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Subseries: Organization Files - FCCSET

OA/ID Number: 62073
Folder ID Number: 62073-009

Folder Title:
FCCSET: CIT [Committee on Industry and Technology] [1991]

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"CORRESPONDENCE TRACKING"

TYPE: ACTION

DOCUMENT NUMBER: 9120624

FROM: WHITE, Robert M.: U.S. DEPARTMENT OF COMMERCE

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 03/01/91

SUBJECT: REQUEST FOR DR. BROMLEY AND THE FULL FCCSET APPROVAL
FOR A CONTINUATION OF THE CIT PROJECT.

ASSIGNED TO: Maryanne Bach

ACTION REQUIRED: FOR DAB SIGNATURE

SENDER'S DUE DATE: OSTP DUE DATE: 03/20/91

DATE COMPLETED: 5/17/91

COPIES TO: D. Allan Bromley
Ken Yale
Dr. Phillips

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/04/91

FILE: FCCSET - CIT



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

Honorable D. Allan Bromley
Assistant to the President
for Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Room 360 - OEOB
Washington, D.C. 20506

MAR 1 1991

RECEIVED

31 MAR 4 P2:39

OFFICE OF THE
DIRECTOR

Dear Allan,

At the January 29 meeting of the FCCSET Committee on Industry and Technology (CIT)* presentations were made by the chairmen of our Individual Technology Steering Groups on Materials, Information and Communication Hardware, Advanced Manufacturing, Advanced Software, and Biotechnology. As a result of these, and the ensuing discussion, I am satisfied that enough progress has been made in establishing the feasibility of our producing "Inventories of Federal Technology Efforts in the Context of Critical Technologies" (hereafter "inventories") to warrant FCCSET approval for this CIT project. The purpose of this memorandum is to request your concurrence, and to suggest that sanctioning the five inventories be an item for the agenda at the next FCCSET meeting.

As indicated by their titles, the inventories' objective is to identify federally-funded R&D activities which relate to industry's critical technologies. Their usefulness reflects the fact that the federal R&D community possesses exceptional know-how and related resources useful to U.S. industry in its drive to develop and commercialize critical, enabling technologies. However, the public-private sector linkage is impacted by industry's not being sufficiently aware of federal resources and activities, and federal entities' not being adequately informed of industry needs. The inventories would help to make that linkage.

Following the development of the inventories and the expression of industry views on them, the CIT would analyze the inventories and industry views for the purpose of:

- o identifying opportunities to develop closer cooperation with industry, and between the federal R&D programs themselves; and,
- o identifying opportunities within the federal R&D programs for redirecting existing R&D funds to increase the positive impact of federal efforts on U.S. industry's competitiveness.

*Note name change

Additional details on these objectives are provided in Enclosures "A" through "E," which are summaries of the five Individual Technology Steering Group reports made at our January 29 meeting.

I believe that there is one aspect of this that deserves further clarification. That concerns the similarities and differences between inventories (as defined for this project) and crosscuts (as defined by OMB). As we conceive them, the CIT inventories would be constructed and oriented primarily to facilitate private sector use of -- and evaluation of -- the information contained in them, and to give government a reasonably accurate indication of amounts spent, where, and for what.

On the other hand, as I understand them, "crosscuts" are more detailed programmatic budget reviews that address goals, objectives, implementation priorities, funding levels, and participating agencies for major topics (e.g. global change). Their orientation is intra-federal government (as opposed to private sector), their purpose is to optimize proposed levels of federal spending for the crosscutting topic, and they require OMB approval before being undertaken.

I have gone into this much detail because the terms "inventory" and "crosscut" are often used interchangeably, and I believe that confusion can exist as a result. In our case, the intention is to complete the five critical technology inventories as the first order of business.

With respect to materials, our Steering Group on Materials believes that sufficient work has been -- or is being -- accomplished to warrant moving quickly from the inventory to the crosscut stage, with the FY 1993 budget a target for crosscut completion. A similar situation may exist regarding biotechnology. The CIT is working closely with the Committee on Life Sciences and Health in constructing a biotechnology inventory.

I remain enthusiastic with respect to both the feasibility and utility of our inventories effort, and I hope that what I have provided here will constitute a sufficient basis for you and the full FCCSET to approve a continuation of the project.

Sincerely,



Robert M. White, Ph.D.

Enclosures

Enclosure A

Summary of the Report by the Technology Steering Group on
Materials of the FCCSET Committee on Industry and Technology

Background: Materials technology, an enabling technology impacting most industrial sectors, is an essential ingredient of U.S. competitiveness. All major technical indicators reveal a significant deterioration in the U.S.'s once pre-eminent position in materials R&D, with trend-lines projecting few signs of a turn-around. The recent comprehensive study on materials science and engineering (MS&E) conducted by the National Research Council identified opportunities and needs while issuing a call for action by the government on a number of fronts. This inventory will be a positive step in meeting that call.

Proposed Action/Deliverables: COMAT (Committee on Materials), a CIT subcommittee, is the operational arm of the Materials Steering Group. It is responsible for: (1) coordination among federal agencies and parties at interest; (2) establishment of the inventory on federal materials R&D programs/budgets/establishments/focus; and (3) the development of a materials crosscut strategy and R&D plan. COMAT's work is well along and significant accomplishments have been achieved. The principal impact from this program's activities is expected to be on information/communications, transportation, aerospace, energy, health, environment, materials resources, and defense.

Participating Organizations: COMAT is comprised of representatives from 20 federal agencies and organizations with significant materials-related activities (e.g. DOE, DOD/DARPA/AF, NASA, NSF, DOI/BOM, DOC/NIST, and HHS/NIH). Liaison members include OSTP, OMB, CIT, and the National Critical Materials Council (NCMC).

Other: A taxonomy has been completed through which a given research project is characterized fully by identifying the appropriate modifier(s) in each of these four categories of materials classification by: (1) type; (2) primary functional property of interest; (3) character of materials research; and (4) materials development stage. An activity/milestone schedule has been developed also.

Enclosure B

Summary of the Report by the Technology Steering Group on
Advanced Manufacturing of the FCCSET Committee on Industry and
Technology

Background: This initiative seeks to bring federal resources to bear in the following long-term goals for private sector advanced manufacturing enhancement: establishing a focused national strategy to achieve U.S. pre-eminence in developing, commercializing, and applying advanced manufacturing processes and technologies; facilitating early and strategic industry participation in the development of federal research agendas involving advanced manufacturing technologies; and stimulating a greater U.S. government generic research orientation toward long-term industry needs in the advanced manufacturing technologies. A definitional problem exists for this technology because of the pervasiveness of "manufacturing" in all forms of economic endeavor. The steering group is seeking to define "advanced manufacturing" in a manner conducive to adding value to this important inventory process. In that connection, previously produced definitions and/or taxonomies developed by OMB (in connection with a potential materials crosscut) and the National Critical Technologies Panel provide resources.

Proposed Action/Deliverables: This initiative will lead to an inventory of federal advanced manufacturing R&D activities. The topics to be covered have been identified, and, to ensure U.S. industry awareness of federal advanced manufacturing R&D, workshops may be conducted.

Participating Organizations: The analytic work for this CIT activity will be accomplished by an Advanced Manufacturing Working Group consisting of relatively senior personnel from each of the participating agencies, with guidance provided by the Advanced Manufacturing Steering Group. Member agencies include DOA, DOC, DOD/DR&E, DoED, DOE, DOI/BOM, DOL, DOT/FHA, NASA, HHS/NIH, NSF, OMB, and OSTP.

Other: A 1991 milestone schedule of actions has been completed.

It should be noted that there are several advanced manufacturing activities related to this CIT initiative under way. These are sponsored by the U.S. Government or other organizations, and -- collectively -- they place special coordination responsibilities on those involved with this effort.

Enclosure C

Summary of the Report by the Technology Steering Group on
Advanced Software of the FCCSET Committee on Industry and
Technology

Background: The advanced software technology area includes those aspects of computational methods and computer codes which are related directly to the creation, maturation and rapid transition of software capabilities within federal systems. The primary objective of this steering group is to identify a strategy for federally funded R&D activities in advanced software to complement private sector efforts to improve U.S. competitiveness in this sector.

Proposed Action/Deliverables: The steering group's ultimate goal is to produce a report that articulates specific government and industry R&D goals for advanced software, quantified where possible. An inventory and preliminary report will be confected by a working group, which will provide a description of each category listed in the advanced software taxonomy, plus major activity centers and federal budget breakouts. This interim report will be the basis for a workshop with industry, the results of which will be incorporated in the final report/inventory. The working group will coordinate its efforts with other related organizations (e.g. the DOD-sponsored Software Engineering Institute and the National Software Exchange, sponsored by the High Performance Computing and Communications Program).

Participating Organizations: The following federal organizations are represented in this effort: DOC/NIST, DOD/DARPA, DOE, DVA, NASA, and NSF.

Other: A draft, detailed taxonomy has been completed. The primary categories of focus include: software and system engineering; human-computer interaction; artificial intelligence; software for parallel systems; software for heterogeneous distributed systems; real-time software; fault tolerant software; and software for secure/trusted and high assurance systems.

Enclosure D

Summary of the Report by the Technology Steering Group on Information and Communication Hardware (formerly Electronics) of the FCCSET Committee on Industry and Technology

Background: The revolution in information technology has two technical components -- hardware and software. This project will examine the federal R&D efforts directed toward the advanced hardware aspect. The broad objective of the exercise is to assure domestic development of the information technology that the U.S. needs to be competitive in the 21st century.

Proposed Action/Deliverables: As part of the FY 1991 budget process, OMB conducted crosscut reviews of a portion of this field of technology -- semiconductors and advanced imaging technologies. This process was a good beginning in that it identified the major federal contributors. The actions required now are to update and to expand the budget information available, to identify the specific federal organizational elements possessing the relevant expertise, and to examine the relationship between the objectives of federal programs and industrial needs for staff and technical support.

Reports will be forthcoming summarizing the nature, extent, and objectives of federal R&D in the information and communication hardware field, assessing the strengths and weaknesses of the overall program, and suggesting actions to correct any identified weaknesses.

Participating Organizations: The Steering Group on Information and Communication Hardware has members from the following agencies: NASA, NSF, CIA, DOD/DARPA, DOSTate, DOI/BOM, VA, and OSTP.

Other: A taxonomy has been completed which divides the R&D needed to develop and support information and communication hardware into five general categories: semiconductors, digital imaging, storage technology, optoelectronics, and sensors. These are based on overlapping technology and together are critical for the information and communication systems of the future.

The most critical coordination issue concerns cooperation with the FCCSET Committee on High Performance Computing. Because the DOD is the largest single participant in the federal program in this area, some effort will have to be made to assure that the data collection is coordinated with ongoing DOD data collection activities.

Summary of the Report by the Technology Steering Group on
Biotechnology of the FCCSET Committee on Industry and Technology

Background: Biotechnology refers to a related set of techniques which, when considered as a whole, will have a major impact on a broad variety of activities, including medicine, agriculture, energy, and the environment. Any technique that uses living organisms, or parts of organisms to make or modify products, to improve plants or animals, or to develop micro-organisms for specific uses, can be defined as biotechnology. The ability to manipulate the genetic constitution of living organisms probably will be comparable in impact to the use of the computer in information processing.

Specific areas covered here include: recombinant DNA research; mapping and sequencing of the human genome; systems for molecular modeling; human gene therapy; diagnostic tests; biotechnology products (e.g. vaccines, monoclonal antibodies); transgenic animals and plants; instrumentation development; and biotechnology training.

Proposed Action/Deliverables: The principal goals of this project are to define the nature and fiscal extent of federal support for those activities which fall under the definition of biotechnology, and to define important relationships with the commercial biotechnology effort. As a result of this exercise, it should be possible to make recommendations which will support the future viability of an essential science-based industry which has to compete in a demanding world market.

A final inventory/report will be prepared postulated on information gathered on such elements as: federal agency budgets relating to biotechnology programs; university-industry partnerships; federal agency-industry partnerships (e.g. CRADAS); federal agency-university partnerships; data on technology transfer and invention licensing.

Participating Organizations: Those entities involved include: all the relevant institutes, centers, and divisions of NIH, NSF, FDA, DOA, EPA, DOE, DOC, DOD, and the VA.

Other: Industry involvement will be accessed through the extensive use of existing industry advisory committees, such as the Industrial Biotechnology Association, and the Pharmaceutical Manufacturers Association.

Close coordination and cooperation will be maintained with the FCCSET Committee on Life Sciences and Health, which is conducting its own biotechnology review.

"CORRESPONDENCE TRACKING"

TYPE: Information

DOCUMENT NUMBER: 9160167

FROM: WHITE, Robert M: Dept. of Commerce

TO: Bromley

DATE OF
CORRESPONDENCE: 03/01/91

SUBJECT: Inventories by the Steering Groups of the FCCSET/CIT
(attached)

ASSIGNED TO: William D. Phillips

ACTION REQUIRED: As appropriate

SENDER'S DUE DATE: OSTP DUE DATE:

DATE COMPLETED: -----

COPIES TO:

WHITE HOUSE TRACKING #: CONTACT PERSON:

REMARKS: For meeting on 3/22 w/Dickens & Gravatt.

DATE RECEIVED: 03/21/91

FILE: FCCSET/CIT



168
UNITED STATES DEPARTMENT OF COMMERCE
Technology Administration
Washington, D.C. 20230

TECHNOLOGY ANALYSIS GROUP
OFFICE of the UNDER SECRETARY for TECHNOLOGY

U.S. DEPARTMENT OF COMMERCE
Herbert C. Hoover Building, Room 4841
Washington, DC 20230

202-377-4844
FAX 202-377-4362

TO:

NAME William Philleps
ORGANIZATION OSTP
FAX NUMBER 395-3719
TELEPHONE _____

FROM:

NAME Cary Brown
MESSAGE

Per your request to Charles Decker
for a copy of the White to Gowley
letter.

NUMBER OF PAGES 8 (INCLUDING COVER SHEET)

Bill Phillips

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

March 1, 1991

MEMORANDUM TO D. ALLAN BROMLEY

FROM: MARYANNE C. BACH *meb*
SUBJECT: MEETING WITH BOB WHITE TODAY, 3:45 P.M.

Your schedule lists a meeting today with Bob White. There a couple of possible FCCSET issues which Bob may bring up....I thought I would briefly highlight these as resolution will involve some internal OSTP coordination. NOTE: Bob may or may not raise these items today; however, I would like to put them on your radar screen, should the topics come up.

Bob has a draft letter in preparation to you summarizing the status of the CIT committee. CIT identifies 5 areas for possible inventories:

materials, information and communications
hardware, advanced manufacturing, advanced
software, and biotechnology.

He will be suggesting that CIT could follow a two stage process, the first being the refinement and completion of the inventories, the second would be to obtain expression of interest from industry on these five federal research/technology areas for two main purposes---identifying opportunities for more clear federal/industry collaboration and for identifying places where a redistribution of federal R&D funds may lead to a positive impact on U.S. competitiveness.

With the transmittal of Bob's letter, he will be seeking your endorsement and that of Full FCCSET of this type of approach on CIT's course of action.

PRIOR TO THE FULL FCCSET ACTION ITEM, I WOULD RECOMMEND AN INTERNAL OSTP MEETING. THERE IS A NEED TO ADDRESS INTERNALLY THE COORDINATION AND AVOIDANCE OF DUPLICATION BETWEEN RELATED ACTIVITIES WITHIN THE PMES, LSH AND CIT COMMITTEES. I THEREFORE WOULD SUGGEST THAT DR. PHILLIPS, DR. WONG AND D.A. HENDERSON AND I REVIEW THE LETTER UPON ITS TRANSMITTAL AND PREPARE TO DISCUSS OPTIONS WITH YOU TO ENSURE BOTH INTERNAL AND FCCSET COMMITTEE COORDINATION. IN THAT MANNER, WE CAN ADDRESS--IN ADVANCE--QUESTIONS THAT MAY ARISE FROM FULL FCCSET MEMBERS.

Matthias Crosscut - Charles Dierke 3/1/91

Terms of reference to OMB - End of March
Dierke, Philby, WDP agree work
with OMB on priority
White & his people Jack Wallis

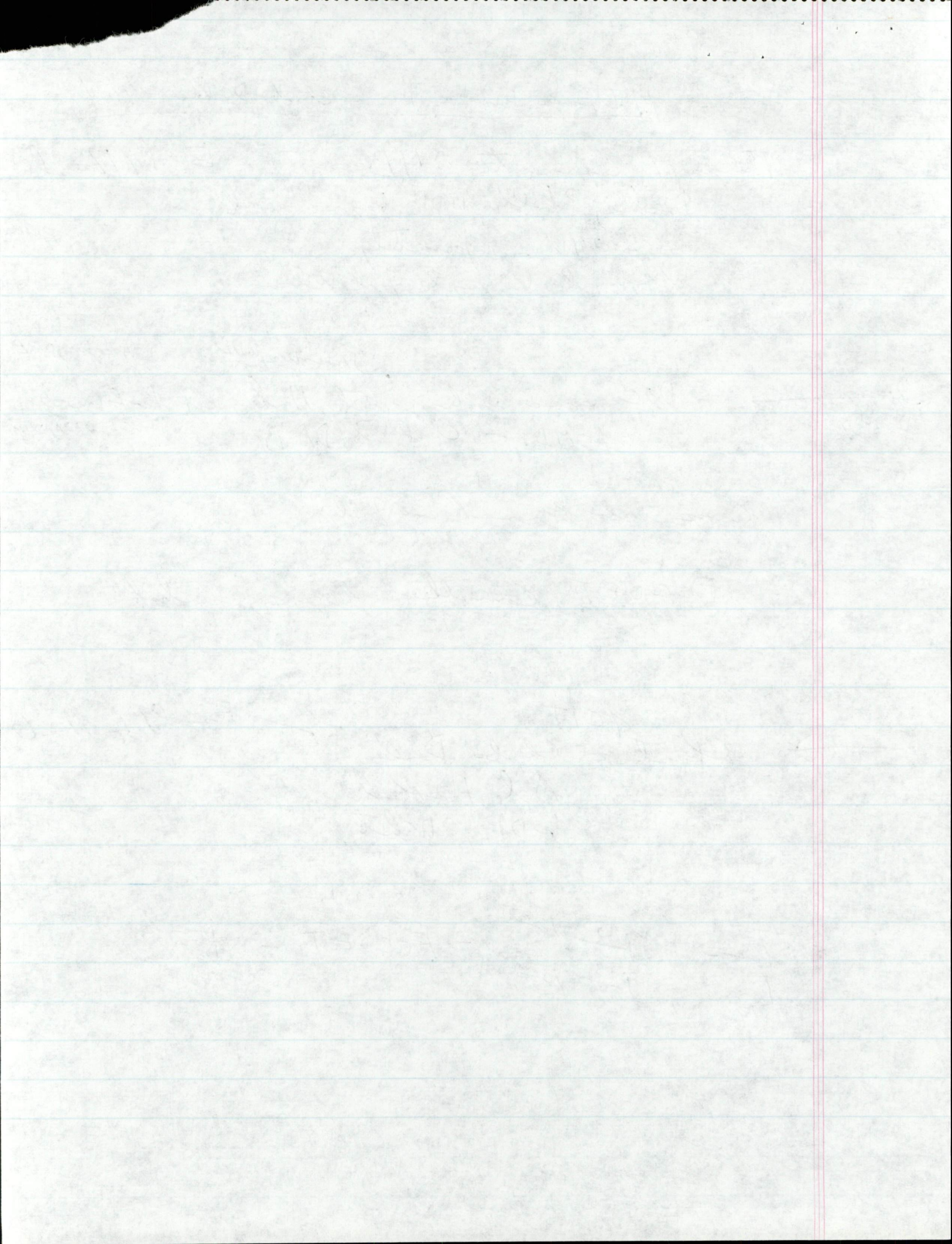
Decision
Dierke → DOC cross under Janet Hale, not Bob Gresh
of OMB. - Chel with DAB ^{Assoc Dir, OMB} ^{Assoc Dir, OMB}
NSF, NASA, STP

Crosscut to be owned in July

FCCSET Committee preparing submission

→ ACIT
Charter - Charles Dierke
Al Hubbard
WDP, White, Finished in March

Tue, 9¹⁵ - 10⁰⁰ - FCCSET - Bank
Fri, 9¹⁵ - 10⁰⁰ Dierke
WDP



U.S. Department of Commerce
Washington, D.C. 20230

U.S. DEPARTMENT OF COMMERCE



TECHNOLOGY ADMINISTRATION

THE ASSISTANT SECRETARY
FOR TECHNOLOGY POLICY
TECHNOLOGY ADMINISTRATION

FACSIMILE TRANSMITTAL SHEET

Number of Pages (including cover sheet): _____

Telephone Number: 202/377-1581

Fax Number: 202/377-4817

Room: HCHB 4814-C

Date: 2/28/91To: CHARLES DICKENSAgency/Company: OSTPFAX number: 395-1575 Telephone number: 395-5101From: JACK WILLIAMSDivision: TATelephone: 377-1403SPECIAL INSTRUCTIONS/MESSAGE: Pls get backto me ASAP. Many thanks.



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

Honorable D. Allan Bromley
Assistant to the President
for Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Room 360 - OE08
Washington, D.C. 20506

Dear Allan,

At the January 29 meeting of the FCCSET Committee on Industry and Technology (CIT)* presentations were made by the chairmen of our Individual Technology Steering Groups on Materials, Information and Communication Hardware, Advanced Manufacturing, Advanced Software, and Biotechnology. As a result of these, and the ensuing discussion, I am satisfied that enough progress has been made in establishing the feasibility of our producing "Inventories of Federal Technology Efforts in the Context of Critical Technologies" (hereafter "inventories") to warrant FCCSET approval for this CIT project. The purpose of this memorandum is to request your concurrence, and to suggest that sanctioning the five inventories be an item for the agenda at the next FCCSET meeting.

As indicated by their titles, the inventories' objective is to identify federally-funded R&D activities which relate to industry's critical technologies. Their usefulness reflects the fact that the federal R&D community possesses exceptional know-how and related resources useful to U.S. industry in its drive to develop and commercialize critical, enabling technologies. However, the public-private sector linkage is impacted by industry's not being sufficiently aware of federal resources and activities, and federal entities' not being adequately informed of industry needs. The inventories would help to make that linkage.

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- o identifying opportunities to develop closer cooperation with industry, and between the federal R&D programs themselves; and,
- o identifying opportunities within the federal R&D programs for redirecting existing R&D funds to increase the positive impact of federal efforts on U.S. industry's competitiveness.

*Note name change

Additional details on these objectives are provided in Enclosures "A" through "E," which are summaries of the five Individual Technology Steering Group reports made at our January 29 meeting.

I believe that there is one aspect of this that deserves further clarification. That concerns the similarities and differences between inventories (as defined for this project) and crosscuts (as defined by OMB). As we conceive them, the CIT inventories would be constructed and oriented primarily to facilitate private sector use of -- and evaluation of -- the information contained in them, and to give government a reasonably accurate indication of amounts spent, where, and for what.

On the other hand, as I understand them, "crosscuts" are more detailed programmatic budget reviews that address goals, objectives, implementation priorities, funding levels, and participating agencies for major topics (e.g. global change). Their orientation is intra-federal government (as opposed to private sector), their purpose is to optimize proposed levels of federal spending for the crosscutting topic, and they require OMB approval before being undertaken.

I have gone into this much detail because the terms "inventory" and "crosscut" are often used interchangeably, and I believe that confusion can exist as a result. In our case, the intention is to complete the five critical technology inventories as the first order of business.

With respect to materials, our Steering Group on Materials believes that sufficient work has been -- or is being -- accomplished to warrant moving quickly from the inventory to the crosscut stage, with the FY 1993 budget a target for crosscut completion. A similar situation may exist regarding biotechnology. The CIT is working closely with the Committee on Life Sciences and Health in constructing a biotechnology inventory.

I remain enthusiastic with respect to both the feasibility and utility of our inventories effort, and I hope that what I have provided here will constitute a sufficient basis for you and the full FCCSET to approve a continuation of the project.

Sincerely,

Robert M. White, Ph.D.

Enclosures

OPTAS/JWilliam Nelson/cgj/2-22-91

2

bc: RWhite
DWince-Smith
BNelson

Enclosure A

Summary of the Report by the Technology Steering Group on
Materials of the FCCSET Committee on Industry and Technology

Background: Materials technology, an enabling technology impacting most industrial sectors, is an essential ingredient of U.S. competitiveness. All major technical indicators reveal a significant deterioration in the U.S.'s once pre-eminent position in materials R&D, with trend-lines projecting few signs of a turn-around. The recent comprehensive study on materials science and engineering (MS&E) conducted by the National Research Council identified opportunities and needs while issuing a call for action by the government on a number of fronts. This inventory will be a positive step in meeting that call.

Proposed Action/Deliverables: COMAT (Committee on Materials), a CIT subcommittee, is the operational arm of the Materials Steering Group. It is responsible for: (1) coordination among federal agencies and parties at interest; (2) establishment of the inventory on federal materials R&D programs/budgets/establishments/focus; and (3) the development of a materials crosscut strategy and R&D plan. COMAT's work is well along and significant accomplishments have been achieved. The principal impact from this program's activities is expected to be on information/communications, transportation, aerospace, energy, health, environment, materials resources, and defense.

Participating Organizations: COMAT is comprised of representatives from 20 federal agencies and organizations with significant materials-related activities (e.g. DOE, DOD/DARPA/AF, NASA, NSF, DOI/BOM, DOC/NIST, and HHS/NIH). Liaison members include OSTP, OMB, CIT, and the National Critical Materials Council (NCMC).

Other: A taxonomy has been completed through which a given research project is characterized fully by identifying the appropriate modifier(s) in each of these four categories of materials classification by: (1) type; (2) primary functional property of interest; (3) character of materials research; and (4) materials development stage. An activity/milestone schedule has been developed also.

Nancy Holtzman OMB

Enclosure B

Summary of the Report by the Technology Steering Group on
Advanced Manufacturing of the FCCSET Committee on Industry and
Technology

Background: This initiative seeks to bring federal resources to bear in the following long-term goals for private sector advanced manufacturing enhancement: establishing a focused national strategy to achieve U.S. pre-eminence in developing, commercializing, and applying advanced manufacturing processes and technologies; facilitating early and strategic industry participation in the development of federal research agendas involving advanced manufacturing technologies; and stimulating a greater U.S. government generic research orientation toward long-term industry needs in the advanced manufacturing technologies. A definitional problem exists for this technology because of the pervasiveness of "manufacturing" in all forms of economic endeavor. The steering group is seeking to define "advanced manufacturing" in a manner conducive to adding value to this important inventory process. In that connection, previously produced definitions and/or taxonomies developed by OMB (in connection with a potential materials crosscut) and the National Critical Technologies Panel provide resources.

Proposed Action/Deliverables: This initiative will lead to an inventory of federal advanced manufacturing R&D activities. The topics to be covered have been identified, and, to ensure U.S. industry awareness of federal advanced manufacturing R&D, workshops may be conducted.

Participating Organizations: The analytic work for this CIT activity will be accomplished by an Advanced Manufacturing Working Group consisting of relatively senior personnel from each of the participating agencies, with guidance provided by the Advanced Manufacturing Steering Group. Member agencies include DOA, DOC, DOD/DR&E, DoED, DOE, DOI/BOM, DOL, DOT/FHA, NASA, HHS/NIH, NSF, OMB, and OSTP.

Other: A 1991 milestone schedule of actions has been completed.

It should be noted that there are several advanced manufacturing activities related to this CIT initiative under way. These are sponsored by the U.S. Government or other organizations, and -- collectively -- they place special coordination responsibilities on those involved with this effort.

Enclosure C

Summary of the Report by the Technology Steering Group on
Advanced Software of the FCCSET Committee on Industry and
Technology

Background: The advanced software technology area includes those aspects of computational methods and computer codes which are related directly to the creation, maturation and rapid transition of software capabilities within federal systems. The primary objective of this steering group is to identify a strategy for federally funded R&D activities in advanced software to complement private sector efforts to improve U.S. competitiveness in this sector.

Proposed Action/Deliverables: The steering group's ultimate goal is to produce a report that articulates specific government and industry R&D goals for advanced software, quantified where possible. An inventory and preliminary report will be confected by a working group, which will provide a description of each category listed in the advanced software taxonomy, plus major activity centers and federal budget breakouts. This interim report will be the basis for a workshop with industry, the results of which will be incorporated in the final report/inventory. The working group will coordinate its efforts with other related organizations (e.g. the DOD-sponsored Software Engineering Institute and the National Software Exchange, sponsored by the High Performance Computing and Communications Program).

Participating Organizations: The following federal organizations are represented in this effort: DOC/NIST, DOD/DARPA, DOE, DVA, NASA, and NSF.

Other: A draft, detailed taxonomy has been completed. The primary categories of focus include: software and system engineering; human-computer interaction; artificial intelligence; software for parallel systems; software for heterogeneous distributed systems; real-time software; fault tolerant software; and software for secure/trusted and high assurance systems.

Enclosure D

Summary of the Report by the Technology Steering Group on
Information and Communication Hardware (formerly Electronics) of
the FCCSET Committee on Industry and Technology

Background: The revolution in information technology has two technical components -- hardware and software. This project will examine the federal R&D efforts directed toward the advanced hardware aspect. The broad objective of the exercise is to assure domestic development of the information technology that the U.S. needs to be competitive in the 21st century.

Proposed Action/Deliverables: As part of the FY 1991 budget process, OMB conducted crosscut reviews of a portion of this field of technology -- semiconductors and advanced imaging technologies. This process was a good beginning in that it identified the major federal contributors. The actions required now are to update and to expand the budget information available, to identify the specific federal organizational elements possessing the relevant expertise, and to examine the relationship between the objectives of federal programs and industrial needs for staff and technical support.

Reports will be forthcoming summarizing the nature, extent, and objectives of federal R&D in the information and communication hardware field, assessing the strengths and weaknesses of the overall program, and suggesting actions to correct any identified weaknesses.

Participating Organizations: The Steering Group on Information and Communication Hardware has members from the following agencies: NASA, NSF, CIA, DOD/DARPA, DOSTate, DOI/BOM, VA, and OSTP.

Other: A taxonomy has been completed which divides the R&D needed to develop and support information and communication hardware into five general categories: semiconductors, digital imaging, storage technology, optoelectronics, and sensors. These are based on overlapping technology and together are critical for the information and communication systems of the future.

The most critical coordination issue concerns cooperation with the FCCSET Committee on High Performance Computing. Because the DOD is the largest single participant in the federal program in this area, some effort will have to be made to assure that the data collection is coordinated with ongoing DOD data collection activities.

Enclosure E

Summary of the Report by the Technology Steering Group on
Biotechnology of the FCCSET Committee on Industry and Technology

Background: Biotechnology refers to a related set of techniques which, when considered as a whole, will have a major impact on a broad variety of activities, including medicine, agriculture, energy, and the environment. Any technique that uses living organisms, or parts of organisms to make or modify products, to improve plants or animals, or to develop micro-organisms for specific uses, can be defined as biotechnology. The ability to manipulate the genetic constitution of living organisms probably will be comparable in impact to the use of the computer in information processing.

Specific areas covered here include: recombinant DNA research; mapping and sequencing of the human genome; systems for molecular modeling; human gene therapy; diagnostic tests; biotechnology products (e.g. vaccines, monoclonal antibodies); transgenic animals and plants; instrumentation development; and biotechnology training.

Proposed Action/Deliverables: The principal goals of this project are to define the nature and fiscal extent of federal support for those activities which fall under the definition of biotechnology, and to define important relationships with the commercial biotechnology effort. As a result of this exercise, it should be possible to make recommendations which will support the future viability of an essential science-based industry which has to compete in a demanding world market.

A final inventory/report will be prepared postulated on information gathered on such elements as: federal agency budgets relating to biotechnology programs; university-industry partnerships; federal agency-industry partnerships (e.g. CRADAS); federal agency-university partnerships; data on technology transfer and invention licensing.

Participating Organizations: Those entities involved include: all the relevant institutes, centers, and divisions of NIH, NSF, FDA, DOA, EPA, DOE, DOC, DOD, and the VA.

Other: Industry involvement will be accessed through the extensive use of existing industry advisory committees, such as the Industrial Biotechnology Association, and the Pharmaceutical Manufacturers Association.

Close coordination and cooperation will be maintained with the FCCSET Committee on Life Sciences and Health, which is conducting its own biotechnology review.

"CORRESPONDENCE TRACKING"

TYPE: Information

DOCUMENT NUMBER: 9160124

FROM: WILLIAMS, Jack: Dept. of Commerce

TO: CIT Members

DATE OF
CORRESPONDENCE: 03/04/91

SUBJECT: Letter to Allan Bromley/Tentative Agenda for March
19 CIT Meeting

ASSIGNED TO:

ACTION REQUIRED:

SENDER'S DUE DATE:

OSTP DUE DATE:

DATE COMPLETED:

5/18/91

COPIES TO:

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

DATE RECEIVED: 03/07/91

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

MAR 4 1991

MEMORANDUM FOR Members, FCCSET Committee on Industry
and Technology (CIT)

FROM: Robert M. White, Chairman *RMW*

SUBJECT: Letter to Allan Bromley/Tentative Agenda for
March 19 CIT Meeting

Attached for your information are copies of my recent letter to FCCSET Chairman D. Allan Bromley, discussing the purpose of -- and progress on -- our inventories project, and requesting FCCSET approval to proceed. Also, please note my comments on the differences and similarities between inventories and crosscuts, and the potential existing for crosscuts on materials and biotechnology.

I am also sending along a copy of the tentative agenda for our March 19 meeting. If you have any changes or wish to add agenda items, please contact Jack Williams (202-377-1403).

Attachments

Meeting of the FCCSET Committee on
Industry and Technology (CIT)
March 19, 1991
11:00 a.m. - 2:00 p.m.
U.S. Department of Commerce
Secretary's Dining Room 5843

Tentative Agenda

- o Welcome and Introductions Bob White
J.R. Thompson
- o Update on Federal Technology Management Policy Deborah L. Wince-Smith
- o High Performance Computing David Nelson
Energy
- o Technology Inventories Status Reports
 - Materials John White
 - Advanced Manufacturing J.R. Thompson
 - Advanced Software Ray Siewert
 - Information and John Lyons
 - Communication Hardware
 - Biotechnology Bill Raub
- o Update on Machine Translation Initiative Joe Clark
- o Discussion on CIT Charter re. Tech Transfer Maryanne Bach
OSTP
- o Closing Comments/Date for Next Meeting Bob White
J.R. Thompson



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MAR 1 1991

Honorable D. Allan Bromley
Assistant to the President
for Science and Technology
Executive Office of the President
Office of Science and Technology Policy
Room 360 - OEOB
Washington, D.C. 20506

Dear Allan,

At the January 29 meeting of the FCCSET Committee on Industry and Technology (CIT)* presentations were made by the chairmen of our Individual Technology Steering Groups on Materials, Information and Communication Hardware, Advanced Manufacturing, Advanced Software, and Biotechnology. As a result of these, and the ensuing discussion, I am satisfied that enough progress has been made in establishing the feasibility of our producing "Inventories of Federal Technology Efforts in the Context of Critical Technologies" (hereafter "inventories") to warrant FCCSET approval for this CIT project. The purpose of this memorandum is to request your concurrence, and to suggest that sanctioning the five inventories be an item for the agenda at the next FCCSET meeting.

As indicated by their titles, the inventories' objective is to identify federally-funded R&D activities which relate to industry's critical technologies. Their usefulness reflects the fact that the federal R&D community possesses exceptional know-how and related resources useful to U.S. industry in its drive to develop and commercialize critical, enabling technologies. However, the public-private sector linkage is impacted by industry's not being sufficiently aware of federal resources and activities, and federal entities' not being adequately informed of industry needs. The inventories would help to make that linkage.

Following the development of the inventories and the expression of industry views on them, the CIT would analyze the inventories and industry views for the purpose of:

- o identifying opportunities to develop closer cooperation with industry, and between the federal R&D programs themselves; and,
- o identifying opportunities within the federal R&D programs for redirecting existing R&D funds to increase the positive impact of federal efforts on U.S. industry's competitiveness.

*Note name change

Additional details on these objectives are provided in Enclosures "A" through "E," which are summaries of the five Individual Technology Steering Group reports made at our January 29 meeting.

I believe that there is one aspect of this that deserves further clarification. That concerns the similarities and differences between inventories (as defined for this project) and crosscuts (as defined by OMB). As we conceive them, the CIT inventories would be constructed and oriented primarily to facilitate private sector use of -- and evaluation of -- the information contained in them, and to give government a reasonably accurate indication of amounts spent, where, and for what.

On the other hand, as I understand them, "crosscuts" are more detailed programmatic budget reviews that address goals, objectives, implementation priorities, funding levels, and participating agencies for major topics (e.g. global change). Their orientation is intra-federal government (as opposed to private sector), their purpose is to optimize proposed levels of federal spending for the crosscutting topic, and they require OMB approval before being undertaken.

I have gone into this much detail because the terms "inventory" and "crosscut" are often used interchangeably, and I believe that confusion can exist as a result. In our case, the intention is to complete the five critical technology inventories as the first order of business.

With respect to materials, our Steering Group on Materials believes that sufficient work has been -- or is being -- accomplished to warrant moving quickly from the inventory to the crosscut stage, with the FY 1993 budget a target for crosscut completion. A similar situation may exist regarding biotechnology. The CIT is working closely with the Committee on Life Sciences and Health in constructing a biotechnology inventory.

I remain enthusiastic with respect to both the feasibility and utility of our inventories effort, and I hope that what I have provided here will constitute a sufficient basis for you and the full FCCSET to approve a continuation of the project.

Sincerely,



Robert M. White, Ph.D.

Enclosures

Enclosure A

Summary of the Report by the Technology Steering Group on
Materials of the FCCSET Committee on Industry and Technology

Background: Materials technology, an enabling technology impacting most industrial sectors, is an essential ingredient of U.S. competitiveness. All major technical indicators reveal a significant deterioration in the U.S.'s once pre-eminent position in materials R&D, with trend-lines projecting few signs of a turn-around. The recent comprehensive study on materials science and engineering (MS&E) conducted by the National Research Council identified opportunities and needs while issuing a call for action by the government on a number of fronts. This inventory will be a positive step in meeting that call.

Proposed Action/Deliverables: COMAT (Committee on Materials), a CIT subcommittee, is the operational arm of the Materials Steering Group. It is responsible for: (1) coordination among federal agencies and parties at interest; (2) establishment of the inventory on federal materials R&D programs/budgets/establishments/focus; and (3) the development of a materials crosscut strategy and R&D plan. COMAT's work is well along and significant accomplishments have been achieved. The principal impact from this program's activities is expected to be on information/communications, transportation, aerospace, energy, health, environment, materials resources, and defense.

Participating Organizations: COMAT is comprised of representatives from 20 federal agencies and organizations with significant materials-related activities (e.g. DOE, DOD/DARPA/AF, NASA, NSF, DOI/BOM, DOC/NIST, and HHS/NIH). Liaison members include OSTP, OMB, CIT, and the National Critical Materials Council (NCMC).

Other: A taxonomy has been completed through which a given research project is characterized fully by identifying the appropriate modifier(s) in each of these four categories of materials classification by: (1) type; (2) primary functional property of interest; (3) character of materials research; and (4) materials development stage. An activity/milestone schedule has been developed also.

Enclosure B

Summary of the Report by the Technology Steering Group on
Advanced Manufacturing of the FCCSET Committee on Industry and
Technology

Background: This initiative seeks to bring federal resources to bear in the following long-term goals for private sector advanced manufacturing enhancement: establishing a focused national strategy to achieve U.S. pre-eminence in developing, commercializing, and applying advanced manufacturing processes and technologies; facilitating early and strategic industry participation in the development of federal research agendas involving advanced manufacturing technologies; and stimulating a greater U.S. government generic research orientation toward long-term industry needs in the advanced manufacturing technologies. A definitional problem exists for this technology because of the pervasiveness of "manufacturing" in all forms of economic endeavor. The steering group is seeking to define "advanced manufacturing" in a manner conducive to adding value to this important inventory process. In that connection, previously produced definitions and/or taxonomies developed by OMB (in connection with a potential materials crosscut) and the National Critical Technologies Panel provide resources.

Proposed Action/Deliverables: This initiative will lead to an inventory of federal advanced manufacturing R&D activities. The topics to be covered have been identified, and, to ensure U.S. industry awareness of federal advanced manufacturing R&D, workshops may be conducted.

Participating Organizations: The analytic work for this CIT activity will be accomplished by an Advanced Manufacturing Working Group consisting of relatively senior personnel from each of the participating agencies, with guidance provided by the Advanced Manufacturing Steering Group. Member agencies include DOA, DOC, DOD/DR&E, DoED, DOE, DOI/BOM, DOL, DOT/FHA, NASA, HHS/NIH, NSF, OMB, and OSTP.

Other: A 1991 milestone schedule of actions has been completed.

It should be noted that there are several advanced manufacturing activities related to this CIT initiative under way. These are sponsored by the U.S. Government or other organizations, and -- collectively -- they place special coordination responsibilities on those involved with this effort.

Enclosure C

Summary of the Report by the Technology Steering Group on
Advanced Software of the FCCSET Committee on Industry and
Technology

Background: The advanced software technology area includes those aspects of computational methods and computer codes which are related directly to the creation, maturation and rapid transition of software capabilities within federal systems. The primary objective of this steering group is to identify a strategy for federally funded R&D activities in advanced software to complement private sector efforts to improve U.S. competitiveness in this sector.

Proposed Action/Deliverables: The steering group's ultimate goal is to produce a report that articulates specific government and industry R&D goals for advanced software, quantified where possible. An inventory and preliminary report will be confected by a working group, which will provide a description of each category listed in the advanced software taxonomy, plus major activity centers and federal budget breakouts. This interim report will be the basis for a workshop with industry, the results of which will be incorporated in the final report/inventory. The working group will coordinate its efforts with other related organizations (e.g. the DOD-sponsored Software Engineering Institute and the National Software Exchange, sponsored by the High Performance Computing and Communications Program).

Participating Organizations: The following federal organizations are represented in this effort: DOC/NIST, DOD/DARPA, DOE, DVA, NASA, and NSF.

Other: A draft, detailed taxonomy has been completed. The primary categories of focus include: software and system engineering; human-computer interaction; artificial intelligence; software for parallel systems; software for heterogeneous distributed systems; real-time software; fault tolerant software; and software for secure/trusted and high assurance systems.

Enclosure D

Summary of the Report by the Technology Steering Group on Information and Communication Hardware (formerly Electronics) of the FCCSET Committee on Industry and Technology

Background: The revolution in information technology has two technical components -- hardware and software. This project will examine the federal R&D efforts directed toward the advanced hardware aspect. The broad objective of the exercise is to assure domestic development of the information technology that the U.S. needs to be competitive in the 21st century.

Proposed Action/Deliverables: As part of the FY 1991 budget process, OMB conducted crosscut reviews of a portion of this field of technology -- semiconductors and advanced imaging technologies. This process was a good beginning in that it identified the major federal contributors. The actions required now are to update and to expand the budget information available, to identify the specific federal organizational elements possessing the relevant expertise, and to examine the relationship between the objectives of federal programs and industrial needs for staff and technical support.

Reports will be forthcoming summarizing the nature, extent, and objectives of federal R&D in the information and communication hardware field, assessing the strengths and weaknesses of the overall program, and suggesting actions to correct any identified weaknesses.

Participating Organizations: The Steering Group on Information and Communication Hardware has members from the following agencies: NASA, NSF, CIA, DOD/DARPA, DOSTate, DOI/BOM, VA, and OSTP.

Other: A taxonomy has been completed which divides the R&D needed to develop and support information and communication hardware into five general categories: semiconductors, digital imaging, storage technology, optoelectronics, and sensors. These are based on overlapping technology and together are critical for the information and communication systems of the future.

The most critical coordination issue concerns cooperation with the FCCSET Committee on High Performance Computing. Because the DOD is the largest single participant in the federal program in this area, some effort will have to be made to assure that the data collection is coordinated with ongoing DOD data collection activities.

Summary of the Report by the Technology Steering Group on
Biotechnology of the FCCSET Committee on Industry and Technology

Background: Biotechnology refers to a related set of techniques which, when considered as a whole, will have a major impact on a broad variety of activities, including medicine, agriculture, energy, and the environment. Any technique that uses living organisms, or parts of organisms to make or modify products, to improve plants or animals, or to develop micro-organisms for specific uses, can be defined as biotechnology. The ability to manipulate the genetic constitution of living organisms probably will be comparable in impact to the use of the computer in information processing.

Specific areas covered here include: recombinant DNA research; mapping and sequencing of the human genome; systems for molecular modeling; human gene therapy; diagnostic tests; biotechnology products (e.g. vaccines, monoclonal antibodies); transgenic animals and plants; instrumentation development; and biotechnology training.

Proposed Action/Deliverables: The principal goals of this project are to define the nature and fiscal extent of federal support for those activities which fall under the definition of biotechnology, and to define important relationships with the commercial biotechnology effort. As a result of this exercise, it should be possible to make recommendations which will support the future viability of an essential science-based industry which has to compete in a demanding world market.

A final inventory/report will be prepared postulated on information gathered on such elements as: federal agency budgets relating to biotechnology programs; university-industry partnerships; federal agency-industry partnerships (e.g. CRADAS); federal agency-university partnerships; data on technology transfer and invention licensing.

Participating Organizations: Those entities involved include: all the relevant institutes, centers, and divisions of NIH, NSF, FDA, DOA, EPA, DOE, DOC, DOD, and the VA.

Other: Industry involvement will be accessed through the extensive use of existing industry advisory committees, such as the Industrial Biotechnology Association, and the Pharmaceutical Manufacturers Association.

Close coordination and cooperation will be maintained with the FCCSET Committee on Life Sciences and Health, which is conducting its own biotechnology review.