

PIRN-200C-008, 27 January 2004

Cmt #	Page	Para #	C/S/A	Comments	Disposition
1	1	3.2.2, and others	A	Comment: Global change “Modulo-2 ...” to “modulo-2 ...” Rationale: Editorial	Accept. The global change will be implemented in the next version of Draft IS-GPS-200D.
2	2	3.2.3	A	Comment: In the second paragraph, change “The four possible bit trains are; ...” to “The four possible bit trains are: ...” Rationale: Editorial	Accept.
3	2	3.2.3	A	Comment: In the third paragraph, change “The three possible bit trains are; ...” to “The three possible bit trains are: ...” Rationale: Editorial	Accept.
4	2	3.2.3	A	Comment: In the third paragraph, change “The L2 CM-code with the 50 sps symbol stream of $D_C(t)$ is time-multiplexed with L2 CL-code at a 1023 kHz rate ...” to “The L2 CM-code with the 50 sps symbol stream of $D_C(t)$ is chip-by-chip time-multiplexed with L2 CL-code at a 1023 kHz rate ...” Rationale: Clarity	Reject. The sentence references para 3.2.2 for a detailed description.
5	3	3.3.3.1	A	Comment: Global change “Modulo-2 ...” to “modulo-2 ...” Rationale: Editorial	Accept. The global change will be implemented in the next version of Draft IS-GPS-200D.
6	3	3.3.3.1 .1	A	Comment: In the first paragraph, change “The L2 CNAV bit train, $D_C(t)$, will always be Forward Error Correction (FEC) encoded by a rate $\frac{1}{2}$ convolutional code.” to “The L2 CNAV bit train, $D_C(t)$, will always be rate $\frac{1}{2}$ convolutional encoded with a Forward Error Correction (FEC) code.” Rationale: Clarity	Reject. The proposed new wording is confusing.
7	3	3.3.4	A	Comment: change “GPS time is established by the Control Segment ...” to “GPS time is established by the Operational Control System (OCS) ...” Rationale: Clarity	Reject. It is proper to use Control Segment.

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8	4	3.3.4	S	Paragraph 2 of 3.3.4 should be revised in the next version to reflect realistic timing capabilities and to clarify the meaning of the statistics.	Other. This will be considered in a future revision effort.
9	5	Glossary	S	IERS is now officially “International Earth rotation and Reference system Service”	Accept.
10	7	6.2.2.2.3	A	Change “Martin Marietta” to “Lockheed Martin”	Accept.
11	7	6.2.2.2.3	S	Current Memory Margins need to be defined	Reject. Contractual requirements are separately stated in a parenthesis.
12	7	6.2.2.2.3	Admin	Comment: The parenthetical phrase of 14 days seems to conflict with the meaning of the initial phrase that talks about 60 days. Suggest that the word “ Additional” be inserted between “the” and “capability” of the second sentence. I.e. <u>These SVs have the ADDITIONAL capability of storing at least 60 days.....</u>	Reject. The parenthetical phrase provides a contractual clarification.
13	8	6.3.3	Admin	Comment: Same as above comment	Reject.
14	7	6.2.2.3	S	Comment: From: will provide a minimum of 180 days of positioning service without contact from the CS when operating in autonomous navigation (Autonav) mode. To: will provide a minimum of 60 days of positioning service without contact from the CS when operating in autonomous navigation (Autonav) mode. Rationale: Block IIF requirement is 60 days and since they are future we can be sure the National Command authorities have decided 60 days is sufficient.	Reject. Other GPS requirements specifications need to be updated before Section 6 of ICD-GPS-200 can be revised.
15	7	6.2.2.2.5	C	Comment: Shouldn’t there be some performance for the IIF SV here? From: ... To: ... “These SVs have the capability to provide positioning service without contact from the CS for a period of 60 days.” Rationale: Follow the section 6.2.2.2.1, 6.2.2.2.2, and 6.2.2.2.3 sections in content	Accept.

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16	8	6.3.3	A	“degradations” to “degradation” Should be singular tense	Accept.
17	8	6.3.3	S	From: The Block IIR/IIR-M SVs, when operating in the Block IIA mode, will perform similarly to the Block IIA SVs and have the capability of storing at least 60 days of navigation data, with current memory margins, to provide positioning service without contact from the CS for that period (through short-term and long-term extended operations). To: The Block IIR/IIR-M SVs, when operating in the Block IIA or Block IIR mode, will perform similarly to the Block IIA SVs and have the capability of storing at least 60 days of navigation data, with current memory margins, to provide positioning service without contact from the CS for that period (through short-term and long-term extended operations). Rationale: Block IIF requirement is 60 days and since they are future we can be sure the National Command authorities have decided 60 days is sufficient.	Reject. Block IIR mode is different than Block IIA mode.
18	8	6.3.4	S	From: If the CS is unable to upload the SVs, the Block IIR/IIR-M SVs will maintain normal operations for period of at least 180 days after the last upload and the Block IIF SVs will maintain normal operations for period of at least 60 days. To: If the CS is unable to upload the SVs, the Block IIR/IIR-M SVs will maintain normal operations for period of at least 60 days after the last upload and the Block IIF SVs will maintain normal operations for period of at least 60 days. Rationale: Block IIF requirement is 60 days and since they are future we can be sure the National Command authorities	Reject. Other GPS requirements specifications need to be updated before Section 6 of ICD-GPS-200 can be revised.
19	8	6.3.4	C	Lockheed Martin believes the new wording “(URE) of no longer than 6 meters, one sigma...” in a new requirement. A previous LOE, dated 17 August 1994, number 3 (SEP) addresses the concern. This LOE is being deleted, the concern is not properly being addressed.	Defer. The comment will be further evaluated and appropriately updated.

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20	19	LOE	C	The deletion of the LOE's & subsequent replacement with text in the body of the document must be contractually caveated as follows: "No Special Tests have been conducted on GPS Block IIR SVs to verify the new wording. If I/F issues surface because of this new wording, it is expected that funding will be provided to work any such issues.	Reject. There should be no difference between the LOEs and the proposed text to be inserted in the body of the document.
21	27	20-1	C	The current Block IIR SV Software does not support the Calendar Year Function described on Sheets 27, 31, and 36	Other. The impacted paragraphs will be revised appropriately.
22	29	20.3.3. 3.1.3	S	Change last shall requirement sentence to: "For Block IIR.IIR-M SVs in the Autonav Mode, the URA is estimated on board, and therefore approximates the description above for each URA index."	Reject. This SV implementation description is not needed in ICD-GPS-200.
23	33	Table 20-V	S	GPS Block IIR does not support Note 3	Accept. "(except for IIR/IIR-M SVs)" will be added to Note 3.
24	35	20.3.3. 5.1.3	A	Comment: In the first paragraph, change "(a) each of the 32 pages ..." to "(a) each of the 24 pages ..." Rationale: Correction	Reject. There are 32 pages of almanac.
25	35	20.3.3. 5.1.3	A	Comment: In the fourth paragraph, change "... in those 32 pages ..." to "... in those 24 pages ..." Rationale: Correction	Reject. There are 32 pages of almanac.

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26		20.3.3. 5.1.13	S	<p>Comment: Need to clarify when “Calendar Year Counter” will become operational.</p> <p>Rationale: The deletion of “Block IIF” and the comments in the cover letter lead to the conclusion that this information is to be available from all SVs. In the absence of any qualifiers, are users to assume that the Calendar Year Counter field will be valid as soon as this PIRN is approved and incorporated into ICD-GPS-200? ARL:UT examined several almanac in Dec, 2003 and Jan, 2004. The area designated as the Calendar Year Counter field is still filled with alternating 1’s and 0’s.</p> <p>Suggestion: If there is a dependency that must be fulfilled before this paragraph is true for all blocks, it needs to be stated. If the ICD will be in effect prior to this field being valid, the text should note how receivers may detect invalid field content.</p>	Other. The impacted paragraphs will be revised appropriately.
27	37	20.3.3. 5.2.2	S	<p>Third Line – Change “shall ensure” to “will ensure” – “shall be “ to “will be” & “shall differ” to “will differ”</p> <p>Rationale: Cannot easily add hard testable requirements to the IIR SV at this late date</p>	Accept.
28	37	20.3.3. 5.2.2	A	<p>Comment: In the first paragraph, line 5, change “... in almanac parameters.” to “... in almanac parameters or SV health.”</p> <p>Rationale: Correction</p>	Reject. “SV health” is not included in the sentence intentionally.
29	37	20.3.3. 5.2.2	S	<p>Comment: Not sure that sentences 1 and 2 are consistent with the last sentence. The beginning of the paragraph indicates that toa values in SF 4 and 5 shall differ for successive data sets which contain changes in almanac parameter. The last sentence states “..upload may continue to indicate the same toa values in SF 4 and 5 as prior to the cutover but the new almanac data set may contain changes in almanac parameters or SV health.” Please explain. It would seem that the toa should change if any parameter (including SV health) changes.</p>	Other. The paragraph will be divided into two paragraphs. A new paragraph will start with the third sentence.

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30	38	20.3.3. 5.2.4	S	Because of the current trend to not introduce leap seconds, the values WN & WNSLF have contained inaccurate data, specifically during June of 2003	Other. This observation has been noted.
31		20.3.3. 5.5.2	C	<p>Comment: The last sentence renders the information in the preceding sentences useless for purposes of allowing the UE to determine almanac consistency.</p> <p>Rationale: The first three sentences provide the UE manufacturer or post-processing data analyst some guidelines for determining whether a given set of almanac pages constitute a consistent data set. However, the final sentence implies that it will NEVER be possible to guarantee that the user has a consistent data set unless there is additional information that allows the user to determine when the cutover to the new upload occurred.</p> <p>Suggestion: Either (1.) Change the last sentence to read that the t_{oa} WILL change on a cutover (unlikely since I believe I see where this was the topic of a letter of exception), or (2.) provide a deterministic way for the user to identify when an almanac cutover has occurred and add a reference to the material in this paragraph.</p>	Reject. This is how the system currently operates and there is no simple and deterministic (guaranteed) way to identify an almanac cutover.
32	41	Section 20.3.4. 5		Comment: The last sentence of the 3 rd paragraph looks contradictory to the last part of the 5 th paragraph. It would appear that DEV 'not equal' zero even for the second transmitted ephemeris after a new upload cutover. Thus, it does not indicate that a new data cutover has occurred, but that one may have occurred recently.	Other. The definition will be revised.