

## **Support for Fortran Standards Development - Report September 2013**

### **Introduction**

The development of most major programming languages is now undertaken by standards committees. BCS has supported the UK contribution to the development of international Fortran standards since 2003. The initial case from 2002 is at [www.fortran.bcs.org/2003/devrep03.htm](http://www.fortran.bcs.org/2003/devrep03.htm) and subsequent annual reports are linked from [www.fortran.bcs.org/standards/stanhome.php](http://www.fortran.bcs.org/standards/stanhome.php).

UK members participate in the ISO Fortran committee (SC22/WG5), the BSI Programming Language committee (IST/5), the ISO Programming Language Committee (SC22) and the US Fortran committee (J3). In addition to attending BSI and international meetings, to the costs of which BCS has contributed, much work is of course undertaken by email. The BSI Fortran panel and the BCS Fortran Specialist Group make every effort to represent the UK as a whole at international meetings.

### **Activity 2012-2013**

The latest revision of the full Fortran language standard, informally known as Fortran 2008, was published in October 2010. The next revision is scheduled for publication in early 2017 and work on determining the content started during the past year. However the principal priority during the year has been development of the Technical Specification on Additional Parallel Features (below).

### **Future Development of the Fortran Standard**

It had been decided (ref the report for 2011-2012) that no extensions be considered for the next revision but that it should incorporate the technical corrigenda and the two technical specifications (on further interoperability with C and on additional parallel facilities) together with editorial improvements and removal of existing deficiencies and irregularities. The UK group had a long and lively email discussion on this last point which resulted in submitting ten proposals to WG5 for consideration. The US submitted 17 proposals and other countries, surprisingly, none. Eight of the UK proposals were accepted in whole or in part, as were seven of the US proposals.

### **Technical Specification on Further Interoperability of Fortran with C**

This was published as ISO/IEC TS 29113:2012 in November 2012.

### **Development of a Technical Specification on Additional Parallel Features in Fortran**

The content of a report to extend the parallel processing facilities in Fortran continued to be unsettled. The requirements "finally agreed" last year were changed again in June. The scheduled publication date is November 2014.

### **Development of the Fortran annex for TR 24772 (Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection and Use)**

The Fortran-specific annex produced by WG5, with UK participation, was included in the 2013 edition of this Technical Report.

### **Physical Dimensions in Fortran**

A project for a technical report on adding physical dimension facilities to Fortran was proposed by a US member of WG5 during the year. A trawl of opinion amongst Fortran Specialist Group members showed opinion both for and against, with the latter slightly preponderant. However the proposal was rejected at the WG5 meeting in June.

### **WG5 meeting in 2015**

Participating countries take turns to host the annual WG5 meeting and it is the turn of the UK in 2015. The Membership Board has kindly agreed to the use of rooms in Southampton Street free of charge for a week in early August.

The UK continues to play a major role in the development of the Fortran language. The convenor of WG5, the project editor, the webmaster and the email administrator are all from the UK, as are (usually, but appointed annually) the minutes secretary and the editor of the Technical Corrigenda.

All Fortran development papers are open to all interested worldwide; minutes of the most recent WG5 meeting are in WG5-N1977. WG5 documents are available via its website <http://www.nag.co.uk/sc22wg5/>. J3 papers are obtainable from <http://www.j3-fortran.org/>.

The Group is extremely grateful for the continuing support of BCS.

David Muxworthy  
BSI Fortran Convenor  
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