Strategic Plan for Fortran Standardization

The international standard for Fortran is a multi-part set of standards. Part 1 defines the base language; other parts define optional auxiliary standards.

1. Mission (the goal to achieve)

The mission of WG5 is to be responsive to changing technology and user needs by establishing procedures whereby all parts of the international Fortran standard are updated and revised in accordance with ISO procedures.

The standard will be developed and maintained by a broad and balanced international group of users, vendors, and academics, collectively providing appropriate expertise.

2. Vision (desired effect of achieving the goal)

The international scientific and engineering community will be provided with a single worldwide Fortran standard that be a modern language with high quality data abstraction and user extensibility features for high performance numerical, scientific and engineering programming.

3. Strategies (functions to achieve the goal)

3.1 Two major functions

There are two major functions: (1) identification of needs and specification of standard requirements and (2) development of standard document content and maintenance of the current standard. Other activities include scheduling, performing liaison and review activities, and conducting ad hoc studies. The requirements and development functions should be separate but highly coordinated.

3.2 Requirements as the "what" function

The result of requirements specification is a document that prescribes the functional requirements for a revision of the base language standard or of related standards. Draft documents (standards, amendments, corrigenda, technical reports, etc.) will be submitted to ISO for adoption.

WG5, on a continuing basis, determines, records, distributes, and maintains the needs and suggested requirements for Fortran. To begin a new revision WG5, using the recorded needs and suggested requirements, establishes objectives and corresponding functional requirements, specifications, and schedule for that revision.

3.3   Development as the "how" function
The development function develops the international standard revisions, corrigenda, amendments, and related auxiliary standards, in accordance with the specified requirements and schedule.

A development body will be chosen to produce each revision or new auxiliary standard. The development body for a revision of the base Fortran standard is the primary development body. It is the responsibility of each development body to determine how the requirements are to be met and to prepare the corresponding draft document. Revisions of the Fortran standard will incorporate approved corrections as well as fully implemented requirements.

Maintenance of a standard involves correcting errors that are discovered in the standard and providing official interpretations for those parts of the standard that are found to be unclear or incompletely specified. A corrigendum that incorporates corrections resulting from this maintenance activity will be produced periodically.

3.4   Scheduling
WG5 will determine the approximate target date for each revision of the base standard - typically between five and ten years - and will negotiate with the primary development body a detailed schedule consistent with this target. For other development work WG5 will negotiate an appropriate schedule with the corresponding development body. Activities involving maintenance of the current standard will take place concurrently with the development
activities.

3.5   The multi-part standard and technical reports
Some needs may be met most effectively with auxiliary standards rather than by revision of the base standard. Such an auxiliary standard is related to the base standard in some significant way; each auxiliary standard is a separate part of the Fortran standard, with Part 1 being the base language. Standard-conforming implementations must accommodate the whole of Part 1; the other parts are optional.

Because of the serious potential for incompatibilities arising from uncoordinated extension activities, WG5 requests that all bodies developing auxiliary standards coordinate their work closely with the primary development body and requires that the work be technically acceptable to the primary development body before approval by WG5.

At some point it may become appropriate to incorporate an auxiliary standard into the base standard. WG5 will accomplish this by assigning the integration to the primary development body, with assistance from the development body responsible for maintenance of the auxiliary standard.

3.6   Liaison and review activities
It is the responsibility of WG5 and the development bodies to establish liaison or contact with and review the work of other organizations whose work items relate to the Fortran standards effort. A list of such organizations is maintained in WG5 Standing Document 6, WG5 Liaison Activities.

3.7   Conducting ad hoc studies

It is the responsibility of WG5 to determine whether studies are needed to aid the identification and requirements specification processes. WG5 may carry out such ad hoc studies or may request one or more participating member bodies to carry out such studies.

4   Tactics (implementing the strategies)

4.1   Principal responsibilities of WG5

WG5 will:

(a)   maintain a repository of suggested requirements (Standing Document 5)

(b)   define revision objectives and select the corresponding functional requirements for development after comprehensive review

(c)   determine whether a given requirement can best be met by a revision of a part of the Fortran standard, the addition of a new part of the Fortran standard or by a technical report

(d)   choose the development bodies and delegate all development and draft document preparation to them

(e)   monitor development (Where progress is not consistent with the schedule WG5 will, together with the development body, determine if corrective action can be taken by the development body; if this is not possible it will be necessary for WG5 to reassign some or all items to another development body, or to delete some items from the specification or to revise the schedule)

(f)   monitor maintenance activities

(g)   determine whether a final draft document is adequate and consistent with the specified requirements

(h)   submit draft documents to ISO

(i)   commission Technical Report projects, as needed, as described in WG5-N1152.

The WG5 Convenor will when appropriate conduct letter ballots of the members to assist in reaching decisions between meetings.

4.2   Principal responsibilities of the development bodies

A development body will:

(a)   nominate a project editor

(b)   produce a draft document to meet the agreed schedule and specified requirements

(c)   establish a document production system that will allow the most recent electronic version of any proposed standard to be available to all members of WG5 and the development body

(d)   coordinate with other development bodies and organizations, as appropriate.

4.3   The Schedule

The specific schedules for the current WG5 projects are detailed in WG5 Standing Document 3, SC22 Project Information. The usual schedule for a standard, or revision of a standard, has the following general form:

Initial requirements prepared	
Review of requirements completed	
Final definition of requirements	
Completion of separate edits	
First working draft available	
WG5 approval of the Committee Draft (CD)	6 months expected
First CD submitted for registration and approval	1
First CD ballot initiated	1
First CD ballot comments available	4
Final CD submitted for approval	5
Final CD ballot initiated	1
Final CD ballot comments available	5
WG5 approval of the Draft International Standard (DIS)	1
DIS registered	2
DIS ballot initiated	1
DIS ballot results available	3
Standard published	2

4.4   Fortran maintenance bodies

WG5 will determine maintenance bodies for Fortran revision standards, auxiliary standards, and technical reports. In general, the body that develops a standard will be responsible for its maintenance.

WG5 will conduct a letter ballot on items that the maintenance body identifies as ready for further processing. From the items thus approved, WG5 will extract material appropriate for a technical corrigendum and forward the resulting draft to SC22 for further processing. This procedure will be repeated annually, except for those years in which a standard revision including the approved items is forwarded to SC22.

4.5   Coordination between WG5 and development bodies

Meeting schedules will be coordinated to make the best advantage of members' resources as far as time and travel expenses are concerned and to accomplish the goals established by the schedule.

There should be as much overlap as possible in the membership of WG5 and development bodies, especially with the primary development body. This provides informal communication and continuity.

Formal written reports and resolutions will be used to clarify communications and maintain a record of communications.