Support for Fortran Standards Development - Report September 2017

Introduction
Fortran is still the language of choice for much scientific, engineering, and economic programming, particularly for use on supercomputers and for very large programs that have evolved over many years. The development of most major programming languages is now undertaken by standards committees and 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 and subsequent annual reports are linked from www.fortran.bcs.org/standards/stanhome.php.

UK members participate in the ISO Fortran committee (SC22/WG5), the BSI Programming Language committee (IST/5) and its Fortran panel (IST/5/-/5), the ISO Programming Languages Committee (SC22) and the US Fortran committee (PL22.3 aka J3). In addition to attendance at BSI and international meetings, to the costs of which BCS has contributed, much work is 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 2016-2017
Work continued on integrating into the language the individual enhancements which had been agreed earlier, plus the content of the Technical Specifications on Interoperability of Fortran with C and on Additional Parallel Features. In March 2017 the draft went forward for balloting by national member bodies of SC22 and was approved by ten votes to none with ten abstentions. The 45 resulting editorial and technical comments (25 of them from the UK) were addressed at the June WG5 meeting and it was decided to reissue the revised document for a second Committee Draft ballot. This version was approved by eleven votes to none with nine abstentions and, perhaps surprisingly, generated 77 editorial and technical comments, of which 15 were from the UK. The comments are to be addressed the October meeting of the US Fortran committee. The scheduled publication date of the revised standard is August 2018.

In a formal ISO ballot on the collateral standard on Fortran Varying Length Strings, the UK voted to 'stabilize', that is to freeze the standard with a view to withdrawal when it is no longer in use.

Future Development of the Fortran Standard
Fortran users worldwide are being asked about which features they consider to be still missing from Fortran, particularly in comparison with other languages (v. https://wg5-fortran.org/). It is proposed next year to select the issues that still need attention and then to develop the necessary technical content over the following two years. The eventual publication of the standard is likely to be in 2022 or 2023.

TR 24772-8 (Guidance to Avoiding Vulnerabilities in Programming Languages through Language Selection and Use, Part 8 Fortran)
UK members participate in developing the Fortran part of this Technical Report. The next edition of the document is scheduled to be completed during the coming year.

Conclusion
The UK continues to play a major role in the development of the Fortran language. John Reid has recently retired after 18 years as WG5 convenor, and as webmaster, but will continue as an active member of the group. The UK continues to provide the project editor (a major undertaking) and the email administrator, plus (usually, but appointed on an ad hoc basis) the minutes secretary and the editor of the Technical Corrigenda. At the most recent WG5 meeting in Garching, Bavaria, five of the 18 participants were from the UK; of the five, two were partially supported by BCS.

Fortran development papers are open to all interested; minutes of the most recent WG5 meeting are in WG5-N2132 and the resolutions are in WG5-N2131. WG5 documents are available via its document register at https://wg5-fortran.org/documents.html. J3 papers are obtainable from http://www.j3-fortran.org/.

The Group is extremely grateful for the continuing BCS contribution to this project.

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BSI Fortran Convenor
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