Letter published in Fortran Forum (Vol 8, No 1, Serial No 20, Jan 1989)
To: Fortran Forum, BCS, NAG, etc. From: **John Reid**
Date: 6th December 1988
Subject: ISO/WG5 meeting in Paris, and X3J3 meeting [no. 110] in Boston.
Note: This is a personal note on the meetings and in no sense does it constitute an official record of them.

1. Introduction

My usual practice is to construct a 'public' report by applying a very small number of mechanical changes to the trip report that I make to my organisation (removing such things as the date of the next meeting of our group). This time, I am proceeding a little differently. The deadlock in X3J3 is over. This would probably not have happened without the influence of the ISO/WG5 meeting in Paris. Therefore this report is constructed from two of my private trip reports.

2. Summary of the WG5 meeting [Paris France, Sep 1988]

WG5 expressed great dissatisfaction with the deadlock in X3J3. It wanted a single compromise plan leading to the appearance of a fresh draft standard soon. The plans of Weaver, Philips, Reid/Smith, and Brainerd, *et al.* were presented by Dick Weaver, Ivor Philips, Andy Johnson, and Lawrie Schonfelder, respectively. It was decided quite quickly that neither the Weaver plan nor the Philips plan was suitable. They were seen as too large a departure from the draft and likely to result in many "no" votes in a second ISO ballot. The authors of the remaining plans met to discuss how a compromise plan might be constructed that met the objectives of both plans and was likely to be acceptable to WG5. This left several decisions open, so straw votes of WG5 were taken before a final plan was proposed. This was modified slightly by WG5 and was adopted on the final day with a vote of 30-2-5 by individuals (Dick Weaver and Ivor Philips voting "no") and 8-0-1 by countries (USA abstaining). The resolution (P2) is reproduced here as an appendix.

WG5 also adopted a resolution (P5) expressing its belief that the timely revision of the Fortran standard is critical and adopting a set of milestones leading to the completion of a second ISO ballot before the next WG5 meeting (10-14 July 1989). This was passed with a vote of 24-4-9 by individuals (Weaver, Philips, Johnson, and Warren (IBM, Canada) voting "no") and 6-0-3 by countries (Japan, Sweden, and USA abstaining).

3. Summary of the X3J3 meeting [Boston MA, Nov 1988: Meeting No 110]

A draft standard implementing the WG5 plan (P2) was distributed to members in time for the 2-week rule. X3 directed X3J3 that the US support a single Fortran standard. Early in the Boston meeting it was decided (24-9) to accept a plan based, in general, on the P2 resolution and during the meeting most of the P2 changes were adopted (see Section 4). None of the plans that were under consideration at Jackson

were discussed seriously, although Ivor Philips (Boeing) had prepared an edited S8 to implement his plan and tried to persuade the Committee to consider it in detail.

There were a number of procedural arguments, but the will of the Committee was clearly to get on with the job of producing a draft broadly in line with P2 and an enormous number of proposals were considered (a lot of work for the Secretary). Every technical change needs a majority of all members to vote YES (that is, at least 22 YES votes) and a 2/3 majority of those voting. Most votes met these requirements with ease, but adopting parameterized LOGICAL just failed (24-13) and deleting the new form of DATA statement only just passed.

As a result, the only significant differences between P2 and S8 are:

1. Pointers have not been added yet to S8.
2. Internal procedures and host association have not been removed from S8.
3. Stream i/o has not yet been added to S8.
4. Paramaterizing LOGICAL has been rejected for S8.
5. Vector subscripts are included in S8 but not in P2.

Soon each member of WG5 will receive a copy of the draft standard based on P2, marked up at the discretion of the Convenor to correct minor errors and include minor changes made at Boston to S8. Also each member of X3J3 will receive a copy of S8 that includes the Boston changes.

It looks as if S8 will be processed in parallel with the WG5 document for a while. X3J3 adopted (30-4) a schedule aimed to match the urgency of the P5 resolution, but it does not envisage S8 being released by X3J3 until May 1989, too late for an SC22 ballot to take place before the July meeting of WG5. However, there is determination on both sides to avoid having two standards, so there seems every hope that the two documents will converge before eventual adoption of either.

4. Technical proposals

A large number of technical proposals were considered, which led to the following changes to S8:

1. Delete RANGE (30-3).
2. Add MIL-STD bit intrinsic functions (34-2).
3. Remove square brackets from array constructors (32-5).
4. Add INCLUDE (31-6).
5. Restore vector subscripts (35-4).
6. Adopt parameterized real and complex (30-7).
7. Add KIND= support for integers (31-5).
8. Remove user elementals (29-6).
9. Remove the new form of the DATA statement (24-10).
10. Extend interface blocks to specify overloads (36-0).

11. Remove IDENTIFY (34-1).
12. Add significant blanks to free source form(33-5).
13. Remove derived-type parameters (35-2).
14. Adopt KIND= for CHARACTER (26-9).
15. Disallow overlapping CASE ranges (Un.).
16. Continue execution after a SELECT CASE block having no match (25-9).
17. Do not allow the number of characters written to an internal file to exceed the length of the record (32-0).
18. Add REPLACE as another STATUS option of the OPEN statement (Un.).
19. Change array constructors to use i/o syntax (Un.).
20. Remove DO … TIMES (29-4).
21. Remove VALUES= specifier (29-3).
22. Add B, O, and Z edit descriptors (34-0).
23. Add binary, octal, and hex constants (35-0).
24. Add DO WHILE (27-9).
25. Generalize G edit descriptor to include all intrinsic types (27-3).

5. Presentation by John Rice (IFIP Working Group 2.5)

IFIP WG 2.5 (Numerical Software) wrote a forthright letter to X3 and X3J3 expressing alarm at the deadlock and appealing for differences to be resolved for the sake of the users' needs for a new standard. John Rice addressed the Committee on behalf of WG 2.5. He explored the various possible reasons for deadlock.

6. Presentation by Guy Steel (Thinking Machines)

Guy Steel appealed to the Committee to reconsider two features that used to be in the language and are now relegated to Appendix F – vector subscripts and FOR ALL. He must have been pleased that the Committee decided to restore vector subscripts.

7. Presence of Gerhard Schmitt on behalf of WG5

Gerhard Schmitt attended the meeting on behalf of WG5. He did not make a formal presentation, but it was most helpful to have him present to explain the WG5 position on each issue. He is also a member of SC22 and was also able to explain the view of that Committee.

8. Next meeting of X3J3

The next meeting of X3J3 will be in Stanford [Palo Alto, CA], 12-17 February. The deadline for pre-meeting distribution is 9 January.

Appendix. WG5 resolution P2

That WG5 agrees, based upon the ISO member bodies comments as documented in ISO/IEC JTC1/SC22 N464 and ISO/IEC JTC1/SC22 N495, and upon the X3J3 straw votes documented in X3J3/221 and X3J3/224, that DP1539 be revised in the following way :

a) in accordance with X3J3/S16 (S16 is a list of editorial changes)

b) as per the text in ISO/IEC JTC1/SC22/WG5 N302 with regard to the following features

1	remove the concept of deprecation	(US)
2	remove RANGE/SET RANGE	(Ca,D,NL,UK,US)
3	remove ALIAS/IDENTIFY	(Ca,D,NL,UK,US)
4	remove specified REAL/COMPLEX precision (REAL(*,*))	(D,J,NL,US)
5	remove internal procedures	(US)
6	remove square brackets for array constructors	(D)
7	add pointers (and associated facilities)	(Ca,F,D,NL,UK,US)
8	add MIL-STD bit intrinsic functions (but with original MIL-STD names restored)	(A,Ca,F,D,NL,UK,US)
9	add significant blanks to free form source	(Ca,F,D,NL,UK,US)
10	change host association to use association in module procedures and remove host association	(US)
11	add parameterization (KIND=) to INTEGER	(UK)
12	add parameterization (KIND=) to REAL/COMPLEX	(D,J,NL)
13	add parameterization (KIND=) to CHARACTER so as to allow multiple character set support	(Ca,Ch,F,J,NL)
14	add the INCLUDE statement	(US)

c) text to be developed

1	remove user-defined elemental functions	(US)
2	remove the new form of the DATA statement	(US)
3	change interface blocks to that described in ISO/IEC JTC1/SC22 WG5 N316	(US)
4	change array constructor syntax to use I/O syntax	(US)
5	remove parameter to derived types	(US)
6	add stream I/O intrinsic procedures	(D,UK)
7	add binary, octal and hexadecimal constants and edit descriptors	(NL) (Ca,NL,UK)
8	add parameterized LOGICAL (KIND=)	(A,Ca,F,D,NL,UK,US)

The codes alongside each point denote the member bodies which mentioned the point in their comment. The abbreviations use are : A - Austria, Ca - Canada, Ch - China, F - France, D - Germany, J - Japan, NL - Netherlands, UK United Kingdom, US - United States.