| **Page** | **Section** | **Line** | **Type** | **Comment/ Rationale** | **Source of Comment (Name/Agency)** | **Suggested Disposition** | **Disposition**  **(Completed by Principal Editor)** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ii | Foreword | para1, last sentence | ed/te | The last sentence of the first paragraph in the foreword is left over from a much earlier version, I'm pretty sure. | David S. Berry / NASA | Remove last sentence of first paragaph (i.e., "This version of the Green Book... tracking data.") |  |
| 1-1 | 1.1 |  | ed | There is a dash and a period "- ." after the end of the text. | David S. Berry / NASA | Remove the "- ." |  |
| 1-1 | 1.3(b) |  | ed/te | The current text was probably accurate at one point, but it is no longer applicable. | David S. Berry / NASA | Replace existing text with something regarding data types and units. |  |
| 1-3 thru 1-4 | 1.4 | All | ed/te | I don't know what's going on here. It looks incomplete or like a work in progress. It also appears to duplicate material on pages 1-5 thru 1-7 | David S. Berry / NASA | Clean up, synchronize, or delete. |  |
| 1-6 | 1.4 | [22] | ed/te | The reference for [22] has a reference entry for [23] embedded... but it's a different [23] than the one recorded in [23]. | David S. Berry / NASA | Looks like one of the [23] entries will have to become [33] maybe? |  |
| 1-7 | 1.4 | [32] | ed/te | There is a note "SPG4" after the link address that is not correct. | David S. Berry / NASA | From: "SPG4"  To: "SGP4" |  |
| 2-2 | 2.3 | last para | ed | This paragraph is 100% repeated from text in Section 2.2.2 | David S. Berry / NASA | Delete this duplicate, leaving 2.2.2 intact. |  |
| 2-2 | 2.4 | All | ed | This paragraph is largely repeated from text in Section 1.3, where it more properly belongs. | David S. Berry / NASA | Remove section 2.4 |  |
| 3-3 | 3.2 | Table 3-1 | ed | Units error on "Range" | David S. Berry / NASA | From: "Km"  To: "km" (case matters) |  |
| 3-3 | 3.2 | Table 3-1 | ed | Blank line in table between "Integrated Doppler count" and "Rate Sensors" | David S. Berry / NASA | Delete the blank line. |  |
| 3-4 | 3.2 | Table 3-2 | ed | Units error on "Power" | David S. Berry / NASA | From: "Kg"  To: "kg" (case matters) |  |
| 3-4 | 3.2 | Table 3-3 | ed/te | Missing entry... all of the entries in this table are discussed in the document. We can add "Antenna Type" to the list. | David S. Berry / NASA | Add "Antenna Type" |  |
| 3-4 | 3.2 | Table 3-3 | ed/te | The "Units" column in the table mostly has "-" as the applicable units. | David S. Berry / NASA | Suggest changing "-" to "N/A". |  |
| 4-1 | 4.1 | 1 | ed | Remove extra word | David S. Berry / NASA | From: "... which are the pieces of information..."  To: "... which are pieces of information..." |  |
| 4-1 | 4.1 | last | ed | Double period: ". ." | David S. Berry / NASA | Remove second period |  |
| 4-1 | 4.2 | Title | ed/te | The title is incomplete relative to the text. | David S. Berry / NASA | From: "QUALITY"  To: "PHYSICAL CONSTANTS AND DATA QUALITY" |  |
| 4-3 | 4.3.4.2 | 7 | ed | Sentence looks incomplete: "... with an accuracy of 0.003 as (reference [2,7]." | David S. Berry / NASA | The meaning here for "as" is the abbreviation of "arc second", however, this units abbreviation is never used again in the document, and the subject sentence looks like it's missing a word or words after "as". I suggest:  From: "0.01 arc second (as),"  To: "0.01 arc second,"  From: "0.003 as"  To: "0.003 arc second" |  |
| 4-9 | 4.4.1 | para 2 | ed | Qualifying word, given that we will have lots of material on time systems on SANA in the relatively near future. Add "some" to indicate that we won't have a full set in this document. | David S. Berry / NASA | From: "This subsection provides definitions..."  To: "This subsection provides some definitions..." |  |
| 4-10 | Figure 4-5 |  | te | We should have a more current figure if possible. | David S. Berry / NASA | I suggest contacting Dave Vallado dvallado@agi.com to see if he has a more current figure. |  |
| 4-10 | 4.4.2.2.2 | 3 | ed | Missing possessive indicator | David S. Berry / NASA | From: Earths  To: "Earth's" |  |
| 4-10 | 4.4.2.2.2 | 3 | ed | The title of the next section "Terrestrial Time" is attached to the end. | David S. Berry / NASA | Separate "Terrestrial Time" from the preceding sentences, and make it a title. |  |
| 4-10 | 4.4.2.2.2 |  | te | There is no reference provided for the source of the LG value. | David S. Berry / NASA | Provide a reference. |  |
| 4-11 | 4.4.2.2.3 |  | te | There is no reference provided for the difference between TAI and TT. | David S. Berry / NASA | Provide a reference. |  |
| 4-11 | 4.4.2.2.4 |  | te | There is no reference provided for the difference between TAI and GPS. | David S. Berry / NASA | Provide a reference. |  |
| 4-11 | 4.4.2.2.5 |  | te | There is no reference provided for the definition of GMST. | David S. Berry / NASA | Provide a reference. |  |
| 4-11 | 4.4.2.2.5 |  | te | It may be desirable to add the term "hour angle" to the Glossary. | David S. Berry / NASA | Consider |  |
| 4-11 | 4.4.2.2.7 | para 1, last line | ed | At the end of the first paragraph, there is something that looks like references (but may be something else (?)) | David S. Berry / NASA | From: [1.25]  To: [1, 25] ??? |  |
| 4-12 | 4.4.2.3.1 | last | ed | Missing period. | David S. Berry / NASA | Add period at end of sentence. |  |
| 4-12 | 4.4.2.3.2 |  | ed | Typo. | David S. Berry / NASA | From: "relativistic times"  To: "relativistic time" |  |
| 4-12 to 4-13 | 4.4.2.4 |  | ed/te | We could consider deleting this section and the associated diagram Figure 4-6 if we cannot get an acceptable update. | David S. Berry / NASA | Consider. |  |
| 4-14 | 4.6 | 2-3 | ed | Missing word ? The sentence "Unless otherwise specified... recommended by " seems to run into the next sentence "The IERS recommends models...". After "by" and before "The" there is either a missing word(s) or the sentence needs to be smoothed out. The current Green Book (version 3) simply states "Unless otherwise specified, the international community uses models recommended by the IERS  (www.iers.org). | David S. Berry / NASA | I don't know the intent here, so don't have a suggestion other than that the current sentence seems to combine 2 thoughts and is incoherent as written. |  |
| 4-14 | 4.7.1.1 | All | ed | The text for 4.7.1 seems to have been interpreted as a "Heading 4" type. The "BACKGROUND TERMS..." is probably meant to be the Heading type. | David S. Berry / NASA | Fix |  |
| 4-14 | 4.7.1.1 |  | ed | Typo | David S. Berry / NASA | From: "...helpful [14,22}"  To : "...helpful [14,22]" |  |
| 4-14 | 4.7.1.1 |  | ed | The text is written so that in the phrase "from 90 to -90", the negative sign is at the end of the line and the 90 is at the beginning of the next line. Fix this so that the "-90" is all on the same line so the sign doesn't get missed. | David S. Berry / NASA | Fix.  From:  -  90  To: -90 |  |
| 4-14 | 4.7.1.1 | last para | ed | Font change in the keyhole paragraph. | David S. Berry / NASA | Make the font in lines 2 and 3 consistent with surrounding text. |  |
| 4-15 | 4.7.2 | 3 | ed | Uses "HA" instead of "RA" in RADEC discussion... is this correct? | David S. Berry / NASA | Check. |  |
| 5-1 | Table 5-1 |  | ed | The caption for the Table is not separated from the preceding text. | David S. Berry / NASA | Fix. |  |
| 5-3 | Figure 5-1 |  | ed | Just above Figure 5-1, there is an "Error! Reference source not found" message. | David S. Berry / NASA | Fix. |  |
| 5-6 | 5.2.5 | 4 | te | Says "An ephemeris may be definitive, predictive, or both." I think "both" should be qualified. I'd say the ephemeris can be definitive up to some data cutoff point, and predictive thereafter. | David S. Berry / NASA | From: "... or both"  To: "... or a combination of both". |  |
| 5-6 | 5.3.1, 5.3.2 |  | te/ed | Portions of the 3 paragraphs in these two sections are very redundant. | David S. Berry / NASA | Reduce the redundancy. |  |
| 5-6 | 5.3.2 | para2, next to last line. | te/ed | The last paragraph in 5.3.2 contrasts "active" and "passive" rotations. Then in the next to last line of the paragraph, the term "attitude rotation" is used. Consistency is suggested here. | David S. Berry / NASA | From: "... not be confused with an attitude rotation"  To: "... not be confused with a passive rotation" |  |
| 5-7 | 5.3.4 |  | ed | In the list of stabilization modes, the first 3 entries are not capitalized, then the last "Uncontrolled" is capitalized. | David S. Berry / NASA | Be consistent. Either capitalize all or uncapitalize all. Suggest change from "U" to "u". |  |
| 5-7 | 5.3.4 |  | ed | In the list of "attitude elements needed at a given time", the first entry is "given time". This seems redundant. | David S. Berry / NASA | Either remove "given time" from the list, or change the introductory phrase to "The attitude elements needed are as follows:" |  |
| 5-7 | 5.3.4 |  | te | The formulation of the unit quaternion has the cosine term in the opposite position as Alain is using in the ADM. | David S. Berry / NASA | Please consult with Alain and ensure that the Green Book and ADM are consistent. |  |
| 5-8 | entire page |  | te | This page needs to be coordinated with Alain and Julie to ensure consistency with the ADM. | David S. Berry / NASA | Coordinate with Alain and Julie. |  |
| 5-13 | 5.5.3 |  | te | No units are provided for the quantities | David S. Berry / NASA | Provide units, as was done for the SRP model in 5.5.2:  Satellite cross section (m2)  Spacecraft mass (kg)  Density (kg m-3)  Velocity (m s-1) |  |
| 5-13 | 5.6 | last line | ed | Font change | David S. Berry / NASA | Make the font in last line consistent with preceding text. |  |
| 6-1 | 6.1 |  | ed | There is a double period at the end of the paragraph (". .") | David S. Berry / NASA | Remove redundant period. |  |
| 6-2 | 6.2.2.2 | 4-5 | te/ed | Uses term "ground-satellite", but we have a different term defined in the doc. | David S. Berry / NASA | From: "ground-satellite"  To: "ground-to-flight" |  |
| 6-2 | 6.2.2.2 | next to last | ed | Missing period. | David S. Berry / NASA | From: "... relay satellite) Pseudo noise..."  To: "... relay satellite). Pseudo noise..." |  |
| 6-2 | 6.2.2.3 | 2 | ed | Extra word | David S. Berry / NASA | From: "... sending an a ground-to-flight..."  To: "... sending a ground-to-flight..." |  |
| 6-4 | 6.2.2.4 | 2 | te/ed | Word choice | David S. Berry / NASA | From: "... communications trail."  To: "... communications path." (Note this will make it more consistent with the TDM, where we use the keyword "PATH".) |  |
| 6-6 | 6.2.2.7 | para 2, lines 5-11 | ed/te | The material starting in para 2, line 5 "If the receiving station on the Earth..." and extending through the end of the paragraph is really more applicable to the discussion of 3-way on page 6-3 in section 6.2.2.3. | David S. Berry / NASA | I suggest moving the text described to p.6-3, after the discussion of 3-way communications. You may need to delete a bit of the moved material to avoid redundancy. |  |
| 6-6 | 6.2.2.8 | 2 | ed/te | I suggest modifying the second sentence. | David S. Berry / NASA | From: "Tracking stations at various locations around the Earth track..."  To: "Two tracking stations separated by a long baseline (typically several thousand kilometers) track..." |  |
| 6-10 | 6.3.4 |  | te | You state at end of paragraph 1: "For this reason, star magnitudes are attitude measurements". This doesn't ring completely true, but I think a word change could improve it. | David S. Berry / NASA | From: "For this reason, ..."  To: "When used in this manner, ..." |  |
| A-1 | Glossary |  | te | On "Flight-to-ground", there is a directionality implied that is missing. | David S. Berry / NASA | From: "The set of exchanges between..."  To: "The set of downlink exchanges between..." |  |
| A-1 | Glossary |  | te | On "Frame origin", I would add a phrase. | David S. Berry / NASA | From: "... axes."  To: "... axes in a coordinate frame." |  |
| A-2 | Glossary |  | te | GPS is a US system, correct? | David S. Berry / NASA | Somewhere in the definition, add "United States" |  |
| A-2 | Glossary |  | te | On "Ground-to-flight", there is a directionality implied that is missing. | David S. Berry / NASA | From: "The set of exchanges between any one spacecraft participant and a non-spacecraft participant."  To: "The set of uplink exchanges between a non-spacecraft participant and a spacecraft participant." |  |
| B-2 | Acronyms |  | ed | On "MET", missing ending parenthesis | David S. Berry / NASA | From: "... typically launch"  To: "... typically launch)" |  |
| B-2 | Acronyms |  | ed | The acronyms MOON\_ME, MOON\_MEIAUE, MOON\_PA are not used in the document. | David S. Berry / NASA | Remove from Acronyms. |  |
| B-2 | Acronyms |  | ed | Given the previous item, it might be a good idea to do a complete "acronym scrub" of the document. There are probably others that are in Acronyms annex but not used, and some that are used but are not in the Annex. | David S. Berry / NASA | Consider. This will take an hour or so, but will improve the document. |  |
| B-2 | Acronyms |  | ed | RTLT and RTN are on the same line. | David S. Berry / NASA | Move RTN to its own line. |  |
| B-2 | Acronyms |  | ed | In "RTN", the word "transverse" is misspelled | David S. Berry / NASA | From: "Transvers"  To: "Transverse" |  |