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**Normative References**

[ISO/IEC Directives Part 2 – Rules for the structuring and drafting of International Standards](http://isotc.iso.org/livelink/livelink?func=ll&objId=17667902&objAction=Open&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dll%26objId%3D4230456%26objAction%3Dbrowse)

[SC4 Supplementary directives - Rules for the structure and drafting of SC4 standards for industrial data](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571831&objAction=Open&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dll%26objId%3D11568437%26objAction%3Dbrowse%26viewType%3D1) (SC4N2412)

[Guidelines for the development and approval of STEP application protocols](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571722&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1804708348) (SC4N535)

[Guidelines for application interpreted model development](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571721&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1411683063) (SC4N532)

[SC4 Standing Document: Guidelines for the Development of Mapping Specifications](http://isotc.iso.org/livelink/livelink?func=ll&objId=11566926&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1498505598) (SC4N2661)

**Bibliography**

1. [SC4 Quality Manual](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571501&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1619737451) (SC4N1110)
2. **AP/ATS Resolution 469 (**[SC4 Cumulative Resolutions](http://www.tc184-sc4.org/SC4_Cumulative_Resolutions/documentation.cfm?bk=1767) - Open PDF File and search on 469 for Resolution 469 for Resolution on AP/ATS**).**

N-number of this completed checklist: ISO TC184/SC4/WG12N9533

Name of person who completed this checklist Claudia Huebner

Date this checklist was completed 28 Aug 2017

Document reviewed

Standard 10303

Part 506

Edition 3

Stage IS

N-number: ISO TC184/SC4/WG12 N9567/9568

## Requirements for approving and submitting to the Secretariat documents at any stage of approval may be found in the [SC4 Organization Handbook](http://isotc.iso.org/livelink/livelink?func=ll&objId=11572165&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1789365379) (SC4N2502)

The current versions of supporting documents for SC4 part developers may be found at

[SC4 Standards Developers Information](http://www.tc184-sc4.org/SC4_Open/SC4_Standards_Developers_Info/documentation.cfm?bk=1723)

FOR EACH QUESTION, CHECK THE BOX THAT APPLIES. IF "N/A" (NOT APPLICABLE) IS CHECKED, EXPLAIN THE REASON THE QUESTION IS NOT APPLICABLE IN THE COMMENT FIELD.

# PROJECT TEAM REVIEW

|  |  |  |  |
| --- | --- | --- | --- |
| **YES** | **NO** | **N/A** |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. Members of the project team and reviewers were adequately trained to perform the roles they are assigned. *(See 10 of the Quality Manual.)*   Comments: |
|  |  |  | 1. The completed internal review documents submitted by the project team to the project leader are dated and signed by the project team member assigned to execute the internal review.   List Person(s) who completed internal review: Rick Zuray  Comments: |
|  |  |  | 1. The project team has used the task assignments from QC Procedures for Internal Review. The N-number of the version used is      .   All applicable tasks are completed for the part class as stated in Table 1 of Procedures for Internal Review.  Some tasks were omitted because they were unclear or did not apply. Feedback regarding improvements to the Procedures for Internal Review was sent to the QC exploder ([kwvsc4@gmail.com](mailto:kwvsc4@gmail.com)).  Comments: |
|  |  |  | 1. The project team, in the summary report, has collected, reviewed, and recorded all SEDS that affect project development, if any.   Comments: Validated through the Change Request Build |

# PART STAGE

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. This part is at stage:   Stage 60 (IS).  Stage 50 (FDIS).  Stage 40 (DIS).  Stage 30 (CD).  Stage 20 Industry Review.  Comments: |

# ISSUE LOG

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The issue log is up-to-date for the stage of the part:   At Stage 30, there is evidence of active issue resolution (open issues are permitted).  At Stage 40, there are no open technical issues (though there may be open editorial issues).  At Stage 50, there are no open issues.  Comments: |
|  |  |  | 1. The issue log is in the proper format for the stage of the part:   At Stage 30, the issue log is legible, easy to read, and complete.  At Stage 40 and Stage 50, the issue resolutions are recorded using ISO Form 13B.  *(See* [*ISO Forms*](http://isotc.iso.org/livelink/livelink?func=ll&objId=4229233&objAction=browse&sort=name&viewType=1) *)*  Comments: Using Bugzilla process |
|  |  |  | 1. All issues and errors identified in the internal review have been resolved or recorded.   All issues have been resolved and are closed.  Issues remain open and are documented in the internal review summary report.  Comments: |

# COPYRIGHT

*If the part is at Stage 30 or beyond, check the following items:*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The copyright symbol and statement are on the bottom of cover page, and they are as specified by the Supplementary directives for the drafting and presentation of ISO 10303 (SD). *(See 4.1.1.2 of the SD.)*   Comments: |
|  |  |  | 1. Each page of the document has the correct page footer with the copyright statement. *(See 5.2.1 of the SD.)*   Comments: |

# COVER PAGE

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The cover page has the correct format, structure and content. *(See 4.1.1 and annex A of the SD;* [*SC4 Cover Sheet for SC4 Parts*](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571831&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1594151402)   Comments: |
|  |  |  | 1. The date is present with the format YYYY-MM-DD.  *(See* [*SC4 Cover Sheet for SC4 Parts*](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571831&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1594151402)*.)*   Comments: |
|  |  |  | 1. The part number and title have been verified as being the same as the SC4 database for the project.   Comment: |
|  |  |  | 1. The abstract is present and does not introduce concepts or new wording that differs from those in the scope statement.   Comment: |
|  |  |  | 1. The copyright information on the cover page is correct for the ballot release stage of the part. The Stage 20 and Stage 30 copyright statements are different than the Stage 40 and Stage 50 statements. (*See 4.1.1 and annex A of SD;* [*SC4 Cover Sheet for SC4 Parts*](http://isotc.iso.org/livelink/livelink?func=ll&objId=11571831&objAction=Open&vernum=1&nexturl=%2Flivelink%2Flivelink%3Ffunc%3Dsrch%2ESearchCache%26cacheId%3D1594151402).)   Comment: |

**CONTENTS, ANNEXES, FIGURES, AND TABLES**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The "Contents" (table of contents) is present. *(See 4.1.3 of the SD.)*   Comments: |
|  |  |  | 1. The TOC is complete and contains the information specified by the SD. *(See 4.1.3 of the SD.)*   Comment: |
|  |  |  | 1. The lists of figures and tables include the number, complete title, and links to each figure and each table in the document. *(See 4.1.3 of the SD.)*   Comment: |
|  |  |  | 1. The index is present and starts on the page specified by the table of contents. *(See 4.1.3 and 4.3.3 of the SD.)*   Comment: |
|  |  |  | 1. All notes and examples in the text of the document appear as specified in the SD. *(See 4.4.3 and 4.4.4 of the SD.)*   Comments: |

# FOREWORD AND INTRODUCTION

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The Foreword is present and the required text is as specified by the SD. *(See 5.4.2 of the SD.)*   Comments: |
|  |  |  | 1. The reference to the URL listing of related parts is current. *(See 4.1.4.1.3 of the SD; 10303 parts see* [*SC4 Part Titles*](http://www.tc184-sc4.org/SC4_Open/Projects/documentation.cfm?bk=2027)*.)*   Comments: |
|  |  |  | 1. The Introduction is present. *(See 5.4.3 of the SD.)*   Comments: |
|  |  |  | 1. The Introduction states the knowledge necessary for understanding the part. *(See 4.1.5 of the SD.)*   Comments: |
|  |  |  | 1. The Introduction explains the industry need for this part and does not imply a broader or narrower focus of types of information covered than specified by the Scope statement.   Comments: |
|  |  |  | 1. The Introduction states what the subject is, why the subject is important and the key points of the standard. *(See 4.1.5 of the SD.)*   Comments: |
|  |  |  | 1. The Introduction identifies the application domain for using this part.   Comments: |
|  |  |  | 1. Relationships with other ISO TC 184/SC4 parts, including planned overlaps with other APs, have been identified and briefly described.   Comments: |

# SCOPE

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The scope for the part is present and the format of the page is correct as specified by the SD, including the header that is different from all other page headers for the part. *(See 5.2.1.2 of the SD.)*   Comment: |
|  |  |  | 1. The scope contains the correct required text. *(See 4.2.3, 7.1, 8.1, and 9.2 of the SD.)*   Comments: |
|  |  |  | 1. The scope statement is complete *(See 4.2.3 and, depending on part class, also 7.1, 8.1, or 9.3 of the SD.)*, concise, unambiguous, and conveys the scope of the part in terms that are understandable to an engineering user, an application domain expert, and a software implementer*.*   Comment: |
|  |  |  | 1. Types of product, types of product data, life cycle support, discipline views, and uses of product data supported are included and easily recognized in the scope statement.  *(See 8.1 and 9.3 of the SD and 4.1 of the APG.)*   Comments: |
|  |  |  | 1. Types of product, types of product data, life cycle support, discipline views and uses of product data not supported are included and easily recognized in the scope statement.  *(See 8.1 and 9.3 of the SD and 4.1 of the APG.)*   Comments: |
|  |  |  | 1. The in-scope and out-of-scope statements have been properly separated and stated.  *(See 4.2.3 of the SD.)*   Comments: |
|  |  |  | 1. The scope as stated in the original New Work Item for this part:   has been increased. A New Work Item will be initiated on       (date).  has been decreased. A New Work Item will be initiated on       (date).  is affected by a SEDS report. The SEDS report(s) are:       (date).  has editorial changes only       (date).  is unchanged.  Comments: |
|  |  |  | 1. The working group convener and the SC4 Secretariat have been notified of the Scope changes by this Project Leader:   Yes. The notification occurred on       (date).  The scope is unchanged.  Comments: |
|  |  |  | 1. No user requirements or definitions appear in the scope statement. *(See 4.2.3 of the SD.)*   Comment: |
|  |  |  | 1. All issues related to the scope have been resolved.   Comments: |

# NORMATIVE REFERENCES

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. All standards and technical specifications referenced in normative text have been identified in clause 2.   Comments: |
|  |  |  | 1. Every reference listed in clause 2 is found in normative text in a normative clause or annex of this part. This includes USE or REFERENCE statements in EXPRESS. Reminder: examples and notes are not normative.   Comments: |
|  |  |  | 1. For parts at Stage 40 or higher, all ISO standards listed in clause 2 are at least at the Stage 40 stage (registered by the ISO Central Secretariat or accepted by the SC4 Secretariat for Stage 40 ballot).   Comments: |

# TERMS, DEFINITIONS, SYMBOLS, AND ABBREVIATIONS

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. All terms used from other TC 184/SC4 parts or standards are listed under a subclause for each part or standard. *(See 4.2.5.2 of the SD.)*   Comments: |
|  |  |  | 1. All definitions of terms that conflict with current definitions of the same term(s) defined in other TC 184/SC4 parts have been defined in clause 3. A NOTE has been included with the definition to alert the reader of the difference. (*See 4.2.5.2 and 4.2.5.3 of the SD)*   Comments: |
|  |  |  | 1. The terms listed in clause 3.n ("Other terms and definitions") are not found in other publicly available standards.   Comments: |
|  |  |  | 1. All defined terms have non-circular definitions. A definition is considered circular when the term being defined appears in the definition.   The terms defined in this part are unambiguous, concise, and understandable to engineering users, application domain experts, and software implementers using the part.  Comments: |
|  |  |  | 1. All abbreviations have been recorded in a separate subclause in clause 3. *(See 4.2.5.4 of the SD.)* SC4 discourages the use of abbreviations in EXPRESS names, application object names, and attribute names in SC4 parts.   Comments: |

# EXPRESS

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The EXPRESS schemas within this part have been successfully compiled. The compilers and versions used were the following: (Suggestion: use multiple compilers.)   Compiler Version Platform                                  Comments: |
|  |  |  | 1. There is a one-to-one correspondence for each EXPRESS entity and type between the schema and the EXPRESS-G diagrams.   Comments: |
|  |  |  | 1. The HTML and EXPRESS listing in clause E are the same   Comments: |

Complete for All ISO 10303 Documents:

# AAM (ISO 10303 AP ONLY)

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. All inputs, controls, outputs, mechanisms (ICOMs), and activities this part defines and their definitions are sufficient for the domain expert and software implementor. *(See 9.9.2.1.3 of the SD and 4.7 of the APG* )   Comments: |
|  |  |  | 1. The diagrams clearly indicate with an asterisk (\*) the activities and data flows that are out-of-scope. *(See 9.9.2.1 and 9.9.2.1.1 of the SD and 4.7 of the APG.)*   Comments: |
|  |  |  | 1. The in-scope information flows in the AAM can be traced to concepts listed as in-scope in clause 1.   Comments: |
|  |  |  | 1. The entire AAM has been reviewed, is understood, and is approved by appropriate industry experts. Evidence to support this approval is documented in the AP Validation Report as required by the APG. *(See 5.6.1 of the APG.)*   Comments: |

# APPLICATION REFERENCE MODEL (ISO 10303 AP ONLY)

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The introduction for this part contains a data planning model shows the relationships of major concepts supported by this AP.  *(See APG clauses 3.4.7, 4.)*   Comments: |
|  |  |  | 1. Industrial reviewers agree with the information requirements and UoFs. *(See clauses 4.4 and 5.3 of the APG.)*   Comments: |
|  |  |  | 1. Each UoF name is appropriate to the definition within the application domain. Names are sufficiently descriptive of the role and meaning of the UOF.   Comments: |
|  |  |  | 1. All UoFs are within the scope of this part. Each UoF represents a high level concept required by this specific application domain.   Comments: |
|  |  |  | 1. UoF harmonization, with other ISO 10303 parts with similar UoF requirements and identical UoF names, is complete.   None apply  UoFs used from other APs are listed below.  UoFs used:  Comments: |
|  |  |  | 1. There is a one-to-one correspondence between the set of AOs listed in the UoFs in clause 4.1 and the set of AOs defined in clause 4.2.   Comments: |
|  |  |  | 1. All application objects (AO) are defined, have been reviewed, are understood, and are approved by appropriate industry experts.   Comments: |
|  |  |  | 1. There is a one-to-one correspondence between the AOs defined in clause 4 and the ARM diagrams in annex G of this part.   Comments: |
|  |  |  | 1. There is a one-to-one correspondence between the AOs defined in clause 4 and the ARM diagrams in annex G of this part.   Comments: |
|  |  |  | 1. The HTML and EXPRESS listing in clause E are the same   Comments: |
|  |  |  | 1. Each AO name is unique across the set of 10303 application protocols and does not share its name with an attribute name or UoF name within this part. An exception to this rule is management resource subtypes.   The following parts/subtype names are shared:  Comments: |
|  |  |  | 1. No integrated resource (IR) term or definition is found in the information requirements clause except by written request from the industry review experts to which this application protocol is designed to assist. *(See APG 5.3)*   Comments: |

# MAPPING TABLE

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. Interpretation of the ARM has been performed by qualified resources. *(See 5.3.2 of AP Developmental Guidelines—SC4 N535.)*   The interpretation was performed by the following individuals:  Comments: |
|  |  |  | 1. The complete interpretation report is included with the AP Validation Report as required the APG. *(See 5.4.1 and 5.6.1 of the APG.)*   Comments: |
|  |  |  | 1. All pruning is identified and the rationale for why such pruning is required is documented in subclause 5.2.1 Fundamental concepts and assumptions of this part are specified by the APG. *(See Interpretation Guidelines.)*   Comments: |
|  |  |  | 1. Each application object (AO), AO attribute, and application assertion specified in clauses 4.2 and 4.3 of the AP appear in the table or specification in alphabetical order.   Comments: |
|  |  |  | 1. There is an AIM element in the mapping table or specification for each application specialization in subclause 5.2, the AIM short form. The AP part number is listed as the source for each one.   Comments: |
|  |  |  | 1. For each entry in the mapping table or specification, reference paths use proper notation per *Guidelines for the development of mapping tables or Guidelines for the development of mapping specifications).*   Comments: |
|  |  |  | 1. An alphabetical listing of global rules is provided at the end of the mapping table or specification.   Comments: |
|  |  |  | 1. Each global rule is referenced at least once in the mapping table or specification.   Comments: |
|  |  |  | 1. Each AE has a complete reference path entry in the table or specification. The phrases "NO MAPPING" or "PARTIAL MAPPING" do not appear in the mapping table or specification of this part. (*See Guidelines for the development of mapping tables or Guidelines for the development of mapping specifications)*   Comments: |

# AIM SHORT FORM

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. Each AIM element whose source is an IR or AIC is listed in a USE FROM statement in subclause 5.2, the AIM short form.   Comments: |
|  |  |  | 1. The USE FROM statements appear at the beginning of the schema and are identified to the IR from which they come as specified by the SD. *(See 9.6.2 of the SD.)*   Comments: |
|  |  |  | 1. AIC requirements are satisfied for this part.   The appropriate AICs have been correctly referenced and used.  No AIC(s) is/are required.  Comments: |
|  |  |  | 1. All new AIC(s) required for this AP is/are under development as a New Work Item(s).   Comments: |
|  |  |  | 1. The short form contains all application-specific entities, rules, and functions.   Comments: |
|  |  |  | 1. The short form has been compiled. The compilers and versions used were the following: (Suggestion: use multiple compilers.)   Compiler Version Platform            Comments: |

# CONFORMANCE REQUIREMENTS (ISO 10303 AP ONLY)

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. Each conformance class is identified in a table in clause 6 as specified by the SD and the APG. *(See 9.7 of the SD and 4.6 and 5.5 of the APG.)*   Comments: |

# REQUIRED SUPPORTING DOCUMENTATION (ISO 10303 AP ONLY)

This section does not apply to the document being reviewed.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 1. The Validation Report is complete for the stage of the part in question. *(See 5.6 of the APG.)*   Comments: |
|  |  |  | 1. Annex L contains usage scenarios and usage test for the part. Annex L is optional but you are strongly encouraged to include it. *(See 4.7, 5.3, and 5.6 of the APG.)*   Yes. The usage scenarios reflect the scope of the part.  No. Convener and project team have agreed that usage scenarios are not needed at this Stage for this part.  Comments: |
|  |  |  | 1. There is an annex containing technical discussions about this part (Annex M if there is a Usage Scenarios annex; Annex L otherwise). The technical discussions annex is optional, but you are strongly encouraged to include it. *(See 9.9 of the SD and 4.7 of the APG.)*   Yes. The Technical Discussion annex is concise and contains useful and clarifying information about this part.  No. The convener and project leader have agreed that technical discussions are not needed at this stage for this part.  Comments: |
|  |  |  | 1. The Abstract Test Suite or the test cases that correspond to this part is/are appropriately complete for the part's stage:   At Stage 30, test cases and test case documentation are in work.  At Stage 50, the Abstract Test Suite or the test case documentation is complete.  Comment: |

APPROVAL

I have reviewed and verified the items on this document.

Name Date