



ISO/IEC JTC1/SC22
Languages
Secretariat: CANADA (SCC)

ISO/IEC JTC1/SC22

N791

MAY 1990

TITLE:

Summary of Voting and Comments received on
PDTR 10182 - Guidelines For Language Bindings

SOURCE:

Secretariat ISO/IEC JTC1/SC22

WORK ITEM:

JTC1.22.14

STATUS:

New

CROSS REFERENCE:

N754

DOCUMENT TYPE:

Summary of Voting

ACTION:

For information to SC22 Member Bodies.
See attached.

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SUMMARY OF VOTING ON:

Letter Ballot Reference No: SC22 N754
Circulated by :JTC1/SC22
Circulation Date :1990-02-26
Closing Date :1990-05-21

SUBJECT:PDTR 10182 - Information Processing Systems
Guidelines For Language Bindings

The following responses have been received:

'P' Members supporting the proposal ,
without comments : 08

'P' Members supporting the proposal,
with comments : 04

'P' Members not supporting the proposal: 00

'P' Members abstaining : 00

'P' Members not voting : 08

Comments:

Attachment 1 - Canada
Attachment 2 - Japan
Attachment 3 - UK
Attachment 4 - USA
Attachment 5 - UK expert's personal comments

Secretariat Action:

The SC22 Secretariat will forward the attached comments to WG11 for consideration and recommendation for further processing of PDTR 10182. It should be noted that the comments contained in Att 5 are to be considered only if the WG feels they are useful in the progress of the TR.

ISO/IEC JTC1/SC22 LETTER BALLOT SUMMARY

PROJECT NO: JTC1.22.14

SUBJECT: PDTR 10182 - Guidelines For Language Bindings

Reference Document No: PDTR 10182

Ballot Document No: N754

Circulation Date: 1990-02-06

Closing Date: 1990-05-21

Circulated To: SC22 P,O,L

Circulated By: Secretariat

SUMMARY OF VOTING AND COMMENTS RECEIVED

	Approve	Disapprove	Abstain	Comments	Not Voting
'P' Members					
Austria	()	()	()	()	(x)
Belgium	(x)	()	()	()	()
Canada	(x)	()	()	(x)	()
China	()	()	()	()	(x)
Czechoslovakia	(x)	()	()	()	()
Denmark	(x)	()	()	()	()
Finland	(x)	()	()	()	()
France	()	()	()	()	()
Germany F.R.	(x)	()	()	()	(x)
Hungary	()	()	()	()	()
Iran	()	()	()	()	(x)
Italy	(x)	()	()	()	(x)
Japan	(x)	()	()	()	()
Netherlands	(x)	()	()	(x)	()
New Zealand	()	()	()	()	()
Sweden	()	()	()	()	(x)
Switzerland	()	()	()	()	(x)
UK	(x)	()	()	(x)	(x)
USA	(x)	()	()	(x)	()
USSR	(x)	()	()	()	()

'O' Members					
Australia	()	()	()	()	()
Brazil	()	()	()	()	()
German Dem Rep.	()	()	()	()	()
Iceland	()	()	()	()	()
India	()	()	()	()	()
Korea	()	()	()	()	()
Norway	()	()	()	()	()
Poland	()	()	()	()	()
Portugal	()	()	()	()	()
Singapore	()	()	()	()	()
Turkey	()	()	()	()	()
Thailand	()	()	()	()	()
Yugoslavia	()	()	()	()	()

*attachment
to N791*

CANADIAN COMMENTS ON DOCUMENT NO. DTR 10182

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Canada approves the above document, but submits the following comments:

- i. Guideline 2 does not resolve the issue of where responsibility lies. It is suggested that it is the primary responsibility of the system facility committee to establish a reference binding to an arbitrary language and a generic binding. Subsequent bindings should be the responsibility of the appropriate language committees. In practice it is expected that the system facility committee will seek support from the applicable language committee in the creation of the arbitrary language binding.
- ii. Guideline 5 is too restrictive. Current POSIX work could be prevented from achieving IS status in the absence of an IS for C. The logistics of achieving an IS for POSIX should not be dependent on those for C.

.../rw

Attachment
to N791

Japanese Comments on pDTR 10182 (SC 22 N754)

1. Page 5, Line 26

"(qv)" in ALIEN SYNTAX shall be clarified.

2. Page 45, Line 8

The following type definition is not allowed in Pascal:

```
GEInputClass = (GVLocator..GVString);
```

3. Minor editorial errors

<u>Page</u>	<u>Line</u>	<u>Incorrect</u>	<u>Correct</u>
Table		3.4.2 ... INTERfaces	3.4.2 ... Interfaces
1	12	conficts	conflicts
6	12	a application...	an application...
9	32	when chosing...	when choosing...
24	28	preceeding	preceding
26	16-17	between. between.	between.
31	17	separate	separated
48	23	preceeding	preceding
49	27	dominant	dominant
51	34	denomonator	denominator
61	13	sentinal	sentinel
63	30	occurence	occurrence



*Attachment
to N791*

ISO/IEC PROPOSED DTR 10182
INFORMATION PROCESSING SYSTEMS
GUIDELINES FOR LANGUAGE BINDINGS SC22N754

UK P-Member Body votes approval for the above ballot with the following comments.

1. Section 1.3 references need updating, in particular on Page 4, as follows:

"Programming Languages - C, in process of registration as ISO/DP"
should be replaced with:
Programming Languages - 'C', ISO/DIS 9899.

"Programming Languages - Extended Pascal, in process of registration as ISO/DP"
should be replaced with:
Programming Languages - Extended Pascal, ISO/DIS 10206.
2. 'Basic' is an acronym and so should be in capital letters - 'BASIC'.
This affects:
Issue #21, Page 63
Section 1.3, Page 4
3. Typographical error.
In the Table of Contents
Section 3.4.2. 'INTERfaces' should be replaced with 'Interfaces'.

16 May 1990
SRB/nas

*Attachment
to N791*

The US provides the following comments with its FOR vote on the proposed DTR 10182 on Information Processing Systems Guidelines for Language Bindings.

The US would like to compliment ISO/IEC JTC1/SC22/WG11 on producing these guidelines. In general, they are well written. They are useful and already one technical committee within the US is using the report as it works on the revision of a programming language standard. The Guidelines have been found to be particularly useful as the committee considers issues of inter-language calling. It seems especially appropriate that language bindings is the subject of a technical report. The US wishes that these guidelines remain guidelines and bindings is never the subject of a standard.

1. On page 17, lines 2-6: While it is true that the language committees may not have the expertise to develop bindings to specialized facilities, it does have a better understanding of the particular language. Often, the system facility committee has expertise in only the language that the original bindings are designed for, but not in additional languages that they have been given the task to develop bindings for.
2. On page 32, Guideline 35 (Ref. Issue 12): The arguments seem to favor adherence to the strict "Input before Output" parameter rule, even though a length specifier for an array or string more appropriately should be associated with the array, rather than being considered as a separate parameter. Many implementations generate a sequence of "hidden" parameters which specify these lengths following the defined arguments. This knowledge could be considered when doing an inter-language binding.
3. In section 1.3, References and Bibliography, the following references to ISO standards for NDL and SQL should be used in place of the ones in the DTR
 - Information Processing Systems - Database Language - NDL, ISO 8907:1987
 - Information Processing Systems - Database Language, SQL, ISO 9075:1989, revision of ISO 9075:1987 to include Integrity Enhancement.

3. (con't.)

These additional ISO documents deal with programming language binding issues and examples for database language standards

- Procedure Language Access to Draft Proposed Database Language, NDL, ISO TC97/SC21 N493, August 1984
 - Procedure Language Access to Draft Proposed Database Language, SQL, ISO TC97/SC21 N626, March 1985
4. In section 2.3, User-Defined Procedural Interfaces, the last paragraph stating that "database facilities use this method", could reference examples from ISO TC97/SC21 N493 or N626
 5. In section 2.5, Programming Languages with Embedded Alien Syntax, the last paragraph could reference ISO TC97/SC21 N493 or N626.
 6. References throughout the DTR to DP 8907 or to DP 9075 should be replaced by ISO 8907:1987 or ISO 9075:1989 respectively.
 7. ISO/IEC JTC1/SC21 is currently considering the subject of language binding issues for its protocol standards. This DTR should be sent to SC21 as a formal liaison report.
 8. In section 1.3, COBOL is not listed and should be. The US would like to see further development to address COBOL.
 9. In Guideline 10, first sentence of second paragraph - Compatibility with an existing standard may preclude more precise properties of existing data types.
 10. Guideline 33 - One US committee noted that while the grouping of messages numbers may be laudable, it has been found to be unrealistic. One always runs out of numbers when one starts with a range, so this does not solve the problem. The US suggests deleting this guideline.
 11. Guideline 35 - Additional explanation is needed to clarify the meaning of "added parameters". As stated, the proposed wording of the guideline must be supplemented with that of issue 12 annex B to be useful. It is recommended that suitable text of issue 12 be used to supplement that of the guideline.
 12. Guideline 36 - The guideline should be sufficiently clearly stated as to not require an understanding of issue 13. As drafted, the guideline is not clear as to what point is being made until issue 13 has been understood.

13. Guideline 41 - This guideline seems to contradict common practice in various programming language standards in which the same syntax is used for all function calls (i.e. COBOL, Pascal, C, Fortran). One committee in the US observed that a common prefix that associates visually a function which is being called with a package is certainly a good idea. However, lexical differentiation implies other syntactic differentiation between calls for its language binding and other calls.

The US is pleased to offer to clarify its comments as needed.

Comments on Proposed Bindings Guidelines

These are comments on ISO/IEC JTC1/SC22 N754 (Proposed Guidelines on : Information Processing Subsystems - Guidelines for Language Bindings. They arose from a preliminary attempt by ECMA TC33-TGEP (Task Group for ECMA PCTE) to apply the Guidelines to the production of Ada and C language bindings for ECMA PCTE (which is being defined in a language-independent way). However they express my personal opinion and do not necessarily represent the views of TGEP.

My general impression is that the Guidelines will prove very useful in deciding the strategy for the bindings, overall and for each particular language, as a checklist of issues to consider and in suggesting solutions. The comments are all on points of detail. I realise they are rather late in the day, and none of them are important enough for me to wish to see any risk of delay to the publication of the Guidelines on their behalf.

1. Page 4, section 1.3, reference for Ada. This should be to IS 8652.
2. Page 16, section 3.1, Guideline 2. The second sentence (which duplicates the first part of Guideline 7) should be deleted.
3. Page 22, section 3.4.1. In fact (regrettably) no Guidelines are given for method 5.
4. Page 23, section 3.4.2.1. I think it would be worth taking one further step of generalisation by deleting the reference to GKS in the first paragraph, and where necessary loosening the Guidelines by adding phrases like "if necessary". This would bring the presentation of this section in line with the rest of the document.
5. Page 23, section 3.4.2.1, 3rd paragraph, 2nd sentence. "Will maintain" should be replaced by "maintains", if that is the intent (otherwise the document will become out of date).
6. Page 25, section 3.4.2.2, Guidelines 18 and 19. A reference to Guidelines 44 and 45 would help the reader understand what these are about.
7. Page 25, section 3.4.2.2, Guideline 20. This is out of place in section 3.4.2, which deals with method 1. Perhaps sections 3.4.2.2 and 3.4.2.3 should be lifted to form section 3.5.
8. Page 31, section 3.4.2.4, Guideline 33. This should be done even if error numbering is not used (e.g. with Ada exceptions).
9. Page 33, section 3.4.2.4, Guideline 38, 4th sentence. I fail to see why the order LEFT, MIDDLE, RIGHT is more "natural" than RIGHT, MIDDLE, LEFT; "customary" or "conventional" perhaps.

10. Page 34, section 3.4.2.4, Guideline 42. I disagree with the idea of eliminating unnecessary words between the functional specification and the binding; this adds to the complexity of the mapping. Why have them there in the first place? The example in Annex A (page 42) does not, otherwise the function would be called something like PERFORM A REQUEST ON A SPECIFIED STROKE DEVICE. As it is, the mapping between names in the functional specification and the Ada mapping is clear and unambiguous.
11. Page 36, section 3.4.2.4, Guidelines 46, 47. Replace "data types" by "names of data types" (twice). It is not obvious why data type names are treated differently to function names, and the discussion of Issue 23 does not help. In particular, to follow Guideline 47 some action by the functional standard definers like that proposed in Guideline 44 seems to be needed. Some explanation of this difference would help.
12. Page 37, section 3.4.2.4, Guideline 48, 4th sentence. I disagree that binding documents should not contain detailed references to the functional standard; I do not see how a binding can be well-defined in general without such references. The functional standard should have reached a stable state before the binding is issued, and any revision to the functional standard necessitates a review of associated bindings. I agree that the binding document should not copy material or quote from the functional standard.
13. Annex A. It is difficult to relate the bindings to the functional standard with certainty in the fragments presented. This is presumably in part because there is some general information on the mapping not shown here, e.g. conventions for function names. However it is not clear whether all possible points of doubt would be covered. For instance, the mapping between the 6 parameters of REQUEST STROKE and the 4 parameters of the Pascal binding GReqStroke might be deducible from a general rule given elsewhere, but if not it should be stated. Similar points can be made about the other languages.
14. Annex A, page 46. Figures 6 and 7 have run together.

John Dawes
14 May 1990