

**TO:** ISO/IEC JTC1/SC22

**FROM:** Miles Ellis, Convenor WG5

**SUBJECT:** Report to the Eighth Plenary Meeting of SC22  
18-22 September, 1995, Annapolis, MD, USA

**Work Items:** 22.02.01 Programming Language Fortran  
Maintenance of IS 1539:1991  
Revision of IS 1539:1991 (to become IS 1539-1)

22.02.02 Varying length character strings

**Attachments:** Resolutions of the WG5 meeting held in Tokyo, Japan, 17-21  
April, 1995 (WG5 N1116)  
SC22 Project Information (WG5 N1129 – Standing Doc. 3)

## **1. Convenorship of WG5**

The previous Convenor of WG5 (Jeanne Martin) resigned from the position in 1994, after serving WG5 in this capacity since 1983, although she agreed to remain as Acting Convenor until a replacement was identified. Following the subsequent decision of the US to relinquish the Secretariat for WG5, the BSI nominated Dr Miles Ellis for the vacant post. Following discussions with Ms Martin, the SC22 Secretariat appointed Dr Ellis as Acting Convenor from 7th February 1995 – an appointment that was made permanent on the conclusion of the relevant letter ballot on 6th June 1995 (N1848).

## **2. Summary of WG5 activity in 1994-95**

The major activity during this year has been the preparation of a draft CD for the revision of IS 1539:1991, known informally as Fortran 95. WG5 met in Tokyo in April to determine its position with regard to the provisional document prepared by its Primary Development Body (ANSI/X3J3) and voted to forward this document to SC22 for balloting after a number of minor changes had been incorporated by X3J3 (see Resolution T4). The Project Editor (Richard Maine) completed the incorporation of the necessary edits one week ahead of the (very tight) deadline set by WG5 and the draft CD (SC22 N1842) is currently being balloted by SC22.

It is the intention of WG5 to process the ballot comments at its next meeting in San Diego, 6-10 November 1995, and to produce a final version of the draft standard by the end of the year. This document will then be circulated to the full WG5 membership for an advisory ballot before being submitted to the SC22 Secretariat for transmission to ITTF for DIS balloting.

A second Technical Corrigendum to IS 1539:1991 was approved in a letter ballot which ended on 21 December 1994 and has been submitted to ITTF for publication, although at the time of writing it has not yet been published. It is proposed to produce a third, and final, technical corrigendum at the same time as the DIS for the revision of IS 1539:1991 is submitted for balloting.

IS1539-2:1994 (Varying length character strings) was published in October 1994.

During the meeting in Tokyo, WG5 also unanimously agreed on a number of other important issues which are detailed below.

### **3. WG5 Plans for the future development of Fortran standards**

During its meeting in Tokyo, which was attended by 14 members representing four countries, WG5 took a number of decisions regarding its future plans for both the language itself and its own method of working which are briefly summarised here, together with a reference to the relevant Resolution(s):

#### *3.1 Technical Corrigendum 3 (T5)*

Because of the importance of formally recording the resolution of *all* resolved defects in the current Fortran Standard (IS 1539:1991) so that it may be used as the basis of legal or other contractual requirements even after the publication of a revised Standard, WG5 has resolved to produce a third, final, Technical Corrigendum at the same time as it submits the DIS for this revision for registration; all of the corrections in this Technical Corrigendum will be incorporated within the DIS, thus ensuring, amongst other things, that the final version of IS 1539:1991 (Fortran 90), including all Corrigenda, will be fully compatible with its successor (Fortran 95).

#### *3.2 The use of Type 2 Technical Reports to accelerate the development of Fortran standards (T7, T8, T9, T10)*

In order to respond more quickly to the needs of the Fortran community, WG5 has resolved to utilise Type 2 Technical Reports as a means of more rapidly defining the proposed form of a limited number of features which are felt to be too important to the Fortran community, or to a significant part of it, to wait for the next full revision of the Standard. It is intended that these features would be incorporated in the next revision exactly as specified in the relevant TRs, unless experience in their implementation and/or use indicated that a change was required, and it is expected that this guarantee will enable vendors to incorporate these features in their compilers in the form specified in the relevant TRs without fear of the subsequent Standard specifying them differently. This policy has been described in document N1862, which was produced specifically for members of SC22.

During the meeting WG5 identified three important topics for which there was not enough time to complete the work for their inclusion in the current revision of IS 1539:1991, and SC22 is asked to approve subdivision of the main Fortran project (22.02.01) to allow for the production of TRs in these areas (see section 4 of

this report).

### *3.3 Revision of IS 1539-2:1994*

Although Part 2 of the Fortran Standard (varying length character strings) was only published in 1994 it will require minor revision to bring it into line with the revision of the main Fortran language standard (IS 1539:1991). In so far as any specific action is required, SC22 is requested to confirm the appointment of Dr Lawrie Schonfelder as Project Editor for this revision; he was the editor of the original standard.

### *3.4 Electronic Distribution of Documents*

WG5 resolved that, in future, all document distribution should be carried out solely in electronic form, either via an official WG5 ftp server or on diskette – apart from the announcements of meetings, provisional agendas for meetings and minutes of meetings, which will continue to be circulated in paper form. In addition, any member body may request a single copy of each complete distribution in paper form for subsequent copying and redistribution within their country. In order to facilitate this move to electronic document distribution, WG5 has established both its own ftp server and a set of World Wide Web pages, in addition to its long-established email list.

## **4. SC22 Action Items**

SC22 is asked to approve the following proposals:

- Confirm the appointment of Dr J L Schonfelder (UK) as Project Editor for the revision of IS 1539-2:1994 to bring it into line with the current revision of IS 1539:1991.
- Subdivide project 22.02.01 to create a subproject 22.02.01.01 for the production of a Type 2 Technical Report, in accordance with the policy approved in Resolution T7, on the subject of handling floating point exceptions, as recommended by Resolution T8.
- Subdivide project 22.02.01 to create a subproject 22.02.01.02 for the production of a Type 2 Technical Report, in accordance with the policy approved in Resolution T7, on the subject of interoperability with C, as recommended by Resolution T9.
- Subdivide project 22.02.01 to create a subproject 22.02.01.03 for the production of a Type 2 Technical Report, in accordance with the policy approved in Resolution T7, on the subject of data type enhancements, as recommended by Resolution T10.

Full details of the latter three proposals will be available by the time of the SC22 Plenary.

## **5. Future WG5 Meetings**

The next regular meeting of WG5 will be held in San Diego, CA, USA, 6-10 November 1995. The primary purpose of this meeting will be to process the comments received during the CD ballot for Fortran 95, which ends on 28th September 1995, and to provide instructions for its Primary Development Body (ANSI/X3J3) which will enable it to produce a draft DIS before the end of 1995.

The other major item of business at this meeting will be the production of the first detailed specification of the proposed contents of the revision of Fortran which is tentatively scheduled for 2000/2001. All member bodies have been requested to submit lists of requirements to the Convenor for circulation to all members before the meeting.

It is anticipated that the following meeting of WG5 will be in the summer of 1996, at which the main items of business will be the approval of the PDTRs for exception handling, interoperability with C and data type enhancements, unless these have already been dealt with by correspondence, and further work on the content of Fortran 2000.

## RESOLUTIONS OF THE WG5 MEETING ON 17 TO 21 APRIL, 1995 IN TOKYO, JAPAN

*Resolutions T1 to T13 were passed by unanimous consent, T14 to T16 by unanimous acclaim.*

### **T1. Retiring Convenor of WG5**

That WG5 expresses its utmost thanks for all the guidance and support its retiring convenor, Jeanne Martin, has given the Working Group over the past twelve years and for all the work she has done on behalf of Fortran and of standards more generally.

### **T2. Convenor-elect of WG5**

That WG5 welcomes the proposal of the British member body to assume the secretariat of WG5 and the nomination of Miles Ellis as convenor and urges all member bodies to endorse this nomination in the SC22 ballot.

### **T3. Appreciation of X3J3**

That WG5 expresses its most sincere appreciation to X3J3 for progressing development of the draft Fortran 95 document in accordance with the schedule in the Fortran strategic plan.

### **T4. Content of Fortran 95**

That WG5 intends to submit a draft revised standard for Fortran for CD ballot during the summer of 1995, and directs the editor to prepare a document (X3J3/95-007r1) by May 31, 1995 for this purpose. The content of this document will be WG5-N1094 (also known as X3J3/95-007) modified, within this time frame, as follows:

- items 1.1 to 1.10 of WG5-N1112, inclusive
- item 5 of WG5-N1112

together with any other technical corrections which may be identified during processing of the draft. The document for CD ballot should not contain further rationale sections (v. item 3.1 of WG5-N1112). If any portion of items 1.4 and 5 are not completed, the CD document will be as in WG5-N1094 in these respects.

### **T5. Technical Corrigendum 3**

That WG5 records its intent to produce a third, final, Technical Corrigendum for the current Fortran standard at the same time as the registration of the DIS for the revised standard. All corrections in this Technical Corrigendum will be incorporated in the DIS before submission to SC22. Publication of resolved defects is necessary since the Fortran 90 standard may be the basis of legal or other contractual requirements.

### **T6. Electronic Distribution of Documents**

That WG5 endorses the principles for electronic distribution of WG5 documents outlined in WG5-N1077 and requests its acting convenor to determine the preferences of all its members. Further WG5 requests its acting convenor and Jamie Shiers to establish at CERN a WG5 ftp archive and a WG5 WWW home page and to arrange for copies to be held at subsidiary sites as may be required.

### **T7. Development of Fortran beyond Fortran 95**

That WG5 will respond more quickly to the needs of the Fortran community by aggressively pursuing Technical Reports of Type 2 between versions of the Fortran standard, with the intent that the material of such technical reports be integrated into the following revision of the Fortran standard. Document WG5-N1111 describes in detail the objectives and nature of these technical reports.

Accordingly, WG5 directs its acting convenor to submit proposals to the SC22 secretariat for new work items for the production of these technical reports in time for a decision to be made at the SC22 plenary meeting, to be held in Annapolis in September 1995.

**T8. Handling Floating Point Exceptions**

That WG5 intends to produce a Technical Report in 1996 on handling floating point exceptions in Fortran; Wolfgang Walter is appointed interim Project Editor and is charged to assemble a development body and to identify a Project Editor. The target schedule and initial content of this technical report are described in document WG5-N1117.

**T9. Interoperability with C**

That WG5 intends to produce a Technical Report in 1996 on interoperability with C; Jamie Shiers is appointed interim Project Editor and is charged to assemble a development body and to identify a Project Editor. The target schedule and outline content of this technical report are described in document WG5-N1114.

**T10. Data Type Enhancements**

That WG5 intends to produce a Technical Report on handling data type enhancements that include allocatable components and parameterized derived types; Lawrie Schonfelder is appointed interim Project Editor and is charged to assemble a development body and to identify a Project Editor. The target schedule and outline content of this technical report are described in document WG5-N1115.

**T11. Standard Preprocessor for Fortran**

That WG5 recognizes that preprocessing facilities are an important consideration for many members of the Fortran community. However WG5 does not believe that such facilities should be incorporated into the Fortran Standard (ISO/IEC IS 1539-1). WG5 therefore invites members and member bodies to make proposals for further action, including specification of requirements and nominations for project editor.

**T12. Varying Length Character Strings in Fortran - development of IS 1539-2**

That WG5 will revise ISO/IEC IS 1539-2:1994 in line with the revision of ISO/IEC IS 1539:1991 and directs its acting convenor to make the necessary arrangements with the SC22 secretariat.

**T13. Fortran 2000 Revision**

That WG5 intends to produce a first detailed specification of the content of the 2000/2001 revision of Fortran at its November 1995 meeting and therefore requests member bodies to submit requirements to the convenor no later than 15 September, 1995. Further, John Reid as editor of the WG5 Repository of Requirements (Standing Document 5), is directed to remind members of the conditions for, and the electronic format of the content of, submissions to the repository.

**T14. Vote of Thanks for Support for Meeting**

That WG5 thanks the Japanese member body (Information Processing Society of Japan/Information Technology Standards Commission of Japan), Fujitsu, Hitachi and NEC for generously supporting the meeting.

**T15. Vote of Thanks for Support for Mailing**

That WG5 thanks The Numerical Algorithms Group Ltd. for copying and distributing papers for WG5, including those for this meeting.

**T16. Vote of Thanks**

That WG5 wishes to express its appreciation to the acting convenor (Miles Ellis), the secretary (Malcolm Cohen), the drafting committee and the hosts (Hideo Wada, Masayuki Takata, Kazuo Nishimura, Minoru Tanaka, Yukimasa Yoshida and Ichiro Honma) for their contributions to the success of the meeting.

Further that WG5 wishes especially to thank all the hosts for the exceptional kindness and hospitality shown to visitors throughout the meeting and for the arrangements made for the visit to Kamakura on the day preceding the meeting.

**SC22 Project Information – Fortran**

**Work Item 22.02.01**      Programming Language Fortran  
 (Revision of IS 1539:1991)

Project Editor:            Richard Maine

Current ITTF Registered Document:    (IS 1539:1991)

Current Reference Documents:        N1842

<i>Stage</i>	<i>Process</i>	<i>Target Date</i>	<i>Actual Date</i>
3	CD submitted for registration (N1842)	95-06	95-05
	CD ballot initiated	95-06	95-06
	CD ballot comments circulated	95-10	
4	DIS registered	96-03	
	DIS ballot initiated	96-04	
	DIS ballot comments circulated	96-08	
5	Corrections to DIS sent to ITTF	96-09	
	Standard published	96-10	

**Work Item 22.02.02**      Fortran Part 2 – Varying length character strings  
 (IS 1539-2:1994)

Project Editor:            Lawrie Schonfelder

Current ITTF Registered Document:    IS 1539-2:1994

Current Reference Documents:        (none)

<i>Stage</i>	<i>Process</i>	<i>Target Date</i>	<i>Actual Date</i>
2	Subdivision of Work Item authorized		89-09
3	CD registered		92-09
	CD ballot initiated		92-10
	CD ballot comments circulated		93-02
4	DIS registered	93-10	93-10
	DIS ballot initiated	93-11	93-11
	DIS ballot comments circulated	94-05	94-06
5	Amended document sent to ITTF	94-09	94-09
	Standard published	94-10	94-10