

July 22, 1991

TO: ISO/IEC JTC1/SC22

FROM: Jeanne Martin, Convenor WG5

SUBJECT: Report to the SC22 AG Meeting
September 23-27, 1991, ViennaWork Items: 22.02.01 Programming Language Fortran (Revision of ISO 1539-1980)
22.02.02 Variable length character string module

**There is a new international standard: ISO/IEC 1539:1991
Programming Language Fortran. Copies will be available from
the ISO Publications Department the first week of August.
The informal name for this standard is "Fortran 90".**

The synchronization point of May 1, 1991, for submittal of the final draft to ISO/IEC ITTF and to ANSI, was met. The ANSI standard, when published, will be referenced as X3.198-199x Programming Language Fortran 90. ANSI is retaining the previous standard X3.9-1978 Programming Language Fortran, as well. Other countries are adopting the new international standard as their single Fortran standard. Translations are underway in Japan and the USSR.

WG5 has met twice since the London SC22 AG meeting: March 18-22, 1991 in London, and June 24-28, in Lund, Sweden. The resolutions from these meetings are attached to this report.

1991 London WG5 Meeting

The purpose of this special London meeting was to analyze the results of the JTC1 ballot on DIS 1539 and determine WG5's recommendation for further processing. There were 27 delegates, representing 5 countries.

The results of the JTC1 ballot on DIS 1539, which concluded February 2, 1991, were:

19	yes
1	no
7	not voting

The country voting no (Japan) specified conditions that, if met, would change its no vote to a yes vote. There were approximately 460 suggested editorial changes accompanying the votes, primarily from Canada, the UK, and the US. The Japanese no vote would change to yes if certain edits were accepted. At the conclusion of the meeting, WG5 had adopted 239 editorial changes, including those required to change the Japanese vote to yes.

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Some progress was made on WG5's second work item, the varying length character string module, and there was some preliminary discussion of future Fortran standardization.

Following the meeting, a new draft was prepared so that it could be reviewed by X3J3 at its early April meeting. The final draft was sent to ISO/IEC ITTF on April 29.

Lund WG5 Meeting

The regular annual WG5 meeting was held in Lund, Sweden, June 24-28. There were 22 delegates, representing 6 countries.

It was announced that the new international standard would be available from the ISO Publications Dept. the first week in August. The reportedly first Fortran 90 compiler was announced on June 11, from NAG Ltd. in the UK.

There were two features of previous drafts that had to be given up in order to meet ISO drafting rules: the acknowledgements to authors of the standard and the line numbers. Of the two, there were more complaints from WG5 members about the loss of line numbers than the loss of acknowledgements. WG5 members understand the reason for removal of line numbers (they can't be retained across translation to other languages), but retaining them would make maintenance of the standard easier. Some WG5 members agreed that without any evidence of authors, the standard seems to have more weight, as if came down from a higher authority.

The principal objectives of the Lund meeting were:

- to devise a management plan for future Fortran standardization
- to devise a mechanism for dealing with requests for interpretation of the new standard
- to further the work on the varying length character string module so that it can become a collateral standard to Fortran 90

WG5 did not come up with a management plan. However, it was agreed that the content of any future standards should be determined by WG5. Some thought the work of producing the standard should be delegated to the US Fortran committee (X3J3) again, and there should be a new standard in a less-than-ten-year period. Others felt that producing a single monolithic standard would be wrong and that instead, smaller addenda to Fortran 90 or collateral standards (such as the string module) should be adopted as they are demanded by users. These "pieces" could then be delegated to national member body Fortran committees, not necessarily to X3J3. Once several of these exist, they could become the major new content of a revised standard. Objectors to this approach pointed out the problem of integrating new features that have been previously standardized in a piecemeal fashion. Another factor is the language independent standards that have been adopted recently or are on the brink of adoption that affect all programming languages. These are referred to in resolutions L4 and L10. They must be taken into account in future standardization activities. It appears that JTC1 will shortly require a formal study period to justify embarking on any new standard. Resolution L11 records WG5's intent to comply with this requirement. When it became clear that WG5 was not going to resolve all the issues and that more study was needed before a plan could be proposed, a Subgroup was established (by resolution L12) to develop a plan over the coming year. This group consists of a WG5 member from each of the countries: Canada, Germany, Japan, UK, and US plus the X3J3 Vice Chair and the WG5 Convenor. The group will work by electronic mail, and only if necessary, meet in the spring of 1992.

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WG5 did agree that requests for interpretation, clarification, and correction of Fortran 90 should be delegated to X3J3. WG5 has already received three such requests. A WG5 member who is also an X3J3 member was appointed by the Convenor to acknowledge and track these requests and their responses. Resolutions L5 and L6 elaborate the means for handling such requests.

There was discussion and several votes regarding changes to the existing draft of the varying length character string module, and the project editor was requested to produce a revised version by September 30 so that a WG5 letter ballot can be held to authorize submission of the draft to SC22 for registration as a CD. The timing is to be such that comments on the CD be available before the next WG5 meeting. X3J3 had requested that WG5 produce a rationale for the varying string module. This task was assigned to the German Fortran committee. Resolutions L8 and L9 deal with these two decisions.

A number of other standards bodies have created bindings to Fortran 77 (such as the graphics bindings, the POSIX binding, and the X3H5 (parallel processing) binding. Fortran 77 is no longer an international standard. To help these groups convert their Fortran 77 bindings to Fortran 90 bindings, WG5 proposes to produce an informal guidelines document. This task was assigned to the UK Fortran committee as indicated in resolution L7.

WG5 decided it was too early to make any decisions about the technical content of future Fortran standards, but there were a few tutorials on topics that are likely to be of interest in that regard:

- parallel processing
- object-oriented programming
- preprocessing (conditional inclusion and macro processing)

However, before proceeding in new directions, WG5 will wait to determine the public reaction to Fortran 90.

Future WG5 Meetings

The next regular WG5 meeting is scheduled for June 24-28, 1992 in Victoria, B. C., Canada. The 1993 meeting will probably be held in Germany.

Action Items for SC22

There are three possible action items for SC22 from WG5:

- When the Convenorship of WG5 comes up for confirmation again, WG5 would like the call for volunteers to go out to all member bodies that participate in the work of WG5, not just to the member body that currently holds the Secretariat. Lund resolution L2 requests SC22 to review the procedures for appointing convenors of its working groups and requests that these procedures allow for recommendations from the working group affected.
- WG5 would like X3J3 to accept responsibility for the maintenance of the international Fortran standard (that is, to produce the text for corrigenda). Lund resolution L5 requests SC22 to make the appropriate arrangements with the US member body.
- Lund resolution L6 recommends to SC22 and all its member bodies that national Fortran standards be maintained solely via maintenance of the International Fortran Standard.

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Attachments: 1991 London WG5 Resolutions [*WG5-N704*]
Lund WG5 Resolutions [*WG5-N736*]

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