

ISO/TC 59/SC 13

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)

Email of secretary: lla@standard.no

Secretariat: SN (Norway)

prEN ISO DIS 23387 ballot result and comments from CEN and ISO members

Document type: Summary of voting

Date of document: 2019-06-13

Expected action: INFO

Background: Dear all,
prEN ISO 23387 is developed under the Vienna Agreement with CEN lead (draft prepared by CEN/TC 442/WG 4).
CEN Enquiry and ISO/DIS closed 2019-06-12.
Enclosed you will find:

- Ballot results CEN Enquiry. Result: Approved (15 yes, 1 no)
- Ballot resultat ISO DIS. Result: Approved (16 yes, 1 no)
- ISO comments received.
- CEN comments received. All CEN comments are also given as ISO comments.

All comments will be considered and responded to in the table of comments by CEN/TC 442/WG 4. Experts from ISO/TC 59/SC 13 are welcome to participate. A revised draft document will be prepared for CEN Formal Vote-ISO/FDIS or publication.

Committee URL: <https://isotc.iso.org/livelink/livelink/open/tc59sc13>



Voting Results

Ballot Information

| | |
|--------------------------------|---|
| Ballot reference | prEN ISO 23387 |
| Ballot type | ENQ (Enquiry) |
| English title | Building Information Modelling (BIM) - Data templates for construction objects used in the life cycle of any built asset - Concepts and principles (ISO/DIS 23387:2019) |
| French title | Modélisation des informations de la construction (BIM) - Modèles de données pour les objets de construction utilisés durant le cycle de vie de tout bien construit - Concepts et principes (ISO/DIS 23387:2019) |
| German title | Bauwerksinformationsmodellierung (BIM) - Datenvorlagen für Bauobjekte während des Lebenszyklus eines baulichen Vermögensgegenstandes - Konzepte und Grundsätze (ISO/DIS 23387:2019) |
| Work item Id | 64242 |
| Work item number | 00442010 |
| Procedure iteration | 1 |
| Vienna agreement status | VA/CEN |
| ISO ballot type | DIS |
| ISO reference | ISO/DIS 23387 |
| ISO committee | ISO/TC 59/SC 13 |
| Committee reference | CEN/TC 442 |
| Committee secretariat | Norway (SN) |
| Opening date | 2019-03-21 |
| Initial closing date | 2019-06-12 |
| Closing date | 2019-06-12 |
| Note | |

Result of voting

(National Members having abstained are not counted in this vote.)

Approved by National Members

National Members approving: 15

National Members disapproving: 1

Number of Members approving: 93.750 % (requirement ≥ 55 %)

Weighted percentage of Population approving: 97.705 % (requirement ≥ 65 %)

| Member responses | |
|------------------------|---|
| Votes cast (30) | Austria (ASI) Belgium (NBN) Bulgaria (BDS) Croatia (HZN) Cyprus (CYS) Czech Republic (UNMZ) Denmark (DS) Estonia (EVS) France (AFNOR) Germany (DIN) Greece (NQIS ELOT) Hungary (MSZT) Iceland (IST) Ireland (NSAI) Italy (UNI) Lithuania (LST) Malta (MCCAA) Netherlands (NEN) North Macedonia (ISRSM) Norway (SN) Poland (PKN) Portugal (IPQ) Serbia (ISS) Slovakia (UNMS SR) Slovenia (SIST) Spain (UNE) Sweden (SIS) Switzerland (SNV) Turkey (TSE) United Kingdom (BSI) |
| Comments submitted (0) | |
| Votes not cast (4) | Finland (SFS) Latvia (LVS) Luxembourg (ILNAS) Romania (ASRO) |

| Questions | |
|-----------|--|
| Q.1 | Do you approve this draft as a European Standard |
| Q.2 | Do you agree with the proposed implementation periods? |
| Q.3 | Do you have any comments ? |
| Q.4 | National legislation/administrative deviation |

| Vote Matrix | | | | | |
|--|-------------|------------|------------|------------|------------|
| | Date | Q.1 | Q.2 | Q.3 | Q.4 |
| Austria (ASI), Member, Inside EEA | 2019-05-17 | Abstains | Abstain | No | No Answer |
| Belgium (NBN), Member, Inside EEA | 2019-06-11 | Abstains | Abstain | No | No Answer |
| Bulgaria (BDS), Member, Inside EEA | 2019-05-29 | Yes | Yes | No | No |
| Croatia (HZN), Member, Inside EEA | 2019-06-10 | Abstains | Abstain | No | No Answer |
| Cyprus (CYS), Member, Inside EEA | 2019-05-27 | Abstains | Yes | No | No Answer |
| Czech Republic (UNMZ), Member, Inside EEA | 2019-06-11 | No | Yes | Yes | No |
| Denmark (DS), Member, Inside EEA | 2019-06-06 | Yes | Yes | No | No Answer |
| Estonia (EVS), Member, Inside EEA | 2019-05-13 | Abstains | Abstain | No | No Answer |
| Finland (SFS), Member, Inside EEA | Not Voted | - | - | - | - |
| France (AFNOR), Member, Inside EEA | 2019-06-07 | Yes | Yes | Yes | No |
| Germany (DIN), Member, Inside EEA | 2019-05-23 | Yes | Yes | Yes | No |
| Greece (NQIS ELOT), Member, Inside EEA | 2019-06-10 | Yes | Yes | No | No Answer |
| Hungary (MSZT), Member, Inside EEA | 2019-05-30 | Abstains | Abstain | No | No Answer |
| Iceland (IST), Member, Inside EEA | 2019-06-11 | Abstains | Yes | No | No |
| Ireland (NSAI), Member, Inside EEA | 2019-05-30 | Yes | Yes | No | No |
| Italy (UNI), Member, Inside EEA | 2019-05-31 | Yes | Yes | No | No |
| Latvia (LVS), Member, Inside EEA | Not Voted | - | - | - | - |
| Lithuania (LST), Member, Inside EEA | 2019-06-03 | Yes | Yes | No | No Answer |
| Luxembourg (ILNAS), Member, Inside EEA | Not Voted | - | - | - | - |
| Malta (MCCAA), Member, Inside EEA | 2019-04-30 | Abstains | Yes | No | No |
| Netherlands (NEN), Member, Inside EEA | 2019-06-04 | Abstains | Abstain | No | No Answer |
| North Macedonia (ISRSM), Member, Outside EEA | 2019-06-06 | Abstains | Abstain | No | No Answer |
| Norway (SN), Secretariat, Inside EEA | 2019-06-05 | Yes | Yes | Yes | No |

| Vote Matrix | | | | | |
|--|-------------|------------|------------|------------|------------|
| | Date | Q.1 | Q.2 | Q.3 | Q.4 |
| Poland (PKN), Member, Inside EEA | 2019-06-11 | Yes | Yes | No | No Answer |
| Portugal (IPQ), Member, Inside EEA | 2019-06-12 | Abstains | Abstain | No | No |
| Romania (ASRO), Member, Inside EEA | Not Voted | - | - | - | - |
| Serbia (ISS), Member, Outside EEA | 2019-06-06 | Abstains | Abstain | No | No Answer |
| Slovakia (UNMS SR), Member, Inside EEA | 2019-06-06 | Abstains | Abstain | No | No |
| Slovenia (SIST), Member, Inside EEA | 2019-05-09 | Yes | Abstain | No | No |
| Spain (UNE), Member, Inside EEA | 2019-06-05 | Abstains | Abstain | Yes | No Answer |
| Sweden (SIS), Member, Inside EEA | 2019-06-05 | Yes | Yes | Yes | No |
| Switzerland (SNV), Member, Outside EEA | 2019-06-07 | Yes | Yes | No | No |
| Turkey (TSE), Member, Outside EEA | 2019-06-11 | Yes | Yes | No | No Answer |
| United Kingdom (BSI), Member, Inside EEA | 2019-05-28 | Yes | Yes | Yes | No |

| Answers to Q.1: "Do you approve this draft as a European Standard" | | |
|---|-----------------|--|
| 15 x | Yes | Bulgaria (BDS), Denmark (DS), France (AFNOR), Germany (DIN), Greece (NQIS ELOT), Ireland (NSAI), Italy (UNI), Lithuania (LST), Norway (SN), Poland (PKN), Slovenia (SIST), Sweden (SIS), Switzerland (SNV), Turkey (TSE), United Kingdom (BSI) |
| 1 x | No | Czech Republic (UNMZ) |
| 14 x | Abstains | Austria (ASI), Belgium (NBN), Croatia (HZN), Cyprus (CYS), Estonia (EVS), Hungary (MSZT), Iceland (IST), Malta (MCCAA), Netherlands (NEN), North Macedonia (ISRSM), Portugal (IPQ), Serbia (ISS), Slovakia (UNMS SR), Spain (UNE) |

| Answers to Q.2: "Do you agree with the proposed implementation periods?" | | |
|---|----------------|--|
| 12 x | Abstain | Austria (ASI), Belgium (NBN), Croatia (HZN), Estonia (EVS), Hungary (MSZT), Netherlands (NEN), North Macedonia (ISRSM), Portugal (IPQ), Serbia (ISS), Slovakia (UNMS SR), Slovenia (SIST), Spain (UNE) |
| 18 x | Yes | Bulgaria (BDS), Cyprus (CYS), Czech Republic (UNMZ), Denmark (DS), France (AFNOR), Germany (DIN), Greece (NQIS ELOT), Iceland (IST), Ireland (NSAI), Italy (UNI), Lithuania (LST), Malta (MCCAA), Norway (SN), Poland (PKN), Sweden (SIS), Switzerland (SNV), Turkey (TSE), United Kingdom (BSI) |
| 0 x | No | |

| Answers to Q.3: "Do you have any comments ?" | | |
|---|------------|--|
| 7 x | Yes | Czech Republic (UNMZ), France (AFNOR), Germany (DIN), Norway (SN), Spain (UNE), Sweden (SIS), United Kingdom (BSI) |
| 23 x | No | Austria (ASI), Belgium (NBN), Bulgaria (BDS), Croatia (HZN), Cyprus (CYS), Denmark (DS), Estonia (EVS), Greece (NQIS ELOT), Hungary (MSZT), Iceland (IST), Ireland (NSAI), Italy (UNI), Lithuania (LST), Malta (MCCAA), Netherlands (NEN), North Macedonia (ISRSM), Poland (PKN), Portugal (IPQ), Serbia (ISS), Slovakia (UNMS SR), Slovenia (SIST), Switzerland (SNV), Turkey (TSE) |

| Answers to Q.4: "National legislation/administrative deviation" | | |
|--|------------------|--|
| 0 x | Yes | |
| 15 x | No | Bulgaria (BDS), Czech Republic (UNMZ), France (AFNOR), Germany (DIN), Iceland (IST), Ireland (NSAI), Italy (UNI), Malta (MCCAA), Norway (SN), Portugal (IPQ), Slovakia (UNMS SR), Slovenia (SIST), Sweden (SIS), Switzerland (SNV), United Kingdom (BSI) |
| 15 x | No Answer | Austria (ASI), Belgium (NBN), Croatia (HZN), Cyprus (CYS), Denmark (DS), Estonia (EVS), Greece (NQIS ELOT), Hungary (MSZT), Lithuania (LST), Netherlands (NEN), North Macedonia (ISRSM), Poland (PKN), Serbia (ISS), Spain (UNE), Turkey (TSE) |

| | |
|--|--------------------------|
| Comments from Voters | |
| Czech Republic (UNMZ) Cast by Kuklova, Lydie Mrs. | |
| Comment File | prEN ISO 23387_UNMZ.doc |
| France (AFNOR) Cast by Bonnin, Marguerite Mme | |
| Comment File | prEN ISO 23387_AFNOR.doc |
| Germany (DIN) Cast by Committee Service Centre, DIN - | |
| Comment File | prEN ISO 23387_DIN.doc |
| Norway (SN) Cast by Landfald, Lisbet Ms | |
| Comment File | prEN ISO 23387_SN.doc |
| Spain (UNE) Cast by ARENAS, Jose Angel Mr | |
| Comment File | prEN ISO 23387_UNE.doc |
| Sweden (SIS) Cast by Mellgren, Linda Mrs | |
| Comment File | prEN ISO 23387_SIS.doc |
| United Kingdom (BSI) Cast by Kosandiak, Stephanie Ms | |
| Comment File | prEN ISO 23387_BSI.doc |

| Ballot Information | | | |
|-------------------------|--|------------------------|---------------------|
| Reference | ISO/DIS 23387 | Committee | ISO/TC 59/SC 13 |
| Edition number | 1 | | |
| English title | Building Information Modelling (BIM) -- Data templates for construction objects used in the life cycle of any built asset -- Concepts and principles | | |
| French title | Modélisation des informations de la construction (BIM) -- Modèles de données pour les objets de construction utilisés durant le cycle de vie de tout bien construit -- Concepts et principes | | |
| Start date | 2019-03-20 | End date | 2019-06-12 |
| Opened on | 2019-03-20 00:02:39 | Closed on | 2019-06-13 00:00:06 |
| Status | Closed | | |
| Voting stage | Enquiry | Version number | 1 |
| Note | | | |
| Vienna agreement | CEN lead | CEN ballot type | CENENQ |
| CEN reference | prEN ISO 23387 | CEN committee | CEN/TC 442 |

| Result of voting |
|--|
| <p>P-Members voting: 16 in favour out of 17 = 94 % (requirement >= 66.66%)</p> <p><i>(P-Members having abstained are not counted in this vote.)</i></p> <p>Member bodies voting: 1 negative votes out of 20 = 5 % (requirement <= 25%)</p> <p style="font-size: 1.2em; font-weight: bold; text-align: center;"><i>Approved</i></p> |

| Votes by members | | | | | |
|------------------|--------|----------|----------|-------------|------------|
| Country | Member | Status | Approval | Disapproval | Abstention |
| Australia | SA | P-Member | X | | |
| Austria | ASI | P-Member | | | X |
| Belgium | NBN | P-Member | | | X |
| Brazil | ABNT | P-Member | X | | |
| Canada | SCC | P-Member | X | | |
| Chile | INN | P-Member | | | X |
| China | SAC | P-Member | | | X |
| Czech Republic | UNMZ | P-Member | | X * | |
| Denmark | DS | P-Member | X | | |
| Egypt | EOS | O-Member | X | | |

| | | | | | |
|---|-----------|-------------|-----|---|-----|
| Finland | SFS | P-Member | X | | |
| France | AFNOR | P-Member | X * | | |
| Germany | DIN | P-Member | X * | | |
| Greece | NQIS ELOT | | X | | |
| Hungary | MSZT | P-Member | | | X |
| Italy | UNI | P-Member | X | | |
| Japan | JISC | P-Member | X | | |
| Kazakhstan | KAZMEMST | P-Member | | | X |
| Malaysia | DSM | P-Member | X | | |
| Netherlands | NEN | P-Member | | | X |
| Norway | SN | Secretariat | X * | | |
| Peru | INACAL | P-Member | | | X |
| Poland | PKN | O-Member | X | | |
| Portugal | IPQ | P-Member | | | X |
| Romania | ASRO | P-Member | | | X |
| Russian Federation | GOST R | P-Member | X | | |
| Singapore | SSC | P-Member | | | X |
| Slovenia | SIST | P-Member | | | |
| Spain | UNE | P-Member | | | X * |
| Sweden | SIS | P-Member | X * | | |
| Switzerland | SNV | P-Member | X | | |
| Turkey | TSE | P-Member | X | | |
| United Kingdom | BSI | P-Member | X * | | |
| United States | ANSI | P-Member | | | X |
| P-Member TOTALS | | | 16 | 1 | 13 |
| Total of P-Members voting: 17 | | | | | |
| TOTALS | | | 19 | 1 | 13 |
| (*) A comment file was submitted with this vote | | | | | |

| Comments from Voters | | | |
|----------------------|-------|-------------|---|
| Czech Republic | UNMZ | P-Member | ISO_DIS 23387_UNMZ.doc |
| France | AFNOR | P-Member | ISO_DIS 23387_AFNOR.doc |
| Germany | DIN | P-Member | ISO_DIS 23387_DIN.doc |
| Norway | SN | Secretariat | ISO_DIS 23387_SN.doc |
| Spain | UNE | P-Member | ISO_DIS 23387_UNE.doc |
| Sweden | SIS | P-Member | ISO_DIS 23387_SIS.doc |

United Kingdom

BSI

P-Member

[ISO_DIS 23387_BSI.doc](#)

Comments from Commenters

ISO

[ISO_DIS 23387_ISO.doc](#)

Template for comments and secretariat observations

Date:2019-06-13

Document:

Project: ISO DIS 23387

| MB/ NC ¹ | Line number | Clause/ Subclause | Paragraph/ Figure/Table | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
|------------------------|----------------|----------------------|----------------------------|---------------------------------|---|--|------------------------------------|
| .CZ 001 | | | | ge | The text as presented does not take much into consideration the future translation where some segments (e.g. xtdRelClassifies, joined words) are not to be translated but will have no meaning if in a sentence. A similar situation may arise with crucial figures (mostly with relations). | Take future translation into consideration and try not to mix such segments directly into sentences. When necessary, complete such sentences in a way that their meaning would still be complete with such segments replaced with meaningless references. | |
| CZ 002 | | | | ge | Most of the figures are not readable. | Consider applying a minimum text height at least in those figures where e.g. details about relations are not explained elsewhere. If not feasible add references to a key. | |
| CZ 003 | | | | ge | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 28, all figure titles appear below figures. In annexes the numbering is different. | Move all figure titles below figures (and below the "Key", if any – not a "Legend"). In Annex A start with new numbers A.1 etc. | |
| CZ 004 | | | | ge | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 10.6, the references to the document itself shall be to "this document". | Replace references to ISO 23387 in a normal text (where relevant) to references to "this document". | |
| CZ 005 | | | | ge | According to the Guidelines for the implementation of the Vienna Agreement (2016, 5.4) "all parallel procedure documents are to be drafted using the "ISO template " and normative references shall not be made to EN ISO standards but to the corresponding ISO International Standards". European foreword and Foreword are incomplete. | Check the whole text for references to EN ISO standards and replace accordingly (concerns mainly clause 2). Check the text for references to "this European standard" and replace accordingly (e.g. in clause 1). Complete Foreword to match the ISO standard content (e.g. responsible TCs (cooperation) etc.) and the European foreword as well (responsible TCs, secretariat, patent rights, member states, endorsement notice etc.). | |
| CZ 006 | | | | ge | An experience with experimental creation of product data templates based on harmonised standards is showing that the reference documents are often not fit to provide basis for an unambiguous result. From the point of view of an NSB willing to provide data templates it is hard to produce additional content to existing standards but out of the existing governance structures – integration is needed into existing structures. | For those templates that need to be based on standards it would be more efficient to develop a methodology and template for a dedicated annex that would within the standard itself provide content for the corresponding data template. This seems to be the only way to ensure full consistency with the text of the standard and prevent production of multiple differing templates adding a new, hardly maintainable content out of the existing governance structure (technical committees etc.). | |

1 **MB** = Member body / **NC** = National Committee (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by **)

2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial

Template for comments and secretariat observations

Date:2019-06-13

Document:

Project: ISO DIS 23387

| MB/ NC ¹ | Line number | Clause/ Subclause | Paragraph/ Figure/Table | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|--|------------------------------------|
| CZ 007 | | | | ge | As the present draft contains a problematic relation to ISO 12006-3 undergoing a substantial revision, its content may not have been clearly understood by all stakeholders (from which many are not familiar with the core concept of a data template that is not introduced, explained, justified or made clear e.g. through examples) and seems not to be finished by the working group and/or task group (essential discussions are still ongoing even during the enquiry), we cast a negative vote at this stage. | We suggest a second enquiry should take place after the draft is finished by the working group and/or task group and the core concept of a data template is made obvious to a broader audience. The publication shall be coordinated with ISO 12006-3 as revised. If the 3-year timeframe (probably started in April 2018 based on decision 110, no extension so far) does not allow for fixing the draft and aligning with ISO 12006-3 as revised, a technical report or a technical specification may be produced as a temporary solution. | |
| es 008 | | | | ge | We abstain in order to assure the compatibility of CWA 173016:2018 with the standards on construction objects, in particular with construction products. | | |
| NO 009 | | | | ge | Since ISO/DIS 23387 is fundamentally based on ISO 12006-3, which is undergoing a revision, changes that occur in this revision will have a major impact on ISO/DIS 23387. | All parts of this document that will be impacted by changes in ISO 12006-3 must be taken into account. | |
| FR 010 | | | | Ge | The French mirror committee acknowledges the work achieved by WG 4 /TG 2 in developing EN ISO 23387. | | |
| FR 011 | | | | Ge | It should be possible to improve consistency with the current revision of EN ISO 12006-3 has to be taken into account. | Please check with ISO 12006-3 Project Leader or ISO/TC 59/SC 13/WG 6. | |
| DE 012 | | | Fig 2 | te | What does IFC entity defined enum stand for? | | |
| DE 013 | | | Fig 3 | te | What does it mean if a relationship relates a classification with two properties in different roles, each one with 0..*? Is this just a shortcut to get the figure simpler? Does it combine the relationships? Is that compliant with ISO 12006-3? | | |
| DE | | | Fig. 1 | te | The cardinality of the relationships to the reference | | |

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|------------------------|----------------|----------------------|--|---------------------------------|---|--|------------------------------------|
| 014 | | | | | documents are often unclear: - <ul style="list-style-type: none"> - According to the cardinality, a reference document may only refer to one template and to one construction object. What about a document which refers to windows and doors for which two templates are created? - A reference document shall refer to at least one group of properties. Isn't it possible, that you refer to different documents for the grouping and for the description of the single properties? Then the second one does not refer to a Nest. - If the different reference document objects in a diagram play different roles, then they should get different names: property reference document, template reference document, ... | | |
| DE 015 | | | Fig. 1 | te | Any quantity shall have a unit (according to the cardinality). Is that the intention? | | |
| DE 016 | | | Fig. 1 | te | There are two paths from property to value: One via the quantity, the other via the xtdRelAssignsPropertyWithValues-Relationship. When to use which one? Aren't the values only in the context of the template applicable anyway? | | |
| DE 017 | | | Fig. 3 | te | The relationship type xtdrelAssociates is used twice | Replace by xtdRelClassifies | |
| DE 018 | | | figures | ed | Title and key are under the figure and not above. | Please revise. | |
| 019 GB | | | Table 1 – EN ISO 23387 and EN ISO | te | xtdbag is not semantically meaningful | data template is a relationship (xtdAssignsProperties/?) between xtdSubjects and xtdProperty's | |

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|------------------------|----------------|----------------------|--------------------------------|---------------------------------|---|---|------------------------------------|
| | | | 12006-3 naming relations | | xtdnest is not semantically meaningful | group of properties is itself a property. | |
| CZ 020 | | 01 | last para. | ge | The second phrase does not reflect that standards are voluntary in general. | Use a statement that would respect the principle of general voluntariness of standards. | |
| CZ 021 | | 02 | | ed | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 10.4, the reference to all parts shall be followed by "(all parts)".. | Replace "EN/ISO 80000, <i>Quantities and Units</i> " with „ISO 80000 (all parts), <i>Quantities and units</i> ". (applies to ISO/IEC 19505 as well) | |
| CZ 022 | | 02 | | te | ISO 16739 has already been replaced with ISO 16739-1:2018 Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries – Part 1: Data schema. | Update references if appropriate (or use dated ones if not). | |
| ** 023 | | 02 | | ed | ISO/IEC Directives, Part 2, 2018, 15.5.3 Only references cited normatively in the text shall be listed in the normative references clause. Refer to ISO/IEC Directives, Part 2, 2018, 15.5.3 for examples of normative and informative citations. ISO/IEC Directives, Part 2, 2018, Table 3 provides verbal forms and expressions that make a citation normative. | All the references listed, except ISO 12006-3, are informatively referenced in the text. Please move the informatively cited reference to the Bibliography and remove the uncited reference, or add normative citations. | |
| DE 024 | | 02 | | ed | Please use the right order for normative reference. | Please check. | |
| DE 025 | | 02 | | ed | Please use the standard text for the chapter. | Please check. | |
| DE 026 | | 02 | | ge | Ensure that all documents are up to date and are normatively referred to in the rest of the document. | Please check. | |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|---|------------------------------------|
| | | | | | The other way around all documents normatively referred to in the rest of the document shall be given in the Clause "Normative references". | | |
| CZ 027 | | 03 | | ed | Almost all the notes lack dot at the end. | Check and add dots at the ends of notes. | |
| CZ 028 | | 03 | | ed | Introductory wording shall be in accordance with Internal Regulations, part 3:2017 (ISO/IEC Directives Part 2:2016), 16.5.2. | Update the introductory wording to be in line with the rules. | |
| ** 029 | | 03 | | ed | If the definition for one term refers to other terms, the referred terms shall be italicized and the entry numbers shall be indicated in a pair of brackets that follow. Within one definition, cross-reference to the same other term only appears once. Example: 3.1.2 terminological entry part of a terminological data collection which contains the <i>terminological data</i> (3.1.3) related to one <i>concept</i> (3.2.1) | Please add indications of cross-references in the definitions. | |
| ** 030 | | 03 | | ed | SOURCE: If a terminological entry is reproduced from another document, the source shall be given at the end of the entry. The number of the source terminological entry shall be given. If any changes are made to the original terminological entry, this shall be indicated, along with a description of what has been modified. e.g., text added, deleted or note to entry added. Example: [SOURCE: ISO 1087-1:2000, 3.8.2, modified – Note 1 to entry has been added.] | Please check throughout Clause 3, indicate the number of the source terminological entries and provide details of modifications made to source terms/definitions. If it has been completely redrafted, there is no need to give the source, it is considered a new terminological entry. Please follow the edits made to 3.4 in the DIS edited file for an example. | |
| DE 031 | | 03 | | ed | Use the right format for the definitions (including the word "source" when taking the definition from another standard). | Please check. | |

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Document:

Project: ISO DIS 23387

| MB/ NC ¹ | Line number | Clause/ Subclause | Paragraph/ Figure/Table | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
|------------------------|----------------|---|----------------------------|---------------------------------|---|--|------------------------------------|
| | | | | | Notes and examples are also part of a definition and have to be considered as modifications if added or changed. If a terminological entry is reproduced from another document, the source shall be given at the end of the entry. If any changes are made to the original terminological entry, this shall be indicated, along with a description of what has been modified. A document given as a source of a terminological entry is informative. | | |
| FR 032 | | 03 | | Te | Definition of EN ISO 23387 should be consistent with the ones used within EN ISO 23386. | All definitions should be aligned with EN ISO 23386 and in particular the definitions of property and group of properties. | |
| CZ 033 | | 03.01 | | te | There is a different definition in the source [ISO 6707-1:2017, 3.4.1.4], the source shall be dated and completed with the number of the term in the source, it shall appear below the "Note 1 to entry:" and be completed with a statement on modification if e.g. a note to entry was added. | Check ISO 6707-1:2017 , update definition to match the source (if relevant – or remove source), update NOTE to "Note 1 to entry:" and provide source at the end of the terminological entry. | |
| DE 034 | | 03.01 3.3 3.7 3.10 3.11 3.15 | | ge | "NOTE"/"NOTE 1" shall be "Note 1 to entry:". "NOTE 2" shall be "Note 2 to entry:". All notes to entry and all examples shall end with a dot. | Please change. | |
| CZ 035 | | 03.02 | | te | The definition does not match the source (probably ISO/IEC 2382:2015 – 2121501). ISO/DIS 23386 provided a different definition in 3.2. | Check the source for a complete definition and notes, modify together with a modification statement if necessary, complete source information. Preferably align with ISO 23386. | |
| DE 036 | | 03.02 | | te | Different definitions in prEN ISO 23386 and prEN ISO 23387; different source in prEN ISO 23387 | Please use the same definition. | |

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2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial

Template for comments and secretariat observations

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| CZ 037 | | 03.03 | | te | It is unclear what PIM/PDM refer to. | Use only one abbreviation if for the term that precedes. | |
| CZ 038 | | 03.03 | | ed | Instead of "NOTE 1". | Use "Note 1 to entry: ". (in all clause 3) | |
| CZ 039 | | 03.04 | | te | Provide source information at the end of the entry including modification statement. | Place [ISO 12006-2:2015, 3.1.2, modified – Examples have been added.] at the end of the entry. | |
| CZ 040 | | 03.05 | | te | The definition does not capture any delimiting characteristic to distinguish enumerated value from other types of value. | Consider completing the definition. | |
| CZ 041 | | 03.06 | | te | Entry number is required in source. Source shall be provided at the end of the entry. | Check the source for an entry number, move it to the end and state modification if needed. Align with future ISO 23386 if relevant. | |
| NO 042 | | 03.06 | | ge | Group of properties has different purpose in prEN ISO 23386 than in this document. | Create a new T&D for the purpose for this document. E.g. Property set. | |
| CZ 043 | | 03.07 | | te | A circular definition (using the same term to define it) is provided. Alignment needed with future ISO 23386. | Consult the last version of ISO 23386 after the Enquiry to seek alignment. Add source, possibly modified, if relevant. | |
| DE 044 | | 03.07 | | te | Different definitions in prEN ISO 23386 and prEN ISO 23387. | Please use the same definition. | |
| CZ 045 | | 03.08 | | te | In terminological entries the abbreviations are usually provided on a separate line, not in brackets as in the text. Source needs to be updated and completed with a term number (and modification, if relevant). | Consult source to look for the term number (unfortunately the version on BS webpage does not provide term numbers and seems not to contain the term and definition – may be irrelevant as source of the entry). | |

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| 046 GB | | 03.08 | | te | multiple file formats (STEP, XML, RDFS/OWL) | remove 'an' format -> formats | |
| CZ 047 | | 03.09 | | te | The terminological entry is not in line with the source. | Consult ISO 6707-1:2017 , 3.4.1.3, to align, update source as appropriate (+ modification if relevant). | |
| 048 GB | | 03.09 | | te | 3.1 component and 3.9 product are insufficiently different. choose one. | delete 3.1. and use only 3.9 product | |
| CZ 049 | | 03.10 | | te | The source as provided does not exist. | Check the source. Align with future ISO 23386 (as updated after Enquiry) if possible. | |
| DE 050 | | 03.10 3.14 | | ge | The Source shall be dated. | Please change. | |
| CZ 051 | | 03.11 | | te | Instead of EN the ISO shall be referred to as source. ISO/DIS 23386 used "measure" possibly for a similar/the same concept (see ISO 12006-3 and IFC as well). | Update source to ISO 80000-1:2009 , 3.1, complete it with a statement on modification and move it to the end of the entry. Consider explaining the similarity/difference with "measure". | |
| DE 052 | | 03.11 | | ed | Quantity is defined as "property of a phenomenon ...". Probably, this is not the property as defined in 3.10. | Use a different word instead of property | |
| CZ 053 | | 03.12 | | te | According to ISO 10241-1:2011, 6.4.4, a definition shall consist of a single phrase ... (written in such a form that it can replace the term in its context – Internal Regulations, part 3:2017). | Avoid using complete other phrases (after the full stop which is not to be used) e.g. by replacing them with notes to entry. Alignment needed with future ISO 23386. | |

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| DE 054 | | 03.12 | | ed | Definitions consist of 1 sentence. Don't use the term which has to be defined in the definition. | Please revise the definition. | |
| CZ 055 | | 03.13 | | te | The term number needs to be identified in the source document (probably ISO/IEC/IEEE 15288:2015). | See source document for compliance with the entry and number of the term. | |
| CZ 056 | | 03.14 | | te | The definition shall start on a new line with a lower case letter and not end with a dot, number of source entry is needed. | Update the term layout, add term number probably in ISO/IEC 19505-1:2012. | |
| DE 057 | | 03.14 | | ed | "Unified Modelling Language" should be bold and formatted as a header | | |
| CZ 058 | | 03.15 | | te | Term number and modification statement is needed in the source. Source to be provided at the end of the entry. | Update reference to ISO 80000-1:2009 , 3.9. Describe modifications (e.g. Notes to entry removed, Note 1 to entry and examples added). | |
| 059 GB | | 03.15 | | te | radian is not a derived unit. | example 2 is omitted/revised as radian is not a derived unit. | |
| FR 060 | | 04 | | Te | Generic property is not yet defined; it should be considered to introduce a definition. | Please provide a definition of generic property. | |
| FR 061 | | 04 | | Te | According to Figure 1, Generic property should be optional instead of being mandatory. | Please amend the figure 1 by having the possibility of not having generic property, in order to introduce this idea please replace 1* by 0* as highlighted below. | |

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| | | | | | | | |
| FR 062 | | 04 | | Te | The concept of generic property has to be illustrated in order to be more understandable. | Please provide use cases of generic properties; this content could be provide as informative annex. | |
| CZ 063 | | 04 | 1 st para. | ed | Names of standards not to be used in references. | Remove the name of the standard. | |
| CZ 064 | | 04 | 2 nd para. | te | It may not be clear what objects, collections and relationships refer to. | Consider clarifying what objects, collections and relationships refer to. | |
| CZ 065 | | 04 | Figure 1 | te | Because the possible content of the template is limited in comparison with the extensive content provided in the reference documents (standards) and a lot of complexities will not be captured, it would be practical to explain the principle also by other means that could be understood by people not familiar with the type of notation used (e.g. a text description based on a simplified graphic representation of the main relations). Examples would help as well to make the principle clearer. | Consider a broader audience of experts in specific domains of the construction industry that so far may not have identified the impact data templates would have in their domain and may not have paid sufficient attention due to a lack of understanding to the graphical representations. Provide an explanation and real examples to make obvious what is being dealt with, how it relates to reference documents and the corresponding construction products and other types of construction objects. | |
| CZ 066 | | 04 | last para. | te | There are “interdependent” properties mentioned in 3.7 and “dependencies” between properties here with probably a different meaning. | Make sure these are clearly understood also in the context of the future ISO 23386. | |

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| CZ 067 | | 04 | link to Annex B | te | While Table 2 uses ISO 23387 names, Annex B uses ISO 12006-3 names (in title). | Refer to the same type of names or use both in all cases (similar in 7.1.4). Using both may also be helpful for translation. | |
| CZ 068 | | 05 | | te | Provided linking to IFC (ISO 16739) is insufficient because it doesn't solve units in a way where data exchange could be realised in a reliable and consistent way. This part of ISO 12006-3 is under revision. | Postpone publication of the standard until the revised version of ISO 12006-3 is published and prove that interoperability of units and measure types is solved before this standard is published. | |
| CZ 069 | | 07 | | ge | ISO 12006-3 which is referenced in the standard is under revision and will likely be soon replaced by the newer version. It seems to be premature to use the old version and make partial extensions to the schema. Even UML diagrams will become obsolete very soon. | Postpone publication of the standard until the revised version of ISO 12006-3 is published. | |
| CZ 070 | | 07 | | ge | Name of the standard states that this standard describes concepts and principles. But explicit implementation of the schema is provided in the clause 7 which exceeds announced scope of the project. | Remove schema implementation from the standard | |
| ** 071 | | 07 | | ed | ISO/IEC Directives, Part 2, 2018, 22.3.3 "Hanging paragraphs" shall be avoided since reference to them is ambiguous. In Clause 7, the first few, 'hanging', paragraphs cannot be uniquely identified as being in Clause 7 since the paragraphs in 7.1 and 7.2 also form part of Clause 7. To avoid this problem it is necessary to identify the hanging paragraph as subclause "7.1 General" (or other suitable title) and to renumber the existing 7.1 and 7.2 accordingly. | Text updated at DIS edit. Subclauses "7.1 General" and "7.2.1 General" have been added. The subsequent subclauses have been renumbered. | |
| DE 072 | | 07 7.01 | | ge | According to ISO/IEC Directives, Part 2:2018, 22.3.3, "Hanging paragraphs" shall be avoided since reference to them is ambiguous. The first paragraph of a clause shall be numbered as a subclause. The first subclause can often be named "General". Renumbering concerns also cross | Please check. | |

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| | | | | | references. | | |
| DE 073 | | 07 | 3 rd paragraph | ed | Are you referring to figure 1? Or to figure 3? | | |
| DE 074 | | 07.01.2 | relatingClassi fication | ed | Related thingsRelatedThings | Seems to be a typo | |
| DE 075 | | 07.01.3 | | te | Why has xtdRelAssociates been re-defined? | Give an explanation | |
| DE 076 | | 07.01.4 | | ed | | Give a textual description of the rule | |
| DE 077 | | 07.01.5 | | ed | | Give a textual description of the rule | |
| DE 078 | | 07.02 | | te | The long form seems to be incomplete. E.g. the xtdClassification is missing | Create a correct long form | |
| 079 GB | | 1Scope | | ge | in Potential contravention of the CEN/ISO/Vienna arrangements. | Clarification required as to which is delivered first ISO 12006-3 or ISO 23387. | |
| SE 080 | | 3 Terms and definitions | | ed | 3.10: Example 1: typographic inconsistency | 3.10: Change to capital letter: "Length ..." | |
| SE 081 | | 3 Terms and definitions | | ed | 3.13: spelling mistake: "purpose" | 3.13: Change to "purposes". | |

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|------------------------|----------------|---|----------------------------|---------------------------------|---|--|------------------------------------|
| SE 082 | | 3 Terms and definitions | | ed | 3.12: The definition contains too much information. | Separate the second sentence in a NOTE. Add a full stop at the end. | |
| SE 083 | | 3 Terms and definitions | | te | 3.8: This is not a complete definition: "X specifies ..." | Add a term for the superordinate concept. | |
| SE 084 | | 3 Terms and definitions | | ed | 3.6 and 3.8: Improper indication of synonyms (GUID), (IFC) | Indicate synonyms according to ISO 10241-1. | |
| SE 085 | | 3 Terms and definitions | | te | 3.7: This is a circular definition (inner): group of properties cannot be part of the definition if it's the term for the concept being defined. | Rewrite the definition, or preferably, consider whether this is a term and whether it needs to be included in section 3. | |
| 086 GB | | 6Linking data templates to classificatio n | | ge | This clause presumes undecided revisions of ISO12006-3 | The standard should be based on the existing ISO 12006-3 or await the final outcome of the revision process. | |
| 087 GB | | 7EXPRESS specificatio n | | ge | the definition of a new schema is outside the scope of this standard and conflicts with ISO12006-3. in its present form it is in conflict with ISO/CEN/Vienna agreement. | section 7 should be presented as a view (example) of ISO 12006-3 not as an alternative., | |
| DE 088 | | Annex A | Fig. 4 | ed | Wrong number: "Figure 4" instead of "Figure A.1" | Please revise. | |
| DE | | Annex A | Fig. 5 | ed | Wrong number: "Figure 5" instead of "Figure A.2" | Please revise. | |

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| 089 | | | | | | | |
| DE 090 | | Annex B | Fig. 6 | ed | Wrong number: "Figure 6" instead of "Figure B.1" | Please revise. | |
| DE 091 | | Annex B, general | | te | Composition can be represented by composition of templates. That is useful for systems. But there are complex objects, e.g. electronic products as used in building automation systems, which are composed of internal components. One example are the connections of an electronic product. These products often have various numbers of connections. Each connection can be described by a number of properties. And there exist different types of connections, i.e. they may need different property sets to be described. Often part of relationships are used to model this situation and to relate an electronic component to its connection elements. It is probably not useful to define separated templates for these types of components. | These products could be represented quite easily by providing the possibility of an internal composition, or nesting. | |
| DE 092 | | Annex B, general | Fig. 6 | te | The text in the figure is too small for the printed version. | Please revise. | |
| CZ 093 | | Annex A | 2 nd and 3 rd paragraph | te | It is not clear what ISO 12006-3 version 3 is (ISO 12006-3:2007 is the first edition, preceded by ISO/PAS 12006-3:2001, also a first edition). | If the version does not relate to the standard, provide an explanation what it refers to and use it in a way so as not to confuse the reference. | |
| CZ 094 | | Annex B | | te | The figure lacks reference in Annex B. Figure title contains explanation that would better fit in a provision. Details in the figure are not readable. | Remove the description from figure title and place it in an introductory sentence with reference to the figure. Make the important parts in the figure identifiable using references to a key. | |
| ** 095 | | Bibliography | | ed | All the documents informatively referenced in the text shall be listed in the Bibliography. ISO and IEC standards should be listed before literature references in numerical order. | Please check throughout the document and list all the informative references in the Bibliography in numerical order, ISO/IEC standards before other references. | |

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| ** 096 | | Clauses 2 and 3 | | ed | Introductory generic text is not correct. Up-to-date generic text is provided in the Simple template in the Drafting standards section on iso.org: https://www.iso.org/drafting-standards.html | Text updated at DIS edit. | |
| DE 097 | | Fig. 5 | | te | It seems that modification have done for xtdREIDocuments. These modifications are not present in the EXPRESS schema in clause 7. | Bring the modifications into the Express schema. Give reasons for the modifications | |
| ** 098 | | Foreword | | ed | Use the up-to-date generic text which is provided in the Simple template in the Drafting standards section on iso.org: https://www.iso.org/drafting-standards.html | Text updated at DIS edit. | |
| DE 099 | | Foreword | | ed | Use the right foreword for the ISO. | Please check. | |
| ** 100 | | General | | ed | Please do not add "EN" before the ISO document numbers. | Please correct as applicable. | |
| ** 101 | | General | | ed | Use "this document" to refer to ISO 23387 throughout the text. | Please correct as applicable. | |
| ** 102 | | General | | ed | An edited file of the DIS has been prepared by ISO/CS. | Please use the DIS edited file as a basis for any further drafting. | |
| DE 103 | | General | | ge | It would be helpful for a reader to find some examples of templates in the document. That would make it easier to understand the concept of a template and to apply it to a concrete situation. | | |
| DE 104 | | General | Text and Figures | ed | Reference to prEN ISO 12006-3 and prEN ISO 12006-3 is used. | Please revise. | |
| ** 105 | | General: Code | | ed | For code in the text, please make sure to change the font to Courier New. This will help users identify the code and ensure that the style and format of the code remain unchanged during further processing procedures of the content. | Please correct as applicable. | |

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| ** 106 | | General: Figures | | ed | Several figures use colours to indicate different components. | If the colours in the figures are important for the understanding of the document, please add the following notice before the Scope underneath the title: IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer. | |
| CZ 107 | | Introduction | | ed | Standards are usually referenced by their numbers, without full title. | Remove the title of ISO 12006-3. | |
| CZ 108 | | Introduction | | te | The term “constructed facilities” may designate the same concept as “built assets” used elsewhere. | Consider alignment if the meaning is the same. Take ISO 19650 into consideration. | |
| DE 109 | | Introduction | | ed | New version of EN ISO 16739 published in 2018. | Please check (EN ISO 16739-1). | |
| CZ 110 | | Title | | ed | The use of capital letters in “Information Modelling” may be excessive comparing to ISO 19650. | Consider aligning with ISO 19650 to read “information modelling”. | |

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ISO_DIS 23387_AFNOR.doc: Collation successful

ISO_DIS 23387_BSI.doc: Collation successful

ISO_DIS 23387_DIN.doc: Collation successful

ISO_DIS 23387_ISO.doc: Collation successful

ISO_DIS 23387_SIS.doc: Collation successful

ISO_DIS 23387_SN.doc: Collation successful

ISO_DIS 23387_UNE.doc: Collation successful

ISO_DIS 23387_UNMZ.doc: Collation successful

Collation of files was successful. Number of collated files: 8

SELECTED (number of files): 8

PASSED TEST (number of files conformed to CCT table model): 8

FAILED TEST (number of files conformed to CCT table model): 0

CCT - Version 2018.2

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| CZ 001 | | | | ge | The text as presented does not take much into consideration the future translation where some segments (e.g. xtdRelClassifies, joined words) are not to be translated but will have no meaning if in a sentence. A similar situation may arise with crucial figures (mostly with relations). | Take future translation into consideration and try not to mix such segments directly into sentences. When necessary, complete such sentences in a way that their meaning would still be complete with such segments replaced with meaningless references. | Same comment as in ISO/DIS 23387 |
| CZ 002 | | | | ge | Most of the figures are not readable. | Consider applying a minimum text height at least in those figures where e.g. details about relations are not explained elsewhere. If not feasible add references to a key. | Same comment as in ISO/DIS 23387 |
| CZ 003 | | | | ge | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 28, all figure titles appear below figures. In annexes the numbering is different. | Move all figure titles below figures (and below the "Key", if any – not a "Legend"). In Annex A start with new numbers A.1 etc. | Same comment as in ISO/DIS 23387 |
| CZ 004 | | | | ge | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 10.6, the references to the document itself shall be to "this document". | Replace references to ISO 23387 in a normal text (where relevant) to references to "this document". | Same comment as in ISO/DIS 23387 |
| CZ 005 | | | | ge | According to the Guidelines for the implementation of the Vienna Agreement (2016, 5.4) "all parallel procedure documents are to be drafted using the "ISO template " and normative references shall not be made to EN ISO standards but to the corresponding ISO International Standards". European foreword and Foreword are incomplete. | Check the whole text for references to EN ISO standards and replace accordingly (concerns mainly clause 2). Check the text for references to "this European standard" and replace accordingly (e.g. in clause 1). Complete Foreword to match the ISO standard content (e.g. responsible TCs (cooperation) etc.) and the European foreword as well (responsible TCs, secretariat, patent rights, member states, endorsement notice etc.). | Same comment as in ISO/DIS 23387 |
| CZ 006 | | | | ge | An experience with experimental creation of product data templates based on harmonised standards is showing that the reference documents are often not fit to provide basis for an unambiguous result. From the point of view of an NSB willing to provide data templates it is hard to produce additional content to existing standards but out of the existing governance structures – integration is needed into existing structures. | For those templates that need to be based on standards it would be more efficient to develop a methodology and template for a dedicated annex that would within the standard itself provide content for the corresponding data template. This seems to be the only way to ensure full consistency with the text of the standard and prevent production of multiple differing templates adding a new, hardly maintainable content out of the existing governance structure (technical committees etc.). | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|--|------------------------------------|
| CZ 007 | | | | ge | As the present draft contains a problematic relation to ISO 12006-3 undergoing a substantial revision, its content may not have been clearly understood by all stakeholders (from which many are not familiar with the core concept of a data template that is not introduced, explained, justified or made clear e.g. through examples) and seems not to be finished by the working group and/or task group (essential discussions are still ongoing even during the enquiry), we cast a negative vote at this stage. | We suggest a second enquiry should take place after the draft is finished by the working group and/or task group and the core concept of a data template is made obvious to a broader audience. The publication shall be coordinated with ISO 12006-3 as revised. If the 3-year timeframe (probably started in April 2018 based on decision 110, no extension so far) does not allow for fixing the draft and aligning with ISO 12006-3 as revised, a technical report or a technical specification may be produced as a temporary solution. | Same comment as in ISO/DIS 23387 |
| es 008 | | | | ge | We abstain in order to assure the compatibility of CWA 173016:2018 with the standards on construction objects, in particular with construction products. | | Same comment as in ISO/DIS 23387 |
| NO 009 | | | | ge | Since ISO/DIS 23387 is fundamentally based on ISO 12006-3, which is undergoing a revision, changes that occur in this revision will have a major impact on ISO/DIS 23387. | All parts of this document that will be impacted by changes in ISO 12006-3 must be taken into account. | Same comment as in ISO/DIS 23387 |
| FR 010 | | | | Ge | The French mirror committee acknowledges the work achieved by WG 4 /TG 2 in developing EN ISO 23387. | | Same comment as in ISO/DIS 23387 |
| FR 011 | | | | Ge | It should be possible to improve consistency with the current revision of EN ISO 12006-3 has to be taken into account. | Please check with ISO 12006-3 Project Leader or ISO/TC 59/SC 13/WG 6. | Same comment as in ISO/DIS 23387 |
| DE 012 | | | Fig 2 | te | What does IFC entity defined enum stand for? | | Same comment as in ISO/DIS 23387 |
| DE 013 | | | Fig 3 | te | What does it mean if a relationship relates a classification with two properties in different roles, each one with 0..*? Is this just a shortcut to get the figure simpler? Does it combine the relationships? Is that compliant with ISO 12006-3? | | Same comment as in ISO/DIS 23387 |
| DE | | | Fig. 1 | te | The cardinality of the relationships to the reference | | Same comment as in |

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|------------------------|----------------|----------------------|-----------------------------------|---------------------------------|---|--|------------------------------------|
| 014 | | | | | documents are often unclear: - <ul style="list-style-type: none"> - According to the cardinality, a reference document may only refer to one template and to one construction object. What about a document which refers to windows and doors for which two templates are created? - A reference document shall refer to at least one group of properties. Isn't it possible, that you refer to different documents for the grouping and for the description of the single properties? Then the second one does not refer to a Nest. - If the different reference document objects in a diagram play different roles, then they should get different names: property reference document, template reference document, ... | | ISO/DIS 23387 |
| DE 015 | | | Fig. 1 | te | Any quantity shall have a unit (according to the cardinality). Is that the intention? | | Same comment as in ISO/DIS 23387 |
| DE 016 | | | Fig. 1 | te | There are two paths from property to value: One via the quantity, the other via the xtdRelAssignsPropertyWithValues-Relationship. When to use which one? Aren't the values only in the context of the template applicable anyway? | | Same comment as in ISO/DIS 23387 |
| DE 017 | | | Fig. 3 | te | The relationship type xtdrelAssociates is used twice | Replace by xtdRelClassifies | Same comment as in ISO/DIS 23387 |
| DE 018 | | | figures | ed | Title and key are under the figure and not above. | Please revise. | Same comment as in ISO/DIS 23387 |
| 019 GB | | | Table 1 – EN ISO 23387 and EN ISO | te | xtdbag is not semantically meaningful | data template is a relationship (xtdAssignsProperties/?) between xtdSubjects and xtdProperty's | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|--------------------------------|---------------------------------|---|---|------------------------------------|
| | | | 12006-3 naming relations | | xtdnest is not semantically meaningful | group of properties is itself a property. | |
| CZ 020 | | 01 | last para. | ge | The second phrase does not reflect that standards are voluntary in general. | Use a statement that would respect the principle of general voluntariness of standards. | Same comment as in ISO/DIS 23387 |
| CZ 021 | | 02 | | ed | According to CEN/CENELEC Internal Regulations, Part 3:2017 (ISO/IEC Directives, Part 2:2016) , 10.4, the reference to all parts shall be followed by "(all parts)".. | Replace "EN/ISO 80000, <i>Quantities and Units</i> " with „ISO 80000 (all parts), <i>Quantities and units</i> ". (applies to ISO/IEC 19505 as well) | Same comment as in ISO/DIS 23387 |
| CZ 022 | | 02 | | te | ISO 16739 has already been replaced with ISO 16739-1:2018 Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries – Part 1: Data schema. | Update references if appropriate (or use dated ones if not). | Same comment as in ISO/DIS 23387 |
| DE 023 | | 02 | | ed | Please use the right order for normative reference. | Please check. | Same comment as in ISO/DIS 23387 |
| DE 024 | | 02 | | ed | Please use the standard text for the chapter. | Please check. | Same comment as in ISO/DIS 23387 |
| DE 025 | | 02 | | ge | Ensure that all documents are up to date and are normatively referred to in the rest of the document. The other way around all documents normatively referred to in the rest of the document shall be given in the Clause "Normative references". | Please check. | Same comment as in ISO/DIS 23387 |
| CZ 026 | | 03 | | ed | Almost all the notes lack dot at the end. | Check and add dots at the ends of notes. | Same comment as in ISO/DIS 23387 |
| CZ 027 | | 03 | | ed | Introductory wording shall be in accordance with Internal Regulations, part 3:2017 (ISO/IEC | Update the introductory wording to be in line with the rules. | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|---|----------------------------|---------------------------------|---|--|------------------------------------|
| | | | | | Directives Part 2:2016), 16.5.2. | | |
| DE 028 | | 03 | | ed | Use the right format for the definitions (including the word “source” when taking the definition from another standard). Notes and examples are also part of a definition and have to be considered as modifications if added or changed. If a terminological entry is reproduced from another document, the source shall be given at the end of the entry. If any changes are made to the original terminological entry, this shall be indicated, along with a description of what has been modified. A document given as a source of a terminological entry is informative. | Please check. | Same comment as in ISO/DIS 23387 |
| FR 029 | | 03 | | Te | Definition of EN ISO 23387 should be consistent with the ones used within EN ISO 23386. | All definitions should be aligned with EN ISO 23386 and in particular the definitions of property and group of properties. | Same comment as in ISO/DIS 23387 |
| CZ 030 | | 03.01 | | te | There is a different definition in the source [ISO 6707-1:2017, 3.4.1.4], the source shall be dated and completed with the number of the term in the source, it shall appear below the “Note 1 to entry:” and be completed with a statement on modification if e.g. a note to entry was added. | Check ISO 6707-1:2017 , update definition to match the source (if relevant – or remove source), update NOTE to “Note 1 to entry:” and provide source at the end of the terminological entry. | Same comment as in ISO/DIS 23387 |
| DE 031 | | 03.01 3.3 3.7 3.10 3.11 3.15 | | ge | “NOTE”/“NOTE 1” shall be “Note 1 to entry:”. “NOTE 2” shall be “Note 2 to entry:”. All notes to entry and all examples shall end with a dot. | Please change. | Same comment as in ISO/DIS 23387 |
| CZ 032 | | 03.02 | | te | The definition does not match the source (probably ISO/IEC 2382:2015 – 2121501). ISO/DIS 23386 provided a different definition in 3.2. | Check the source for a complete definition and notes, modify together with a modification statement if necessary, complete source | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|---|------------------------------------|
| | | | | | | information. Preferably align with ISO 23386. | |
| DE 033 | | 03.02 | | te | Different definitions in prEN ISO 23386 and prEN ISO 23387; different source in prEN ISO 23387 | Please use the same definition. | Same comment as in ISO/DIS 23387 |
| CZ 034 | | 03.03 | | te | It is unclear what PIM/PDM refer to. | Use only one abbreviation if for the term that precedes. | Same comment as in ISO/DIS 23387 |
| CZ 035 | | 03.03 | | ed | Instead of "NOTE 1". | Use "Note 1 to entry: ". (in all clause 3) | Same comment as in ISO/DIS 23387 |
| CZ 036 | | 03.04 | | te | Provide source information at the end of the entry including modification statement. | Place [ISO 12006-2:2015, 3.1.2, modified – Examples have been added.] at the end of the entry. | Same comment as in ISO/DIS 23387 |
| CZ 037 | | 03.05 | | te | The definition does not capture any delimiting characteristic to distinguish enumerated value from other types of value. | Consider completing the definition. | Same comment as in ISO/DIS 23387 |
| CZ 038 | | 03.06 | | te | Entry number is required in source. Source shall be provided at the end of the entry. | Check the source for an entry number, move it to the end and state modification if needed. Align with future ISO 23386 if relevant. | Same comment as in ISO/DIS 23387 |
| NO 039 | | 03.06 | | ge | Group of properties has different purpose in prEN ISO 23386 than in this document. | Create a new T&D for the purpose for this document. E.g. Property set. | Same comment as in ISO/DIS 23387 |
| CZ 040 | | 03.07 | | te | A circular definition (using the same term to define it) is provided. Alignment needed with future ISO 23386. | Consult the last version of ISO 23386 after the Enquiry to seek alignment. Add source, possibly modified, if relevant. | Same comment as in ISO/DIS 23387 |
| DE 041 | | 03.07 | | te | Different definitions in prEN ISO 23386 and prEN ISO 23387. | Please use the same definition. | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|---|---|------------------------------------|
| CZ 042 | | 03.08 | | te | In terminological entries the abbreviations are usually provided on a separate line, not in brackets as in the text. Source needs to be updated and completed with a term number (and modification, if relevant). | Consult source to look for the term number (unfortunately the version on BS webpage does not provide term numbers and seems not to contain the term and definition – may be irrelevant as source of the entry). | Same comment as in ISO/DIS 23387 |
| 043 GB | | 03.08 | | te | multiple file formats (STEP, XML, RDFS/OWL) | remove 'an' format -> formats | Same comment as in ISO/DIS 23387 |
| CZ 044 | | 03.09 | | te | The terminological entry is not in line with the source. | Consult ISO 6707-1:2017 , 3.4.1.3, to align, update source as appropriate (+ modification if relevant). | Same comment as in ISO/DIS 23387 |
| 045 GB | | 03.09 | | te | 3.1 component and 3.9 product are insufficiently different. choose one. | delete 3.1. and use only 3.9 product | Same comment as in ISO/DIS 23387 |
| CZ 046 | | 03.10 | | te | The source as provided does not exist. | Check the source. Align with future ISO 23386 (as updated after Enquiry) if possible. | Same comment as in ISO/DIS 23387 |
| DE 047 | | 03.10 3.14 | | ge | The Source shall be dated. | Please change. | Same comment as in ISO/DIS 23387 |
| CZ 048 | | 03.11 | | te | Instead of EN the ISO shall be referred to as source. ISO/DIS 23386 used “measure” possibly for a similar/the same concept (see ISO 12006-3 and IFC as well). | Update source to ISO 80000-1:2009 , 3.1, complete it with a statement on modification and move it to the end of the entry. Consider explaining the similarity/difference with “measure”. | Same comment as in ISO/DIS 23387 |
| DE 049 | | 03.11 | | ed | Quantity is defined as “property of a phenomenon ...”. Probably, this is not the property as defined in 3.10. | Use a different word instead of property | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|--|------------------------------------|
| CZ 050 | | 03.12 | | te | According to ISO 10241-1:2011, 6.4.4, a definition shall consist of a single phrase ... (written in such a form that it can replace the term in its context – Internal Regulations, part 3:2017). | Avoid using complete other phrases (after the full stop which is not to be used) e.g. by replacing them with notes to entry. Alignment needed with future ISO 23386. | Same comment as in ISO/DIS 23387 |
| DE 051 | | 03.12 | | ed | Definitions consist of 1 sentence. Don't use the term which has to be defined in the definition. | Please revise the definition. | Same comment as in ISO/DIS 23387 |
| CZ 052 | | 03.13 | | te | The term number needs to be identified in the source document (probably ISO/IEC/IEEE 15288:2015). | See source document for compliance with the entry and number of the term. | Same comment as in ISO/DIS 23387 |
| CZ 053 | | 03.14 | | te | The definition shall start on a new line with a lower case letter and not end with a dot, number of source entry is needed. | Update the term layout, add term number probably in ISO/IEC 19505-1:2012. | Same comment as in ISO/DIS 23387 |
| DE 054 | | 03.14 | | ed | “Unified Modelling Language” should be bold and formatted as a header | | Same comment as in ISO/DIS 23387 |
| CZ 055 | | 03.15 | | te | Term number and modification statement is needed in the source. Source to be provided at the end of the entry. | Update reference to ISO 80000-1:2009 , 3.9. Describe modifications (e.g. Notes to entry removed, Note 1 to entry and examples added). | Same comment as in ISO/DIS 23387 |
| 056 GB | | 03.15 | | te | radian is not a derived unit. | example 2 is omitted/revise as radian is not a derived unit. | Same comment as in ISO/DIS 23387 |
| FR 057 | | 04 | | Te | Generic property is not yet defined; it should be considered to introduce a definition. | Please provide a definition of generic property. | Same comment as in ISO/DIS 23387 |
| FR 058 | | 04 | | Te | According to Figure 1, Generic property should be optional instead of being mandatory. | Please amend the figure 1 by having the possibility of not having generic property, in order to introduce this idea please replace 1* by 0* as highlighted below. | Same comment as in ISO/DIS 23387 |

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|---------------------|-------------|-------------------|-------------------------|------------------------------|---|--|----------------------------------|
| | | | | | | | |
| FR 059 | | 04 | | Te | The concept of generic property has to be illustrated in order to be more understandable. | Please provide use cases of generic properties; this content could be provide as informative annex. | Same comment as in ISO/DIS 23387 |
| CZ 060 | | 04 | 1 st para. | ed | Names of standards not to be used in references. | Remove the name of the standard. | Same comment as in ISO/DIS 23387 |
| CZ 061 | | 04 | 2 nd para. | te | It may not be clear what objects, collections and relationships refer to. | Consider clarifying what objects, collections and relationships refer to. | Same comment as in ISO/DIS 23387 |
| CZ 062 | | 04 | Figure 1 | te | Because the possible content of the template is limited in comparison with the extensive content provided in the reference documents (standards) and a lot of complexities will not be captured, it would be practical to explain the principle also by other means that could be understood by people not familiar with the type of notation used (e.g. a text description based on a simplified graphic representation of the main relations). Examples would help as well to make the principle clearer. | Consider a broader audience of experts in specific domains of the construction industry that so far may not have identified the impact data templates would have in their domain and may not have paid sufficient attention due to a lack of understanding to the graphical representations. Provide an explanation and real examples to make obvious what is being dealt with, how it relates to reference documents and the corresponding construction products and other types of construction objects. | Same comment as in ISO/DIS 23387 |
| CZ 063 | | 04 | last para. | te | There are “interdependent” properties mentioned in 3.7 and “dependencies” between properties here with probably a different meaning. | Make sure these are clearly understood also in the context of the future ISO 23386. | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|----------------------------|---------------------------------|---|--|------------------------------------|
| CZ 064 | | 04 | link to Annex B | te | While Table 2 uses ISO 23387 names, Annex B uses ISO 12006-3 names (in title). | Refer to the same type of names or use both in all cases (similar in 7.1.4). Using both may also be helpful for translation. | Same comment as in ISO/DIS 23387 |
| CZ 065 | | 05 | | te | Provided linking to IFC (ISO 16739) is insufficient because it doesn't solve units in a way where data exchange could be realised in a reliable and consistent way. This part of ISO 12006-3 is under revision. | Postpone publication of the standard until the revised version of ISO 12006-3 is published and prove that interoperability of units and measure types is solved before this standard is published. | Same comment as in ISO/DIS 23387 |
| CZ 066 | | 07 | | ge | ISO 12006-3 which is referenced in the standard is under revision and will likely be soon replaced by the newer version. It seems to be premature to use the old version and make partial extensions to the schema. Even UML diagrams will become obsolete very soon. | Postpone publication of the standard until the revised version of ISO 12006-3 is published. | Same comment as in ISO/DIS 23387 |
| CZ 067 | | 07 | | ge | Name of the standard states that this standard describes concepts and principles. But explicit implementation of the schema is provided in the clause 7 which exceeds announced scope of the project. | Remove schema implementation from the standard | Same comment as in ISO/DIS 23387 |
| DE 068 | | 07 7.01 | | ge | According to ISO/IEC Directives, Part 2:2018, 22.3.3, "Hanging paragraphs" shall be avoided since reference to them is ambiguous. The first paragraph of a clause shall be numbered as a subclause. The first subclause can often be named "General". Renumbering concerns also cross references. | Please check. | Same comment as in ISO/DIS 23387 |
| DE 069 | | 07 | 3 rd paragraph | ed | Are you referring to figure 1? Or to figure 3? | | Same comment as in ISO/DIS 23387 |
| DE 070 | | 07.01.2 | relatingClassification | ed | Related thingsRelatedThings | Seems to be a typo | Same comment as in ISO/DIS 23387 |
| DE | | 07.01.3 | | te | Why has xtdRelAssociates been re-defined? | Give an explanation | Same comment as in |

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|------------------------|----------------|----------------------------|----------------------------|---------------------------------|--|--|-------------------------------------|
| 071 | | | | | | | ISO/DIS 23387 |
| DE 072 | | 07.01.4 | | ed | | Give a textual description of the rule | Same comment as in ISO/DIS 23387 |
| DE 073 | | 07.01.5 | | ed | | Give a textual description of the rule | Same comment as in ISO/DIS 23387 |
| DE 074 | | 07.02 | | te | The long form seems to be incomplete. E.g. the xtdClassification is missing | Create a correct long form | Same comment as in ISO/DIS 23387 |
| 075 GB | | 1Scope | | ge | in Potential contravention of the CEN/ISO/Vienna arrangements. | Clarification required as to which is delivered first ISO 12006-3 or ISO 23387. | Same comment as in ISO/DIS 23387 |
| SE 076 | | 3 Terms and definitions | | ed | 3.10: Example 1: typographic inconsistency | 3.10: Change to capital letter: "Length ..." | Same comment as in ISO/DIS 23387 |
| SE 077 | | 3 Terms and definitions | | ed | 3.13: spelling mistake: "purpose" | 3.13: Change to "purposes". | Same comment as in ISO/DIS 23387 |
| SE 078 | | 3 Terms and definitions | | ed | 3.12: The definition contains too much information. | Separate the second sentence in a NOTE. Add a full stop at the end. | Same comment as in ISO/DIS 23387 |
| SE 079 | | 3 Terms and definitions | | te | 3.8: This is not a complete definition: "X specifies ..." | Add a term for the superordinate concept. | Same comment as in ISO/DIS 23387 |
| SE 080 | | 3 Terms and definitions | | ed | 3.6 and 3.8: Improper indication of synonyms (GUID), (IFC) | Indicate synonyms according to ISO 10241-1. | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|--|----------------------------|---------------------------------|--|--|------------------------------------|
| SE 081 | | 3 Terms and definitions | | te | 3.7: This is a circular definition (inner): group of properties cannot be part of the definition if it's the term for the concept being defined. | Rewrite the definition, or preferably, consider whether this is a term and whether it needs to be included in section 3. | Same comment as in ISO/DIS 23387 |
| 082 GB | | 6 Linking data templates to classification | | ge | This clause presumes undecided revisions of ISO12006-3 | The standard should be based on the existing ISO 12006-3 or await the final outcome of the revision process. | Same comment as in ISO/DIS 23387 |
| 083 GB | | 7 EXPRESS specification | | ge | the definition of a new schema is outside the scope of this standard and conflicts with ISO12006-3. in its present form it is in conflict with ISO/CEN/Vienna agreement. | section 7 should be presented as a view (example) of ISO 12006-3 not as an alternative., | Same comment as in ISO/DIS 23387 |
| DE 084 | | Annex A | Fig. 4 | ed | Wrong number: "Figure 4" instead of "Figure A.1" | Please revise. | Same comment as in ISO/DIS 23387 |
| DE 085 | | Annex A | Fig. 5 | ed | Wrong number: "Figure 5" instead of "Figure A.2" | Please revise. | Same comment as in ISO/DIS 23387 |
| DE 086 | | Annex B | Fig. 6 | ed | Wrong number: "Figure 6" instead of "Figure B.1" | Please revise. | Same comment as in ISO/DIS 23387 |
| DE 087 | | Annex B, general | | te | Composition can be represented by composition of templates. That is useful for systems. But there are complex objects, e.g. electronic products as used in building automation systems, | These products could be represented quite easily by providing the possibility of an internal composition, or nesting. | Same comment as in ISO/DIS 23387 |

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|------------------------|----------------|----------------------|--|---------------------------------|--|--|-------------------------------------|
| | | | | | which are composed of internal components. One example are the connections of an electronic product. These products often have various numbers of connections. Each connection can be described by a number of properties. And there exist different types of connections, i.e. they may need different property sets to be described. Often part of relationships are used to model this situation and to relate an electronic component to its connection elements. It is probably not useful to define separated templates for these types of components. | | |
| DE 088 | | Annex B, general | Fig. 6 | te | The text in the figure is too small for the printed version. | Please revise. | Same comment as in ISO/DIS 23387 |
| CZ 089 | | Annex A | 2 nd and 3 rd paragraph | te | It is not clear what ISO 12006-3 version 3 is (ISO 12006-3:2007 is the first edition, preceded by ISO/PAS 12006-3:2001, also a first edition). | If the version does not relate to the standard, provide an explanation what it refers to and use it in a way so as not to confuse the reference. | Same comment as in ISO/DIS 23387 |
| CZ 090 | | Annex B | | te | The figure lacks reference in Annex B. Figure title contains explanation that would better fit in a provision. Details in the figure are not readable. | Remove the description from figure title and place it in an introductory sentence with reference to the figure. Make the important parts in the figure identifiable using references to a key. | Same comment as in ISO/DIS 23387 |
| DE 091 | | Fig. 5 | | te | It seems that modification have done for xtdREIDocuments. These modifications are not present in the EXPRESS schema in clause 7. | Bring the modifications into the Express schema. Give reasons for the modifications | Same comment as in ISO/DIS 23387 |
| DE 092 | | Foreword | | ed | Use the right foreword for the ISO. | Please check. | Same comment as in ISO/DIS 23387 |
| DE 093 | | General | | ge | It would be helpful for a reader to find some examples of templates in the document. That would make it easier to understand the concept of a template and to apply it to a concrete situation. | | Same comment as in ISO/DIS 23387 |
| DE 094 | | General | Text and Figures | ed | Reference to prEN ISO 12006-3 and prEN ISO 12006-3 is used. | Please revise. | Same comment as in ISO/DIS 23387 |

1 **MB** = Member body / **NC** = National Committee (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by **)

2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial

Template for comments and secretariat observations

Date:2019-06-13

Document:

Project: prEN ISO 23387

| MB/ NC ¹ | Line number | Clause/ Subclause | Paragraph/ Figure/Table | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
|------------------------|----------------|----------------------|----------------------------|---------------------------------|--|---|------------------------------------|
| CZ 095 | | Introduction | | ed | Standards are usually referenced by their numbers, without full title. | Remove the title of ISO 12006-3. | Same comment as in ISO/DIS 23387 |
| CZ 096 | | Introduction | | te | The term “constructed facilities” may designate the same concept as “built assets” used elsewhere. | Consider alignment if the meaning is the same. Take ISO 19650 into consideration. | Same comment as in ISO/DIS 23387 |
| DE 097 | | Introduction | | ed | New version of EN ISO 16739 published in 2018. | Please check (EN ISO 16739-1). | Same comment as in ISO/DIS 23387 |
| CZ 098 | | Title | | ed | The use of capital letters in “Information Modelling” may be excessive comparing to ISO 19650. | Consider aligning with ISO 19650 to read “information modelling”. | Same comment as in ISO/DIS 23387 |

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prEN ISO 23387_AFNOR.doc: Collation successful

prEN ISO 23387_BSI.doc: Collation successful

prEN ISO 23387_DIN.doc: Collation successful

prEN ISO 23387_SIS.doc: Collation successful

prEN ISO 23387_SN.doc: Collation successful

prEN ISO 23387_UNE.doc: Collation successful

prEN ISO 23387_UNMZ.doc: Collation successful

Collation of files was successful. Number of collated files: 7

SELECTED (number of files): 7

PASSED TEST (number of files conformed to CCT table model): 7

FAILED TEST (number of files conformed to CCT table model): 0

CCT - Version 2018.2

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