

# Choosing the technical content for Fortran 2020

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## 2016-2017 Users' comments

- ▶ "Is there a clean way to do it? Will there be in f2020?!"
- ▶ "the Fortran [sic] committee never seem to discuss the need..."
- ▶ "I'll never be able to understand why "the committee... is reluctant to address the confusion and muddled messaging..."
- ▶ "I am ... convinced that we will not have ... generic programming in the next 20 years"
- ▶ "persons who produce ... Fortran compilers are unskilled."
- ▶ 'the voiceless majority ... have ... no institutional support during committee discussions and whose "use cases" ... go unnoticed or inadequately represented.'
- ▶ 'extremely, extremely disconcerting ... intrinsic procedure introduced as recently as Fortran 2008 ... can end up as "useless"... entirely unacceptable position.'
- ▶ 'Please standards people trust us enough to give us Fortran void pointer and address arithmetic.'

## N2126: A Strategy for Reckoning the Content of the Next Revision, by Dan Nagle, J3 chair

- ▶ 'the latency between publication of those revisions and the general availability of fully-compliant compilers is seen by many as far too long.'
- ▶ 'latency of around three-to-five years' time is best.'
- ▶ 'some included new features that had a cost to implement that significantly outweighs their incremental benefit to applications programmers.'
- ▶ 'Any new feature request shall be stated as a set of use cases where applications programmers currently have undue difficulties.'
- ▶ 'the compiler engineers ... will make an estimate of cost of implementation.'
- ▶ 'WG5 ... will then accept or decline the proposed new feature.'

Key ideas: budget, cost to implementers, use cases.

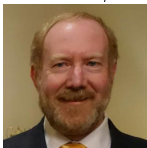
## J3/WG5 JUN-2017 meeting in Garching, Germany

N2132:

- ▶ 'concern that the standard had moved ahead of the language in compilers available to users, giving the impression that Fortran was slowing down.'
- ▶ 'different compilers implemented different subsets of the standard, thus inhibiting both development and portability of programs.'
- ▶ 'a need to investigate what Fortran users wanted to do in the language which was not currently possible and to find out what features in other languages were actually used, not simply talked about.'
- ▶ 'New features should be adopted only if they had long-term viability and features which might have only a minor benefit for users but a negative effect on compiler construction or performance should be avoided.'

## New WG5 convener, new site, user survey






- ▶ Steve Lionel (ex DEC, ex Intel, "Dr Fortran"), US based, J3 member, WG5 convener



- ▶ New WG5 site: <https://wg5-fortran.org>
- ▶ User survey - advertised at comp.lang.fortran, COMP-FORTRAN-90@JISCMAIL.AC.UK, Intel forums.
- ▶ Please complete the survey and advertise to others as widely as possible!

# User survey 1 (15-SEP-2017)

\* 1. Please rank the following suggested features in order of your wanting to use them in your applications. You can use a mouse to rearrange the items or enter rank numbers: 1 is most desired, 2 next most, etc.

	<input type="text" value=""/>	Easier manipulation of NUL-terminated strings
	<input type="text" value=""/>	Automatic allocation on READ into ALLOCATABLE character/array
	<input type="text" value=""/>	Unsigned INTEGER
	<input type="text" value=""/>	Generic programming or templates
	<input type="text" value=""/>	Bit strings
	<input type="text" value=""/>	Conditional expressions (like C's ? operator)
	<input type="text" value=""/>	Block-oriented or structured exceptions
	<input type="text" value=""/>	Suggestion not listed here (enter below)

## User survey 2

- ▶ (Mandatory) For the feature you ranked highest, how would it help in development of your applications? Have you used this feature in applications written in other languages?
- ▶ If you have a suggestion not listed above, please describe it here. Include references to other languages, if any, that have a similar feature. How would you use it in your applications? Have you used this feature in applications written in other languages?
- ▶ Any general comments for the Fortran committee?
- ▶ (Mandatory) Your name
- ▶ Your email address (Optional - will be used only to contact you about your suggestions/votes)

# WG5 Plan

- ▶ The survey results are analysed at J3 OCT-2017 meeting. A shortlist is drawn up.
- ▶ Further consultation with users based on the shortlist. Possibly another/amended survey.
- ▶ Final shortlist prepared at J3 FEB-2018 meeting. This is presented to WG5.
- ▶ N2135, Revised strategic plans for WG5, by John Reid:

## 3. Further revision

Started planning further revision	2017-06	J3/WG5
Choose issues that need attention	2018-06	J3/WG5
Preliminary choice of technical content	2019-08	J3/WG5
Final choice of technical content	2020-06	J3/WG5
CD constructed	2021-06	J3/WG5
CD ballot initiated	2021-07	