

No. 19837

**UNITED STATES OF AMERICA
and
BRAZIL**

Memorandum of Understanding relating to scientific and technical assistance. Signed at Gaithersburg and São Paulo on 6 September 1974

Agreement amending the above-mentioned Memorandum of Understanding. Signed at Gaithersburg on 13 June 1975 and at São Paulo on 4 September 1975

Agreement amending and extending the above-mentioned Memorandum of Understanding of 6 September 1974, as amended. Signed at Gaithersburg on 2 September 1976 and at São Paulo on 5 September 1976

Agreement extending the above-mentioned Memorandum of Understanding of 6 September 1974, as amended and extended. Signed at São Paulo on 2 March 1978 and at Gaithersburg on 19 April 1978

Authentic texts: English and Portuguese.

Registered by the United States of America on 10 June 1981.

MEMORANDUM OF UNDERSTANDING¹ BETWEEN THE STATE OF SÃO PAULO REPRESENTED BY THE SÃO PAULO STATE COUNCIL OF TECHNOLOGY (CET) AND THE NATIONAL BUREAU OF STANDARDS (NBS)

The Government of the State of São Paulo (Brazil) has developed a plan for the acceleration of industrial growth in this region, called the São Paulo Project in Science and Technology.

The broad purposes of the São Paulo Project in Science and Technology are:

1. To promote the application of basic and applied scientific research and technology to the problems of Brazilian industry and agriculture;
2. To develop the capabilities in industry, government, universities and research institutes for providing an increased proportion of this research and technology from Brazilian sources; and
3. To focus efforts for increasing capabilities in science and technology most closely on those industrial and agricultural sectors that hold promise for rapidly improving Brazil's economic growth, largely through improving the capacities of firms to compete successfully in world markets.

The Government of the State of São Paulo is providing firms with financial incentives to invest in research and development projects of their own and to contract for research in São Paulo institutions, principally research institutes and universities. By these contracts, the research institutes and universities may be expected to increase their capabilities to serve the firms and thereby contribute more effectively to the economic growth of the State and the Nation.

This strategy is being implemented through a policy and decision-making structure, the Conselho Estadual de Tecnologia (CET), which is applying the financial incentives and mobilizing supporting resources of technical assistance and material procurement. U.S. technical assistance and training services are being provided in support of the program by the AID Loan No. 512-L-088.

This Memorandum of Understanding provides the basis under which the National Bureau of Standards (NBS) agrees to furnish scientific and technical advice and assistance on a reimbursable basis to CET in support of a collaborative program to enhance the scientific and technological capabilities of Brazil.

The objectives of the program will be to create and improve capabilities at the Instituto de Pesquisas Tecnológicas (IPT), which provides consultation services to the manufacturing industry and which will make a direct contribution to measurement systems and product quality with possible benefit throughout Brazil.

The program will include:

1. Training at NBS or at other governmental and private institutions;
2. Supply to IPT of research materials, physical standards, or instruments for precise measurement or quality control;
3. Participation of IPT in NBS programs;

¹ Came into force on 6 September 1974 by signature, in accordance with paragraph G.

4. Technical assistance, including consultation assignments of NBS staff to IPT;
5. NBS services normally given on a reimbursable basis.

The program will be developed in project areas (see A-G below) through the identification of a series of specific tasks in these areas and allow for addition or deletion of specific tasks. Each task will give as an end product a new or enhanced capability of IPT to perform a certain service to the Brazilian industrial community and/or government.

Each task plan will include: purpose of the task, names of the monitors at NBS and at IPT, assumptions for achieving purpose, inputs by NBS and by IPT and dates thereof, expected milestones towards completion, reports and dates thereof, output indicators, budget, and expenditures schedule. Each task must be approved in advance by the Coordinators for both NBS and CET. At the conclusion of a task, the monitors will prepare a final report which must be approved by the Coordinators for both NBS and CET.

Payment is to be made only for completed work on NBS requests for reimbursement by voucher against AID Loan 512-L-088 after approval by CET that the work covered by the voucher has been performed. The Council shall pay actual costs in cruzeiros of transportation of travelers in Brazil in connection with duties directly referable to the contract including travel allowances at rates prescribed by the U.S. Federal Government Travel Regulations as from time to time amended. The Council will provide a per diem allowance (in lieu of quarters allowance) to short-term staff members at rates prescribed by the U.S. Federal Government Travel Regulations as from time to time amended, during the time such short-term staff members spend at posts of duty in Brazil under this agreement. In authorizing such per diem rates, the Council shall consider the particular circumstances involved with respect to each such short-term staff member, including the extent to which meals and/or lodging may be made available without charge or at nominal cost by a Brazilian agency and similar factors. Where travel or subsistence expenses in countries other than Brazil are involved for NBS or IPT staff or consultants, U.S. Federal Travel Regulations shall be applied.

Reimbursement shall be for all program costs, including such travel or subsistence expenses, salary, costs of planning, other administrative costs and overhead expenses as routinely recorded in the NBS accounting system up to the limit of the attached budget. In case this limit has to be exceeded an amended budget may be submitted by NBS for approval by CET. The Council will establish an irrevocable letter of credit in U.S. dollars at the New York Office of the Banco do Brasil, acceptable to and in the name of the NBS, which will be in the same amount as the face value of this contract, and which will be amended if the face value of the contract is changed. NBS may, upon approval by CET, transfer amounts between the several columns and rows of the budget, provided that the total budget figure is not exceeded.

The agreed task shall fit into one of the NBS/IPT project areas (as further defined in the following paragraphs A-G) within which the needs of industry will be especially considered:

(A) *Chemical Analysis*

1. Identification and evaluation of possible areas of application of x-ray fluorescence, electron problem microanalysis, and related instrumental analysis techniques to industry, environmental problems, and applied scientific research.

2. Training and technical assistance to foster the correct use of Standard Reference Materials in Brazil and to develop the capability at IPT for producing, certifying and distributing reliable working standards.
 3. Transmittal of selected published documents and literature references of potential interest to IPT in above-mentioned areas.
 4. Discussion and evaluation of plans for applied research, training, and services in the above mentioned areas.
- (B) *Collaborative Reference Programs (CRP) (other than those covered under C below)*
1. Participation of IPT in NBS's CRP's: such as rubber, paper, and color and appearance.
 2. Training of IPT staff members in the data analysis performed in CRPs (also to be used on the CCRL reference program, par. C below).
 3. Training of IPT staff members in the planning and implementation aspects of these CRPs.
 4. Training of IPT staff members (possibly the same individuals mentioned in 3) in specific testing techniques, possibly at selected laboratories participating in the CRP and at laboratories specialized in other products such as lumber, textiles, metals, plastics and ceramics.
 5. Technical assistance for the initiation of CRPs in Brazil in product areas such as rubber, paper, and color and appearance.
- (C) *Cement and Concrete Reference Laboratory (CCRL)*
1. Participation of IPT on CRPs for cement, bituminous materials, soil, aggregates, and concrete.
 2. Training of IPT staff members in the planning and implementation aspects of these programs.
 3. Training of IPT staff members as laboratory inspectors.
 4. Technical assistance for the initiation of CRPs and inspection programs in Brazil for the product areas listed in paragraph 1 above.
- (D) *Measurements Services*
1. Assisting IPT in acquiring and/or maintaining "stand alone" capability in dimensional, mechanical, optical, electrical, heat and allied areas of measurement.
 2. Supporting the transfer of measurement capability to practical measurement.
 3. Training of IPT staff members in selected areas of measurement where the needs of industry are not being met.
- (E) *Building Research*
1. Training of IPT staff members in performance testing and development of test methods, with emphasis on aspects of durability and safety, in the NBS Center for Building Technology and the Fire Technology Program.
 2. Assisting in the transfer of the present state of the art in the U.S. and specifically at NBS in building technology, specifically related to structural engineering and building standards and codes, and housing technology.

(F) *Information Activities*

1. Provision of selected U.S. literature on standardization and measurement science and technology.
2. Training in utilizing available services at NBS in information systems for science and technology and the NBS reference collection of standards.
3. The use and dissemination of critically evaluated technical data.
4. Training of IPT staff members in planning and development of techniques, procedures and mechanisms for resolution of obstacles and for the establishment of incentives for computer applications for information systems.

(G) *Laboratory Accreditation*

1. Technical training assistance needed to implement programs of laboratory examination and evaluation.
2. Consultative assistance concerning a system of examination, evaluation and monitoring of testing laboratories, to be applied in furtherance of other elements of this agreement.

When training necessary for the accomplishment of any agreed task is not available at NBS, this training may be accomplished by contracting with other public or private institutions or organizations defined in the task plan approved by NBS and CET. The program may involve additional training in areas mutually agreed by NBS and CET. All contracts with non-governmental institutions or organizations shall contain provisions required by law or U.S. Government policy and shall be approved by CET.

Both the CET and NBS will appoint program coordinators with responsibility for effectively carrying out all phases of this program. The greatest possible flexibility in the administration shall be accorded to the coordinators coupled with full responsibility and accountability. Administrative status reports will be prepared by the coordinators on a quarterly basis. These reports and the incorporation of new tasks must be approved by NBS and CET. Twice a year, a substantive evaluation report with full fiscal data will be presented by the coordinators for the review and evaluation of the collaborative program by NBS and CET. Review and evaluation procedures will include a joint meeting among officials of both CET and NBS to consider reports presented by the coordinators. Preliminary internal review procedures will be established by each organization in accordance with its own needs.

This Understanding shall be in effect for two years from that date of signing. It may be terminated by either side, immediately after written notification, but without affecting previously agreed and current tasks. Tasks in specific project areas may be added or withdrawn by mutual consent. The Understanding may be amended or extended for periods of two years by a simple exchange of letters and establishing mutual consent. Mutual consent for additional tasks or an extension of the period of the Understanding will require agreement for any additional funding that may be necessary.

Approved and accepted for
São Paulo State Council of Technology:

By: [Signed — Signé]¹

Title: Secretary of Economy and Planning

Date: September 6, 1974

Witness:

[Illegible]

Approved and accepted for
the National Bureau of Standards:

By: [Signed — Signé]²

Title: Director

Date: September 6, 1974

Witness:

[Signed]

CHARLES B. PHUCAS
Notary Public
Montgomery Co., MD

ESTIMATED BUDGET — TWO YEARS

	NBS Staff Salaries US\$*	Contracting by NBS US\$	NBS Staff and Consultants US\$	Other Direct Costs US\$	Equipment and Supplies US\$	Brazilian Staff Travel and Per Diem for Training	Total US\$
(a) Chemical Analysis .	92,400	9,200	4,250	2,700	15,000	33,400	156,950
(b) Collaborative Reference Programs	30,200	3,000	2,550	2,700	4,000	12,150	54,600
(c) Cement and Concrete Ref. Lab.	85,450	8,500	3,400	5,950	2,000	10,700	116,000
(d) Measurement Services	93,950	9,400	1,700	2,150	2,000	17,100	126,300
(e) Building Research including Fire Technology	77,300	7,800	7,650	9,750	4,000	36,900	143,400
(f) Information	31,500	3,150	3,400	3,250	2,000	14,000	57,300
(g) Laboratory Accreditation	12,850	1,300	1,700	2,150	1,000	5,350	24,350
Program Management .	24,000	—	3,400	3,000	1,000	19,700	51,100
TOTAL US\$	447,650	42,350	28,050	31,650	31,000	149,300	730,000

(*) Including indirect costs and fringe benefits.

¹ Signed by H. Zaccarelli — Signé par H. Zaccarelli.

² Signed by Richard W. Roberts — Signé par Richard W. Roberts.

AMENDMENT¹ — STATE OF SÃO PAULO REPRESENTED BY THE
STATE COUNCIL OF TECHNOLOGY (C.E.T.) [AND] NATIONAL
BUREAU OF STANDARDS (N.B.S.) MEMORANDUM OF UNDER-
STANDING²

Page 3, 1st full paragraph, delete 3rd sentence of paragraph and substitute following:

“To guarantee such reimbursements the Council hereby irrevocably assigns sufficient funds from the Agency for International Development Loan 512-L-088 to cover any allowable and properly documented costs for direct payment to the N.B.S. by U.S.A.I.D./Brasil. C.E.T. will request U.S.A.I.D./Brasil to establish a Direct Reimbursement Authorization under the Loan in the amount of US\$ 730,000.00, the same amount as the face value of this contract which will be amended if the face value of the contract is changed”.

Page 6, last paragraph, line 2: “the” in place of “that”; line 7: delete “and”.

Approved and accepted for State of
São Paulo (represented by the State
Council of Technology):

By: [Signed — Signé]³

Title: Secretary of Culture, Science
and Technology

Date: 4 de setembro de 1975⁴

Witness:

[Illegible]

Approved and accepted
for the National Bureau of Standards:

By: [Signed — Signé]⁴

Title: Director

Date: June 13, 1975

Witness:

[Signed]

CHARLES B. PHUCAS
Notary Public
Montgomery Co., MD

¹ Came into force on 4 September 1975 by signature.

² See p. 166 of this volume.

³ Signed by J. Mindlin — Signé par J. Mindlin.

⁴ Signed by Richard W. Roberts — Signé par Richard W. Roberts.

⁵ 4 September 1975.

AMENDMENT¹ No. 2 TO THE MEMORANDUM OF UNDERSTANDING BETWEEN THE STATE OF SÃO PAULO REPRESENTED BY THE SÃO PAULO STATE COUNCIL OF TECHNOLOGY (C.E.T.) AND THE NATIONAL BUREAU OF STANDARDS (N.B.S.),² RESULTANT OF LOAN AGREEMENT No. 512-L-088, SIGNED BETWEEN THE GOVERNMENT OF THE STATE OF SÃO PAULO AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA THROUGH ITS AGENCY FOR INTERNATIONAL DEVELOPMENT (A.I.D.)

The parties hereto mutually agree with the following statements with the purpose of rectifying, ratifying and amending the Memorandum of Understanding signed in September 6, 1974.²

1. Considering that the Resolution of June 16, 1976, of the Secretary of Culture, Science and Technology, placed the execution of Loan Agreement No. 512-L-088, established between the Government of the State of São Paulo and the Government of the United States of America, directly under the Secretary of Culture, Science and Technology, has the present Memorandum of Understanding its title changed from "Memorandum of Understanding between the State of São Paulo represented by the São Paulo State Council of Technology (CET) and the National Bureau of Standards (NBS)" to "Memorandum of Understanding between the Government of the State of São Paulo represented by the Secretariat of Culture, Science and Technology (S.C.C.T.) and the National Bureau of Standards (N.B.S)".

And in all other items which refer to the São Paulo State Council of Technology, *Conselho Estadual de Tecnologia*, and *C.E.T.*, substitute by "Secretariat of Culture, Science and Technology (S.C.C.T.)".

2. On page 6, below item 2, "G", insert the following items:

"(H) *Metallurgy*

1. Training and technical assistance to foster the correct use of techniques such as X-ray, scanning electron microscopy, transmission electron microscopy to the solution of industrial metallurgical problems and scientific research in the field of metallic materials and processes.
2. Training and technical assistance to establish in IPT a laboratory for the study of electrical deposition and analysis of the quality of electrically deposited layers.
3. Training of IPT staff members in advanced techniques for failure analysis and prevention.

¹ Came into force on 5 September 1976 by signature.

² See pp. 166 and 171 of this volume.

“(J) *Fire Technology*

1. Training of IPT staff member[s] in current testing techniques for the evaluation of the fire resistance of materials, [e]specially building materials and those used in and around the home.
2. Technical assistance for the design and construction of a fire testing and prevention laboratory in IPT.

“(K) *Acoustics and Noise*

1. Training of IPT staff members in techniques for the calibration of microphones and electrical acoustics instruments in the development of related standards.
2. Technical assistance to IPT in problems such as evaluation of acoustic comfort in buildings, control of industrial noise.
3. Technical assistance for the improvement of the facilities of the acoustics and noise laboratory in IPT.”

3. On page 2, fourth paragraph, first line, and on page 3, second full paragraph, second line, instead of “G” one should read “K”, due to item 2 above.

4. The term of the present Memorandum of Understanding and its Amendment No. 1 is extended up to August 31, 1978, due to the inclusion of new specific areas, defined by “H”, “J” and “K”, as per item 2 of this Amendment.

Besides these modifications herein introduced, the contracting parties, however, duly ratify the other terms, provisions and conditions established [in] the Memorandum of Understanding, and duly sign it in the presence of witnesses.

By: National Bureau of Standards—NBS

Signature: [Signed]

Typed name: E. AMBLER

Date: September 2, 1976

Title: Director

By: Government of the State of São Paulo

Signature: [Signed]

Typed name: MAX FEFFER

Date:*

Title: Secretary of Culture, Science and Technology

*Witness:

[Signed]

PEGGY A. WEBB

[Signed]

Typed name: Mrs. ANNA M. CONDON

Notary Public

My Commission expires July 1, 1978

Witness:

[Signed]

Typed name: EDWARD L. BRADY

* Signature affixed September 5, 1976.

	<i>NBS Staff Salaries US\$</i>	<i>Contracting by NBS US\$</i>	<i>NBS Staff and Consultants Travel US\$</i>	<i>Other Direct Costs US\$</i>	<i>Technical Instruments and Supplies US\$</i>	<i>Brazilian Staff Travel and Per Diem for Training</i>	<i>Total US\$</i>
(a) Chemical Analysis..	48,650	1,950	1,950	970	5,400	38,920	97,840
(b) Collaborative Reference Programs	24,330	970	970	500	2,350	19,460	48,580
(c) Cement and Concrete Ref. Lab.	19,450	780	780	380	1,950	15,560	38,900
(d) Measurement Services	43,800	1,750	1,750	870	5,400	35,050	88,620
(e) Building Research .	48,650	2,000	2,000	970	7,900	38,920	100,440
(f) Information	4,900	200	200	100	480	3,920	9,800
(g) Laboratory Accreditation	4,900	200	200	100	480	3,920	9,800
(h) Metallurgy	19,450	780	780	380	1,950	15,560	38,900
(j) Fire Technology . . .	48,650	1,950	1,950	970	14,000	38,920	106,440
(k) Acoustics and Noise.	48,650	1,950	1,950	970	4,500	38,920	96,940
Program Management .	48,450	1,950	1,950	970	1,500	38,920	93,740
	359,880	14,480	14,480	7,180	45,910	288,070	730,000

TERM OF AMENDMENT¹ EXTENDING THE MEMORANDUM OF UNDERSTANDING OF THE STANDARDIZATION, QUALITY CONTROL AND CERTIFICATION OF INDUSTRIAL PRODUCTS PROGRAM, AND ITS RESPECTIVE AMENDMENTS 1 AND 2,² ESTABLISHED AND SIGNED BETWEEN THE STATE OF SÃO PAULO, THROUGH ITS SECRETARIAT OF CULTURE, SCIENCE AND TECHNOLOGY, REPRESENTED BY ITS SECRETARY, DR. MAX FEFFER, AND THE NATIONAL BUREAU OF STANDARDS, REPRESENTED BY DR. E. AMBLER. THIS MEMORANDUM OF UNDERSTANDING RESULTS FROM LOAN AGREEMENT 512/L/088 SIGNED BETWEEN THE STATE OF SÃO PAULO AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA THROUGH ITS AGENCY FOR INTERNATIONAL DEVELOPMENT (AID)

The parties hereto mutually agree with the following:

I. The term of the present Memorandum and its respective Amendments 1 and 2,² is extended up to October 31, 1978, due to delays in the training programs provoked by difficulties with the exemption of the compulsory deposit required for international travelling. The same may, however, be terminated according to provisions described in the Memorandum.

II. Besides the modifications herein introduced, the contracting parties, however, duly ratify the other terms, provisions and conditions established in the Memorandum, signed in September 6, 1974, and its respective Amendments 1 and 2, and of which this Term is made part of.

III. The present Term of Amendment will come into force on the date of its signature by the State of São Paulo.³

¹ Came into force on 19 April 1978 by signature, in accordance with paragraph III.

² See pp. 166, 171 and 172 of this volume.

³ In spite of statement that Agreement will enter into force on date of signature by São Paulo, the United States considers Agreement entered into force April 19, 1978, upon signature by representative of National Bureau of Standards. (Information supplied by the Government of the United States.)

National Bureau of Standards:

State of São Paulo
Secretariat of Culture,
Science and Technology:

Signature: [Signed]
Typed name: E. AMBLER
Title: Director

Signature: [Signed]
Typed name: MAX FEFFER
Title: Secretary of Cul-
ture, Science and
Technology

Date of signature: April 19, 1978*Date of signature:* March 2, 1978*Witness:**Witness:*

[Signed]

PEGGY A. WEBB

Date: April 19, 1978*Date:*

[Signed]

Mrs. ANNA M. CONDON

Notary Public

My Commission expires July 1, 1978