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Record of Response 1

For defect reports on

ISO/IEC 1989:2002

Information technology — Programming languages — COBOL

ISO/IEC JTC 1/SC 22/WG 4

Secretariat: ANSI

Contents

Introduction

This Record of Response contains defect reports concerning ISO/IEC 1989:2002, Information technology — Programming languages — COBOL. Associated corrections and clarifications are contained in Technical Corrigendum 1 to ISO/IEC 1989:2002, Information technology — Programming languages — COBOL.

DR-1 - Restricted program pointer with AS phrase on CALL statement

DEFECT REPORT NUMBER: 1989/001

WG SECRETARIAT: ANSI

DATE CIRCULATED BY WG SECRETARIAT: 11 June 2003

DEADLINE ON RESPONSE FROM EDITOR: 11 August 2003

SUBMITTER: Ann Bennett (Project Editor)

FOR REVIEW BY: SC22/WG4

DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002 Information technology — Programming languages — COBOL

QUALIFIER: Clarification required

REFERENCES IN DOCUMENT: Page 420, 14.8.4, CALL statement

NATURE OF DEFECT

When a restricted program-pointer is specified in a program-prototype CALL statement, the rules imply that the specified program-prototype name is ignored. The prototype specified in the definition of the program-pointer is used instead. A mismatch between those two prototypes is permitted and will not be diagnosed as an error.
(Reference: INCITS/J4 02-0251, DF-1.2, Restricted program pointer with AS phrase on CALL stmt)

SOLUTION PROPOSED BY THE SUBMITTER

The following changes are proposed for a technical corrigendum:

1. Page 422, 14.8.4 CALL statement, add a new syntax rule for format 3:
   13a) If identifier-1 references a restricted program-pointer, the signature of the program-prototype specified in the definition of that pointer shall be the same as the signature of program-prototype-name-1.
2. Page 424, 14.8.4 CALL statement, replace GR 7 by the following:
   7) If the NESTED phrase is not specified, program-prototype-name-1 is used to determine the characteristics of the called program.

EDITOR'S RESPONSE

The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

1. Page 422, 14.8.4.2, CALL statement, Syntax rules, add the following under format 3, after syntax rule 13, as new syntax rule 13a:

   "13a) If identifier-1 references a restricted program-pointer, the signature of the program-prototype specified in the definition of that pointer shall be the same as the signature of program-prototype-name-1." [DR-1]

2. Page 424, 14.8.4.3, CALL statement, General rules, replace general rule 7 with the following:
   "If the NESTED phrase is not specified, program-prototype-name-1 is used to determine the characteristics of the called program."

DR-3 - Clarify FORMAT clause

DEFECT REPORT NUMBER: 1989/003
WG SECRETARIAT: ANSI
DATE CIRCULATED BY WG SECRETARIAT: 11 June 2003
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SUBMITTER: Ann Bennett (Project Editor)
FOR REVIEW BY: SC22/WG4
DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information Technology — Programming Languages — COBOL
QUALIFIER: Clarification required
REFERENCES IN DOCUMENT:
1) Page 286, 13.16.22, FORMAT clause, general rules 2c3d and 2c3e.
2) Page 507, 14.8.33, REWRITE statement, syntax rule 10b
3) Page 559, 14.8.47, WRITE statement, syntax rule 7b

NATURE OF DEFECT:
Reference 1 specifies the manner in which numeric literals are treated in the FROM phrase of WRITE and REWRITE statements. However, references 2 and 3 allow only national, boolean, or alphanumeric literals in this context, and consequently the rules in reference 1 that relate to numeric literals never apply.
(Reference: INCITS/J4 02-0252, DF-3.2, Clarify FORMAT clause)

SOLUTION PROPOSED BY THE SUBMITTER:

- Page 286, 13.16.22, FORMAT clause: Delete general rules 2c3d and 2c3e.

EDITOR'S RESPONSE
The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

- Page 286, 13.16.22.3, FORMAT clause, General rules, delete general rule 2)c)3.d (beginning "If the literal is a fixed-point numeric ...") and general rule 2)c)3.e (beginning "If the literal is a floating-point numeric ...").

DR-4 - Overlapping operands in RELEASE statement

DEFECT REPORT NUMBER: 1989/004
WG SECRETARIAT: ANSI
DATE CIRCULATED BY WG SECRETARIAT: 11 June 2003
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SUBMITTER: Ann Bennett (Project Editor)
FOR REVIEW BY: SC22/WG4
DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information Technology — Programming Languages — COBOL
QUALIFIER: Clarification required
REFERENCES IN DOCUMENT:
1) Page 503, 14.8.30, RELEASE statement, syntax rule 2
2) Page 505, 14.8.32, RETURN statement, syntax rule 1
NATURE OF DEFECT:
References 1 and 2 require that the implementor prohibit overlap of the sending and receiving data items for RELEASE statements with FROM phrases and RETURN statements with INTO phrases. However, it is not always possible to detect such overlap during compilation.
(Reference: INCITS/J4 02-0253, DF-4.1, Overlapping operands in RELEASE)
SOLUTION PROPOSED BY THE SUBMITTER:

1. Page 503, 14.8.30, RELEASE statement, syntax rule 2: Delete the second sentence.
2. Page 505, 14.8.32, RETURN statement: Delete syntax rule 1.
3. Page 829, F.2, Substantive changes not affecting existing programs: Add entry 112a as follows: RELEASE statement: The rule prohibiting record-name-1 and identifer-1 from referencing the same storage area has been deleted. The results are undefined, according to the rules for overlapping operands.
4. Page 830, F.2, Substantive changes not affecting existing programs: Add entry 116a as follows: RETURN statement: The rule prohibiting the storage area associated with identifier-1 and the record area associated with file-name-1 from being the same storage area has been deleted. The results are undefined, according to the rules for overlapping operands.

EDITOR'S RESPONSE
The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

1. Page 503, 14.8.30.2, RELEASE statement, Syntax rules, syntax rule 2, delete the second sentence (beginning "Record-name-1 and identifier-1 ...")

2. Page 505, 14.8.32.2, RETURN statement, Syntax rules, delete syntax rule 1.

3. Page 829, F.2, Substantive changes not affecting existing programs, add entry 112a after entry 112 as follows:

   "112a) RELEASE statement: The rule prohibiting record-name-1 and identifer-1 from referencing the same storage area has been deleted. The results are undefined, according to the rules for overlapping operands."

4. Page 830, F.2, Substantive changes not affecting existing programs, add entry 116a after entry 116 as follows:

"116a) RETURN statement: The rule prohibiting the storage area associated with identifier-1 and the record area associated with file-name-1 from being the same storage area has been deleted. The results are undefined, according to the rules for overlapping operands."

DR-7 - SET statement problems — object references

DEFECT REPORT NUMBER: 1989/007
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SUBMITTER: Ann Bennett (Project Editor)
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DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information Technology — Programming Languages — COBOL
QUALIFIER: Clarification required
REFERENCES IN DOCUMENT: Page 407, 14.7.2.2, Elementary items, rule 2d
NATURE OF DEFECT:
Rule 2d in the conformance rules for elementary returning items in 14.7.2.2, Elementary items, is poorly worded. It states "If the activated method is invoked with any other object reference, this identifier is used as the sending operand, including the ONLY phrase if specified." No identifier contains an ONLY phrase. The description of an object reference can contain an ONLY phrase.
(Reference: INCITS/J4 03-0133, DF-7.I, SET statement problems — object references)

SOLUTION PROPOSED BY THE SUBMITTER:
The following change is proposed for a technical corrigendum:

- Page 408, 14.7.2.2, Elementary items, replace rule 2d with the following:
  If the activated method is invoked with any other object reference, the sending operand has the description of that object reference, including the ONLY phrase if specified.

EDITOR'S RESPONSE

The defect described above is corrected in Technical Corrigendum 1. The change is editorial, but the complexity and length of the existing sentence makes it difficult to revise in part. The following is the change:

- Pages 407 and 408, 14.7.2.2, Elementary items, first paragraph, replace item 2 and its subitems a, b, c, d, and e with the following:

  "2) If the returning item in the activated element is described with an ACTIVE-CLASS phrase, the conformance rules are the same as the conformance rules for a SET statement specified in the activating element with the following operands:

  a) A receiving operand that is the returning item in the activating element.

  b) A sending operand that is an object reference described as follows:

  a) If the activated method is invoked with a class-name, the sending object reference is described with that same class-name and an ONLY phrase.

  b) If the activated method is invoked with the predefined object reference SELF or SUPER, the sending object reference is described with an ACTIVE-CLASS phrase.

  c) If the activated method is invoked with an object reference that is described with an interface-name, the sending object reference is a universal object reference.

  d) If the activated method is invoked with any other object reference, the sending operand has the same description as that object reference.

If the sending operand defined above is described with a class-name or an ACTIVE-CLASS phrase, the presence or absence of the FACTORY phrase is the same as in the returning item of the activated element."   [DR-7]

DR-8 - Call Convention and Entry Convention

DEFECT REPORT NUMBER: 1989/008

WG SECRETARIAT: ANSI

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SUBMITTER: Ann Bennett (Project Editor)

FOR REVIEW BY: SC22/WG4

DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information technology — Programming languages — COBOL

QUALIFIER: Clarification required

REFERENCES IN DOCUMENT:
Page 68, Section 8.3.1.1.1, User-Defined words

NATURE OF DEFECT:
The standard is not clear as to how the naming convention and mapping used for calling an external program is determined for the program-prototype format of the CALL statement.

(Reference: INCITS/J4 03-0036, DF-8.2, Call Convention & Entry Convention)

SOLUTION PROPOSED BY THE SUBMITTER:

Changes for a Technical Corrigendum:

1. Section 8.3.1.1.1, User-Defined words, page 68, replace item 1 that follows the sentence starting "When a CALL statement…" with the following (italics indicate change):
   1) If the CALL statement, CANCEL statement, or program-address-identifier specifies a program-prototype-name, the naming convention and mapping used for the program-name is determined by the entry convention *indicated by the description of the program to be called, as determined by 12.2.7.3, REPOSITORY paragraph, General rule 10*;

Changes for a Future Standard:
Section 8.3.1.1.1, User-Defined words, should be restructured so that references to 8.3.1.1.1 can identify the specific part of 8.3.1.1.1 to which they refer.

EDITOR'S RESPONSE

1. The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

   Page 68, 8.3.1.1.1, User-defined words, last paragraph (beginning "When a CALL statement, a CANCEL statement, ..."), item 1, change in part to read:

   "... determined by the entry convention indicated by the description of the program to be called, as specified in 12.2.7.3, REPOSITORY paragraph, General rule 10."

2. The changes proposed above for a future standard will be further considered in setting priorities for a future edition of ISO/IEC 1989.

DR-9 - Minor comments

DEFECT REPORT NUMBER: 1989/009

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FOR REVIEW BY: SC22/WG4

DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002 Information technology — Programming languages — COBOL

QUALIFIER: Clarification required

REFERENCES IN DOCUMENT

1. Page 457, 14.18.9, INITIALIZE statement
2. Page 779, E 17.5.1, Objects

NATURE OF DEFECT

1. Page 457, 14.18.19: INITIALIZE … REPLACING category-name BY... includes a choice-indicator, which enhances the previous format of the REPLACING phrase (for example ‘INITIALIZE x REPLACING ALPHABETIC, ALPHANUMERIC BY "A"’). This change should be in the list of “changes not affecting …”?

2. Page 779: E17.5 has 3 lines of text and an additional header 'E17.5.1', while E17.6, for example, also with 3 lines of text, does not have any subsections.

(Reference: INCITS/J4 03-0029, DF-9.1, Minor comments)

SOLUTION PROPOSED BY THE SUBMITTER

While it is correct that the change noted in item1 should be in the list of changes not affecting, no change is needed because this response serves as notification of the defect.

The inconsistency noted in item 2 will be corrected for the next standard. The project editor will remove the heading E 17.5.1 in the next standard.

EDITOR'S RESPONSE

1. The defect described in item 1 above is corrected in Technical Corrigendum 1. The following is the change:
   Page 827, F.2, Substantive changes not affecting existing programs, add the following item after item 71):
   "71a) INITIALIZE statement. The syntax was enhanced to allow the specification of multiple categories in a single REPLACING phrase of an INITIALIZE statement."

2. The project editor will remove the heading E 17.5.1 in the next edition of ISO/IEC 1989.

DR-10 - Parameterized classes and interfaces

DEFECT REPORT NUMBER: 1989/010

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FOR REVIEW BY: SC22/WG4

DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002 Information technology — Programming languages — COBOL

QUALIFIER: Clarification Required

REFERENCES IN DOCUMENT

1. Page 1, Scope
2. Page 29, 7 Compiler directing facility. Last paragraph of the section.
3. Page 166. 9.3.12, Parameterized classes.
4. Page 166, 9.3.13, Parameterized interfaces.
5. Page 176, 11.2.2, Class-ID Paragraph, Syntax Rule 4
6. Page 180, 11.5.3, Interface-ID Paragraph, Syntax Rule 3
7. Page 205, Repository Paragraph, 12.2.7.2, Syntax rules 3 and 7.
8. Page 396, Table 14 — Exception-names and exception conditions, EC-OO-RESOURCE.
9. Page 684, B.1, Implementor-defined language element list, Item 107
10. Page 688, Implementor-defined language element list, Item 166

NATURE OF DEFECT

There is a generalized issue with parameterized classes and interfaces, in that while it is clear the intent is not to allow direct references to parameterized class and interface definitions as normal classes and interfaces, the rules never state the prohibition. Additionally, it is a bit difficult to find in the standard the definition of when class and interface expansion occurs. Finally, there are some minor editorial glitches and inconsistencies in the rules that the proposed changes seek to address.

(Reference: INCITS/J4 03-0069, DF 10.2, Parameterized Classes and Interfaces)

SOLUTION PROPOSED BY THE SUBMITTER

Changes for a Technical Corrigendum:

1. Page 1, Scope, third item, second bulleted list, change to: “The time at which parameterized classes and interfaces are expanded.”
2. Page 166, 9.3.12, Parameterized Classes, third paragraph, first sentence which states: “When a parameterized class is specified in the REPOSITORY paragraph, a new class (an instance of a parameterized class) is created based on the specification of the parameterized class.”

   Replace with:

   “When a class is specified as the parameterized class in an EXPANDS phrase in the REPOSITORY paragraph, a new class (an instance of that parameterized class) is created based on the specification of the parameterized class.”
3. Page 166, 9.3.13, Parameterized Interfaces, third paragraph, first sentence which states:

   “When a parameterized interface is specified in the REPOSITORY paragraph, a new interface (an instance of a parameterized interface) is created based on the specification of the parameterized interface."

Replace with:

"When an interface is specified as the parameterized interfaces in an EXPANDS phrase in the REPOSITORY paragraph, a new interface (an instance of that parameterized interface) is created based on the specification of the parameterized interface."

4. Page 176, Class-Id, 11.2.2, Syntax rules, Syntax rule 4, remove the second sentence.
5. Page 206, Repository, 12.2.7.3, General Rules, General Rule 1, add a second paragraph: "If class-name-1 is a class described with the USING phrase, class-name-1 may be specified only in the REPOSITORY paragraph.
6. Page 207, Repository, 12.2.7.3, General Rules, General Rule 7, add a second paragraph: "If interface-name-1 is an interface described with the USING phrase, interface-name-1 may be specified only in the REPOSITORY paragraph.
7. Page 396, Table 14 — Exception-names and exception conditions, EC-OO-RESOURCE. Change to "Insufficient system resources to create the object."
8. Page 684, B.1 Implementor-defined language element list, Item 107, first sentence, change to "Parameterized classes and interfaces (when expanded).

Changes for a future revision or amendment:

1. Consider better placement for the discussion for the timing of expansion of parameterized classes and interfaces in a future revision or amendment.
2. Page 176, Class-Id, 11.2.3, General Rules, make the wording for GR6 and the wording for GR4 for Interface-Id on page 180 consistent.

EDITOR'S RESPONSE

The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

1. Page 1, Scope, third paragraph, third bullet, change "classes" to "classes and interfaces".

2. Page 166, 9.3.12, Parameterized classes, third paragraph, first sentence, change in part to read: "When a class is specified as the parameterized class in an EXPANDS phrase in the REPOSITORY paragraph, ..."

3. Page 176, 11.2.2, CLASS-ID paragraph, Syntax rules, syntax rule 4, delete the second sentence (beginning "Class-name-2 shall not be the name ...")

4. Page 206, 12.2.7.3, REPOSITORY paragraph, General rules, general rule 1, add a second paragraph as follows:
"If class-name-1 is a class described with the USING phrase, class-name-1 may be specified only in the REPOSITORY paragraph."

5. Page 207, 12.2.7.3, REPOSITORY paragraph, General rules, general rule 7, add a second paragraph as follows:
"If interface-name-1 is an interface described with the USING phrase, interface-name-1 may be specified only in the REPOSITORY paragraph."

The changes proposed for a future revision or amendment will be further considered for a future edition of ISO/IEC 1989.

DR-13 - SET identifier to class-name

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DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information Technology — Programming Languages — COBOL
QUALIFIER: Omission
REFERENCES IN DOCUMENT:
Page 519, 14.8.35.2, SET statement, syntax rule 13
NATURE OF DEFECT:
There is an omission in SET statement format 3 rules for setting identifier-3 when a class-name is specified in the TO phrase. The rules do not address the case of an identifier-3 described with an ONLY phrase.
(Reference: INCITS/J4 03-0072, DF-13.1, SET identifier to class-name)
SOLUTION PROPOSED BY THE SUBMITTER:
The following change is proposed for a technical corrigendum:

Page 519, 14.8.35.2, SET statement, syntax rule 13, replace with the following:

> If class-name-1 is specified and the data item referenced by identifier-3 is described with a class-name, that data item shall be described with the FACTORY phrase and the following rules apply:
>
> a) if the data item referenced by identifier-3 is described with the ONLY phrase, class-name-1 shall be the class-name specified in the description of the data item referenced by identifier-3;
>
> b) otherwise, class-name-1 shall reference the same class or a subclass of the class specified in the description of the data item referenced by identifier-3.

EDITOR'S RESPONSE
The defect described above is corrected in Technical Corrigendum 1. The following are the changes:
Page 519, 14.8.35.2, SET statement, syntax rule 13, change in part to read:

> "... described with the FACTORY phrase, and the following rules apply:
>
> a) if the data item referenced by identifier-3 is described with the ONLY phrase, class-name-1 shall be the class-name specified in the description of the data item referenced by identifier-3;
>
> b) otherwise, class-name-1 shall reference the same class or a subclass of the class specified in the description of the data item referenced by identifier-3."

DR-17 - Circular references with TYPEDEFs

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DEFECT REPORT CONCERNING:
ISO/IEC 1989:2002, Information Technology — Programming Languages — COBOL
QUALIFIER: Clarification required
REFERENCES IN DOCUMENT:
Pages 355-356, 13.16.55, TYPE clause
NATURE OF DEFECT:
Even though the note associated with general rule 1 of the TYPE clause states that the rules prohibit direct or indirect circular references within the type declaration, there is no rule that directly expresses that prohibition.

(Reference: INCITS/J4 03-0074, DF 17.1, Circular references with TYPEDEFs)

SOLUTION PROPOSED BY THE SUBMITTER:

1. Page 356, 13.16.55, TYPE clause: Delete the note that immediately follows general rule 1.
2. Page 359, 13.16.56, TYPEDEF clause: Add a new syntax rule 2 as follows:
   Neither the description of the subject of the entry nor the description of any data item subordinate to the subject of the entry shall directly or indirectly describe a data item of type type-name.

EDITOR'S RESPONSE

The defect described above is corrected in Technical Corrigendum 1. The following are the changes:

1. Page 356, 13.16.55.3, TYPE clause, General rules, general rule 1, delete the note that immediately follows the rule.

2. Page 359, 13.16.56.2, TYPEDEF clause, Syntax rules, add a new syntax rule after syntax rule 1 as follows:

   "2) Neither the description of the subject of the entry nor the description of any data item subordinate to the subject of the entry shall directly or indirectly describe a data item of type type-name."