

1 TC scope

J3 develops the standard for the Fortran programming language, with the content of each revision specified by ISO/IEC JTC1/SC22/WG5.

2 Significant accomplishments

- Fortran 2003 was issued as an International Standard. See <ftp://ftp.nag.co.uk/sc22wg5/N1551-N1600/N1579.pdf> (summary of changes) and <ftp://ftp.nag.co.uk/sc22wg5/N1601-N1650/N1601.pdf> (final committee draft of complete standard).
- Type II technical report on Enhanced Module Facilities was issued. See <ftp://ftp.nag.co.uk/sc22wg5/N1601-N1650/N1602.pdf>.
- Technical content of Fortran 2008 was defined. See <ftp://ftp.nag.co.uk/sc22wg5/N1601-N1650/N1630.txt> (Resolutions of the 2005 WG5 meeting) and [.../N1626.txt](ftp://ftp.nag.co.uk/sc22wg5/N1601-N1650/N1626.txt) (pre-meeting requirements repository).

3 Significant challenges

Gathering and distilling requirements for Fortran 2008

J3 cast a wide net and then filtered. Suggestions were solicited in *Fortran Forum* (an ACM publication), the comp-fortran-90@jiscmail.ac.uk mailing list, and the [comp.lang.fortran](http://www.comp.lang.fortran) newsgroup.

The following excel spreadsheets are available from the J3 document archive at <http://www.rose-hulman.edu/groups/fortran/HTML/doc/year/>:

- 04/04-265r1.xls listed 163 J3 proposals.
- 04/04-302.xls listed 172 J3 proposals.
- 04/04-370r4.xls and 04-423r1.xls listed 50 J3 proposals.
- 05/05-145r3.xls listed 49 J3 proposals.

The spreadsheets have a title for each proposal, and a list of relevant papers, available from the same source. The WG5 requirements repository, listing 49 J3 proposals, six Russian proposals, and ten UK proposals, is available at <ftp://ftp.nag.co.uk/sc22wg5/N1601-N1650/N1626.txt>.

4 Expected challenges

- Develop the Fortran 2008 standard to meet the requirements set by WG5.
- The ISO requirement to prepare a standard within 18 months of initiating a work item makes substantial progress in any single revision difficult. With each revision, this policy has caused J3 to forgo implementing many good ideas. Instead, in this cycle, J3 has spent $1\frac{3}{4}$ years gathering proposals, many of which have been on the table in various forms for twenty years, and then reducing the list to fit within the 18 month schedule. This time could be put to better use in actually developing new functionality that the user community has eagerly sought.

5 Liaison activities

- Dan Nagle — Liaison to H2 (Database/SQL).
- Craig Rasmussen — Liaison to J11 (C).

Liaison with J11 is to coordinate maintenance and future development of the **Interoperability with C** feature of Fortran 2003.

6 Future trends and related technical activities

- Fortran has been and remains the premier computer programming language for high-performance floating-point numerical computations. This is expected to continue.
- Future work will focus on incorporating explicit parallelization, and improving facilities for large-scale software engineering, especially generic programming.
- J3 continues to have a strong working relationship with WG5.

7 How can INCITS help

- J3 receives fine support from INCITS staff.
- Reduce impediments to TC membership and service as officers to encourage broader participation. J3 currently has eleven primary members: Six from compiler vendors, two from government laboratories, and three who represent themselves. There are no students, no active full-time university faculty, and no delegates from private industry.
 - Officers' training and required attendance at non-TC activities, usually at delegates' own expense, do not advance the TC's agenda. Asking an employer to pay for this only decreases the employer's interest in employee participation in standards activities.
 - It is sometimes difficult for foreign delegates to participate; is INCITS petitioning the State Department to ease entry for regular attendees?
 - INCITS uses Microsoft HTML files, but MS HTML is nonstandard. Many HTML editors will not handle MS HTML. A standards organization should use and require use of standard-conforming products and systems.

- Reduce useless make-work: J3 US TAG has frequently voted unanimously on an issue, and so remarked in its minutes, which include an attendance list, only to be told that a matrix of votes is necessary.
- ...
- Urge ISO
 - To complete publication in a more timely fashion.

ISO did not publish the Fortran 2003 Standard until fifteen months after the technical work was completed. If the ISO delay were reduced, TC's would have more time for fruitful development.
 - To be more responsive to project editors.

The ISO editor introduced numerous mistakes into the Technical Report on Enhanced Module Facilities. Sally Smith was responsive and tried to help, but the ISO editor never responded directly to the project editor's concerns, and failed altogether to address some of them. Despite numerous requests, the ISO editor's name and contact information were not given to the project editor.
 - Not to undo committees' and project editors' work.

INCITS J3 carefully prepared bookmarks and hyperlinks within the PDF version of the Fortran 2003 standard. These were removed by the ISO editor.
 - To be consistent in the requirements it puts on project editors.

The technical report on Enhanced Module Facilities was prepared by exactly the same word processing system, using exactly the same fonts, styles, and page layout as the Standard. Nonetheless, the ISO editor requested a different font. As it happened, this was only so that the ISO editor could change page headings in the introduction, and introduce ISO boilerplate. The project editor offered to do this, but the ISO editor did not respond.