

Meeting of ISO/JTC1/SC22/WG5  
Engels Building, Rotterdam. 13-17 August 1990

1. Opening of the Meeting

The meeting was opened on Monday, 13 August 1990 by the convenor, Jeanne Martin, who welcomed the delegates.

2. Appointments

The following appointments were made:

Jeanne Martin	Convener
Bert Buckley	Vice Chair
Mike Roth	Recording Secretary
Jack den Haan	Librarian
Andrew Johnson	Editor
David Muxworthy	Head of Drafting Committee
Jeanne Adams	Head of GEN Subgroup
Lawrie Schonfelder	Head of DATA Subgroup
Andrew Tait	Head of CIO Subgroup
Miles Ellis	Head of PROC Subgroup

3. Reports

Progress reports were presented by Jeanne Adams on the ANSI Standard, and by Gerhard Schmitt on liaison with X3J3 (N560).

The following National Activity Reports were presented:

Gerhard Schmitt	Austria (N559)
Erik Kruyt	Netherlands (N561)
David Muxworthy	United Kingdom (N563)
Graham Warren	Canada (N572)
Karl Rotthaeuser	Germany (N573)
Cornelis Ampt	Belgium
Hideo Wada	Japan (N570)
Christian Mas	France (N601)
Andrew Johnson	USA
Alla Gorelic	USSR (N568)
Aurelio Pollicini	Italy

Miles Ellis presented a report on liaison with the ad hoc Working Group on Character Handling.

Later in the week, Brian Meek presented a report on liaison with WG11 (N585)

4. Previous Meetings

The minutes of the Ispra meeting (N526) and of the London meeting (N525) were adopted.

Jerry Wagener reported on the current status of the responses to the resolutions of the London meeting (N565) and of the Ispra meeting (N566).

There followed a discussion of the future disposition of these resolutions.

In order to comply with London Resolution L5, it was proposed by Lawrie Schonfelder, seconded by Miles Ellis, that the meeting accept that N538 is an adequate response to SC22.

This was carried 22-0-7.

## 5. Future Evolution of Fortran

Future Evolution of Fortran (initial discussion)  
Scribe: Kelble

references: N537 and N564

Schmitt: Future development is three fold:  
- modules, e.g. structured I/O  
- technical items requiring language changes  
- recommendations to SC22 as to how these changes should be done

Adams: [Jeanne discussed the history of WG5/X3J3 interactions emphasizing the excellent rapport that exists between the groups.]

Muxworthy: [David described the contents of N564 (the UK position) specifically mentioning the following points]  
- one choice is no future evolution  
- premature to start new work item now; perhaps a year from now would be fine  
- instead of a general revision work item, specify those areas to be changed; a subgroup should be formed to form proposals in this area  
- there should be a greater move to international standards and a Fortran 90 revision should be done under ISO rules  
- several technical items are listed without any specific recommendations as to their disposition

Warren: We should probably base our discussion on the UK paper and prepare resolutions on each of the topics. This would serve as a record.

Schonfelder: I agree with Graham. I also agree that a group should be formed to come up with new work item plans.

Johnson: I agree that it is premature to start now.

Due to the volume of initial work is it possible for an international body to develop a standard in a timely manner.

Ampt: Is it the idea of the UK that we only have international standards for programming languages?

Muxworthy: An international standard should be adopted as the national standard.

Schonfelder: Where an international standard exists a different British standard will not be adopted. The international standard may be printed with a BSI cover for legal reasons.

Drafting of a document is different from the rules under which it is adopted. Only one set of rules should be followed not two. These two issues should be separated.

Schmitt: Even if we adopt an international standard as a national standard, the old national standard must be withdrawn.

I agree that we should reduce the different rules under which we are working.

We should quickly determine the topics for future standardization of both modules and language features.

Hopper: We should decide up front what we want in the standard and have a public review on that. Then draft the document.

Ampt: First, find out what we want to do. We should do it under one set of rules.

Buckley: Jeanne (Adams), you mentioned that X3 recognizes an international project. Whose rules do you follow?

Adams: [Jeanne read the X3 definition of an international project.]

Buckley: It doesn't say how the project will operate.

Warren: I agree with Fred. Canada would like to see a scope of work and have consensus on that scope of work before proceeding.

Straw Vote: WG5 believes that there should be further development of Fortran subsequent to Fortran 90. (29-0-0)

Ampt: We should vote on: Is there a need for further development of Fortran?

Straw Vote: WG5 feels that there is a need for further development of Fortran subsequent Fortran 90. (31-0-0)

Buckley: We should straw vote that we want to be involved in the future development of Fortran.

Schonfelder: We have no control over this.

Schmitt: We should take the vote as it is a recommendation to SC22.

Ampt: We should say if we want to be involved and to what extent.

Campbell: There are 2 kinds of work: substantive issues and debugging the standard. A debug revision could be done in a shorter time frame based upon interpretations made.

Schonfelder: Debugging activities don't require a revision of the document but can be issued in a separate document.

Campbell: A more substantive bug might best be addressed by a revision.

Tait: I support Fred's idea along with Graham.

If a national committee develops the document for WG5, they are working as a subcontractor and should be treated as such.

Tilbury: I agree that a revision with fixes be issued within five years.

Ellis: Gary is identifying 2 parallel work items which could be done by 2 different bodies.

Adams: I would like to request that WG5 delay in creating resolutions on these issues until they are discussed with X3J3.

Ampt: We need to get started as ISO will be slow. Perhaps all we should say now is that we want to be involved.

Schmitt: The actual items to be done should be held for the new work item proposal. Currently, we must state things in general.

Tait: What this group does shouldn't need prior discussion by X3J3.

Schonfelder: This is really 2 questions:  
1) That WG5 believes that it should draft a new work item for a future revision of Fortran 90.  
2) That WG5 believes that WG5 is an appropriate body to be involved with further processing of the work items.

Straw Vote: Schonfelder question #1 above. (30-0-1)

Straw Vote: Schonfelder question #2 above. (19-0-9)

Ampt: We should say when we will produce this new work item, next week, next years, or 7 years from now.

Hopper: We could say something like the new work item will be developed n months after the standard comes out.

Buckley: We should say how we want the work to be done, e.g. delegate the work to X3J3.

Schonfelder: One year is the minimum we could adopt given that the JTC1 ballot doesn't finish until February which implies that the standard will be published next summer.

Warren: One year is somewhat optimistic if we are really going to be specific.

Ampt: We should aim for a year but we must wait until the current one is approved.

Campbell: We could start working on the new work item proposal now while the approval process for the current revision is progressing.

Ampt: A new work item is not needed to maintain the revision; it is part of the original work item.

Hopper: We need to vote on the items to be included in the new work item.

Ellis: WG5 has responsibility for developing an international standard and we designated X3J3 as editor. The question remains as to who maintains the document, the parent committee or the editor? I feel that the parent committee has that responsibility but could delegate it.

Weaver: There could be a problem with specifying the list of features in the new work item in that if you wish to change the list, you must go through a JTC1 ballot. Perhaps we should not specify the list but rather we should specify how the list will be created and maintained.

Ampt: We should decide how detailed we should be with our new work item.

Johnson: If we do nothing, maintenance is already established and is delegated to the document editor (X3J3).

Hopper: We shouldn't change the list once it is approved.

Ellis: The ISO rules seem to indicate that an editing group be set up which includes the document editor and other experts appointed by the member bodies.

Several straw votes indicated that WG5 is strongly in favour of future development:

WG5 believes that there should be further development for Fortran subsequent to Fortran 90.

Carried 29-0-0.

WG5 believes that there is a need for further development for Fortran 90.

Carried 31-0-0.

WG5 believes that it should draft a New Work Item proposal for future revision of Fortran 90.

Carried 30-0-1.

WG5 believes that WG5 is an appropriate body to be involved with processing this New Work Item.

Carried 19-0-9.

## 6. Presentation of Forward Referencing Issues

Maureen Hoffert presented her proposals on forward procedure referencing (N542).

This was followed by much unscripted discussion in which the meeting was clearly split between those who considered that this is the last chance to correct a major problem of compiler efficiency and those who considered that this is a major change to the language which would delay publication of the standard.

A straw vote to do something about forward referencing was split 11-11-9.

This was followed by an almost identical straw vote in which a no vote was more accurately defined as meaning maintain the status quo.

This was also split 11-14-7.

#### 7. Subgroups

The subgroups and the drafting committee met on several occasions throughout the meeting. Their heads then reported back to the full meeting, and requested straw votes to approve minor editorial changes. These were usually accepted without objection.

The straw vote to include the example in Section 3 of N571 was carried 17-2-9.

A later straw vote to remove the last sentence of Paragraph 2 of N593 was lost 6-11-11.

A compendium of the accepted edits was issued as N600.

#### 8. Drafting Committee (Thursday)

During the drafting committee's development of a resolution on the further evolution of the Fortran Language Standard, there was a straw vote to draft a resolution to set up a subgroup to recommend a procedure for the next revision of Fortran.

This was carried 21-3-6.

There was a straw vote for another resolution to say something about forward referencing.

This produced the inconclusive result of 15-9-9.

An attempt to be more specific was the straw vote to the effect that without specifically supporting the details of N542, I do support the general objective of addressing the forward referencing issue in this standard.

This produced the even more inconclusive result of 14-14-4.

#### 9. Dynamic Length Character String Module

Lawrie Schonfelder reported on his variable length character string module (N543).

This was well received, and a straw vote to adopt N575 and N543 as the working documents for the dynamic length character string module was carried 21-0-5.

A discussion of the name of the module, to be used following USE, was followed by a straw vote with multiple voting:

ISO_VARYING_STRING	17
ISO_1539_1_STRING	14
ISO_CHARACTER_STRING	8
ISO_CHAR_STRING	11

This was followed by another straw vote, this time with exclusive voting:

ISO_1539_1_STRING	12
ISO_VARYING_STRING	18

Similarly, a straw vote on the name of the data type produced:

Multiple voting:

ISO_STRING	15
STRING	1
VARYING_STRING	20
VARSTRING	6

Exclusive voting:

ISO_STRING	15
VARYING_STRING	19

There was then a straw vote on whether to

- 1) restrict the facilities to the fundamental ones
- 2) extend to a rich full set

The result was 26-3-7.

#### 10. ISO Conformance

Mike Metcalf presented paper N589 on editorial changes required to DIS 1539 in order to bring it into compliance with Part 3 of the ISO directives.

The proposals in it, other than numbers 14, 22, 30 and 31, were accepted by unanimous consent.

Items 22, 30 and 31 were deferred.

Item 14 proposes deleting the two pages of names of those who have worked towards producing the standard.

A straw vote to keep these names in was carried 20-6-7.

In order to make it quite clear to ISO, a formal motion to delete both pages v and vi was proposed by Mike Metcalf, seconded by Dick Weaver.



The result was:

Individual votes: 6-25-6      Country votes: 1-8-1

A motion to replace the heading by 'Acknowledgements' left adjusted was carried by unanimous consent.

11. Drafting Committee (Friday)

There had been a draft resolution requesting X3J3 to act as project editor to provide corrections and clarifications for ISO/IEC 1539:1991 when it exists.

There was a straw vote on

- |  |    |
|--|----|
| 1) existing text                               | 5  |
| 2) request the convenor to include in a report | 12 |
| 3) undecided                                   | 12 |

It was then pointed out that this resolution requested X3J3 to do what it did anyway and the resolution was withdrawn by a straw vote of 19-3-7.

During the discussion of the resolution on the further evolution of the Fortran language standard, a straw vote was held on whether to set up an ad-hoc group today.

This was lost 4-12-14.

A request to split it into two resolutions also failed 4-9-14.

12. Future Meetings

The following future meetings have been arranged:

18-22 March 1991 in London, England  
24-28 June 1991 in Lund, Sweden  
1992 in Victoria, Canada

13. Forward Referencing Issues for X3J3

Maureen Hoffert requested guidance in how to present forward referencing issues to the X3J3 meeting next week.

Specifically, she put the following straw votes:

- 1) I support the proposal if X3J3 accepts it 12-12-8
- 2) I do not oppose the proposal as is if X3J3 accepts it 23-7-4
- 3) I support the proposal in principle or I will not oppose the proposal if it will not delay the standard 22-7-4
- 4) I oppose the current proposal because of a very specific technical issue 13-3-12

#### 14. Adoption of Resolutions

Lawrie Schonfelder requested a formal vote to split Resolution R8 into two, as he wished to vote Yes on the first paragraph and No on the second.

This was defeated 8-16-12.

The formal votes on the Rotterdam resolutions were then as follows:

##### R1 Editorial Work

That WG5 recommends to X3J3 that the minor edits and corrections listed in WG5/N600 be considered as an initial editorial change document, to be incorporated into ISO/IEC 1539:1991.

Passed by unanimous consent.

##### R2 Reaffirmation of London Resolutions

That WG5 reaffirms the spirit of its resolutions L1, L3 and L4 that the draft international Fortran standard become the sole international Fortran Language Standard, without subset and as quickly as possible, and that it recommends to SC22 that SC22 request each member body to adopt Fortran 90 as its single Fortran language standard at the earliest opportunity.

Individual votes: 29-4-4            Country votes: 8-1-1

##### R3 Adoption of Synchronization Plan

That WG5 supports the synchronization principles for the international and national Fortran language standards, as described in WG5/N551

Individual votes: 35-0-2            Country votes: 9-0-1

##### R4 Acknowledgements in Standards

That WG5 supports the principle that those who significantly contribute to the development of a standard should be acknowledged by name in the document, and requests SC22 also to support this principle and to take the necessary actions to bring this to the attention of JTC1, ITTF and ISO/IEC.

Individual votes: 29-1-7            Country votes: 10-0-0

##### R5 Standard String Module

That WG5 notes the progress being made on the ISO\_VARYING\_STRING module (WG5/N543, WG5/N575, WG5/N581), and records its intent to forward the appropriate document to SC22 after the next WG5 meeting for processing as an international standard collateral to ISO/IEC 1539:1991.

Further WG5 notes that DIN continues as Secretariat for this Work Item, and appoints Lawrie Schonfelder as Project Editor.

Individual votes: 36-0-1      Country votes: 10-0-0

R6 Forward Procedure Reference Proposal

That WG5 notes that since the proposal in WG5/N542 is currently a major item of discussion in X3J3, the proposal was discussed at length in the August 1990 WG5 meeting in Rotterdam and that as a result WG5 included no edits related to this issue in WG5/N600.

Further that WG5 commissions Gerhard Schmitt, as liaison to X3J3, to report the issues discussed to the X3J3 meeting on August 20-24, 1990.

Individual votes: 32-0-5      Country votes: 10-0-0

R7 Character Handling Requirements in Programming Languages

That WG5, in order to comply with the request in SC22 Resolution 119 to review SC22/N623R [in WG5/N536], acknowledges document WG5/N602 as a contribution to the SC22 Ad-Hoc Group on Character Requirements.

Individual votes: 17-5-15      Country votes: 4-1-5

R8 Further Evolution of the Fortran Language Standard

That WG5 believes that evolution of the Fortran Language beyond Fortran 90 would benefit the programming and computing communities, and that promoting the principle of a single worldwide Fortran language standard would maximize this benefit.

Further that WG5 establishes the following agenda to identify the procedures under which these objectives are achieved:

- WG5 individual members and SC22 member bodies submit to the WG5 Convenor suggestions for what these procedures should be (for example, elements of WG5/N537, WG5/N564, WG5/N572 and WG5/N592)
- at its meeting in March 1991, WG5 will, as the top priority, process the results of the JTC1 ballot and complete its work on the Fortran 90 international standard, and then determine the methods it will use to review the submitted suggestions
- at its meeting in June 1991, WG5 will complete its review of the submitted suggestions and prepare for the SC22 Plenary Meeting in September 1991 its

recommendations as to future activities and processes  
pertaining to Fortran.

Individual votes: 34-0-3            Country votes: 10-0-0

R9 Letter responding to SC22 Resolution 134

That WG5 thanks its Convenor for drafting and X3J3 for reviewing the letter in WG5/N538, as per resolution L5, and agrees that, in order to respond to SC22 resolution 134, it be sent by the Convenor to SC22 in time for it to be considered at the October 1990 SC22 Advisory Group meeting.

Individual votes: 36-0-1            Country votes: 10-0-0

R10 Representation at SC22 Advisory Group meeting

That WG5 commissions Gerhard Schmitt to represent the WG5 convenor at the SC22 Advisory Group meeting on October 10-12, 1990 and at the SC22 ad hoc meeting on character requirements on October 8 and 9, 1990.

Passed by unanimous consent.

R11 Future WG5 Meetings

That WG5 recognizes and appreciates the offers of the British member body (BSI) to host the March 18-22, 1991 WG5 meeting, of the Swedish member body (SIS) to host the June 24-28, 1991 WG5 meeting and of the Canadian member body (SCC/CSA) to host the Summer 1992 WG5 meeting.

Passed by unanimous consent.

R12 Appreciation of X3J3

That WG5 thanks X3J3 most warmly on behalf of the worldwide Fortran community for fulfilling resolution L1, processing the proposals according to the schedule specified and enabling the document to be forwarded for processing as a DIS by the end of May 1990.

Passed by unanimous consent.

R13 Appreciation of Editorial Liaison

That WG5 expresses its appreciation of the work performed by Mike Metcalf in liaison with ISO Central Secretariat to facilitate editorial processing of DIS 1539.

Passed by unanimous consent.

R14 Appreciation of X3J3 Representation

That WG5 expresses its appreciation to Gerhard Schmitt for representing WG5 at X3J3 meetings over the past two years.

Passed by unanimous consent.

R15 Vote of Thanks for Support

That WG5 thanks those companies and organizations which have generously contributed financial and other support to the success of the meeting, viz Bull Netherlands NV, Delft University of Technology, IBM Netherlands NV, Info-matics Publishing, Shell Netherlands BV, and the universities of Leiden and Utrecht.

Passed by unanimous consent.

R16 Vote of Thanks

That WG5 wishes to express its appreciation to the Convenor (Jeanne Martin), the vice chair (Bert Buckley), the secretary (Mike Roth), Andrew Johnson for collecting the edits, the drafting committee, and especially the hosts (the Netherlands Fortran Specialist Group and its parent body NNI) for their contributions to the success of the meeting.

Passed by unanimous consent.

M J ROTH  
Secretary

Reactor Physics Methods Department  
Physics & Thermal Hydraulics Division  
AEA Thermal Reactor Services  
Winfrith Technology Centre  
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20 November 1990