 700 patents and over 100 are under license, primarily to U.S. companies. By culling the portfolio and selectively filing new inventions, the utilization rate will steadily increase.

The licensing program issued its first royalty bearing license in FY'77. Approximately $150,000 in execution fees and annual minimums has been collected but royalties based on actual commercial sales have yet to be realized. The average lead time from patent filing to issuing a license is more than three years with two or three more years to first commercial sales. The first royalties based on actual commercial sales will start accruing in FY'82. Program costs will be offset by licensing revenues after FY'83 with annual royalties forecast to return $1 million to the U.S. Treasury by FY'85.

If additional information on the NTIS patent licensing program is desired, contact the Program Manager on (703) 487-4732.

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

July 1982

NTIS Patent Licensing

The National Technical Information Service (NTIS) has adopted the patent licensing regulations of the General Services Administration as amended on July 1, 1981 in response to Public Law 96-517. The regulations require that applications for both exclusive and nonexclusive licenses must be supported by a development and marketing plan which, under the law, is kept confidential. Copies of the regulations may be obtained from the NTIS Office of Government Inventions and Patents (address below).

When NTIS acquires custody of an invention from the agency which performed the research, it announces the availability of licenses. Nonexclusive licensing has preference, but exclusive licenses may be granted if no acceptable candidates apply within three months. Exclusive licensees are selected on the basis of capability and intent to benefit the public by furthering technical and market development of the technology. A notice of intent to grant an exclusive license must be published in the Federal Register sixty days prior to issuance. Exclusivity may be limited to field of use and territory.

All licenses provide for royalty return to the government. Royalty amounts are subject to negotiation between licensees and NTIS. License agreements specify an execution fee and a percentage of sales resulting from license use. Annual minimum fees are specified for exclusive licenses and all foreign licenses to help defray foreign filing, prosecution and maintenance costs. Annual progress reports are required prior to commercialization. Thereafter, reports on sales and royalties due must be submitted semiannually.

The duration of a license is negotiable, but may extend until the expiration of the patent. Exclusive licenses are usually limited to five years but this period may be extended. Licenses may be revoked for specific causes, such as breach or nonperformance.

NTIS will take action to protect its patent rights against infringement. NTIS may grant the exclusive licensee the right of enforcement of the licensed patent. If NTIS cannot halt the infringement within twelve months or the Government has not filed suit against the infringer by that time, the licensee's obligation to pay royalties is suspended.

Rights granted under patent licenses may be assigned only to affiliates owned or controlled by the licensee and the licensee's successors in interest.

For further information contact: Program Manager
Office of Government Inventions and Patents
National Technical Information Service
P.O. Box 1423
Springfield, Virginia 22151
(703) 487-4732

Sample Citation and Ordering Information

Order Number (Used to order reports from NTIS)

Price Codes (See enclosed table for Dollar values)

Performing or Sponsoring Organization

Title

PB80-166952 NTIS Prices: PC A05/MF A01

Semiconductor Measurement Technology: Modulation Measurements for Microwave Mixers

National Bureau of Standards, Washington, DC. National Engineering Lab.*Naval Electronic Systems Command, Washington, DC. (004692218)

AUTHOR: Kenney, James M.

Page Count

Final rept. 1 Jan 70-31 Mar 74

G1215E3 Fld: 14B, 9E, 49H*, 86V GRAI8014

Issue Announced by NTIS

Feb 80 90p*

Date Report Written

Rept No: NBS-SP-400-16

Sponsored in part by Naval Electronic Systems Command, Washington, DC.

Library of Congress catalog card no. 79-600161.

Abstract: The measurement of mixer conversion loss using periodic or incremental modulation of the local oscillator, and the evaluation and minimization of the associated systematic and random uncertainties, are discussed in terms of an X-band mixer measurement system constructed at NBS. It is shown that the systematic uncertainty in the incremental modulation method of measuring conversion loss results largely from the uncertainties in the calibration of microwave attenuation and power. It is also shown that the modulation (periodic modulation) and incremental (incremental modulation) methods of measuring conversion loss are essentially identical, the only practical distinction being in the somewhat different instrumentation required by the different modulation rates. Several improvements in the periodic and incremental modulation techniques are introduced. Novel circuits for measuring intermediate-frequency output conductance and local-oscillator return loss are described which may also be useful for other immittance measurements.

If a report is available from NTIS please use the following information to help in ordering. All orders should be sent to: NTIS, 5285 Port Royal Road, Springfield, VA 22161.

Availability. NTIS products can be available in one or more of the following forms:

Paper Copy. Copies of the original report or reprint are furnished.

Microforms. Microfiche size is 105 x 148.75mm (about 4 x 6in); microfilm can be 35mm or 16mm.

Magnetic Tape. Tape can be 7-track, 200, 556, or 800bpi, odd or even parity; or 9-track, 800 or 1600bpi, odd parity.

Ordering. The form(s) available is indicated in the primary entry: PC = paper copy; MF or Fiche = microfiche; Microfilm (user specify cartridge, reel, etc); Mag Tape = magnetic tape (user specify recording mode). Be sure to specify options wanted.

Payment. Prepaying, using an NTIS Deposit Account, or a charge account, speeds order processing. Be sure payment and order are sent together. Checks, payable to NTIS, must be in U.S. dollars.

Tech Notes and Patents

23/7/1
PB81-971110 NTIS Prices: Subscription

Improved Battery Charger for Electric Vehicles: Polyphase chopper circuit would significantly reduce ripple and EMI

National Aeronautics and Space Administration, Washington, DC.
NTIS Tech Note.
G6086A4 Fld: 10C, 13F, 97M, 85H d8207
Dec 81 1p
For information about subscribing to Tech Notes, please write NTIS Subscription Dept.

Abstract: This citation summarizes a one-page announcement of technology available for utilization. While the single-phase 'boost chopper' is already superior to most conventional battery chargers for electric vehicles, a proposed poly-phase version is expected to give even better performance. Calculations show that when the number of choppers is increased to two, three, or more, ripple and electromagnetic interference (EMI) are substantially reduced and efficiency is improved. The basic advantages of the boost chopper--compactness, high efficiency, and power factors approaching unity--are retained. ...FOR ADDITIONAL INFORMATION: Inquiries concerning rights for the commercial use of this invention should be addressed to the Patent Counsel, NASA Resident Office JPL, Jet Propulsion Laboratory, Pasadena, CA. Refer to NPO-14964.

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23/7/2
PB81-970847 NTIS Prices: Subscription

Evaluation of Electric-VEhicle-Propulsion System: Tests reveal the performance data of an automatic transmission, motor controller, and dc motor

Army Materiel Development and Readiness Command, Alexandria, VA.*Department of the Army, Washington, DC.
NTIS Tech Note.
G5591E4 Fld: 13F, 85H, 97L d8202
Nov 81 1p
For information about subscribing to Tech Notes, please write NTIS Subscription Dept.

Abstract: This citation summarizes a one-page announcement of technology available for utilization. A report by the U.S. Army Mobility Equipment Research and Development command discusses the procedures and results of the performance evaluation of an experimental electric-propulsion system. The propulsion system is powered by sixteen 6-volt traction batteries. A thyristor controller actuated by a foot throttle controls the voltage applied to a dc series field motor rated at 10 hp (7.3 kW) at 3,800 rpm. The system also includes a three-speed automatic transmission. The objective was to determine the commercial applicability, maintainability, and energy utility of the system to establish a design base for the further development of this or a similar system. ...FOR ADDITIONAL INFORMATION: Detailed information about the technology described may be obtained by ordering the NTIS report, order number: AD-A080655, price code: PC A13 or contact Project officer Eberhart Reimers (202) 252-1488.

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23/7/3
PB81-970561 NTIS Prices: Subscription

Energy Buffer for Regenerative Braking: Hydropneumatic energy-storage braking systems can increase the range of electric vehicles

Department of Energy, Washington, DC.
NTIS Tech Note.
G510201 Fld: 13F, 85H d8123
Jun 81 1p
For information about subscribing to Tech Notes, please write NTIS Subscription Dept.

Abstract: This citation summarizes a one-page announcement of technology available for utilization. A hydropneumatic energy buffer was identified as the best candidate to extend the range of electric vehicles under stop-and-go driving, according to an assessment of various units available for near-term commercialization. The study indicated that an off-the-shelf hydropneumatic system can increase the range of a 1,360-kg, lead/acid-battery powered vehicle by 5 percent. ...FOR ADDITIONAL INFORMATION: Detailed information about the technology described may be obtained by ordering the NTIS report, order number: DOE/NASA/0048-79/1, price code: PC A07.

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24/7/1
PATENT-4 270 806 NTIS Prices: Not available NTIS

Combined Hydraulic and Resenerative Brakins System

Department of Energy, Washinston, DC. (052661000)

AUTHOR: Mericle, G. E.; Venkataperumal, R. R.
Patent
G6453I4 Fld: 13F, 13G, 85H, 94I, 97L, 90A GRAI8211
Filed 9 Aus 79, patented 2 Jun 81 1p
Rept No: PAT-APPL-6-065 033
Supersedes PAT-APPL-6-065 033.
This Government-owned invention available for U.S. licensins and, possibly, for foreisn licensins. Copy of patent available Commissioner of Patents, Washinston, DC 20231 $0.50.

Abstract: A combined hydraulic and resenerative brakins system and method is disclosed for an electric vehicle. The brakins system beins responsive to the applied hydraulic pressure in a brake line to control the brakins of the vehicle to be completely hydraulic up to a first level of brake line pressure, to be partially hydraulic at a constant brakins force and partially resenerative at a linearly increasins brakins force from the first level of applied brake line pressure to a hisher second level of brake line pressure, to be partially hydraulic at a linearly increasins brakins force and partially resenerative at a linearly decreasins brakins force from the second level of applied line pressure to a third and hisher level of applied line pressure, and to be completely hydraulic at a linearly increasins brakins force from the third level to all hisher applied levels of line pressure. (ERA citation 07:011171)

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24/7/4
N81-24521/9 NTIS Price: Not available NTIS

Toroidal Cell and Battery

National Aeronautics and Space Administration, Cleveland, OH. Lewis Research Center. (01903900I ND315753)

AUTHOR: Nasle, W. J.
Patent
G4854I1 Fld: 10C, 90B, 97M STAR1915
Filed 28 Mar 80, patented 14 Apr 81 7p
Rept No: PATENT-4 262 064; PAT-APPL-6-134 855,NASA-CASE-LEW-12918-1
Supersedes PAT-APPL-6-134 855, N80-33857 (18 - 24, p 3299).
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC. 20231 $0.50.

Abstract: A toroidal storage battery designed to handle relatively high amp-hour loads is described. The cell includes a wound core disposed within a pair of toroidal channel shaped electrodes spaced apart by nylon insulator. The shape of the case electrodes of this toroidal cell allows a first planar doughnut shaped surface and the inner cylindrical case wall to be used as a first electrode and a second planar doughnut shaped surface and the outer cylindrical case wall to be used as a second electrode. Connectors may be used to stack two or more toroidal cells together by connecting substantially the entire surface area of the first electrode of a first cell to substantially the entire surface area of the second electrode of a second cell. The central cavity of each toroidal cell may be used as a conduit for pumping a fluid through the toroidal cell to thereby cool the cell.

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24/7/6
N81-20352/3 NTIS Price: Not available NTIS

Controller for Computer Control of Brushless DC Motors

National Aeronautics and Space Administration, Pasadena, CA. Pasadena Office. (064668001 ND894694)

AUTHOR: Hieda, L. S.
Patent
G4444K2 Fld: 9B, 90F, 49C STAR1911
Filed 23 Mar 79, patented 3 Feb 81 23p
Rept No: PATENT-4 249 116; PAT-APPL-6-023 484,NASA-CASE-NPO-13970-1
Supersedes PAT-APPL-6-023 484, N79-20315 (17 - 11, p 1421). Sponsored by NASA. This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC. 20231 $0.50.

Abstract: A motor speed and torque controller for brushless d.c. motors provides an unusually smooth torque control arrangement. The controller provides a means for controlling a current waveform in each winding of a brushless dc motor by synchronization of an excitation pulse train from a programmable oscillator. Sensing of torque for synchronization is provided by a light beam chopper mounted on the motor rotor shaft. Speed and duty cycle are independently controlled by controlling the frequency and pulse width output of the programmable oscillator. A means is also provided so that current transitions from one motor winding to another is effected without abrupt changes in output torque.

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24/7/8
AD-D003 055/6 NTIS Prices: Not available NTIS

Miniature Vehicle Dispenser Spin-up Speed Control System

Department of the Air Force, Washington, DC. (000260000 109850)

AUTHOR: Redmond, William G.
Patent
G3711L1 Fld: 9C, 90F, 49C GRAI8110
Filed 27 Sep 78, patented 9 Dec 80 5p
Rept No: PAT-APPL-946 288; PATENT-4 238 716
Supersedes PAT-APPL-946 288-78, AD-D005 576.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Abstract: A precision motor speed control system where a reference generator produces pulses for each revolution of a dispenser shaft, the time between pulses is measured and compared to a preselected standard, a time greater than standard will generate a pulse causing a transistor circuit to apply an accelerating voltage to the motor, a time less than the standard will generate a pulse causing a transistor circuit to apply a decelerating voltage to the motor. (Author)

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24/7/9
PAT-APPL-6-088 301 NTIS Prices: PC A02/MF A01

Sintered Metal Electrodes and Method of Making Same

Department of Energy, Washington, DC. (052661000)

AUTHOR: Bryant, W. A.
Patent Application
G3551H4 Fld: 10C, 90F, 97M GRAI8108
Filed 25 Oct 79 17p
Contract: EY-76-C-02-2949
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

Abstract: A method and electrode produced thereby are provided comprising a thin plate of sintered iron powder having a density of between 20 and 25% of the theoretical density of iron with an internal current collector preferable of hairlike strands of nickel or other suitable metal. The internal current collector provides discharge capacities of greater than 0.3 Ah per gram of total electrode weight. Electrodes without any external current collectors or only with a single strip are disclosed. (ERA citation 06:003745)

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Other Reports

25/7/1
P882-195843 NTIS Prices: PC E09/MF E09

Galvanic High Energy Cells with Molten Electrolytes (Galvanische Hochenergiezellen mit Schmelzelektrolyten)

Commission of the European Communities, Luxembourg. (048489000)

AUTHOR: Borger, W.; Kappus, W.; Kunze, D.; Lais-Hoerstebrock, H.; Panesar, H.
Final rept.
G6981F4 Fld: 10C, 7D, 97D, 99F GRAI8216
c1981 248p
Rept No: EUR-7072-DE
Text in German.
Customers in the European Community countries should apply to the Office for Official Publications of the European Communities, B.P. 1003, Luxembourg.

Abstract: High energy galvanic cells as energy stores offer the potential of about 40% better utilization of primary energy for vehicular and also stationary power production, especially where peak loads are concerned. The objective was to produce fused salt cells of high specific energy and high specific power (150 Ah for 5 hour rate) and 80 Wh/kg. 29 Electrochemical couples were tested for a range of factors and LiAl/FeS using specially prepared FeS appeared most suitable for development of a 200 Ah prototype cell. Detailed studies were made of separators, positive current collectors, swelling phenomena and discharge kinetics of model electrodes. Post-test examination studied causes of cell failure, and a preliminary cost-benefit analysis was made.

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25/7/2
N82-20661/6 NTIS Prices: PC A05/MF A01

Chopper-Controlled Discharge Life Cycling Studies on Lead-Acid Batteries

TRW, Inc., Redondo Beach, CA.*National Aeronautics and Space Administration, Washington, DC. (006784000 T6524000)

AUTHOR: Kraml, J. J.; Ames, E. P.
Final Report.
G6963C3 Fld: 10C, 97M, 85H STAR2011
Mar 82 79p
Rept No: NASA-CR-165615; NAS 1.26:165615
Contract: DEN3-88
Sponsored in Part by Doe.

Abstract: State-of-the-art 6 volt lead-acid golf car batteries were tested. A daily charge/discharge cycling to failure points under various chopper controlled pulsed dc and continuous current load conditions was undertaken. The cycle life and failure modes were investigated for depth of discharge, average current chopper frequency, and chopper duty cycle. It is shown that battery life is primarily and inversely related to depth of discharge and discharge current. Failure mode is characterized by a gradual capacity loss with consistent evidence of cell element aging.

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25/7/4
PB82-198847 NTIS Prices: PC A08/MF A01

Development of a Lead-Acid Battery with High Energy and Power Density

Varta Batterie A.G., Kelkheim (Germany, F.R.). Forschungs- und Entwicklungszentrum.*Bundesministerium fuer Forschung und Technologie, Bonn-Bad Godesberg (Germany, F.R.). (057492001)

AUTHOR: Baufeldt, K. E.; Borger, W.; Braeutigam, R.; Reinhard, A. O.
Research rept.
G6894J4 Fld: 10C, 97M*, 85H GRAI8215
Dec 80 169p*
Monitor: BMFT-FB-T-80-151
Trans. of unidentified German mono. See also N81-27683.

Abstract: The energy density of lead-acid cells has been increased to more than 50 Wh5/kg by two different ways: firstly, by means of forced electrolyte flow through the active materials, secondly, by means of a new construction method with a chequered electrode arrangement based on minimized electrolytic and electronic conduction paths, and on optimized volume/surface area proportion. This cell shows particularly at higher loads an outstanding capacity behavior; at the one-hour discharge the energy density is twice of that of the MAN-bus cell. From our present experience we conclude that the energy density of the lead-acid system can be increased up to 60 Wh5/kg. As to the cycle life of the positive electrode, the 'antimony-free effect' causing the premature failure of cells in cycle tests, can now be explained on the basis of a model. As a consequence it will be possible to apply corrosion resistant grid materials without antimony also for cells specifically designed for repeated deep discharges. Due to our improved understanding of the expander mechanism we developed the expander depot and a method of rejuvenating negative plates, which failed because of sintering, using special expander materials. This procedure has been applied successfully to a MAN-bus battery. With reference to the battery periphery our experiences on a H2/O2 gas recombination device have resulted in a hermetically sealed lead-acid cell for electric vehicles. For the remote control of the state of charge an indicator with automatic temperature compensation has been developed.

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LEVEL 2 - 3 OF 42 DOCUMENTS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AGENCY: National Aeronautics and Space Administration.

{Notice 82-44}

47 FR 32222

July 26, 1982

ACTION:
Government-Owned Inventions; Availability for Licensing
ACTION: Notice of availability of inventions for licensing.

SUMMARY:
SUMMARY: The inventions listed below are owned by the U.S. Government and are available for domestic and, possibly foreign licensing.

Copies of patent applications cited are available from the National Technical Information Service (NTIS), Springfield, Virginia 22161 for $5.00 each ($10.00 outside North American Continent). Requests for copies of patent applications must include the patent application serial number. Claims are deleted from the patent application copies sold to avoid premature disclosure.

CONTACT:
FOR FURTHER INFORMATION CONTACT:
National Aeronautics and Space Administration, John G. Mannix, Director of Patent Licensing, Code GP-4, Washington, D.C. 20546, telephone (202) 755-3954.

TEXT:
SUPPLEMENTARY INFORMATION: .
Patent application 303,671: System for Producing Gas-Filled Hollow Spheres; filed September 18, 1981.
Patent application 317,977: Fire Extinguishant Materials; filed November 3, 1981.
Patent application 320,621: Polyphenylquinoxalines Containing Pendant Phenylethynyl and Ethynyl Groups; filed November 12,1981.
Patent application 322,320: Structural Pressure Sensitive Silicone Adhesives; filed November 17, 1981.
Patent application 322,321: Reusable Thermal Cycling Clamp; filed November 17, 1981.
Patent application 325,082: Degassifying and Mixing Apparatus for Liquids; filed November 25, 1981.
Patent application 333,536: Induction Heating Gun; filed December 22, 1981.
Patent application 333,537: Advanced Inorganic Separators for Alkaline Batteries and Method of Making Same; filed December 22, 1981.
Patent application 338,386: Missile Rolling Tail Brake Torque System; filed January 11, 1982.
Patent application 338,387: Hinged Strake Aircraft Control System; filed January 11, 1982.
Patent application 342,858: High Temperature Emittance Coatings and Coating Compositions; filed January 26, 1982.
Patent application 350,475: A Brushless DC Tachometer; filed February 19, 1982.

Patent application 350,471: Moisture Content and Gas Sampling Device; filed February 19, 1982.

Patent application 350,477: Imaging X-Ray Spectrometer; filed February 19, 1982.

Patent application 350,476: Light Weight Nickel Battery Plaque; filed February 19, 1982.

Patent application 350,474 Two Dimensional Scanner Apparatus; filed February 19, 1982.

Patent application 350,472: Control System for an Induction Motor with Energy Recovery; filed February 19, 1982.

Patent application 350,473: Real Time Pressure Signal System for a Rotary Engine; filed February 19, 1982.

Patent application 352,827: Thin Film Strain Transducer; filed February 26, 1982.

Patent application 352,821: Improved Chromium Electrodes for Redox Cells; filed February 26, 1982.

Patent application 352,831: Rotary Target V-Block; filed February 26, 1982.

Patent application 358,088: Means and Method for Calibrating a Photon Detector Utilizing Electron-Photon Coincidence; filed March 15, 1982.

Patent application 358,089: Acoustic Rotation Control; filed March 15, 1982.

Patent application 359,388: High Voltage V-Groove Solar Cell; filed March 18, 1982.

Patent application 361,216: Ion Mass Spectrometer; filed March 24, 1982.

Patent application 361,217: Acoustic Agglomeration Methods and Apparatus; filed March 24, 1982.

Patent application 361,215: Hotmelt Recharge System; filed March 24, 1982.

Patent application 361,711: A Method and Technique for Installing Light-Weight, Fragile, High-Temperature Fiber Insulation; filed March 25, 1982.

Patent application 364,041: Method for Determining the Point of Zero Zeta Potential of Semiconductor Materials; filed March 31, 1982.

Patent application 364,126: Spectrophone Stabilized Laser With Line Center Offset Frequency Control; filed March 31, 1982.

Patent application 364,092: A Method of Increasing Minority Carrier Lifetime in Silicon or the Like; filed March 31, 1982.

Patent application 364,097: Acoustic Levitation Methods and Apparatus; filed March 31, 1982.

Patent application 364,072: Ion Beam Textured Graphite Electrode Plates; filed March 31, 1982.

Patent application 366,025: Improved Process for Preparing Perfluorotriazine Elasomers and Precursors Thereof; filed April 6, 1982.

Patent application 366,103: Epitaxial Thinning Process; filed April 6, 1982.

Patent application 365,950: High Temperature Silicon Carbide Impregnated Insulating Fabrics; filed April 6, 1982.

Patent application 367,136: State-of-Charge Coulometer; filed April 9, 1982.

Patent application 367,132: Televisions Camera Video Level Control System; filed April 9, 1982.

Patent application 367,121: Thermal Protection System; filed April 9, 1982.

Patent application 368,188: Simplified D.C. to D.C. Converter; filed April 19, 1982.

Patent application 371,351: Process and Apparatus for Growing a Crystal Ribbon; filed April 23, 1982.

Patent application 371,350: High Pressure Fluid Gas Mixture Flushing of Passageways; filed April 23, 1982.

Patent application 371,352: Prosthetic Occulsive Device for an Internal Passageway; filed April 23, 1982.

Patent application 371,253: Interlocking Wedge Joint; filed April 23, 1982.
Patent application 371,354: Method and Apparatus for Strengthening Boron Fibers; filed April 23, 1982.
Patent application 373,770: Correlation Spectrometer Having High Resolution and Multiplexing Capability; filed April 30, 1982.
Patent application 373,771: Electronic Scanning Pressure Measuring System and Tranducer Package; filed April 30, 1982.
Patent application 375,620: Wideband Passive Synthetic Aperture Multichannel Receiver; filed May 6, 1982.
Patent application 375,784: Improved Thermal Barrier Coating System; filed May 6, 1982.
Patent application 375,684: Solar Powered Actuator With Continuously Variable Auxiliary Power Control; filed May 6, 1982.
Patent application 377,891: Apparatus for Disintegrating Kidney Stones; filed May 13, 1982.
Patent application 378,533: Unitary Seal Ring Assembly; filed May 13, 1982.
Patent application 379,602: Wind and Solar Powered Turbine; filed May 19, 1982.
Patent application 379,601: Acoustic Particle Separation; filed May 19, 1982.
Patent application 383,068: Saltless Solar Pond; filed May 28, 1982.

July 19, 1982.

S. Neil Hosenball,

General Counsel.

(FR Doc. 82-20040 Filed 7-23-82; ...

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
OFFICE OF THE DIRECTOR

Norm ✓
Hatkar
copy

MEMORANDUM TO: Mr. Michael J. Bayer
Associate Deputy Secretary

THROUGH: Dr. Bruce Merrifield
Assistant Secretary
Office of Productivity, Technology,
and Innovation

SUBJECT: NTIS Patent Licensing Program

During your visit to NTIS on July 23, Mr. Fiske asked for additional information on Government patent licensing. This referred to our progress on patent licensing as shown in Table I.

The latest survey on all Government patents covered data up to the end of FY 1976 and was published by GPO for the Federal Council for Science and Technology. The holdings and licensing status of some 27,000 Government-owned patents is displayed in Table II. It shows that 72% of the patents were held by agencies with procurement-oriented missions, which have very low licensing rates. The licensing rates for DOE and the agencies cooperating with the NTIS program, which have private-sector oriented missions, are much higher, and are not too much lower than that of non-government institutes and research foundations, or the utilization rate of holdings of large corporations. However, as of 1976, and with the exception of DOE (ERDA), almost all licenses were pro forma, royalty-free, and non-exclusive.

The NTIS program, starting in 1976 departed from previous practice by actively promoting technologies, by charging royalties and by offering the incentive of exclusive licenses. The holdings in the NTIS inventory and the licensing rate are shown in Table III.

We agree that faster growth in licensing could be achieved if the program were not resource limited and if more agencies cooperated with our program.

Joseph F. Caponio
Acting Director

Attachment

cc: Dr. Dederick

TABLE I: PATENT LICENSES GRANTED BY NTIS

FY 1977	9
FY 1978	2
FY 1979	8
FY 1980	10
FY 1981	20
FY 1982 (est.)	30

TYPE:	Exclusive	15
	Nonexclusive	62

FOR:	Air Force	1
	Agriculture	7
	Army	1
	Commerce	20
	Interior	5
	Health, Human Svcs.	36
	Navy	4
	Veterans Admin.	4

TABLE II: GOVERNMENT-OWNED PATENTS (1976)

	Holdings	Licensed
DOD	62%	2%
NASA	10%	4%
DOE (ERDA)	16%	23%
Agencies now using NTIS - (DoC, USDA, HHS, DOI, VA, NSF)	10%	26%
Other (TVA, etc.)	2%	12%

Only DOE and NTIS have collected significant royalties from U.S. and foreign patent licenses.

TABLE III: ACTIVE NTIS PATENT INVENTORY (FILED SINCE 1977)

		Percent Licensed
DOMESTIC - Commerce	35	34%
- Transfers from Other Agencies	93	48%
FOREIGN - Inventions	203	14%
- Country Cases	745	27%

DRAFT

THE ROLE OF GOVERNMENT PATENTS IN THE TECHNOLOGY TRANSFER PROCESS

Douglas J. Campion
Office of Government Inventions and Patents
National Technical Information Service
U.S. Department of Commerce

U.S. Government-owned patents represent a sizeable public investment in research and development. It is claimed that the technology represented by the approximately 30,000 active government patents is greatly underutilized. Rates of utilization of between 3% and 5% are frequently cited.

I subscribe to this notion of the low utilization of government patents, but for some different reasons than those most frequently stated. Two issues most often associated with this underutilization are the title versus license arguments concerning inventions resulting from contracted research, and exclusivity in licensing when government ownership of patents is clear.

There are other issues which should be explored which are central to an evaluation of the government's invention technology and its ability to transfer it. Before I discuss some of these, let me tell you about the NTIS patent licensing program, which has shaped my present perspective on government patents and their role in the technology transfer process.

In late 1972, at the request of the interagency Committee on Government Patent Policy, NTIS started announcing the availability of government-owned patents and pending patent applications for licensing in its journals, in the Federal Register, and in the Patent Office Official Gazette to achieve wide dissemination of invention information. The government waived the usual confidentiality of pending patent applications in order to make the inventions known at the earliest possible time. Copies of pending applications were made available from NTIS. Claims were deleted from patent application copies sold to the public to avoid claim copying and possible interferences.

Also in 1972, the President, in a Message to Congress on Science and Technology, directed his Science Adviser and the Secretary of Commerce to develop programs to systematically promote the utilization of government patents and to obtain foreign patents to protect valuable foreign markets for U.S. industry. NTIS, in its emerging role as the center for Commerce technology transfer programs, was delegated the responsibility.

NTIS quickly recognized the importance of screening government inventions to identify those with the most potential for commercialization. With limited resources, only a portion of the government's patents could actually be handled by NTIS staff. Evaluation experiments were designed to assist in developing an operational procedure for selecting

the best inventions. Battelle Memorial Institute and IIT Research Institute were contracted to assess the commercial potential of a sample of two hundred inventions. In a separate experiment, government inventors, their technical supervisors, government patent attorneys, and independent contractors evaluated 150 additional inventions for commercial potential. Both experiments produced similar results. Evaluators agreed with some regularity on the majority of inventions which fell in the range of fair to good potential for commercialization, but there was virtually no agreement or discernable pattern which emerged in selecting inventions with excellent potential for licensing.

NTIS settled on an operational procedure in which inventors provide basic technical and market evaluations and references to related technical publications and patents. Next, a preliminary in-house screening selects approximately 25 to 30 percent of the inventions for evaluation by contractor. The contractor review consists of three phases of increasingly rigorous evaluation, ranging from 3 to 4 hours of professional effort to 2 or 3 days for the final market analysis. An invention may be rejected at any stage of the evaluation process.

Concurrent with the contractor evaluation, NTIS staff starts to accumulate evidence of possible commercial potential by contacting inventors' colleagues, trade associations, and established industry contacts. Prospective licensees provide valuable information and are contacted at different points in the evaluation cycle depending on the invention and the

preferred method of operation of the staff member to whom the case is assigned.

At the beginning of the development of the program, NTIS also recognized the importance of effective promotion. Several different approaches were tried. Response was initially very good to widely disseminated general information on specific inventions. In the final analysis, however, it was found that shotgun types of promotion, which include mailing lists, trade shows, and invention seminars, produced little by way of hard licensing interest. It was decided that some general promotion was necessary because it served to protect the public interest and to keep the NTIS name in view. A reasonably effective general promotion piece was developed similar to NASA Tech Briefs. Inventions which survived one or two levels of screening and evaluation are described in a one page format titled "Selected Technology for Licensing." These notes are distributed to trade and technology publications and industry subscribers. A technical support package is prepared for each tech note and distributed upon request.

Various promotion attempts showed that the real pay-off was to be found in highly targeted promotion and marketing. In contrast to the shotgun approach, the targeted or rifle approach succeeds in establishing direct contact with licensing candidates. Specific companies are identified who are engaged in the field of commercial development to which subject inventions relate. Then, specific individuals in

those companies are located whose job it is to stay abreast of the latest in commercial product and process developments. These individuals include heads of R and D departments, new product managers, technology acquisitions people, and marketing directors. NTIS has a growing list of some 400 such contacts in the private sector who are regularly fed information on new inventions by personal letter or telephone. It is this direct industry contact approach which produces the greatest results in transferring patented invention technology.

Subsequent to development of this method of promotion, NTIS found that it was essentially the same approach used by the highly successful National Research and Development Corporation of Great Britain and the Research Corporation in New York which manages inventions for some 40 universities.

A key element of the NTIS licensing program is foreign patent filing, to protect valuable foreign markets for U.S. industry. Our balance of trade situation has seriously deteriorated in recent years and our share of manufactured goods worldwide has declined from 18% in 1960 to about 11% in 1980. Inventions which survive the most rigorous NTIS evaluations are filed in those foreign countries which possess the natural resources, production capabilities, or markets which might be developed by U.S. industry. Selected inventions are usually filed in the major industrialized countries of Western Europe and Japan, but inventions have been filed in more than 35 foreign countries.

It has taken several years to sell the NTIS program to a handful of agencies who provide an invention inventory. The Department of Commerce produces no more than a dozen inventions each year, primarily by the National Bureau of Standards. Without the cooperation of Agriculture, NIH, Interior, the National Science Foundation, and the Veterans Administration, NTIS would have no licensing program. Under separate agreements with each of these agencies, NTIS receives custody transfers of foreign and domestic patent rights. This arrangement provides the critical mass of inventions necessary to sustain a viable licensing program.

The NTIS patent licensing program has completed its induction period and has developed into a program which will produce significant licensing and technolgy transfer results.

Since 1976, when the first foreign patents were filed, the NTIS portfolio has grown to 740 issued and pending foreign patents. Approximately, 20% of these have already been licensed. Culling and additional licensing will raise the percentage to 30% by the end of this fiscal year. More than 50 licenses have been granted since the first license was issued in fiscal year 1977 and sixty licenses are currently under negotiation. One-third of these involve Fortune 500 firms and almost half of the licenses under negotiation are exclusives.

Some examples of inventions that have been licensed by NTIS include an extremely precise satellite controlled digital clock, a vaccine for hepatitus, Platinum II cancer drugs, an anti-corrosive sulfur cement, and a device for detecting clear air turbulence from airplances. Examples of inventions under negotiation include additional drugs to be used in cancer therapy, a machine for continuous fruit harvesting, insect maturation inhibitors, mining equipment, and a micro-organism used in the conversion of bio-mass to synfuels.

Our current and pending licenses could produce in excess of $100 million of additional R & D and new plant investment. However, because of commercial development scheduling and required regulatory approvals, significant commercial sales will not result until 1983.

In contrast to other agency licensing programs, virtually all the licenses NTIS issues, both exclusive and nonexclusive, are royalty-bearing. To date, the Government has received royalties of about $150,000 from NTIS licenses, comprised primarily of execution fees and annual minimums. Between $100,000 and $200,000 should be realized next fiscal year and $1 million by 1985. Beyond 1985, royalties could equal several million dollars per year.

I started this presentation by indicating there were additional factors other than the title and exclusive licensing issues which affect use of government inventions. In 1976,

the last year for which data were collected, agencies of the government filed approximately 2,300 applications for patents. Sixty percent of these applications were disclosed by federal employee inventors. That is 1,400 inventions in a single year not impacted by the title versus license controversy. What are the reasons for the low rate of utilization of these inventions? Some would say the lack of an exclusive license incentive, but federal agencies have had the authority to grant exclusive licenses for six years. In 1975, the GSA provided specific guidelines for exclusive licensing. Several agencies have exercised that authority directly or have let NTIS exercise it for them. Resolution of the title and exclusive licensing issues alone will not realize the full potential for utilization of government invention technology.

First, I think it needs to be recognized that the majority of the government's current patents have little potential for commercialization under patent licenses. The old Harbridge House study touched on this when it found that 70% of the reasons cited for non-utilization of the government patents surveyed related specifically to limited commercial potential. Government patents have traditionally been filed defensively to protect the R and D and procurement activities of sponsoring agencies. The R and D mission of an agency substantially reflects the commercial applicability of its patented technology.

This is not to say that there is no good technology to be found in every agency's portfolio of patents. What

affects the transfer process, however, is the fact that significant commercialization of patents usually occurs under the protection afforded by a license. If a patent is not a relatively strong patent with respect to potential civilian application, licensing and transfer will not occur.

Patents filed to protect procurement activities or as another form of publication are frequently little more than "paper" patents. Claims are narrowly defined and examples are cited without attention to the broadest possible application. Many government patents are fairly easy to circumvent, and the motivation to design around them increases dramatically if a license carries a recoupment or royalty provision. Small increments of additional investment in R and D and patent filing could substantially increase the quality and transferability of government invention technology.

Another factor which affects patent use is the organizational structure within which an agency delegates responsibility for patent licensing. Two situations seem to predominate: There are agencies that have not recognized the potential for patent licensing and engage in little or no promotion, and there are agencies which have recognized some of the potential of patents in the technology transfer process and whose technology utilization people promote their use. In both cases, however, the responsibility for actual negotiation and licensing resides with the agency Patent Counsel, buried

somewhere in the Office of General Counsel and immune from private sector realities. Licensing is incidental to the primary job of filing and prosecuting patents and few government patent attorneys have the time and experience necessary to effectively engage in the licensing process which requires sensitivity for commercial development issues.

There are still other factors which affect the utilization of our investment in invention technology. Greater incentives are needed to provide government inventors with the motivation to even disclose potentially useful inventions. Some government researchers fail to see the utility of a highly stylized legal document whose technical merit is suspect without the editing and peer review afforded a technical journal publication.

Inventor's technical publications need to be more closely controlled to preserve domestic and foreign patent rights. Publications frequently preclude foreign filing on important invention developments. The U.S. market alone may not provide enough incentive for commercialization of an invention with the likelihood of unrestricted foreign competition.

These are all problems we have come into contact with first hand in the NTIS licensing program. None of them is unsolvable, and the NTIS program has demonstrated that greater utilization is presently possible with just a little imagination and additional investment. All the evaluation, promotion, foreign filing, licensing and related activities of the NTIS program are conducted by six people.

In conclusion, some entirely new approaches are needed to achieve a rate of utilization commensurate with the size of our R and D expenditure. The U.S. Government funds approximately one-sixth of the world's R and D, $150 million a day. Yet, we have not recognized the full value of our R and D investment. The U.S. is the only major industrialized country which has not established an organization whose job it is to capitalize on its invention technology. In fact, the OMB has recently decided to phase out the NTIS licensing program as part of the overall budget cuts. If the present decision stands, we will have no truly active government patent licensing programs after 1982.

Latker
File w/ NTIS

Engineering Times
April 1986
Published by the National Society of Professional Engineers
Vol. 8, No. 4
News and Comments on Issues Affecting the Profession

Self-Supporting

NTIS: A Little-Known Treasure Trove of Technical Data, Reports, Licensing

By Stefan Jaeger
Staff Writer

A first uninformed glance at this government report seller evokes clichéd images of tax drains and a bloated federal bureaucracy. The once-airy documents room has been squeezed into two levels to make room for two million—mostly government—reports. Best-selling documents reach sales of a mere 200—nationwide. Conserved for posterity are reports not only on concrete and computers, but also on shrimp and backgammon, and the mailroom piles up with 25,000 mailings per day, some 500,000 paper documents per year, and 4 million reports on microfiche annually.

A second, more careful look reveals that no tax dollars are involved. This government collector, cataloguer, and retailer of technical reports and bibliographies is supported wholly through sales income, surviving, even thriving, in the open marketplace—enough proof for any capitalist of the service's usefulness.

The name of this pay-its-own-way government institution: the National Technical Information Service (NTIS), by its own billing a "national treasure house" for documentation on hundreds of billions of dollars of R&D paid for by the federal government over the past 45 years. The sheer volume of orders and on-line services generates more than two-thirds of the current $30-million annual budget to maintain and expand operations. The mail flow is so great the service has acquired its own zip code, "Theoretically, you could just put 22161 on an envelope and it would get to us," says NTIS spokesman Melvin Josephs.

Housed in three modest low-rise office buildings in a suburb of Washington, D.C., NTIS coordinates with more than 400 federal agencies for the archiving and dissemination of research and analysis on all subjects—even the unusual—that the U.S. and foreign governments have graced with their R&D tax dollars. NTIS customers can choose from some 100 subscription products and services, and government agencies can retain NTIS as their broker for custom-marketing arrangements.

A user breakdown shows an expectedly strong business and industry share—64% of all buyers. Foreign business, industry, and governments come in at a collective 20%, and state and federal governments buy 6% of NTIS turnover. Purchases by academic and public libraries (6%) and by individuals (4%) make up the remainder.

Born After WWII

The original forebear of NTIS emerged from the R&D boom of the WWII years when, by executive order, President Harry Truman created the Office of the Publication Board to collect and declassify government war research to give U.S. industry a technical infusion of hard-won developments. Before the war, the scientific community had exchanged information primarily through the traditional vehicle of peer-reviewed journal articles, yet the war effort had relegated vast collections of the newest research to agency files scattered throughout the country. The U.S. needed a centralized mechanism to organize the data and make them available to business.

In line with this goal, the Department of Commerce formed the Office of Technical Services in 1946, which absorbed the Publications Board, and in 1950 established a national clearinghouse for scientific and technical information. After additional transformations in name and function, the expanded clearinghouse became NTIS in 1970, and sales revenue grew from $13 million a year in 1976 to $21 million in 1985.

Forever grateful is the postmaster of the post office branch nearest NTIS. When the service moved to its present location in the mid-1960s, the colossal crush of new mail raised the post office's status from third class to first class, and the postmaster's salary jumped accordingly.

"A lot of the documents would have been lost without NTIS," Josephs believes. "If you think about it, all the research together in one place is really an amazing resource."

At the heart of NTIS operations lies the bibliographic data base, the nerve fiber and memory for data on government research. Originally a drive tape for a printing machine to produce "Government Reports Announcements and Indexes," the tape moved on-line in 1964 and became one of the world's most widely used data bases, with more than 10,000 searches of the one-million-plus entries made daily.

To be continued on next page

April, 1986

Now available on 10 major foreign and domestic data-base vendors, the title and abstract roster can be tapped for the latest federal R&D entries on anything from "ablation" to "zeolite." For those who cannot search on-line, NTIS offers published searches in more than 3000 subject areas in 21 data bases and sells about 30,000 search copies a year. Promising NTIS documents can be ordered individually, either on microfiche or on paper. Documents stored on microfiche (recent documents are also stockpiled in multiple paper copies) can be photocopied as "blowbacks" on a microfiche enlarger printer that churns out from 50 to 80 one-sided copies a minute.

In the first year of operation, 1946, turn-around time and preparation for mailing ran about 10 to 12 weeks. "Today turn-around time on orders averages about a week," Josephs commented, "but mail delivery takes the same time as it did 40 years ago."

Average sales per report, figured over the whole inventory, reach a modest 10 copies per lifetime, but counting only reports that actually have buyers sends the average sales per report to about 40, still not a blockbusting total. Fewer than 500 reports a year sell more than 100 copies.

Limited Audience

NTIS is quite content with those humble numbers, aware that the highly technical nature of most documents makes for a limited audience and that the service is not designed for much more. When the title of an NTIS report on home solar heating got into "Popular Science," the service was besieged with some 65,000 orders. "It nearly killed us," said Josephs, "but it's the kind of problem we'd like to have more of."

Another title that hit sales in the thousands: "Barefoot Doctor in China," a translation of a Chinese document on what in the U.S. would be called folk medicine. The book proved so popular that a private publishing house eventually picked it up for its own book line.

To allow researchers to keep abreast of new reports in general subject areas without having to wade through the full scope of the catalogue, NTIS offers subscriptions to its "Abstract Newsletters," which list all new acquisitions in 27 topic areas, ranging from week in civil engineering and electrotechnology to materials sciences and pollution control.

Microfiche users wanting to monitor new reports in a particular field can pick a profile under the Selected Research in Microfiche (SRIM) service and let NTIS send all relevant new reports every two weeks for a low $1.25 per copy, regardless of report length.

Licensing

Alongside sales of data-packed floppy disks, customer-update services, and on-line ordering options, NTIS has become the government agent for federal-technology licensing. Formed under the Stevenson-Wydler Technology Innovation Act, the Center for the Utilization of Federal Technology (CUFT), an NTIS entity, has negotiated licenses for more than 50 government-owned inventions in 1985 alone. The private sector now has the rights to such taxpayer-financed products as the test kit for the detection of AIDS and the test for hepatitis. The AIDS kit brought in close to $1 million of the $1.5 million in royalties earned through the licensing program in FY 1985. Also auctioned off was the patent for an EPA device to contain oil spills.

The broad range of services already in place should keep NTIS in the black, even without expansion, for as long as present demand trends —and unclassified government research—continue. New product lines, like the recent optical disk offerings, will speckle the landscape, but an eye on the pocketbook will also temper breakneck expansion. Forbidden by law to spend more than it makes, NTIS is not anxious to test the courts through deficit spending.

As a separate pay-as-you-play entity, the service will never show up in the overall red ink of government.

NTIS designed its own clever system and gadgetry to sort reports for individual SRIM subscribers. A computer matches the new acquisitions list with the user profile and churns out the number of copies of each report the total population of SRIM users need. Each microfiche title, now in a separate stack, is assigned a bin number and placed in a cubbyhole of a large rack wired with lights. The interest profile, "pollution" for example, is then fed to a computer-controlled device that lights the bulbs of each bin containing a relevant report. The light-marked microfiche are then collected by hand and mailed to the individual.

Some 2500 reports are matched with about 700 profiles every two weeks, which amounts to an annual distribution of 4 million wafers. "SRIM has to be the best information bargain around," said Josephs. "Where else can you get a full report for a dollar and a quarter?"

Through acquisition agreements with 91 foreign governments, NTIS receives thousands of foreign reports each year and allows U.S. laboratories and businesses to get a taste of government R&D done abroad. Reports from other countries now make up about 25% of the NTIS collection, the majority of entries sporting English-language titles and abstracts. Occasionally NTIS can arrange for documents to be translated.

Learn More About NTIS

Details of services and materials available from the National Technical Information Service are given in a free publication, PR 154. To request it or any other information, contact NTIS, 5285 Port Royal Rd., Springfield, Va. 22161; (703) 487-4600.

Reging File w/ NTIS NR

National Technical Information Service
Center for the Utilization of Federal Technology
Patent Licensing

CUFT's Office of Federal Patent Licensing conducts the most active licensing program in the Federal Government. The program started in 1976 under cooperative agreements with the Departments of Health, Agriculture, Interior, and Commerce. Beginning in 1982 when licensing revenues approached $155,000, emphasis was placed on increasing exclusivity in new licenses so that companies would have maximum incentive to invest their own funds in rapid commercialization. In FY 1985, licenses on new inventions were 73% exclusive. Recent activity is shown in the chart below.

In FY 1985, revenues have increased 75% over FY 1984, totaling $1.5 million, $730,000 over program costs. Revenues for FY 1986 are estimated at $4 million, increasing to $6-8 million by FY 1990.

CUFT's Office of Federal Patent Licensing
FY 1983 — 85 Activity

Inventions Publicized (Excluding those from DOD, DOE NASA)	425		
Inventions foreign filed to protect overseas marketing rights	45		
Fees and Royalties received	$3.3 million		
Commercialization pledges	$275 million		
	Exclusive and co-exclusive	Nonexclusive	Total
Licenses granted	58	59	117
. . . on previously licensed inventions	*2*	*41*	*43*
. . . on new inventions	*56*	*18*	*74*
Licenses granted 1976 — 1982	17	64	81

The agencies for which CUFT licenses generate about 10% of the Government's patents. As shown below, these CUFT licenses accounted for 33% of the licenses granted and 83% of the revenues for all agencies in FY 1984. It also is evident that the overall rate of use of Federal patents has doubled from the 1976 4% rate cited in a study prepared by the Federal Council for Science and Technology. Both CUFT and NASA have reached the 25-30% level which is equivalent to the best university programs.

CUFT also maintains a strong foreign patenting program. Its foreign patents now provide protection against foreign competition for about $60 million in export sales of U.S. licensees. Without this effort, foreign companies could use the U.S. Government technology covered in these patents without benefit to the United States.

Federal Patent Licensing Activity*
FY 1984

Licensing Agency	Annual Average Patents Issued **	Licenses Granted	Fees and Royalties	Licenses/ Patents Ratio
Defense				
Army	276	5	$10,300	1.8%
Air Force	141	0	—	—
Navy	427	11	$14,000	2.6%
Energy	220	25	$53,700	11.3%
NASA	122	33	$98,000	27%
NTIS/CUFT (For Health,	121	36	$868,000	30%
Agriculture, Commerce, Interior, and others)	1307	110	$1,044,000	8.4%

* Based upon an August 1985 GAO report (GAO/RCED-85-94).

** This average covers an eleven year period.

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Productivity, Technology and Innovation
Washington, D.C. 20230
(202) 377-1984

JAN 22 1986

MEMORANDUM FOR: Joseph F. Caponio
Norman J. Latker
David T. Mowry
Jack Williams

Subject: NTIS Patent Licensing Program

The NTIS Patent Licnesing program has been, and with your support will continue to be, a remarkably successful vehicle for the transfer of Federal technology. S. 1914 holds the promise of building on this success, either as a separate effort based in the Federal laboratories or as a combined effort involving both the labs and NTIS.

In my view these two approaches are neither mutually exclusive nor competitive; in truth, given the sad history of technology transfer, they are complementary. Given this, I have, as a matter of policy, continued to support both the NTIS licensing program and S. 1914. You, in turn, are expected to follow this basic policy and to support it in any presentations, speeches, briefings and discussions on the patent licensing issue.

/s/

D. Bruce Merrifield

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

January 7, 1986

MEMORANDUM TO: Joseph F. Caponio
Director

FROM: David T. Mowry, Associate Director
Center for the Utilization
of Federal Technology

SUBJECT: Effect of S.1914 on the NTIS Patent Licensing Program

S.1914 was introduced by Senator Gorton on December 9 and is approximately equivalent to H.R. 3773, which was passed by voice vote in the House in December. Possibly inadvertently, the language of Section 6 involving receipt of royalties and other income from licensees does not grant the Department of Commerce, acting for the last ten years as a patent marketing and licensing agent assisting eight R&D agencies, which generate about 10% of federally-owned inventions, to have the same authority to pay its expenses out of licensing revenue as the R&D agencies which generate the inventions.

The existing invention transfer to Commerce from R&D agencies does not involve a blanket transfer commitment, but is done on a voluntary individual invention basis working closely with agency and laboratory inventors after NTIS has expended considerable efforts to obtain qualified license applicants. This pioneer program is staffed with experienced licensing experts from industry and has been supported by four administrations as authorized by Congress from its inception through annual appropriations, which totaled $4.7 million before licensing revenues finally exceeded costs in 1983. In FY 1986, it will recover more than triple its costs, returning $2 million or more to the Treasury.

The August 29, 1985 GAO report (GAO/RCED-85-94) indicates that in the FY 1982-84 period NTIS negotiated 28% of all Government licenses and generated 88% of all licensing revenues. FY 1985-86 results are even better and 75 new licenses are presently under negotiation. Only NASA has granted a comparable number of licenses, generating 5.3% of revenues. NTIS licenses annually 20-30% of the new patents of its client agencies, considerably better than the frequently quoted 4% utilization rate of all government patents based on pre-1976 data. This is equivalent to the best university licensing programs of which only a few are self-sustaining. There is no unsubsidized patent licensing program in government, academic or private sector world-wide which does not use royalties from its top winners to develop licenses from promising new inventions untested commercially.

The NTIS program also provides invention announcements and inquiry referral services for all Federal agencies. The program pioneered the inventors' incentive award system (15% of royalties up to statutory ceilings) and in 1985 made cash awards to 110 laboratory employees. This awards concept would be continued by each agency under the new law from royalties passed back to the agencies.

Over the years NTIS has filed on more than 150 inventions in foreign countries, and 50% of the current portfolio is under license to American companies, providing them with patent monopolies for exports in excess of $40 million. Other agencies, not having the export expansion mission of Commerce spend little money on foreign filing, thereby allowing highly industrialized competitors free access to U.S. Federal technology.

If a second sentence were added to S.1914, Section 13 (b) in page 14, line 13 after the word "income" it would permit the NTIS program to continue to be available to the agencies and laboratories, still on a voluntary basis, without duplicating, burdensome administrative, accounting, budgeting and marketing costs.

> "A Federal agency receiving royalties or other income as a result of invention management services performed for another Federal agency under section 207 of Title 35, United States Code may retain such royalties and income to the extent required to offset costs and expenses incurred under (2)(E) below before returning the balance of such royalty and income for distribution as provided herein."

A second clarifying insertion on page 15, line 20 after "inventions" would be "under section 207 of Title 35, United States Code," to reinforce existing statutory licensing authority.

The bill as presently worded would force NTIS to seek budget allocations from each of eight client agencies or their laboratories in the appropriations process two years prior to the time that costs were to be incurred and five to ten years before anticipated revenues from commercially successful inventions would return any offsetting funds to the source agencies. Past attempts to recover direct patenting costs from source agencies to say nothing of large, unexpected and unbudgeted expenses incurred in patent defense, support to Justice in interferences, infringements and lawsuits, FOIA inquiries, and administrative appeals have not been successful. Without the proposed added language, and in the absence of continuing appropriations, the NTIS program would not be able to obtain adequate funding or continue to serve client agencies. Further, the NTIS patent licensing expertise would then no longer be available to train and assist agencies and laboratories now generating 90% of Government inventions and wishing to start up or improve their own patent management programs. In order to continue, NTIS needs

the same statutory authority as the R&D agencies to administer licensing revenues.

We urge that this recommendation be made to Under Secretary Merrifield in time to amend the Commerce position on S-1914.

U.S. DEPARTMENT OF COMMERCE

2/19

To : Bruce/Ken

From: Jack

Bruce As far as I know, this is OK. Joe Clark thinks it is a 'fine idea'.

Ken If DBM signs, pls. send copies to Clark at NTIS, Latker, and me. Thanks.

(Also Bob Ortner) with note

TRANSMITTAL FORM CD-82A (10-67)
PRESCRIBED BY DAO 214-2

USCOMM-DC 1232-P67
GPO : 1985 O - 474-068

~~[illegible]~~ / ~~[illegible]~~ FYI

N

Regina File with NTIS/Training

U.S. DEPARTMENT OF COMMERCE

February 18, 1986

To : D. Bruce Merrifield

From: B. Jerome Jackson B.J.J.

Attached is the FY 1986 proposed reprogramming for your signature. This reprogramming will shift funds from the CUFT add-on to BEA.

RECEIVED
FEB 18 1986
D. BRUCE MERRIFIELD

TRANSMITTAL FORM CD-42A (10-67)
PRESCRIBED BY DAO 214-2

USCOMM-DC 1838-P67
GPO : 1976 O - 216-459

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for Economic Affairs
Washington, D.C. 20230

FEB 20 1986

MEMORANDUM FOR: Kay Bulow
Assistant Secretary for
Administration

FROM: D. Bruce Merrifield
Acting Under Secretary for
Economic Affairs

SUBJECT: FY 1986 Proposed Reprogramming

The Economic and Statistical Analysis appropriation is proposing a reprogramming of resources in FY 1986. This reprogramming will transfer funds from the Center for the Utilization of Federal Technology (CUFT) to the Bureau of Economic Analysis (BEA) to help offset the Gramm-Rudman-Hollings reductions. The reprogramming, if approved, will lessen the impact of the Gramm-Rudman-Hollings budget reductions on the quality and timeliness of the GNP and balance of payments estimates and analyses prepared by the Bureau of Economic Analysis. Specifically, it would permit the filling of selected vacancies in the national income and product and balance of payments accounts to permit cross checks of the GNP estimates and in the bilateral balance of payments accounts. These areas have been extremely hard hit by the total personnel freeze imposed as the result of the Gramm-Rudman-Hollings budget reduction act.

Except for the proposed reprogramming of funds from CUFT to BEA, all other line items have absorbed their 4.3 percent reduction across-the-board.

Enclosure

cc: Mark Brown

DEPARTMENT OF COMMERCE
ECONOMIC AND STATISTICAL ANALYSIS
NOTIFICATION OF PROPOSED REPROGRAMMING
Fiscal Year 1986

Operating Unit: Economic and Statistical Analysis
Appropriation: Salaries and expenses
Program: Economic Affairs

Fiscal Summary

	FTE	Amount
1. Reprogrammed from:		
Productivity, technology, and innovation:		
Policy implementation and coordination.....	...	-$287
2. Reprogrammed to:		
Economic analysis:		
National economic accounts.....	...	+184
International economic accounts.....	...	+103
Total.....	...	+287

Description/Justification

The FY 1986 House Report included $300,000 for the Center for Utilization of Federal Technology (CUFT) "...to establish a training and educational program for the designated technology transfer agents at Federal laboratories...Committee strongly suggests that the Center for Utilization of Federal Technology contract out this education and training program,...". It is requested that this FY 1986 add-on by the House Appropriations Subcommittee, as agreed to by the Conferees, be reprogrammed for internal use by ESA to offset partially the effects of the Gramm-Rudman-Hollings budget reductions elsewhere in the appropriations -- primarily in the Bureau of Economic Analysis. The Gramm-Rudman-Hollings budget reduction amounts to an additional $1,312,000 for ESA as a whole. The $287,000 for the CUFT program is being proposed for reprogramming to offset partially the absorptions required for ESA in FY 1986. This reprogramming will occur in FY 1986 only. In FY 1987, the appropriated funds for the CUFT program are being proposed for termination.

Impact

Due to the reprogramming of the CUFT resources, the work as proposed by the House Appropriations Subcommittee will not be done by contract. While the $300,000 could be useful in developing a body of teachable material for training Government laboratory staffs, the job can be done internally with existing staff by obtaining materials at no cost from Universities, industry, and Federal agencies. Further, the Office of Productivity, Technology, and Innovation is collaborating with the Office of Personnel

Management on the potential of developing courses to supply this training in the future on a fee basis. The reprogramming, if approved, will lessen the impact of the Gramm-Rudman-Hollings budget reductions on the quality and timeliness of the GNP and balance of payments estimates and analyses prepared by the Bureau of Economic Analysis. Specifically, it would permit the filling of selected vacancies in the national income and product and balance of payments accounts to permit cross checks of the GNP estimates and in the bilateral balance of payments accounts. These areas have been extremely hard hit by the total personnel freeze imposed as the result of the Gramm-Rudman-Hollings budget reduction act.

Attached is a table showing the effects of this proposed reprogramming on our Gramm-Rudman-Hollings report.

Effects of Proposed Reprogramming on
Gramm-Rudman-Hollings Report
Economic and Statistical Analysis
(in thousands of dollars)

Program, project, activity	Base	Sequester	Revised Base	Change	Revised Total
1. Economic Analysis					
A. National economic accounts:					
(1) National income and product and wealth accounts	5,456	235	5,221	184	5,405
(2) Interindustry accounts	1,360	58	1,302	0	1,302
(3) Regional accounts	3,873	166	3,707	0	3,707
Subtotal	10,689	459	10,230	184	10,414
B. Analysis of business trends:					
(1) Business outlook	2,494	107	2,387	0	2,387
(2) Statistical indicators	1,047	45	1,002	0	1,002
(3) Current business analysis	2,060	89	1,971	0	1,971
Subtotal	5,601	241	5,360	0	5,360
C. International economic accounts:					
(1) Balance of payments accounts	2,818	121	2,697	103	2,800
(2) International investment estimates	3,179	137	3,042	0	3,042
Subtotal	5,997	258	5,739	103	5,842
Subtotal, Economic Analysis	22,287	958	21,329	287	21,616
3. Productivity, Technology, and Innovation:					
A. Productivity, technology, and innovation:					
(1) Productivity enhancement	1,162	50	1,112	0	1,112
(2) Policy implementation and coordination	1,788	77	1,711	-287	1,424
(Center for the Utilization of Federal Technology)	(300)	(13)	0 (287)	(-287)	0 (0)
Subtotal, Productivity, Technology, and Innovation	2,950	127	2,823	-287	2,536

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
OFFICE OF THE DIRECTOR

NOV 5 1985

MEMORANDUM TO: D. Bruce Merrifield
Assistant Secretary for Productivity,
Technology and Innovation

FROM: Joseph F. Caponio
Director, NTIS

Original Signed By
Joseph F. Caponio

SUBJECT: Preliminary Design for Federal Laboratory Training

In response to your memo of September 22, our Center for the Utilization of Federal Technology (CUFT) has prepared the attached preliminary design for training Federal laboratory personnel.

As the legislation progresses, I would be happy to provide more detail, and to discuss it with you. We have summarized the legislation, our planning response to the legislation, and the principal background information.

Attachments

cc: Jack Williams

LEGISLATION: H.R. 2965* included appropriations of $300,000 for the Center for Utilization of Federal Technology (CUFT) to:

1. establish a training and education program for the designated technology transfer agents at Federal laboratories to recognize those types of research data, technologies and processes which have the most potential for commercial application,

2. identify "growth" industries which would have the most interest in obtaining this information; and,

3. maintain a computerized data base of research and technology developed by the Federal laboratories.

The U.S. House of Representatives Appropriations Committee reporting out this legislation strongly suggests that CUFT contract out this education and training program, preferably with a non-profit organization. (Attachment #1)

CUFT has developed a preliminary plan to implement the activities above. Detailed work statements will be developed pending resolution of the recommended disallowance of the $300,000 by the Senate Committee on Appropriations. (Attachment #2)

* Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Bill, 1986.

OVERVIEW OF PLANNED RESPONSE TO LEGISLATION

1. Training and Education

The training needs of Federal laboratory personnel span the ability to identify useful know-how for application in commercial processes to the understanding of patent licensing procedures to transfer commercially marketable technologies. Implicit in creating this capability, technology transfer agents must understand and master awareness and communication techniques so to establish ongoing relationships between laboratory personnel and U.S. industries as appropriate. Contract(s) with non-profit organizations already involved in industrial innovation and technology transfer would call for three training modules specific to different types of laboratory and agency personnel:

a. training for identifying, evaluating, and internal monitoring of technologies (i.e., proposed technology evaluation scheme at Federal laboratories developed by the Center for the Utilization of Federal Technology (CUFT), National Technical Information Service. (Attachments #3, 4, 5, and 6). An ongoing system needs to be established, with initial emphasis on developing training tools, visual aids, videotapes, manuals and texts. Representatives from agencies and major ORTAs

the results of its research and development...to further this objective...we created the National Technical Information Service..." In that same message, the President directed the Secretary of Commerce to develop a systematic effort to promote Government invention technology to facilitate its transfer into the civilian economy. This specific responsibility was logically delegated to NTIS.

In the 1970's, NTIS developed new initiatives in response to these mandates. An office of Special Technology Transfer Services was created to insure a high priority for technology transfer and utilization in NTIS program development. During this period, development in NTIS' growth toward a mature technology transfer perspective included interactions and joint activities with the Federal Laboratory Consortium, the Economic Development Administration, and State and local government agencies. In addition, NTIS represented the Department of Commerce on the Federal Council's interagency Committee on Domestic Technology Transfer.

One of the most valuable of NTIS' examinations of the technology transfer process involved experimental programs designed to identify Government technology with potential for commercialization. An initial experiment in the early 1970's involved technologists at two well known research institutes, Battelle and IIT Research Institute. Several hundred Government inventions were evaluated for commercial potential. As a check on the selection process, many of the same inventions were evaluated by both organizations and correlated for consistency of evaluation results. In addition, a subset of these inventions was evaluated by the NBS Patent Evaluation Committee. Correlation of evaluation results between evaluators was extremely low.

In an expanded experiment, four outside contractors, including Bendix Research Laboratories, evaluated a group of Government inventions; in addition, these inventions were evaluated by the Government inventors and the inventors' technical supervisors. Again, there was little consistency among evaluators for what appeared to be the most promising inventions. Government evaluators were less likely to have an opinion of commercial potential and more likely to be optimistic when they did have an opinion than the outside evaluators. Experience in technology evaluation of the extensive ETIP and OERI programs at NBS are available for background.

Recognized as the primary U.S. agency concerned with systematic technology evaluation and transfer, NTIS presented the results of its experiments at two biannual world meetings of National Research and Development Organizations.

The first-hand experience gained by NTIS in operational and experimental programs has been invaluable to development of effective ongoing activities in support of a national technology delivery system.

With the formation of the Center for the Utilization of Federal Technology (CUFT) at NTIS, its Office of Federal Patent Licensing

Economic and Statistical Analysis

The Committee recommends $30,543,000 for the Economic and Statistical Analysis programs of the Department. This amount is $1,024,000 above the President's request and is $109,000 less than appropriations provided for the current fiscal year, including amounts in the Fiscal Year 1985 Supplemental Appropriations Bill (H.R. 2577) as passed the House. The Committee recommendation provides for uncontrollable cost increases of $1,763,000, and reductions related to the program freeze (−$787,000), the Deficit Reduction Act of 1984 (−$482,000), and the administrative cost reduction (−$524,000). In addition, the Committee has not restored the $812,000 related to the five percent pay reduction proposal. If such legislation is not enacted, the Committee understands that the Administration will submit a budget request for the full amount of the costs related to this appropriation account.

The Committee recommendation includes restoration and full funding for fiscal year 1986 for the Office of Productivity, Technology and Innovation (OPTI). The budget request had assumed that this Office would be phased out in fiscal year 1986; however, the Committee felt that the work conducted by this Office was of such importance to the nation's economy that the Office should continue to be funded. In addition, the Committee has included $300,000 for the Center for Utilization of Federal Technology, as envisioned by the Stevenson-Wydler Technology Act. Section 11 of that Act established the Center for Utilization of Federal Technology (CUFT) within the Department of Commerce. CUFT was to serve a clearinghouse function, in that all technology assessments prepared by Federal laboratories were to be sent to CUFT for filing. Anyone searching for a particular technology could consult CUFT, which in turn would put the individual in touch with the Federal laboratory which had done research in the field and might be able to provide relevant information or technology. The Committee instructs the Department to establish a training and educational program for the designated technology transfer agents at Federal laboratories. This program would train the technology transfer agents to recognize those types of research data, technologies and processes which have the most potential for commercial application. It would also identify the "growth" industries which would have the most interest in obtaining this information. The Committee strongly suggests that the Center for Utilization of Federal Technology contract out this education and training program, preferably with a non-profit organization already involved in industrial innovation and technology transfer. As there are more than 300 Federal laboratories of significant size, this should be envisioned as a multi-year program, which would require a computerized data base of research and technology developed by the Federal laboratories.

ATTACHMENT #2

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY, BUDGET ESTIMATES AND AMOUNTS RECOMMENDED IN THE BILL FOR FISCAL YEAR 1986—Continued

[Amounts in dollars]

Item	1985 Appropriation	Budget estimate	House allowance	Committee recommendation	Senate committee recommendation compared with (+ or -)		
					1985 Appropriation	Budget estimate	House allowance
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
...al Maritime Commission	12,292,000	11,940,000	11,606,000	11,873,000	-419,000	-67,000	+267,000
...eral Trade Commission	69,572,000	65,626,000	63,900,000	65,500,000	-4,072,000	-126,000	+1,600,000
...rnational Trade Commission	25,130,000	28,901,000	28,900,000	28,060,000	+2,930,000	-841,000	-840,000
...ean - United States Friendship Commission	1,600,000	1,550,000	—	1,550,000	-50,000	—	+1,550,000
...al Services Corporation	313,000,000	305,000,000	305,500,000	306,400,000	-6,600,000	+1,400,000	+900,000
...ine Mammal Commission	929,000	600,000	900,000	900,000	-29,000	+100,000	—
...rime Administration	80,367,000	70,367,000	79,712,000	78,636,000	-1,731,000	+8,269,000	-1,076,000
...ffice of the United States Trade Representative	13,582,000	11,510,000	13,158,000	13,158,000	-424,000	+1,648,000	—
...urities and Exchange Commission	106,382,000	110,974,000	109,767,000	110,355,000	+3,973,000	-619,000	+588,000
...Small Business Administration	728,750,000	300,990,000	416,400,000	363,460,000	-365,290,000	+62,560,000	-52,940,000
...he Justice Institute	—	8,883,000	8,883,000	5,000,000	+5,000,000	-3,883,000	-3,883,000
...ited States Information Agency	810,125,000	982,762,000	885,194,000	876,500,000	+66,375,000	-106,262,000	-8,694,000
Grand total	12,262,903,200	11,659,270,000	11,922,021,000	11,900,660,000	-362,243,200	+241,390,000	-21,361,000

Calendar No. 338

99TH CONGRESS, 1st Session — SENATE — REPORT 99-150

DEPARTMENTS OF COMMERCE, JUSTICE, AND STATE, THE JUDICIARY, AND RELATED AGENCIES APPROPRIATION BILL, 1986

OCTOBER 4 (legislative day, SEPTEMBER 30), 1985.—Ordered to be printed

Mr. RUDMAN, (for Mr. LAXALT), from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 2965]

The Committee on Appropriations, to which was referred the bill (H.R. 2965) making appropriations for the Departments of Commerce, Justice, and State, the Judiciary, and related agencies for the fiscal year ending September 30, 1986, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes made.

AMOUNT IN NEW BUDGET (OBLIGATIONAL) AUTHORITY

Amount of bill as passed by the House	$11,922,021,000
Amount of Senate bill below House	21,361,000
Total bill as reported to Senate	11,900,660,000
Amount of appropriations, 1985	12,265,253,200
Amount of budget estimates, 1986, as amended	11,659,270,000
The bill as reported to the Senate:	
Under the appropriations for 1985	364,593,200
Over the estimates for 1986	241,390,000

TITLE I—DEPARTMENT OF COMMERCE

A total of $2,112,004,000 is recommended for the Department of Commerce, which is $178,267,000 less than the amount for 1985, $396,473,000 more than the budget estimates, and $7,883,000 under the House allowance. Increases over the budget requests occur primarily in appropriations for the Economic Development Administration and the National Oceanic and Atmospheric Administration.

General Administration

SALARIES AND EXPENSES

1985 appropriations to date	$36,483,000
1986 budget estimate	36,227,000
House allowance	31,609,000
Committee recommendation	32,343,000

The Committee recommends an appropriation of $32,343,000, a decrease of $4,140,000 from 1985 appropriations to date. The amount recommended is $3,884,000 less than the request and $734,000 more than the House allowance.

This appropriation provides for the executive direction of the Department of Commerce, including the secretarial officers and their immediate staffs; for departmental staff services for management and administration, including such functions as budget, program evaluation, congressional relations, public information, legal services, organization and management studies, personnel, systems, publications, and security; and for the audit and investigative duties of the inspector general.

The Committee recommendation will provide for the same program level as proposed in the budget request through the use of $3,700,000 in fiscal year 1985 carryover balances. In addition, the Committee recommendation restores 80 percent ($734,000) of the 5-percent pay reduction originally proposed in the President's budget, a reduction of $184,000.

Bureau of the Census

SALARIES AND EXPENSES

1985 appropriations to date	$85,259,000
1986 budget estimate	90,639,000
House allowance	88,662,000
Committee recommendation	90,400,000

The Committee recommends an appropriation of $90,400,000, an increase of $5,141,000 over 1985 appropriations to date. The amount rec-

This appropriation provides for the Bureau of the Census' statistical programs which include the measurement of the Nation's economy and the demographic characteristics of the population. These programs provide a broad base of economic, demographic, and social information used for decisionmaking by governments, private organizations, and individuals.

The Committee recommendation includes $357,000 as requested to enhance current service trade reports on the transportation, finance, and communications industries, as well as $500,000 for foreign trade statistics. In addition, the Committee recommendation accepts the House reductions of $280,000 for demographic reports and $581,000 for international statistics, as well as a $3,000 general reduction. However, the Committee has not included $700,000 provided by the House for general economic statistics, including data on small manufacturers.

The Committee also recommends $300,000 to allow the Bureau of the Census to conduct a general economic survey of the communications sector which has been affected by deregulation and technological growth.

The Committee wishes to reaffirm the commitment of the Congress, adopted in the Commerce Appropriations Act (Public Law 96–536) for fiscal year 1981, which directed the Secretary of Commerce "to expedite the program of collecting, through appropriate surveys, data on benefits received and data on participation in federally funded, in-kind benefit programs * * *." The Committee further requests that the Department submit a report on its conference on the measurement of noncash benefits scheduled for December 1985.

The Committee recommendation restores 80 percent ($2,141,000) of the 5-percent pay reduction originally proposed in the President's budget, a reduction of $536,000.

PERIODIC CENSUSES AND PROGRAMS

1985 appropriations to date	$81,000,000
1986 budget estimate	108,523,000
House allowance	105,111,000
Committee recommendation	105,687,000

The Committee recommends an appropriation of $105,687,000, an increase of $24,687,000 over 1985 appropriations to date. The amount recommended is $2,836,000 less than the budget estimate and $576,000 more than the House allowance.

This appropriation funds periodic censuses and surveys covering the major economic and demographic areas once or twice each decade. It also provides for the maintenance of geographic support activities required by the various censuses, the preparation of population and per capita income estimates, and the acquisition of large-scale data processing equipment.

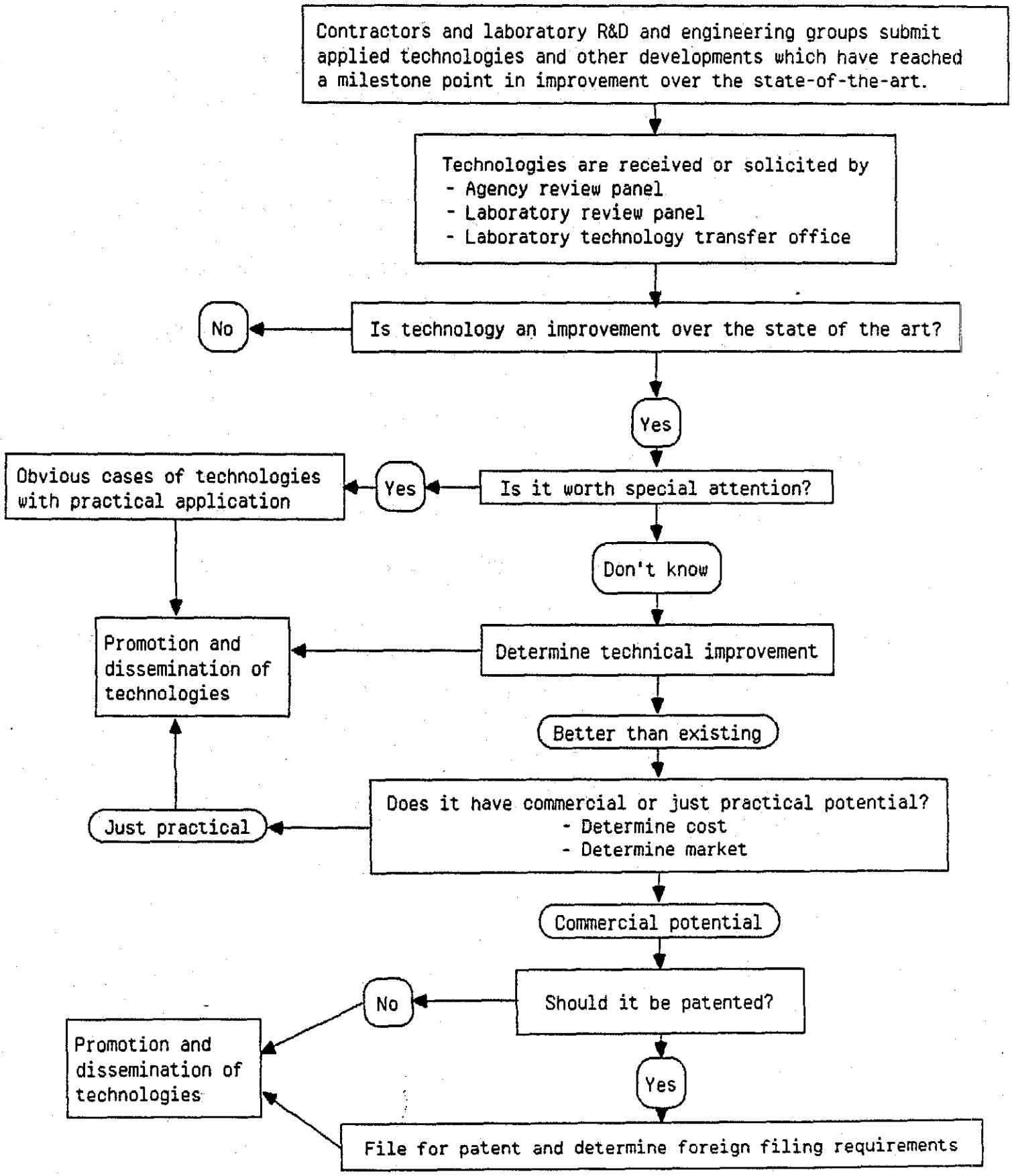
The Committee recommendation includes $1,178,000 of the requested enhancement of $2,278,000 for data processing systems. This will pro-

Laboratory Technologies with Commercial or Practical Application
(New processes, techniques, equipment, software, or materials)

Attachment #3

Definitions: ***Commercial technologies****-Those which can be developed into a marketable product.*

Practical technologies*-Those which can be used to improve a process or some operation but which cannot be directly developed as a marketable product.*



UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

DEVELOPMENT PLAN TO PRODUCE A GUIDE TO COMMERCIALIZING FEDERAL TECHNOLOGY

The Center for the Utilization of Federal Technology proposes to develop and publish a guide to assist U.S. businesses in the commercialization of Federal technology. The guide would be an overview of the steps required to identify potential technologies; to their development and to carry out their production and marketing.

It has been established through discussions with various Federal agencies that there is a need to assure that small companies and individuals developing Federal technologies are cognizant of the necessary business requirements to commercialize these technologies.

Agencies will be solicited to contribute to the production of the publication. The estimated cost is $60,000.

AUDIENCE:

- Small businesses or ventures engaging in new technology development
- Individuals who are technology-oriented, not business-oriented

BOOK FORMAT AND STYLE:

- Audience has a technical education, but may not have business experience
- Between 100 to 150 pages
- Written as a guide
- Overviews innovation and business steps
- Provides a thorough reference to other published material or contacts, e.g., associations

TABLE OF CONTENTS

Introduction - Innovation Process

Sources of Technology

Government-owned Inventions
How to find inventions
Getting more detail about inventions
How to obtain a license

ATTACHMENT #5

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

March 1, 1984

MEMORANDUM TO: Joseph E. Clark
Deputy Director

SUBJECT: Technology Evaluations at Federal Laboratories

In numerous discussions with FLC and ORTA representatives from Federal laboratories, the major missing link, critical for meaningful technology evaluation, has been basic commercial market research data. The researcher and his peers on site are quite capable of assessing technical merit. Assuming time and search budget availability, the patentability aspect can best be addressed by the local attorney. However, no one in the "ivory tower" seems to be able to factor in the marketability assessment. This requires information on market segment size, and cost: performance comparisons with understanding of the relation between manufacturing or "factory door" costs and prices to the consumer. Bill Marcuse, the ORTA chief at Brookhaven, has articulated this lack very well in his FY 1983 Technology Transfer Report (excerpts attached).

A cost effective service to laboratories could be carried out by CUFT either in-house, by contractor, or through a combination of these. A feasibility study at less than $10K would involve a intragovernment questionnaire from CUFT to ORTA's and patent disclosures evaluation committees to determine the volume and type of market data they would request if freely available on request. An experienced market research firm on a sole source purchase order could identify sources and annual costs of accessing and providing market information at the level and depth appropriate to the magnitude of decision making involved. Thus, if costs of patent filing and prosecution or of "packaging" technology for transfer are in the $5-10,000 range, one should spend only $500-1,000 for commercial or market assessment.

A great deal of basic market data can be accessed and maintained for $50-100,000 per year. This would include acquisitions of two to five year old survey reports (adequate and very cheap), online computer access to Predicast and other market data bases, general reports from Kline, First, SRI, A.D. Little and many others. Many reports might be donated when the use was explained. Much basic data, up to the SIC six or seven digit levels might be acquired free or accessed from Census, ITC, BEA, BIE, and FTC if data source confidentiality were assured. One staffer and one or two clerical support staff could start up the program, provide laboratories with up to 200 or 300 orientation market profiles per year at a cost of $200-250,000. If successful, and a satisfied user demand in either volume or depth of data was created above this level, a service charge to agencies could be

instituted to insure value received and put a ceiling on program costs. Acting as a government-wide market data purchasing cooperative, CUFT could insure access to data for hundreds of users at a very small fraction of the cost of each agency and/or laboratory acquiring this independently. CUFT would maximize use of contractors and of purchased data, staffing only at the commercial information broker or library level.

We request approval of the concept and to start the feasibility survey work in FY 1984, organizing and staffing in FY 1985 with an operational line item in the budget starting in FY 1986.

David T. Mowry
Center for the Utilization
of Federal Technology

Attachment

cc: Joe Caponio
Norm Latker
Bruce Merrifield
Tip Parker

BROOKHAVEN NATIONAL LABORATORY

TECHNOLOGY TRANSFER REPORT

FISCAL YEAR 1983

Brookhaven National Laboratory
Upton, Long Island, New York 11973
Operated By Associated Universities, Inc.
Under Contract No. DE-AC02-76CH00016 with the
United States Department of Energy

C. ISSUES

The ORTA has experienced surprisingly few problems in its formative stage. Cooperation from the program departments has exceeded expectations. This probably is a result of the support provided by the technology transfer coordinating committee. The advice provided by the Committee has been of great importance for the effective operation of the ORTA. From the beginning, Laboratory management has been supportive and the organizational location of the ORTA provides visability and indicates the interest of the Director's Office.

Nevertheless, there are two areas of concern. One is with regard to the need to perform market assessments for potentially transferrable technologies. This requires a kind of skill that is not available at this Laboratory and is unlikely to become available. The second has to do with the nature of the technology transfer process. It seems clear that some research on the technology process is needed so that we can understand why some "tried and true" methods and approaches sometimes are effective and other times are not, and so we can direct "experimentation" to most likely approaches rather than strike out randomly.

D. INITIATIVES

By and large this year will be one of consolidation. There are many initiatives that are underway and most of our effort will be directed to bringing them about.

Planned Activities Within Current Resources

1. Continue program review.
2. Increase staff awareness of technology transfer.
3. Plan and organize IRI visit, November, 1983.
4. Organize working groups to explore use of laboratory facilities by industry.

Appendix A:

ORTA Placement and Technology Transfer Process

1. ORTA Contact:
   Dr. William Marcuse, Head
   Office of Research and Technology Applications
   Brookhaven National Laboratory, Building 130
   Upton, N.Y. 11973

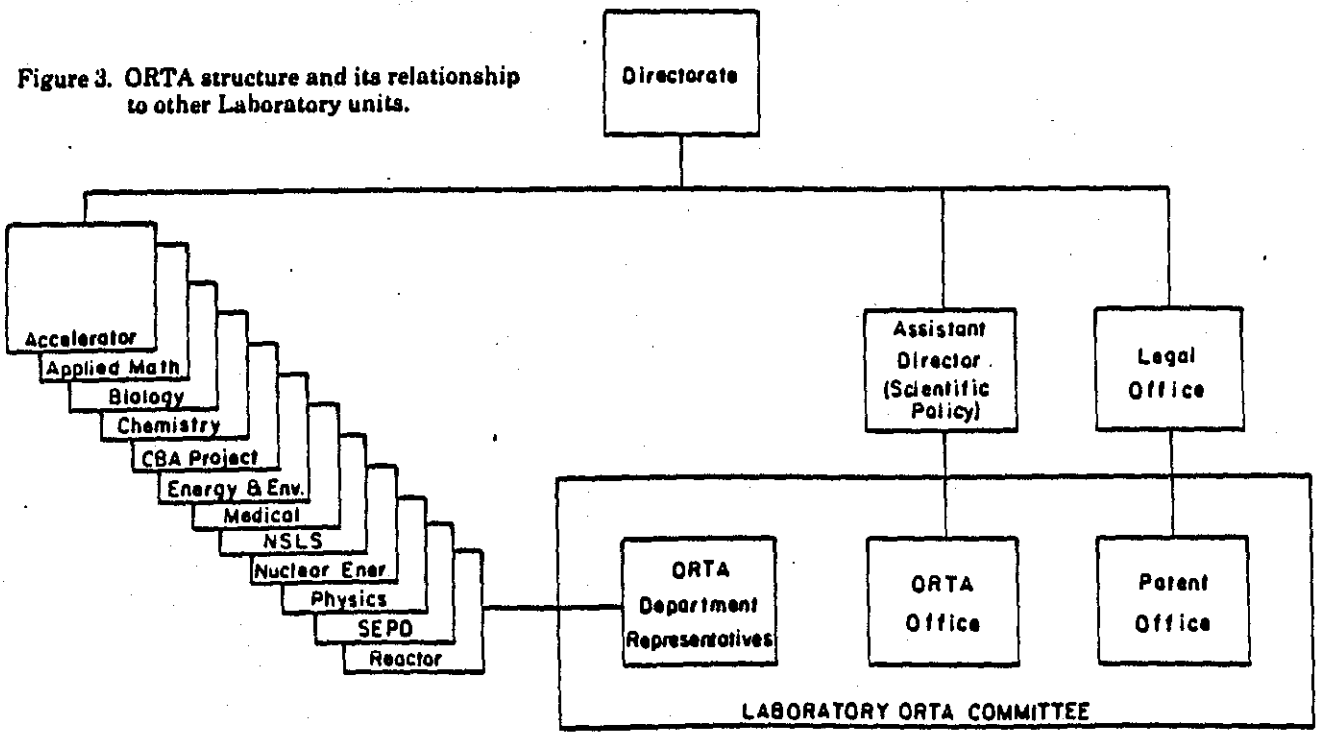
2. Placement of ORTA Within Laboratory Management Structure:
   Overview of the Laboratory's Technology Transfer Program:

The Head of the Office of Research and Technology Applications (ORTA) reports directly to the Laboratory Assistant Director for Scientific Planning and Policy who is a member of the Director's Laboratory Policy Committee. Figure 1 is a modified organization chart of the Laboratory highlighting the organizational location of the ORTA and depicting the origins of the Technology Transfer Committee - close to the programmatic effort of the Laboratory. The Assistant Director for Scientific Planning and Policy is also charged with the responsibility for the Institutional Plan and, significantly, for the functioning of the ORTA, provides a strong linkage to the scientific staff through the Office of Scientific Personnel. This organizational location provides the ORTA with direct access to the Laboratory Director, Deputy Director and Associate Directors. Direct line support is provided by the Laboratory Patent Attorney. The Laboratory has established this highly visible ORTA in response to the Stevenson-Wydler legislation and the DOE Order implementing it. Previously the Laboratory performed technology transfer through decentralized program level efforts.

The ORTA will continue to focus on organizational structure and managerial procedures necessary to effectively implement its P.L. 96-480 mandated duties, especially in technology assessment. We intend to concentrate on fundamentals in order to improve our program.

(Appendix A cont.)

Figure 3. ORTA structure and its relationship to other Laboratory units.



3. Brief Description of Technology Transfer Process

The Department Representatives and the Patent Attorney review current Laboratory programs and identify possible candidates. These are then screened by an internal review panel and application assessments are prepared for successful candidates. These are then subjected to evaluation by external experts and industry contacts. If the recommendations are again positive the process passes to the outreach phase where pertinent information on the "product" is submitted to the DOE technical Information Center for eventual dissemination by NTIS. Specific user groups will be targeted and information on the "product" provided to these groups and to technology brokers.

(Appendix A cont.)

Finally, in the Transfer and Assistance Phase, ORTA and other involved parties at Brookhaven will respond to requests regarding transfer of the technology. The structure of this phase varies depending on the specific nature of the "product" involved and whether it is patented, copyrighted, otherwise protected or generally unprotected and unprotectable. If proprietary use is involved and the product is protected, negotiations will be established between the DOE patent counsel and the potential "user" group. Brookhaven and ORTA will act to provide further information on the "product," provide technical assistance in developing or refining the product for use and in design and evaluation programs. Further, if the "user" group seeks enhanced assistance in developing spin-off applications, ORTA will seek to develop such interaction.

Form NTIS-303
(8-76)

U.S. Department of Commerce
NATIONAL TECHNICAL INFORMATION SERVICE

INVENTION EVALUATION QUESTIONNAIRE

TO:

An evaluation of the invention identified below is requested as part of a Department of Commerce program aimed at promoting the use of Government inventions. Please complete the questionnaire and return it to:

Patent Program
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

This questionnaire might also be sent by NTIS to others associated with the development of this invention. Please submit an independently prepared response; do not consult with others receiving a copy of this questionnaire.

Thank you for your cooperation.

INVENTION IDENTIFICATION

Title of invention	
Inventor(s)	Agency Sponsor
Application Serial No.	Application Filing Date
Agency Case No.	Patent No. (if any)

RESPONDENT IDENTIFICATION

Name	Address
Title	
Organization	
Telephone	

NTIS use only:

Date completed questionnaire received by NTIS _____

Source code: GP____

Evaluator _____

A D G
B E H
C F I

USCOMM-DC 6901-P78

Please circle numbers and fill in blanks when appropriate.

KNOWLEDGE OF THE INVENTION AND INDUSTRY

A. WHAT IS YOUR RELATIONSHIP TO THE INVENTION ?

1. Inventor/Co-inventor
2. Inventor's Technical Supervisor
3. Patent attorney who prepared/ prosecuted the invention
4. Other patent attorney
5. NTIS Invention Evaluator
6. Other (please specify) _____

B. HOW FAMILIAR WERE YOU WITH THE INVENTION PRIOR TO RECEIVING THIS QUESTIONNAIRE ?

1. Intimately familiar
2. Moderately familiar
3. Was aware of it
4. No previous knowledge

C. HOW FAMILIAR ARE YOU WITH THE INDUSTRY (manufacturing, marketing, and general structure) TO WHICH THE INVENTION RELATES ?

1. Intimately familiar
2. Moderately familiar
3. Not familiar

STATUS OF INVENTION DEVELOPMENT

D. WHAT IS THE CURRENT STATUS OF THE INVENTION ?

1. Not in use and not being developed, last use or development on _____
2. Still being developed
3. Currently in use
4. Unknown

E. HOW FAR HAS THE DEVELOPMENT OF THE INVENTION BEEN CARRIED ?

1. No development beyond preparation of patent application
2. Experimentation models, bread boards, prototypes
3. Limited production
4. Full scale production
5. Unknown

F. WHAT IS THE EXTENT OF CURRENT COMMERCIAL USE OF THE INVENTION ?

1. Being considered for commercial development (specify company) _____
2. Under commercial development (specify company) _____
3. Currently in commercial use (specify company) _____
4. No known commercial interest

SIGNIFICANCE OF INVENTION IN ITS FIELD

G. WHAT IS THE RELATIVE SIGNIFICANCE OF THE INVENTION IN ITS FIELD OF TECHNOLOGY ?

1. Known in existing technology
2. Slight modification
3. Modest advance
4. Significant advance
5. Major improvement
6. Pioneer discovery

H. WHAT ARE THE PRINCIPAL ADVANTAGES OF THE INVENTION OVER THE PRIOR ART ?

RELATED DISCLOSURES

I. ARE THERE OTHER PATENTS/PATENT APPLICATIONS THAT DIRECTLY RELATE TO THIS INVENTION ?

1. No
2. Divisional ser. nos._____
3. Continuation-in-part ser. nos.
4. Other (please specify)_____
5. Unknown

J. PLEASE CITE ANY PUBLISHED TECHNICAL REPORTS OR JOURNAL ARTICLES THAT DESCRIBE THE INVENTION AND INDICATE PUBLICATION DATES.

COMMERCIAL POTENTIAL OF INVENTION

K. WHAT IS THE LIKELIHOOD OF ULTIMATE COMMERCIAL USE OF THE INVENTION ?

1. None
2. Poor
3. Fair
4. Good
5. Excellent
6. Unknown

L. WHAT IS YOUR ESTIMATE OF CAPITAL INVESTMENT REQUIRED TO COMMERCIALIZE THE INVENTION ?

1. Not applicable
2. Less than $10,000
3. $10,000 to $100,000
4. $100,000 to $500,000
5. $500,000 to $1,000,000
6. Over $1,000,000
7. Unknown

M. WHAT IS YOUR ESTIMATE OF THE COMMERCIAL POTENTIAL OF THE INVENTION AS MEASURED BY GROSS SALES OVER THE LIFE OF THE INVENTION ?

1. None
2. Less than $100,000
3. $100,000 to $500,000
4. $500,000 to $1,000,000
5. $1,000,000 to $5,000,000
6. $5,000,000 to $10,000,000
7. Over $10,000,000
8. Unknown

RECOMMENDATIONS FOR INVENTION EXPLOITATION

N. SHOULD THE U.S. GOVERNMENT PROMOTE THE COMMERCIALIZATION OF THIS INVENTION ?

1. Yes 2. No 3. Unknown

Please comment.

O. SHOULD THE U.S. GOVERNMENT SEEK FOREIGN PATENT PROTECTION ON THIS INVENTION ?

1. Yes 2. No 3. Unknown

If Yes, circle letter next to country where protection should be sought and comment on the market potential.

a. Australia _____
b. Belgium _____
c. Canada _____
d. France _____
e. Great Britain _____
f. Italy _____
g. Japan _____
h. Netherlands _____
i. Sweden _____
j. Switzerland _____
k. West Germany _____
l. Other Countries _____

P. PROVIDE, IF YOU CAN, A LIST OF NAMES AND ADDRESSES OF EXPERTS IN THE FIELD OF THE INVENTION WHO COULD PROVIDE ADDITIONAL EVALUATIONS OF THE COMMERCIAL POTENTIAL OF THE INVENTION.

Q. PROVIDE, IF YOU CAN, A LIST OF SPECIFIC COMPANIES THAT YOU REGARD AS GOOD LICENSING PROSPECTS FOR THE INVENTION (not required if invention appears to have no commercial potential).

R. OTHER COMMENTS:

MEMORANDUM OF UNDERSTANDING

between the

CENTER FOR THE UTILIZATION OF FEDERAL TECHNOLOGY

and the

FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER

I. Introduction and Purpose

The Center for the Utilization of Federal Technology (CUFT) of the National Technical Information Service (NTIS) was provided legislative basis in the Stevenson-Wydler Technology Innovation Act of 1980 (Public Law 96-480). The Federal Laboratory Consortium for Technology Transfer (FLC) was recognized in Section 11 of this Act as an integral partner in the technology transfer activities to be undertaken by Agencies and their laboratories with the active cooperation of CUFT.

The purpose of this Memorandum of Understanding is to delineate and expand the areas of cooperation between CUFT and FLC, designed to enhance implementation of Section 11 of P.L. 96-480.

II. Scope

The CUFT, a central clearinghouse for the collection and dissemination of Federal technology information and a licensor of Federally owned patents, provides information and services in response to requests from State and local governments and the private sector. The FLC, a consortium of Federal R&D institutions, is a nationwide network which uses a person-to-person approach to link its member institutions. Through FLC, the combined capabilities of the R&D institutions are used to broker more efficiently requests for technology or assistance both within the Federal system and with non-Federal users of technology. FLC is the primary communication mechanism among the Offices of Research and Technology Applications (ORTAs) in the R&D institutions, and provides an interagency forum on technology transfer policy and practices.

CUFT and FLC will cooperate in:

1. Responding to requests for information and/or assistance from State and local government and private industry. The nature of the request will be the factor which determines the specific distribution and types of efforts to be utilized in the formulation of the response; each party will respond in consonance with its capabilities. It is understood that both CUFT and FLC will receive inquiries from user groups. FLC agrees to receive requests through CUFT that require assistance in addition to published information, and to refer those requests to the appropriate FLC member R&D institution for direct response. CUFT agrees to receive requests through FLC which require published material to satisfy user needs, and to respond directly to the user.

2. Identifying and developing training sessions for their constituencies.

3. Exchanging publications and other writtten material that will enhance the ability of each party to expand their role in the implementation of P.L. 96-480. CUFT will, for example, make available to the FLC, directories, catalogs, guides, etc., prepared by CUFT to facilitate its mission. FLC will recommend programs and services which CUFT can incorporate into its program to assist ORTA missions. Examples may be: pooled approaches to obtaining market research information for screening and evaluating innovations; directories; catalogs and guides; training in certain aspects of technology transfer, for example, use of information systems; and other approaches to promote the transfer of technology, etc.

4. Identifying a project to promote certain special methods for the dissemination of technology information to the public and private sectors.

5. Identifying certain key individuals in State and local government who may facilitate the transfer of Federal laboratory technology to U.S. industry.

III. Financial Responsibilities

Funds for the performance of tasks under this Memorandum of Understanding will be obligated by the respective party as the tasks are executed or modified. Each party is responsible for its financial obligations pursuant to its own activities.

IV. Duration of MOU

This Memorandum of Understanding shall be effective upon signature of designated representatives of each party, and shall expire on June 1, 1987, unless extension is mutually agreed upon in writing. It may be terminated upon delivery of 30 days advance written notice to the other party.

V. Representative Personnel

The persons named below will serve in a representative capacity to facilitate communications between the parties to this Memorandum of Understanding:

CUFT	FLC
Mr. Edward J. Lehmann	Dr. Eugene E. Stark
Ms. Darcia D. Bracken	Ms. Margaret M. McNamara

VI. Authorized Signatories

For CUFT:

Joseph E. Clark

Dr. Joseph E. Clark
Deputy Director, NTIS
Date: 5/13/85

Dr. David T. Mowry
Associate Director, CUFT
Date: 5/10/85

For FLC:

Eugene Stark

Dr. Eugene E. Stark
Chairman, FLC
Date: May 8 1985

Margaret M. McNamara

Ms. Margaret M. McNamara
Vice-Chairman, FLC
Date: May 7, 1985

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

R Davies
Do we have
NTIS file?
N.

March 5, 1984

MEMORANDUM TO: George K. Kudravetz
Robert P. Auber
Douglas J. Campion

SUBJECT: Precommitment Clearances for Patent Licenses

Further to my memo to Bob Ellert on September 29, 1983 regarding precommitment clearances on denial of license applications which might creat later appeals, please also send to OAGC (Bob Ellert), copy to OPTI (Norm Latker) for approval prior to grant, any applications for non-exclusive license on previously unlicensed patents.

David T. Mowry
Program Manager
Center for the Utilization
of Federal Technology

cc: R. Ellert, OAGC
N. Latker, OPTI
J. Williams, OPTI
J. Clark, NTIS