USA Standards Committee Correspondence

USA STANDARDS INSTITUTE

Minutes of the Ninth Meeting of
USASI Working Group X3.4.3 FORTRAN
January 22, 1969
BEMA
235 West 42nd Street
New York, New York 10017

Doc. #X3.4.3/6

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1. Opening Remarks

The ninth meeting of USASI X3.4.3 was called to order at 10:15 a.m. on January 22, 1969 by the Chairman, William P. Heising.

2. Procedural Items

2.1 Attendance

See Appendix B.

2.2 Agenda

The agenda shown in Appendix C was approved without dissent.

2.3 Previous Minutes

The minutes for the eighth meeting (X3.4.3/2) of X3.4.3 were corrected as shown below.

1. B1, G. Reitwiesner is affiliated with NBS.

2. A3 and B1, correct spelling of "Reitwiesner."

With the above corrections, the minutes for the eighth meeting of USASI X3.4.3 (X3.4.3/2) were approved without dissent.

2.4 Membership

1. Without dissent, the following were approved for voter membership.

Frank Engel, Jr. ~ The MITRE Corporation
Charles Kerpelman ~ RCA

2. By a vote of 13 for, 0 against, 1 abstention, the following were approved for voter membership.

Frank Bradick ~ UNIVAC

3. Without dissent, the following were approved for observer membership.

H. A. Washington ~ IBM
J. D. Waggoner ~ U. S. Army

4. For this meeting, J. D. Waggoner is recognized as the alternate for David Kennamer.

5. With regret, the Committee accepted the resignation of George Moshos. Dr. Moshos is presently associated with Newark College of Engineering.

6. The following voting members were placed on provisional status and will be so informed by the membership chairman, Martin Greenfield.

John O. Neuhaus ~ CDC
L. W. Strobel ~ NCR

7. With the reorganization of X3.4.3 and X3.4.3B, and due to a change in company affiliations, there are two voting members from IBM. The Committee decided to retain both as voting members due to both individuals' outstanding contributions to the work of X3.4.3B. However, Mr. Jones announced his intention to abstain from voting unless Mr. Klein was unable to vote.

2.5 Mailing List

After approval of the motion disolving X3.4.3B, the Secretary was directed to combine the mailing lists of X3.4.3 and X3.4.3B.

3. Chairman's Report

3.1 ISO FORTRAN

X3.4.3 has been directed to review comments on the proposed ISO standard. Appendix H contains a partial result of the ISO ballot and the comments.

The work was directed to X3.4.3B.

3.2 Comments by NBS

The comments appearing in October 1968 Datamation regarding FORTRAN interpretations and clarifications were modified in the December 1968 Datamation. The article read in part, 'NBS, it was pointed out, "fully supports the work of USASI and knows of no instance in which any manufacturer agreed only to an interpretation that was to his individual benefit." '

3.3 Reporters at Meeting and News Releases

We can invite reporters to our meetings if we so wish. The Chairman has been directed by X3.4 to furnish BEMA with a news release for each meeting.

4. Extension Report ~ Frank Engel, Jr.

Frank Engel, at the last meeting, was appointed to "explore and make recommendations as to a mechanism by which X3.4.3 should consider extension of FORTRAN, X3.9-1966." His report is attached as Appendix E.

Mr. Engel also reported on a forthcoming FORTRAN forum (May 13, 1969) being sponsored by SIGPLAN. (Appendix K)

5. X3.4.3B Report

Appendix F and Appendix G contain information on the X3.4.3 mail ballots concluded July 22, 1968 and January 3, 1969, respectively. A copy of the clarification report (X3.4.3/4) may be obtained from the Secretary. The committee approved the acceptance of the January 3 ballot by Klein.

The report has been approved for publication by X3.4. It must now be approved by X3. It is in their hands, but not on the agenda. The Chairman of X3.4 has been directed to ask X3 to approve the report for publication or at most conduct a 30-day mail ballot.

The most recent material on clarifications was taken to ECMA TC8 by Mr. Hamilton. He attended their meeting January 15-17, 1969. At the ECMA meeting it was learned that ECMA has issued errata sheets for the ECMA standards.

6. Approval of X3.4.3B Clarifications

The interpretations submitted by X3.4.3B numbered:

USAS X3.9-1966/#31
USAS X3.9-1966/#33
USAS X3.9-1966/#47

were approved (14 for, 0 against, 1 abstention). The interpretations are included as Appendix I.

The interpretation submitted by X3.4.3B numbered:

USAS X3.9-1966/#32

was referred back to X3.4.3B (Appendix J).

7. Actions Taken by the Committee

7.1 Affirmation of Scope of X3.4.3

The following motion, moved by Hamilton and seconded by Sampson, was approved (12-0-1).

Resolved: USASI X3.4.3 affirms that new developments in the FORTRAN language should be considered for standardization and that it is the intention of USASI X3.4.3 to provide for further FORTRAN standardization.

7.2 Affirmation of Direction of Further FORTRAN Standards

The following motion, moved by Hamilton and seconded by Engel, was approved (8-0-4).

Resolved: USASI X3.4.3 further affirms that the basis for evolution of further FORTRAN standards shall be the existing FORTRAN standards insofar as any future standards should not invalidate programs written in the language of the present standards.

7.3 Reorganization of X3.4.3 and X3.4.3B

The following motion, moved by Greenfield and seconded by Campbell, was approved (7-1-5). The Chairman ruled this motion as a procedural matter.

Resolved: Effective with the termination of the eleventh meeting of Technical Subcommittee X3.4.3B, January 25, 1969:

(1) Technical Subcommittee X3.4.3B is dissolved.

(2) Responsibility for the continuing maintenance work on the USASI FORTRAN standard is returned to Working Group X3.4.3, and

(3) The procedures for approval of the documents on the maintenance of the USASI FORTRAN standard be amended to reflect the dissolving of Technical Subcommittee X3.4.3B.

Greenfield was appointed to revise the procedure rules for clarifications.

Because of the importance of the above resolution, a summary of the debate is given below.

Con Arguments

1. The time delay between the first approval of a clarification (at X3.4.3B) and its final Approval at X3.4.3 may be beneficial to the technical work. It provides a built-in check and balance.

2. Groups which can't support people at the X3.4.3B level could support people at X3.4.3 with its fewer meetings.

3. A working committee like X3.4.3B has fewer people and those people are interested in the work. Thus more work can be accomplished.

4. X 3.4.3 has a broad scope. It must not only consider clarifications but extensions and if necessary revisions. It is also responsible for setting up the procedures, policies, and guide lines under which the technical work is done. The scope is too broad to add the burden of detailed technical work.

Pro Arguments

1. The time delay between approval of clarifications at X3.4.3B and X3.4.3 just adds time to the publications process. The membership of X3.4.3 is over 50% composed of X3.4.3B members. The clarifications appear to be approved by X3.4.3 without in-depth study.

2. If it becomes impossible for X3.4.3 to do both jobs, X3.4.3B can always be reconstituted.

3. X3.4.3B has scope only for clarifications. Sometimes it is impossible to tell if an item under consideration is a clarification or an extension. If the work were done at X3.4.3, this problem would not occur.

4. Although the scope of X3.4.3 is broader and some members are not interested in clarification, the membership rules could be revised so that all who wished to participate could, even if in some limited manner.

5. The clarification work will dominate the FORTRAN activity for some time to come. It has repercussions throughout all the X3.4.3 work.

6. A real understanding of the standards are necessary for extension or revision work. This understanding can best be obtained through the work needed for clarifications.

8. Items Discussed But No Action Taken

8.1 Dissemination of Clarification Report

Although the clarification report will be published in CACM, some mechanism should be set up for distribution of the clarifications along with the Standard. Future buyers of the standard should at least be made aware that the clarifications report exists.

Mr. Hamilton is to request reprints.

8.2 Suggested X3.4.3 Ad Hoc Committee on Extensions

Engel moved and Laird seconded the formation of the Ad Hoc Committee listed in Appendix E, page 6, recommendation #2. After much debate, the motion was withdrawn.

9. Next Meeting

The tenth meeting of X3.4.3 will be March 24,25, and 26, 1969 in Bethesda, Maryland. Herb Bright and Computation Planning, Inc., will host the meeting.

Mr. Bright will send a meeting announcement to the combined mailing lists of X3.4.3 and X3.4.3B and will enclose a copy of the reorganization resolution.

10. Adjournment

The Chairman thanked the Committee and the observers for the work accomplished.

The Chairman directed Dennis Hamilton, Chairman of X3.4.3B to extend congratulations to X3.4.3B for the work they accomplished.

The meeting was adjourned at 5:15 p.m., January 22, 1969.

Respectfully submitted,

Carol Sampson

Carol Sampson
Secretary, USASI X3.4.3

APPENDIX A

X3.4.3 MAILING LIST

NAME	AFFILIATION	WORK FOR	STATUS
CARL B. BAILEY - 9422 SANDIA CORPORATION P.O. BOX 5800 ALBUQUERQUE, NEW MEXICO 87115 505/264-8733	SANDIA	SANDIA	VM
MR. J. BESSE EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION 1204 GENEVA RUE DU RHONE 114 SWITZERLAND			
FRANK A. BRADICK UNIVAC DPD MS 4951 2276 HIGHCREST DRIVE ROSEVILLE, MINNESOTA 55113	UNIVAC	UNIVAC	VM
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DAVID EATON
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UNIVAC DIVISION SPERRY RAND
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212/586-5000 X2815

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IBM
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SECRETARY GENERAL
EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION
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A. R. Jones IBM CORPORATION 1271 AVENUE OF THE AMERICAS NEW YORK, N.Y. 10020 212/JL6-2050			VM
DAVID R. JUDD COMPUTER ANALYSTS AND PROGRAMMERS LTD. CAP HOUSE 14 - 15 GREAT JAMES STREET LONDON, WCI ENGLAND			
R. H. KARPINSKI 199 CANON DRIVE ORINDA CALIFORNIA 94563			
LT. DAVID W. KENNAMER U.S. ARMY COMPUTER SYSTEMS EVALUATION COMMAND WASHINGTON, D.C.	U.S. ARMY	U.S. ARMY	VM
CHARLES KERPELMAN RCA - EDP CHERRY HILL, N.J. 08101 609/963-8000			

E. W. KLEIN IBM 1271 AVENUE OF THE AMERICAS NEW YORK, N.Y. 10020 212/JU6-2050	IBM	IBM	VM
DONALD T LAIRD COMPUTER BUILDING THE PENNSYLVANIA STATE UNIVERSITY UNIVERSITY PARK, PA. 16801 814/865-9527	ENGINEERS JOINT COUNCIL	PENN STATE UNIVERSITY	VM
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JOHN C. NEUHAUS CONTROL DATA CORPORATION 3145 PORTER DRIVE PALO ALTO, CALIF.	CDC	CDC	VM
MRS. E. PARKER CENTER FOR COMPUTER SCIENCES AND TECHNOLOGY NATIONAL BUREAU OF STANDARDS GAITHERSBURG, MARYLAND 301/921-3551			
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PROGRAMMING LANGUAGES GROUP COM-SHARE, INC. HURONVIEW RESEARCH PARK 1353 NORTH MAIN ST. ANN ARBOR, MICH. 48107			
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CARAL SAMPSON APPLIED DATA RESEARCH 25 WILSON BLVD ARLINGTON, VA. 22201 703/528-3141	APPLIED DATA RESEARCH	APPLIED DATA RESEARCH	VM
BOB SHEFF CCM-SHARE 1353 NORTH MAIN STREET ANN ARBOR, MICH. 48103 313/761-4040		CCM-SHARE	OM
KENNETH SHOSTACK DATA SYSTEMS SECTION RAYTHEON COMPANY 528 BOSTON POST ROAD SUDBURY, MASSACHUSETTS 01776	RAYTHEON	RAYTHEON	VM
BURNELL TIEFA ORGANIZATION 9421 SANDIA CORPORATION ALBUQUERQUE, NEW MEXICO 87112 505/264-2076			
HERBERT VAN BRINK UNION CARBIDE CORP - 42 270 PARK AVENUE NEW YORK, N.Y. 10017 212/551-6526	SHARE	UNION CARBICE	VM
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JAMES I WILLIAMS BURROUGHS CORP. PAOLI, PENNA. 215/NI4-4400 X589	BURROUGHS	BURROUGH	VM

APPENDIX B

ATTENDANCE X3.4.3 January 22, 1969

Voting Members Present		Affiliation*
1.	Carl Bailey	Sandia
2.	Frank Bradick	UNIVAC
3.	Herbert S. Bright	Computation Planning, Inc.
4.	Lloyd Campbell	U. S. Army ~ ARDC
5.	Frank Engel, Jr.	The MITRE Corporation
6.	Martin Greenfield	Honeywell
7.	Dennis E. Hamilton	X3.4.3B
8.	William P. Heising	Chairman
9.	Frances E. Holberton	NBS
10.	A. Richard Jones	IBM
11.	Charles Kerpelman	RCA
12.	E. W. Klein	IBM
13.	Donald T. Laird	Engineers Joint Council
14.	Caral Sampson	Applied Data Research
15.	Kenneth Shostack	Raytheon

Alternates Present		
1.	J. D. Waggoner for David Kennamer	U. S. Army

Voting Members Absent		
1.	Robert Danek	USE
2.	David Kennamer	U. S. Army
3.	John O Neuhaus	CDC
4.	C. J. Pfeifer	VIM
5.	Herbert Van Brink	SHARE
6.	J. I. Williams	Burroughs

Observer Members Present		
1.	Robert Schieber	Standard Oil (Ind.)

*All participants in technical work act as individuals. Affiliation is given for identification and to indicate the variety of experience contributed to fulfillment of the technical work.

APPENDIX C

AGENDA

1. Opening Remarks
2. Agenda
3. Minutes of Last Meeting
4. Membership
5. Reports
    a. X3.4.3B ~ Hamilton
    b. Extension ~ Engel
    c. Liaison X3.4 and ISO ~ Heising
6. Reorganization Proposal
7. Old Business
8. New Business

APPENDIX D

USASI X3.4.3 Document Numbers

1.	X3.4.3/1	Minutes 7th Meeting, February 23, 1967
2.	X3.4.3/2	Minutes 8th Meeting, February 2, 1968
3.	X3.4.3/3	Report on the USASI X3.4.3 Mail Ballot Concluded July 22, 1968
4.	X3.4.3/4	Ballot Item: Clarification of FORTRAN Standards ~ Initial Progress
5.	X3.4.3/5	Report on the USASI X3.4.3 Mail Ballot Concluded January 3, 1969
6.	X3.4.3/6	Minutes 9th Meeting, January 22, 1969

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APPENDIX F

January 15, 1969

TO: X3.4.3

RE: Report on the USASI X3.4.3 Mail Ballot Concluded July 22, 1968

Corrections

Page	Section	Para.	Line	Charge
1	1	2	3	...approved at the [eighth]
2	2.2.1	Title		BALLOT ITEM
2	2.2.1	1	3	of [a cross reference] in...

Dennis E. Hamilton

Dennis E. Hamilton
Chairman, X3.4.3B

DEH/ldf

REPORT ON THE USASI X3.4.3 MAIL BALLOT

CONCLUDED JULY 22, 1968

1. INTRODUCTION

In accordance with "Procedure for X3.4.3. Approval of X3.4.3B Output," adopted at the February 2, 1968, meeting of USASI X3.4.3, a mail ballot was conducted for the approval of four technical items being simultaneously incorporated in the report "Clarification of FORTRAN Standards--Initial Progress," document X3.4.3B/8.

The clarification report, authorized by X3.4.3 (but without the four additional items), was simultaneously distributed for editorial comments and with the ballot items incorporated. This approach, approved at the eight X3.4.3B meeting, is the most expeditious means for avoiding incoherent, irregular release of single interpretation items. In particular, the tables of corrections are substantially altered by ballot items, Since such tables are presupposed for all interpretations, it is important that their first "public" appearance not be confused by later fundamental revisions (as opposed to additions that might be found).

In response to the ballot positions, a final form of the clarification report has been prepared and is attached (as document X3.4.3/4) for final review. Editorial changes have also been included so that the report (especially Table 5) is more timely.

As a result of the balloting, all items received at least one negative response. In every case but one, review by X3.4.3B has resulted in the recommendation to the chairman of X3.4.3 that the negative positions are non-substantive with reballoting not required. The remaining item involves a technicality in the description of a ballot item. That item is to be reballoted, at this time, with correct instructions. (See section 3.)

In addition, an editorial change has been made to interpretation USAS X3.9-1966/#35 to eliminate an ambiguity pointed out in one response.

Finally, the edited report also contains a modified Table 1, correcting errors discovered when the standard was transcribed for machine processing. This table is also being reballoted.

There are no other substantive changes between X3.4.3B/8 and X3.4.3/4. In particular, further interpretations approved by X3.4.3B since issuance of X3.4.3B/8 are <u>not</u> incorporated. They are being mail-balloted independently.

2. BALLOT RESULTS

Transmittal of ballots to the twenty members of USASI X3.4.3, as reflected in the February 2, 1968 membership list, resulted in eleven ballots cast, eight ballots not returned, and one ballot returned as undeliverable (Table 1). In compliance with the ballot procedure, the eight unreturned ballots are tallied as absentions for all ballot "items". Since failure to return a ballot casts some doubt as to its proper delivery, it is suggested that further distributions of matters of importance be by certified mail. The votes cast for each item are tallied in Table 2.

2.1. IMPROPERLY BALLOTED ITEM

For Ballot Item 3, on Corrections to Typographical and Transcription Errors (Table 2 of Clarification Report), the two new items being balloted were incorrectly identified. This was the substance of the one qualified response. In addition, one already-approved entry was dropped in the editing. A corrected table is now incorporated with, as well, inclusion of two already-approved items which were erroneously included in the mistakes table.

2.2. REMAINING OBJECTIONS

For all remaining objections, the chairman, X3.4.3 is requested to rule that X3.4.3/4 complies with the objections in spirit, that the objections are non-substantive, and that reballoting is not required. (See Section 3.) For the record, the objections are described below.

2.2.1. Ballot item 1: Interpretation on External Procedures

The reference entry for section 8.4.2 was improperly transcribed. Correction of this citation, inclusion of a reference to section 8, and incorporation of cross references in the text have been carried out with the concurrence of X3.4.3B.

2.2.2. BALLOT ITEM 2: Interpretation on Blanks in a "Nonempty String of Digits".

The reason for unacceptability of Item 2 was that reference is made to another interpretation not yet completed. This is a procedural issue.

In addition, a possible misunderstanding of Example 3 was pointed out. X3.4.3B has approved a substitution which avoids this difficulty. The change is incorporated in X3.4.3/4.

2.2.3. BALLOT ITEM 4: Correction to Mistakes (Table 4)

The last two items of the clarification report table were noted to be improperly classified as mistakes. They are already approved as typographical errors and have, accordingly, been moved back to Table 2 in X3.4.3/4.

3. ACTION REQUIRED

To expedite handling, the necessary reballoting is being done as total approval of the substantive material incorporated in X3.4.3/4. As described in this report, the only matters which are considered unapproved (assuming concurrence of the X3.4.3 chairman) are the corrections for lines 8L22 and 24L24 added to Table 2 and the changed Table 1.

Table 1 requires re-approval because transcription of the standard to magnetic tape revealed that the former table was in error with regard to page 19. The Editor has verified this change and has included it for ballot as a minor matter. 'Other comments received on Table 1 are resolved by the explanatory footnote.

Respectfully submitted,

Dennis E. Hamilton

Dennis E. Hamilton
Editor, Clarification Report.

TABLE 1

RETURN OF BALLOTS

Member	Ballot Returned	Ballot not Returned	Ballot Undeliverable
C. B. Bailey		x	
H. S. Bright	x		
Lloyd W. Campbell	x		
Robert Danek	x		
Martin Greenfield	x		
Dennis E. Hamilton		x	
William P. Heising		x	
Frances E. Holberton	x		
A. Richard Jones	x		
Lt. David W. Kennamer		x	
E. W. Klein	x		
Donald T. Laird		x	
G. J. Moshos	x		
John O. Neuhaus		x	
C. J. Pfeifer		x	
Caral Sampson	x		
Kenneth Shostack	x		
L. W. Strobel			x
H. Van Brink	x		
James I. Williams		x	
Totals	11	8	1

TABLE 2

DISTRIBUTION OF VOTES CAST*

ITEM	Unconditionally Acceptable	Acceptable with Changes	Unacceptable	Totals
1	8	3	0	11
2	10	0	1	11
3	10	1	0	11
4	10	1	0	11
Totals	38	5	1	44

NOTE: *No abstentions were cast. Eight abstentions pertain to each item as the result of ballots not being returned.

APPENDIX G

REPORT ON THE USASI X3.4.3 MAIL BALLOT

CONCLUDED JANUARY 3, 1969

1. GENERAL

In accordance with "Procedure for X3.4.3 Approval of X3.4.3B Output," a mail ballot was conducted for approval of the final draft of "Clarification of FORTRAN Standards--Initial Progress," document X3.4.3/4. (For particulars, see - "Report on the USASI X3.4.3 Mail Ballot Concluded July 22, 1968," document X3.4.3/3.)

Following conclusion of the ballot on January 3, 1969, the question stood approved by 13 assents, with six ballots not returned (cf. section 2).

Concurrent with balloting, the clarification report was distributed to USASI X3.4 for information and possible action at their 6 January meeting. After hearing the report on the X3.4.3 balloting, X3.4 approved, without dissent, forwarding of X3.4.3/4 to X3 with a request for publication and with a collateral request that this specific item be dealt with rapidly.

During balloting, several editorial defects were noted in X3.4.3/4. The attached copy of X3.4.3/4 reflects all known corrections. This document is being forwarded to X3.4 for information and X3 for deliberation so that the most current, "clean" copy of X3.4.3/4 will be processed. (A summary of all corrections is presented in Table 2. Cf. Section 3.)

At the same time, X3.4.3/4 will be presented to the January 15-17 meeting of ECMA TC-8 (FORTRAN) in Amsterdam.

Finally, early distribution to the appropriate editors of the Communications of the ACM will be made so that an appropriate amount of space may be reserved for earliest appearance of the report, pending, of course, approval by X3.

2. BALLOT RETURNS

The return of ballots is indicated in Table 1.

Two irregularities of a trivial nature have arisen and it is recommended that those rules which interfere with acceptance of those two returns be suspended.

In the first instance, E. W. Klein, as the result of being away on a prolonged assignment, did not receive the ballot until immediately after the closing date. The ballot was necessarily returned late.

In the second instance, G. J. Moshos had resigned from X3.4.3B and X3.4.3, recommending that Mr. H. C. Kerpelman be accepted as a member. Mr. Kerpelman returned Mr. Moshos' ballot although, since X3.4.3 has not met since these events, Mr. Kerpelman is technically not yet a member of X3.4.3.

Of the six unreturned ballots, two represent default abstentions by chairmen and three, more significantly, appear to be for members which have resigned (if their formal resignation from X3.4.3B is any index).

As a general observation, there having been two mail ballots, it appears that an effective technique has been devised and that its usage is now understood.

One defect which is also evident is with regard to the membership rules and the infrequency of X3.4.3 meetings. In the span of time between X3.4.3 meetings we can see that there is de facto change in the membership of X3.4.3. If the mail ballot provisions of "Procedure for X3.4.3 Approval of X3.4.3B Output" are to be efficacious, it is desirable that ballots be granted to the most reasonably current membership of X3.4.3. (An obvious difficulty is with recognition of new members in advance of X3.4.3 convention. I have no solution -- DEH.)

TABLE 1

RETURN OF BALLOTS

Member	Returned	Unreturned
C. B. Bailey	X	
H. S. Bright	X	
Lloyd W. Campbell	X	
Robert Danek	X	
Martin Greenfield	X	
Dennis E. Hamilton		X
William P. Heising		X
Frances E. Holberton	X	
A. Richard Jones		X
Lt. David W. Kennamer		X
E. W. Klein	(X)	
Donald T. Laird	X	
G. J. Moshos by H. C. Kerpelman	(X)	
John O. Newhaus		X
C. J. Pfeifer	X	
Carol A. Sampson	X	
Kenneth Shostack	X	
H. Van Brink	X	
James I. Williams		X

Note: (X) See Text.

All returned ballots were unconditionally affirmative

3. EDITORIAL MATTERS

The initial clarification report has been revised four times since its appearance. Editorial changes required to the third version (the balloted X3.4.3/4) support the contention that there is many a slip twixt draft and publication (Table 2).

Concern for the integrity of documents has been paramount in the efforts of X3.4.3B, and a workable procedure has emerged in the case of X3.4.3/4. Assignment of an editor from the technical committee originating a report seems to be crucial if the inevitable changes must be made while preserving the substance of the report. This practice now obtains generally, albeit informally, within the X3.4 organization.

It seems that, with the amount of experience now obtained, including annoying counterexamples (not confined to FORTRAN), that this editorship practice be formalized within X3.4 with the recommendation that it carry through X3 and to ultimate publication in the case of X3.4 output.

Respectfully submitted,

Dennis E. Hamilton

TABLE 2

CORRECTIONS TO X3.4.3/4

PAGE	SECTION	PARA.	LINE	CORRECTION
i		1	3	...[have] revealed
iii				Additional sheet of instructions to the compositor added
4		2	3	Transcription of the standard to [machine-processable]
9	4.2	1	1	[Over forty] topics have...
9	4.2	2	2-3	Entire last sentence italicized for emphasis
21				Complete page retyped in a less ambiguous font.
21		last	1	...[occurring] in
22		status	1	Approved [X3.4.3, 1968 July 22]
25		5 L&R	2	28, [37], 47, 52
25		31R	1	23 [,] 24, 33[,] 34, 37
25		last	1	Approved by X3.4.3, [1969 January 3]
26		15L24		"extended" should be italicized
26		last		Approved by X3.4.3, [1969 January 3]
27		7L28		Should be labelled 7L29 and Period should follow "Scope"
27		7L29		Should be labelled 7L29b
28		28R49		Should be 27R49
29		22L23		"[g - w]" retyped so g does not resemble q
29				Omitted table foot matter included

Note: Further debugging of line numbering is reflected in these changes. They have been verified and are not of such substance that reapproval should be required.

APPENDIX H

USA STANDARDS INSTITUTE

W. P. HEISING

JAN 17 1969

USA Standards Committee Correspondence

Address reply to: Richard B. Holmes
BEMA/DPG
235 East 42nd Street
New York, New York 10017

1969 January 16

To: [X] Chairman of Subcommittee X3.4.3.- W. Heising

[ ] Members of Subcommittee X3.

[ ] USA Representatives of ISO/TC 97/

Subject: [ ] Comments received on X3 Letter Ballot No. X3/

[X] Document No. ISO/TC 97/ Draft ISO Recommendation # 1539- comments received.

Purpose: [ ] For your Action by_____

[ ] To resolve negative letter ballot vote

[ ] to develop USA position

[X] to contribute comments

[ ] for your information

Enclosures: Comments received on DR # 1539
Copy of comments on Letter Ballot X3/ , with signature and source deleted.

1918 FIFTY YEARS OF VOLUNTARY STANDARDS 1968

United States of America Standards Institute
INCORPORATED
10 East 40th Street, New York, N.Y. 10016, USA 212 Murray Hill 3-3058

28 October 1968

RECEIVED BEMA/DPG

OCT 31 1968

Mr. A. C. Grove
Director of Standards, D.P.G.
B.E.M.A.
235 East 42nd Street
New York, N. Y. 10017

Dear Alex:

DRAFT ISO RECOMMENDATION NO. 1539

The Central Secretariat, ISO had submitted to the Secretariat, ISO/TC 97 copies of Ballots of Member Bodies on DIR. No. 1539 - FORTRAN.

A Decision form has been prepared at USASI and has been submitted to the Central Secretariat.

The following Members had submitted comments with their Ballots:

Australia	Denmark
Belgium	Japan

Copies of Ballots and comments are enclosed herewith. We are also enclosing a copy of Table of Replies which shows the Member Bodies responding to this DIR. Your attention is invited to our letter of 1968 August 30 to ISO in which we stated that USA response would be delayed two months.

Kindly submit the enclosed comments to the appropriate subcommittee of X3 for review and revision of the DIR. A statement will be required which will show the action taken on each item to enable USASI to prepare the Final Report.

May we have the revised Draft ISO Recommendation and the statement on comments by 1 March 1969 to enable USASI to meet the target date for submittal of the revised Draft Recommendation and Final Report to the ISO.

In the event more time is required to work on this matter advise USASI so that the target date to ISO can be extended.

Sincerely,

MFK/sd
enc.

M. F. Killian
For The Secretariat
ISO/TC 97

DRAFT ISO RECOMMENDATION No. — PROJET DE RECOMMANDATION ISO N° 1539

circulated on — distribué le 5.4.1968

time limit for reply: — délai: 5.9.1968

reminder letters: — lettres de rappel:

TABLE OF REPLIES — TC 97 — TABLEAU DES RÉPONSES

Member Body *Comité Membre*	Date of Reply *Date de la réponse*	Approval *Approbation* (*) (**)	Disapproval *Désapprobation*	Abstention *Abstention*	Member Body *Comité Membre*	Date of Reply *Date de la réponse*	Approval *Approbation* (*) (**)	Disapproval *Désapprobation*	Abstention *Abstention*
Albanie					Portugal	5.8.68	x		
Argentina					R. of S. Africa				
Australia	5.9.68	x*			Roumanie				
Austria	9.9.68	x			Suisse	19.8.68	x		
Belgique	4.9.68	x*			Sweden	17.9.68	x		
Brésil	30.8.68	x			Tchécoslovaquie	2.2.7.68	x		
Bulgarie					Thailand	7.8.68			x
Canada					Turquie	4.5.68	x		
Chile	25.4.68			x	U.A.R.				
Colombia					United Kingdom	30.8.68	x		
Cuba					U.S.A.	delay			
Denmark	18.9.68	x*			U.S.S.R.				
Espagne	2.10.68				Venezuela				
Finland					Yougoslavie				
France	2.9.68	x			Ceylon				
Germany	23.7.68	x			Philippines				
Ghana									
Grece									
Hongrie									
ICAITI									
India									
Indonesia									
Iran									
Iraq	4.8.68			x					
Ireland	29.8.68	x							
Israel	1.9.68	x							
Italie	4.9.68	x							
Japan	17.9.68	x*							
Korea, D.P.R. of									
Korea, Rep. of									
Lebanon									
Maroc									
Mexico									
Netherlands		10.10.68							
New Zealand	2.8.68	x							
Norway									
Pakistan									
Paraguay									
Pérou									
Pologne									
total					total		16	0	3

(*) Comments of an editorial nature / *Commentaires d'ordre rédactionnel* (**) Various comments / *Commentaires divers*

X3.4.3/6

LETTER BALLOT

from the Member Body of . . . AUSTRALIA . . . .

on the Draft ISO Recommendation No. 1539 - Programming language FORTRAN

set forth in the document ISO/TC 97 (Secretariat - 99) 153 E

* *

(This letter ballot is to be returned, in duplicate, to the Central Secretariat at latest by 5 September 1968).

---

* ~~We approve the Draft ISO Recommendation as presented~~

* or We approve the Draft ISO Recommendation as presented, though making certain comments of an editorial nature, which we attach to this letter ballot

* ~~We do not approve the Draft ISO Recommendation for the technical reasons given hereunder or attached to this letter ballot~~

~~The presence of these technical reasons would change this vote to approve~~

. . . . . .

. . . . . .

* ~~We abstain from voting~~

(The (P) Members of Technical Committee ISO/TC 97 have an obligation to vote)

Place and date : . SYDNEY, AUSTRALIA . 5/9/68

Enclosures :

Signature : W. I. Stewart
(W.I. Stewart, Deputy Director)
Standards Association of Australia

---

* strike out what does not apply

Texte français au verso

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

TECHNICAL COMMITTEE NO. 97, COMPUTERS AND INFORMATION PROCESSING

Australian comments on ISO Draft Recommendation 1539,
Programming Language FORTRAN.

GENERAL COMMENT

"DO" Loops. "DO" loops should use the method of leading decisions i.e. they should not automatically be executed once.

"FORMAT" Repetition Rules. "FORMAT" repetition rules should follow the Control Data version rather than those proposed.

In particular Clause 7.23.3 on Page 32 states that "If no group repeat count is specified, a group repeat count of one is assumed". In the case of Control Data FORTRAN's infinity is assumed and this is considered to have distinct advantages.

Furthermore Clause 7.23.4 on Page 33 states that "However, if another list element ... that group repeat specification terminated by the last preceding right parenthesis, ...". Control Data only backtrack in this way if an infinite group is specified, otherwise control goes to the start of the FORMAT statement. This is considered to permit greater flexibility but must of course be used in conjunction with the provisions of the preceding paragraph.

BULLETIN DE VOTE

du Comité Membre de . BELGIQUE . . . . . .

concernant le Projet de Recommandation ISO N°1539. - Langage de programmation FORTRAN

exposé dans le document ISO/TC 97 (Secrétariat - 99) 153 F

* *

(Ce bulletin de vote est à adresser, en deux exemplaires, au Secrétariat Central au plus tard le 5 septembre 1968)

---

* ~~Nous approuvons le Projet de Recommandation ISO tel qu'il est présenté~~

* ou Nous approuvons le Projet de Recommandation ISO tel qu'il est présenté, tout en formulant des commentaires d'ordre rédactionnel exposés en annexe au présent bulletin de vote

* ~~ou Nous désapprouvons le Projet de Recommandation ISO pour les raisons techniques indiquées ci-après (ou en annexe au présent bulletin de vote)~~
~~(Acceptation de ces raisons techniques impliquera le vote en opposition)~~

. . . . . .

. . . . . .

~~ou Nous nous abstenons de voter~~

(Les Membres (P) du Comité Technique ISO/TC 97 sont tenus de voter)

Lieu et date : Bruxelles, le 4 septembre 1968

Annexes : 1

LE DIRECTEUR GENERAL,

Signature : . . . . J. VAN DROOGENBROECK

---

* Rayer ce qui ne convient pas

IBN
Brussels

Appendix to letter ballot
relating to DR ISO N° 1539

PR/MH/ISO 97
2900.1539

BELGIAN EDITORIAL COMMENTS
RELATING TO DRAFT ISO RECOMMENDATION N° 1539

- It is advisable to add to the draft the text of 3rd paragraph on page 7 of Draft Rec. ISO N° 1538, i.e. that the characters may vary from one country to other under certain conditions.

On account of the above it would bepossible to use the current multiplication symbol (St.Andrew's cross) instead of the asterisk used in FORTRAN.

It would also permit the use, in conformity with provisions of the Belgian Standard NBN 136 - Writing of numbers and unit symbols -/ a comma, instead of, as contained in both drafts, a "decimal point".

We would recall in this context that ISO Recommendation R 31 - First Part - makes the use of a decimal comma in its French version.

- The draft relating to FORTRAN would become more legible if a better separation were made, as also in the text relating to ALGOL, of the reference text and the text of publication.

Institut Belge de Normalisation
29 Avenue de la Brabançonne, Bruxelles 4

PR/MH/ISO 97
2900.1539

Annexe au bulletin de vote
relatif au PR ISO N° 1539

OBSERVATIONS D'ORDRE REDACTIONNEL DE LA BELGIQUE SUR LE PROJET DE RECOMMANDATION ISO N° 1539

- Il serait utile d'ajouter, dans le projet, ce qui est dit au 3e alinéa de la page 7 du Projet de Rec. ISO N° 1538, c'est-à-dire que les caractères peuvent différer d'un pays à l'autre sous certaines conditions.

Cela permettrait d'utiliser le signe habituel de la multiplication (croix de St André) au lieu de l'astérisque utilisé pour le FORTRAN.

Cela permettrait aussi d'utiliser, conformément à ce qui est prescrit par la Norme Belge NBN 136 - Ecriture des nombres et symboles d'unités -, une virgule pour ce qui, dans les deux projets, est désigné par "point décimal".

Il est à remarquer, à ce sujet, que la Recommandation ISO/R 31 - 1ère partie - fait usage de la virgule décimale dans la version en langue française.

- Le projet relatif au FORTRAN deviendrait peut-être plus lisible si l'on s'attachait à mieux séparer, comme dans le texte relatif à l'ALGOL, ce qui est le langage de référence de ce qui est le langage de publication.

LETTER BALLOT

from the Member Body of . . Denmark . . . . . .

on the Draft ISO Recommendation No. 1539 - Programming language FORTRAN

set forth in the document ISO/TC 97 (Secretariat - 99) 153 E

*

* *

(This letter ballot is to be returned, in duplicate, to the Central Secretariat at latest by 5 September 1968).

~~* We approve the Draft ISO Recommendation as presented~~

X * or We approve the Draft ISO Recommendation as presented, though making certain comments ~~of an editorial nature~~, which we attach to this letter ballot

~~* or We disapprove the Draft ISO Recommendation for the technical reasons stated hereunder or attached to this letter ballot~~
~~(acceptance of these technical reasons will change this vote to approval)~~

. . . .

. . . .

~~* or We abstain from voting~~

(The (P) Members of Technical Committee ISO/TC 97 have an obligation to vote)

Place and date : Copenhagen, 18.9.1968.
DANISH STANDARDS ASSOCIATION
f. O. Weincke, M.D.

Enclosures :

Signature : J.G. Busck . . . .
J.G. Busck
Chief Engineer

---

* strike out what does not apply

Texte français au verso

Comments regarding
"Draft ISO Recommendations No. 1539, Programming Language FORTRAN"

1. A comprehensive index (cf. the ALGOL document) is essential.

2. The sections should be numbered e.g. 7.1.1.1. instead of 7.111.

3. Definitions concerning implementation and hardware should be separated from the definition of the FORTRAN language.

Examples:
3.11 (last 2 lines)
3.2 - 3.3
3.4 (last 3 lines)
4.23 (last 2 lines: "must be twice that ... "
4.3
7.127.1 (second last line)
7.127 (5. last line)
7.211.1
etc. etc.

4. The FORTRAN document lacks the clarity of definition of fundamental ideas and syntactic elements as found in the ALGOL document.

The definition and use of "names", "symbolic names" and "identifiers" are ambiguous (p. 5 and 7). Are they synonyms?

When so many different "names" have been used to identify program units and functions, precise definitions of these are essential and do not exist at the moment. Some examples follow:

In 5.1 "procedure name" is defined as the identifier of a "function". In 5.2 is used "function name" and in 5.14 "symbolic name" (as identifier for a "procedure" which includes "function" as an element).

In 5.4 "a dummy argument identifies (?) a variable, array, (external?) subroutine or external function". In 8.31, 3) "the dummy arguments are either a variable name, an array name or an external procedure name". Ambiguity arises here because the first definition contains 4 elements, the second only 3, until you recognize that an "external procedure" is either an "external function" or an "external subroutine".

The status of non-FORTRAN subprograms is not made sufficiently clear.

p.1: "There is a type of line called a comment that is not ... ". "Comment" is undefined in the report. Maybe it should be: "comment line"?

p.1: "Imperative verbs" ? line 4 f.b.

p.2: "Statements are labeled ... " should be: "Statements may be labeled ... "

p.2: "...labeled with numbers". A "number" is undefined in the report.

p.2: "The identifiers used in FORTRAN ... ". "Identifiers" undefined in the report. Maybe it should be: "symbolic names"? or "data names"?

p.2: "Input/output are numbered" should be: "Input/output units are numbered".

3.2. The reference "7.238" should be: "7.23.8".

3.3. The reason for the note is unclear.

3.5. "Alphabetic" is undefined, should be: "a letter".

The content of 4.1 corresponds very closely to that of 5.3. Why two sections on almost the same subjects?

"Entity" used in 4.3 and in several other places is undefined.

5.116 should contain a reference to 7.23.8.

In 6.1 "admissible element" is undefined.

6.4, line 2: "---the range of the subtraction operator is the term ... ", should be "...the range of all operators is the term ... ".

6.4, 2. paragraph, 1. line: the order of evaluation of an expression should be exactly defined.

In 6.5, line 2: "...has the value .TRUE. or .FALSE."

In 7.111, note 5 (page 14): The process "to truncate" is undefined for negative numbers.

In 7.211.2, line 2 f.b.: "In a subprogram, ... ". Is "subprogram" here a "procedure subprogram" or a "specification subprogram"?.

8.2 (page 41): IFIX(A) is undefined for A negative.

8.2 (page 41): SIGN, ISIGN, DESIGN: The value assigned to "sign of a_2" is undefined for $a_2=0$.

p.45: Why permit side-effects in full FORTRAN? (cf.f. 6.4, paragraph 2). Why not return results through COMMON?

8.42: "The actual arguments, which constitute the argument list (if any), must ... " .

p.51: last 3 lines: The meaning and/or necessity is unclear.

p.54: "Class VIII A block" (not "block name")

10.1.6: 2) "...is immediately followed by an argument list enclosed in parenthesis".

10.27: The sentence: "The following statements are block terminal statements" is missing.

LETTER BALLOT

JAPAN

from the Member Body of . . . . . .

on the Draft ISO Recommendation No. 1539 - Programming language FORTRAN

set forth in the document ISO/TC 97 (Secretariat - 99) 153 E

* * *

(This letter ballot is to be returned, in duplicate, to the Central Secretariat at latest by 5 September 1968).

~~We approve the Draft ISO Recommendation as presented~~

* or We approve the Draft ISO Recommendation as presented, though making certain comments of an editorial nature, which we attach to this letter ballot

* ~~or We disapprove the Draft ISO Recommendation for the technical reasons stated hereunder or attached to this letter ballot~~
~~(Acceptance of these technical reasons will change this vote to approval)~~
. . . . . .

. . . . . .

* ~~or We abstain from voting~~
~~(The (P) Members of Technical Committee ISO/TC 97 have an obligation to vote)~~

Place and date : JAPAN SEP 17 1968

Enclosures :

Signature : R. Takada

---

* strike out what does not apply

Texte français au verso

Japanese Comments on Draft ISO Recommendation No. 1539

Programming Language FORTRAN

The following are editorial comments prepared by SC5 of the Information Processing Society of Japan:

1) In 5.112 Real Constant, the following statement should be included in Basic FORTRAN:

"A real constant is indicated by writing a basic real constant or a basic real constant followed by a decimal exponent."
In other words, only "or an integer constant followed by a decimal exponent" should be excluded from Basic FORTRAN.

2) In 7.121.1, the following sentence should be added:

"Execution of this statement causes the statement indentified by the statement label to be executed next."

3) In 7.128, "5)" should immediately precede the third paragraph.

4) In 10.27, the following sentence should follow the first sentence:

"The following statements are block terminal statements:"

5) In ANNEX C, the end part of the second sentence preceded by 1),

"on one one third of the page width" should read
"one on one third of the page width"

Mitglied der Internationalen Organisation für Normung (ISO)

File 1539

DIN

Postanschrift:
DEUTSCHER NORMENAUSSCHUSS · 1 BERLIN 30 · POSTFACH

Airmail

United States of America
Standards Institute
10 East 40th Street
New York, N.Y, 10016

U. S. A.

RECEIVED BEMA/DPG

DEC 2 1968

Ihre Zeichen	Ihre Nachricht vom	Unsere Zeichen	Durchwahl-Nr	1 BERLIN 30 Burggrafenstraße 4-7
		E5/97-5	Berlin 13 82 352	28 November 1968

Betreff

ISO/TC 97/SC 5

Dear Mr. Killian:

We voted affirmatively on Draft ISO Recommendation No. 1539 FORTRAN. Nevertheless, we would like to inform you about the following errors of an editorial nature, which we discovered even now in document 97 N 153 E:

Page 1 (Chapter 2), line 3 from the bottom:
Underscore the term array name at its first appearance.

Page 2 (Chapter 2), line 6:
Insert the missing word "units" behind the words "Input/output".

Page 51 (Clause 8.42), line 5 from the bottom:
Replace "external function" by "external subroutine" because this clause is dealing with subroutines. The external function has been mentioned on page 46, line 1.

The page numbering system should be revised, e.g. number the first pages from Roman I to V. In reference notes, the term "section" should be corrected into "chapter" (e.g. page 2, line 6; page 10, last line of 5.4).

Yours sincerely
DEUTSCHER NORMENAUSSCHUSS
The Director

for H. Ludwig
Ehlers

cc.
Mr. Grove, BEMA
Mr. Schmied, ISO-CS

H-15

X3.4.3/6

APPENDIX I

Approved Clarifications 22 January 1969

Status: APPROVED X3.4.3 22 January 1969

Number: USAS X3.9-1966/#31 19 October 1968

Title: Comment Line

Descriptors: BLOCK DATA statement
comment line
FUNCTION statement
statement
SUBROUTINE statement

Topic: What are the provisions for formation of and placement of comment lines?

References: 2. Basic Terminology
3.2 Lines
3.2.1 Comment Line

Interpretation: A comment line must contain the letter "C" in Column 1. Columns 2 through 72 of the comment line must each contain a character from the FORTRAN character set. All possible combinations of those characters are valid in Columns 2 through 72 of the comment line.

A comment line may precede any line except a continuation line. Specifically, a comment line may immediately precede another comment line, an end line, or the initial line of any statement, including the first statement of any program unit.

There is no other restriction specific to the comment line.

Rationale: In Section 3.2.1, replacing the word "line" with its equivalent expression "string of 72 characters" (Section 3.2), one has the following definition:

> "The letter C in Column 1 of a line designates that string of 72 characters as a comment line."

Section 3.2.1, states that "a comment line does not affect the program in any way...". Thus a BLOCK DATA statement, a FUNCTION statement, or a SUBROUTINE statement which follows one or more comment lines is interpreted as though the comment lines were not there. The words "headed by" in Section 2 refer only to the statements of the program. Section 2 states that "...a comment...is not a statement."

Question: Doc.# X3.4.3B/1 Appendix C, p. 10

"Is the following statement true? 'The text of a comment may occupy Columns 2 through 72'."

"A comment line may or may not precede the statement FUNCTION, SUBROUTINE, or BLOCK DATA. In Section 2, lines 26, 40, 42, the words 'headed by' in reference to subprograms implies that a comment not precede the mentioned statements in a program unit. Because there is no rule which governs its predecessor, it can be assumed by what has been written that even a main program may not commence with a comment line."

Frank Engel, Jr.

Status: APPROVED X3.4.3 22 January 1969

Number: USAS X3.9-1966/#33 30 October 1968

Title: Purpose and Orientation of the Standard

Descriptors: FORTRAN language
processor
program
standard-conforming program

Topic: Was the standard or FORTRAN established to promote program interchangeability? Is the standard orientated towards programs or processors?

References: 1.1 Purpose
1.2.2 (Untitled section)
B1.1 Processor Limitations

Interpretation: The standard was established to promote program interchangeability.

The standard describes FORTRAN programs, not a FORTRAN processor, even though interpretation is frequently defined in terms of the behavior of an hypothetical processor.

A suggested rewording of the first paragraph of 1.1 follows.

ORIGINAL

> 1.1 Purpose. This standard establishes the form for and the interpretation of programs expressed in the FORTRAN language for the purpose of promoting a high degree of interchangeability of such programs for use on a variety of automatic data processing systems. A processor shall conform to this standard provided it accepts, and interprets as specified, at least those forms and relationships described herein.

ALTERNATE

1.1 Purpose. For the purpose of promoting a high degree of interchangeability of FORTRAN programs for use on a variety of automatic data processing systems, this standard establishes the form for, and the interpretation of, programs expressed in the FORTRAN language. A program shall conform to this standard provided it does not use more than the forms and relationships described herein, and provided it admits of an interpretation according to this standard. A processor shall conform to this standard provided it executes standard-conforming programs in a manner which fulfills the interpretations prescribed herein.

Rationale: The objective for FORTRAN standardization, established in 1962, stated:

> The FORTRAN standard will facilitate machine-to-machine transfer of programs written in ASA Standard FORTRAN. The standard will serve as a reference document both for users who wish to achieve this objective and for manufacturers whose programming products will make it possible. The content and method of presentation of the standard will recognize this purpose.*

In accordance with the objective for FORTRAN standardization, the rewording of the first sentence of Section 1.1 emphasizes the creation of the FORTRAN standard, not the FORTRAN language, to promote interchangeability of programs.

---

*Heising, W. P., History and Summary of FORTRAN standardization development for the ASA, Comm. ACM, 7, 10 (Oct. 1964), 590.

The standard describes FORTRAN programs, not a FORTRAN processor, even though interpretation is frequently defined in terms of the behavior of a hypothetical processor. The insertion emphasizes the standard's orientation toward programs and defines more precisely when a FORTRAN program is one in conformance with the standard. In particular, it is not sufficient to limit a program to the prescribed forms. The program must also admit of an interpretation. The second paragraph of Section 1.1 supports this definition by indicating general conditions under which a program will fail to admit of an interpretation.

In the original form of the last sentence of the first paragraph of Section 1.1, 'accepts' and 'interprets as specified' are too vague. It is not possible to implement a useful, concrete processor that interprets programs strictly as specified. The interpretation rules of the standard are incomplete. Any actual processor must, for example, embody a prescription of properties excluded from the standard in Section 1.2.2. (See also Section B.1.*)

In accordance with the philosophy stated in the standardization objective, the rewording relies on the definition of a standard-complying program. It is then stated that the interpretation prescribed in the standard must be fulfilled. That is, an implementation is acceptable if it provides the standard interpretation when details not prescribed are ignored.

---

*Note that B1.1 is at odds with Section 1.2. The position is maintained that programs, not processors, are being defined. Processor descriptions can only be obtained by inference from the stated interpretations.

Question: Doc.# X3.4.3B/1, Appendix D, Item 1.

A suggested addition to 1.1. "...'A program shall conform to this standard provided it does not use more than the forms and relationships described herein and does not use any entity that is not defined at the time of its use.'"

Discussion of the above addition brought out the fact that the first sentence of 1.1 could be read that the FORTRAN language was established to promote interchangeability of programs.

Status: APPROVED X3.4.3 22 January 1969

Number: USAS X3.9-1966/#47 23 October 1968

Title: Blank Lines

Descriptor: blank line

Topic: Does the standard provide an interpretation for a blank line?

References:
3.2 Lines
3.2.1 Comment Line
3.2.2 End Line
3.2.3 Initial Line
3.2.4 Continuation Line
3.3 Statements
USAS X3.9-1966/#32 Empty Statements

Interpretation: Let a blank line be a line in which all 72 characters are the character blank. According to the standard (Section 3.2), a blank line is an initial line. Thus the only interpretation for a blank line is provided when it is followed by one or more continuation lines containing one of the statements of the FORTRAN language.

Rationale: There are four varieties of lines defined in the standard: comment line, end line, initial line, and continuation line. A comment line (Section 3.2.1), an end line (Section 3.2.2), and a continuation line (Section 3.2.4) each, by definition, contain at least one character which is not the blank character. An initial line (Section 3.2.3) may contain the character blank in columns 1 through 72. Thus, a blank line (as defined above) is an initial line.

"A statement consists of an initial line optionally followed by up to nineteen ordered continuation lines." (Section 3.3) By definition of an empty statement (USAS X3.9-1966/#32), a blank line followed by a comment line, an end line, or an initial line is an empty statement and does not admit of an interpretation.

Columns 7 through 72 of a blank line together with columns 7 through 72 of the following one or more continuation lines form a statement which may or may not admit of an interpretation.

Question: Doc. #X3.4.3B/1, Section 7, Item 1.

"Does the standard provide an interpretation for a blank line?"

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