THE FIRST TWO DECADES


OHP FOILS FOR A PRESENTATION GIVEN AT THE FSG MEETING ON 10 MAY 1990
The objectives of the group were formally agreed to be:

(a) to form a focus in the United Kingdom for work concerned with establishing and maintaining FORTRAN standards.

(b) to work in association with national and international standardisation bodies.

The following programme of activities was then devised against these objectives:

(1) Analyse existing ASI standards for Basic FORTRAN and FORTRAN.

(2) Review current post ASI implementation against (1) in regard to syntax and semantics.

(3) Collating Users' requirements and proposed solutions.

(4) Recommendations to standard Bodies as a result of (1), (2) and (3).

(5) Dissemination of information on FORTRAN standards.

It was agreed that Mr Gatehouse would write to ASI to advise them that a BCS FORTRAN specialist group is being formed and to ask, in particular, for communication on documentation and information on standardisation practices.
Early FSG Working Parties

January 1970
Analyse existing standards  
Ian Pyle
Comparison of existing compilers  
Brian Shearing and  
David Muxworthy
Extension to Fortran  
John Gatehouse

April 1970
Extensions to ASI Fortran IV  
Brian Shearing
Adaptation to conversational use  
Peter Bradly
Fortran on small machines  
Mike Garside

April 1971
Free format  
David Marwick
Mini computers  
Mike Garside
Diagnostics  
Paul Samet
Extensions  
Brian Shearing

1975
FORTREV review  
Colin Day

April 1976
Preprocessors  
John Murchland
Group Promotion & Information  
Alan Clarke

December 1976
Review Codasyl FDBMLC JOD  
Geoff Stacey
THE NEXT STANDARD FORTRAN

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First information available to FSG on X3J3 plans for revising Fortran 66

Ideas for Consideration as Extensions to Standard FORTRAN -- 8/71

No-St Extension or Revision Idea

1-1 Mixed real-integer arithmetic
2-A Apostrophe as Hollerith delimiter
3-A Multiple replacement assignment statement
4-1 Multiple entry subprograms
5-3 Specify a statement delimiter character; allow more than one statement per line
6-1 Have Hollerith or character data type; allow Hollerith constants in assignment and IF statements.
7-2 More than three dimensions
8-2 Nonstandard return statement
9-2 Reread or DECODE
10-2 ENCODE or equivalent
11-2 Automatic typing of function names, i.e., type of argument determines which function is actually used.
12-5 Data in type-statements
13-1 Implicit statement
14-N Implied multiplication after a right parenthesis
15 Logical masking statements
16-2 Program statement to identify main programs
17-3 Special format descriptor for vertical space control
18-2 Error detection on reading.
19-A End file detection on reading.
20 Generalization of subscript expressions.
21-3 Namelist statement
22-3 Internal subprograms
23-2 Free format input data, e.g., use a comma as field delimiter
24-N Names longer than six characters
25 Ignore trailing blanks in input data
26-N Allow Hollerith information in output lists without associated format field descriptor
27-2 Implied Do loop in data statement
28-2 Array name without subscript in data statement
29-2 Group successive exponentiations right to left
30-1 Expand basic external function list
31 Add some basic subroutine names
32 Generalize DO statement, i.e., allow expressions with zero and negative values
33-A Allow variable format statement labels in I/O statements, e.g., allow integer variable name that has been assigned a statement label 'value' in an assign statement
34 Allow more precise precision requirements in type statements
35 Allow additional format field descriptors, e.g., R and T
36-3 Define standard input data sentinel and make available number of numbers and/or number of lines read

Status Code: A-approved, N-not recommended,
1-Must be in Std., 2-Should be in Std., 3-Recommended,
4-Of some value, 5-Of trivial value.

[plus 3 more pages, 150 items in all]
4. Revision of objectives

Following further discussion, the wording of the proposed revised objectives now becomes "To undertake activities associated with any aspects of Fortran". It is intended to present this for approval at the next Specialist Groups meeting.
3.3 **ISO TC97/SC5**

Brian Meek reported about this meeting.

This group covers all programming languages for ISO and had to discuss more than Fortran. An ad hoc committee was set up to discuss Fortran. This consisted of 15 members, including 6 from X3J3.

N397 (X3J3/90) as amended by N410(X3J3/97) was considered as Fortran 77 for standardisation and a recommendation was made to the main committee that this be put to a letter ballot for acceptance as an International Standard.

Discussion on Fortran 82 plans followed and the following 'rough' schedule was given:

- 1978 - discussion of philosophy of new revision
- 1979 - discussion of particular proposals
- 1980 - 1982 writing of the new standard, draft publication and comment period.

None of these divisions are fixed and the first two items could overlap. Comment from outside the U.S.A. would be welcome at any time.

There was some discussion on the form of the new standard, one idea was to have a base language (perhaps Fortran 77) with add on modules to cover such items as real time applications, DBMS facilities, etc.

**Working Party Reports**

There were no working party reports.

**Other Recent Fortran Events**

5.1 **Implementation Developments**

K. Normington reported that Lanchester's Fortran compiler now had write list expressions as per Fortran 77

5.2 **Fortran Publications**
3. **Report from X3J3**

Mr. A. Clarke reported on the latest meeting of X3J3 held in Boston USA in October, at which he and Mr. A. Walter were present as observers. The following timetable is being attempted:

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Event</th>
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<tbody>
<tr>
<td>1979</td>
<td>Oct.</td>
<td>Initial Interface proposal by Subgroup</td>
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<tr>
<td>1980</td>
<td>Jan.</td>
<td>Technical Article on Interface Solution</td>
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<td></td>
<td>Mar.</td>
<td>Technical Article on Core</td>
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<tr>
<td></td>
<td>May</td>
<td>Language itself in place</td>
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<td>July</td>
<td>Final proposals for Core</td>
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<td>1981</td>
<td>Jan.</td>
<td>Final proposals for modules (including Data Base)</td>
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<td></td>
<td>Mar.</td>
<td>Proposals with text</td>
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<td></td>
<td>May</td>
<td>Final form of Core - plus - modules</td>
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<td></td>
<td>July</td>
<td>Last meeting for proposals</td>
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<tr>
<td></td>
<td>Oct.</td>
<td>Edit and cross-check document</td>
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<tr>
<td>1982</td>
<td>Jan.</td>
<td>Document in final form</td>
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### Public Presentations

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<tbody>
<tr>
<td>1971</td>
<td>Two-day Workshop</td>
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<td>1972</td>
<td>High-Level Language Conference</td>
<td>York</td>
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<td>1973</td>
<td>Datafair 73</td>
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<td>1975</td>
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<td>1989</td>
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### Ordinary Meetings outside London

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<td>Feb 1980</td>
<td>Edinburgh</td>
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<td>Nov 1981</td>
<td>Salford</td>
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<td>Oct 1986</td>
<td>Reading</td>
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<td>Jul 1987</td>
<td>Coventry</td>
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<td>Apr 1989</td>
<td>Oxford</td>
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Presentations at FSG meetings

1975
ICL 2900 Fortran
Compiling Fortran on Minicomputers
The SHELTRAN Preprocessor
Optimising Compilers for Fortran

1976
SHORTRAN - a Conversational Fortran translator
Univac Fortran Systems
Fortran Systems on DEC PDP8 and PDP11
Language Standards and Algorithm Editing
Experiences with Fortran and a CODASYL Data Base System
Fortran on an International Timesharing Network

1977
A Large Scale Fortran Project
Tools for a Large Subroutine Package
The dpANS Fortran
Industrial Fortran

1978
PL/I - a Successor to Fortran
Cray-1 Fortran Compiler

1979
Experience with the CODASYL Fortran interface
The ICL DAP
Fortran for the GEC 4000 series
The Use of Computers in Weather Forecasting

1980
Experience with programming in Fortran 77
Array Processing in Genstat
The Real Precision Proposals for Fortran
Portability of Fortran 77
Fortran Language Requirements
1981
Tools for Numeric Software Engineering
Fortran 8X Array Processing
Fortran I, Ratfor and the Software Tools Package
Parallel Processing - What is it?
Portable Fortran 77 Compilers

1982
How to make Portable Packages with almost any dialect of Fortran
Proposals for Fortran 8X
Using Standard Fortran - Past, Present and Future
The Cray-1 as a Fortran Engine

1983
GKS and Fortran
Array Processing in Fortran 8X
Fortran Optimisation
Derived Data Types in Fortran

1984
Toolpack - The Implementation Phase
The ISO Fortran Meeting in Geneva
The ICL Fortran 77 Optimising Compiler
Mixed Fortran and Prolog

1985
DEC Fortran and Program Development Aids
The BS Method for Specifying Requirements for Fortran Language Processors
The NCC/FSTS Fortran 77 Compiler Validation Scheme
Using DEC Computers in the field of Dynamic Simulation
1986
Floating Point Accuracy and Numerical Precision in Fortran
FPV - a floating point validation Package
A user's experience with the NAG Floating Point verifier
The New ETA Supercomputer
ECMWF - Its Role, Computing Activities and Fortran Experiences

1987
The Implementation of Toolpack
Software Tools
The AMT DAP-3
Productivity Tools for Fortran Programmers
Fortran Compilers on Modestly Parallel Processors

1988
The Array Processor Features in Fortran 8X
Implementation of Array Processor Extensions in Fortran 8X
Ada versus Fortran
Experiences with Ada and Fortran
The Salford FTN77/386 Compiler
The Portable Package Framework

1989
Short History of Fortran Preprocessors
Automatic Vectorisation
FLINT
PC Fortran Symposium
Expert Systems: general aspects and special properties of statistical front ends
The application of Knowledge-based Systems to enhance existing Fortran Software

1990
Parallel Processing
Fortran Harness for Parallel Computers
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<th>Chairman</th>
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