



Form 8A: Committee decision for DIS

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| Secretariat: JISC | ISO/TC 268/SC 1 N 317 |
| Project number and title: ISO/CD 37156 - Smart community infrastructures -- Guidelines on Data Exchange and Sharing for Smart Community Infrastructures | |

This form should be sent to the ISO Central Secretariat (<http://isotc.iso.org/livelink/si/>), together with the draft of the project, by the secretariat of the technical committee or subcommittee concerned.

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| The accompanying document is submitted for circulation to member body vote: <input checked="" type="checkbox"/> As a DIS |
| Consensus has been obtained from the P-members of the committee: on 2018-08-29 <input type="checkbox"/> At the meeting of . See Resolution number . In document N . <input checked="" type="checkbox"/> By ballot initiated on 2018-07-02 Please attach a copy of the ballot results (if applicable) |

| | |
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| Listing of the P-members (NWIP, CD or Resolution) | |
| P-members in favour: | 12 |
| Canada (SCC), China (SAC), Japan (JISC), Korea, Republic of (KATS), Philippines (BPS), Romania (ASRO), Russian Federation (GOST R), Rwanda (RSB), Sri Lanka (SLSI), Ukraine (DSTU), United Kingdom (BSI), United States (ANSI) | |
| P-members voting against: | 0 |

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| <p>P-members abstaining: 11</p> <p>Austria (ASI), France (AFNOR), Germany (DIN), Greece (NQIS ELOT), India (BIS), Iran, Islamic Republic of (ISIRI), Netherlands (NEN), Norway (SN), South Africa (SABS), Spain (UNE), Sweden (SIS)</p> |
| <p>P-members who did not vote: 1</p> <p>Denmark (DS)</p> |
| <p>Remarks:</p> <p>ISO/TC268/SC1 also took the following resolution at Moscow on 2018-10-18</p> <p>Resolution -130 (Moscow -08/2018)</p> <p>Approval of the report from ISO/TC 268/SC1/WG4</p> <p>ISO/TC 268/SC 1 approves the report from ISO/TC 268/SC 1/WG4 as presented by Dr. Wan, and also decides that ISO 37156 should proceed to DIS stage.</p> |

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| <p>I hereby confirm that this draft meets the requirements of Part 2 of the ISO/IEC Directives:</p> | | |
| <p>Secretariat:</p> <p>JISC</p> | <p>Date:</p> <p>2018-10-19</p> | <p>Name/Signature of TC/SC Secretary:</p> <p>Chiba, Yusuke Mr</p> |

Result of voting

Ballot Information

| | |
|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| Ballot reference | ISO/CD 37156 |
| Ballot type | CD |
| Ballot title | Smart community infrastructures -- Guidelines on Data Exchange and Sharing for Smart Community Infrastructures |
| Opening date | 2018-07-02 |
| Closing date | 2018-08-27 |
| Note | |

Member responses:

| | |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Votes cast (23) | Austria (ASI) Canada (SCC) China (SAC) France (AFNOR) Germany (DIN) Greece (NQIS ELOT) India (BIS) Iran, Islamic Republic of (ISIRI) Japan (JISC) Korea, Republic of (KATS) Netherlands (NEN) Norway (SN) Philippines (BPS) Romania (ASRO) Russian Federation (GOST R) Rwanda (RSB) South Africa (SABS) Spain (UNE) Sri Lanka (SLSI) Sweden (SIS) Ukraine (DSTU) United Kingdom (BSI) United States (ANSI) |
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Comments submitted (0)

Votes not cast (1) Denmark (DS)

Questions:

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| Q.1 | "Do you approve the circulation of the draft as a DIS?" |
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| Votes by members | Q.1 |
|----------------------|------------|
| Austria (ASI) | Abstention |

| | |
|------------------------------------------|------------------------|
| Canada (SCC) | Approval |
| China (SAC) | Approval |
| France (AFNOR) | Abstention |
| Germany (DIN) | Abstention |
| Greece (NQIS ELOT) | Abstention |
| India (BIS) | Abstention |
| Iran, Islamic Republic of (ISIRI) | Abstention |
| Japan (JISC) | Approval with comments |
| Korea, Republic of (KATS) | Approval with comments |
| Netherlands (NEN) | Abstention |
| Norway (SN) | Abstention |
| Philippines (BPS) | Approval |
| Romania (ASRO) | Approval |
| Russian Federation (GOST R) | Approval |
| Rwanda (RSB) | Approval |
| South Africa (SABS) | Abstention |
| Spain (UNE) | Abstention |
| Sri Lanka (SLSI) | Approval |
| Sweden (SIS) | Abstention |
| Ukraine (DSTU) | Approval |
| United Kingdom (BSI) | Approval with comments |
| United States (ANSI) | Approval with comments |

| Answers to Q.1: "Do you approve the circulation of the draft as a DIS?" | | |
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| 8 x | Approval | Canada (SCC) China (SAC) Philippines (BPS) Romania (ASRO) Russian Federation (GOST R) Rwanda (RSB) Sri Lanka (SLSI) Ukraine (DSTU) |
| 4 x | Approval with comments | Japan (JISC) Korea, Republic of (KATS) United Kingdom (BSI) United States (ANSI) |

| | | |
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| 0 x | Disapproval | |
| 11 x | Abstention | Austria (ASI) France (AFNOR) Germany (DIN) Greece (NQIS ELOT) India (BIS) Iran, Islamic Republic of (ISIRI) Netherlands (NEN) Norway (SN) South Africa (SABS) Spain (UNE) Sweden (SIS) |

| Comments from Voters | | |
|----------------------------------|----------------------------|------------------------|
| Member: | Comment: | Date: |
| Germany (DIN) | <i>Comment File</i> | 2018-08-15 09:23:35 |
| Japan (JISC) | <i>Comment File</i> | 2018-08-22 09:14:28 |
| Korea, Republic of (KATS) | <i>Comment File</i> | 2018-08-26 11:10:21 |
| United Kingdom (BSI) | <i>Comment File</i> | 2018-07-26 14:17:41 |
| United States (ANSI) | <i>Comment File</i> | 2018-08-27 23:21:50 |

| Comments from Commenters | | |
|--------------------------|----------|-------|
| Member: | Comment: | Date: |

Template for comments and secretariat observations

| MB/ NC ¹ | Line number (e.g. 17) | Clause/ Subclause (e.g. 3.1) | Paragraph/ Figure/ Table/ (e.g. Table 1) | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
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| DE | | | | ge | <p>The handling of data described in the first part is regulated in Germany by the Federal Data Protection Act (BDSG) and in Europe by the EU Data Protection Basic Regulation.</p> <p>The sections on data security and privacy addressed in the second part are correct, but largely without practical application as a standard. A standard for defining open-source exchange formats and technical interfaces would be better.</p> | <p>Insert clear references to national and international legal regulations.</p> <p>Shortening of text passages without practical application.</p> | Accepted. (Jacqui, Thomas, Xiaomi, to draft response for approval of the comment.) |
| JP1 | all | | | Ge | <p>Inconsistency between the core words, such as</p> <ul style="list-style-type: none"> ● Data exchange and sharing ● Data sharing and exchange ● Sharing and exchanging community infrastructure data ● Data exchange and sharing of community infrastructure ● etc.... | <p>Depending on the context where these core words are used, we understand it might be difficult to keep the consistencies. However, we strongly recommend that Leadership of SC1/WG4 review all these core words throughout the document, and revise to keep consistency where necessary</p> | Accepted. Will be amended Jacqui will check |
| GB1 | | | | Ge | <p>ISO/IEC 30182 provides a Smart City Concept Model to address problems of interoperability in smart city data.</p> <p>ISO CD 37156 references 30182 in a few places:</p> <ul style="list-style-type: none"> - Line 169, the last line of the introduction - Line 379 in 5.1, the general introduction - Line 980 in 9.6 suggests that the | <p>Make more of the relationship to the already published standard ISO/IEC 30182, for example, explain how each concept in this standard relates to the similar concept in 30182 – or even just adopt that concept if it already provides what is needed.</p> <p>Explain how “the standards framework” could use the ISO/IEC 30182 SCCM. And what the idea of</p> | Not accepted. It is not mandatory to have implemented ISO/IEC 30182 in order to implement ISO/IEC 37156. This would of course be beneficial but ISO/IEC 30182 only deals with one |

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| | | | | | <p>“standards framework” should use the SCCM</p> <ul style="list-style-type: none"> - Line 985-987 adopts four definitions from 30182, in the context of smart city indicators - Item 25) in the bibliography <p>& references the “SCCM” especially in section 5.3 – which tries to give a clearer picture of how the two relate. See specific comments about section 5.3</p> | “standards framework” means in this context. | barrier to data interoperability and may only be implemented once ISO/IEC 37156 is implemented. Therefore appropriate ISO/IEC 30182 references have been included. |
| KR1 | 130 | Introduction | 1 st para. | ed | The “information, communication technology” indicates ICT which is “information and communication technology”. | Fix it as follows: “information <u>and</u> ; communication technology.” | Accepted. Will be amended |
| KR3 | 155, 211-219 | Introduction, 3.1.4 | 3 rd bullet item | te | The digital continuity is a technical concept. The current CD text doesn't provide any guideline and related descriptions but only include its definition at 3.1.4. | Choose either one: Option 1: delete the 3rd bullet item and also delete 3.1.4; or Option 2: add an additional sub-clause for the digital continuity with related guidelines or at least [To be added] if no guidelines yet. | Accepted. Option 1: (Xiaomi) |
| KR2 | 169 | | | ed | Only the title of ISO/IEC JTC1 30182 doesn't specify. | Change as follows: ISO/IEC 30182 Smart city concept model – Guidance for establishing a model for data interoperability | Accepted. Will be amended |
| KR4 | 261 | 3.2.5 | | te | This document addresses a relation to ISO 8000-110, “Data quality” of which vocabulary document, ISO 8000-2, defines metadata as “data defining and describing other data”. This | Change it as follows: “3.2.5 metadata data <u>defining and describing</u> about other data [SOURCE: ISO <u>8000-2:2017</u> , <u>3.2.8 14721:2012</u> ; | Accepted. Will be amended |

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| | | | | | definition provides clearer meaning. | 4.7.2] | |
| GB2 | 262 | 3.2.5 | SOURCE | Te | <p>ISO 14721:2012 is given as the source of the definition used in this document for 'metadata'. This is a bit strange, as ISO 14721 is a them specific standard for the archiving of 'space data'. Yes, the OAIS model which it uses is used more generally in the world of archiving.</p> <p>ISO 19115-1:2014 has an equivalent definition "information about a resource". This has been the same since the first edition of ISO 19115, but has a similar weakness: the scope of that standard is geographic information. Broader perhaps than space, and with a clearer application to this standard than archiving (let alone space data), but not as good as a "general" ISO definition.</p> <p>The nearest I can find to that, which conveniently is closer to the current definition, is from ISO/IEC 11179-1:2015 <i>Information technology – Metadata registries (MDR) – Part 1:Framework</i> "data that defines and describes other data". Oddly, this definition does not appear in http://www.electropedia.org/; it is accessible via the ISO Online Browsing Protal. (I suspect the whole of JTC1's work is not in the IEC "electropedia")</p> <p>Strangely, ISO 15836-1 <i>The Dublin Core metadata element set</i> (the 'grandfather' of metadata standards) doesn't actually define metadata. And neither does the underlying Dublin Core terms set!</p> | Adopt the ISO/IEC 11179-1 definition of 'metadata', as being more 'general IT', so change Line 261 to "data that defines and describes other data" and line 262 to "[SOURCE: ISO/IEC 11179-1:2015 3.2.16]" | Accepted. Will be amended Resolved with KR4 |
| KR5 | | 3.2 | | te | The item b) of 4.2 deals with the data quality but there is no definition even though a relation between this document and ISO 8000-110 is stated in the introduction part. | Include the following definition quoted from ISO 8000-2: "3.2.x data quality degree to which a set of inherent characteristics of data fulfils requirements | Accepted. Will be amended Resolved into 9.3 (KIM) |

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| Date: 08272018 | Document: CD 37156 | Project: |
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| | | | | | | Note to entry: the requirement means a need or expectation that is stated, generally implied or obligatory [SOURCE: ISO 8000-2:2017, 3.4.8]" | |
| JP2 | 295 | 3.3.2 | | Te | Term "data acquisition" is not used in the main text | Use this term in the main text at least once, or delete this term. | Accepted. Will be deleted |
| KR6 | 299 | 3.3.3 | | te | There is no related description and usage. | Delete this term due to no use. | Accepted. Will be deleted |
| JP3 | 299 | 3.3.3 | | Te | Term "data classification" is not used in the main text | Use this term in the main text at least once, or delete this term. | Accepted. Will be deleted |
| US/ ANS I1 | 322 | 3.3.9 | | TE | Add text to address protection of data. | preservation of confidentiality, integrity and availability of information <u>free from danger or threat of unintended access and use</u> | Accepted. Will be amended 3.3.9 Will be deleted 7.2 will be amended to include preservation of data. (Jacque) |
| KR7 | 340 | 4.1 | | te | The purpose of 4 is to provide consideration principles as in 4.2. But the content of 4.1 as general descriptions for 4 is addressing a different context. | Delete 4.1 or refine it to be fitted. | Withdrawn |
| KR8 | 349 | 4.2 | | te | Referring to "a balance between data security and privacy are maintained", the balance is not always made because they have different characteristics. The data security will be always a requirement but the privacy may be not in some | Delete "a balance between". So, "data security and privacy are maintained" is enough to address such important consideration points. | Accepted. Will be amended |

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| | | | | | cases. This comment shall be handled together with KR8 to avoid any duplication. | | |
| GB3 | 350 | 4.2 | b) | Te | This is a very weak statement of quality, it doesn't even make any suggestion that the data should be good enough to be of any use. | How about "In order to be worth sharing, the data should be of sufficient quality to be useful in more than part of the smart community infrastructure, or by more than one organisation." | Accepted. Will be amended |
| KR9 | 358 | 4.2 | | te | The item a) and f) are both dealing with security looking like a duplication. | Delete the security aspect from the item a) and combine it with the item f) as follows: "a) The community infrastructure data should be available to be exchanged and shared, ensuring that a balance between data security and privacy are maintained. " "f) The security <u>and privacy</u> of the community infrastructure data should be <u>maintained and ensured together.</u> " | Accepted. Will be amended Replace ensured with persevered (Biyu) |
| KR10 | | 4.2 | | te | As time goes, the community infrastructure changes by various reasons and shall adapt to societal, environmental, cultural, strategic and policy changes. In order to fulfil this change management, the temporal information also shall be maintained. | Include the following additional principle: "h) The data should have temporal information to maintain changes of the community infrastructure by any reason (e.g. societal, environmental, cultural, strategic and policy changes) and to track community infrastructure changes for smart management and efficiency improvement." | Accepted. Will be amended (Biyu) |
| KR11 | | 4.2 | | te | The definition of the smart community infrastructure data is data created, captured, collected or curated from the various sources of smart community infrastructure. That is, the data will consist of a variety of different data objects where a vital requirement for efficient data management is identification of every data object. A systematic data management and structured data for interoperability among different | Include the following additional principle: "i) The data should be identifiable systematically and uniformly by a set of identification schemes involved in community infrastructures." | Accepted. Will be amended "i) The data should be identifiable by a set of identification mechanisms for community infrastructures." |

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| | | | | | stakeholders of a smart community infrastructure can be enabled only by a uniform and hierarchical identification scheme. | | (Biyu) |
| US/ ANS I3 | 359 | 4.2.g). | | TE/ED | Add text (geo-spatial) to clarify the type of method. | g) The data should use geo-spatial methods to achieve the positioning and control of urban infrastructure objects. | Not Accepted. (Biyu) |
| GB4 | 359 | 4.2 | g) | Ge | This is one of only two mentions of “spatial” in the normative text of this document. This highlights the potential useful of guidance to smart cities on the use of spatial data, which has its own family of standards that are already in common use worldwide. One of these is mentioned in the Bibliography, as item 44) (line 1080). ISO/IEC 30182 (referenced in this standard e.g. at line 379) defines the concept of PLACE. | Perhaps include a brief statement about spatial data ISO/IEC 30182 (referenced in this standard e.g. at line 379) defines the concept of PLACE | Not Accepted. All 22 concept of ISO/IEC 30182 are used in this standard. Check list of Bibliography |
| JP4 | 372-378 | 5.1 | | ge | The term “Data framework” is used at many places. Roles of the data framework look explained around here. But there is no definition for the data framework. What does the data framework mean? All the followings are included? - Data assets(metadata, reference data, thematic data) - Collected data assets(open, shared and closed data within the data spectrum) - Concept model for infrastructure data | Put the definition of the “ data framework ” in clause 3 or explain “data framework” around here. | Accepted. Will be amended To change “data framework” and “data type” Review with JP4 |

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| | | | | | <ul style="list-style-type: none"> - Data dictionary and catalogue - Security strategy and policy - Privacy strategy and governance - Data roles and responsibilities | | |
| GB5 | 375-376 | 5.1 | | Ge | <p>The classification of data assets into metadata, reference data, and thematic data is often a useful distinction which is missing from ISO/IEC 30182 – although to be fair to 30182, it does explicitly state that “metadata of a dataset” is out of scope.</p> <p>The current working draft of ISO/IEC 30145-2 <i>Smart City Knowledge Management Framework</i> does make some use of the ideas of “metadata” and “thematic data”. That draft is scheduled to be an ISO/IEC JTC1 CD within the next few months. It does make extensive use of ISO/IEC 30182, in particular extending it with metadata concepts.</p> | <p>It would be good if some members of TC268/SC1, in particular those involved with ISO 37156 comment on the ISO/IEC 30145-2 Committee Draft, to move the two towards a consistent use of the ideas of metadata, reference data, and thematic data.</p> <p>At present, I’m not suggesting any change to this aspect of ISO/CD 37156, except perhaps to highlight the relationship on this point with the published ISO/IEC 30182: add in line 376 “The reference data and thematic data can build on concepts defined in ISO/IEC 30182.”</p> <p>This is in addition to the relationship mentioned in lines 379-381, and is a partial elaboration of the statement at line 980.</p> | Noted |
| GB6 | 382 | 5.2 | Section title | Ge | <p>The use of “Data type” in this context is confusing to the reader, as the phrase “Data type” is most often used to mean the kind of values that the data can have e.g. numeric, string, etc.</p> <p>Note: the phrase “data type” is used at 401,</p> | <p>Adopt the term introduced at 375, so change the heading to “Classifications of data” or “Data classifications”</p> <p>To some, that may imply security classifications, and at 380 “classifications” is used to mean the</p> | Accepted. the use of “data framework” and “data type” will be revised |

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| | | | | | suggesting that 5.3 will detail them. 5.3 makes no mention of metadata / reference data / thematic data. | position on the data spectrum, but it is at least internally consistent in this document. | |
| GB7 | 385-387 | 5.2.1 | | Te | <p>The example given is not a clear example of metadata. A list of the voluntary services organisations who deliver city services is a good example of reference data. Most data about them would be thematic data, in that context (managing the delivery of the services, and/or the relationships to stakeholders).</p> <p>A better example of metadata (specifically, provenance metadata) would be: who owns the data? When was the data created?</p> <p>Section 7.4.2.3 provides better examples of reference data.</p> <p>ISO 14721:2012 is mentioned as the source of the definition used in this document for 'metadata'</p> | Change the example to match that given in 7.4.2.3, or to "the ownership of the data, or the data of creation of the data." | Not Accepted. |
| GB8 | 390-391 | 5.2.2 | | Ge | <p>Neither of these examples are good examples of reference data. Both are good examples of data items that are good candidates for sharing.</p> <p>Section 7.4.2.4 provides better examples of reference data.</p> | <p>Better examples of reference data would be a list of stakeholders who may provide data into the system, or a list of streets (or more generally, 'places' in the ISO/IEC 30182 sense) to which data items relate.</p> <p>Or the example given at 7.4.2.4</p> <p>In both these cases, interoperability is improved</p> | <p>Not Accepted.</p> <p>A Variety of examples have been used. Delete footnote 1.</p> |

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| | | | | | | by having one authoritative reference set, to which data publishers refer. | |
| GB9 | 401 | 5.2.3 | | Ed | <p>If the comment against line 382 is accepted, then no change is needed.</p> <p>If the comment against line 382 is rejected, then this use of “data types” should be changed, as section 5.3 does not discuss the data types outlined in section 5.2. Or perhaps restructure 5.3 so that the three tables are clear examples of the three classifications of data given in 5.2</p> | Depends on whether the comment on line 382 is accepted or rejected. | Not Accepted. see comment for line 382. |
| JP5 | 407 | 5.3 | | ed | The term “the SCCM” appeared here without any explanation. | Change to “the Smart city concept model, SCCM, ” and add the provenance of SCCM. | Accepted. Will be changed |
| KR1 2 | 407 | 5.3 | . | ed | The abbreviation “SCCM” used here for the first time and defined in ISO/IEC 30182:2017. | <p>Change as follows:</p> <p>The Table 1 to 3 identify the elements of the Smart city concept model (SCCM) which relate ...</p> <p>Also, add definition of Smart city concept model (SCCM) into clause 3.1.</p> | Accepted. Will be changed |
| JP8 | 408-410 | 5.3 | | ge | The description of “Community infrastructure data which is collected may relate to characteristics, consumption, movement, presence, production, status, supply and use. These descriptions are not necessarily exhaustive or mutually exclusive.” is hard to understand. These look categories of collectable data in Table 1. | <p>Change to</p> <p>“Collectable data of community infrastructure can be categorised into characteristics of something, consumption of something, movement of something, presence of something, production of something, status of something, supply of something, use of something as shown in Table 1. These descriptions are not necessarily exhaustive</p> | Accepted. Will be changed |

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|------------------------------------------------|--------------------------|-----------------------------|----------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|----|----|-----------------------------|----|----|------------------|-----|----|------------|----|----|------------------------------------------------|----|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------|------------------------|---------------------|----|-----|-----------------------------|----|-----|------------------|-----|-----|------------|----|-----|------------------------------------------------|----|-----|---------------------------|
| | | | | | | or mutually exclusive. “ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GB10 | 410 | 5.2.3 | Table 1 | Ge | <p>It is not clear how the “Prime Concept” given in the final column from ISO/IEC 30182 has been selected.</p> <p>But then, I can’t understand which entry in each row actually indicate the data item.</p> <p>For example, 30182 has concepts of BUILDING and OBSERVATION which would seem to be the “prime concept” for a Building & Survey respectively. “Building use” may be an OBJECTIVE?</p> | Try to encourage one of the original authors of ISO/IEC 30182, or the BSI PAS on which it is based, to review this draft, in order to ensure it uses ISO/IEC 30182 appropriately. | Accepted. The ISO Editor of ISO/IEC 30182 has reviewed the Prime Concepts used and they are correct. The collectable data column in the table indicates the data which may be collected for the infrastructure stated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JP6 | | | Table 1,2,3 | te | <p>Regarding collectable data, this covers only the data come from the infrastructure in operating stage. This does not over the data related to infrastructure itself. See the following table.</p> <table border="1" data-bbox="745 986 1234 1374"> <thead> <tr> <th>Stage</th> <th>Data from infrastructure</th> <th>Data of infrastructure</th> </tr> </thead> <tbody> <tr> <td>Planning and design</td> <td>No</td> <td>No</td> </tr> <tr> <td>Developing and construction</td> <td>No</td> <td>No</td> </tr> <tr> <td>In use/operation</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Suspension</td> <td>No</td> <td>No</td> </tr> <tr> <td>Demolition, reinforcement and new construction</td> <td>No</td> <td>No</td> </tr> </tbody> </table> | Stage | Data from infrastructure | Data of infrastructure | Planning and design | No | No | Developing and construction | No | No | In use/operation | Yes | No | Suspension | No | No | Demolition, reinforcement and new construction | No | No | <p>Change the table like the followings.</p> <table border="1" data-bbox="1301 858 1798 1289"> <thead> <tr> <th>Stage</th> <th>Data from infrastructure</th> <th>Data of infrastructure</th> </tr> </thead> <tbody> <tr> <td>Planning and design</td> <td>No</td> <td>Yes</td> </tr> <tr> <td>Developing and construction</td> <td>No</td> <td>Yes</td> </tr> <tr> <td>In use/operation</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>Suspension</td> <td>No</td> <td>Yes</td> </tr> <tr> <td>Demolition, reinforcement and new construction</td> <td>No</td> <td>Yes</td> </tr> </tbody> </table> <p>To achieve the above, please see the proposal from JISC which will be sent to WG4 secretary in</p> | Stage | Data from infrastructure | Data of infrastructure | Planning and design | No | Yes | Developing and construction | No | Yes | In use/operation | Yes | Yes | Suspension | No | Yes | Demolition, reinforcement and new construction | No | Yes | Accepted. Will be amended |
| Stage | Data from infrastructure | Data of infrastructure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Planning and design | No | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developing and construction | No | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In use/operation | Yes | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Suspension | No | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Demolition, reinforcement and new construction | No | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage | Data from infrastructure | Data of infrastructure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Planning and design | No | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Developing and construction | No | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In use/operation | Yes | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Suspension | No | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Demolition, reinforcement and new construction | No | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|--------------------|-----------------------|-----------------------------|----------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | Data of infrastructure is important. Collectable data should cover all data related to infrastructure. | a separate e-mail. | |
| JP7 | | | | Te | ISO/IEC 30182 should be used as normative document throughout this text. Add this standard in Clause 2 and use this standard in the main text so as to be read as normative document. | | Not accepted. It is not mandatory to have implemented ISO/IEC 30182 in order to implement ISO 37156. This would of course be beneficial but ISO/IEC 30182 only deals with one barrier to data interoperability and may only be implemented once ISO 37156 is implemented. Therefore appropriate ISO/IEC 30182 references have been included. |
| JP9 | 411 | 5.3 | Table 1 | ed | One of term definitions of SCCM is "Collectable Data". However, description of Table 1 is "Table 1 – Description of the data collected from the community infrastructure using concepts from SCCM(Smart city concept model)" | Change to "Table 1 – Example of collectable data form the community infrastructure using concepts from SCCM (Smart city concept model)" . Use "Collectable Data" in the text to explain Table 1, 2, and 3. | Accepted. Will be amended. (JP) |
| JP10 | 411 | Table | | Ed | The title of the table should be written on the | | Accepted. Will be |

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| | | | | | above table. | | amended. (JP) |
| JP1 1 | 412- 413, 414 | 5.3 | Table 2 | ge | It is very hard to understand meaning of the four levels of insights (OPERATIONAL, CRITICAL, ANALYTICAL and STRATEGIC) from only few explanation of the column "INSIGHTS(SCCM)" in the Table 2. | Please add the following explanations after the sentence of line 412-413. Delete explanation written in brackets in the column "INSIGHTS (SCCM)". The following explanation which comes from ISO/IEC 30182. "Operational insight - which examines characteristics of things such as buildings, communities and organizations, using data to evidence and improve their value for the city; Critical insight – the real-time monitoring of incidents and current cases, involving all relevant organizations from across sectors, who work together to achieve the desired outcome or response; Analytical insight – the exploration of the data ecosystem to determine patterns, correlations and predictions. This allows the development or innovation of systems or services, impact assessment of proposed changes to systems or services, or the evidencing of challenges and opportunities for the city; and Strategic insight – an overarching approach that examines outcomes related to strategic objectives, decisions and plans." | Accepted. Will be amended. Title for table 2 will contain a reference to the source of the 4 levels of insights. |

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| JP1 3 | 418 | | footnote | Te | Table 3 explains the “stakeholder roles” which is defined in ISO 37153 (NOT ISO 37153). Therefore, ISO 37153 should be referred in Normative reference in Clause 2. | | Accepted. |
| US/ ANS 14 | | 5.5 | | GE | <p>There seems to be 3 main topics, somehow related to each other but separate topics, being described: 1. The concept of private to public data, 2. A general categorization of different data concept types, 3. An illustrative example (considering this is a guidance document) using the PAS SCCM model.</p> <p>Considering it is conceivable that public – private partnerships, and what they choose to share either bilaterally or more broadly between multiple parties, can easily vary city to city globally it would seem any type of data concept could inherit any attribute of a spectrum of private to public access privileges.</p> <p>Additionally considering the highly innovative evolution of operating models today and possibly in the future it would seem there should be a more defined set of data type categories as partners ‘co-operate’ closer. ‘Concurrent</p> | <p>Considering there are varied understandings of data confidentiality, what is some’s secret data might be someone else’s limited sharing data, a more elaborated or more illustrative description of the spectrum of data sharing would be more helpful. Between ‘Closed’ (within an Entity) to ‘Shared’ (between Entities) to ‘Open’ (with any Entity) many technical systems have for years supported access categories of internal only, named access, group access, public access and public usually enforced by different agreements including Formal Agreement (e.g. legal contract, law, regulation), Explicit Agreement (e.g. Agreement), Authorization (e.g. via an Admin), Limited License (e.g. Terms of Use License),to Open License / Privacy Statement.</p> <p>Much of which already has been defined in other international standards, consider also a more elaborated description of data concept types such as</p> | Not accepted. Note: (Biyu), (Xiaomi) |

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|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--|--------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|
| | | | | | <p>computing' across different legal entities is not a new concept in many domains. For example 'transactional data' seems to be absent.</p> <p>Somehow the established concepts of 'data processor' and 'data provider' seems to somehow need to be addressed in this section and or elsewhere given their legally significant meaning today across government mandated data regulations / policies e.g. EU GDPR.</p> | <table border="1"> <tr> <td>Data Category</td> <td></td> </tr> <tr> <td>Master Data</td> <td>"Single source of truth". Relatively static about people, places and things involved in an organization or community.</td> </tr> <tr> <td>Reference Data</td> <td>Sets of values / classification schemes referred to by systems, people, processes and transactional and master records</td> </tr> <tr> <td>Transactional Data</td> <td>Describes the internal or external events or business transactions that take place as an organization conducts its business.</td> </tr> <tr> <td>Historical Data</td> <td>Significant facts/events as of a certain point in time that should not be altered; e.g. security reporting, compliance reporting.</td> </tr> </table> | Data Category | | Master Data | "Single source of truth". Relatively static about people, places and things involved in an organization or community. | Reference Data | Sets of values / classification schemes referred to by systems, people, processes and transactional and master records | Transactional Data | Describes the internal or external events or business transactions that take place as an organization conducts its business. | Historical Data | Significant facts/events as of a certain point in time that should not be altered; e.g. security reporting, compliance reporting. | |
| Data Category | | | | | | | | | | | | | | | | | |
| Master Data | "Single source of truth". Relatively static about people, places and things involved in an organization or community. | | | | | | | | | | | | | | | | |
| Reference Data | Sets of values / classification schemes referred to by systems, people, processes and transactional and master records | | | | | | | | | | | | | | | | |
| Transactional Data | Describes the internal or external events or business transactions that take place as an organization conducts its business. | | | | | | | | | | | | | | | | |
| Historical Data | Significant facts/events as of a certain point in time that should not be altered; e.g. security reporting, compliance reporting. | | | | | | | | | | | | | | | | |

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|------------------------|-----------------------------|------------------------------------|---------------------------------------------------|---------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| | | | | | | <p>invoices.</p> <p>Metadata</p> <ol style="list-style-type: none"> 1. Audit Trail Metadata: for security, compliance and forensics e.g. time stamps, creator, create data, update date, .. 2. Business Metadata: non-technical aspects of data and their use e.g. field definitions, report names, organizational vocabulary. 3. Technical Metadata: used to | |

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|-----------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------|--|
| | | | | | | <table border="1"> <tr> <td></td> <td>describe technology and data structures. Clarification NOTE: there may be more common types of Metadata</td> </tr> <tr> <td>Temporary Data</td> <td>Traditionally data kept inside of an organization to speed up business processing, typically not by people but by systems.</td> </tr> </table> | | describe technology and data structures. Clarification NOTE: there may be more common types of Metadata | Temporary Data | Traditionally data kept inside of an organization to speed up business processing, typically not by people but by systems. | |
| | describe technology and data structures. Clarification NOTE: there may be more common types of Metadata | | | | | | | | | | |
| Temporary Data | Traditionally data kept inside of an organization to speed up business processing, typically not by people but by systems. | | | | | | | | | | |
| KR1 3 | 443 | 5.5.2 | | te | Usually privacy-related data has a strong restriction for use. This point needs to be described. | Modify the related sentence as follows: "In a community, this data <u>is mainly related to the privacy concerns and</u> includes payment details for citizens within a specific service, such as their council tax." | Accepted. Will be amended. | | | | |
| JP1 2 | 449 | 5.5.3 | | ge | What is the meaning of "suitability of sharing data for new purposes"? Clause 8 is Data privacy. How the data privacy and the suitability of sharing data for new purposes are related? | Add clear explanations. | Noted | | | | |
| JP1 4 | 450 | 5.5.3 | | ge | Clause 9 is "data roles and responsibilities". This clause includes data roles, provenance of data, accountability, new business models and | Explain relationship between "access rights to data" and Clause 9. | Noted | | | | |

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| | | | | | standards framework for cooperative models. How those relate to “access rights to data”? | | |
| JP1 5 | 461 | 5.5.3 | | ge | “COMAH” appears here only. Some explanation or reference about COMAH should be put. | Add explanation or references for COMAH. | Revise as Control of major accidents and hazards (COMAH) |
| KR1 4 | 482 | 6.2 | 2 nd para. | ge | The example provided in clause 6.2 is about sharing infrastructure element itself and not about data exchange and sharing. | Add specific example of data exchange and sharing. | Noted |
| US/ ANS 19 | | VARIOUS | | GE | There is likely not many, if any communities or organizations immune to ‘redundant data’ so a ‘data maturity’ index / levels / tiers or whatever the name of an approach would be, would be useful together with a proven PDCA continuous improvement management process for cities and communities to know where their ‘Data Management’ maturity is today and ‘what do I need to do to improve’ i.e. what am I going to have to spend to improve my data management practices. | Consider adding an entire clause on ‘data maturity’ which could also reference descriptions of Roles and Responsibilities, plus other content in this Draft | Not Accepted |
| US/ ANS 15 | | 7 | | GE | ISO (and the IEC) share a very popular family of data security standards (ISO/IEC 27000 family) which should make it much simpler and more | Consider rewriting Clause 7 to use other ISO data security standards including 27000 at least, and the US is willing to help with the editing. | Not Accepted. Only the security principles are included in this standard |

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| | | | | | <p>prescriptive if referenced in Clause 7 generally.</p> <p>While the 27000 family addresses cyber data security, there is also a need to address the physical-cyber related data security guidance which other ISO and international standards address which seems to be missing in Clause 7. For example physical data related to critical infrastructures.</p> | | and they have been created using the 27000 family of standards. A separate Smart City security standard has been created by the UK which outlines this in much more detail bringing in the specific issues for a multi agency, multi asset setting and the complexity of a smart city. which include more than the extension to cyber-physical systems in this comment. |
| US/ ANS 16 | | 7 | | GE | The Clause title “Security of data exchange and sharing” doesn’t seem accurately reflect the content in Clause 7 as there is no discussion on ensuring security in the process of exchanging and sharing data over public networks where data in motion/in transit. Data protection in transit is the protection of this data while it’s traveling from network to network or being transferred from a local storage device to a cloud storage device – wherever data is moving, effective data protection measures for in transit data are critical as data is | Consider changing the Clause title to something like “Security of data intended to be shared” and or included a subclause on data protection guidance for data in motion/in transit. | <p>Not Accepted.</p> <p>The vulnerabilities of all data exchange sharing are described in 7.2.</p> |

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|--------------------|--------------------------|--------------------------------|----------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | often considered less secure while in motion. | | |
| KR15 | 548 | 7.1 | 2 nd line of 3 rd para. | ed | “that can be provide different city infrastructure” has a typo between “can” and “provide”. Correct it. | Delete “be”. | Accepted. Will be amended. “that can provide different city infrastructure” has a typo between “can” and “provide”. Correct it. |
| KR16 | 601-603 | 7.3.2 | 1 st para. | ed | “Cities need to consider the autonomy service providers have when devising the appropriate data security measures to be implemented” is a little difficult to be understood. | Rephrase the sentence to provide clearer meaning. | Accepted will be revised (Jacqui) “Cities need to consider the autonomy service providers when devising the appropriate data security measures to be implemented” is a little difficult to be understood. |
| KR17 | 669 | 7.4.1 | 3 rd para. from the last | te | The privacy is another risk for the threat landscape. | Include “privacy”. | Accepted. Will be amended. An assessment of the threat landscape should consider that attacks could result in loss of confidentiality, availability, safety, privacy, resilience, possession, authenticity, utility and/or integrity of |

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| | | | | | | | data which is exchanged and shared by community infrastructure service providers |
| US/ ANS 17 | | 8 | | GE | ISO already defines Data Privacy as “rights and obligations of individuals and organizations with respect to the collection, use, retention, disclosure and disposal of personal information” which seems to be a succinct definition which Clause 8 should use and reference. | Consider adding the current ISO definition of Data Privacy | Not Accepted See DE1 |
| US/ ANS 18 | | 8 | | GE | <p>Privacy is a (very complicated and evolving) national sovereignty issue, perhaps more relevant as regulations and laws than standards, and an ongoing challenge generally for cities.</p> <p>While this draft proposes 8 Privacy principles, the EU Data Protection Directive proposes 6 Principles: 1. Lawfulness, fairness and transparency, 2. Purpose limitations, 3. Data minimisation, 4. Accuracy, 5. Storage limitations, 6. Integrity and confidentiality</p> <p>While there may be some similarity between the 8 and the 6 Principles, it is certainly going to be confusing to readers as to what set of principles to follow – and anyone who Shall have to comply</p> | Consider addressing the US Comments and/or moving the Privacy discussion to an Informative Annex for a more elaborate discussion. | Not Accepted. See DE1 |

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| | | | | | with something like the EU GDPR will likely not consider this proposed ISO Guidance | | |
| KR1 8 | 750 | 8.2.3. | title | ed | There is no other command-type title. | Change the title from "Consider city stakeholders" to "Consideration of city stakeholders". | Accepted will be revised. |
| KR1 9 | 842 | 8.3.4 | 2 nd line of 1 st para. | ed | Make an end point, "." in the end of the sentence. | Include "." in the end. | Accepted Will be amended. |
| KR2 0 | 854 | 8.3.4 | | ed | A typo, "," in the end of the line. | Modify "," with "." | Accepted. Will be amended..Additionally the missing "." on line 842 will be inserted after "city services" |
| KR2 1 | 865-866 | 8.3.5 | 1 st sentence | ed | A typographical error | Modify it as follows: "it is important to recognize that individuals have rights <u>of</u> their own data." | Not accepted. This should read "rights over their" this will be amended. |
| KR2 2 | 978-979 | 9.6 | 1 st sentence | te | No reference and no related descriptions for "Interfaces, Processing, Integration, Measures and the assessment of Impacts" which have each a capital letter. | Clarify them and include related descriptions. | Accepted will be revised. "interfaces, processing, integration, measures and the assessment of impacts" |
| KR2 3 | 980 | 9.6 | | te | "A standards framework for cooperative data exchange and sharing" does not depend on ISO/IEC 30182 and "Interfaces, Processing, Integration, Measures and the assessment of Impacts" are not specified in ISO/IEC 30182. That is, "A standards framework for cooperative data exchange and sharing" can be realized by other ways. | | See: KR22 Insert: organization which is affected. |

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| KR2 4 | 990 | 9.6 | | ed | The reference document is not clear. | Include "BSI" as follows: " BSI PAS 183:2017" | Accepted will be revised. |
| JP1 6 | | 10 | | ge | An use case described in Clause 10 is the same with A.2 case study in Annex A. | Delete "Clause 10". | Accepted ,Will be amended Noted: Change to : "use case" |
| KR2 5 | | 10 and Annex A | | ge | There is one use case in clause 10 and two case study in Annex A, which are using exactly same template. Those three are in same format and style, but one of them is called use case and the other two are called case study. What is the difference? Also, one use case is assumed normative (since it is in main body), while two case studies are assumed informative. Why? | Clarify the difference of use case and case study and make it clear the difference including title (use case vs. case study) nature (normative vs. informative). | Accepted ,Will be amended See:JP16 |
| JP1 7 | | Annex A (informative) | | ge | Currently there are two case studies from China. To be an international standard, to put other countries case studies are recommended. | Japan would like to propose new case study in Annex A. JP secretary will send the new proposal to WG4 secretary in a separate e-mail, and please consider our proposal at next meeting in Moscow A.x Data exchange and utilization across industries for new model of city planning (Tokyo Marunouchi Area) | Accepted ,Will be amended Noted: JP, KR, UK |
| JP1 8 | 994 | Annex A | | Te | Annex A should be referred in the main text | In clause1, add new note as below; Note 2 Annex A shows the useful case study of data exchange and sharing. | Accepted ,Will be amended |

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: 08272018 | Document: CD 37156 | Project: |
|----------------|---------------------------|----------|

| MB/ NC ¹ | Line number (e.g. 17) | Clause/ Subclause (e.g. 3.1) | Paragraph/ Figure/ Table/ (e.g. Table 1) | Type of comment ² | Comments | Proposed change | Observations of the secretariat |
|------------------------|-----------------------------|------------------------------------|---------------------------------------------------|---------------------------------|--------------------------------------------------------------|----------------------------------------------------|------------------------------------|
| JP1 9 | 998 | Annex A | | Ed | Missing Table title. | | Accepted ,Will be amended |
| GB1 1 | 1059 | | 30) | Ed | This bibliography entry is effectively a duplicate of 25) | Delete this item, and renumber the following ones. | Accepted ,Will be amended |

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JP Comments_Proposed Change for Clause 5 Table1- 2- 3

Table 1 - Description of **collectable data** from the community infrastructure using concepts from SCCM (Smart city concept model)

| <i>Collectable Data</i> | <i>Infrastructures</i> | <i>Data Interfaces</i> | <i>Example Observation</i> | <i>Prime Concept (SCCM²)</i> |
|------------------------------|--------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Characteristics of something | Buildings Transportation Network | Survey API for the transportation network data | Building use Structure and design information of the road, bridge, or tunnel. | STATE INFRASTRUCTURE |
| Consumption of something | Street Lighting | Smart meters | Energy used per hour (Kwh) | CASE |
| Movement of something | Transport Network | Vehicle GPS | Journey destinations | PLACE |
| Presence of something | Waste Management | Waste bin sensors | Empty / Full | STATE |
| Production of something | Renewable Power Plant | Smart Grid | Energy load per hour (Mwh) | CASE |
| Status of something | Public Realm Metro/ Subway | Environmental sensor API for the subway data | Outdoor temperature Operation status of the subway; normal operation, suspension, or plan/ developing Inspection data of the car and railways. | STATE STATE/ EVENT |
| Supply of something | Water Mains | Flow sensors | Leaks | CASE |
| Use of something | Communication Networks | System logs | Megabytes of data used | EVENT |

Note to entry: **INFRASTRUCTURE** is a concept of fundamental facilities and systems serving a country, city, or other area. **INFRASTRUCTRE** is not defined in SCCM, however, it is fundamental concept in expressing the data exchange and sharing for smart community infrastructure.

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² SCCM defined in ISO/IEC 30182:2017

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Table 2 - Examples of the level of insights (Operational, Critical, Analytical and Strategic) for collectable community infrastructure data

| <i>Collectable Data</i> | <i>Resulting Data (examples)</i> | <i>INSIGHTS (SCCM)</i> |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Characteristics of something | <p>Building Data: dimensions; occupancy; equipment; indoor temperature; indoor air quality; gas supply pressure; water flow rates; heat delivery temperature</p> <p>Demographic Data: user registration details and profile</p> <p>Structure or Design Data: position, dimensions and materials; load bearing capacity; functions included in the object; route to exit;</p> | <p>OPERATIONAL</p> <p>STRATEGIC</p> |
| Consumption of something | <p>Energy Data: domestic use of electric, thermal, gas; district consumption; tariffs and costs</p> | CRITICAL |
| Movement of something | <p>Transport Data: modal mix; vehicle type; vehicle id; vehicle occupancy; journey start/end times and locations; traffic speed and density; pedestrian movements; energy consumption per km; emissions/pollutants per km</p> | ANALYTICAL |
| Presence of something | <p>Image Data: congestion; integrity of the public realm, such as road maintenance; incidents; unrest and community safety</p> | STRATEGIC |

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| | | |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Production of something | Energy Data: local renewable production | CRITICAL |
| Status of Something | Environmental Data: outdoor air quality; water quality; flood levels; noise levels; temperature; weather conditions; carbon emissions; luminescence Operation Status Data: status of planning, construction, operation, suspension, stopped; period of time for the status Inspection Data: method/ person in charge of inspection; data inspected; judgement result | ANALYTICAL |
| Supply of something | Energy Data: network power loads. | CRITICAL |
| Use of Something | Network Utilization: number of bus journeys taken | STRATEGIC |

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Table 3 - Examples of observations which can be used to further understand relationships **to be** shared or exchanged

| <i>Collectable Data</i> | <i>AGENT / ITEM (SCCM)</i> | <i>METRIC (SCCM)</i> | <i>PLACE (SCCM)</i> | <i>Time</i> | <i>Stakeholder Roles³</i> |
|------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------|---------------------|--------------------|----------------------------------------------------|
| Characteristics of something | Person or Household Building, infrastructure , or Community Government or Municipality | Cost | Location points | Date/time stamp | Infrastructure owners, suppliers & operators |
| Consumption of something | | Frequency | Departure | | |
| Movement of something | | Quantity | points Arrival | | |
| Presence of something | | Scale | points Transit | | Investors |
| Production of something | | Specification | routes | | Planners |
| Status of something | | State | Neighborhoods | | |
| Supply of something | | Velocity | Districts | | |
| Use of something | | life expectancy | Cities | | Citizens |

JP Comments_Proposed change for JP6_ Annex

Annex A (informative) Case study

A.x Data exchange and utilization across industries for new model of city planning (Tokyo Marunouchi Area)

A.1 Data exchange and utilization across industries for new model of city planning (Tokyo Marunouchi Area)

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project title | Data exchange and utilization across industries for new model of city planning (Tokyo Marunouchi Area) |
| Project profile | <p>This is a trial project for creating new model of city planning by utilizing data across industries at Tokyo Marunouchi district. Participants include city developer (Mitsubishi Estate Co., Ltd.), ICT service vendor (Fujitsu Limited), communication service vendor (Softbank Corp), and academia (Ohsawa laboratory of the University of Tokyo).</p> <p>Data to be shared: In this project, Industrial data from each company are shared to other participating organizations. For example, the city developer (Mitsubishi Estate) provides power consumption data of their building, sales amount and customer attribute data of tenants' shops, the communication service vendor (Softbank group) provides flow data of people at the area, and other lots of open data related to the area are shared.</p> <p>How to exchange and share the data: The sharing is conducted on the data exchange and utilization platform (Virtuora DX) using block-chain technology that ICT service vendor (Fujitsu Limited) provides. Data providers register the attribute information (Data Jacket*) of data on the platform</p> |

| | | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| | <p>(Virtuora DX) to notify what kind of data they have to others. Participants try to create new business or service ideas by combining those data and then analyse data deeply to introduce data correlation.</p> <p>Note *: Data Jacket is the description model of data attribute devised by Professor Yukio Ohsawa of the University of Tokyo.</p> <p>Expected effect of data utilization: The project aims at verifying that the combinations of data from different industries to create new value for businesses and services. For example, power consumption data of an office building could be combined with the flow data of people to plan effective promotion for shops.</p> <p>Future prospects: The project is open for new company to join who provides data or analysing skills so that many kinds of data can be shared and used not only for providing new services but also for studying new models of city planning.</p> | |
| Organization | Mitsubishi Estate (City Developer), Fujitsu Limited (ICT vendor), Softbank Corporation (Communication service vendor), Ohsawa laboratory of Tokyo University (Academia). | |
| Place | Tokyo-Marunouchi, Japan | |
| Time | May 2018 - December 2018 | |
| Reference | http://www.fujitsu.com/global/about/resources/news/press-releases/2017/0605-01.html http://www.fujitsu.com/global/about/resources/news/press-releases/2018/0514-02.html | |
| Relevance to this document | 4 | Principles for data exchange and sharing |
| | 5.1 | General |
| | 5.4 | Data dictionary and catalogue |
| | 5.5 | Data spectrum |