UK Contribution to the Discussion on Future Evolution of Fortran
WG5 Meeting Rotterdam, August 13-17, 1990

This short note has been produced in response to London Resolution L6.

The UK Fortran Panel believes that there is continuing user demand for the further development of Fortran beyond Fortran 90. This opinion is based on the world-wide public comment on the drafts, on comments made at public meetings to discuss developments and on opinion in the UK Fortran community, expressed at Fortran Specialist Group and at Fortran Panel meetings and in articles and letters in the trade press.

Given the time needed to produce documents of the complexity of programming language standards we believe that there should not be a significant delay before submitting a New Work Item proposal for a revision. However we believe it would be premature to produce a proposal this year. We suggest that WG5 should think in terms of forwarding a NWI proposal a year from now and should use the intervening twelve months to formulate the exact content of the proposal. If this were to be more detailed than the current work item description, for example in the style of Extended Pascal, this could considerably shorten the time needed for the technical development of the revision.

We suggest that in order to achieve this WG5 should set up an ad hoe subgroup with the specific task of formulating the proposal. This subgroup should start with the base material arising from discussion at this (Rotterdam) meeting and should work by e-mail and fax; we suggest that access to at least one of these media could be a prerequisite for membership of the subgroup. The subgroup should report to the working group by mail, via the convenor. The target should be to have an draft ready, other than for any minor adjustment, for the Summer 1991 WG5 meeting.

Because of the essentially international character of programming languages, BSI will be seeking to persuade the SC22 Advisory Group meeting in October 1990 that future NWIs in its area, including revisions, should specify development of international standards solely by SC22 working groups, and not as dual national and international standards. This is in part to avoid placing technical groups in the position of attempting to obey two different, possibly contradictory, sets of rules and procedures at one time. Note that the intent is not to exclude anyone who has expertise to bring to standards development; there is for example the possibility of delegation of parts of the technical work to local (national) subgroups. However BSI proposes that such subgroups should work to ISO rules. We therefore naturally propose that this should apply to the revision of Fortran 90.

As to technical content of the NWI it has been suggested, despite all the votes in WG5, that experience with implementation might indicate a need for a subset language to aid efficiency. However most users seeking extensions appear to want increased functionality. A list arising from a recent British Fortran Specialist Group meeting is appended as an example, more to show some of the topics under discussion than necessarily to give them the endorsement of the BSI Fortran Panel. We make no specific proposal on this subject prior to discussion at the Rotterdam meeting.

Lastly we suggest that clarification is needed as to where exactly responsibility lies

for interpretation of Fortran 90 as an ISO standard, and, partly related to this and to the possible diminution of knowledge of Fortran 90 development through dispersal of its authors, that members of X313 and WG5 should consider producing an Information Bulletin on the reasons for aspects of development.

David Muxworthy
for BSI IST/5/5
10 August, 1990

A P P E N D I X

Report from BCS Fortran Specialist Group meeting, 28 June 1990

Topics members would like to see addressed in a revision were (in no particular order):

- bit handling
- event handling, possibly on the Ada model
- "real time" computing
- parallelism and multi-tasking, with reference to X3H5 work
- extension of deprecation
- possible implementation of core and modules
- examination of features in other languages which cause them to be used in preference to Fortran
- more extensive notes in the standard including advice on use
- retention of emphasis on efficiency and of independent compilation
- ability to cross-call other languages
- acknowledgement that the underlying hardware is likely to change substantially in the lifetime of the standard
- possible definition of graphics interface, e.g. for micros, windows
- ability to force serial execution, e.g.by compiler directives
- arbitrary character sets in identifiers
- register of character kinds for Fortran 90
- store mapping of files