| **07-Page** | **Section** | **Line** | **Type** | **Comment/ Rationale** | **Source of Comment (Name/Agency)** | **Suggested Disposition** | **Disposition**  **(Completed by Principal Editor)** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| F-3 | F1 |  | ed | Closing bracket missing in: “SCREEN\_TYPE: Type of screening criteria (probability or shape, where shape […]” | R. Kahle / DLR |  | 03-May-23: BDS: Agree. |
| F-4 | F2 |  | ed | In section CSCALE\_FACTOR\_MIN … below the equation there is a caption “Figure F-2: […]”. Not sure if a caption is needed for an equation. Suggest removal. | R. Kahle / DLR |  | 03-May-23: BDS: Agree, caption removed. |
| F-4 | F3 | heading | ed | Suggest to change F3 heading “Additional Parameters” to be more meaningful and hence consistent with headings F1 and F2. Maybe change into “Primary / Secondary Objects Physical Parameters” | R. Kahle / DLR |  | 03-May-23: BDS: We can change this section title to “Object Physical Parameters”, but it would mean we also have to also change occurrences of “Additional Parameters” in Section 3.5. Additional parameters terminology has been in use since V1.  DLO: I like Ralph’s suggestion, as it is vague now.  10-May-23: NAV: Agree make change. |
| F-8 | F3 |  | ed | NOTES 1.: “is” is missing in-between “ATarget” and “undefined” | R. Kahle / DLR |  | 03-May-23: BDS: Agree. |
| F-8 | F3 |  | ed | NOTES 2.: suggest to remove closing bracket “]” at end of sentence | R. Kahle / DLR |  | 03-May-23: BDS: Agree. |
| F-? | (F4) |  | ed | There is no heading F4 – please check | R. Kahle / DLR |  | 03-May-23: BDS: Corrected. |
| F-9 | F5 |  | ed | Suggest to change F5 heading “Conjunction Data Message DCP Uncertainty and Sensitivity Vector Explanation”, e.g. into “Dynamic Consider Parameters DCP” potentially with extension “- Background and Application”.  This would help the reader to easily relate the newly introduced keywords DCP\_SENSITIVITY\_VECTOR\_POSITION and \*\_VELOCITY introduced in Table 3-5 (p. 3-23) and comments “COMMENT DCP Density …”, “…DCP Sensitivity …” to annex F5. | R. Kahle / DLR |  | 03-May-23: BDS: For discussion by group. Agree section needs some work.  DLO: Agree that this title change makes sense. |
| F-9 to F-13 | F5 |  | ed | The complete Annex F5 looks like (taken from) a separate document. The content is considered super interesting and helpful. But I suggest to shorten a bit. For example, the references to a specific system for CDM production (here ASW release version 19.2) could be removed. | R. Kahle / DLR |  | 03-May-23: BDS: For discussion by group. Agree section needs some work.  DLO: Agree with the suggestion. This should not be tailored to one specific system. |
| F-9 | F5 |  | Ge | The introduction of this section shall be adapted to the CDM purpose. It may be better to keep the purely technical content and remove the rest of references to ASW 19.2, etc.. | J.M.Lozano/ESA-GMV | Consider rewording. | 03-May-23: BDS: For discussion by group. Agree section needs some work.  DLO: Agree with the suggestion. This should not be tailored to one specific system. |
| F-9 | F5 |  | Ge | Is acceptable to cite the author in this way? Shouldn’t we include the reference in section 1 of the document. | J.M.Lozano/ESA-GMV | Review if the author citation is in line with Secretariat standards. | 03-May-23: BDS: Agree, citation removed. |
| H-1 | H | [H6],  [H10] | ed | For references [H6] and [H10] add “pp. “ before page numbers, to be consistent with other references, e.g. [H7] | R. Kahle / DLR |  | 03-May-23: BDS: Agree. |
| 3-15 | 3.5 | COMMENT | ed | The COMMENT keyword description refers to Section 1.1.1, which then is (hyper)linked to 6.3.4 | Vitali Braun (ESA) | Change “1.1.1” to “6.3.4” | 03-May-23: BDS: Appears fine in my document.  DLO: Also fine viewed on my machine. |
| 3-19 | 3.5 | COMMENT | ed | The COMMENT keyword description refers to Section 1.1.1, which then is (hyper)linked to 6.3.4, appears twice on this page. | Vitali Braun (ESA) | Change “1.1.1” to “6.3.4” in both instances | 03-May-23: BDS: Appears fine in my document.  DLO: Also fine viewed on my machine. |
| 3-22 | 3.5 | CSIG3EIGVEC3 | ed | The unit “nd” is not defined in the document. | Vitali Braun (ESA) | Either define it in Section 1, or remove it. | 03-May-23: BDS: nd added to Section 1. |
| 3-24 | 3.6 | COMMENT | ed | The COMMENT keyword description refers to Section 1.1.1, which then is (hyper)linked to 6.3.4 | Vitali Braun (ESA) | Change “1.1.1” to “6.3.4” | 03-May-23: BDS: Appears fine in my document.  DLO: Also fine viewed on my machine. |
| E-2 | Annex E | CDM-P10 | ed | The trace column contains a reference to Section 1.1.1, which then is (hyper)linked to 6.4.3 | Vitali Braun (ESA) | Change “1.1.1” to “6.4.3” | 03-May-23: BDS: Appears fine in my document.  DLO: Also fine viewed on my machine. |
| E-3 | Annex E | CDM-P12 | ed | Does the “operational status” refer to the MANEUVERABLE keyword? If so, wouldn’t it be more explicit to either augment the requirement or the rationale column by stating that it refers to the maneuverability status? As a spacecraft can also be operational without being maneuverable. | Vitali Braun (ESA) | Augment the Rationale (as augmenting Requirement probably is a no-go) by referring to that keyword. | 03-May-23: BDS: Require guidance from group, this is not a CDMV2 addition.  DLO: No. As you point out, MANEUVERABLE=true implies that a satellite is operational, but a satellite can be operational w/o being maneuverable. S/C operators could e.g. change their attitude/orientation to help minimize collision risk.  10-May-23: NAV: Add an operational status keyword as per the ODM OPS\_STATUS (p6-10). |
| H-2 | Annex H | [H19] | ed | Hejduk, H. should be Hejduk, M. | Vitali Braun (ESA) | Change to correct initials. | 03-May-23: BDS: Agree. |
| H-2, H-3 | Annex H | [H20] – [H25] | ed | “K. Chan” [H20] and all the other references through [H25] violate the “Surname, N.” syntax used earlier. | Vitali Braun (ESA) | Change to syntax used for the other references. | 03-May-23: BDS: Agree. |
| 3-22 | Table 3-5 | na | ed | CSCALE\_FACTOR\_MIN: Should “CSCALE\_FACTOR” in NOTE1 be “CSCALE\_FACTOR\_MIN”? | Hideaki Hinagawa/JAXA | Change “CSCALE\_FACTOR” in NOTE1 for “CSCALE\_FACTOR\_MIN” to “CSCALE\_FACTOR\_MIN”. | 03-May-23: BDS: Agree. |
| 3-22 | Table 3-5 | na | ed | CSCALE\_FACTOR\_MAX: Should “CSCALE\_FACTOR” in NOTE1 be “CSCALE\_FACTOR\_MAX”? | Hideaki Hinagawa/JAXA | Change “CSCALE\_FACTOR” in NOTE1 for “CSCALE\_FACTOR\_MAX” to “CSCALE\_FACTOR\_MAX”. | 03-May-23: BDS: Agree. |
| 3-22 | Table 3-5 | na | te | In my understanding, the first character “C” in CSCALE\_FACTOR represents a covariance, not a standard deviation. If this is correct, the sentence “the covariance matrix must be multiplied by CSCALE\_FACTOR2(squared)” sounds confusing because it you need to multiply the value twice. | Hideaki Hinagawa/JAXA | Drop “The supplied one-sigma deviations get multiplied by CSCALE\_FACTOR” and keep “the covariance matrix must be multiplied by CSCALE\_FACTOR(drop the superscript ‘2’)”. | 03-May-23: BDS: Need guidance from group.  DLO: This is intended to be a scale factor acting upon the eigenvalues, not the covariance directly. That’s why the NOTE1 comment says, “NOTE 1: The supplied one-sigma deviations get multiplied by CSCALE\_FACTOR, while the covariance matrix must be multiplied by CSCALE\_FACTOR2 to scale the covariance appropriately as shown in APPENDIX F.”  10-May-23: NAV: Clarified explanation in document regarding eigenvalues. |
| 3-23 | Table 3-5 | na | te | The unit of DCP\_SENSITIVITY\_VECTOR\_POSITION is “m”, not “n/a”. | Hideaki Hinagawa/JAXA | Change the unit from n/a to m. | 03-May-23: BDS: Agree. |
| 3-23 | Table 3-5 | na | te | The unit of DCP\_SENSITIVITY\_VECTOR\_VELOCITY is “m/s”, not “n/a”. | Hideaki Hinagawa/JAXA | Change the unit from n/a to m/s. | 03-May-23: BDS: Agree. |
| 3-1 | 3.1.1 |  | Ed | Table 3-1.  Cell boundaries seem to be missing for some cells in contents column. | J.M.Lozano/ESA-GMV | Review formatting. | 03-May-23: BDS: Appears fine in my document.  DLO: also appears fine for me. |
| 3-1 | 3.1.1.c |  | Ge | Bullet c is not consistent with table 3-1. The table include entries in column “Section” for bullet a to f but bullet c. | J.M.Lozano/ESA-GMV | Remove bullet c or update table 3-1. | 03-May-23: BDS: Appears fine in my document.  DLO: also appears fine for me. |
| 3-2 | 3.2.d |  | Ge | “conditional” is first introduced in this line but it is not clear for the reader what conditional means.  Also applicable to sec 3.3, 3.4, 3.5 & 3.6. | J.M.Lozano/ESA-GMV | Consider adding wording similar to ODM sec 3.2.2.1. | 03-May-23: BDS: ODM wording added to relevant sections. |
| 3-2 | 3.2 |  | Ge | MESSAGE\_FOR  Some examples may be misleading for the reader. SPOT, IRIDIUM and INTELSAT are not spacecrafts. | J.M.Lozano/ESA-GMV | Consider using the same name used for OBJECT\_NAME in table 3-4. | 03-May-23: BDS: Need guidance from group as MESSAGE\_FOR is a CDM V1 tag.  DLO: Agree that they should be consistent. Do we need MESSAGE\_FOR to be backward compatible?  09-May-23: BDS: WE could add comment that users are encouraged to use OBJECT\_NAME indicating that MESSAGE\_FOR is depreciated (as we did for EPHEMRIS\_NAME).  10-May-23: NAV: No change. |
| 3-2 and 3-8 |  |  |  | MESSAGE\_FOR on p. 3-2 has a very simple Description with satellite names as examples. OBJECT\_NAME has a lengthy Description and seems to indicate the same thing as MESSAGE\_FOR. Should they have the same Description for consistency? | Halverson/NASA | suggestion | 03-May-23: BDS: Need guidance from group.  DLO: Do we need MESSAGE\_FOR ?  10-May-23: NAV: No change |
| 3-3 | 3.3 |  | Ge | RELATIVE\_POSITION\_X  These fields are Optional but we do not impose any additional constraint. Would it make sense to provide just one of them or should we impose/recommend that none or the three of them should be used?  Similar situation for other groups of components. | J.M.Lozano/ESA-GMV | Consider of we need to add a note, make them conditional or just leave it as it is now. | 03-May-23: BDS: This is true of many keywords representing a vector; I would suggest leaving as is?  DLO: It’s true that some fields in the OCM have conditional restrictions, e.g., “If the SCLK timescale is selected, then ‘EPOCH\_TZERO’ shall be interpreted as the spacecraft clock epoch and both SCLK\_OFFSET\_AT\_EPOCH and SCLK\_SEC\_PER\_SI\_SEC shall be supplied.”  But it is also true that for some entries, vector content is not conditional. Unsure what to do there.  10-May-23: NAV: Add to section 5.2 that all components of a vector should be supplied, |
| 3-7 | 3.3 |  | Ge | PREVIOUS\_MESSAGE\_EPOCH  Does this filed refer to the CREATION\_DATE of the previous message or any other EPOCH associated to the CDM? | J.M.Lozano/ESA-GMV | Clarify if refers to a given KEYWORD in previous message. | 03-May-23: BDS: Added reference to CREATION\_DATE |
| 3-8 | 3.4 |  | Ge | CATALOG\_NAME  The URL is wrong because “.org” is missing. Assuming the URLs in nav.sanaregistry.org will be promoted to the official SANA registry, the current URL should be <https://sanaregistry.org/r/cdm_catalog/> | J.M.Lozano/ESA-GMV | Check the expected final URL and update accordingly. | 03-May-23: BDS: Agree. |
| 3-11 | 3.4 |  | Ge | REF\_FRAME  We have added a reference to SANA but the paragraph states that the ref frame shall be taken from the given list. | J.M.Lozano/ESA-GMV | Remove last sentence or reword. | 03-May-23: BDS: This is true of many of the SANA references, do we leave examples in or remove all?  DLO – not sure how we are balancing use of SANA vs backwards compatibility. The backwards compatible-list is more limiting.  09-May-23: BDS: We have the discussion may times about how the reference frames in the CDM should be a limited subset of those in SANA, therefore we should not make a change here.  10-May-23: Description clarified. |
| 3-11 | 3.4 |  | Ge | ALT\_COV\_REF\_FRAME  The reference to SANA is missed for this reference frame. | J.M.Lozano/ESA-GMV | Consider adding a SANA reference. | 03-May-23: BDS: reference added. |
| 3-21 | 3.5 |  | Ed | CSIGEIGVEC3  Are units “nd” correct? | J.M.Lozano/ESA-GMV | Review units. | 03-May-23: BDS: nd added to Section 1, NonDim/dimensionless. |
| 3-23 | 3.6 |  | Ge | USER\_DEFINED\_x  The example may be confusing with TIME\_LAST\_OBS\_START/END | J.M.Lozano/ESA-GMV | Consider using a example that can not be related with any existing field. | 03-May-23: BDS: Changed to MAX\_MNVR\_PER\_HOUR |
| 4-1 | 4.1 |  | Ge | We are mixing several types of SANA URLs for registries that are currently in the official SANA registry. Some are <https://sanaregistry.org> and others <https://nav.sanaregistry.org>. | J.M.Lozano/ESA-GMV | Consider using the same convention in all new SANA URLs. Approach to be confirmed by David. I think we are negotiating with the Secretariat a strategy to avoid RIDs related with URLs. | 03-May-23: BDS: For discussion by group.  10-May-23: NAV: Need to check links, existing registries are sanaregistry.org and beta links are nav.sanaresgistry.  26-Sep-23: BDS: Links all checks and OK. |
| B-1 | Annex B |  | Ge | In this section we are mixing SANA URL with and without “www”. | J.M.Lozano/ESA-GMV | Consider updating to a single convention. | 03-May-23: BDS: Agree, www removed |
| B-2 | B2 |  | Ge | Catalogue URL may not be consistent with current draft in navsanaregistry. (See comment on page 3-8) | J.M.Lozano/ESA-GMV | Check if URL shall be updated. | 03-May-23: BDS: For discussion by group.  10-May-23: NAV: Same as comment above.  23-Sep-23: BDS: Links all checked and OK. |
| B-2 | B2 |  | Ec | The SANA Registry name is not correct. It should be “SANA Registry of Conjunction Data Message CATALOG\_NAME” instead of “SANA Registry of Organizations” | J.M.Lozano/ESA-GMV | Consider adding a SANA reference. | 03-May-23: BDS: Agree. |
| G-4 | G1.3 |  | Ge | “Additional parameters” comment is missing but other equivalent comments are included. | J.M.Lozano/ESA-GMV | Consider adding the comments for all blocks used. | 03-May-23: BDS: For group to discuss.  DLO: Easy to just add “COMMENT Object1 Additional Parameters” and “COMMENT Object2 Additional Parameters” |
| G-3 | G1.3 |  | Ge | The position of the Comment for Object 1 SV is wrong. | J.M.Lozano/ESA-GMV | Move the comment line to the right place (3 lines down). | 03-May-23: BDS: Agree. |
| G-10 | G2 |  | Ge | The example uses the unqualified schema but includes the line “xmlns:ndm” that only applies to qualified. | J.M.Lozano/ESA-GMV | Use qualified schema or remove xmlns:ndm line. | 03-May-23: BDS: Line removed from example. |
| G-10 | G2 |  | Ge | Indentation of EPHEMERIS\_NAME and COVARIANCE\_METHOD is missing. | J.M.Lozano/ESA-GMV | Indent both line with the rest of metadata. | 03-May-23: BDS: Agree. |
| G-11 | G2 |  | Ge | Indentation of PERIAPSIS\_ALTITUDE, INCLINATION and X is wrong. | J.M.Lozano/ESA-GMV | Indent the lines with the rest of metadata. | 03-May-23: BDS: Agree. |
| 3-7 |  |  |  | In SEFI\_COLLISION\_PROBABILITY Description the word ‘is’ is missing. ‘If COLLISION\_PERCENTILE is present …’ and similarly ‘If COLLISION\_PERCENTILE is not present …’ | Halverson/NASA | fix | 03-May-23: BDS: Agree. |
| 3-7 |  |  |  | In PREVIOUS\_MESSAGE\_ID Description add ‘(See 5.2.0 for formatting rules)’ for consistency | Halverson/NASA | fix | 03-May-23: BDS: Agree. |
| 3-10 |  |  |  | In COVARIANCE\_SOURCE, what is VCM in the Description? Is that supposed to be OCM? And what is HAC? It isn’t defined anywhere. Do you have references for these? | Halverson/NASA | fix | 03-May-23: DLO: Vector Covariance Message and High Accuracy Catalog “is a thing”, but I don’t believe these need to be listed as a COVARIANCE SOURCE; could this just be taken from the SANA “Organizations” registry?  10-May-23: NAV: Simplify description, make free text field. |
| 3-10 |  |  |  | In MANEUVERABLE I would think N/A means ‘Not Available’. ‘Not Applicable’ to me means the same as NO (not maneuverable). Or maybe it would be better to use UNKNOWN. | Halverson/NASA | suggestion | 03-May-23: BDS: Agree, suggest changing to UNKNOWN. |
| 6-3 |  |  |  | Second paragraph of 6.3.2.5, insert a space. ‘reference [8]’ | Halverson/NASA | fix | 03-May-23: BDS: Agree. |
| A-3 | A2.1.4 | First | Ed | Currently states “CCSDS 508.0 Version 2.0 Document Version “ | Patrick Zimmerman/NASA-JSC | This should probably be listed as simply “CCSDS 508.0-B-2”.  Although there does not appear to be any consistency in the field in our current documents:  RDM “CCSDS 508.1-B-1”  PRM “CCSDS 509.0 Document Version”  TDM “CCSDS 503.0-B-2 Document Version” | 03-May-23 : BDS : For discussion by group.  10-May-23: NAV: Agree |
| A-4 | A2.1.5 | 16 | Ed | ‘Object 1’ has a white space between name and number.  This also occurs in lines 17, 18 | Patrick Zimmerman/NASA-JSC | Should be ‘Object1’ | 03-May-23: BDS: Agree. |
| A-4 | A2.1.5 | 16 | Ed | ‘Object 2’ has a white space between name and number.  This also occurs in lines 17, 18 | Patrick Zimmerman/NASA-JSC | Should be ‘Object2’ | 03-May-23: BDS: Agree. |
| A-4 | A2.1.5 | 18 | Ed | ‘object 1’ and ‘object 2’ are not capitalized | Patrick Zimmerman/NASA-JSC | Should be ‘Object1’ and ‘Object2’ to be consistent with rest of table | 03-May-23: BDS: Agree. |
| A-5 | A2.1.5 | 27 | Ed | Feature statements ends with a period –other feature statements do not use a period  This also occurs in line 29, 43, and 106 | Patrick Zimmerman/NASA-JSC | Recommend deleting the period at end of sentence | 03-May-23: BDS: Agree. |
| A-5 | A2.1.5 | 55 | Ed | Feature statement includes phrase ‘of the object’, which is not used in other OD statements (54-59) | Patrick Zimmerman/NASA-JSC | Recommend deleting ‘of the object’ | 03-May-23: BDS: Agree. |
| A-7 | A2.1.5 | 85 | Ed | Feature uses abbreviation “Max”, whereas other Feature statements do not.  Also occurs in line 88, 93 and 97. | Patrick Zimmerman/NASA-JSC | Recommend changing to “Maximum” | 03-May-23: BDS: Agree. |
| A-7 | A2.1.5 | 86 | Ed | Feature describes this as ‘Medium’ dimension. A term not used anywhere in the book.  Also in 89, as ‘med OEB’ | Patrick Zimmerman/NASA-JSC | Recommend changing to ‘Intermediate’  And in 89, change to ‘intermediate OEB’ | 03-May-23: BDS: Agree. |
| A-7 | A2.1.5 | 90 | Ed | Feature uses abbreviation “min”, whereas other Feature statements do not.  Also occurs in line 92 and 95. | Patrick Zimmerman/NASA-JSC | Recommend changing to ‘minimum’ | 03-May-23: BDS: Agree. |
| A-7 | A2.1.5 | 94 | Ed | Feature does not indicate which magnitude type it is | Patrick Zimmerman/NASA-JSC | Recommend including ‘absolute’, i.e. “Typical absolute visual magnitude” | 03-May-23: BDS: Agree. |
| A-9 | A2.1.5 | 134 | Ed | Three keyword terms listed in one row | Patrick Zimmerman/NASA-JSC | Recommend splitting into three rows, with one keyword per row | 03-May-23: BDS: Agree. |
| A-9 | A2.1.5 | 136 | Ed | Two keyword terms listed in one row | Patrick Zimmerman/NASA-JSC | Recommend splitting into two rows, with one keyword per row | 03-May-23: BDS: Agree. |
| B-2 | B2 | B5 | Ge | Not a P.1.0.4 book comment, but wanted to note that the SANA registry for Orbit-Relative Ref Frames will need an update after publication of this document | Patrick Zimmerman/NASA-JSC | SANA entry for RSW\_Inertial currently lists 508.0-B-1.  Will need to updated to 508.0-B-2 after publication | 03-May-23: BDS: For highlighting to group.  10-May-23: NAV: Agree, need to discuss with SANA team. |
| C-3 | C2 | 7 | Ed | Description for the use of REF\_FRAME does not mention Orbit -Relative | Patrick Zimmerman/NASA-JSC | Include Orbit-Relative in description:  Definitions of celestial body and orbit-relative reference frames for use with the keyword REF\_FRAME. | 03-May-23: BDS: Agree. |
| D-1 | n/a | HBR | Ed | Abbreviation listed as ‘Hard Body Radius’, without hyphen.  Also in Table 3-5: CDM KVN Data and Annex J section J1 | Patrick Zimmerman/NASA-JSC | Add hyphen to the three occurrences to bring all into consistency.  ‘Hard-Body Radius’ | 03-May-23: BDS: Agree. |
| D-1 | n/a | ASW | Ed | Abbreviation used in Annex F (F5) | Patrick Zimmerman/NASA-JSC | Include ASW in Annex D  ASW Astrodynamics Support Workstation | 03-May-23: BDS: Agree. |
| D-1 | n/a | DCP | Ed | Abbreviation used in Annex F (F5) | Patrick Zimmerman/NASA-JSC | Include DCP in Annex D  DCP Dynamic Consider Parameter | 03-May-23: BDS: Agree. |
| F-5 | SEDR | 15 | Ed | Sentence is indented.  where, in order to correctly average… | Patrick Zimmerman/NASA-JSC | Consider making sentence left-justified  where, in order to correctly average… | 03-May-23: BDS: Agree. |
| F-5 | OEB | 7 | Ed | References a dotted line in a figure that is drawn in the color red. What is the stance for using color in a Standard document? A20.0-Y-4 sections 6.2.1.2 and 6.2.1.3 indicate there should not be color. | Patrick Zimmerman/NASA-JSC | Remove word and color red if not allowed by the standards. | 03-May-23: BDS: Agree, removed colouring and de-capitalised word. |
| F-8 | Apparent-to-Absolute | 30 | Ed | Indicates a case if VMapparent is already known, and does not need to be computed. This would seem to indicate that VMapparent should be listed in the above definitions. | Patrick Zimmerman/NASA-JSC | Add VMapparent to definitions if appropriate | 03-May-23: BDS: Agree. |
| H-2 | H22 |  |  | Edition is listed as ‘2rd’. I believe the 2001 printing is the ‘2nd’ Edition | Patrick Zimmerman/NASA-JSC | Correct type of the edition number | 03-May-23: BDS: Agree. |
| J-1 | J1 | Vmag | Ed | Vmag not listed in Abbreviations table | Patrick Zimmerman/NASA-JSC | Add Vmag into Annex D | 03-May-23: BDS: Agree. |
| J-1 | J1 | CDF | Ed | CDF not listed in Abbreviations table | Patrick Zimmerman/NASA-JSC | Add CDF into Annex D | 03-May-23: BDS: Agree. |
| 3-4 | Table 3-3 |  | Te | APPROACH\_ANGLE: The approach angle computed between Objects1 and Object2 in the RTN coordinate frame relative to Object1. This value is obtained by taking the dot product of the two velocity vectors at TCA. 0. Definition may be confusing as the table describes Relative Motion, and the angle does not depend on the object | Alain Lamy/CNES | Suggestion: (unsigned) angle between the 2 absolute velocity vectors ? | 10-May-23: NAV: Change to “The angle between the inertial velocity vector of Object1 and the relative velocity vector of Object2 with respect to Object1 in the inertial frame.” |
| 3-4 | Table 3-3 |  | Ed | SCREEN\_TYPE “The type of screening to be used, the value(s” - “.” instead of “,” | Alain Lamy/CNES | Correct text in document | 10-May-23: NAV: Agree |
| 3-12 | Table 3-4 |  | Te | ATMOSPHERIC\_MODEL / N\_BODY\_PERTURBATIONS : It would probably be better to give “real” examples. | Alain Lamy/CNES | Add a few examples from SANA | 10-May-23: NAV: Add examples back into document from V1, check against SANA |
| I1 | Annex I |  | Ed | “Several places in this document, there are references to it” -> in missing | Alain Lamy/CNES | Correct text in document | 10-May-23: NAV: Agree |
| 1-5 | 1.5 | [7] | ed/te | The provided link is incomplete; as printed one receives a "404 Not Found" error | David S. Berry / NASA | From: http://www.unoosa.org/oosa/osoindex  To: https://www.unoosa.org/oosa/osoindex/search-ng.jspx | 10-May-23: NAV: Agree |
| B-2 | b |  | te | I don't think this section and the registry to which it refers should be in the CDM given the restriction cited for the REF\_FRAME keyword. | David S. Berry / NASA | Remove Section B4 | 10-May-23: BDS: Section was added for OEB\_PARENT\_FRAME from ODM. Group to discuss  10-May-23: NAV: Change B4 and B5 to directory reference OEB\_PARENT\_FRAME instead of \*\_REF\_FRAME. |
| I-1 | Annex I | 1 | ed | Missing word | David S. Berry / NASA | From: Several places in this document  To: **In** several places in this document | 10-May-23: NAV: Agree |
| J-1 | Annex J | 3 | ed | End of first paragraph lacks a period. | David S. Berry / NASA | Add period at end of sentence. | 10-May-23: NAV: Agree |
| 3-2 | Table 3-2 |  | ed | APPROACH\_ANGLE: Plural noun should be singular | David S. Berry / NASA | From: Objects1 and Object2  To: Object1 and Object2 | 07-Sep-23: BDS: Agree |
| 3-4 | Table 3-2 |  | ed | SCREEN\_TYPE: | David S. Berry / NASA | From: The type of screening to be used, the values  To: The type of screening to be used. The values | 07-Sep-23: BDS: Agree |
| 3-4 | Table 3-2 |  | ed | Word choice in "SCREEN\_VOLUME\_SHAPE". | David S. Berry / NASA | From: Condition: Mandatory on SCREEN\_TYPE = SHAPE  To: Condition: Mandatory if SCREEN\_TYPE = SHAPE | 07-Sep-23: BDS: Agree |
| 3-4 | Table 3-2 |  | ed | Word choice in "SCREEN\_VOLUME\_RADIUS". | David S. Berry / NASA | From: Condition: Mandatory on SCREEN\_VOLUME\_SHAPE=SPHERE"  To: Condition: From: Condition: Mandatory if SCREEN\_VOLUME\_SHAPE=SPHERE" | 07-Sep-23: BDS: Agree |
| 3-4+ | Table 3-2, in general |  | ed | Word choice | David S. Berry / NASA | In general,  From: "Mandatory on"  To: "Mandatory if" | 07-Sep-23: BDS: Agree |
| 3-6 | Table 3-2 |  | ed/te | COLLISION\_PERCENTILE | David S. Berry / NASA | For this variable, do you really want the units to be "%", e.g., a line of  10 25 50 90 100  or a line of  10% 25% 50% 90% 100%. The name implies that the values are percentiles, so maybe the "%" is not necessary. | 07-Sep-23: BDS: Unit set to n/a |
| 3-8 | Table 3-4 |  | ed | OBJECT\_DESIGNATOR example. | David S. Berry / NASA | Is it really necessary to have "2147483648\_04ae[…]d84c" as an example value? What is the purpose of putting [...] in the example? Consider removing. | 07-Sep-23: BDS: Agree, specific example removed |
| 3-9 | Table 3-4 |  | ed/te | OBJECT\_TYPE: List of possible values is now in SANA registry https://sanaregistry.org/r/object\_types | David S. Berry / NASA | Consider replacing list of values by reference to https://sanaregistry.org/r/object\_types | 26-Sep\_23: BDS: Agree |
| 3-11 | Table 3-4 |  | ed | COVARIANCE\_SOURCE: Cannot have an item applicable to Object 1 and Object 2 in the metadata | David S. Berry / NASA | From: "both Object 1 and Object 2"  To: "the object" | 07-Sep-23: BDS: Agree |
| 3-11 | Table 3-4 |  | ed | COVARIANCE\_SOURCE: Cannot have an item applicable to Object 1 and Object 2 in the metadata | David S. Berry / NASA | From: "both Object 1 and Object 2"  To: "the object" | 07-Sep-23: BDS: Duplicate comment |
| 3-11 | Table 3-4 |  | ed | VCM should be spelled out at least once and/or listed in Annex | David S. Berry / NASA | From: VCM  To: Vector Covariance Message (VCM) | 07-Sep-23: BDS: Agree |
| 3-13 | 3.5.2 |  | ed/te | Word choice | David S. Berry / NASA | From: Covariance shall be specified in RTN format.  To: Covariance shall be specified in the RTN reference frame. | 07-Sep-23: BDS: Agree |
| 3-14 | 3.5.2.1 |  | te | I wonder if this sentence is really applicable to the CDM: "Alternatively interpolation of the state transition matrices may be performed relative to the two interpolation bounding points [H14]." Is this methodology applicable given the data provided in the CDM? Or must it be obtained from external sources? | David S. Berry / NASA | Consider removing the sentence. | 29-Sep-23: DLO: Agree, fixed. |
| 3-15 | Table 3-5 |  | ed/te | MIN\_MEDIAN\_MAX\_UPDATE\_INTERVAL: I think the "Description" of this keyword has some problems. First, it uses the word "catalogue" ambiguously compared to other uses of the word "catalogue" in the CDM. The phrase "collection of recent catalogues" suggests that the object may be defined in multiple catalogues (certainly possible), but are the stats from a single CATALOG\_NAME? or not? Is it the CATALOG specified on the "CATALOG\_NAME" keyword? The term "successive" is ambiguous as well... does it mean the most recent 4 consecutive versions of a given catalog? or (using the example provided) the MIN, MEDIAN, MAX 3 values across the 30 day span of TLEs? Finally, is TLE a catalog type? It's not listed in https://sanaregistry.org/r/space\_object\_catalog. Last but not least how is this useful? | David S. Berry / NASA | Clarify the "Description" for this keyword. | 29-Sep-23: DLO: Agree, fixed. |
| 3-18 | Table 3-5 |  | ed/te | MIN\_DV, MAX\_DV: The "Description" uses the word "performable RTN delta-v", but Annex A uses "achievable RTN delta-v". I think "achievable" is probably better. Should also add data type indicator. | David S. Berry / NASA | From: "performable delta-v"  To: "achievable delta-v" | 07-Sep-23: BDS: Agree |
| 3-18 | Table 3-5 |  | ed/te | LEAD\_TIME\_REQD\_BEFORE\_TCA: issue with units... "hours" is not an SI unit abbreviation. The acceptable value is "h". Alternatively, there are several keywords that have "d" as the unit that are not restricted to integer days. Should also add data type indicator. | David S. Berry / NASA | From: "hours" in Units column  To: "h" in Units column (or "d") | 07-Sep-23: BDS: Changed unit to h. |
| 3-22 | Table 3-5 |  | ed/te | CSIG3EIGVEC3: "nd" for units was phased out long ago. | David S. Berry / NASA | Replace "nd" with "n/a" for the units on eigenvectors. | 26-Sep-23: BDS: Agree, this will then be in line with paras 5.2.10 and 6.2.4.2 |
| 3-22 | Table 3-5 |  | ed/te | CSIG3EIGVEC3: The units for this probably require some explanation. | David S. Berry / NASA | Clarify in the description how the units should be assigned. Also add units to the eigenvalues in the example in the Annex G1.4 | 26-Sep-23: BDS: Units have been set to n/a in line with above comment. |
| 3-22  3-23 | Table 3-5 |  | ed | The three CSCALE\_FACTOR\* (MIN, " ", MAX) keywords use the word "APPENDIX" instead of "Annex" in the Description | David S. Berry / NASA | From: APPENDIX F  To: Annex F | 07-Sep-23: BDS: Agree |
| 3-23 | Table 3-5 |  | ed | There is a spurious "" on CSCALE\_FACTOR\_MAX near the end of the first paragraph of the Description. | David S. Berry / NASA | Remove spurious . | 07-Sep-23: BDS: Agree |
| 3-23 | Table 3-5 |  | ed | SCREENING\_DATA\_SOURCE: Word choice at end of "Description" | David S. Berry / NASA | From: "this screening"  To: "the screening" | 07-Sep-23: BDS: Agree |
| 3-23 | Table 3-5 |  | ed/te | DCP\_SENSITIVITY\_VECTOR\_\* should have an example provided. | David S. Berry / NASA | Add to Example G1.4 | 07-Sep-23: BDS: Example added |
| 3-23 | Table 3-5 |  | ed/te | Note that discussion of DCP\_SENSITIVITY\_VECTOR\_\* in Annex F refers to "dynamic consider parameters" instead of "drag". | David S. Berry / NASA | Is drag the only relevant dynamic factor? If so, state so in Annex F. | 07-Sep-23: BDS: Changed DCP definition in document to be Drag Consider Parameter in line with keyword. DCP acronym removed from Annex F4, Annex F4 to be generic discussion on dynamics consider parameters but will be re-written in line with previous comment. |
| 3-24 | 3.6 (e) |  | ed/te | Should state that user-defined parameters are always optional. They cannot be mandatory or conditional. | David S. Berry / NASA | Modify 3.6 (e). | 07-Sep-23: BDS: 3.6(e) removed and MOC column deleted from Table 3-6. |
| 3-24 | Table 3-6 |  | ed/te | I think it would be good to show a user defined parameter that requires a unit specification. | David S. Berry / NASA | For example:  USER\_DEFINED\_ANSWER\_TO\_EVERYTHING = 42 [d] | 26-Sep-23: BDS: This has not been done in other documents such as the ODM. |
| Section 4 | Section 4 |  | te | Note that the version of the XML schemas will not be 4.0.0 due to the fact that the ADM document did not progress at the same rate as the ODM. So version 4.0.0 applies to the ADM changes, and it is likely that the CDM changes will be in a future XML version 5.0.0 | David S. Berry / NASA | For now, change the 4.0.0 in the schema names to 5.0.0 and examples. To the best of my knowledge, that is what they will be. | 07-Sep-23: BDS: Agree |
| 5-2 | 5.2.9 |  | ed/te | I wonder why this paragraph is necessary. Why isn't 6.2.2.2 sufficient? | David S. Berry / NASA | Consider deleting 5.2.9, and changing references to 5.2.9 to 6.2.2.2. | 26-Sep-23: BDS: Agree |
| 5-2 | 5.2.10 |  | ed/te | I wonder why this paragraph is necessary. Why isn't 6.2.4.2 sufficient? | David S. Berry / NASA | Consider deleting and referring to 6.2.4.2 | 26-Sep-23: BDS: Agree |