

**WG5 Business Plan and Convener's Report
to the ISO/IEC JTC1/SC22 1999 Plenary**

PERIOD COVERED BY THIS REPORT: August 1998 – July 1999

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1 MANAGEMENT SUMMARY

1.1 JTC1/SC22/WG5 Statement of Scope

The development and maintenance of ISO/IEC Fortran programming language standards.

1.2 Project Report

1.2.1 Completed Projects

22.02.01.02 Type 2 TR on Floating Point Exception Handling in Fortran

The TR was published in December 1998 as TR 15580:1998.

22.02.01.04 Type 2 TR on Enhanced Data Type Facilities in Fortran

The TR was published in December 1998 as TR 15581:1998.

22.02.03 Programming Language Fortran – Part 3: Conditional Compilation

The IS was published in April 1999 as IS 1539-3:1999.

1.2.2 Projects Underway

22.02.01.01 Programming Language Fortran – Part 1: Base language

The requirements for the next revision of the base Fortran Standard (IS 1539-1:1997), referred to informally as Fortran 200x, were agreed by WG5 at its meeting in Las Vegas, USA, in February 1997. In accordance with WG5's agreed strategic policy, the development of the draft standard was delegated to NCITS/J3, acting as WG5's

Primary Development Body. The original target date for J3 to deliver the draft standard to WG5 was January 2000. However, due to a combination of factors, including the need to process defect items and the complexity of some of the new features in the proposed revision, coupled with falling membership of NCITS/J3, this date has now been revised to June 2002. As a result, it is not now expected that the first CD ballot will commence until October 2002 instead of September 2000. The target date for the publication of the revised standard is now December 2004, instead of November 2002.

WG5 and J3 are developing new procedures to provide more effective means for WG5 members to contribute to the work of its Primary Development Body in order to ensure that two Corrigenda to IS 1539-1:1997, one containing items critical to the form of Fortran 200x and one containing other miscellaneous items, will be published before the first CD Ballot for Fortran 200x. It is intended that the first of these corrigenda will be submitted for SC22 balloting in September 2000, and that the second will be submitted in September 2001.

22.02.01.02 Type 2 TR on Floating Point Exception Handling in Fortran

During the work on integrating the features described in TR 15580:1998 into Fortran 200x certain minor errors have been identified. In order that these can be brought to the attention of any vendors modifying their existing Fortran 90/95 compilers to incorporate these features, and who are not members of NCITS/J3 or WG5, WG5 intends to revise this TR to incorporate these corrections as quickly as possible. The revised text was approved at WG5's meeting in June 1999. Moreover, in order to simplify the identification of these changes, WG5 intends to post the changes on its web site.

22.02.01.04 Type 2 TR on Enhanced Data Type Facilities in Fortran

During the work on integrating the features described in TR 15581:1998 into Fortran 200x certain minor errors have been identified. In order that these can be brought to the attention of any vendors modifying their existing Fortran 90/95 compilers to incorporate these features, and who are not members of NCITS/J3 or WG5, WG5 intends to revise this TR to incorporate these corrections as quickly as possible. The revised text was approved at WG5's meeting in June 1999. Moreover, in order to simplify the identification of these changes, WG5 intends to post the changes on its web site.

22.02.02 Programming Language Fortran – Part 2: Varying length character strings

The draft revision was submitted for simultaneous Registration and FCD Approval ballots in January 1999. Both ballots resulted in 14 votes in favour, 2 abstentions on the grounds of lack of expertise, 6 P-members failing to vote, and no votes against. In the FCD approval ballot, three countries (Germany, Japan and the UK) accompanied their approval votes with comments. In both votes one O-member voted in favour and one O-member abstained. The comments were addressed during a meeting of WG5 in June and a revised document, which incorporated the action agreed as a result of the disposition of the comments from the FCD ballot was submitted for its FDIS ballot in July 1999.

1.2.3 Cancelled Projects

None

1.3 Cooperation and Competition

WG5 cooperates closely with the ANSI NCITS/J3 Fortran Technical Committee, to whom it has delegated the technical development of Fortran 200x as well as the maintenance of Fortran 95 (ISO/IEC 1539-1:1997). There is also close contact with the industry-driven High Performance Fortran Consortium, with several members of the HPF Consortium also being members of J3 and/or WG5. Many of those responsible for the development of commercial Fortran compilers are members of J3 and/or WG5.

Other important liaisons are those with IFIP WG2.5 (Numerical Software) and ISO/IEC JTC1/SC22/WG20 (Internationalization).

There are no competitive activities.

2 PERIOD REVIEW

2.1 Market Requirements

Fortran is still the language of choice for the majority of scientific and technological programming. The long delay between the release of Fortran 77 and the availability of Fortran 90 compilers, at a time when other languages, such as C and C++, were evolving rapidly, had a significant impact on the use of Fortran, but there are now clear signs that the facilities available in Fortran 90 and Fortran 95 are causing a growing number of scientific and technological users to move towards these latest versions of Fortran. In parallel with this, the availability of two commercial subsets designed primarily for educational use (F from Imagine, Inc and Elf90 from Lahey Computing Systems, Inc) is generating increased interest in Fortran from the higher education sector.

Most major Fortran compiler vendors are represented either on WG5 or its Primary Development Body, NCITS/J3, as are many of the major research establishments which rely on Fortran for their numerical computing. There is also an active email list for users of Fortran 90 which provides valuable feedback from users. All these diverse sources are used to guide the development of the language, both through revisions to the base language Standard, and through other related standards and technical reports.

2.2 Achievements

A new Part 3 of the Standard has been published during the year, while the Final CD of the revision to Part 2 was approved, with fourteen P-members voting in favour and none against. In addition, two Technical Reports have also been published, describing features which will be incorporated in the next revision of the Base Language Standard (Part 1).

2.3 Resources

As elsewhere in the Standardization world, it is becoming increasingly difficult to persuade employers to provide the necessary funding for Standards activity. WG5 delegates most of the technical work involved in developing Standards and Technical Reports to “development bodies” which are either based on a national Fortran committee, as in the case of NCITS/J3 – the primary development body responsible for development of the revision to the base language standard and its subsequent maintenance, or consist of a (small) multinational group under the leadership of the relevant project editor. WG5 currently has two such active development bodies, including the primary development body, developing standards, and three development bodies monitoring published standards and technical reports for maintenance purposes. It is, however, a matter of concern that the number of members of the primary development body (NCITS/J3) has been falling recently, with the inevitable result that the development both of the next revision of the base standard and of corrigenda to the current base standard is being seriously delayed.

WG5 itself carries out much of its discussions via email, with an annual meeting during the summer, and occasional other meetings at critical stages in the development of the base language standard. The meeting in June 1999 was attended by nineteen members, including the Convenor, representing seven countries; one other country was unable to attend due to its travel funds for standardization activities having been exhausted on Java activities!

3 FOCUS FOR NEXT WORK PERIOD

3.1 Deliverables

It is anticipated that the revision of Part 2 of the Standard (Varying length character strings) will be approved before the end of the year.

It is also hoped that revised versions of TR 15580:1998 and TR 15581:1998 will be published in the first half of 2000.

3.2 Strategies

WG5 operates under a strategic plan described in WG5 Standing Document 4, the latest version of which, WG5 N1349, is annexed to this Report. In particular, the revision of the base Standard, IS 1539-1, is delegated to ANSI NCITS/J3 operating as WG5’s Primary Development Body, while the other projects for which WG5 is responsible are handled by other Development Bodies which liaise with the Primary Development Body as required.

3.2.1 Risks

As far as possible, WG5 tries to anticipate technical comments during international ballots by holding informal ballots of its members before any documents are submitted for ballot. Nevertheless, unexpected technical comments can always delay the planned schedule.

3.2.2 Opportunities

WG5 has made extensive use of email for over a decade to speed up technical development. Since 1995 most documents have been distributed via an official file server in the UK, with two mirror sites in the USA; all documents have been distributed in this way since 1997. An open web site is also used to provide non-technical, and other publicly available, information to interested parties.

In addition to speeding up the distribution of documents, the use of electronic distribution and communication systems also provides many other benefits, such as the ability to rapidly carry out informal ballots of the members for various reasons.

3.3 Work Program Priorities

Publication of Part 2 of the Standard (Varying Length Strings) and the preparation of the first corrigendum to Fortran 95 are WG5's two priority activities this year.

WG5 members will also monitor, and/or participate in, the work of WG5's Primary Development Body, NCITS/J3, as it moves into the final stages of the development of the Working Draft of the revision of the base Fortran language Standard, ISO/IEC 1539-1:1997.

4 OTHER ITEMS

4.1 Action Requested at the Forthcoming SC22 Plenary

4.1.1 Extension of Schedule for Project 22.02.01.01

The revision of ISO/IEC 1539-1:1997 commenced in 1997. It was originally intended to complete this revision by late 2002, five years after commencing the work. However, as discussed in section 1.2.2, it is now expected that the revised standard will not be finally approved until November 2004. WG5, therefore, requests SC22 to authorise an extension of two years for this project.

4.1.2 Registration and Approval of Revised version of TR15580

A WG5 wishes to produce a (very) minor revision of TR 15580:1998 in order to incorporate corrections to certain errors found during the integration of its content into Fortran 200x. In order to expedite this process, WG5 requests SC22 to approve the registration of the revised draft TR, and also to approve the revised draft itself, at its 1999 Plenary. Note that it is intended that the changes will also be available from the WG5 web site.

4.1.3 Registration and Approval of Revised version of TR15581

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4.2 Recent Meetings

1998/6/14-18 Cadarache, France

4.3 Future Meetings

2000/08/21-25 Oulu, Finland
2001/08 UK
2002/08 tba
2003/04 USA (1st CD ballot resolution)
2003/08 tba

Note that WG5 normally meets annually, with extra meetings being held as/when necessary to process ballot comments or other high priority activities which do not accord with the regular meeting schedule. WG5's Primary Development Body, NCITS/J3, meets quarterly. Other work is carried out via email.

4.4 Convenorship of WG5

Regrettably, due to pressure of work the Convenor, Dr Miles Ellis, is no longer able to devote sufficient time to carrying out the duties of Convenor as he feels necessary, and has, therefore, decided not to apply for re-appointment as Convenor when his current term of office expires at the 1999 SC22 Plenary. Dr Ellis is willing to continue to act as Convenor until his replacement has been appointed by SC22. In this connection, it is understood that the UK expects to nominate a replacement, at the 1999 Plenary, for appointment as WG5 Convenor in succession to Dr Ellis.