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AN EVALUATION OF THE NEEDS AND REQUIREMENTS FOR THE
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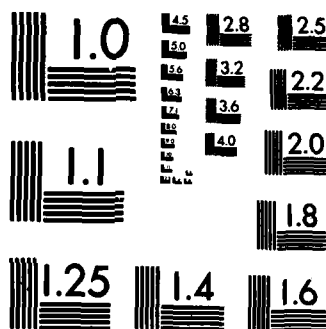
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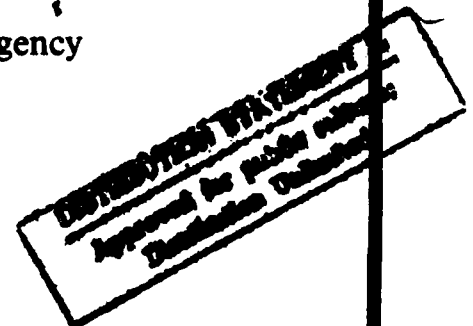
IDA PAPER P-1681

AN EVALUATION OF THE NEEDS AND
REQUIREMENTS FOR THE ESTABLISHMENT OF
AN Ada® LIAISON ORGANIZATION

Norman D. Jorstad
John A. N. Lee
Samuel J. Lomonaco, Jr.

September 1982

Prepared for
Defense Advanced Research Projects Agency



INSTITUTE FOR DEFENSE ANALYSES
SCIENCE AND TECHNOLOGY DIVISION

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AN Ada® LIAISON ORGANIZATION**

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September 1982



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SCIENCE AND TECHNOLOGY DIVISION
1801 N. Beauregard Street
Alexandria, Virginia 22311**

**Contract MDA 903 79 C 0202
DARPA Assignment A-69**

PREFACE

This report was prepared for the Ada® Joint Program Office (AJPO) in response to Project Assignment No. A-69 from the Defense Advanced Research Projects Agency (DARPA). Subsequent to the initiation of this project, cognizance of the AJPO was transferred to the Office of the Deputy Under Secretary of Defense for Research and Advanced Technology.

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ABSTRACT

This report examines the needs of the Ada® Joint Program Office (AJPO) in the establishment of an organization [to be called the Ada Liaison Organization (ALO)] for the "sustenance" of the Ada language following the acceptance of the language as a National standard and during the early stages of implementation, expansion of applicability, and development of supporting systems.

It is proposed, in view of the number of overlapping needs of various responsibilities, that such an organization be formed as a single unit so as to maintain coordination, but with distinct subentities interacting with the differing internal and external agencies which have cognizance of some phase of the Ada activity. The ultimate responsibility for the continued support and development of Ada remains with AJPO. The Ada Liaison Organization will provide recommendations for the administration of the Military Standard, the American National Standard, and other related standards or specifications. The proposed charter of the ALO is presented in the Appendix.

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CONTENTS

Preface	ii
Abstract	iii
I. BACKGROUND	1
II. RATIONALE	4
III. TASKS TO BE UNDERTAKEN AND SUBCOMMITTEES PROPOSED	7
IV. SUMMARY	11
APPENDIX--Ada Liaison Organization Charter	A-1

I. BACKGROUND

From the early days of the development of a proposal for a new programming language for embedded systems, it has been clear that the development of a language must be followed by a period in which the language is absorbed into the computer community. During this second period, the language is "out of the control" of the original language developers unless some actions are taken to protect it. In the past, such control has been exercised by "language control boards" established by the language originator who then imposed discipline on the implementation process. This worked exceedingly well (for example) in the case of PL/1 because there was only one major implementation activity. A parallel effort by a "competitive" vendor would have had little effect on the ultimate direction for the language.

In the case of Ada®, however, the originator is not also the implementer and the acceptance of the language into the community has occurred prior to implementation. The STEELMAN¹ requirements specify the need to maintain a consistent stable language. On the grounds that history has repeatedly shown (1) that a language is never stable until it is ready to die and (2) that there exist far more people who want to change the language than there exist to maintain the status quo, a language cannot be guaranteed to be one language unless a more stringent form of control is exercised. In the case of the programming language Ada, this control exists in three basic forms.

¹DoD Requirements for High Order Computer Programming Languages
"STEELMAN," June 1978.

1. The copyrighting of the Language Reference Manual,
2. The establishment of a trademark for the name, and
3. The acceptance of the Language Reference Manual as a National standard.

In the past, efforts have been made to control certain aspects of programming languages, but never in direct connection with a language in the public domain and as specified through a National standard. Instead, the process has been to establish a Federal standard, to require the use of that language in conformance with the Federal standard for all contracts with Federal agencies and, finally, to establish a Federal validation procedure that must be applied to systems which are procured through Federal procedures. In each of these situations, planned relationships between the original standard (National or Federal) and the subsequent validation process have been lacking; that is, conformance requirements that are a fundamental part of such a combined process are not supportive of the validation process. This is attributable, possibly, to the lack of basic support for the technology rather than to any incompetence on the part of the standards writers; equally, it is attributable to the lack of foresight on the part of the writers and the resistance of the approval organizations to accept strong statements of conformance.

The aspect of this problem which affects the Ada Joint Program Office (AJPO) is the need for the interpretation of statements in the Language Reference Manual subsequent to its acceptance as a standard. The implementation process will cause the questioning of numerous specifications, but it will be only by the good will of the implementer that questions of interpretation are brought before the language "owner." It would be far more expeditious for the implementer either to assume an interpretation for fear of being branded as unknowledgeable or so as not to stilt the growth of the implementation. In the case of other languages, for example, where implementations have

preceded the request for interpretations, the result has been a set of interpretations which provide numerous options. Ada, however, is more than a programming language; it is a complete system, including programmer support tools (of which the compiler is one) and libraries of program units. The organization being established must be given the charter to include all aspects of the Ada system in its program of work.

II. RATIONALE

The Ada® Liaison Organization (ALO) must undertake to satisfy the needs of both the AJPO as well as those external organizations with whom the AJPO has made agreements. Additionally, this group can serve as a focal point for public interaction on a technical level, while not usurping the AJPO of its responsibilities to the DoD for nontechnical contacts. Thus, a partial listing of the tasks to be undertaken on behalf of AJPO or as a liaison organization for AJPO includes:

1. Those activities required of an accredited sponsor of an American National Standard
2. To represent the United States as a technical advisory group (TAG) to international standards organizations who have an interest in the language
3. To be the focal point within the USA and potentially as the sponsor through ANSI (American National Standards Institute) of any international standards activity
4. To act as an impartial observer of the validation practices associated with the enforcement of the trademark or any other process which may be substituted
5. To provide the AJPO with a technical input for the continued development of the language in conjunction with recommended modifications to the standard
6. To assist in the development of programming support systems which rely on the programming language and which may have an effect on the language.

Under the heading of providing the expertise to support the activities required of an accredited sponsor for the National Standard, the following activities are required to be conducted²:

1. Provide continuity of administrative oversight and support of its standards activities
2. Provide for designation, publication, and maintenance of the standard(s) produced
3. Provide for an appeals mechanism*
4. Provide procedures regarding interpretation of the standard(s)**
5. Cooperate with ANSI in standards planning and coordination activities of mutual interests
6. Advise ANSI of the initiation and scope of new standards activities expected to result in candidate American National Standards
7. Advise ANSI of the initiation of activities related to revision, reaffirmation, or withdrawal of existing American National Standards
8. Consider applicable international standards.

One of the problems associated with establishing this group will be that its full membership may not be eligible to participate in every activity. Where the subject matter is strictly related to the Ada system, it is to be expected that everyone should participate. On the other hand, when the organization is

²Draft Procedures for the Development and Coordination of American National Standards, ANSI, NY, 26 March 1982, Section 2.2, Part (2).

*Although intended mainly as an appeal to verify that a product may be certified as conforming to the ANSI standard, this mechanism should be applicable to any appeals relating to the validation procedures, registration, and the use of the trademark.

**See also Federal Information Processing Standard (FIPS) 29 (revised) on the National Bureau of Standards (NBS) procedures for responding to requests for interpretation.

acting as the representative of the U.S.A., it would be inappropriate to include nonresidents in these discussions, especially when such debates may involve National-standards-related postures. Similarly, where the organization is acting as a representative of the technical community, there should be no question of the preponderance of any particular organization or point of view. This is based on the philosophy that it would be much more acceptable to the general community to have had a representative group express an opinion which is unacceptable to DoD and then to have AJPO reject it, than to have initially stifled the open expression of such an unacceptable view.

Membership may be limited in some manner to those representatives of organizations that support the language (the time has passed when counterarguments against the development of the language are sensible), at least in concept. Thus, non-U.S.A. organizational membership might be limited to those organizations which have expressed support of the Ada concept.

It is our opinion that under the proposed procedures for the development and coordination of standards (Ref. 2) it is not actually necessary for the AJPO (as the sponsor) to establish a committee to fulfill its accreditation obligations and, further, that it is not necessary that the committee membership be open to the general computer community. It is strongly recommended, however, that the committee membership rules be so established that three criteria are met:

1. That membership is open but subject to certain requirements, such as a demonstration of technical competence, sincere interest, and positive support,
2. That the officers of the organization be subject to some form of accountability both to the sponsor and to the committee, and
3. That procedures be considered which would eventually permit the committee to modify its rules of conduct of meetings and overall charter.

III. TASKS TO BE UNDERTAKEN AND SUBCOMMITTEES PROPOSED

The following is a listing of the membership and the tasks to be undertaken by the subcommittees of this organization. At this time these committees appear to address all of the inter-relationships that need to be satisfied to assist AJPO in fulfilling its mission.

Subcommittee 1--Ada Program/ANSI Liaison Organization

- Specific Tasks--to provide standards support in accordance with ANSI (American National Standards Institute) procedures as listed below:
 1. Provide continuity of administrative oversight and support of standards activities
 2. Provide for publication and maintenance of the standard(s) produced
 3. Provide for an appeals mechanism with respect to the interpretation and application of relevant standards and the registration of conforming products
 4. Provide procedures for the interpretation of the standard(s)
 5. Coordinate with ANSI and other pertinent organizations in standards planning and coordination of activities of mutual interest
 6. Advise ANSI of the initiation and scope of new standards activities expected to result in candidate American National Standards

7. Advise ANSI of the initiation of activities related to the revision, reaffirmation, or withdrawal of pertinent existing American National Standards, and
 8. Take into consideration international standards and/or activities.
- Membership--to be drawn from the membership of the ALO, balanced between producers, users, and general-interest groups, with a preponderance of representatives of U.S.A. industry, the DoD having a single vote.
 - Liaison--interacts with and is the major means of input from the general public and ANSI.

Subcommittee 2--Ada Technical Advisory Group (Ada-TAG) to ISO/TC97/SC5

- The purpose of the Ada-TAG is to provide advice from a U.S. point of view on Ada-related international standards issues.
- Specific Tasks--to provide the ANSI Committee X3 with proposed U.S.A. positions with respect to Ada and to respond to inquiries from the international standards community with respect to domestic Ada activities.
- Membership--to be drawn from the membership of the ALO, restricted to U.S. residents and representatives only, with a balance between producers, users, and general-interest groups; DoD is a single member of the user community.
- Liaison--with ANS Committee X3, ANSI (as the SC5 secretariat) and U.S.A. industry.

Subcommittee 3--ISO/TC97/SC5 Ada Experts Group Sponsor

- Specific Tasks--to provide sponsorship to the proposed ISO/TC97/SC5 Experts Group on Ada through the ANSI Secretariat and to coordinate with other national domestic activities in this subject area by, but not restricted

to, organizing meetings of individual experts from ISO member bodies, providing a means of communication between individual experts between meetings, and maintaining minutes of meetings, a mailing list, and a record of all Experts Group correspondence.

- Membership--to be drawn from the membership of the ALO.
- Liaison--coordination through ANSI to other International Organization for Standardization (ISO) member bodies.

Subcommittee 4--FIPS and MIL STD Liaison

- Specific Tasks--to provide liaison with, and coordination between, U.S. Federal agencies whose responsibilities include the development, issuance, and promulgation of related standards.
- Membership--to be drawn from the membership of the ALO and to specifically include representatives of U.S. Federal agencies to the ALO.
- Liaison--to interact with the relevant governmental agencies responsible for other Federal Standards related to Ada.

Subcommittee 5--Ada Validation Organization Liaison

- Specific Tasks--to provide technical liaison with the Ada Validation Organization including, but not restricted to, trademark enforcement, entering of appeals with respect to validation procedures and processes, performing technical reviews of Ada validation methods, and reviewing decisions that respond to disputes related to system validation; review and certification of the list of validated Ada systems; and encouragement of research in the area of systems validation.
- Membership--to be from the membership of the ALO with equal representation of the DoD and other interests.

- Liaison--to interact with the Ada Systems Validation Organization, which will request policy decisions, forward appeals, issue an "approved list" with the approval of this subcommittee, and provide licensing to other "validation organizations."

Subcommittee 6--Ada Development Coordination

- Specific Tasks--(1) to coordinate the needs for language/systems development as determined from public response to the Ada program and through requests for interpretation received by standards liaison activities subcommittees; (2) to coordinate interpretations of language and system features between the AJPO and the standards organizations; and (3) to be cognizant of research in the field that will affect Ada or research which is needed to support the Ada system.
- Membership--to be drawn from the membership of the AJPO with a balance between DoD interests and the industry representatives.
- Liaison--to provide liaison between the ALO and technical special-interest groups related to Ada, such as (but not restricted to) ACM-SIGPLAN/Ada-TEC, Ada-Europe, Ada-U.K. and JUG-Ada.

IV. SUMMARY

Throughout the development of Ada[®] there has been a continual involvement with and reliance on the international computer community. This involvement has included both the early stages of development where many computer scientists provided reviews of proposals and the later stages, which involved the more formal group of distinguished reviewers. The proposal discussed in this report continues this tradition while fulfilling the general requirements of providing liaison with other organizations and providing technical support for the Ada program.

The appendix contains a proposed Charter for the Ada Liaison Organization. This charter embodies the principles and tasks discussed in the previous sections and is believed to be in consonance with the September 1982 edition of the ANSI Procedures for the Development and Coordination of America's National Standards.

APPENDIX

Ada® LIAISON ORGANIZATION CHARTER

ARTICLE I - NAME

This organization shall be called the Ada® Liaison Organization (ALO).

ARTICLE II - PURPOSE

As sponsor for the Ada program, the Department of Defense, as represented by the Ada Joint Program Office (AJPO), is responsible for maintenance of the Ada standard(s). The ALO is organized and will be operated for the purpose of providing liaison between AJPO and other Ada activities within the sponsoring organization, DoD, and other concerned organizations.

ARTICLE III - TASKS AND RESPONSIBILITIES

A. The principal task of the ALO shall be to review and recommend to the AJPO positions relative to the administration of the Military Standard, the American National Standards, and other related standards or specifications.

B. Specific tasks and responsibilities are listed below. These tasks are assigned to specific committees in Article VI.

1. To provide liaison between AJPO as the sponsor of the American National Standard (ANS) and American National Standards Institute (ANSI) for the programming language Ada, and to provide standards support regarding the relevant standard(s) in accordance with ANSI procedures¹ and as listed below:

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¹American National Standards Institute, Procedures for the Development and Coordination of American National Standards, March 26, 1982, ANSI, NY.

- a. Provide continuity of administrative oversight and support of standards activities,
 - b. Provide for publication and maintenance of the standard(s) produced,
 - c. Provide for an appeals mechanism with respect to the interpretation and application of relevant standards, and the registration of conforming products,
 - d. Provide procedures for the interpretation of the standard(s),
 - e. Coordinate with ANSI and other pertinent organizations in standards planning and coordination of activities of mutual interest,
 - f. Advise ANSI of the initiation and scope of new standards activities expected to result in candidate American National Standards,
 - g. Advise ANSI of the initiation of activities related to the revision, reaffirmation, or withdrawal of pertinent existing American National Standards, and
 - h. Take into consideration international standards and/or activities.
2. To provide as the Ada Technical Advisory Group (Ada-TAG) to ISO/TC97/SC5 advice from a USA point of view on Ada-related international standards' issues. These tasks will include:
- a. Providing ANS Committee X3 with proposed USA positions with respect to Ada, and
 - b. Responding to inquiries from the international standards community with respect to domestic Ada activities.

3. To provide sponsorship to the proposed ISO/TC97/SC5 Ada Experts Group through the ANSI Secretariat and to coordinate with other national domestic activities in this subject area by, but not restricted to, organizing meetings of individual experts from ISO member bodies, providing a means of communication between individual experts between meetings and by maintaining minutes of meetings, a mailing list, and a record of all Experts Group correspondence.
4. To provide liaison with, and coordination between, U.S. Federal agencies whose responsibilities include the development, issuance, and promulgation of related standards.
5. To provide technical liaison with the Ada Validation Organization including, but not restricted to, trademark enforcement, appeals with respect to validation procedures and processes, performing technical reviews of Ada validation methods, review decisions which respond to disputes related to system validation, review and certification of the list of validated Ada systems, and encouragement of research in the area of systems validation.
6. To coordinate the needs for language/systems development as determined from public response to the Ada program and through requests for interpretation received by the standing committee.
7. To coordinate interpretations of language and system features between the AJPO and the standards organizations, and to be cognizant of research in the field which will affect Ada or research which is needed to support the Ada system.

ARTICLE IV - MEMBERSHIP OF THE ADA LIAISON ORGANIZATION (ALO)

A. The ALO will consist of an Executive Committee plus fifteen (15) to thirty (30) principal members appointed by the Chairperson of the Executive Committee.

B. Members will be appointed, as follows:

1. Members will be appointed for a term of three (3) years and may be reappointed to consecutive terms.
2. The Chairperson will appoint members to fill vacancies to complete the term of a former member with the concurrence of the Executive Committee.
3. The Chairperson may appoint at his discretion six (6) or fewer nonvoting ex officio members to the ALO. The Chairperson may appoint additional ex officio members with approval of the Executive Committee.

C. Members of the ALO will either represent an organization or themselves as individuals. Designation of status will be made by the Chairperson at the time of appointment.

D. With approval of the Chairperson, members who represent an organization may designate an alternate to attend meetings in place of the principal member. This designation will be in writing and will outline the authority delegated to the alternate in the absence of the principal member to include voting privileges.

E. Ex officio members can attend meetings and participate in discussions, but cannot vote.

F. Except for ex officio members, membership will be terminated if a member misses two nonexcused consecutive meetings, and may be terminated by the Chairperson with the concurrence of the Executive Committee for other reasons. The Chairperson may terminate the membership of ex officio members he/she appoints. The Chairperson will establish procedures which ensure that members whose membership is in jeopardy of being terminated are given adequate notice and an opportunity to correct the situation.

ARTICLE V - OFFICERS

A. The officers of this organization shall be Chairperson, Vice Chairperson, and Secretary/Treasurer. The Chairperson and Secretary/Treasurer will serve concurrently in their same capacity as officers of the Executive Committee (see Article VI).

B. The officers will be selected, as follows:

1. The Chairperson shall be the Director of the AJPO and is appointed by the Under Secretary of Defense Research and Engineering, U.S. Department of Defense (DoD).
2. The Chairperson shall select one of the voting members of the ALO as the Vice Chairperson.
3. The AJPO Technical Director shall serve as the Secretary/Treasurer.

C. Duties of the officers are as follows:

1. The Chairperson shall preside at meetings of the ALO and of its Executive Committee. The Chairperson shall be responsible for the overall management of the ALO. The Chairperson shall set the agenda for ALO meetings. The Chairperson shall distribute "Draft Proposed Ada Interpretations" to the public at large.
2. The Vice Chairperson shall assume those duties of the Chairperson that are delegated to him by the Chairperson. The Vice Chairperson shall be Acting Chairperson if the office of Chairperson is vacant and may chair meetings in the absence of the Chairperson.
3. The Secretary/Treasurer (or designated alternate) shall keep minutes of all meetings, maintain financial and membership records, and maintain a register of all submissions to the ALO and of documents

created by the ALO and its committees. In the absence of the Chairperson and Vice Chairperson, the Secretary/Treasurer may chair a meeting.

ARTICLE VI - COMMITTEES

A. Committees of the ALO shall consist of an Executive Committee, Management Committee, and six (6) Standing Committees. Additional committees may be established by the Chairperson of the ALO with the concurrence of the Executive Committee.

B. ALO Executive Committee

1. The ALO Executive Committee will consist of a Chairperson, Vice Chairperson, Secretary/Treasurer, voting members, and nonvoting ex officio and liaison members, as follows:
 - a. A Chairperson who shall be the Director of AJPO
 - b. A Vice Chairperson selected by the Chairperson from one of the voting members of the Executive Committee
 - c. A Secretary/Treasurer who shall be the AJPO Technical Director
 - d. Two members from the U.S. Computer Community appointed by the Chairperson from nominations recommended by the American Federation of Information Processing Societies, CBEMA, and other similar U.S. computer-related organizations
 - e. A member from the European community appointed by the Chairperson with the advice and consent of the Director General for Internal Market and Industrial Affairs, Commission of the European Communities
 - f. A member representing NATO appointed by the Chairperson with the advice and consent of the Chairperson, Military Command and Information Systems Working Group of NATO

- g. A member representing the U.S. Department of Defense appointed by the Chairperson with the advice and consent of the U.S. Military Department Ada Program Managers
 - h. A member representing the U.S. National Bureau of Standards Federal Information Processing Standards (NBS-FIPS) appointed by the Chairperson with the advice and consent of the Director of the Institute for Computer Science and Technology, NBS, U.S. Department of Commerce
 - i. Ex officio and Liaison members without voting privileges, including:
 - (1) The principal U.S. Department of Defense representative to ANSC X3
 - (2) A person selected by the Chairperson with the advice and consent of the Chairperson of ANSC X3/SPARC (Standards Planning and Requirements Committee), to maintain liaison between the ALO and SPARC. (This liaison role may be performed by one of the regular members of the Executive Committee listed above; otherwise, the person designated will be an ex officio member without a vote.)
- 2. All members of the ALO Executive Committee, including nonvoting and ex officio members, can participate in discussions.
 - 3. Except as required by Article VIII, Section G.2, decisions of the ALO Executive Committee will be made by simple majority vote of those present, the Chairperson voting. In case of a tie, the Chairperson will rule.

C. ALO Management Committee

1. Specific Tasks: (a) To act as the resident management support committee to the Chairperson of the ALO; (b) To review agendas, meeting schedules, and liaison activities; (c) To verify letter ballot counts.
2. Membership--The members shall be composed of the ALO Chairperson and the chairpersons of the Standing Committees.
3. Chairperson--The chairperson of the ALO shall serve as the chairperson of the ALO Management Committee.
4. Meetings--Meetings of the ALO Management Committee shall be scheduled at the discretion of the chairperson.

D. Standing Committees

1. Standing Committees, and the chairperson for each, will be appointed by the chairperson of the ALO with the consensus of the Executive Committee.
2. Meetings of a Standing Committee will be held at the discretion of the committee chairperson with the concurrence of the committee membership. Exceptions are noted below in paragraph 3 of Standing Committee 2.

Standing Committee 1--Ada Program/ANSI Liaison
Organization

1. Specific Tasks: as listed in Article III B.1.
2. Membership--The membership shall be appointed by the Chairperson from the membership of the ALO, balanced between producers, users, and general interest groups with a predominance of representatives of U.S. industry. The U.S. Department of Defense (DoD) will have a single vote.

Standing Committee 2--Ada Technical Advisory Group
(Ada-TAG) to ISO/TC9/SC5

1. Specific Tasks: as listed in Article III B.2.
2. Membership--The membership shall be appointed by the Chairperson of the ALO from among USA representatives to the ALO. There will be a balance between producers, users and general interest groups. The U.S. DoD will be considered as a single member of the user community. The U.S. DoD-ANSC/X3 SPARC Liaison and the principal U.S. DoD representative to ANSC X3 shall be members of Ada-TAG.
3. Meetings--A meeting of Ada-TAG will be held in conjunction with every scheduled meeting of the ALO. The Ada-TAG chairperson may schedule additional meetings as required with thirty (30) days written notice.

Standing Committee 3--ISO/TC97/SC5 Ada Experts Group
Sponsor

1. Specific Tasks: as listed in Article III B.3.
2. Membership--Members shall be appointed by the chairperson of the ALO from among the membership of the ALO.

Standing Committee 4--FIPS and MIL STD Liaison

1. Specific Tasks: as listed in Article III B.4.
2. Membership--The members shall be appointed by the chairperson of the ALO from the membership of the ALO and will specifically include those representatives to the ALO of U.S. Federal agencies.

Standing Committee 5--Ada Validation Organization
Liaison

1. Specific Tasks: as listed in Article III B.5.
2. Membership--The members shall be appointed by the chairperson of the ALO from the membership of the

ALO to ensure a balance between the U.S. Department of Defense (DoD) representation and other interests.

3. Foreign governments and other standards bodies may apply to the ALO to establish additional validation organizations. A consensus of the ALO voting members shall be required to accredit such organizations, and that consensus must be maintained to maintain accreditation.

Standing Committee 6--Ada Development Coordination

1. Specific Tasks: as listed in Article III B.6 and 7.
2. Membership--The members shall be appointed by the chairperson of the ALO from the membership of the ALO so as to ensure equal representation of the interests of the U.S. Department of Defense (DoD) and industry.

- E. The Chairperson of the ALO may appoint temporary committees and their chairpersons. The tenure of a temporary committee shall terminate at the succeeding meeting of the ALO unless extended by the ALO to the next meeting.

ARTICLE VIII - MEETINGS OF THE ALO

A. There shall be at least one (1) scheduled meeting of the full ALO each year.

B. Meetings shall be scheduled by the Chairperson.

C. Meetings shall be announced at least sixty (60) days in advance. In an emergency, as determined by the ALO Management Committee, extraordinary meetings may be scheduled to consider specific items with less than sixty days notice provided that a quorum can be assured.

D. A quorum must exist to call a meeting to order. A quorum is defined as at least one (1) officer who is authorized

to act as chairperson and at least one-half of the remaining voting membership.

E. In the absence of a ruling of the Chairperson to the contrary, meetings shall be conducted in accordance with Roberts Rules of Order.

F. Rulings on any point or procedure not included in these articles shall be made by the Chairperson, and it shall require a two-thirds vote of those present and authorized to vote to override such rulings.

G. Voting

1. Decisions of the ALO may be determined by oral or written ballot (see Article IX below for letter ballot procedures). Approval will normally require a consensus of those present and authorized to vote or in the case of letter ballots, those completed letter ballots received by the ALO by the designated deadline date set for return of the letter ballots. A consensus is here defined to mean substantial agreement reached after a concerted attempt to resolve objections. Consensus implies much more than the concept of a majority but does not necessarily require unanimity.
2. The Chairperson of the ALO will determine whether a consensus exists on each ALO work item. In the absence of clear consensus, an issue shall be referred to the Executive Committee where approval will require a two-thirds majority of those authorized to vote.
3. The Secretary/Treasurer will be responsible for reporting to the Executive Committee the number of, and reasons for, unresolved negative votes.

ARTICLE IX - LETTER BALLOTS

A. The Chairperson of the ALO or any constituent committee can authorize a letter ballot within that group. Letter ballots

may be authorized by conventional mail or, alternatively, by electronic means provided all members have access to the electronic facility.

B. The Chairperson of the ALO or of a committee shall issue a letter ballot on request of at least twenty percent (20%) of the current membership of the ALO or of the committee.

C. Recipients of letter ballots shall be required to respond to a letter ballot within one (1) calendar month from the date stamped on the ballot; the Chairperson may grant extensions or specify a longer response period when appropriate.

D. A letter ballot shall give recipients an opportunity to vote "yes", "no" or "abstain." It shall require a statement indicating the reason for abstaining or the amendment that must be included to resolve a "no" vote. A "yes" vote may also specify recommended improvements.

E. A consensus as defined in Article VIII, Section G.1 will be required to approve a proposal considered by letter ballot. The Chairperson will provide to the advocates of a proposal a resolution period of at least thirty (30) days after the ballots have been counted and the results published, to resolve negative votes.

ARTICLE X - AMENDMENTS AND PROCEDURES

A. Recommendations for amendments to these articles by the ALO are to be submitted to the sponsor (DoD/AJPO) and shall follow the procedures below:

1. The intent to amend these articles shall be published in an ALO meeting announcement and may be discussed by the membership at that meeting.
2. Voting on the amendment will be by letter ballot in accordance with procedures outlined in Article IX. Approval will require a two-thirds majority of completed valid ballots received.
3. The result of the vote on each amendment shall be published in the minutes of the ALO meeting.

4. Articles as amended must be republished and distributed to the active membership at appropriate intervals as directed by the Executive Committee.

ARTICLE XI - INTERPRETATIONS

A. Interpretations of standards may be recommended to the ALO in accordance with procedures established by Standing Committee 1.

B. Interpretations of language issues may be recommended to the ALO in accordance with procedures established by Standing Committee 5.

These interpretations will be referred to the Executive Committee as "Draft Proposed Ada Interpretations." If no ALO Executive Committee member objects to the draft proposed Ada interpretation within thirty (30) days of the date of publication, then it will be elevated to the status of "Proposed Ada Interpretation." If there is some objection, the approval process will be suspended until the objection is resolved at which time the thirty-day limit will continue. Upon clearance by the Executive Committee, the "Proposed Ada Interpretation" will be scheduled on the ALO meeting agenda for discussion and vote in accordance with procedures of Articles VIII and IX. Ada interpretations approved by the ALO can only be issued in the name of and published by the AJPO.

ARTICLE XII - EXPENSES

A. Each member and officer of the ALO is responsible for the provision of his/her own travel and administrative expenses for ALO-related activities.

B. Fees may be assessed to the membership to cover administrative costs of the ALO and its constituent committees.

C. Any change in fees must be published in an ALO meeting announcement prior to becoming effective and be subject to the rules for amendments.