CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
111	M. Dash GPA	Page: Para: 20.3.3.5.1.4	Critical	Comment: The SV configuration codes are becoming too granular and based on differentiating Space Segment activity that is not necessarily relevant to the User Segment. As was done with Code 001, a parenthetical description should be provided with each value. It is the parenthetical that really provides information useful to the User Segment, not the SV block number. The following reflects changes to 200 that will be proposed as part of overall updates associated with WAGE, which puts the capability description first and makes the SV block the parenthetical: Code SV Configuration 001 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g.,Block II/IIA/IIR SV). 010 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). Additional codes will be assigned in the future, should the need arise. Users can assume that SVs with a numerically larger (binary sense) configuration code will be backwards compatible with this version of IS-GPS-200. A similar description needs to be identified for Code 100 Suggested Change: From: To:	PO Resolution: A/C Rationale: Seec comment #282 Concurrence: Concur Rationale:	11/19/08: Add description for code 100 - "A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA capability (e.g., Block IIIA SV)." Stakeholders concur with proposed changes with the modification noted above and remove the statement "Users can assume that SVs with a numerically larger (binary sense) configuration code will be backwards compatible with this version of IS-GPS-200." Action assigned to Mike Dash to revise the above statement. This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.

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				Rationale: The key item with these codes is not the SV block designation (which is why they are in quotes), but the differences in capabilities that the UE can assume about the SV it is communicating with. The parenthetical description is what provides this information. New codes should only be assigned with changes in capability. If a future SV block only provides the capability already associated with one of these codes, then a new code should not be added. That SV should simply output one of the existing codes.		
104	M. Dash GPA	Page: Para:	Critical	Comment: There is no document identifying the requirements redundantly repeated in 200/705/800 documents. Provide a document of some kind identifying common/redundant requirements in 200/705/800 so that reviewers know what the POC is intending to manage as common Suggested Change: From: To: Rationale: Previous comments to remove redundancies by having 705 and 800 simply refer to 200 have been rejected or deferred. As long as the redundancies exist, the POC and reviewers now have the additional burden of crosschecking 200/705/800 to make sure the redundantly stated requirements don't diverge or contradict each other. Particularly in the case of Army review, the primary interest is 200. However, since 705 and 800 contain information redundant of 200 that the Army cares about, all three documents have to be reviewed. A document identifying the redundant areas would focus the Army review (as well as other military reviewers) to the sections they really	PO Resolution: Reject Rationale: Creating a new interface is a GPSW decision and not up to the ICC. Concurrence: Non-concur Rationale: Putting the documents in DOORS does not address the comment. Duplicating requirements in these three ICDs, even if care is taken to ensure the wording is identical, creates the situation where a change can be initiated under the guise of a 705 or 800 ICWG, resulting in the change being forced in 200. Only one document should own a requirement, and 200 should be the owner of every requirement in 200, even those that are common with 705 and 800 B. Castro: An alternative approach would be to create a cross reference matrix.	11/19/08: Action assigned to Mike Munoz to coordinate with Mike Dash on possible solutions to this comment. Comment deferred. This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics. 9/1/09: Comment rejected. Rationale updated.

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				care about.		
103	M. Dash GPA	Page: Para:	Critical	Comment: The package of documents for review (draft documents along with PIRNs), have serious quality control issues. For example, there are changes in the draft documents not captured in the corresponding PIRN (Tables 3-Va and 3-Vb in IS-GPS-200). Also, since change bars were added to the draft documents as an afterthought, there are areas of the documents denoted as a change by font color, yet with no change bars (Tables 3-Va and 3-Vb in IS-GPS-200). There are also items denoted as a change by font color that have not changed at all when compared to the original document (Table 3-IV in IS-GPS-200). The means that the efforts to identify proposed changes using the PIRN and font color/change bars in a draft document cannot be trusted to be accurate, forcing the many reviewers to perform a painstaking side by side comparison review (one of the most manpower intensive reviews) just to clearly and accurately identify the changes being proposed, which is the document POC's responsibility, not the reviewer's responsibility. A new package should be created that clearly and specifically identifies any and all changes being proposed so that the reviewers don't have to go through any exercise or ordeal just to figure that out. Either provide a PIRN that clearly identifies the proposed changes for ICWG review (as is done with every other ICD in the GPSW), or provide a Word file of the last approved version of the document with track changes turn on to identify proposed changes. As it stands, it should not be assumed that the reviewers can adequately identify all the proposed change, and that the absence of a comment to an area the POC intended as a proposed change should not be interpreted as “silent agreement” by the reviewer.	PO Resolution: Accept Rationale: Although the comment has merit, this is out of scope for this ICWG. Also, the documents are planned to be imported into DOORS. 9/1/09: All changes from the last baselined version should be highlighted using Words "Track Change" feature. Adminstrative changes (i.e. typos, formatting) may have been fixed without change tracking. Concurrence: Non-concur Rationale:	11/19/08: Stakeholders concur with PO Resolution. Need to work the solution offline. This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics. 9/1/09: Rationale updated.

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				Suggested Change: From: To: Rationale: The reviewers (which are large in number compared to the document POC) are responsible for evaluating proposed changes and providing comments. However, reviewers are not responsible to try and identify proposed changes when the POC has failed to do so adequately. Identifying proposed changes accurately and succinctly is the POC's responsibility and is a prerequisite to obtain reviewer comments. Particularly in the case of these documents, which are publicly released for review and comment. The state of the documents sent out for review shows a lack of quality control and casts a shadow of doubt on the GPSW's ability to properly perform configuration management on them. Particularly, given the reduced time allocated for review, as well as the increasing number of documents the people have to review in parallel, it is essential that the document POCs adequately meet their responsibilities by properly identifying proposed changes in a way that places no burden on the reviewers to do so. The state of these documents, and any subsequent ICWG to discuss them, do not meet the proper ICWG requirements that are supposed to be entrance criteria for the RWG (e.g. use the ICWG process to resolve key issue from stakeholders). The reason is that stakeholders can't properly identify all the issue they may have because no one has accurately and reliably identified all the proposed changes.		
74	T. Nagle GPC	Page: 16 Para: 3.3.1.5	Critical	Comment: Change title to Signal Component Phase Relationships. Reflect findings of NPEF. Until Year 2020, or until L2C/L5 FOC, whichever is later, L2C	PO Resolution: Reject Rationale: No details are available regarding the phase	11/19/08: Action assigned to Karl Kovach to review and provide new language. Stakeholders agree to defer comment.

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				shall be in phase quadrature, identical to L1 C/A. After that, phase relationships can change. Delete the 2nd paragraph and replace with the following: "For Block IIR-M, IIF, and subsequent blocks of SVs, phase quadrature relationship between the two L2 carrier components will be the same as for the two L1 carrier components as described above. See Section 6.XX for discussions on future carrier phase relationships." Someone needs to write Section 6.XX based upon Federal Register entry on 16 May 2008: DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration [Docket No.: 080506632–8633–01] Codeless and Semi-Codeless Access to the Global Positioning System. Suggested Change: From: To: Rationale: Update to agreements reached in NPEF.	change after 2020. Need a way forward plan from GPSW leadership. Aerospace to provide NPEF details and new language if applicable. 9/1/09: This comment is OBE. Language submitted by Karl Kovach is aligned with 03JUN09 ERB decision by Col Goldstein AND with Col Madden Memo. Concurrence: Concur Rationale:	9/1/09: Comment rejected. Rationale updated. 9/30/09: Removed reference from 6.3 (Pre-operational use) to 3.3.1.5.3 (Phase Continuity) in order to satisfy civil community
56	T. Kawakami GPD	Page: 56a Para: 6.3.5.1	Critical	Comment: The description of the additional PRN sequences is not consistent between IS-GPS-200, IS-GPS-705 and IS-GPS-800. When the previous version of IS-GPS-800 was approved, the ICC assured that all three of the public ISs would contain the same description. The ICC also decided that the additional PRN values would not be moved to a separate document and that the ISs would not point to a common document that would contain the official description of the additional PRN sequences. Decide which description will be used and then consistently use it. Additionally, recommend consultation with M. Dash (GPA) for discussions	PO Resolution: Defer Rationale: Defer to ICWG for discussion Concurrence: Concur Rationale:	11/19/08: Action assigned to Mike Munoz to determine solution – still in work. 8/27/09: Gopal to ask commenter whether this really critical or can be reduced. Is this necessary to have in this Rev? 9/29/09: Kawakami mentioned that he was okay with deferring this until Kovach has produced the PPIRN on constellation expansion

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				from previous CCB and ICWG meetings pertaining to additional PRN sequences. Suggested Change: From: To: Rationale:		
53	S. Brown LMCO	Page: 67 Para: 20.3.2	Critical	Comment: Suggested Change: From: The memory retentivity for the Block IIR/IIR-M/IIF SVs is designed and guaranteed for at least 60 days. To: The memory retentivity for the Block IIR/IIR-M/IIF/III SVs is designed and guaranteed for at least 60 days. Rationale: updated to include GPS III-specific information.	PO Resolution: A/C Rationale: III should be IIIA Concurrence: Concur Rationale:	11/19/08: Stakeholders agree to "The memory retentivity is guaranteed for at least 60 days for SVs subsequent to Block IIA." Changes made in real time during the ICWG. 8/20/09: Changing III to IIIA or vice versa doesn't matter
51	S. Brown LMCO	Page: 55 Para: 6.2.2.2.6	Critical	Comment: Suggested Change: From: NEW To: The block of operational replenishment SVs are designated as SVNs 74-105 and are termed "Block III" SVs. This is the first block of operational SVs that transmit the L1C Civil signal. These SVs will provide at least 60 days of positioning service without contact from the CS. Rationale: Text added to include reference to GPS III	PO Resolution: A/C Rationale: Modified slightly to be specific to Block IIIA. See comment 247. Concurrence: Concur Rationale:	11/19/08: Stakeholders concur with proposed change with some modification – remove "Civil" after L1C. Change made in real-time during the ICWG. 8/20/09: Changing III to IIIA or vice versa doesn't matter

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
50	S. Brown LMCO	Page: 54 Para: 6.2.2.2	Critical	Comment: Suggested Change: From: The operational satellites are designated Block II, Block IIA, Block IIR, Block IIR-M and Block IIF SVs. Characteristics of these SVs are provided below. Modes of operation for these SVs and accuracy of positioning services provided are described in paragraphs 6.3.2 through 6.3.4. These SVs transmit configuration codes as specified in paragraph 20.3.3.5.1.4. The navigation signal provides no direct indication of the type of the transmitting SV. To: The operational satellites are designated Block II, Block IIA, Block IIR, Block IIR-M, Block IIF, and Block III SVs. Characteristics of these SVs are provided below. Modes of operation for these SVs and accuracy of positioning services provided are described in paragraphs 6.3.2 through 6.3.4. These SVs transmit configuration codes as specified in paragraph 20.3.3.5.1.4. The navigation signal provides no direct indication of the type of the transmitting SV. Rationale: Text updated to include reference to GPS III.	PO Resolution: A/C Rationale: Concurrence: Concur Rationale:	11/19/08: Stakeholders concur with proposed change. Leave “III” unchanged.
49	S. Brown LMCO	Page: 43 Para: 3.3.4	Critical	Comment: Suggested Change: From: In each SV the X1 epochs of the P-code offer a convenient unit for precisely counting and communicating time. Time stated in this manner is referred to as Z-count, which is given as a 29-bit binary number consisting of two parts as follows: To: In each SV the X1 epochs of the P-code offer a	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	11/19/08: Stakeholders concur with proposed change.

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				convenient unit for precisely counting and communicating time. Time stated in this manner is referred to as Z-count, which is given as a binary number consisting of two parts as follows: Rationale: GPS III uses a 32 bit Z count; removed reference to 29-bit Z count which is specific to the GPS II implementation.		
48	S. Brown LMCO	Page: 20 Para: 3.3.1.9	Critical	Comment: Suggested Change: From: L2 ellipticity shall be no worse than 3.2 dB for Block II/IIA SVs and shall be no worse than 2.2 dB for Block II/IIRM/IIF over the angular range of ±14.3 degrees from boresight. To: L2 ellipticity shall be no worse than 2.2 dB for Block III SVs over the angular range of ±13.8 degrees plus pointing error from boresight. Rationale: New text added to specifically address the L2 ellipticity for GPS III SVs. The reason that the angular range is different from the GPS II SVs is that the 14.3 degrees in the other requirements allows for up to 0.5 degree pointing error. LM historical performance for IIR/IIR-M has been much better than that with less that 0.1 degree pointing error. New text with a smaller angular range value allows LM to take advantage of better pointing error.	PO Resolution: A/C Rationale: Space IPT (Soon Yi) has action to provide angular range required independent of pointing error. Concurrence: Concur Rationale: 11/19/08: Revised the comment to read: "For the angular range of ±13.8 degrees from nadir, L1 ellipticity shall be no worse than 1.8 dB for GPS III SVs." Matches the 800 language. Changes made in real time. Stakeholders concur.	11/07/08: Per Aerospace, there is 0.5 degree pointing error. Need to determine if "±13.8 degrees, plus pointing error, from nadir" or "±14.3 degrees from boresight" is more acceptable.
47	M. Jeffris MITRE	Page: Para: 3.3.1.9	Critical	Comment: Suggested Change: From: For the angular range of □14.3 degrees from boresight, L1 ellipticity shall be no worse than 1.2 dB for Block II/IIA and shall be no worse than 1.8 dB for Block IIR/IIR-M/IIF SVs.	PO Resolution: A/C Rationale: Space IPT (Soon Yi) has action to provide angular range required independent of pointing error. Concurrence: Concur Rationale:	11/07/08: Per Aerospace, there is 0.5 degree pointing error. Need to determine if "±13.8 degrees, plus pointing error, from nadir" or "±14.3 degrees from boresight" is more acceptable. 11/19/08: Revised the comment to read: "For the angular range of ±13.8 degrees from nadir, L1 ellipticity shall be no worse

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: For the angular range of ±13.8 degrees, plus pointing error, from boresight, L1 ellipticity shall be no worse than 1.8 dB for GPS III SVs. Rationale: New text added to specifically address the L1 ellipticity for GPS III SVs. The reason that the angular range is different from the GPS II SVs is that the 14.3 degrees in the other requirements allows for up to 0.5 degree pointing error. LM historical performance for IIR/IIR-M has been much better than that with less that 0.1 degree pointing error. New text with a smaller angular range value allows LM to take advantage of better pointing error.		than 1.8 dB for GPS III SVs." Matches the 800 language. Changes made in real time. Stakeholders concur.
4	M. Jeffris MITRE	Page: Para: 3.3.1.6	Critical	Comment: Power defined in 3.3.1.6 need to be recalculated to take into account changes to bandwidth in 3.3.1.1. Suggested Change: From: SEE WORD CRM To: SEE WORD CRM Rationale: References bandwidth to 3.3.1.1. New values are consistent with the wider bandwidth; no change in received power over the previous bandwidth.	PO Resolution: A/C Rationale: Removed "and subsequent satellites" from Table 3-Vb. Concurrence: Concur Rationale:	Changes made real time Stakeholders concur
3	M. Jeffris MITRE	Page: Para: 3.3.1.4	Critical	Comment: This section should be consistent with 3.3.1.1. Suggested Change: From: In-band spurious transmissions shall be at least 40 dB below the unmodulated L1 and L2 carriers over the allocated 20.46 MHz channel bandwidth.	PO Resolution: A/C Rationale: 9/29/09: Modified verbiage slightly during ICWG to improve clarity. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: In-band spurious transmissions, from the SV, shall be at least 40 dB below the unmodulated L1 carrier over the band specified in 3.3.1.1. In-band spurious transmissions are defined as transmissions within the bands specified in 3.3.1.1 which are not expressly components of the L1 and L2 waveforms. Rationale: References bandwidth to 3.3.1.1.		
2	M. Jeffris MITRE	Page: Para: 3.3.1.2	Critical	Comment: Clarify wording and change numerical value to match 3.3.1.1. Suggested Change: From: Correlation loss is defined as the difference between the SV power received in a 20.46 MHz bandwidth and the signal power recovered in an ideal correlation receiver of the same bandwidth. To: Correlation loss is defined as the difference between the signal power received in the bandwidth defined in 3.3.1.1 and the signal power recovered in an ideal correlation receiver of the same bandwidth, which ideally performs lossless correlation using an exact replica of the waveform with an ideal sharp-cutoff filter whose bandwidth corresponds to that in 3.3.1.1, and whose phase is linear over that bandwidth Rationale: References bandwidth to 3.3.1.1 and makes wording consistent with other ISs and ICDs.	PO Resolution: A/C Rationale: Comment is OBE. These sections have been modified per the "Correlation Loss/Phase Carrier Noise" WG 10/01/09: This section was rewriiten real-time during the ICWG after a rigorous discussion. The rewrite should addresses the commentors concern. Concurrence: Concur Rationale:	5/22/08: An action item was created to coordinate across all doc's (200, 705, 800). They will be holding a working group to complete that action. 02/19/09: Bud Bakeman has proposed new language; new language will be reviewed at the next ICWG. See comment 71. 08/27/09: This should be resolved by the M. Deelo WG.
1	M. Dash GPA	Page: Para: 3.3.1.1	Critical	Comment: Clarify wording and change numerical value in first paragraph. Suggested Change: From: The signals shall be contained within two 20.46-MHz bands centered about L1 and L2.	PO Resolution: A/C Rationale: See comment #38 for wording used. Concurrence: Concur Rationale:	5/22/08: Recommendation to place a table in document for clarification. Accept comment. 02/16/08: Wording changed in real-time at 19 Nov 08 ICWG. See comment 38.

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				To: For Block IIR, IIR-M, and IIF satellites, the signals shall be contained within two 20.46-MHz bands centered about the L1 and L2 nominal frequencies. For Block III and subsequent satellites, the requirements specified in this IS shall pertain to the signal contained within a 30.69MHz band centered about the L1 and L2 nominal frequencies. Rationale: Extends bandwidth for better potential performance and to enable spectrum protection over a wider set of frequencies.		
110	M. Dash GPA	Page: Para: 3.3.4	Substantive	Comment: The wording "The most common limit is 10" is really vague and provides no value given there are a specific number of bits assigned to this field for legacy Nav and LC2. Change to read "The most significant bits of the Z-count are a binary representation of the sequential number assigned to the current GPS week (see paragraph 6.2.4). This is modulo representation, limited by the number of bits allocated to GPS Week in the NAV Messagephysical space available. The number of bits allocated to GPS Week in the legacy NAV is 10, and for CNAV is 13The most common limit is 10." Suggested Change: From: To: Rationale: This section needs to give guidance specific to this interface document. A vague desciption that the implementation of GPS Week can vary based on how much space is made available is vague and meaningless. The IS should clearly describe the space being made available for GPS Week as provided in the IS.	PO Resolution: Reject Rationale: Need to discuss at ICWG. 7/23/09: This comment is OBE because the original text that it is referring to has been stricken. Concurrence: Concur Rationale:	11/19/08: Stakeholders agree with some modification. Changes made in real time during ICWG. Removed "This is modulo representation, limited by the physical space available. The most common limit is 10" from original text. This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
109	M. Dash GPA	Page: Para: 3.3.4	Substantive	Comment: The PIRN is proposing a to change from something that was true for Block II SVs, but not Block III, to something that is not true for Block II SVs, but true for Block III. This ICD is not only for GPS III. Instead of the change being proposed, make the following change: "Time stated in this manner is referred to as Z-count, which is given in as a 32-bit binary number consisting of two parts as follows:" Suggested Change: From: To: Rationale: The number of bits the SV allocates to Z-count is not part of the actual definition of Z-count, just part of the implementation in that SV. The actual definition of Z-count is not based on number of bits. Since this information is SV peculiar, and has nothing to do with the interface definition at all, it doesn't belong in the IS, but instead in some SV specification.	PO Resolution: Reject Rationale: Need ICWG discussion. 7/23/09: This comment is OBE because the original text that it is referring to has been stricken. Concurrence: Concur Rationale:	11/19/08: OBE This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.
102	T. Nagle GPC	Page: 196 Para: Table 30-XI	Substantive	Comment: Terms "totGGTO" and "WNotGGTO" are not defined in the CNAV message types. Suggested Change: From: "totGGTO" and "WNotGGTO" To: tGGTO" and "WNGGTO" Rationale: Correction	PO Resolution: Accept Rationale: Need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Discuss with Ed Powers. Determine if there has been any preference with Galileo.
101	T. Nagle GPC	Page: 195 Para: 30.3.3.8.2	Substantive	Comment: In the equation, terms "totGGTO", "WN", and "WNotGGTO" are not defined in the CNAV message types.	PO Resolution: Accept Rationale: Need ICWG discussion.	11/19/08: Discuss with Ed Powers. Determine if there has been any preference with Galileo.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: “totGGTO”, “WN”, and “WNotGGTO” To: “tGGTO”, “WNn”, and “WNGGTO” Rationale: Correction	Concurrence: Concur Rationale:	
100	T. Nagle GPC	Page: 186 Para: 30.3.3.6.2	Substantive	Comment: Term “WN” in the equation is not defined in the CNAV message types. Suggested Change: From: WN To: WNn Rationale: Correction	PO Resolution: Reject Rationale: Need ICWG discussion. Concurrence: Concur Rationale:	WN is found in section 20.3.3.5.2.4; there is no mention of WNn in the document. 11/19/08: Withdrawn
98	T. Nagle GPC	Page: 171 Para: 30.3.3.2.4	Substantive	Comment: Please check the second equation Suggested Change: From: … + URAoc1(t – top) + … To: … + URAoc1(t – top - 93,600) + … Rationale: Correction	PO Resolution: Reject Rationale: Need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Withdrawn
93	T. Nagle GPC	Page: 153 Para: Figure 30-8	Substantive	Comment: Incorrect label and bit number for this parameter. Suggested Change: From: t0GGTO 14 BITS To: tGGTO 16 BITS Rationale: Consistency (with IS-GPS-800) and correct number of bits for this parameter.	PO Resolution: Defer Rationale: Need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: See disposition of comment 102. The figure should contain 16 bits.
91	T. Nagle GPC	Page: 109 Para:	Substantive	Comment: This section describes how almanac data for the first 32 PRNs (SVs) are reported.	PO Resolution: Defer	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		20.3.3.5.1.2		Nowhere in the document is there any information concerning how almanac data will be reported for any of the other GPS PRNs defined in Section 6.3.5. Recommend that IS-GPS-200D include information on how almanac data will be reported for the rest of the GPS PRNs defined in Section 6.3.5. Suggested Change: From: To: Rationale: Without this information, receiver manufacturers will not know how to implement PRNs greater than 32.	Rationale: Action item assigned Karl Kovach to produce language (possibly in section 6). Concurrence: Concur Rationale:	
88	T. Nagle GPC	Page: 87 Para: 20.3.3.3.1.5	Substantive	Comment: 20.3.3.31.5 says "The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters." It is not clear what specifically is meant by “the correction parameters.” Define what are considered the “correction parameters”. Specifically, do correction parameters include the URA, i.e., will there be a change in IODC when there is a change in the URA? Will this continue even when GPS III uses the URA as an integrity parameter? Suggested Change: From: To: Rationale: Clarification	PO Resolution: Defer Rationale: For PSCIA Working Group 8/6/09: ICC to set-up a WG to discuss this. See AI #28 Concurrence: Concur Rationale:	11/19/08: “Correction parameter” may not be the correct term. Stakeholders concur to send to PSICA working group
87	T. Nagle GPC	Page: 86 Para: 20.3.3.3.1.3	Substantive	Comment: GPS III plans to use the URA as an integrity parameter. In anticipation of that use, the definition for URA should be better defined for	PO Resolution: Accept Rationale: For PSCIA Working Group	11/19/08: Stakeholders concur with PO resolution..

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				when it is used as an integrity parameter vs. for when it is used as an accuracy parameter. Make clear whether user should use the upper bound, lower bound, or nominal value of URA when the URA is used as an integrity parameter. Suggested Change: From: To: Rationale: Remove ambiguity for how to interpret the URA integrity parameter	8/27/09: Add a note that states that the upper bound should be used Concurrence: Concur Rationale:	
86	T. Nagle GPC	Page: 69 Para: Figure 20-1	Substantive	Comment: Figure note explaining the letter "C" does not reflect assignment of bit 23 as the Integrity Status Flag. This note appears in each sheet of the figure (11 sheets total). Suggested Change: From: C = TLM BITS 23 AND 24 WHICH ARE RESERVED To: C = TLM BITS 23 AND 24. BIT 23 IS THE INTEGRITY STATUS FLAG AND BIT 24 IS RESERVED. Rationale: Reflects assignment of bit 23 as the integrity status flag.	PO Resolution: Accept Rationale: For PSCIA Working Group Concurrence: Concur Rationale:	11/19/08: Stakeholders concur with the recommended change. Need to ensure that all pages of the figure are updated accordingly.
83	T. Nagle GPC	Page: 20 Para: 3.3.1.8	Substantive	Comment: Specifying a bias-like error with a 2-sigma number sounds wrong, as sigma relates to Gaussian distributions of random errors. I interpret the requirement as “the offset between P(Y) and C/A transitions will exceed 10 ns less than 4.6% of the time” That is, the bias could stay at 9 ns forever and be OK. Suggested Change:	PO Resolution: Reject Rationale: For PSCIA Working Group 9/1/09: Comment is OBE. Phase Noise/Correlation WG has provided new language to replace this section. Concurrence: Concur Rationale:	11/19/08: Assign Action to Mike Deelo to have the Phase Noise/Correlation Loss working group discuss group delay also.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: the offset between P(Y) and C/A transitions will never exceed 10		
82	T. Nagle GPC	Page: 20 Para: 3.3.1.7.3	Substantive	Comment: Please specify that the group delay differential in this section is an addition to the terrestrial group delay differential. The additional bias of group delay differential for SSV users, with respect to EC users, is specified as "values", given by the Block III Space Contractor. Please clarify where this additional bias is a single number or a value range. Suggested Change: From: The group delay differential between the radiated L1 with respect to the Earth-coverage signal for users of the Space Service Volume are given as values by the Block III Space Contractor. To: An additional group delay differential between the radiated L1 with respect to the Earth-coverage signal for users of the Space Service Volume is given as a value by the Block III Space Contractor. This bias value may be different for other SVs. Rationale: Clarity	PO Resolution: A/C Rationale: Need ICWG discussion. Concurrence: Concur Rationale: Concurred by AJ on 8/6/09	11/19/08: Section edited to read as follows "The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume shall be given as values by the Block IIIA Space Contractor (TBD)". Action to GPSW/GPC to determine where the equations and parameters should be located. Remove these equations and SSV discussion from this document. Provide a reference/pointer to the TBD location for this information. Stakeholders concur. Verify with Steve Brown that all appropriate sections have been removed. Contact POC for ICD-GPS-240. 29-sept-09: ICWG concured the text is appropriate as-is.
81	T. Nagle GPC	Page: 20 Para: 3.3.1.7.3	Substantive	Comment: Normally, the group delay differential includes a bias component and a random component. It is unclear how "an additional 3.5 nanoseconds (two sigma) accuracy degradation" applies to. Does this indicate that the mean value of this bias is zero? If this means, an additional 1.75 ns applies to the absolute value of the mean differential delay, then the uncertainty of this additional bias will affect the random component of the group delay differential. Please clarify.	PO Resolution: A/C Rationale: Need ICWG discussion. Concurrence: Concur Rationale: Concurred by AJ on 8/6/09	11/19/08: Comment is OBE - section edited to read as follows "The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume shall be given as values by the Block IIIA Space Contractor (TBD). The details are provided in TBD". Action to GPSW/GPC to determine where the equations and parameters should be located. Remove

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: Clarity		these equations and SSV discussion from this document. Provide a reference/pointer to the TBD location for this information. Stakeholders concur. Verify with Steve Brown that all appropriate sections have been removed. Contact POC for ICD-GPS-240.
80	T. Nagle GPC	Page: 19 Para: 3.3.1.7.3	Substantive	Comment: The additional bias of group delay differential for SSV users, with respect to EC users, is specified as "values", given by the Block III Space Contractor. Please clarify where this additional bias is a single number or a value range. Suggested Change: From: To: Rationale: Clarity	PO Resolution: A/C Rationale: Need ICWG discussion. Concurrence: Concur Rationale: Concurred by AJ on 8/6/09	11/19/08: Comment is OBE - section edited to read as follows "The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume shall be given as values by the Block IIIA Space Contractor (TBD). The details are provided in TBD". Action to GPSW/GPC to determine where the equations and parameters should be located. Remove these equations and SSV discussion from this document. Provide a reference/pointer to the TBD location for this information. Stakeholders concur. Verify with Steve Brown that all appropriate sections have been removed. Contact POC for ICD-GPS-240.
79	T. Nagle GPC	Page: 19 Para: 3.3.1.6.1 Table 3-VC	Substantive	Comment: These signal power levels are much higher than the signal power levels specified. P(Y) C/A or L2C L1 23.5 deg -187dBW -184.0 dBW L2 26.0 deg -186.0 dBW -183.0 dBW Suggested Change: From: To: Rationale: Correction	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	11/19/08: Stakeholders concur
78	T. Nagle	Page: 19	Substantive	Comment: Incorrect signal power levels.	PO Resolution: Accept	11/19/08: Stakeholders concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	GPC	Para: 3.3.1.6.1 Table 3-VC		Add a "-" sign to all the power levels in the table, and change Table 3-VC to small c. Suggested Change: From: To: Rationale: Correction	Rationale: Concurrence: Concur Rationale:	
77	T. Nagle GPC	Page: 19 Para: 3.3.1.6.1	Substantive	Comment: Please define the SSV users where the received signal levels in Table 3-VC apply, (LEO, MEO, or GEO?). Suggested Change: From: To: Rationale: Important info to validate received signal levels.	PO Resolution: Accept Rationale: Values are for GEO. Will make the change. Concurrence: Concur Rationale:	11/19/08: OBE - See Action Item #17 for IS-GPS-800
76	T. Nagle GPC	Page: 16 Para: 3.3.1.6.1	Substantive	Comment: worst normal orientation does not make sense for a "circularly polarized antenna Omit "at worst normal orientation" from sentence 2. Suggested Change: From: To: Rationale: Removes potential confusion	PO Resolution: Accept Rationale: Reference receiver antenna should be assumed ideal. Concurrence: Concur Rationale: Concurred by AJ on 8/6/09	11/19/08: State "at normal orientation". Stakeholders concur. Change made in real time.
75	T. Nagle GPC	Page: 16 Para: 3.3.1.6	Substantive	Comment: "power gain" is not defined. Suggest change from "power gain" to "antenna gain" for angles beyond the EOE. Between EOE and nadir, the specified 2 dB drop may be intended to include space loss, Clarify which is meant.	PO Resolution: A/C Rationale: Do not want to spec. a particular antenna design in the interface document. Want to spec. the power envelope.	11/19/08: Defer. See Action Item #17 for IS-GPS-800. 8/6/09: Action to Munoz to provide WAS/IS text. CLOSED.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: Removes potential confusion	Concurrence: Concur Rationale:	
72	T. Nagle GPC	Page: 14 Para: 3.3.1.3	Substantive	Comment: Carrier phase noise should be specified as suggested for IS-GPS-800 in telecons during August 08. Delete any reference to tracking loop bandwidth and specify phase noise single-sided spectral density (maybe with a figure). "The single-sideband phase noise spectral density of the L-band carrier shall not exceed: -30 dBc at $\square f = 1$ Hz decreasing 30 dB/decade until it reaches $\square f = 10$ Hz. From 10 Hz to 10,000 Hz it decreases at 10 dB per decade reaching -90 dBc at $\square f = 10{,}000$ Hz." Suggested Change: From: To: Rationale: Same frequency source as L1C on the Block IIIA satellites. It is not appropriate to assume User Equipment receiver implementation. IS should specify the signal-in-space, not receiver performance.	PO Resolution: Reject Rationale: Defer for discussion at Public ICWG. 8/6/09: Action to M. Deelo to provide WAS/IS text that meets the comment originators intent 9/1/09: M. Deelo WG has provided new language to replace this text. Concurrence: Concur Rationale:	11/18/08: Comment was accepted with some modifications. The language of the proposed change will be modified and incorporated in the ICWG minutes for stakeholder review.
71	T. Nagle GPC	Page: 14 Para: 3.3.1.2	Substantive	Comment: Correlation Loss in this paragraph has had a long-standing inconsistency: with this loss defined as the difference between power received in 20.46 MHz bandwidth and that recovered from a perfect 20.46 MHz correlator, there should be no additional loss due to "ideal receiver waveform distortion". Correlation Loss for C/A and L2C codes for the Block IIIA SVs should be consistent with	PO Resolution: Reject Rationale: Defer for discussion at Public ICWG 8/6/09: M. Deelo to provide WAS/IS text 9/1/09: This comment is OBE as the section has been rewritten per the CL/PN WG Concurrence: Concur	11/18/08: New proposed change presented at ICWG by Bud Bakeman. Action assigned to Mike Deelo to set up meeting with appropriate stakeholders to revise proposed change. Comment to remain open.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				L1C. Make text consistent with Paragraph 3.2.1.5 in IS-GPS-800: “Correlation loss is defined as the difference between the signal power received in the bandwidth defined in 3.3.1.1 and the signal power recovered in an ideal correlation receiver of the same bandwidth using an exact replica of the waveform within an ideal sharp-cutoff filter bandwidth centered at L1 and L2, whose bandwidth corresponds to that specified in 3.3.1.1 and whose phase is linear over that bandwidth. The correlation loss apportionment due to SV modulation and filter imperfections shall be 0.6 dB maximum for the Block IIA/IIR/IIR-M/IIF SVs and 0.2 dB maximum for the Block IIIA SVs and subsequent.” The 0.2 dB value for the IIIAs presumes that the IS-GPS-800 L1C correlation loss will be applicable to C/A, L2C, and P(Y)-code. This should certainly be true at least for C/A on L1. If not possible for P(Y) and L2C additionally, then this section should provide separate values for the C/A, L2C and P(Y)-code signals. Suggested Change: From: To: Rationale: Correctness – on the IIIAs and beyond, L1C, C/A and L2C code modulation and effects of filter imperfections should be the same; and as noted, this paragraph has been historically inconsistent in its provision of a 0.4 dB loss for “ideal UE waveform distortion” for a receiver that is defined to be perfect and with the same	Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				bandwidth that SV signal power is defined for.		
70	T. Nagle GPC	Page: 5 Para: 3.2.1/2nd para	Substantive	Comment: Clarify wording to avoid misinterpretation due to incomplete definition. Suggested Change: From: "The SVs shall also be capable of initiating and terminating the broadcast of NSCM and/or NSCL code(s) independently of each other, in response to CS command." To: "The SVs shall also be capable of initiating and terminating the broadcast of NSC, NSCM, NSCL or NSY code individually, or any applicable combination, in response to CS command." Rationale: Incomplete requirements	PO Resolution: Reject Rationale: Changes meaning and is not correct. Concurrence: Concur Rationale:	11/19/08: Accept PO resolution – new requirement needs verification.
69	T. Nagle GPC	Page: 5 Para: 3.2.1/2nd para	Substantive	Comment: Clarify wording to avoid misleading interpretation Make changes as indicated: "The SVs will transmit intentionally "incorrect" versions of the L2CM and L2 CL codes where needed to protect the users from receiving and utilizing anomalous NAV Suggested Change: From: To: Rationale: The cause of anomalous NAV signals is not limited to "a malfunction in the SV's reference frequency generation system." For example, there might be a malfunction of OCX state vector generation that results in erroneous NAV data while there is no fault or malfunction onboard SV's reference frequency generation system.	PO Resolution: Accept Rationale: see comment #68 Concurrence: Concur Rationale:	11/19/08: Changes made to section 3.2.1 in real time during the ICWG – replaced "NAV" with "navigation." Stakeholders agree with the comment's proposed deletion. Action assigned to Thomas Davis to identify all inappropriate instances of "NAV" and replace with "navigation." (should include all public documents?)
68	T. Nagle	Page: 5	Substantive	Comment: Clarify wording to avoid misleading	PO Resolution: Accept	11/19/08: Changes made to section 3.2.1 in

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	GPC	Para: 3.2.1/1st para		interpretation. Make changes as indicated: "The SVs will transmit intentionally "incorrect" versions of the C/A and P(Y) codes where needed to protect the users from receiving and utilizing anomalous NAV Suggested Change: From: To: Rationale: The cause of anomalous NAV signals is not limited to "a malfunction in the SV's reference frequency generation system." For example, there might be a malfunction of OCX state vector generation that results in erroneous NAV data while there is no fault or malfunction onboard SV's reference frequency generation system.	Rationale: Deleted Example Concurrence: Concur Rationale:	real time during the ICWG – replaced "NAV" with "navigation." Stakeholders agree with the comment's proposed deletion. Action assigned to Thomas Davis to identify all inappropriate instances of "NAV" and replace with "navigation."
64	T. Nagle GPC	Page: Gen Para:	Substantive	Comment: Add complete detail which will allow receivers to be designed developed and produced that can be properly operational utilizing all available PRN codes documented through 63 Suggested Change: From: To: Rationale:	PO Resolution: Defer Rationale: Duplicate comment; see comment # 10. 8/6/09: Related to constellation expansion PPIRN to be supplied from K. Kovach Concurrence: Concur Rationale:	11/19/08: Action assigned to Karl Kovach. See Action item #8 against IS-GPS-200
63	T. Nagle GPC	Page: Para: Title Pages	Substantive	Comment: Title pages of document should indicate a unique draft version number or date of this redline version. This draft version needs to be clearly identifiable from other draft version that might exist now or the near future. Suggested Change:	PO Resolution: Accept Rationale: Documents are differentiated by date in the filename, however, the date does not appear in the filename when posted on the GPSW website. For future drafts, will add the draft date to the header as follows: DRAFT DOCUMENT: FOR ICWG DISCUSSION PURPOSES	11/19/08: Action assigned to review older PIRNs for previous language – Thomas Davis.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: No draft version number or date. To: Add unique draft version number or date. Recommend identifying it as IS-GPS-200D draft IRN-200D-002 with a draft version date, but specific identifier is not important as long as it is unique. Rationale: Not having a unique identifier for this version can lead to confusion between versions for all except the person in control of the latest version. This appears to be a draft including proposed IRN-200D-002.	ONLY (MM-DD-YYYY) Concurrence: Concur Rationale:	
52	S. Brown LMCO	Page: 67 Para: 20.3.2	Substantive	Comment: Suggested Change: From: The TLM word shall be transmitted first, immediately followed by the HOW. The latter shall be followed by eight data words. To: The TLM word shall be transmitted first, immediately followed by the HOW. The HOW shall be followed by eight data words. Rationale: Now that this is a stand-alone object, recommend replacing the word "latter" with "HOW" so that the requirement makes sense standing on its own	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	11/19/08: Stakeholders concur.
46	S. Brown LMCO	Page: 16 Para: 3.3.1.5	Substantive	Comment: Suggested Change: From: Referring to the phase of the P carrier when Pi(t) equals zero as the "zero phase angle", the P(Y)- and C/A-code generator output shall control the respective signal phases in the following manner: when Pi(t) equals one, a 180-degree phase reversal of the P-carrier occurs; when Gi(t)	PO Resolution: Reject Rationale: the document already contains a “shall”. The “Was” / “Is” text does not match the rationale. Concurrence: Concur Rationale:	11/19/08: Comment is deferred – will be revisited when documents are placed in DOORS.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				equals one, the C/A carrier advances 90 degrees; when the Gi(t) equals zero, the C/A carrier shall be retarded 90 degrees (such that when Gi(t) changes state, a 180-degree phase reversal of the C/A carrier occurs). To: Referring to the phase of the P carrier when Pi(t) equals zero as the "zero phase angle", the P(Y)- and C/A-code generator output shall control the respective signal phases in the following manner: when Pi(t) equals one, a 180-degree phase reversal of the P-carrier occurs; when Gi(t) equals one, the C/A carrier advances 90 degrees; when the Gi(t) equals zero, the C/A carrier will be retarded 90 degrees (such that when Gi(t) changes state, a 180-degree phase reversal of the C/A carrier occurs). Rationale: Changed a will to a shall to have a requirment; to facilitate requirements verification.		
45	S. Brown LMCO	Page: 10 Para: 3.2.1.5	Substantive	Comment: Move Code Phase Assignments (IIR-M, IIF, and III) from Chapter 6 to Chapter 3 Suggested Change: From: To: Rationale: Move to account for PRN expansion beyond 32 operational PRNs. Change made in response to SDR-80 and SDR-81 action items.	PO Resolution: Defer Rationale: See CRM comments #11 and #12. Concurrence: Concur Rationale:	11/19/08: Action assigned to Karl Kovach. See Action item #8 against IS-GPS-200
44	S. Brown LMCO	Page: 8 Para: 3.2.1.5	Substantive	Comment: Move Code Phase Assignments from Chapter 6 to Chapter 3 Suggested Change: From:	PO Resolution: Defer Rationale: See CRM comments #11 and #12. Concurrence: Concur Rationale:	11/19/08: Action assigned to Karl Kovach. See Action item #8 against IS-GPS-200

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: Move to account for PRN expansion beyond 32 operational PRNs. Change made in response to SDR-80 and SDR-81 action items.		
40	Dr. Pam Neal SE&I	Page: Para: 30.3.3.1.1.1	Substantive	Comment: Clarify wording in PIRN-002 Suggested Change: From: On IIF, these 13 bits are comprised of 10 LSBs (WN) that represent the ten MSBs (WNe) of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1, and 3 MSBs which are three extra bits that extend the range of transmission week number from 10 to 13 bits. To: On IIF, these 13 bits are comprised of 10 LSBs (WN) that represent the ten LSBs of the week number as qualified in paragraph 20.3.3.3.1.1, and 3 MSBs which are three extra bits that extend the range of transmission week number from 10 to 13 bits. Rationale: Refers to 29-bit Z-count, which has been changed in other areas to 32-bit Z-count. However, changing to a 32-bit Z-count here would cause more confusion. Alternatively, I believe the entire sentence could be deleted without loss of clarity. It was originally in the ICD so the reader could reconcile the longer week number with the available number of bits as described in section 3.3.4. Since 3.3.4 has been changed, this sentence is no longer needed.	PO Resolution: Reject Rationale: Comment is OBE. The entire sentence was removed. Concurrence: Concur Rationale:	11/19/08: Removed entire sentence “On IIF, these 13 bits are comprised of 10 LSBs (WN) that represent the ten MSBs (WNe) of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1, and 3 MSBs which are three extra bits that extend the range of transmission week number from 10 to 13 bits.” Changes made in real time during ICWG. Stakeholders concur.
39	Dr. Pam Neal SE&I	Page: Para: 3.3.4	Substantive	Comment: Clarify wording in PIRN-002 Suggested Change: From: b. The most significant bits of the Z-count are a binary representation of the sequential	PO Resolution: A/C Rationale: Concurrence: Concur	11/19/08: Comment OBE –Stakeholders agree with some modification. Changes made in real time during ICWG. Removed “This is modulo representation, limited by the physical space available. The most common limit is 10” from original text.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				number assigned to the current GPS week (see paragraph 6.2.4). This is modulo representation, limited by the physical space available. The most common limit is 10. To: b. The most significant bits of the Z-count are a binary representation of the sequential number assigned to the current GPS week (see paragraph 6.2.4). This is modulo representation, limited by the physical space available in the SV. The most common limit is 10 bits. Rationale: Clarification of limitations	Rationale:	
38	Dr. Pam Neal SE&I	Page: Para: 3.3.1.1	Substantive	Comment: Clarify wording to avoid confusion and make document consistent with IS-GPS-705 and IS-GPS-800 Suggested Change: From: For Block IIA, IIR, IIR-M, and IIF satellites, the signals shall be contained within two 20.46-MHz bands centered about the L1 and L2 nominal frequencies. For Block III and subsequent satellites, the requirements specified in this IS shall pertain to the signal contained within two 30.69MHz bands, one centered about the L1 nominal frequency and one centered about the L2 nominal frequency. To: The requirements specified in this document shall pertain to the signal as follows: ☐ For Block IIA, IIR, IIR-M, and IIF satellites the signal is contained within two 20.46MHz bands, one centered about the L1 nominal frequency and one centered about the nominal L2 frequency. ☐ For Block III and subsequent satellites, the signal is contained within two 30.69MHz bands, one centered about the L1 nominal frequency and one centered about the nominal L2 frequency.	PO Resolution: A/C Rationale: Accept with comment. The bullet format will not be used. However it will be reworded for clarity. Concurrence: Concur Rationale:	11/19/08: Changes made in real time during the ICWG to section 3.3.1.1 – stakeholders concur.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Using similar wording across documents avoids potential confusion.		
37	Al Buennagel Aerospace	Page: Para:	Substantive	Comment: Too causal switch to 32 ZCount in IS-200, against 30 years of use of 29 bits. Add transition material, then use both values. Suggested Change: From: To: Rationale: Jarring transition from past	PO Resolution: Reject Rationale: Discuss at ICWG. 32 bit count is the SV internal representation for GPS III and should be transparent to the user. Concurrence: Concur Rationale:	11/19/08: OBE - See related comment 49 for disposition. For this reason, concurrance changed to 'concur'.
35	T. Nagle GPC	Page: 128, 129 Para: Tables 20-XI, 20-XII, 1	Substantive	Comment: It is not clear what user equipment should do when it receives an IODC that is not defined in either Table 20-XI or 20-XII of IS-GPS-200D, and therefore the fit interval is not defined (at least the fit interval is not defined if the fit interval flag is not set to 0. A value of 0 would indicate that the fit interval is 4 hours). Tables 20-XI and 20-XII should clearly indicate the curve fit intervals to use for every possible value of IODC. Suggested Change: From: To: Rationale: Clarification	PO Resolution: Accept Rationale: 5/23/08: Accept comment and will include in document. Concurrence: Concur Rationale:	
34	T. Nagle GPC	Page: 188 Para: 30.3.3.9	Substantive	Comment: Correction bits for message type 36. Suggested Change: From: “The requisite bits shall occupy bits 39 through 270 of message type 15 and bits 128 through 275 of message type 36.	PO Resolution: A/C Rationale: 5/23/08: Accept with comment. For message type 15: “and bits 39 through 274” not 270. Change made real-time. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: "The requisite bits shall occupy bits 39 through 270 of message type 15 and bits 128 through 271 of message type 36." Rationale: Correction	Rationale:	
33	T. Nagle GPC	Page: 187 Para: 30.3.3.8.2	Substantive	Comment: Equation Correction Add ")" in front of "+ A2GGTO". Suggested Change: From: To: Rationale: Equation correction	PO Resolution: Accept Rationale: 5/23/08: Comment accepted barring confirmation by ICC. Updated document real-time. Concurrence: Concur Rationale:	
31	T. Nagle GPC	Page: 155 Para: 30.3.3.1.1	Substantive	Comment: ICD does not define the Integrity Status Flag Add text to paragraph 30.3.3.1.1 to describe the Integrity Status Flag as shown in the attached draft PIRN-200D-XXX(ISF). Suggested Change: From: To: Rationale: The Integrity Status Flag is an authenticated requirement specified in SS-SYS-800, SS-CS-800, and SS-SS-800. Failure to include the ISF in this ICD before the next OCX RFP will result in cost impact to the OCX program.	PO Resolution: A/C Rationale: 5/23/08: Accept comment. See resolution in IS-GPS-800 CRM on 22 May 08 Concurrence: Concur Rationale:	11 Jun 08: Change made 29-sept-09: added another sentence at the end of the section. Refer to document for change.
30	T. Nagle GPC	Page: 141 Para: Fig. 30-1	Substantive	Comment: ICD does not define the Integrity Status Flag. Modify figure 30-1 to show the Integrity Status Flag as shown in the attached draft PIRN-200D-XXX(ISF).	PO Resolution: Accept Rationale: 5/23/08: Accept comment. See resolution in IS-GPS-800 CRM on 22 May 08	11 Jun 08: Change made

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: The Integrity Status Flag is an authenticated requirement specified in SS-SYS-800, SS-CS-800, and SS-SS-800. Failure to include the ISF in this ICD before the next OCX RFP will result in cost impact to the OCX program.	Concurrence: Concur Rationale:	
28	T. Nagle GPC	Page: 106 Para: 20.3.3.5.1.2, 1	Substantive	Comment: This section describes how almanac data for the first 32 PRNs (SVs) are reported. Nowhere in the document is there any information concerning how almanac data will be reported for any of the other GPS PRNs defined in Section 6.3.5. Recommend that IS-GPS-200D include information on how almanac data will be reported for the rest of the GPS PRNs defined in Section 6.3.5. Suggested Change: From: To: Rationale: Without this information, receiver manufacturers will not know how to implement PRNs greater than 32.	PO Resolution: Defer Rationale: 5/23/08: Action for Aerospace to present constellation expansion. Results will be presented at next ICWG (+1?) Concurrence: Concur Rationale:	
27	T. Nagle GPC	Page: 84 Para: 20.3.3.3.1.5 1	Substantive	Comment: 20.3.3.31.5 says "The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters." It is not clear what specifically is meant by “the correction parameters.” Define what are considered the “correction	PO Resolution: Defer Rationale: 5/23/08: Defer. There is an action to generate responses within comment. 02/19/09: Duplicate of Comment # 88 Concurrence: Concur	Potentially delete if it is exactly the same as #88

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				parameters". Specifically, do correction parameters include the URA, i.e., will there be a change in IODC when there is a change in the URA? Will this continue even when GPS III uses the URA as an integrity parameter? Suggested Change: From: To: Rationale: Clarification	Rationale:	
26	T. Nagle GPC	Page: 84 Para: 20.3.3.3.1.31	Substantive	Comment: GPS III plans to use the URA as an integrity parameter. In anticipation of that use, the definition for URA should be better defined for when it is used as an integrity parameter vs. for when it is used as an accuracy parameter. Make clear whether user should use the upper bound, lower bound, or nominal value of URA when the URA is used as an integrity parameter. Suggested Change: From: To: Rationale: Remove ambiguity for how to interpret the URA integrity parameter	PO Resolution: Accept Rationale: 5/23/08: Accept comment. See resolution in IS-GPS-800 CRM on 22 May 08 02/19/09: Duplicate of Comment # 87 Concurrence: Concur Rationale:	
25	T. Nagle GPC	Page: 82 Para: Fig. 20-2	Substantive	Comment: ICD does not define the Integrity Status Flag. Modify figure 20-2 to show the Integrity Status Flag as shown in the attached draft PIRN-200D-XXX(ISF). Suggested Change:	PO Resolution: Accept Rationale: 5/23/08: Accept comment and will be incorporate into document. However, a working group will be created to discuss further. Concurrence: Concur	11 Jun 08: Change made

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: The Integrity Status Flag is an authenticated requirement specified in SS-SYS-800, SS-CS-800, and SS-SS-800. Failure to include the ISF in this ICD before the next OCX RFP will result in cost impact to the OCX program.	Rationale:	
24	T. Nagle GPC	Page: 81 Para: 20.3.3.1	Substantive	Comment: ICD does not define the Integrity Status Flag. Add text to paragraph 20.3.3.1 to describe the Integrity Status Flag as shown in the attached draft PIRN-200D-XXX(ISF). Suggested Change: From: To: Rationale: The Integrity Status Flag is an authenticated requirement specified in SS-SYS-800, SS-CS-800, and SS-SS-800. Failure to include the ISF in this ICD before the next OCX RFP will result in cost impact to the OCX program.	PO Resolution: Accept Rationale: 5/23/08: Accept comment and will incorporate into document. However, a working group will be created to discuss further. Concurrence: Concur Rationale:	11 Jun 08: Change made 29-sept-09: there is discussion with URAoe and ORAoc terms. K. Kovach to provide clarification. Updated document realtime at the ICWG. M. Munoz recommends to deleting the entire first paragraph. Also there has been some new information divulged at the ICWG that the Bit 23 cannot be used for this purpose per AEP OCS 5.5 configuration. it can be a 1 or a 0. Aj has stated that the first two words are generated by the SV's not the control segment. S. Brown has also stated that for the IIR SVs, has the bit set at "0". Action item is required to investigate IIA, and IIF.
23	T. Nagle GPC	Page: 56i Para: 6.3.5.3	Substantive	Comment: More than 80 L2 code pairs are added. Suggested Change: From: “An additional set of 80 L2 CM-/L2 CL-code sequence pairs are selected and assigned with PRN numbers in this section shown in Table 6-II. Among the 80 additional sequences, PRN numbers 38 through 63 are reserved for future GPS SVs, and PRN numbers 159 through 210 are reserved for	PO Resolution: A/C Rationale: Concurrence: Concur Rationale:	5/23/08: Ensure there is coordination amongst code pairs and look at table 6-11 11/07/08: The written language refers to the assignment of for L2 CM-/L2 CL code sequence pairs. Table 6-II has 78 code pairs (not 80). Code pairs 64 - 158 are unassigned. The document will reflect 78 code pairs. 8/24/09: Changed to 78

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				other GNSS application. PRN allocations do not exist for numbers 64 through 158 for L2 CM-/L2 CL-code." To: "An additional set of 173 L2 CM-/L2 CL-code sequence pairs are selected and assigned with PRN numbers in this section shown in Table 6-II. Among the 173 additional sequences, PRN numbers 38 through 63 are reserved for future GPS SVs, PRN numbers 159 through 210 are reserved for other GNSS application, and PRN numbers 64 through 158 are not used." Rationale: More precise since there are 173 code pairs in table 6-II.		
22	T. Nagle GPC	Page: 15 Para: 3.3.1.6 2nd para	Substantive	Comment: Conflicting information on the L1 off-axis power gain (i.e., can't have both 10 dB and 18 dB power gain at EOE to 20 degrees off nadir. Suggested Change: From: "… nor more than 10 dB from EOE to 20 degrees off nadir, and no more than 18 dB from EOE to 23 degrees off nadir;" To: "… nor more than 10 dB from EOE to 20 degrees off nadir, and no more than 18 dB from 20 to 23 degrees off nadir;" Rationale: Conflicting information	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	5/23/08: Withdraw comment.
20	T. Nagle GPC	Page: 5 Para: 3.2.1.6	Substantive	Comment: Clarify wording to avoid confusion. Make changes as indicated: "The NSC, NSCM, NSCL, and NSY codes, used to protect the user from a malfunction in the SV's reference frequency system (reference paragraph 3.2.1) receiving anomalous NAV signals, are not for utilization by the user and, therefore, are not defined in this document."	PO Resolution: Accept Rationale: 5/23/08: Accept comment and changed document real-time. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: The Non-standard codes protect the user from receiving timely-detected anomalous NAV data. The cause of anomalous NAV signals is not limited to "a malfunction in the SV's reference frequency system.		
19	T. Nagle GPC	Page: 5 Para: 3.2.1/2nd para	Substantive	Comment: Clarify wording to avoid misinterpretation due to incomplete definition. Suggested Change: From: "The SVs shall also be capable of initiating and terminating the broadcast of NSCM and/or NSCL code(s) independently of each other, in response to CS command." To: "The SVs shall also be capable of initiating and terminating the broadcast of NSC, NSCM, NSCL or NSY code individually, or any applicable combination, in response to CS command." Rationale: Incomplete requirements	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	5/23/08: Withdraw comment.
18	T. Nagle GPC	Page: 5 Para: 3.2.1/2nd para	Substantive	Comment: Clarify wording to avoid misleading interpretation Make changes as indicated: "The SVs will transmit intentionally "incorrect" versions of the L2CM and L2 CL codes where needed to protect the users from receiving and utilizing anomalous NAV signals as a result of a malfunction in the SV's reference frequency generation system." Suggested Change: From:	PO Resolution: Accept Rationale: 5/23/08: Accept comment and made change real-time. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: The cause of anomalous NAV signals is not limited to "a malfunction in the SV's reference frequency generation system." For example, there might be a malfunction of OCX state vector generation that results in erroneous NAV data while there is no fault or malfunction onboard SV's reference frequency generation system.		
17	T. Nagle GPC	Page: 5 Para: 3.2.1/1st para	Substantive	Comment: Clarify wording to avoid misleading interpretation Make changes as indicated: "The SVs will transmit intentionally "incorrect" versions of the C/A and P(Y) codes where needed to protect the users from receiving and utilizing anomalous NAV signals as a result of a malfunction in the SV's reference frequency generation system." Suggested Change: From: To: Rationale: The cause of anomalous NAV signals is not limited to "a malfunction in the SV's reference frequency generation system." For example, there might be a malfunction of OCX state vector generation that results in erroneous NAV data while there is no fault or malfunction onboard SV's reference frequency generation system.	PO Resolution: Accept Rationale: 5/23/08: Accept with comment. Updated the document real-time. Concurrence: Concur Rationale:	
12	T. Nagle GPC	Page: Gen Para:	Substantive	Comment: The GPS Wing should consider the merits of defining all of the PRN codes for all of the civil signals in a common document that is individually referenced by each interface spec. That way some of the inconsistencies that exist between the individual interface specs may be more easily identified and eliminated. For	PO Resolution: A/C Rationale: 5/23/08: Refer to action #10 from IS-GPS-800 ICWG review. 7/30/09: Documents will be placed into DOORS after CCB	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				example, IS-GPS-800 states that the first 63 PRNs given in Table 3.2-2 and Table 3.2-3 of that document "are designated for GPS use" (see 3.2.2.1), whereas IS-GPS-200D Table 3-I states that "PRN sequences 33 through 37 are reserved for other uses (e.g. ground transmitters). Furthermore, since the purpose of IS-GPS-200D is to define the signal interface between a GPS satellite and a User, we question the appropriateness of defining PRN codes for GBAS, SBAS, and other GNSS in IS-GPS-200D. Suggested Change: From: To: Rationale:	Concurrence: Concur Rationale:	
11	T. Nagle GPC	Page: Gen Para:	Substantive	Comment: Remove all tables documenting PRN codes and develop a new document for all PRN codes (Example attached) Suggested Change: From: To: Rationale: the title of the interface document is Space Segment to user. Many of the documented codes are not part of from the space segment and when doing this make sure all text is identical for all signals unless there is some unique requirement that must be met.	PO Resolution: Reject Rationale: 5/23/08: Refer to action #11 from IS-GPS-800 ICWG review. See comment #158 of IS-GPS-800 CRM. Concurrence: Non-concur Rationale:	
10	T. Nagle GPC	Page: Gen Para:	Substantive	Comment: Add complete detail which will allow receivers to be designed developed and produced that can be properly operational utilizing all available PRN codes documented through 63	PO Resolution: Defer Rationale: 5/23/08: Aero presented solution for the comment. Will be presented at next ICWG in PIRN.	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale:	8/6/09: Related to PPIRN for constellation expansion to be supplied by Karl Kovach Concurrence: Concur Rationale:	
8	Dr. Mike Munoz SE&I	Page: 16 Para: 3.3.1.6	Substantive	Comment: The minimum power assumptions are inconsistent with IS-GPS-800. Include a common table of link losses for L1, L2 and L5 signals. Suggested Change: From: To: Rationale: Need for consistency across interface documents	PO Resolution: Reject Rationale: 5/22/08: This does not affect IS-GPS-200. This will be placed as an action for the other docs. Concurrence: Concur Rationale:	
108	M. Dash GPA	Page: Para: Gen	Administrative	Comment: The PIRN uses blue font to identify new text in the “is” section. Use a method of denoting new and deleted text in a way that does not rely on color, i.e. underline new text, and use strikethrough for deleted text. Suggested Change: From: To: Rationale: The difference between blue and black font can be too subtle for some reviewers, especially if they don’t have access to a color printer or copier. Particularly in the case where the new text is not succinctly presented, but is buried in a repetition of a large amount of text that	PO Resolution: A/C Rationale: Accept; current documents have underlined new text and strikethrough deleted text. 9/1/09: Documents are now distributed via Word. You can now color-code and customize the changes however you like. Concurrence: Concur Rationale:	This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				has not changed (and is in black font).		
107	M. Dash GPA	Page: Para: Gen	Administrative	Comment: The PIRN fails to identify exactly which version of IS-GPS-200 it is applicable to. Identify the revision and any approved IRNs that this PIRN is applicable to. Suggested Change: From: To: Rationale: Part of clearly understanding the Proposed interface changes is to identify exactly what version of the interface the proposed changes are being made against.	PO Resolution: Reject Rationale: Accept with comment. Will be included in the next coordination cycle. 9/1/09: This PIRN applies to the last CCB'ed version of the document. Concurrence: Concur Rationale:	This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.
106	M. Dash GPA	Page: Para: Gen	Administrative	Comment: PIRN items are not numbered Sequentially number PIRN items Suggested Change: From: To: Rationale: PIRN item numbers are an important way to reference which parts of the PIRN are being commented against, particularly in the case where identifying page and para number may not suffice (e.g. multiple changes to a give page and para number	PO Resolution: Reject Rationale: Accept with comment. Will be included in the next coordination cycle. 9/1/09: There is now only one PIRN to comment against. Concurrence: Concur Rationale:	This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.
105	M. Dash GPA	Page: Para: Gen	Administrative	Comment: The PIRN is marked as ICD-GPS-200 PIRN-002, which is confusing. PIRNs should be marked “PIRN-200D-00x”, where x is the next PIRN number available against IS-GPS-200D. Suggested Change:	PO Resolution: Reject Rationale: Accept with comment. Document standardization efforts are currently in work. 9/1/09: There is now only one PIRN. Concurrence: Concur	The resolution should identify a date or milestone as to when this issue will be addressed. This is a comment submitted to the ICWG, not the CCB, and as such should not affect CCB comment statistics.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: PIRN nomenclature format is the following: PIRN-xxxr-nnn xxx = the IS/ICD number r = the rev letter of the IS/ICD the PIRN pretains to nnn = sequential number assigned to each PIRN The proper nomenclature is an essential CM tool for figuring out how this PIRN is being applied.	Rationale:	
99	T. Nagle GPC	Page: 177 Para: 30.3.3.3.1.1.2	Administrative	Comment: Delete an extra "-" in front the term "cTGD". Suggested Change: From: To: Rationale: Typo	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
97	T. Nagle GPC	Page: 165 Para: Table 30-I	Administrative	Comment: Under the parameter column, add the parameter symbol and move the parameter description to the next column. Suggested Change: From: SV Accuracy | <blank> To: URAoe INDEX | SV Accuracy Rationale: This appeared to be included an earlier accepted change (Master CRM Item 32), but only half the change appears to have been implemented.	PO Resolution: Accept Rationale: Duplicate; see comment #32 Concurrence: Concur Rationale:	
96	T. Nagle GPC	Page: 165 Para: Table 30-I	Administrative	Comment: Editorial comment. Under the "Parameter" column, add the parameter symbols and move the parameter descriptions to the next	PO Resolution: Accept Rationale: Duplicate; see comment #32	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				columns. Suggested Change: From: To: WNn Week Number URAoe INDEX SV Accuracy Rationale: Clarity and consistency.	Concurrence: Concur Rationale:	
95	T. Nagle GPC	Page: 163 Para: 30.3.3.1.1.4	Administrative	Comment: Editorial. Suggested Change: From: "… SV for the unauthorized (non-Precise Positioning Service) user." To: "… SV for the SPS user." Rationale: Editorial	PO Resolution: Accept Rationale: Duplicate comment; see comment # 13. Concurrence: Concur Rationale:	
94	T. Nagle GPC	Page: 163 Para: 30.3.3.1.1.4	Substantive	Comment: Suggested Change: From: "…for the unauthorized (non-Precise Positioning Service) user." To: "…for the standard positioning service user." Rationale: Consistency with changes implemented in response to item	PO Resolution: Accept Rationale: Duplicate comment; see comment # 13. Concurrence: Concur Rationale:	
92	T. Nagle GPC	Page: 143 Para: 30.3.3	Substantive	Comment: Editorial Comment. Suggested Change: From: "…(UDRA) may be worse than indicated in the respective message types, and the SV should be used at the user's own risk."	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: "… (UDRA) may be worse than indicated in the respective message types." Rationale: "The SV should be used at the user's own risk" is not needed here.		
90	T. Nagle GPC	Page: 92 Para: 20.3.3.3.3.2 First equation from bottom of the page	Administrative	Comment: Please define the term "SSVL2" Suggested Change: From: To: Rationale: Clarity	PO Resolution: Reject Rationale: Defer; need ICWG discussion 8/6/09: We need to find a home for these SSV parameters. Will keep this open until a home can be found. 9/1/09: OBE. These equations have been removed. Don't need to track this here. This comment should be resubmitted to the document owner in which these parameters are located. Concurrence: Concur Rationale:	11/19/08: Action to GPSW/GPC to determine where the equations and parameters should be located. Remove these equations and SSV discussion from this document. Provide a reference/pointer to the TBD location for this information. Stakeholders concur. Verify with Steve Brown that all appropriate sections have been removed. Contact POC for ICD-GPS-240.
89	T. Nagle GPC	Page: 92 Para: 20.3.3.3.3.2 Second equation from bottom of the page	Administrative	Comment: Please define the term "SSVL1" Suggested Change: From: To: Rationale: Clarity	PO Resolution: Reject Rationale: Defer; need ICWG discussion 8/6/09: We need to find a home for these SSV parameters. Will keep this open until a home can be found. 9/1/09: OBE. These equations have been removed. Don't need to track this here. This comment should be resubmitted to the document owner in which these parameters are located. Concurrence: Concur Rationale:	11/19/08: Action to GPSW/GPC to determine where the equations and parameters should be located. Remove these equations and SSV discussion from this document. Provide a reference/pointer to the TBD location for this information. Stakeholders concur. Verify with Steve Brown that all appropriate sections have been removed. Contact POC for ICD-GPS-240.
85	T. Nagle GPC	Page: 57 Para: Appendix I Section 10	Administrative	Comment: Remove Letters of Exception from LM and Boeing. Suggested Change: From:	PO Resolution: Reject Rationale: Reject. Only the PCO can approve removal of letters of exception. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: This is a contractual issue and does not belong in an IS document	Rationale:	
73	T. Nagle GPC	Page: 15 Para: 3.3.1.4	Administrative	Comment: Commonly expressed as “L1 and signals”, instead of “L1 and L2 waveforms”. Suggested Change: From: “In-band spurious transmissions are defined as transmissions within the bands specified in 3.3.1.1 which are not expressly components of the L1 and L2 waveforms. To: “In-band spurious transmissions are defined as transmissions within the bands specified in 3.3.1.1 which are not expressly components of the L1 and L2 signals.” Rationale: Clarity	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
67	T. Nagle GPC	Page: 3 Para: 2.1	Administrative	Comment: Change GP-03-001 dated 14 Nov 2003 to GP-03-001A dated 20 April 2006 Suggested Change: From: To: Rationale: Current Version	PO Resolution: A/C Rationale: Accept with comment. Remove date. Most current revision applies. Concurrence: Concur Rationale:	
66	T. Nagle GPC	Page: 1 Para: 1.2	Administrative	Comment: Add the word “obtaining approval” on the first sentence. Suggested Change: From:	PO Resolution: A/C Rationale: Accept with comment. Changed to “approval coordination”. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: Rationale is the ICC obtains approval from CCB	Rationale:	
65	T. Nagle GPC	Page: Gen Para:	Administrative	Comment: Several places throughout this document make reference to an “authorized” and “unauthorized” user. Suggest that the word “authorized user” be replaced with “precise positioning service user” and “unauthorized user” be replaced with “standard positioning service user”. Suggested Change: From: To: Rationale: Civil users who use SPS are authorized to use that service.	PO Resolution: Accept Rationale: Duplicate of comment #13. Concurrence: Concur Rationale:	
62	T. Nagle GPC	Page: Para: At Least Twice	Administrative	Comment: Since “Precise Positioning Service” is a title, it should be capitalized. Suggested Change: From: “precise positioning service” To: “Precise Positioning Service” Rationale:	PO Resolution: Reject Rationale: See comment #61. Concurrence: Concur Rationale:	
61	T. Nagle GPC	Page: Para: Various	Administrative	Comment: Since “Standard Positioning Service” is a title, it should be capitalized. Suggested Change: From: “standard positioning service” To: “Standard Positioning Service”	PO Resolution: Reject Rationale: Reject. Text refers to the service not to the document with the same name. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale:		
60	T. Kawakami GPD	Page: 198 Para: 30.3.4.3	Administrative	Comment: “WGS 84” should not have a hyphen Change “WGS-84” to “WGS 84” Suggested Change: From: To: Rationale: Correctness	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
59	T. Kawakami GPD	Page: 130 Para: 20.3.4.3	Administrative	Comment: “WGS 84” should not have a hyphen Change “WGS-84” to “WGS 84” Suggested Change: From: "WGS-84" To: "WGS 84" Rationale: Correctness	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
58	T. Kawakami GPD	Page: 129 Para: Figure 20-4	Administrative	Comment: “WGS 84” should not have a hyphen Change “WGS-84” to “WGS 84” Suggested Change: From: "WGS-84" To: "WGS 84" Rationale: Correctness	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
57	T. Kawakami GPD	Page: X Para:	Administrative	Comment: 20.3.3.3.3.1, 20.3.3.3.3.2 and 20.3.3.3.3.3 are not included in the table of contents add 20.3.3.3.3.1/2/3 to the table of contents Suggested Change: From:	PO Resolution: Accept Rationale: Accept with comment. Changes to the TOC will be completed after other changes are approved/rejected at the ICWG. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: Correctness	Rationale:	
55	T. Kawakami GPD	Page: 92 Para: 20.3.3.3.2	Administrative	Comment: using both “degrees” and “°” decide which one will be used and then consistently use it Suggested Change: From: To: Rationale: Consistency	PO Resolution: Defer Rationale: Defer. For the port to DOORS, we are converting symbols to words as much as possible. However in some cases like equations, will likely leave the symbols as is – will try and be as consistent as possible, but must also be pragmatic in the approach. Concurrence: Concur Rationale:	
54	T. Kawakami GPD	Page: 5 Para: 3.2.1 (2nd paragraph)	Administrative	Comment: missing comma Suggested Change: From: “e.g. as a result…” To: “e.g., as a result …” Rationale: Typo	PO Resolution: Reject Rationale: Reject; the example was removed from the document; see comment #68. Concurrence: Concur Rationale:	
43	S. Brown LMCO	Page: 5 Para: 3.1	Administrative	Comment: Suggested Change: From: The interface between the GPS Space Segment (SS) and the GPS navigation User Segment (US) includes two RF links, L1 and L2. Utilizing these links, the space vehicles (SVs) of the SS shall provide continuous earth coverage signals that provide to the US the ranging codes and the system data needed to accomplish the GPS navigation (NAV) mission. To: The interface between the GPS Space Segment (SS) and the GPS Navigation User Segment (US)	PO Resolution: Reject Rationale: Reject. The abbreviation is User Segment (US) not NUS. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				includes two RF links, L1 and L2. Utilizing these links, the space vehicles (SVs) of the SS shall provide continuous earth coverage signals that provide to the US the ranging codes and the system data needed to accomplish the GPS navigation (NAV) mission. Rationale: Capitalize navigation when used in Navigation User for consistency		
41	Dr. Pam Neal SE&I	Page: Para: 6.2.2.6	Administrative	Comment: Typo in PIRN 2 Suggested Change: From: Bloack To: Block Rationale: Fix Typo	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
32	T. Nagle GPC	Page: 159 Para: Table 30-I	Administrative	Comment: Editorial comment. Under the "Parameter" column, add the parameter symbols and move the parameter descriptions to the next columns. Suggested Change: From: To: Suggested Change: TO WNn Week Number URAoe INDEX SV Accuracy Rationale: Clarity and consistency.	PO Resolution: Accept Rationale: 5/23/08: Accept comment. Admin change. Concurrence: Concur Rationale:	
29	T. Nagle GPC	Page: 139 Para: 30.3.3.	Administrative	Comment: Editorial Comment Suggested Change: From: "… (UDRA) may be worse than indicated in the respective message types, and the SV should be used at the user's own risk."	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	5/23/08: Comment withdrawn. 10/16/09: Changed to accept after ICWG discussion.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: "… (UDRA) may be worse than indicated in the respective message types." Rationale: "The SV should be used at the user's own risk" is not needed here.		
16	T. Nagle GPC	Page: 1 Para: 2 (Section 1.2) 3-6	Administrative	Comment: The sentence states "The Joint Program Office (JPO) administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate JPO Operating Instruction (OI)." JPO has been renamed GPS Wing. Replace JPO with GPS Wing throughout the document. Suggested Change: From: To: Rationale: Clarification	PO Resolution: Accept Rationale: 5/23/08: Accept comment Concurrence: Concur Rationale:	10/15/09: Replaced all instances of JPO with GPSW. Also added to acronym list.
15	T. Nagle GPC	Page: 1 Para: 2 (Section 1.2) 1-3	Administrative	Comment: The first sentence states "ARINC Engineering Services , LLC has been designated the Interface Control Contractor (ICC), and is responsible for the basic preparation, approval, distribution, retention, and Interface Control Working Group (ICWG) coordination of the IS in accordance with GP-03-001. SAIC is now the ICC. Replace all references of ARINC to SAIC. Suggested Change: From: To: Rationale: Clarification	PO Resolution: Accept Rationale: 5/23/08: Admin comment. Accept comment. Also reference will be made to the govt and not contractor specific. Concurrence: Concur Rationale:	
14	T. Nagle	Page:	Administrative	Comment: Eliminate the word "approval" from the	PO Resolution: Reject	PO Resolution: 06/13/08 – Reject. This

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	GPC	Para: 1.2		first sentence. Suggested Change: From: To: Rationale: Rationale is the ICC does not have approval authority	Rationale: 5/23/08: Refer to action #10 from IS-GPS-800 ICWG review. Concurrence: Concur Rationale:	comment is outside the purview of the ICWG. This issue is already being discussed at the GPSW/CC level.
13	T. Nagle GPC	Page: Gen Para:	Administrative	Comment: Several places throughout this document make reference to an “authorized” and “unauthorized” user. Suggest that the word “authorized user” be replaced with “precise positioning service user” and “unauthorized user” be replaced with “standard positioning service user”. Suggested Change: From: To: Rationale: Civil users who use SPS are authorized to use that service.	PO Resolution: Accept Rationale: 5/23/08: Accept comment. Action for ICC to go thru doc and update document with proposed solution. May reference PPS users and SPS users. Concurrence: Concur Rationale:	10 Jun 08: Changes made by ICC 29-sept-09: ICC to take an action to further define the "unauthorized" and "authroized" and SPS and PPS. The definitions to go into section 6.2 definitions. This action has been completed.
9	M. Carrol SE&I	Page: 160 Para: Table 30-1	Administrative	Comment: Table has a typo Suggested Change: From: “Amplitude of the sine harmonic correction term to the argument of latitude”. To: “Amplitude of the cosine harmonic correction term to the argument of latitude”. Rationale: Incorrect term used.	PO Resolution: Accept Rationale: 5/23/08: Accept comment. Placed correction in to document real-time. Concurrence: Concur Rationale:	
7	T. Davis SE&I	Page: N/A Para: N/A	Administrative	Comment: Remove reference to GPS Joint Program Office	PO Resolution: Accept	Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: “Navstar GPS Joint Program Office” & ”JPO” To: “Navstar GPS Wing (GPSW)” & “GPSW” Rationale: The term JPO is no longer used.	Rationale: Concurrence: Concur Rationale:	
6	T. Davis SE&I	Page: 1 Para: 1.2	Administrative	Comment: Remove references to previous ICC Suggested Change: From: “ARINC Engineering Services, LLC has been designated.” To: “Science Applications International Corporation (SAIC) has been designated…” Rationale: The SE&I is the new ICC for this document.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	Per EN guidance, use language for the ICC that is non-company specific: “The ICC designated by the government…”
5	S. Hutsell 2SOPS	Page: 119 Para: 20.3.3.5.2.3	Administrative	Comment: Rewording needed Suggested Change: From: “During extended operations (short-term and long-term) the almanac time parameter may not provide the specified time accuracy or URE component.” To: “During extended operations (short-term and long-term) the almanac time parameter may not provide the specified time accuracy or URE component. Additionally, occasional CS actions to manage clock offsets may also inhibit the ability to provide specified almanac time parameter accuracies.” Rationale: Clarification of reality. As one example, after we perform a necessary, periodic timing	PO Resolution: Accept Rationale: While the information is useful, it does not belong in this document. Should be captured as a probability of occurrence if included at all. 5/23/08: Accepted comment after re-reviewed. Added clarification into document Concurrence: Concur Rationale:	

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				adjustment on a satellite, it can and will take literally hours [empirically, on average about 24 hours], before we will have uploaded the entire constellation with new almanac time parameters reflecting the timing adjustment. Additionally, user sets that download almanacs based on the time of applicability (tOA), can and will experience the elapsing of additional hours [empirically, as much as 24 hours], before such user equipment will recognize the update.		
112	S. Thomason A5P	Page: 54 Para: 6.2.2.2.6	Administrative	Comment: Suggested Change: From: “Block IIIA SVs” To: “Block III SVs” Rationale: First sentence refers to entire Block III program (SVNs 74-105), not just IIIA	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	Concur (05/06/09)
113	S. Thomason A5P	Page: 55 Para: 6.2.5	Administrative	Comment: Suggested Change: From: “interface control document” To: “interface specification” Rationale: IS stands for Interface Specification	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	Concur (05/06/09)
114	S. Thomason A5P	Page: 164 Para: Table 30-I	Administrative	Comment: Rows in columns 3-6 do not line up with rows in columns 1 and 2 Realign rows for clear alignment Suggested Change: From: To:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	Concur (05/06/09)

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				Rationale: It is not necessarily obvious which value in columns 3-6 apply to parameters in rows 1-2.		
115	T. Nagle GPC	Page: Cover Para:	Administrative	Comment: The old GPS JPO address was deleted, with no new address provided Don't just delete the old address. Replace it with the new GPSW address Suggested Change: From: To: Rationale: The address is important organizational information that should be	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	Concur (05/21/09)
116	T. Nagle GPC	Page: iii Para:	Administrative	Comment: The revision record indicates these changes are "needed" for GPS IIIA. However, none of the changes are critical changes in requirements, just changes providing information on GPS IIIA implementation. Change to read "Incorporates changes associated with GPS IIIA" Suggested Change: From: To: Rationale: Given that GPS III has a requirement to support continued operation of fielded UE that is IS-GPS-200 compliant, it's hard to argue that any changes are "needed" for GPS III. That fielded UE is not going to change, and it was developed against older versions of this document.	PO Resolution: Accept Rationale: 04/28/09 – Incorporated change. Concurrence: Concur Rationale:	Concur (05/21/09)
117	T. Nagle GPC	Page: 1 Para: Sec 1.1 Scope	Substantive	Comment: Include phrase to delimit scope of this document to certain signals only (L1 C/A, L1/L2 P(Y), and L2C) Add sentence… This applies to L1 C/A, L1/L2 P(Y)	PO Resolution: Accept Rationale:	Concur (05/21/09)

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				and L2C codes on the L1 and L2 RF links. Suggested Change: From: To: Rationale: L1C is also a new L1 link signal for GPS IIIA, which is not addressed in this document. M-code is also transmitted on L1 and L2, and is not addressed in this document.	Concurrence: Concur Rationale:	
118	T. Nagle GPC	Page: 3 Para: 2.1	Administrative	Comment: Change date GP-03-001 from 14 Nov 2003 to 20 April 2006 Suggested Change: From: To: Rationale: Lastest revision	PO Resolution: Reject Rationale: Reject. See comment #67. Concurrence: Concur Rationale:	Concur (05/21/09)
119	T. Nagle GPC	Page: 6 Para: 3.2.1.1 3.2.1.3 3.2.1.4 3.2.1.5 3.3.2.1 6.3.5	Critical	Comment: There is still an issue with how PRN expansion was added to this document, disregarding comments submitted previously regarding systems engineering issues. The stated intent was to put PRN expansion in as “information only”, but the way it was included is not for “information only” since there are links to PRN expansion in sec 3. This makes the PRN expansion described in sec 6 acceptable to implement, which is more than just “information only”. Suggested Change: There are two possible courses of action: 1. Implement the changes originally requested back in 2006; delete the IRN-200D-001 changes to sec 3 (3.2.1.1, 3.2.1.3, 3.2.1.4, 3.2.1.5,3.3.2.1) and change the first sentence of 6.3.5 to read “The additional PRN sequences provided in this section	PO Resolution: Defer Rationale: Defer. The languages in each of these sections was baselined prior to the current ICC’s involvement; the current ICC was not privy to the ‘information only’ discussion. If the commenter provides the names of the original discussion participants, the POC will set up a meeting to resolve the issue. 8/10/09: Submitted as an RIL item by Mike Deelo. Concurrence: Non-concur Rationale:	Non-concur (05/21/09)

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				are for information only and impose no requirement on the operational SIS interface between the GPS Space and User Segments. The additional PRN sequences identified in this section are not applicable to SVs required to comply with this Interface Specification. The current valid range for GPS PRN signal number for C/A- and P-code is remains 1 – 37 as specified in Table 3-I. The PRN sequences provided in this section are for other L1/L2 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, and potential use in the future by GPS" --or-- 2. Identify the system level changes/impacts associated with allowing SVs to be assigned PRNs above 32, such as: - Proactively confirm with UE vendors that this PRN expansion will have no impact on fielded products -Identify the nav message to be provided with C/A and P(Y) -Identify the impacts to GPSW UE ICDs -Identify a requirement to assign PRNs 1-32 to operational SVs before assigning PRNs 38 and above -Identify the requirement in a system level document (e.g. SS-GPS-300) that is being met by expanding the number of SVs the constellation is able to support, e.g. improve SV availability to terrain challenged users. Suggested Change: From: To: Rationale: There are many significant systems engineering ramifications of allowing PRNs		

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				assigned to SVs to go beyond 32 that have not be addressed or resolved. Until that time, the PRN expansion should be clearly presented as "information only" and not conveyed as something that is acceptable to implement at this time. At least not until all the issues are worked out.		
120	T. Nagle GPC	Page: 14 Para: 3.3.1.1 3.3.1.4	Critical	Comment: The change in bandwidth for GPS IIIA vs. previous satellites is unclear. Since the codes defined within this document are not changing for GPS III this reads as an interface requirements change, when it is probably not intended that way. Also, what is missing is a statement of the UE requirements, i.e. what bandwidth must an ICD-GPS-200 compliant RCVR support? With 20.46 identified all these years, it was assumed that the UE simply had the same requirement. However, if GPS III introduces a new bandwidth definition, it becomes unclear what the interface requirement will be for UE intending to be compliant with this draft version of the interface document. Reject these changes and come up with wording that more clearly communicates what part of the interface requirements is really changing, with regard to the codes/signals defined in IS-GPS-200 only. If this is just to let readers know that bandwidth allocated to GPS is wider than the bandwidth taken up by the codes/signals defined in IS-GPS-200, then that can be stated separately as information. Alternatively, if the intent is to change the bandwidth that future UE incorporate, then that has to be clearly stated somehow. Suggested Change: From: To: Rationale: Per sec 1.1, this document defines the	PO Resolution: Accept Rationale: Agree there has been a lot of swirl regarding the bandwidths. The ICC POC will propose new language for the next ICWG. Concurrence: Concur Rationale:	(05/11/09) PO notes "Accept", however if comment has not been ultimately resolved, as cited in the PO Resolution it has not, the PO has and needs to officially note this as being "Deferred" until the follow up action to ultimately resolve and close it out has been accomplished. 8/24/09: New tables from LM should answer the comment

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				interface between the Space and User segments. All the parameters defining this interface need to be clearly communicated from the perspective of both the User and Space segment so that there is a clear understanding of the interface requirements. Subtle differences between generations of SVs may be interesting information, but do not always constitute a change in interface requirements. The requirements being levied on the User Segment need to be clearly stated.		
121	T. Nagle GPC	Page: 14 Para: 3.3.1.2 Correlation Loss	Critical	Comment: Recommend modifying the requirement for correlation loss. Suggested Change: From: 3.3.1.2 Correlation Loss. Correlation loss is defined as the difference between the SV power received in a 20.46 MHz bandwidth and the signal power recovered in an ideal correlation receiver of the same bandwidth. On the L1 and L2 channels, the worst case correlation loss occurs when the carrier is modulated by the sum of the P(Y) code and the NAV data stream. For this case, the correlation loss apportionment shall be as follows: 1. SV modulation imperfections 0.6 dB 2. Ideal UE receiver waveform distortion 0.4 dB (due to 20.46 MHz filter) To: "3.3.1.2 Correlation Loss. Correlation loss is defined as the difference between the signal power received in the bandwidth defined in 3.3.1.1 and the signal power recovered in an ideal correlation receiver of the same bandwidth which ideally performs lossless correlation using an exact replica of the waveform with an ideal sharp-cutoff whose bandwidth corresponds to that in 3.3.1.1, and whose phase is linear over that bandwidth. For the L1 and L2 P(Y) code, the correlation loss	PO Resolution: Reject Rationale: Currently, an action item exists to produce new language and should be available for review prior to the forthcoming ICWG. 9/1/09: Comment is OBE. Entire section was rewritten. Concurrence: Concur Rationale:	Non-concur (05/21/09) 8/24/09: M. Deelo WG

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				apportionment to the SV modulation and filter imperfections shall be 0.6 dB. For the C/A and L2C codes, the correlation loss apportionment to the SV modulation and filter imperfections shall be 0.2 dB. Rationale: Correlation loss is not the same for the wideband P(Y) code and the narrowband C/A and L2C codes. Also, the interface specification should not specify loss in a user receiver. The suggested change text provides the user with as much information as required and makes no assumption regarding the user		
122	T. Nagle GPC	Page: 14 Para: 3.3.1.3 Carrier Phase Noise	Critical	Comment: Recommend modifying the requirement for Carrier Phase Noise. Suggested Change: From: 3.3.1.3 Carrier Phase Noise. The phase noise spectral density of the unmodulated carrier shall be such that a phase locked loop of 10 Hz one-sided noise bandwidth shall be able to track the carrier to an accuracy of 0.1 radians rms. To: 3.3.1.3 Carrier Phase Noise The phase noise spectral density of the unmodulated carrier shall not exceed the magnitude of a straight line (on a log-log plot) between -30 dBc/Hz at 1 Hz and -60 dBc/Hz at 10 Hz, and another straight line between -60 dBc/Hz at 10 Hz and -90 dBc/Hz at 10 Hz Rationale: The suggested change text provides the user with as much information as required and makes no assumption regarding the user implementation.	PO Resolution: Reject Rationale: Defer. This has been mentioned in previous comments. Currently, new language is being produced and should be available for review prior to the forthcoming ICWG. 9/1/09: Comment is OBE. Entire section was rewritten. Concurrence: Concur Rationale:	Non-concur (05/21/09) 8/20/09: M. Deelo WG
123	T. Nagle GPC	Page: 14 Para: 3.3.1.4	Substantive	Comment: The first sentence is provided as a completely new sentence, when only the reference to bandwidth has changed, e.g. “allocated 20.46	PO Resolution: Accept Rationale: The sentence should include L2 as follows:	GPC Rejects PO’s Resolution citing this has not been Accepted/resolved if it still requires further efforts to finalize the

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				MHz channel bandwidth" is being changed to "band specified in 3.3.1.1". Yet, reference to L2 has been dropped. Is this intentional? Suggested Change: Assuming the absence of L2 was unintentional, it should be put back in. Otherwise please explain why L2 was dropped. Also, the changes identified should be concise, showing only the portions affected and not the whole sentence, as indicated in the comment. Suggested Change: From: To: Rationale: There should be a spurious transmission requirement for L1 and L2	"In-band spurious transmissions, from the SV, shall be at least 40 dB below for both L1 and L2 unmodulated carriers over the respective bands specified in 3.3.1.1." Subject to approval at next ICWG. 9/1/09: Change has been incorporated into document. Concurrence: Concur Rationale:	acceptance of the comment, and does not concur with deferring the comment as the suggested change and rationale has been provided. (05/21/09) 29-sept-09: changes made realtime in the ICWG. stakeholders concur with the new verbiage propsoed in the document. changed 40dB to -40dBc and "at least" to "at or "below" also got rid of the L1 and L2 references. see redlined document for verbiage.
124	T. Nagle GPC	Page: 16 Para: 3.3.1.5	Critical	Comment: Change title to Signal Component Phase Relationships. Reflect findings of NPEF. Request GPS Wing formally commence Technical Interface Meetings (TIMs) with participation by government only stakeholders and their direct support government contractors to support the evolution of new language for this topic, and where it and any associations are or would be noted throughout this and other GPS Wing prescribed interface specifications (IS), system specifications (SS), and performance standard documents. TIMs should commence prior to the next GPS Wing ERB meeting on this IS, while any final proposed language intended for implementation into this IS continue to be deferred until the next or succeeding ICWG where concurrence by both federal and non-federal stakeholders in attendance or otherwise represented can be secured. Suggested Change: Delete the 2nd paragraph and replace with the following: "For Block IIR-M, IIF,	PO Resolution: Reject Rationale: Duplicate comment; see comment #74. Concurrence: Concur Rationale:	(05/11/09) GPC notes this is a duplicate of #74 as PO cites. GPC comment for this issue is cited in comment #74

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				and subsequent blocks of SVs, phase quadrature relationship between the two L2 carrier components will be the same as for the two L1 carrier components as described above. See Section 6.XX for discussions on future carrier phase relationships." Someone needs to write Section 6.XX based upon Federal Register entry on 16 May 2008: DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration [Docket No.: 080506632–8633–01] Codeless and Semi-Codeless Access to the Global Positioning System. Suggested Change: From: To: Rationale: Update to agreements reached in NPEF, including the phase 2 report. Most precision GPS positioning, velocity determination and timing systems as well as applications using carrier phase require known signal component phase relationships for receiver design.		
125	T. Nagle GPC	Page: 16 Para: 3.3.1.5	Critical	Comment: Phase continuity is not specified in the interface specification. Request GPS Wing formally commence Technical Interface Meetings (TIMs) with participation by government only stakeholders and their direct support government contractors to support the evolution of language for this topic, and where it and any associations are or would be noted throughout this and other GPS Wing prescribed interface specifications (IS), system specifications (SS), and performance standard documents. TIMs should commence prior to the next GPS Wing ERB	PO Resolution: A/C Rationale: Karl Kovach has developed some continuity language to replace 3.3.1.5. Need to discuss the implementation at the next ICWG 9/1/09: Phase continuity language has been added to the document. Concurrence: Concur Rationale:	(05/11/09) GPC rejects absence of PO's recognition of GPC's follow-on comment submitted for this review cycle in March 2009. First, request for the Civil's to be involved in TIMs with Karl Kovach to coordinate, facilitate and lastly expedite an interface specification/language that could be satisfactory for presentation and approval by next ICWG attendees? Secondly, suggestion change(s) and rationale remain in effect as the Civil's repeated response on this issue.

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				meeting on this IS, while any final proposed language intended for implementation into this IS continue to be deferred until the next or succeeding ICWG where concurrence by both federal and non-federal stakeholders in attendance or otherwise represented can be secured. Suggested Change: From: To: Suggested Change: Insert the following paragraph after paragraph 3.3.1.5 3.3.1.5.1 Phase Continuity While a satellite is broadcasting standard L1 P(Y) code, standard L1 C/A code, standard L2 P(Y) code, standard L2 CM or standard L2 CL code signals, there shall be no discontinuities that exceed 10 degrees (TBR) as measured over any interval up to and including 10 seconds, in the respective L1 P(Y), L1 C/A, L2 P(Y), L2 CM or L2 CL carrier phase other than those attributable to the binary state of the modulating signals. Rationale: Most precision GPS positioning, velocity determination and timing systems as well as applications using carrier phase require phase continuity.		9/30/09: Language changed to LM suggestion language. Concurred by ICWG.
126	T. Nagle GPC	Page: 16 Para: 3.3.1.6	Critical	Comment: By adding information specific to GPS III (which was also done for IIF), it becomes unclear what the overarching interface requirement is vs. satellite peculiar information/requirements, e.g. what is the interface requirement on the User Segment. If the information in this new third paragraph (as well as the second paragraph) does not conflict with the information in the first paragraph of 3.3.1.6, then the added text is not really a change in interface requirements, but just	PO Resolution: Reject Rationale: This has been a long standing problem, and the ICC does not know how to resolve it. The proposed solution only partially resolves the problem. 12/17/09: This comment is hinting at the need for a overarching document that specifies the entire GPS constellation. Concurrence: Non-concur	Non-concur (05/21/09)

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				capturing how GPS III specific design information. If so, the added information may lead one to assume that UE should be designed to work with specific generations of SVs, instead of designing to an overarching interface requirement. Suggested Change: If the information in this new third paragraph (as well as the second paragraph) does not contradict the requirement in the first paragraph of 3.3.1.6, then delete it. If this new paragraph is addressing a new interface requirement that is not compatible with the first paragraph, then there could be a very big problem with GPS III being backward compatible with fielded UE. Suggested Change: From: To: Rationale: This document needs to first be clear on the overarching interface requirement that equally applies to all UE and SV configurations. Adding specific details about various SV configurations is secondary, and if done so, measures need to be taken to make the requirement clear, e.g. what is the requirement being placed on the User Segment?	Rationale:	
127	T. Nagle GPC	Page: 16 Para: 3.3.1.6	Substantive	Comment: The requirement descriptions of the L1 and L2 off-axis gain for Block III SVs are not complete. No power gain information is given for angles beyond EOE. Suggested Change: From: The Block IIIA SV shall provide L1 and L2 signals with the following characteristic: the L1	PO Resolution: A/C Rationale: See Action Item #17 for IS-GPS-800. New language will be proposed for the next ICWG 8/6/09: Action to Dr. Munoz to provide new language. CLOSED (8/27/09) Concurrence: Concur Rationale:	Non-concur (05/21/09)

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				off-axis power gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir; the L2 off-axis power gain shall not decrease by more than 2 dB from EOE to nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion. To: The Block III SVs shall provide L1 and L2 signals with the following characteristic: a) L1 – the L1 off-axis power gain shall not decrease by more than 2 dB from the EOE to nadir, nor more than 10 dB from EOE to 20 degrees off nadir, and no more than 19.5 dB from EOE to 23.5 degrees off nadir; the power drop off between EOE and ±23.5 degrees off nadir shall be in a monotonically decreasing fashion; b) L2 – the L2 off-axis power gain shall not decrease by more than 2 dB from the EOE to nadir, and no more than 18 dB from EOE to 26.0 degrees off nadir; the power drop off between EOE and ±26.0 degrees off nadir shall be in a monotonically decreasing fashion Rationale: Tighten the off-axis power gain specs for block III SVs using IS-GPS-800A specs.		
128	T. Nagle GPC	Page: 20 Para: 3.3.1.8	Substantive	Comment: Please provide the further clarification of "On the L1 channel the data transitions of the two modulating signals (i.e., that containing the P(Y)-code and that containing the C/A-code), L1 P(Y) and L1 C/A, shall be such that the average time difference between the transitions does not exceed 10 nanoseconds (two sigma)." It was raised at the GPS IIIA NPE PDR. Suggested Change: Please clarify. Suggested Change: From: To:	PO Resolution: Reject Rationale: Please provide more information on the changes. Concurrence: Concur Rationale:	(05/11/09) GPC withdraws comment; it is either cited and/or incorporated to be worked elsewhere in the IS CRMs.

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				Rationale: Need requirement clarification from ICWG.		
129	T. Nagle GPC	Page: 20 Para: 3.3.1.8	Substantive	Comment: Please add the signal coherence for L2 P(Y) and L2C. Add "On the L2 channel the data transitions of the two modulating signals (i.e., that containing the P(Y)-code and that containing the L2C-code), L2 P(Y) and L2C, shall be such that the average time difference between the transitions does not exceed 10 nanoseconds (two sigma)." Suggested Change: From: To: Rationale: Also need requirement clarification from ICWG.	PO Resolution: Reject Rationale: New language is currently being proposed for ICWG. 9/1/09: New language has been submitted for this section. Concurrence: Concur Rationale:	Non-concur (05/21/09) 8/9/09: Connected with comment 800_231.
130	T. Nagle GPC	Page: 17 Para: Tbl 3-V C	Substantive	Comment: This table implies that Space Service users may only use GPS III SVs. If so, that needs to be stated somehow, but is probably impractical (e.g. expecting space service UE to design to specific configurations of SV). Suggested Change: Need to add clarification regarding how the space service user equipment is to incorporate (or not incorporate) IIF and earlier SV configurations. Suggested Change: From: To: Rationale: Even though this is a new requirement, and there is no expectation for IIF and earlier to meet it, there need to be clarification as to	PO Resolution: Reject Rationale: There are no power level requirements for any SVs prior to GPSIII. Concurrence: Concur Rationale:	Concur (05/21/09)

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				whether the UE can assume the information in this table with regard to any SVs it may track.		
131	T. Nagle GPC	Page: 18/19 Para: Tables 3.-Vb and 3-Vc	Administrative	Comment: Tables 3-Vb and 3-Vc show the SV Block parameters as “III” and “III and Subsequent” respectively. Believe the parameters should be the same in both tables. Suggested Change: Update the tables so that they have the same SV Block parameter. Suggested Change: From: To: Rationale: Consistency	PO Resolution: Reject Rationale: Correct as is Concurrence: Concur Rationale:	Concur (05/21/09)
132	T. Nagle GPC	Page: 19 Para: 3.3.1.6.1	Substantive	Comment: The values in Table 3-Vc are specified for the users in “the geosynchronous orbit”. Need to indicate it in the requirement. Suggested Change: From: The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized user receiving antenna at normal orientation, at the off-nadir angles defined in Table 3-Vc. To: The minimum effective received signal power is measured at the output of a 0 dBi ideal right-hand circularly polarized user receiving antenna (in geostationary orbit) at normal orientation, at the off-nadir angles defined in Table 3-Vc, and using 0 dB atmospheric loss Rationale: Clarity and consistency with IS-GPS-800A	PO Resolution: Accept Rationale: Accept with comment. Will need ICWG concurrence. 8/6/09: Accept Concurrence: Concur Rationale:	(05/11/09) PO notes “Accept”, however if comment has not been ultimately resolved, as cited in the PO Resolution it has not, the PO has and needs to officially note this as being “Deferred” until the follow up action to ultimately resolve and close it out has been accomplished.
133	T. Nagle GPC	Page: 59 Para: 3.3.1.7.1	Substantive	Comment: Need to add the group delay uncertainty requirement for block III SVs.	PO Resolution: Reject	Non-concur (05/21/09) 8/24/09: Will talk to Munoz to find why this

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				Suggested Change: Add at the end of the first sentence - "For Block III SVs, the effective uncertainty of the group delay shall not exceed 1.0 nanoseconds (two sigma). The uncertainty requirement shall be valid for signal measurement/averaging times of 10 milliseconds to 1 day." Suggested Change: From: To: Rationale: Specify and use group delay uncertainty for block III SVs from IS-GPS-800A.	Rationale: Will add to topics for discussion at the ICWG; be prepared to provide rationale for tightening the requirement. 8/27/09: PSICA WG concurs 8/27/09: LM states that SS-800 being updated, therefore group delay calculations based on uncorrellated URE requirements will change. Concurrence: Non-concur Rationale:	was accepted in 705 and not in 200. 10/16/09: This section was reviewed extensively at the ICWG and stakeholders have all agreed to the verbiage currently in the document.
134	T. Nagle GPC	Page: 19 Para: 3.3.1.7.2	Substantive	Comment: Need to specify and to tighten the requirement of the group delay differential for block III SVs. Suggested Change: From: For a given navigation payload redundancy configuration, the absolute value of the mean differential delay shall not exceed 15.0 nanoseconds. The random variations about the mean shall not exceed 3.0 nanoseconds (two-sigma). To: For a given navigation payload redundancy configuration, the absolute value of the mean differential delay shall not exceed 30.0 nanoseconds. The random variations about the mean shall not exceed 3.0 nanoseconds (two-sigma). For Block III SVs, the absolute value of the mean differential delay shall not exceed 15.0 nanoseconds. The random variations about the mean shall not exceed 1.0 nanoseconds (two sigma). The random variation requirement shall be	PO Resolution: Reject Rationale: Rationale is insufficient for a change that may impact cost of the SV. 8/27/09: Accept with change. Accept only the second sentence. But, keep open until action is closed. Concurrence: Concur Rationale:	(05/11/09) GPC rejects PO resolution on the basis that this information already exists internal to the GPS-IIIA contractor. GPC thus recommends incorporation of information from the GPS-IIIA Lockheed Martin Navigation Payload PDR for the Mean Differential Group Delay between any two RF chains. 8/6/09: Withdrawn

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				valid for signal measurement/averaging times of 10 milliseconds to 1 day. Rationale: Tighten the requirement of the group delay differential for Block III SVs.		
135	T. Nagle GPC	Page: 19 Para: 3.3.1.7.3	Substantive	Comment: Please provide the values for the SSV group delay differential. Suggested Change: Please provide the values. Suggested Change: From: To: Rationale: Requirement	PO Resolution: Reject Rationale: See Action Item # 22 for IS-GPS-800. The action was for GPC to determine the best location for these values. 8/27/09: Leave defered until a location is provided (website, document, etc) 9/1/09: Changed to reject. It's an official TBD in the document. No need to continue tracking this here. Concurrence: Concur Rationale:	GPC Rejects PO's Resolution as a Reject when it is actually a Deferral (05/21/09) 8/6/09: OBE
136	T. Nagle GPC	Page: 19/20 Para: 3.3.1.7.3	Substantive	Comment: Section 3.3.1.7.3 is a brief description of the space service volume group delay differential. It is listed as TBD, waiting for the values by the Block III Space Contractor. IS-GPS-705A (3.3.1.7.3) has the same requirement while IS-GPS-800A (3.2.1.8.3) contains the same requirement with one exception. IS-GPS-800A makes reference of Block IIIA instead of Block III. Suggested Change: Change "Block IIIA" to "Block III" in 800A or modify 200E and 705A to reflect "Block IIIA" instead of "Block III". In addition, resolve the TBDs. Suggested Change: From: To: Rationale: Consistency and completion	PO Resolution: A/C Rationale: Accept with comment. Will change IS –GPS-800 to read "GPSIII". See Action Item # 22 for IS-GPS-800 (in reference to TBDs). Concurrence: Concur Rationale:	Concur (05/21/09)
137	T. Nagle	Page: 20, 84-	Critical	Comment: Need positive confirmation that these	PO Resolution: Reject	Concur (05/21/09)

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	GPC	94, 96, 98 Para: 3.3.1.9 Fig 20-1 30.3.3.1 Fig 20-2		changes, bore sight to nadir and Integrity Status Flag, have no impact on the fielded UE within the Army. Suggested Change: Provide time to coordinate with military UE vendors to positively confirm whether or not the proposed change impacts fielded UE. Suggested Change: From: To: Rationale: The ICWG phase did not allow enough time (as described in the ICWG charter), or provide the right kind of change description, for tasking to flow down to UE vendors to specifically get feedback on the impacts of this proposed change. The CCB review stage is also shortened and presumes contractor coordination has already been completed. We don't want to risk a problem down the road that is observed in the field, forcing a decision to turn off this integrity function while the problem is sorted. As was done with the WAGE and PRN 32 issues, there needs to be a method of positively determining impacts on the various fielded UE.	Rationale: The comment is process oriented and out of scope. Provide comments against the ICWG charter to the ICC POC and they will be forwarded to the appropriate group. Concurrence: Concur Rationale:	
138	T. Nagle GPC	Page: 35 Para: Fig 3-1-	Administrative	Comment: When I print out this document, the word "Register" is missing from the "G2" block. I also tried converting the file to PDF, and it is missing there, but shows up on screen. Suggested Change: This could be one of those Word nuances that shows up differently on different computers, but need to make sure the final PDF version (which is supposed to print the same from every computer) does not lose text from this figure. Suggested Change:	PO Resolution: Reject Rationale: The ICC PDF version displays and prints correctly. The users should only provide PDF related comments against the official PDF version produced by the Wing. 05/04/09: After further review, the PO Resolution has changed to: Accept. The ICC POC will ensure the PDF version of the document will contain the correct Concurrence: Concur	Concur (05/21/09)

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale:	Rationale:	
139	T. Nagle GPC	Page: 43 Para: 3.3.4	Substantive	Comment: Need tighter requirement on the accuracy of the requisite data for relating GPS time to UTC for block III SVs. Suggested Change: From: The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it shall relate GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma) To: The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it shall relate GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). For Block III SVs, the accuracy of the data on L1 NAV and L2 CNAV during the transmission interval shall be such that it shall relate GPS time to UTC(USNO) to within 1.5 nanoseconds (RMS over 30 days)." Rationale: Tighten requirement for block III SVs based on IS-GPS-800A.	PO Resolution: Reject Rationale: The previous ICWG discussions were only against the IS-GPS-800. This will be a topic of discussion at ICWG. 9/9/09: The rationale submitted is still not sufficient to tighten this requirement. Concurrence: Non-concur Rationale:	Non-Concur (05/21/09) 9/9/09: GPC has submitted new rationale, however, it is not sufficient to allow for this tightening. 10/01/09: 1.5 ns is only required once OCX comes online. Concurred by Hegarty, awaiting concurrance from GPC. 10/16/09: Removed an extraneous shall from the sentence.
140	T. Nagle GPC	Page: 51 Para: Acronyms	Administrative	Comment: Add: PPS Precise Positioning Service Add: SPS Standard Positioning Service Suggested Change: From:	PO Resolution: Accept Rationale: 04/28/09: Changes incorporated Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale:		
141	T. Nagle GPC	Page: 54 Para: 6.2.1	Critical	Comment: Definition of URA should be expanded to be consistent with the expanded definition in the GPS III SS-SYS-800, SS-SS-800, and SS-CS-800 specifications. Suggested Change: Expand existing definition of URA as shown below: Suggested Change: From: 6.2.1 User Range Accuracy. User range accuracy (URA) is a statistical indicator of the ranging accuracies obtainable with a specific SV. URA is a one-sigma estimate of the user range errors in the navigation data for the transmitting satellite. It includes all errors for which the Space and Control Segments are responsible. It does not include any errors introduced in the user set or the transmission media. While the URA may vary over a given subframe fit interval, the URA index (N) reported in the NAV message corresponds to the maximum value of URA anticipated over the fit interval. To: 6.2.1 User Range Accuracy. User range accuracy (URA) is a statistical indicator of the GPS ranging accuracies obtainable with a specific signal and SV. URA is broadcast in the navigation message and is specific to the signal containing that message. URA is a "conservative" estimate of the RMS user range errors (URE), over the curve fit interval that is applicable to the NAV data from which the URA is read, for the worst-case location within the intersection of the satellite signal and the terrestrial service volume. The term "conservative" means that the URA also	PO Resolution: A/C Rationale: Language needs to be ERB/CCB approved at the requirements level prior to or concurrent with changes being made to the interface document. Will coordinate with the Requirements lead. 8/6/09: Will use the same language that GPC submitted to the 800 specs. Concurrence: Concur Rationale:	05/11/09) GPC rejects PO's deferral of this matter. This needed to be worked prior to this ERB/CCB cycle in order to get incorporated into document revision. Requirements Lead is a resident/local entity that could have been coordinated with prior to this upcoming ERB/CCB. 29-sept-09: ICWG stakeholders reviewed the proposed text in the document. it seems that a discusion began to request a definition to the "integrty status flag" also this integrity status flag was placed in quotations in the proposed text. Mike Dash asks the question whether 5.73 needs to be written in the document. this may be re-reviewed.

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				represents the standard deviation of a cumulative Gaussian distribution, which "overbounds" the cumulative distribution of the instantaneous URE of the signal, during the curve-fit interval to which the URA applies. The term "overbound" means that for each value of range error, the cumulative probability on the Gaussian distribution defined by the URA is greater than or equal to the corresponding probability on the URE distribution, out to and including a specified value of probability. When the integrity status flag in the accompanying NAV data is "OFF", the specified probability limit for the overbound is 1 - 10E-5/hr and the URA is termed the Nominal URA. When the integrity status flag in the accompanying NAV data is "ON", the specified probability limit is 1 - 10E-8/hr and the URA is termed the Assured URA. The URA for a particular signal may be represented by a single parameter in the NAV data or by more than one parameter representing components of the total URA. Specific URA parameters and formulae for calculating the total URA for a signal are defined sections 20 and 30 of this document. The URA includes all errors for which the Space and Control Segments are responsible. It does not include any errors introduced in the user set or the transmission media. While the URA may vary over a given subframe fit interval, the URA index or components reported in the NAV message correspond to the maximum value of URA anticipated over the fit interval. Rationale: Definition of URA should be consistent between the GPS III specifications and the interface documents. The current definition of URA in this document lacks specificity.		
142	T. Nagle GPC	Page: Para: New	Critical	Comment: Add new paragraph (20.3.1.1) that describes the OCX assumptions regarding UE	PO Resolution: Defer	(05/11/09) PO notes “Accept”, however if comment has not been ultimately resolved,

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				correlation characteristics used to make pseudorange measurements and a disclaimer that UE using different correlation characteristics may experience small additional User Range Errors. Suggested Change: Add new paragraph 20.3.1.1, as follows: Suggested Change: From: WAS: (none) To: IS: The pseudorange-related parameters provided in this navigation message are defined at zero age of data assuming that the UE is making pseudorange measurements using a signal correlation function with the following characteristics: an early-late discriminator (TBR), a correlator spacing equivalent to one P-code-chip (1/10.23 microseconds) (TBR) and a 20.46 MHz bandwidth (TBR). User receivers with different correlation characteristics may experience additional small pseudorange errors, due to small nominal signal distortions and frequency dispersion, which may alter the shape of the correlation signal peak from the ideal. It is the responsibility of the user to account for these additional errors and for any impact it may have on his specific application. Rationale: This is consistent with the assumptions and definition of URE in the GPS III -800 series of specifications. At this time, the Control Segment is not required to account for multiple UE correlation characteristics or provide multiple sets of data, therefore, the navigation message must be provided relative to a standard correlation characteristic and a single set of data.	Rationale: The OCX assumptions do not belong in the document. However, will add as a placeholder until a better document is identified pending ICWG approval. Concurrence: Concur Rationale:	as cited in the PO Resolution it has not, the PO has and needs to officially note this as being “Deferred” until the follow up action to ultimately resolve and close it out has been accomplished.
143	T. Nagle GPC	Page: Para: New	Critical	Comment: Add new paragraph (30.3.1.1) that describes the OCX assumptions regarding UE	PO Resolution: Defer	(05/11/09) PO notes “Accept”, however if comment has not been ultimately resolved,

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				correlation characteristics used to make pseudorange measurements and a disclaimer that UE using different correlation characteristics may experience small additional User Range Errors. Suggested Change: Add new paragraph 20.3.1.1, as follows: Suggested Change: From: (none) To: The pseudorange-related parameters provided in this navigation message are defined at zero age of data assuming that the UE is making pseudorange measurements using a signal correlation function with the following characteristics: an early-late discriminator (TBR), a correlator spacing equivalent to one P-code-chip (1/10.23 microseconds) (TBR) and a 20.46 MHz bandwidth (TBR). User receivers with different correlation characteristics may experience additional small pseudorange errors, due to small nominal signal distortions and frequency dispersion, which may alter the shape of the correlation signal peak from the ideal. It is the responsibility of the user to account for these additional errors and for any impact it may have on his specific application. Rationale: This is consistent with the assumptions and definition of URE in the GPS III -800 series of specifications. At this time, the Control Segment is not required to account for multiple UE correlation characteristics or provide multiple sets of data, therefore, the navigation message must be provided relative to a standard correlation characteristic and a single set of data.	Rationale: The OCX assumptions do not belong in the document. However, will add as a placeholder until a better document is identified pending ICWG approval. Concurrence: Concur Rationale:	as cited in the PO Resolution it has not, the PO has and needs to officially note this as being “Deferred” until the follow up action to ultimately resolve and close it out has been accomplished.
144	T. Nagle GPC	Page: 54 Para: 6.2.1	Critical	Comment: The definition of URA in this section is inconsistent with that in SS-SYS-800C. Here URA is	PO Resolution: Accept	Concur (05/21/09)

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				defined as “with a specific SV” while SS-SYS-800C (SYS1065) defines URA as “with a specific signal and SV”. Suggested Change: Change “with a specific SV” to “with a specific signal and SV”. Suggested Change: From: To: Rationale: Consistency and correctness	Rationale: Accept as administrative Concurrence: Concur Rationale:	
145	T. Nagle GPC	Page: 59 Para: 6.3.4	Administrative	Comment: This comment is regarding the statements “In the Autonav mode the Block IIR/IIR-M/IIF/directional crosslink-capable III SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma for Block IIR/IIR-M” and “If the CS is unable to upload the SVs, the Block IIR/IIR-M/IIF/directional crosslink-capable III SVs will maintain normal operations for period of at least 60 days after the last upload”. Why is there a reference to all blocks of SVs in the beginning of the sentence, but only a reference to block IIR/IIR-M at the end of the sentence? (Substantive) Is there really any need to differentiate by SV since the statement applies to Autonav where implemented in any SV?(Administrative) Suggested Change: From: To: Recommend this statement be changed to read “In the Autonav mode the SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a	PO Resolution: Defer Rationale: The paragraph needs to be revised to differentiate “Autonav” from “Autonomous Navigation”. Waiting for resolution from NCWG on UHF Autonav tentatively scheduled for Jun 09. 8/6/09: V. Gopal to work with R. Lozano & SNL for final definitions of Autonomous Naviation Mode and AutoNav Mode. May require significant rewrites of public interfaces. 12/17/09: ICC is considering removal of all Autononav language from the document. Such language may be inappropriate for this document. Concurrence: Non-concur Rationale:	Non-concur (05/21/09)

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				URE of no larger than 6 meters, one sigma" and "If the CS is unable to upload the SVs, the SVs will maintain normal operations for period of at least 60 days after the last upload" Rationale: In this case, the state is true for SVs that implement autonav, so it is unnecessary to point out all the SV types. The previous sentences clarify which SVs have an autonav requirement.		
146	T. Nagle GPC	Page: 59 Para: 6.3.2.1	Administrative	Comment: Section 6.3.2.1 describes the extended navigation mode of the Block IIIA SVs. It is unclear if this requirement will be applicable to Block III B and C SVs. If applicable to Block III B and C SVs, change "Block IIIA" to "Block III". If one looks at 6.3.4 Autonomous Navigation Mode it refers to all "Block III" SVs. Suggested Change: Change "Block IIIA" to "Block III" Suggested Change: From: To: Rationale: Clarification and consistency.	PO Resolution: Reject Rationale: The requirement is currently for GPSIIIA only. IIIB and IIIC are currently TBD. Concurrence: Concur Rationale:	Concur (05/21/09)
147	T. Nagle GPC	Page: 73 Para: Sec 10 Appendix 1	Administrative	Comment: Delete Section 10 Appendix 1. Letter of Exception (LM & Boeing) Suggested Change: From: To: Rationale: Letter of Exceptions are of a contractual nature and not part of an interface specification.	PO Resolution: Reject Rationale: Contracts will not allow us to remove these pages from the interfaces since Boeing is on contract for these interfaces. Concurrence: Concur Rationale:	(05/11/09) GPC rejects PO resolution and again refers to the rationale provided for this comment. Duplicate comment #85.
148	T. Nagle GPC	Page: 83 Para: 20.3.2	Substantive	Comment: Section 20.3.2 Message Structure, third paragraph, fourth sentence, states "Block IIIA SVs	PO Resolution: Accept	Concur (05/21/09)

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				have the capability to store at least 60 days of uploaded data." This requirement is already defined in Section 6.3.2.1. Believe this sentence can be removed or should make reference to Section 6.3.2.1 for clarification. This section has the same issue in item 3, above. It only discusses Block IIIA SVs. It is unclear if this requirement will be applicable to Block III B and C SVs. If applicable to Block III B and C SVs, change "Block IIIA" to "Block III". If one looks at 6.3.4 Autonomous Navigation Mode it refers to all "Block III" SVs. Suggested Change: Believe this sentence can be removed or should make reference to Section 6.3.2.1 for clarification. Change "Block IIIA" to "Block III" Suggested Change: From: To: Rationale: Clarification and consistency.	Rationale: Concurrence: Concur Rationale:	
149	T. Nagle GPC	Page: 95 Para: 20.3.3.1 20.3.3.2 20.3.3.3.1.3 20.3.3.5.1.9 30.3.3.2.4	Administrative	Comment: "authorized user" and "unauthorized user" have been replaced with "precise positioning service user" and "standard positioning service user" globally throughout the document. However, the terms "authorized" and "unauthorized" are used in many other documents in reference to whether or not access to PPS is authorized. Unauthorized referred to both SPS UE as well as unkeyed PPS UE. The terminology change in IS-GPS-200 creates a semantics disconnect with other documents. Suggested Change: A couple of options: 1. Reverse the change 2. Somewhere add definitions of PPS user and SPS user that clarify that an unkeyed PPS device qualifies as SPS user, and take an action to update	PO Resolution: A/C Rationale: The changes were made per the GPC suggested language, which was concurred upon at the May 08 ICWG. See comment #13. GPC should decide amongst themselves and provide suggested terminology. Concurrence: Concur Rationale:	(05/11/09) Suggested terminology. Replace "authorized user" with "keyed PPS user equipment". Replace "unauthorized user" with "unkeyed PPS and SPS user equipment".

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				all the other GPSW technical baseline documents to replace the terms “authorized” and “unauthorized” with “PPS” and “SPS” Suggested Change: From: To: Rationale: This change in this document causes semantics disconnect with other GPSW documents. The disconnect needs to be addressed.		
150	T. Nagle GPC	Page: 96, 172 Para: 20.3.3.1, 30.3.3.1.1	Substantive	Comment: The new text uses the words “without an accompanying alert”. What alert? There is no other change in the document suggesting that an accompanying alert will be added to the Legacy Nav message, so where is this alert coming from? Suggested Change: Add wording clarifying what is meant by “an accompanying alert” and where that alert is found, whether somewhere in the signal or provided externally. Suggested Change: From: To: Rationale: These references to the “without an accompanying alert” need to be accompanied with a description of where the alerts may be found.	PO Resolution: Accept Rationale: The changes were made per the GPC suggested language, which was concurred upon at the May 08 ICWG. See comments #24 & #31. The ICC POC does not know what GPC’s original intent was; GPC should provide recommended updated language. Concurrence: Concur Rationale:	Concur (05/21/09)
151	T. Nagle GPC	Page: 97 Para: 20.3.3.1	Administrative	Comment: Add (PPS) and (SPS) after precise positioning service …and standard positioning service. Suggested Change:	PO Resolution: Accept Rationale: 04/28/09: Incorporated change. Concurrence: Concur	Concur (05/21/09)

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: Entire words will not have to be spelled out in subsequent paragraphs.	Rationale:	
152	T. Nagle GPC	Page: 102 Para: 20.3.3.3.1.5	Substantive	Comment: Current IODC does not require it to change every time of detecting any change in the correction parameters. For Block III, this requirement can be tighten for block III SVs. Suggested Change: From: The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters. To: The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters. The IODC shall change when detecting any change in the correction parameters. Rationale: Tighten the IODC requirement for block III SVs 8/6/09: ICC will setup a WG and work with stakeholders to get WAS/IS text	PO Resolution: Defer Rationale: Needs ICWG discussion Concurrence: Non-concur Rationale:	Non-concur (05/21/09) 8/24/09: Will talk to Munoz to find why this was accepted in 705 and not in 200.
153	T. Nagle GPC	Page: 110 Para: 20.3.3.4.1, 20.3.3.4.3, 20.3.3.4.3.1, 20.3.4.5, 30.3.3.1.1, 30.3.3.1.3	Substantive	Comment: There are a number proposed changes added to address the fact that requirements traditionally performed by the CS are now going to be performed by the SV in the case of GPS IIIA. However, whether the CS or SV performs the task is irrelevant from an interface definition perspective. Suggested Change:	PO Resolution: Defer Rationale: Need to do this holistically; this requires a system-wide effort. This is a low priority. Will discuss at ICWG 9/1/09: There are many additional instances in which this could be done than what the commentor has provided. A very careful examination of how/when this can be done must be undertaken in order to	GPC to provide rationale as to what the harm would be to leave it in.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: 20.3.3.4.1 (para 4): The CS shall assure that the toe value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover (reference paragraph 20.3.4.5). 20.3.3.4.3 (line 3): the values of these parameters, however, are produced by the CS via a least squares curve fit 20.3.3.4.3.1 (line 1): Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curvefit interval used by the CS in determining the ephemeris parameters, as follows: 20.3.4.5 (para 4, line 1): The CS shall assure that the toe value, for at least the first data set transmitted by an SV after a new upload, is different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover for transmission, the CS shall introduce a small deviation in the toe resulting in the toe value that is offset from the hour boundaries (see Table 20-XIII). This offset toe will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the toe. When the toe, immediately prior to a new upload cutover, already reflects a small deviation (i.e. a new upload cutover has occurred in the recent past), then the CS shall introduce an additional deviation to the toe when a new upload is cutover for transmission. 30.3.3.1.1 (3rd para, 2nd sentence) The CS will assure that the toe value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover. 30.3.3.1.3 (2nd sentence)	ensure that we are not "over/under-removing" the CS's role from this document. Therefore, we will defer this comment for the next update when a more careful removal can be accomplished. Concurrence: Concur Rationale: (05/11/09) PO notes “Accept”, however if comment has not been ultimately resolved, as cited in the PO Resolution it has not, the PO has and needs to officially note this as being “Deferred” until the follow up action to ultimately resolve and close it out has been accomplished.	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				The ephemeris parameters are Keplerian in appearance; however, the values of these parameters are produced by the CS via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples: t, x, y, z expressed in ECEF coordinates). To: 20.3.3.4.1 (para 4): The toe value, for at least the first data set transmitted by an SV after an upload, shall be different from that transmitted prior to the cutover (reference paragraph 20.3.4.5). 20.3.3.4.3 (line 3): the values of these parameters, however, are produced via a least squares curve fit 20.3.3.4.3.1 (line 1): Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curvefit interval used in determining the ephemeris parameters, as follows: 20.3.4.5 (para 4, line 1): The toe value, for at least the first data set transmitted by an SV after a new upload, shall be different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover for transmission, a small deviation in the toe resulting in the toe value that is offset from the hour boundaries (see Table 20-XIII). This offset toe will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the toe. When the toe, immediately prior to a new upload cutover, already reflects a small deviation (i.e. a new upload cutover has occurred in the recent past), then an additional deviation to the toe when a new upload is cutover for transmission shall be introducted. 30.3.3.1.1 (3rd para, 2nd sentence)		

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				The toe value, for at least the first data set transmitted by an SV after an upload, shall be different from that transmitted prior to the cutover. 30.3.3.1.3 (2nd sentence) The ephemeris parameters are Keplerian in appearance; however, the values of these parameters are produced via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples: t, x, y, z expressed in ECEF coordinates). Rationale: This states the information from an interface requirements perspective regardless of whether the CS or the SV is performing the action, and eliminates the need to update the wording with each addition SV configuration type.		
154	T. Nagle GPC	Page: 128 Para: 20.3.3.5.1.4	Critical	Comment: A comment was submitted against this section. At the ICWG, I took an action to provide some alternative wording, which I provided 20 Nov 2008. Key aspects of that wording are missing, e.g. clarifying that UE should not be ignoring SVs that in the future may actually set this field to values that are currently undefined. Suggested Change: From: Code - SV Configuration 001 - "Block II/IIA/IIR" SV (A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2). 010 - “Block IIR-M” SV 011 - “Block IIF” SV To: Code - SV Configuration 000 - No A-S capability, no flags for A-S; memory capacity is other than described in paragraph 20.3.2 (e.g.,Block I SV). OR	PO Resolution: Accept Rationale: At the Nov 09 ICWG, proposed language changes were made in real-time. Mike Dash was given the action to revise the following removed language: “Users can assume that SVs with a numerically larger (binary sense) configuration code will be backwards compatible with this version of IS-GPS-200.” The suggested language was inserted into the ICWG meeting minutes. The commenter’s new language will be brought to ICWG Concurrence: Concur Rationale:	(05/21/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				000 - Reserved 001 - A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g.,Block II/IIA/IIR SV). 010 - A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 - A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). 100 - A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA capability (e.g., Block IIIA SV). (e.g.,Block IIIA SV). 101-111 - Undefined The undefined codes will be assigned definition in the future, should the need arise. While UE developers can't anticipate what future definitions will be assigned to the undefned codes, UE shall be able to acquire and track SVs that transmit codes identified above as "Undefined" IAW applicable UE requirements." Rationale: It's critical that UE not unilaterally discard any SV that sets these three bits to an undefined value		
155	T. Nagle GPC	Page: 178, 179 Para: 30.3.3.1.3 , Table 30-1, "****"	Administrative	Comment: The Word file shows a change in "Table 30-II" being replaced with "Table 30-II". It doesn't look like anything has changed. Has something changed? If not, why is this showing up as changed text? Please clarify. Suggested Change: From:	PO Resolution: Reject Rationale: The ERB version does not contain any insertion markings for Table 30-I or Table 3-II. The ERB version is located on the Livelink website. Concurrence: Concur Rationale:	(05/21/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: Not sure if there really is a change here and I'm somehow missing it.		
156	T. Nagle GPC	Page: 190 Para: 30.3.3.3.1.1.2	Administrative	Comment: Was/Is matrix indicates there is a change to the equation, but I can't tell what the change is. The draft document has no change bar next to the equation. Is there really a change being proposed here? Please clarify. Suggested Change: From: To: Rationale: Not sure if there really is a change here and I'm somehow missing it.	PO Resolution: Reject Rationale: The change does not show up when track changes is on. This is a flaw/issue with MS Word. The Was/Is matrix takes precedence. Concurrence: Concur Rationale: (05/21/09) GPC Concurs to removing this as a GPC comment only.	Withdrawn
157	T. Nagle GPC	Page: 208 Para: 30.3.3.9	Administrative	Comment: The Word file shows a change in "Table 30-" being replaced with "Table 30-". It doesn't look like anything has changed. Has something changed? If not, why is this showing up as changed text? Please clarify. Suggested Change: From: To: Rationale:	PO Resolution: Reject Rationale: Section 30.3.3.9 does not reference "Table 30-". Please resubmit with correct section number. Concurrence: Concur Rationale: (05/21/09) GPC Concurs to removing this as a GPC comment only.	Withdrawn
158	T. Nagle GPC	Page: Gen Para:	Critical	Comment: The ICWG phase of the process did not clearly identify proposed changes nor did it allow enough time to coordinate with and task UE contractors to provide feedback on the impacts, if any, this change would have on GPS UE being delivered to the Army. The package sent out for ICWG review had the following issues: - changes in draft document not in PIRN	PO Resolution: Reject Rationale: The comment is noted, but is not within scope of the ICWG meeting itself. This is related to process and needs to be brought up in the appropriate forum. Concurrence: Concur	Withdrawn

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				- change in draft document not identified by change bar - change bar next to items in document that did not actually change. Because of the public ICWG was scheduled prior to coordinating a GPSW position, the document was sent around for GPSW review with only a few weeks to review. Given the shortened time and the condition of the documentation, it would not have been possible to make arrangements to obtain UE vendor feedback for particular products by the time the ICWG was held. Since none of the changes in this draft document are critical, either from an SV or UE perspective, recommend pulling this document and restarting the ICWG process. Suggested Change: From: To: Rationale: The Army has fielded a significant number and types of UE. It is important to be able to determine the impacts of proposed changes to the Space to User Segment interface on this fielded UE. It is important to allow not only sufficient time for review, which needs to be for a package limited to directly/succinctly identifying the proposed changes, but to provide time for the UE program manager to place the task. In the particular case of this draft, the changing of a bit definition from reserved to an integrity bit is something that the GPSW needs to confirm is or is not an impact on fielded UE prior to approving.	Rationale: (05/21/09) GPC Concurs to removing this as a GPC comment only.	
159	T. Nagle GPC	Page: all Para:	Administrative	Comment: The rev letter “D” was removed from the footer of every page, but not replaced with “E”. Add the rev letter to the footer.	PO Resolution: Accept Rationale: 04/28/09: Incorporated change.	(05/21/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: The rev letter is important in identifying the document. This also becomes important when incorporating IRNs, which only affect certain pages, and the IRN needs to be associated with a particular revision letter	Concurrence: Concur Rationale:	
160	T. Nagle GPC	Page: Gen Para:	Critical	Comment: Rejecting all the changes does not result in exactly the same document as was last approved; i.e. IS-GPS-200D with IRN-001. There are differences I noticed as part of reviewing the proposed changes, such as missing cover graphics, text shown as deleted that was never present in IS-GPS-200D with IRN-001 (3.3.1.4,6.2.2.2.6). While these are minor issues, it is indicative of undocumented changes. Since CCB reviewers shouldn't have to scrutinize the parts of the document that are identified as unchanged, what else is being missed? Barring previous comments to rescind this document as restart the ICWG process, there are two options: 1. Discard this Word file and go back to the official Word file for IS-GPS-200D with IRN-001 used to produce the PDF file in the GPS Library, turn track changes on, and insert the proposed document changes -or- 2. Instead of creating a Rev E, create an IRN-002 to Rev D. This way, the Word file need only contain the affected pages, limiting the amount of "unchanged" aspects of the document that needs to be scrutinized.	PO Resolution: Reject Rationale: The comment is noted, but is not within scope. This is related to process and needs to be brought up in the appropriate forum. Also, part of the purpose of the ERB/CCB process is to find issues such as those described. Merely performing 'reject all changes' does not constitute proper review. Concurrence: Concur Rationale: (05/21/09) GPC Concurs to removing this as a GPC comment only.	Withdrawn

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: The CM process for GPSW technical documents is critical, but even more so for this document. IS-GPS-200 is the "backbone" of the GPS system architecture. There are countless number of UE programs, both military and civilian, dependant on this document and the GPSW should not place risk on these programs by not following a rigid CM process during updates. If there is a problem in going from Word 2003 to 2007, then this is a systemic problem as the entire technical library was authored in Word 2003. This should be tackled as a GPSW-wide problem and resolved without using the GPSW's most important documents as test cases.		
161	T. Nagle GPC	Page: Gen Para: Figures	Administrative	Comment: In this Word file, some of the figures (e.g. fig 20-1) have text improperly aligned with the figure. This could be just how the file prints at my computer, but it may be something else. Need to verify the PDF file created from the Word file doesn't have alignment issues with the figures. Suggested Change: From: To: Rationale:	PO Resolution: Reject Rationale: The commenter must provide those figures with error. The example provided did not contain any alignment issues. 05/04/09: The PO Resolution has changed to: Accept. The ICC POC will insure that the final product does not have alignment issues. Concurrence: Concur Rationale: (05/21/09) GPC Concurs to removing this as a GPC comment only.	Withdrawn
162	M. Dash GPA	Page: Gen Para:	Critical	Comment: The ICWG phase of the process did not clearly identify proposed changes nor did it allow enough time to coordinate with and task UE contractors to provide feedback on the impacts, if any, this change would have on GPS UE being	PO Resolution: Accept Rationale: Duplicate of GPC comment #158. Resolution to #158 is "Reject. The comment is noted, but is not within scope of the ICWG meeting itself. This	05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #158. The

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				delivered to the Army. The package sent out for ICWG review had the following issues: - changes in draft document not in PIRN - change in draft document not identified by change bar - change bar next to items in document that did not actually change. Because of the public ICWG was scheduled prior to coordinating a GPSW position, the document was sent around for GPSW review with only a few weeks to review. Given the shortened time and the condition of the documentation, it would not have been possible to make arrangements to obtain UE vendor feedback for particular products by the time the ICWG was held. Since none of the changes in this draft document are critical, either from an SV or UE perspective, recommend pulling this document and restarting the ICWG process. Suggested Change: From: To: Rationale: The Army has fielded a significant number and types of UE. It is important to be able to determine the impacts of proposed changes to the Space to User Segment interface on this fielded UE. It is important to allow not only sufficient time for review, which needs to be for a package limited to directly/succinctly identifying the proposed changes, but to provide time for the UE program manager to place the task. In the particular case of this draft, the changing of a bit definition from reserved to an integrity bit is something that the GPSW needs to confirm is or is not an impact on fielded UE prior to approving.	is related to process and needs to be brought up in the appropriate forum." V. Gopal: GPUG has taken the action to vet the documents with military user developers Concurrence: Concur Rationale: The resolution is incorrect in stating this comment is not in scope of the ICWG. This comment is clearly in scope of the ICWG and the process for updating interface requirements. Configuration management of these public ICDs is critical to GPS and part of the needed interface management. This is not a process comment, but a comment against the document package submitted to CCB for review.	commenter will be added to comment #158 in the 'Reviewer Name' cell to provide him an independent opportunity .to concur/non-concur.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
163	M. Dash GPA	Page: Para: 3.2.1.1, 3.2.1.3, 3.2.1.4, 3.2.1.5, 3.3.2.1, 6.3.5	Critical	Comment: There is still an issue with how PRN expansion was added to this document, disregarding comments submitted previously regarding systems engineering issues. The stated intent was to put PRN expansion in as "information only", but the way it was included is not for "information only" since there are links to PRN expansion in sec 3. This makes the PRN expansion described in sec 6 acceptable to implement, which is more than just "information only". There are two possible courses of action: 1. Implement the changes originally requested back in 2006; delete the IRN-200D-001 changes to sec 3 (3.2.1.1, 3.2.1.3, 3.2.1.4, 3.2.1.5,3.3.2.1) and change the first sentence of 6.3.5 to read "The additional PRN sequences provided in this section are for information only and impose no requirement on the operational SIS interface between the GPS Space and User Segments. The additional PRN sequences identified in this section are not applicable to Block II/IIA, IIR/IIR-M, IIF SVs required to comply with this Interface Specification. In addition, tThe current valid range for GPS PRN signal number for C/A- and P-code is remains 1 – 37 as specified in Table 3-I. The PRN sequences provided in this section are for other L1/L2 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, and potential use in the future by GPS" -or- 2. Identify the system level changes/impacts associated with allowing SVs to be assigned PRNs above 32, such as: - Proactively confirm with UE vendors that this PRN expansion will have no impact on fielded products -Identify the nav message to be provided with C/A and P(Y) -Identify the impacts to GPSW UE ICDs -Identify a requirement to assign PRNs 1-32 to	PO Resolution: Defer Rationale: Duplicate of GPC comment #119. Resolution to #119 is "Defer. The languages in each of these sections was baselined prior to the current ICC's involvement; the current ICC was not privy to the 'information only' discussion. If the commenter provides the names of the original discussion participants, the POC will set up a meeting to resolve the issue." V. Gopal: This has been submitted as an RIL item by Mike Deelo. Concurrence: Concur Rationale: The current ICCs involvement or lack of involvement regarding this wording is not a legitimate reason to reject comments to change the wording. That is what routinely occurs when ICC takes over for another. It's not the reviewer's responsibility to assume ICC duties to identify who should be consulted (e.g. ICWG members) on a reviewers comment. The rejection of the comment should be based on sound rationale as to why it shouldn't be incorporated, otherwise accept the comment and incorporate it, or defer the document to hold another ICWG.	05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #119. The commenter will be added to comment #119 in the 'Reviewer Name' cell to provide him an independent opportunity .to concur/non-concur.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				operational SVs before assigning PRNs 38 and above -Identify the requirement in a system level document (e.g. SS-GPS-300) that is being met by expanding the number of SVs the constellation is able to support, e.g. improve SV availability to terrain challenged users. Suggested Change: From: To: Rationale: There are many significant systems engineering ramifications of allowing PRNs assigned to SVs to go beyond 32 that have not be addressed or resolved. Until that time, the PRN expansion should be clearly presented as "information only" and not conveyed as something that is acceptable to implement at this time. At least not until all the issues are worked out.		
164	M. Dash GPA	Page: all Para:	Administrative	Comment: The rev letter "D" was removed from the footer of every page, but not replaced with "E". Add the rev letter to the footer. Suggested Change: From: To: Rationale: The rev letter is important in identifying the document. This also becomes important when incorporating IRNs, which only affect certain pages, and the IRN needs to be associated with a particular revision letter	PO Resolution: Reject Rationale: Duplicate of GPC comment #159. Resolution to #159 "Accept. 04/28/09: Incorporated change." Concurrence: Concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #159. The commenter will be added to comment #159 in the 'Reviewer Name' cell to provide him an independent opportunity .to concur/non-concur.
165	Tom Thede GPL	Page: 12 Para: 3.2.3	Administrative	Comment: Need to delete all references to Block II SVs	PO Resolution: Defer	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: Block II/IIA To: Block IIA Rationale: Block II characteristics are irrelevant to this document	Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	
166	Tom Thede GPL	Page: 13 Para: Table 3-III	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA/IIR To: Block IIA/IIR Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
167	Tom Thede GPL	Page: 18 Para: Table 3-IV	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline.	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Block IIA Rationale: Block II characteristics are irrelevant to this document	8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	
168	Tom Thede GPL	Page: 20 Para: 3.3.1.9	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA (in 2nd and 4th lines) To: Block IIA Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
169	Tom Thede GPL	Page: 54 Para: 6.2.2.2.1	Administrative	Comment: Need to leave in this paragraph only for historical purposes seeing all Block II satellites were put in disposal orbits. Suggested Change: From: The first block of full scale operational SVs developed by Rockwell International are designated as SVNs 13-21 and are termed "Block II" SVs. These SVs were designed to provide 14 days of positioning service without contact from the CS.	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider.	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: The first block of full scale operational SVs developed by Rockwell International were designated as SVNs 13-21 and were termed "Block II" SVs. These SVs were designed to provide 14 days of positioning service without contact from the CS. There are no operational Block II SVs on orbit as they were all put into disposal orbits in 2008. Rationale: Block II SVs should be mentioned in this paragraph only for historical purposes and then all other references deleted because there are no operational Block II SVs on orbit making their characteristics irrelevant in this document	9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	
170	Tom Thede GPL	Page: 56 Para: 6.3.1	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA/IIR (3rd line) To: Block IIA/IIR Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
171	Tom Thede GPL	Page: 56 Para: 6.3.1	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA (6th line) To: Block IIA	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Block II characteristics are irrelevant to this document	all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	
172	Tom Thede GPL	Page: 57 Para: Fig 6-1	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA (fig title) To: Block IIA Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
173	Tom Thede GPL	Page: 58 Para: 6.3.2	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA (para title) To: Block IIA Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review.	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
					Concurrence: Concur Rationale:	
174	Tom Thede GPL	Page: 58 Para: 6.3.2	Administrative	Comment: Need to delete all references to Block II SVs. Delete “Block II and second sentence in its entirety Suggested Change: From: 6.3.2 Extended Navigation Mode (Block II/IIA). The Block II and IIA SVs are capable of being uploaded by the CS with a minimum of 60 days of navigation data to support a 60 day positioning service. Due to memory retention limitations, the Block II SVs may not transmit correct data for the entire 60 days but are guaranteed to transmit correct data for at least 14 days to support short-term extended operations. ... To: 6.3.2 Extended Navigation Mode (Block IIA). The Block IIA SVs are capable of being uploaded by the CS with a minimum of 60 days of navigation data to support a 60 day positioning service. ... Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
175	Tom Thede GPL	Page: 61 Para: 6.3.5	Administrative	Comment: Need to delete all references to Block II SVs. In third paragraph, delete “Block II and” Suggested Change: From: Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of uploaded NAV data. To: Block IIA SVs are designed with sufficient memory capacity for storing at least 60 days of	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider.	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				uploaded NAV data. Rationale: Block II characteristics are irrelevant to this document	9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	
176	Tom Thede GPL	Page: 83 Para: 20.3.2	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: To: Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur
177	Tom Thede GPL	Page: 83 Para: 20.3.2	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: Block II/IIA To: Block IIA Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
178	Tom Thede GPL	Page: 84 Para: 20.3.2	Administrative	Comment: Need to delete all references to Block II SVs. Change “Block II/IIA” to “Block IIA” and delete second, third and fourth paragraphs. Suggested Change: From: Each subframe and/or page of a subframe shall contain a telemetry (TLM) word and a handover word (HOW), both generated by the SV, and shall start with the TLM/HOW pair. The TLM word shall be transmitted first, immediately followed by the HOW. The latter shall be followed by eight data words. Each word in each frame shall contain parity (reference Section 20.3.5). Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. Alternating ones and zeros will be transmitted in words 3 through 10 in place of the normal NAV data whenever the SV cannot locate the requisite valid control or data element in its on-board computer memory. The following specifics apply to this default action: (a) the parity of the affected words will be invalid, (b) the two trailing bits of word 10 will be zeros (to allow the parity of subsequent subframes to be valid -- reference paragraph 20.3.5), (c) if the problem is the lack of a data element, only the directly related subframe(s) will be treated in this manner, (d) if a control element cannot be located, this default action will be applied to all subframes and all subframes will indicate ID = 1 (Block II/IIA only)	PO Resolution: Defer Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. 9/29/09: Changed back to defer after ICWG review. Concurrence: Concur Rationale:	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				(i.e., an ID-code of 001) in the HOW (reference paragraph 20.3.3.2) (Block IIR/IIR-M and IIF SVs indicate the proper subframe ID for all subframes). Certain failures of control elements which may occur in the SV memory or during an upload will cause the SV to transmit in non-standard codes (NSC and NSY) which would preclude normal use by the US. Normal NAV data transmission will be resumed by the SV whenever a valid set of elements becomes available. Block II/IIA SVs are uploaded with a minimum of 60 days of NAV data. However, the EAROM retentivity for Block II SVs is designed and guaranteed for only 14 days. Therefore, Block II SV memory is most likely to fail sometime during long-term extended operations after repeated write operations. In the case of memory failure, the SV will transmit alternating ones and zeros in word 3-10 as specified in the above paragraph. The EAROM retentivity for Block IIA SVs is designed and guaranteed for at least 60 days. To: (2nd, 3rd, and 4th para deleted) Rationale: Block II characteristics are irrelevant to this document		
179	Tom Thede GPL	Page: 100 Para: 20.3.3.3.1.1	Administrative	Comment: Need to delete all references to Block II SVs. Delete 4th sentence in its entirety Suggested Change: From: For Block II SVs in long-term extended operations, beginning approximately 28 days after upload, the transmission week number may not correspond to the actual GPS week number due to curve fit intervals that cross week boundaries. To: (deleted)	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider.	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Block II characteristics are irrelevant to this document	Concurrence: Concur Rationale:	
180	Tom Thede GPL	Page: 110 Para: 20.3.3.4	Administrative	Comment: Need to delete all references to Block II SVs (20th line) Suggested Change: From: "Block II/IIA/IIR/IIR-M/IIF" To: "Block IIA/IIR/IIR-M/IIF" Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	(05/01/09) Concur
181	Tom Thede GPL	Page: 112 Para: 20.3.3.4.3	Administrative	Comment: Need to delete all references to Block II SVs (20th line) Suggested Change: From: "Block II/IIA/IIR/IIR-M/IIF" To: "Block IIA/IIR/IIR-M/IIF" Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	(05/01/09) Concur
182	Tom Thede GPL	Page: 112 Para: 20.3.3.4.3.1	Administrative	Comment: Need to delete all references to Block II SVs (4th line)	PO Resolution: Reject Rationale: The change will be made upon confirmation	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: "Block II/IIA/IIR/IIR-M/IIF" To: "Block IIA/IIR/IIR-M/IIF" Rationale: Block II characteristics are irrelevant to this document	that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	
183	Tom Thede GPL	Page: 123 Para: 20.3.3.5.1.2	Administrative	Comment: Need to delete all references to Block II SVs. (12th line) Suggested Change: From: For Block II and IIA SVs, three sets of almanac shall be used to span at least 60 days. To: For Block IIA SVs, three sets of almanac shall be used to span at least 60 days. The Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	(05/01/09) Concur
184	Tom Thede GPL	Page: 128 Para: 20.3.3.5.1.4	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: "Block II/IIA/IIR" (under "Code 001") To: "Block IIA/IIR" Rationale: Block II characteristics are irrelevant to	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				this document	argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	
185	Tom Thede GPL	Page: 145 Para: 20.3.4.4	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: "Block II/IIA" (5th line) To: "Block IIA/" Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	(05/01/09) Concur
186	Tom Thede GPL	Page: 146 Para: Table 20-XI	Administrative	Comment: Need to delete all references to Block II SVs Suggested Change: From: "Block II/IIA" (table heading) To: "Block IIA" Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Reject Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	(05/01/09) Concur
187	Tom Thede	Page: 149	Administrative	Comment: Need to delete all references to Block II	PO Resolution: Reject	(05/01/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	GPL	Para: 20.3.4.5		SVs Suggested Change: From: "Block II/IIA/IIR/IIR-M/IIF" (1st, 3rd, and 8th lines) To: "Block IIA/IIR/IIR-M/IIF" Rationale: Block II characteristics are irrelevant to this document	 Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. This change will be downgraded to Administrative since it does not change the technical baseline. 8/11/09: Changed to reject. There is a risk of removing all instances of "Block II" from this interface. Currently, there is no harm in leaving it in. If a compelling argument can be made that is must be removed, then the ICC will reconsider. Concurrence: Concur Rationale:	
188	T. Kawakami GPD	Page: 61 Para: 6.3.5	Critical	Comment: The description of the additional PRN sequences is not consistent between IS-GPS-200, IS-GPS-705 and IS-GPS-800. When the previous version of IS-GPS-800 was approved, the ICC assured that all three of the public ISs would contain the same description. The ICC also decided that the additional PRN values would not be moved to a separate document and that the ISs would not point to a common document that would contain the official description of the additional PRN sequences. Decide which description will be used and then consistently use it. Additionally, recommend consultation with M. Dash (GPA) for discussions from previous CCB and ICWG meetings pertaining to additional PRN sequences. Suggested Change: From: To: Rationale:	PO Resolution: Defer Rationale: Duplicate of comment #56 Concurrence: Concur Rationale:	(04/30/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
189	T. Kawakami GPD	Page: 196 Para: 30.3.3.5	Critical	Comment: Confirm with John Berg (Aerospace) that ECEF to ECI equations, values and descriptions are correct and reflect what will be implemented by GPSIII and OCX. There is ongoing work within multiple groups that will require CNAV and MNAV messages to be updated to reflect the international standards regarding the reference frame, polar motion, etc. Suggested Change: From: To: Rationale:	PO Resolution: A/C Rationale: Commenter must provide information that shows that the equations are incorrect and provide Was/Is suggested language. If there is concern, then a separate meeting (e.g. – TIM) should be created to address concern. 04/30/09: PO Resolution Update - Accept. The ICC POC clarified the comment with the originator. Concurrence: Concur Rationale:	(04/30/09) Concur 8/25/09: OBE. This comment has been addressed by the technical note.
190	Charlton A5P	Page: 6 Para: 3.2.1.1, 3.2.1.3, 3.2.1.4, 3.2.1.5	Administrative	Comment: add period to end of paragraph Suggested Change: From: To: Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
191	Charlton A5P	Page: 11 Para: 3.2.2	Administrative	Comment: recommend use of “encoder” and “encoded” versus “coder” and “coded” Suggested Change: From: To: Rationale: align with more standard usage and make consistent with rest of document	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
192	Charlton A5P	Page: 11 Para: 3.2.2	Administrative	Comment: para 3, line 5 change wording to “…rate ½ convolutional encoding of 25	PO Resolution: Accept Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: clarity	Concurrence: Concur Rationale:	
193	Charlton A5P	Page: 12 Para: 3.2.3	Administrative	Comment: last sentence - change “configuration” to “configurations” and “combination” to “combinations” Suggested Change: From: To: Rationale: subject/verb agreement	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
194	Charlton A5P	Page: 15, 17, 43, 58, 60, Etc. Para: 3.3.1.4, 3.3.1.6, 3.3.4, 6.3.2, 6.3.4, Etc.	Administrative	Comment: There is a lot of “extraneous” white space throughout the document, probably as a result of editing. Once updates are made, insure extra white space is eliminated. Suggested Change: From: To: Rationale: readability	PO Resolution: A/C Rationale: Some white space is required to make the document more readable. Concurrence: Concur Rationale:	(05/05/09) Concur
195	Charlton A5P	Page: 16, 60, 97, 148, 174 Para: 3.3.1.5, 6.3.5.1, 20.3.3.1, 20.3.4.5, 30.3.3.1.1	Administrative	Comment: Tables and figures should appear as soon as practical after first mention in text. Move Tables 3-IV, 3-Va, 3-Vb, 3-Vc, 6-I, 20-XIII, 30-I and Figure 20-2 so that they appear in document as soon as practical following first mention in text. Some now appear several pages after first mention. Suggested Change:	PO Resolution: A/C Rationale: Similar charts/tables are grouped together. Will make changes if the charts/tables are not grouped. Low priority. Concurrence: Concur Rationale:	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: readability		
196	Charlton A5P	Page: 16 Para: 3.3.1.6	Administrative	Comment: first line Suggested Change: From: The SV shall provide L1 and L2 navigation signal strength at end-of-life (EOL), worst-case, in order … To: The SV shall provide worst-case L1 and L2 navigation signal strength at End-of-Life (EOL) in order … Rationale: readability, should also make consistent with similar wording in IS-GPS-705	PO Resolution: A/C Rationale: Will provide alternative language. Concurrence: Concur Rationale:	(05/05/09) Concur
197	Charlton A5P	Page: 16 Para: 3.3.1.6	Administrative	Comment: define acronyms in list or at first use. define dBi and dBW at first use in document or in section 6.1 define dBi and dBW at first use in document or in section 6.1 Suggested Change: From: To: Rationale: clarity and consistency across documents	PO Resolution: A/C Rationale: Will add to the Acronym list. Concurrence: Concur Rationale:	Originally rejected because these are common engineering terms. (05/05/09) Concur
198	Charlton A5P	Page: 19 Para: 3.3.1.6.1	Administrative	Comment: Suggested Change: From: The SV shall provide L1 and L2 navigation	PO Resolution: A/C Rationale: Will provide alternative language. Concurrence: Concur	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				signal strength at end-of-life (EOL), worst-case, in order to… To: The SV shall provide worst-case L1 and L2 navigation signal strength at End-of-Life (EOL) in order to … Rationale: readability, should also make consistent with similar wording in IS-GPS-705	Rationale:	
199	Charlton A5P	Page: 19 Para: 3.3.1.6.1	Administrative	Comment: last line. delete period following "paragraph" in last line Suggested Change: From: To: Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
200	Charlton A5P	Page: 21, 97 Para: 3.3.2.1, 20.3.3.1	Administrative	Comment: should use consistent number format/nomenclature throughout document Suggested Change: From: 1.023x10^7 1x10^-5 To: 1.023E7 1E-5 Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
201	Charlton A5P	Page: 41 Para: 3.3.3.1.1	Administrative	Comment: para 2, line 3 Suggested Change: From: …the encoder registers illustrated in Figure 3-14 contains the last six bits … To: …the encoder register illustrated in Figure 3-14	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				contains the last six … OR …the encoder registers illustrated in Figure 3-14 contain the last six bits … Rationale: readability - subject/verb agreement		
202	Charlton A5P	Page: 43 Para: 3.3.4	Administrative	Comment: there is an extra “shall” in current verbiage. eliminate extra “shall” so as to read “… interval shall be such that it relates GPS time …” Suggested Change: From: (2nd para, 2nd sentence) The accuracy of this data during the transmission interval shall be such that it shall relate GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). To: (2nd para, 2nd sentence) The accuracy of this data during the transmission interval shall be such that it relates GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
203	Charlton A5P	Page: 43 Para: 3.3.4	Administrative	Comment: para 2, line 7. move comma from before “and” to after “and” Suggested Change: From: Range error components (e.g. SV clock and position) contribute to the GPS time transfer error, and under normal operating circumstances ... To: Range error components (e.g. SV clock and position) contribute to the GPS time transfer error and, under normal operating circumstances ... Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	Orginally rejected because it was first thought that the sentence is grammatically correct. (05/05/09) Concur 05/01/09 Re-evaluated the sentence.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
204	Charlton A5P	Page: 56 Para: 6.3.1	Administrative	Comment: 2nd para, line 1 Suggested Change: From: "signals" To: "signal" Rationale: readablity	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
205	Charlton A5P	Page: 61 Para: 6.3.5.1	Administrative	Comment: para 2, line 2 Suggested Change: From: It should be noted that, in Table 6-I, the C/A-code sequences are identified by “G2 Delay” and “Initial G2 Setting” which is not as same as the method used in Table 3-I. To: It should be noted that, in Table 6-I, the C/A-code sequences are identified by “G2 Delay” and “Initial G2 Setting” which is not the same as the method used in Table 3-I. Rationale: readablity	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
206	Charlton A5P	Page: 62 Para: 6.3.5.2.1	Administrative	Comment: 2nd para, line 3 Suggested Change: From: … assignment … To: … assignments … Rationale: readablity	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
207	Charlton A5P	Page: 100 Para: 20.3.3.3.1	Substantive	Comment: 2nd para, lines 2 & 3. Quantify, if possible, what is meant by “…for an additional period of time after transmission…” Since this phrase is preceded by a “shall” it seems to imply a requirement, but without a length of time it does not give much guidance. Similar wording exists in	PO Resolution: Accept Rationale: Will provide alternative language. Low priority; the language has been in the document for over a decade and may cause more confusion if changed.	(05/05/09) Concur 8/27/09: Will be closed with PSICA WG emails.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				IS-GPS-705. Suggested Change: From: To: Rationale: clarity	Talk to Karl about this 9/1/09: PSICA WG concurs on submitted language Concurrence: Concur Rationale:	
208	Charlton A5P	Page: 108 Para: 20.3.3.3.3.3	Administrative	Comment: change period at end of equation for PRi to a comma Suggested Change: From: PRi = pseudorange measured on the channel indicated by the subscript. To: PRi = pseudorange measured on the channel indicated by the subscript, Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
209	Charlton A5P	Page: 118 Para: 20.3.3.4.4	Administrative	Comment: Delete extra “space” in first line of para following the equations: between “that” and “the best” and again on line 5 of same para following the semi-colon. Suggested Change: From: To: Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
210	Charlton A5P	Page: 128, 178, 183, 188, 192, 192, 195, 201, 207, Etc. Para: 20.3.3.5.1.6,	Administrative	Comment: inconsistent verbiage throughout document. Use standard language throughout document and make consistent with "705" spec as well. Where similar language exists, insure use of same language throughout. Recommend the language used in para 20.3.3.5.1.7: “…bit lengths,	PO Resolution: Defer Rationale: Will need to verify that the proposed language is appropriate for each situation. Concurrence: Concur	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		30.3.3.1.2, 30.3.3.2.2, 30.3.3.3.1.1, 30.3.3.4.5, 30.3.3.4.6.1, 30.3.3.5.1, 30.3.3.7.1, 30.3.3.8.1, Etc.		scale factors, ranges, and units of these parameters …" be used as the standard language. Suggested Change: From: To: Rationale: consistency/readability – similar inconsistencies exist in IS-GPS-705	Rationale:	
211	Charlton A5P	Page: 137 Para: 20.3.3.5.2.4	Administrative	Comment: second to last line. delete extra "space" between "deltatLSF " and "differ" Suggested Change: From: To: Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
212	Charlton A5P	Page: 140 Para: 20.3.3.5.2.6	Administrative	Comment: add period at end of "PR=measured pseudorange" Suggested Change: From: To: Rationale: grammar/consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
213	Charlton A5P	Page: 174 Para: 30.3.3.1.1	Administrative	Comment: line 3 Suggested Change: From: … provide … To: … provides …	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: grammar - subject/verb agreement		
214	Charlton A5P	Page: 174 Para: 30.3.3.1.1	Administrative	Comment: line 4 Suggested Change: From: … consist … To: … consists … Rationale: grammar - subject/verb agreement	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
215	Charlton A5P	Page: 174 Para: 30.3.3.1.1	Administrative	Comment: para 4 on page, should use consistent number format/nomenclature throughout document. change nomenclature from 1x10^-5 and 1x10^-8 to 1E-5 and 1E18, respectively, to be consistent with format elsewhere in document (i.e. para 3.3.1.1) Suggested Change: From: 1x10^-5 … 1x10^-8 To: 1E-5 … 1E18 Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
216	Charlton A5P	Page: 183 Para: 30.3.3.2.1	Administrative	Comment: Quantify, if possible, what is meant by "…for an additional period of time after transmission…" Since this phrase is preceded by a "shall" it seems to imply a requirement, but without a length of time it does not give much guidance. Similar wording exists in IS-GPS-705. Suggested Change: From: To: Rationale: clarity	PO Resolution: Accept Rationale: Same rationale as CID 207 Concurrence: Concur Rationale:	(05/05/09) Concur
217	Charlton	Page: 183	Administrative	Comment: change "provide" to "provides"	PO Resolution: Accept	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	A5P	Para: 30.3.3.2.1		Suggested Change: From: … provide … To: … provides … Rationale: grammar - subject/verb agreement	Rationale: Concurrence: Concur Rationale:	04/28/09: Changes incorporated.
218	Charlton A5P	Page: 187 Para: 30.3.3.2.4	Administrative	Comment: insert period at end of each equation for “N” (two places) Suggested Change: From: To: Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
219	Charlton A5P	Page: 188 Para: 30.3.3.3.1	Administrative	Comment: line 5. make “user” plural Suggested Change: From: … single frequency user. To: … single frequency users. Rationale: subject/verb agreement	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
220	Charlton A5P	Page: 189 Para: 30.3.3.3.1.1.1	Administrative	Comment: delete period following equation for ISCL2C Suggested Change: From: ISCL2C = tL1P(Y) - tL2C. To: ISCL2C = tL1P(Y) - tL2C Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur 04/28/09: Changes incorporated.
221	Charlton A5P	Page: 191 Para: 30.3.3.4	Administrative	Comment: acronyms should be defined at first use or in section 6.1. define “Midi” at first use or in	PO Resolution: Reject	Formerly, reject. Midi is not an acronym. (05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				section 6.1 Suggested Change: From: To: Rationale: clarity/consistency	Rationale: 05/01/09: Will bring to ICWG for definition. 9/1/09: Definition found in 30.3.3.4.5 Concurrence: Concur Rationale:	
222	Charlton A5P	Page: 191 Para: 30.3.3.4.4	Administrative	Comment: make “indication” plural and change “refers” to “refer” Suggested Change: From: … indication … refers … To: … indications … refer … Rationale: subject/verb agreement	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
223	Charlton A5P	Page: 195 Para: 30.3.3.5.1.1	Administrative	Comment: correct spelling: change “postion” to “position” Suggested Change: From: … postion … To: … position … Rationale: spelling	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
224	Charlton A5P	Page: 195 Para: 30.3.3.5.1.1	Administrative	Comment: delete comma after “rotation matrices” Suggested Change: From: To: Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
225	Charlton	Page: 195	Administrative	Comment: add comma after R2(alpha) matrix and	PO Resolution: Accept	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	A5P	Para: 30.3.3.5.1.1		add period after R3(alpha) matrix Suggested Change: From: … R2(alpha) = [ ] R3(alpha) = [ ] To: … R2(alpha) = [ ], R3(alpha) = [ ]. Rationale: grammar/readability	Rationale: Concurrence: Concur Rationale:	
226	Charlton A5P	Page: 199 Para: 30.3.3.6.2	Administrative	Comment: insert period at end of equation and colon in place of period at end of text before equation Suggested Change: From: To: Rationale: grammar/readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
227	Charlton A5P	Page: 204 Para: 30.3.3.7.3	Administrative	Comment: change final line before equation to read “… user may apply clock correction coefficient updates calculated using …” Suggested Change: From: To: Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
228	Charlton A5P	Page: 206 Para: 30.3.3.7.5	Administrative	Comment: insure “dot” notation is above correct symbol once “tracked changes” are removed from updated document Suggested Change: From:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: correctness		
229	Charlton A5P	Page: 206 Para: 30.3.3.7.5	Administrative	Comment: insert period following equation for UDRA at bottom of page Suggested Change: From: To: Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
230	Charlton A5P	Page: 207 Para: 30.3.3.8.1	Administrative	Comment: line 3. insert hyphen so as to read "GPS-like" Suggested Change: From: … other GPS like navigation … To: … other GPS-like navigation … Rationale: clarity/readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
231	Charlton A5P	Page: 211 Para: 30.3.5.1	Administrative	Comment: should use consistent number format/nomenclature throughout document. change nomenclature from 5.96x10^-8 to 5.96E-8 to be consistent with format elsewhere in document (i.e. para 3.3.1.1) Suggested Change: From: 5.96x10^-8 To: 5.96E-08 Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) Concur
232	Charlton A5P	Page: 211 Para: 30.3.5.1	Administrative	Comment: any equation that ends a sentence should be followed by a period. add periods after "otherwise", after equation for p(x) and after	PO Resolution: Accept Rationale:	(05/05/09) Concur

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				equation for m(x) Suggested Change: From: = 0 otherwise … ' p(X) = …. (no period) ' m(X) = …. (no period) To: = 0 otherwise. ' p(X) = …. (period) ' m(X) = …. (period) Rationale: grammar/consistency	Concurrence: Concur Rationale:	
233	Martin/Wang/Yi Aerospace	Page: 15 Para: 3.3.1.6	Substantive	Comment: Suggested Change: From: The Block IIIA SV shall provide L1 and L2 signals with the following characteristic: the L1 off-axis power gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir; the L2 off-axis power gain shall not decrease by more than 2 dB from EOE to nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion. To: The Block IIIA SV shall provide L1 and L2 signals with the following characteristic: the L1 off-axis power gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir; the L2 off-axis power gain shall not decrease by more than 2 dB from EOE to nadir; the power drop off between EOE and ±23.5 degrees (L1) and ±26 degrees (L2) shall be in a monotonically decreasing fashion. Rationale: Accounts for L1 Space Service Volume coverage	PO Resolution: Accept Rationale: Accept for ICWG concurrence. Concurrence: Concur Rationale:	(05/13/09) Concur
234	Martin/Wang/Yi	Page: 18	Substantive	Comment:	PO Resolution: Accept	(05/13/09) Further clarification of the orbit

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	Aerospace	Para: 3.3.1.6.1		Suggested Change: From: Table 3-Vc. Space Service Volume (SSV) Received Minimum RF Signal Strength for GPS III and Subsequent Satellites over the Bandwidth Specified in 3.3.1.1 To: Table 3-Vc. Space Service Volume Minimum Received L1 and L2 Signal Power - GEO Based Antennas Rationale: CRM disposition: minimum power levels apply to GEO orbits.	Rationale: Conflicting comments; need to resolve at ICWG. See comment #77. 9/1/09: Accepted. Concurrence: Concur Rationale:	is required to conform with current GPS space segment requirements.
235	Martin/Wang/Yi Aerospace	Page: 19 Para: 3.3.1.9	Substantive	Comment: Suggested Change: From: L2 ellipticity shall be no worse than 3.2 dB for Block II/IIA SVs and shall be no worse than 2.2 dB for Block IIR/IIR-M/IIF/IIIA over the angular range of ±13.8 degrees from nadir. To: L2 ellipticity shall be no worse than 3.2 dB for Block II/IIA SVs and shall be no worse than 2.2 dB for Block IIR/IIR-M/IIF/IIIA over the angular range of ±13.8 degrees (plus pointing error) from nadir. Pointing error is described in paragraph 3.2.8.1.1.3 of SS-SS-800. Rationale: Clairity and consistency among the user interface specifications	PO Resolution: Reject Rationale: The contractor has to meet the requirement inclusive of any pointing error introduced by their design. Concurrence: Concur Rationale: (05/13/09) Concur	
236	Martin/Wang/Yi Aerospace	Page: 18 Para: 3.3.1.7.3	Substantive	Comment: Suggested Change: From: Space Service Volume Group Delay Differential. The group delay differential between the radiated L1 and L2 signals with respect to the	PO Resolution: Reject Rationale: The contractor has to meet the requirement inclusive of any pointing error introduced by their design. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Earth Coverage signal for users of the Space Service Volume shall be given as values by the Block III Space Contractor (TBD). The details are provided in TBD. To: (remove section) Rationale: CRM disposition: section should be removed from this document.	Rationale: (05/13/09) Consistency in needed among the civil specs.	
237	C. Chiu Aerospace	Page: 5 & 6 Para: 3.2.1	Critical	Comment: For Block IIIA, the P(Y) ranging code described in 3.2.1 could be majority-combined with L1C's in accordance with the GPS IIIA PDR baseline. Also there is a possibility that the PDR baseline could be replaced with a different combining technique known as "POCET". The ICD update does not have a description of the combining schemes involved. More importantly, the ICD update does not provide user equipment developers a definition of the actual P(Y) transmitted from Block IIIA SV's. Add the combining schemes for the ranging code(s) involved, and adjust/modify the ICD requirements that are impacted by the chosen combining scheme. Suggested Change: From: To: Rationale: User equipment developers need the specification of the combining scheme to design some of the receiver's processing blocks and to evaluate the effect of "de-combining" performed by the user equipment.	PO Resolution: Defer Rationale: Will bring the issue to the SEIT Council. The commenter will be involved in this process. 7/23/2009: Being addressed by the GPS III IPT 9/1/09: Signal combining details are considered proprietary by LM and therefore cannot be included in this document or any public document. 12/17/09: On RIL. Aalap Shah working this issue with Bob. Concurrence: Concur Rationale: Concur to resolve this comment in the next SEIT Council meeting.	Formerly rejected. Agree this information would be useful, however, the combining scheme is determined by the contractor, and thus, can vary from contractor to contractor or may be proprietary. Formerly 05/01/09: Do not concur that the new combined signal should be treated as "LM proprietary". The signal combining scheme has always been documented before. For instance, the equation of the combined signal transmitted on L1 is captured in the current version of ICD-GPS-700. For GPS IIIA, there is a new signal combining scheme. The impact of omitting the combining scheme likely leads to the development of less than optimal user equipment for the war-fighters. Moreover, constructing UE to an inaccurate signal description could lead to a number of costly ECP actions on future UE efforts. Without the description of the actual signal to be transmitted by the IIIA payload, the legacy receiver developers (DAGR, GB-GRAM, MAGR, etc) won't be able to determine the degree of compatibility of their fielded products with the new combined signal.
238	C. Chiu Aerospace	Page: 14 Para: 3.3.1.2	Substantive	Comment: (1) The spectral mainlobe of C/A occupies a much narrower bandwidth than that of	PO Resolution: A/C	

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				the P(Y). Hence, the SV modulation/filtering imperfection should have a smaller effect on the C/A than on P(Y). Does the 0.6 dB loss due to "SV Imperfections" apply to C/A or P(Y)? Need another loss allocation for the coded signal that the 0.6 dB does not apply. (2) Same physics applies to the 0.4 dB allocation because the 20.46 MHz receiver front-end will incur less waveform distortion to the C/A than to the P(Y). Need the loss allocation for the signal that the 0.4 dB does not apply. (3) Add a sentence to state that the loss allocations apply to signals transmitted from all legacy SV's as well as from GPS IIIA SV's. Provide separate loss specifications if the preceding sentence does not reflect the facts. Clarify issues raised in Comments (1) through (3) and provide applicable loss specifications Suggested Change: From: To: Rationale: Stated in Comments (1) through (3).	Rationale: Language is still being developed and is to be brought to the next ICWG for stakeholder review. See comment #71. 7/23/2009: Change sentence to read "shall not exceed:" 10/09/09: This section was rewritten in the presence of the commenter. ICWG community agreed to the rewrite. Concurrence: Concur Rationale: 05/01/09: Concur to defer the resolution to the next ICWG.	
239	C. Chiu Aerospace	Page: 17 Para: Table 3-Vb	Critical	Comment: SS-SS-800C does not define received signal power simply on the basis of the power within the bandwidth specified in 3.3.1.1 as stated in the table title of Table 3-Vb. Rather, the received powers listed in Table 3-XI of SS-SS-800C are the "effective received signal powers" which are "referenced to a receiver whose correlation outputs are calibrated against an RF signal without combining loss". To approve SS-SS-800C last August, an agreement was reached at that time that a detailed definition of the reference receiver (e.g., frontend band-pass characteristics, shape of the actual input signal waveform, what is/are calibrated, etc) will be specified in the next IS-GPS-	PO Resolution: Accept Rationale: 04/28/09: The reference for the minimum power specifications in SS-SS-800 and the IS-GPS-200 need to be consistent. 09/11/09: Will Work with Chiu to make sure he gets the information he needs. 12/17/09: Section 3.3.1.2 indicates that combining loss will be compensated for by the space vehicle. Change was made at September ICWG. Concurrence: Concur Rationale: 05/01/09: Accept the 04/28/09 PO	Formerly rejected. The ICC POC is unaware of any agreements made at a SS-SS-800C meeting. More information needs to be provided. Please resubmit with additional information.

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				200 update. Add the definition of the receiver that is used to establish the "effective received signal power" Suggested Change: From: To: Rationale: The significance of the power level specifications given in Table 3-Vb is unclear without the definition of such receiver.	resolution with the following understanding: (1) The definition of the "reference receiver" will include the key structure that impacts the measurement of the "effective received powers". (2) Establish a clear relationship between the "effective received power" and the received power at the output of the reference receiving antenna within the bandwidth described in Table 3-Vb. Note that the above are needed by legacy receiver developers to assess whether the received power specifications associated with the GPS IIIA payload are backward compatible because "calibrated against an RF signal without combining loss" was not stated as a requirement for all legacy receivers.	
240	C. Chiu Aerospace	Page: 17 Para: Table 3-Vb	Critical	Comment: (1) The minimum "effective received signal power" for P(Y) on both L1 and L2 are specified as -161.5 dBW in Table 3-XI of SS-SS-800C. That is, 0.1 dBW lower than those given in Table 3-Vb numerically. (2) The C/A or L2C signal power (-160 dBW) on L2 given in Table 3-Vb numerically disagrees with the minimum "effective received power" (-158.5 dBW) specified in Table 3-XI of SS-SS-800C. Make appropriate changes and make sure the power level specifications consistent with the definition of the reference receiver used to establish the power levels. Rename received power as "effective received power". Suggested Change: From: To: Rationale: Need to be consistent with the payload capability as defined in SS-SS-800C.	PO Resolution: Accept Rationale: The 0.1 dB difference accounts for the increase in filter size to 30.69 MHz. Not all documents have caught up. 04/28/09: This comment is related to comment #239. 12/17/09: Power level for P(Y) has been changed to -161.5 dBW. Also, part 2 of the comment has been resolved along with comment #239 Concurrence: Concur Rationale: 05/01/09: Accept the resolution when the suggested revisions are in line with the Commenter's Concurrence described in Comment #239.	
241	C. Chiu Aerospace	Page: General Para: General	Critical	Comment: To approve SS-SS-800C last August, an agreement was reached at that time that the next IS-GPS-200 update would specify the bandpass	PO Resolution: Defer Rationale: 04/28/09: Commenter wanted flatness and	Formerly rejected. The effects of transmitter filtering are all contained in the correlation loss specification. The contractor

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				characteristics of the triplexer/quadraplexer used by the SVs to shape the transmitted power spectral density. Such bandpass specifications are not included here. Add the specifications described above. Suggested Change: From: To: Rationale: User equipment developers need such specifications to optimize the RF designs and verify the TRD performance requirements.	phase linearity requirements added to interface document. Will forward to Space IPT for final resolution. 7/23/2009: Kevin Kane to provide email on how to specify filter characteristics 9/9/09: Per Mike Munoz, the details were provided to the commentor off-line and this comment is therefore OBE. 12/17/09: Changed to defer per discussion with Bob. Will work with LM to find out a resolution (i.e. establish and upper bound for the filter characterstics). Concurrence: Concur Rationale: The Commenter accepts "Defer" as stated in the 04/28/09 PO resolution under the condition that the PO will not accept a negative Space IPT's resolution unless the GPSW is willing to accept the risks created by not adding the filtering specification in this ICD.	is only responsible for meeting the correlation loss specification and not for a particular filter design implementation. Imposing a filter spec on the contractor will potentially have a significant cost impact. Formerly, 05/01/09: Non-concur that "correlation loss specification" absorbs all effects of transmitter filtering Note that GPSW has provided the current 3 MUE card development teams the GPS IIF and IIR-M filter data to allow them to optimize their design and determine the additional waveform distortion and additional correlation loss caused by the MUE card frontend. Following is copied from a vendor's letter that requested for triplexer characteristics: "… actual triplexer output data …This will be used in our cascaded filter analysis of the space, channel loss, and receiver components to finalize the error budgets for CDR for implementation loss and for pseudorange bias"
242	Rhonda Slattery Aerospace	Page: Para: 3.3.1.6	Substantive	Comment: What is the purpose of this new IIIA paragraph? You have specific requirements for power. What does it add to say it's monotonically decreasing? Delete or justify Suggested Change: From: To: Rationale: Deletion of less-useful data	PO Resolution: Reject Rationale: The sentence lets the user know there will be no antenna nulls between the specified angles. Concurrence: Concur Rationale: I'm willing to live with it, but having a specified power out to 26 degrees says the same thing, so it is duplicative.	
243	Rhonda Slattery Aerospace	Page: Para: Table 3-	Critical	Comment: The power in this table should be calculated over 20.46 dB, not 30.69, so the	PO Resolution: Accept	

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		VB		reference to paragraph 3.3.1.1 is incorrect. Why is this not just an additional row in the earlier table. Fix bandwidth to get correct user power. Consider combining tables Suggested Change: From: To: Rationale: Incorrect	Rationale: Per SS-SS-800, "The received signal strength levels are observed in a 30.69 MHz bandwidth about the center frequency." If this is incorrect, then the comment should be directed toward SS-SS-800 first. Concurrence: Concur Rationale: 1) There was a power and bandwidth working group put together to resolve issues between the specs and ICDs nearly two years ago, and this set of changes is supposed to incorporate their comments in both specs and ICDs "simultaneously". 2) Measuring the same power over a larger bandwidth causes the power over the previous bandwidth to be smaller, which violates the backwards compatibility KPP. (05/06/09) 11/16/09: Changed to 'accept'. We fixed this. Please review.	
244	Rhonda Slattery Aerospace	Page: Para: 3.3.1.7.1-2	Critical	Comment: The values of these parameters are updated in SS-SS-800 to a tighter value. Add SS-SS-800 value for IIIA Suggested Change: From: To: Rationale: Consistent baseline and accurate user knowledge	PO Resolution: Defer Rationale: Per SS-SS-800C, "The SS shall include the unique differential group delay and ISCs supplied by the CS in all earth coverage signals in accordance with IS-GPS-200, ICD-GPS-700, IS-GPS-705, and IS-GPS-800." If the commenter has other values, he/she should resubmit comment with new values for ICWG review. 7/23/2009: Changed to Defer. This item must be worked along with the same issue with ICD-GPS-700. Concurrence: Concur Rationale: The paragraph you quote is just one of the broadcast signals IAW the ICDs, it is not the performance of the signals. (05/06/09)	
245	Rhonda Slattery Aerospace	Page: Para: 3.3.1.7.3	Substantive	Comment: Why is the space contractor for IIIA TBD? Remove 1st TBD or clarify where it applies Suggested Change:	PO Resolution: Accept Rationale: No TBDs in IS-GPS-200D IRN-001. Concurrence: Concur	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: The Space contractor is Lockheed, not TBD	Rationale: (05/06/09)	
246	Rhonda Slattery Aerospace	Page: Para: 3.3.1.9	Substantive	Comment: What happened to the impact of pointing error? If there is a 0.5 deg pointing error, does the edge of earth still get this polarization or will it be higher? Clarify whether this is irrespective of pointing error Suggested Change: From: To: Rationale: Can the user rely on this anywhere in view of the SV?	PO Resolution: A/C Rationale: The contractor has to meet the requirement inclusive of any pointing error introduced by their design. 10/15/09: Changed section from 14.3 to 13.8 to address this issue. Concurrence: Concur Rationale: (05/06/09)	
247	Rhonda Slattery Aerospace	Page: Para: 6.2.2.2.6	Substantive	Comment: Why are we not defining the IIIA block of 8? Define the first 8 as IIIA, which is used in the document. Suggested Change: From: To: Rationale: Throughout the document you use the term IIIA, not generically GPS III. I believe the acquisition strategy is firm for IIIA at least	PO Resolution: Accept Rationale: Not all instances only pertain to GPSIIIA. The commenter should resubmit comment with exact specific instances. 7/23/2009: Changed to accept Concurrence: Concur Rationale: Not all instances pertain to IIIA, but many, many do (exact specific instances can be found by searching on IIIA). Since you use the term frequently, you should define it. How is the UE to know if it's a IIIA or not? (05/06/09)	Changed to read: Block IIIA SVs. The block of operational replenishment SVs are designated as SVNs 74-81. This is the first block of operational SVs that transmit the L1C signal. These SVs will provide at least 60 days of positioning service without contact from the CS.
248	Rhonda Slattery Aerospace	Page: Para: 6.3.1	Critical	Comment: We need data for IIIA in this paragraph, particularly an estimate of maximum power. Update paragraph to include IIIA data or if none is available (Link budgets are available), show TBDs	PO Resolution: Reject Rationale: The ICWG discussion was to not include GPSIIIA maximum power in this document. Any	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Suggested Change: From: To: Rationale: Consistency between all SVs and correctly defining gaps	questions should be directed to the space IPT. Concurrence: Concur Rationale: (05/06/09)	
249	Rhonda Slattery Aerospace	Page: Para: 6.3.2.1	Administrative	Comment: Why is this under IIA instead of in it's own paragraph like IIR and IIF? Move to own paragraph Suggested Change: From: To: Rationale: IIIA is not a part of IIA	PO Resolution: Accept Rationale: Document needs to be reorganized to add a new section. Low priority. 9/1/09: Accepted Concurrence: Concur Rationale: OK, but it implies that IIIA is part of IIA, which is not true. (05/06/09)	
250	Rhonda Slattery Aerospace	Page: Para: 6.3.4	Substantive	Comment: This is the first mention of the IIIB SVs, which are undefined. Either define IIIB, and put IIIB requirements throughout or delete until later update. Suggested Change: From: To: Rationale: Consistency and completeness	PO Resolution: A/C Rationale: The addition of "directional crosslink capable Block III" is incorrect in this paragraph and shouldn't have been added. Concurrence: Concur Rationale: OK (05/06/09)	
251	Rhonda Slattery Aerospace	Page: Para: Table 3-II and 6.3.5.3	Critical	Comment: To meet the IIIA and OCX Block 1 and 2 specifications, you need at least 40 broadcast PRNs. These need to be defined for the user in this update. Add 8 more PRNs to Section 3. Suggested Change:	PO Resolution: A/C Rationale: Need to determine where the 40 broadcast PRNs requirement came from. 7/23/2009: Being addressed by Karl Kovach's PRN expansion PPIRN (to be supplied).	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: Consistency between specification and ICD and complete definition of the Block III requirements.	Concurrence: Non-concur Rationale: It comes from the CS 800 spec. If you want to define all 63, which are needed by a later effectivity, that's fine too. (05/06/09)	
252	Rhonda Slattery Aerospace	Page: Para: 20.3.2	Substantive	Comment: Uploading 60 days of data is handled differently for IIIA than for GPS II. If you don't want to explain the state vector concept, which I agree with, you should change this to avoid discussing "uploaded data". Something like "Block IIIA SVs have the capability to support operation for 60 days without contact with the CS". Suggested Change: From: To: Rationale: The majority of the uploaded data for 60 days is navigation message related, which is not uploaded for GPS III.	PO Resolution: Accept Rationale: See comment #148 7/23/2009: Discuss at future TIM. Provide suggested language beforehand for discussion. Concurrence: Concur Rationale: Comment 148 is related to same language that I'm objecting to here, but is solely related to duplicate language. My concern is the accuracy of the duplicate language. (05/06/09)	
253	Rhonda Slattery Aerospace	Page: Para: 30.3.3.5.1, etc.	Critical	Comment: Coordinate transformations in the user equipment are using the technical note 21 conventions. OCX and all SVs are switching to the technical note 32 conventions. At least insert a note to inform users that this is coming. Preferably, incorporate both sets of equations along with the note and a defined switchover notice. Suggested Change: From: To:	PO Resolution: Accept Rationale: 05/07/09: Will incorporate suggested change upon finalization of technical note 32 conventions. Concurrence: Concur Rationale: This is in the requirement set for OCX block 1. Even without the technical details, the data contained in the ICD is incorrect and needs to be fixed. (05/06/09)	Formerly rejected. The commenter is encouraged to present the coordinate transformations at the Public ICWG.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Complete update for IIIA and OCX		
254	Rhonda Slattery Aerospace	Page: Para: 30.3.3.7.5	Critical	Comment: Where do errors that do not fall cleanly into clock or ephemeris get added to UDRA (e.g., ISC errors, and all the other components of the URE)? Clarify what errors are included in clock and ephemeris UDRA to show users that all errors are covered as described in the 800 specifications. Suggested Change: From: To: Rationale: Current definition of UDRA does not cover all the IIIA and OCX errors.	PO Resolution: Accept Rationale: Will forward to the space IPT for resolution. 7/23/2009: Action assigned to Karl Kovach to improve the definition 9/1/09: Definition for UDRA has been incorporated into the definitions section of the document. Also added wording in the sections 20 and 30 in the URA tables section to address this question Concurrence: Concur Rationale: This is in the requirement set for OCX block 1, as well as GPS III SS. We need to know this data today, and it's not just a SV problem. (05/06/09)	
255	Rhonda Slattery Aerospace	Page: Para: 6.2.5	Substantive	Comment: L5 Civil Signal: The statement in this section is not correct given that the latest IIR-M SV was launched with L5. Not sure if some do not consider that a real L5 signal or not. I would suggest adding in IIR-M to the description. Suggested Change: From: To: Rationale: Correctness	PO Resolution: Reject Rationale: Per The ICC POC understanding, the signal will not be fully usable until the II-F satellites are launched. 9/1/09: There's only 1 II-RM SV that broadcasts L5 and it is, I believe, for demonstration purposes only. I don't think it was intended to be a real usable signal (although it may end up being a real usable signal). Based on this, it is may be acceptable to leave the definition as it is. Concurrence: Non-concur Rationale: The response really isn't valid because the IIF signal on the first IIFs will not be fully usable either until the IIF satellites are fully launched. The statement is that the signal is only on IIF and beyond SVs, which isn't true. This is misleading information in the ICD, and it does not explain to the SIS user community what the GPSW has done for L5. (05/06/09)	
256	Paul DeNaray Aerospace	Page: Para: 6.3.4	Substantive	Comment: Navigation Mode: This section has preexisting text about Autonomous Navigation	PO Resolution: A/C	

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				Mode for GPS II SVs, which was never implemented and in not planned for any OCX Block. In addition, the new wording infers that Autonav will be utilized between the GPS II and GPS III SVs. Again, there are no plans to implement this command & control capability in the GPS baseline. suggest that GPS II Autonomous Navigation Mode be removed from the ICD. Suggested Change: From: To: Rationale: This section should only focus on crosslink capable GPS III SVs.	Rationale: This is a Block II SV requirement, but not an OCX or OCS requirement. Will create a new paragraph for GPSIII. Concurrence: Concur Rationale: (05/06/09)	
257	Paul DeNaray 2SOPS	Page: N/A Para: N/A	Administrative	Comment: Remove all references to Block II satellites for the entire IS-GPS-200E. Rationale: GPS Constellation no longer has Block II satellites (last BII satellite was SVN15 disposed 6 Apr 07.) Suggested Change: From: To: Rationale:	PO Resolution: A/C Rationale: The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. Concurrence: Concur Rationale: (05/01/09)	
258	Chris Sedgwick 2SOPS	Page: 11 Para: 3.2.2 NAV Data (3rd paragraph).	Administrative	Comment: 1st sentence bolded text “During the initial period of Block IIR-M SVs operation, prior to Initial Operational Capability of L2 C signal, Block IIR-M may modulo-2 add the NAV data, D(t), to the L2 CM-code instead of CNAV data, DC(t). “ does not read correctly. Correct grammar and intent of bolded text. Suggested Change:	PO Resolution: Reject Rationale: Will provide new language and present at the next ICWG. 9/1/09: ICC was not able to come up with better wording. Please submit suggested wording for consideration. Concurrence: Not Required	Work with Rhonda to come up with a better sentence.

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				From: To: Rationale:	Rationale:	
259	Chris Sedgwick 2SOPS	Page: 15 Para: 3.3.1.4 Spurious Transmissions	Administrative	Comment: Recommend cross checking language in IS-GPS-800 on spurious transmissions for consistency. Suggested Change: From: To: Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale: (05/01/09)	
260	Chris Sedgwick 2SOPS	Page: 19 Para: 3.3.1.7.3 Space Service Volume Group Delay Differential.	Administrative	Comment: Should TBD's be included in the IS or should the paragraph be removed until specifics are available for the Interface Specification? Suggested Change: From: To: Rationale:	PO Resolution: Reject Rationale: The sentence with the TBD was added as a result of 11/18/2008 ICWG. See comment #80. The specifics were originally in a draft version of the document, but removed per ICWG stakeholder decision. Concurrence: Concur Rationale: (05/01/09)	
261	Chris Sedgwick 2SOPS	Page: 88 Para: 20.3.3.3.1.3 SV Accuracy	Administrative	Comment: IS-GPS-800 states negative URA values in section 3.5.3.5 SV Accuracy URA data. Will this pose a consistency issue and a technical discrepancy between the 2 interface documents? Suggested Change: From: To: Rationale:	PO Resolution: Reject Rationale: Negative URA index values apply to CNAV and CNAV-2 type messages. See IS-GPS-200 section 30.3.3.1.1.4. The positive values are consistent with 20.3.3.3.1.3. Concurrence: Concur Rationale: (05/01/09)	

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262	S. Hutsell 2SOPS	Page: 69.74,79 Para: N/A	Administrative	Comment: The figures appear garbled. Review and correct if/as appropriate (the comment originator is not sure whether this issue is specific to his Word editor or not) Suggested Change: From: To: Rationale:	PO Resolution: Reject Rationale: The ICC POC does not see garbled figures as stated – it is most likely a MSWORD version issue. The PDF version will not have garbled figures. 05/05/09: Accept. The ICC POC will ensure the final PDF version does not contain the error. Concurrence: Concur Rationale: 05/08/09: Originator Concurrence	Fomerly a conditional concurrence, on presentation of an actual .pdf file without garbled figures.
263	S. Hutsell 2SOPS	Page: 52 Para: 3.3.4.a	Administrative	Comment: The statement "The epoch occurs at (approximately) midnight Saturday night-Sunday morning, where midnight is defined as 0000 hours on the UTC scale that is normally referenced to the Grenwich Meridian." by itself is, at best, misleading, and at worst, incorrect. A reader could interpret the statement as being in direct conflict with paragraph 20.3.4, which defines timing relationships. Add the sentence, "The time differences between a) this epoch and b) 0000 UTC Sunday, can be as a result of time scale differences between the SV CLOCK, GPS time, and UTC. Suggested Change: From: To: Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale: (05/01/09)	
264	S. Hutsell 2SOPS	Page: 195 Para: 30.3.3.8	Administrative	Comment: This paragraph makes no reference to integer second differences between GPS time and GNSS time scale types. As a result, this IS, whether intentionally or not, imposes in inferred requirement on all referenced GNSS types such that all referenced GNSS types shall have an integer second offset from GPS time of, without	PO Resolution: A/C Rationale: 05/07/09: The ICC POC is investigating the issue. Concurrence: Concur	Formerly deferred. Need to talk with commenter to clarify comment. Confused—the Originator submitted this comment in January 2009, and has since been available to offer any clarification desired, at the phone # specifically identified five columns to the left. Originator is not in

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				exception, zero (0) seconds. I'm not convinced that all GNSS types have committed to conforming each respective GNSS time type to GPS time in this fashion. Where is this International Accord that documents this kind of commitment? Investigate the validity of this inferred requirement. If such an inferred requirement proves to be invalid, change the structure of this interface specification so as to permit non-zero integer second differences between GPS time and the respective GNSS time scale types. Suggested Change: From: To: Rationale:	Rationale: 05/08/09: Originator Concurrence.	a position to offer personalized clarification if Originator does not have knowledge of who specifically (name, phone #) might have remaining clarification desires.
265	M. Dash GPA	Page: Gen Para:	Critical	Comment: Rejecting all the changes does not result in exactly the same document as was last approved; i.e. IS-GPS-200D with IRN-001. There are differences I noticed as part of reviewing the proposed changes, such as missing cover graphics, text shown as deleted that was never present in IS-GPS-200D with IRN-001 (3.3.1.4,6.2.2.2.6). While these are minor issues, it is indicative of undocumented changes. Since CCB reviewers shouldn't have to scrutinize the parts of the document that are identified as unchanged, what else is being missed? Barring previous comments to rescind this document as restart the ICWG process, there are two options: 1. Discard this Word file and go back to the official Word file for IS-GPS-200D with IRN-001 used to produce the PDF file in the GPS Library, turn track changes on, and insert the proposed document changes	PO Resolution: A/C Rationale: Duplicate of GPC comment #160. V. Gopal: Will scrub the document for any discrepancies Concurrence: Concur Rationale: A failure to maintain configuration control is not a process problem, but a problem against the document submitted to CCB for review. The inability to reject all changes with the result of getting EXACTLY the last approved version of the document is a failure of configuration control. This means that the areas of the document not identified as change are suspect in that they may have changed. Given this is probably the single most important document in the GPS program, the GPSW should be providing its best configuration control for this document.	Resolution to #160 "Reject. The comment is noted, but is not within scope. This is related to process and needs to be brought up in the appropriate forum. Also, part of the purpose of the ERB/CCB process is to find issues such as those described. Merely performing 'reject all changes' does not constitute proper review"

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				-or- 2. Instead of creating a Rev E, create an IRN-002 to Rev D. This way, the Word file need only contain the affected pages, limiting the amount of "unchanged" aspects of the document that needs to be scrutinized. Suggested Change: From: To: Rationale: The CM process for GPSW technical documents is critical, but even more so for this document. IS-GPS-200 is the "backbone" of the GPS system architecture. There are countless number of UE programs, both military and civilian, dependant on this document and the GPSW should not place risk on these programs by not following a rigid CM process during updates. If there is a problem in going from Word 2003 to 2007, then this is a systemic problem as the entire technical library was authored in Word 2003. This should be tackled as a GPSW-wide problem and resolved without using the GPSW's most important documents as test cases.		
266	M. Dash GPA	Page: Gen Para: Figures	Administrative	Comment: In this Word file, some of the figures (e.g. fig 20-1) have text improperly aligned with the figure. This could be just how the file prints at my computer, but it may be something else. Need to verify the PDF file created from the Word file doesn't have alignment issues with the figures. Suggested Change: From:	PO Resolution: Reject Rationale: Duplicate of GPC comment #161. 9/1/09: Word document has been provided Concurrence: Non-concur Rationale: The comment does provide an example figure and simply recommends that care be taken when creating the PDF. Rejecting the comment implies that the document POC is refusing to take care when	Resolution to #161 "Reject. The commenter must provide those figures with error. The example provided did not contain any alignment issues." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #161. The commenter will be added to comment #161 in the 'Reviewer Name' cell to provide him

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				To: Rationale:	creating the PDF file, which is unacceptable.	an independent opportunity .to concur/non-concur. The PO Resolution has changed to: Accept. The ICC POC will insure that the final product does not have alignment issues.
267	M. Dash GPA	Page: Para:	Administrative	Comment: The Was/Is matrix shows changes in terms of whole paragraphs, sections, figures, etc., when only a small portion has actually changed. Thankfully, the draft document does not do that, but instead shows the proposed changes in a direct and concise manner, without burying the change in a "sea of unchanged text". In this case, the Was/Is matrix was created after the draft document, but that is not the intended process. If both the Was/Is matrix and the draft document identified changes the way this Was/Is matrix currently does, more work would have to be done by reviewers in simply identifying proposed changes compared to evaluating those proposed changes. For future reference, Was/Is matrix changes should identify proposed changes in as succinct and direct manner as possible, clearly identifying the proposed change to the reviewer. Suggested Change: From: To: Rationale: The reviewers are not responsible for having to try and identify all proposed changes. That is the POC responsibility. Reviewers are only responsible for evaluating clearly identified proposed changes. Otherwise, an unreasonable burden is placed on reviewers, which is contrary to the recent trend in shortening review times.	PO Resolution: Accept Rationale: Not part of this review. However, comment is noted. 9/1/09: Changed to accept. Commentor is correct. Thank you for the advice. Concurrence: Concur Rationale: The Was/Is matrix is and official part of the CCB package and any comments against the Was/Is matrix are legitimate comments for CCB. In this case, the Was/Is matrix was so poorly created, had the draft ICD itself not accurate identified the proposed changes, a side by side comparison of the draft ICD next the last version would have to be performed, which is unreasonable to place on the reviewers and too long of a task for the time allotted to CCB review. With a resolution to accept the comment and ensure Was/Is matrices are no longer prepared this way, a future update could end up being incredibly problematic.	
268	M. Dash	Page: cover	Administrative	Comment: The old GPS JPO address was deleted,	PO Resolution: Accept	Resolution to #115 "Accept"

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	GPA	Para:		with no new address provided. Don't just delete the old address. Replace it with the new GPSW address Suggested Change: From: To: Rationale: The address is important organizational information that should be	Rationale: Duplicate of GPC comment #115. 9/1/09: Changed to accept. Concurrence: Concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #115. The commenter will be added to comment #115 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
269	M. Dash GPA	Page: iii Para:	Administrative	Comment: The revision record indicates these changes are "needed" for GPS IIIA. However, none of the changes are critical changes in requirements, just changes providing information on GPS IIIA implementation. Change to read "Incorporates changes associated with GPS IIIA" Suggested Change: From: To: Rationale: Given that GPS III has a requirement to support continued operation of fielded UE that is IS-GPS-200 compliant, it's hard to argue that any changes are "needed" for GPS III. That fielded UE is not going to change, and it was developed against older versions of this document.	PO Resolution: Accept Rationale: Duplicate of GPC comment #116. Concurrence: Concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	Resolution to #116 "Accept 11/28/09 – Incorporated change" 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #116. The commenter will be added to comment #116 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
270	M. Dash GPA	Page: 3 Para: 2.1	Substantive	Comment: The date of GP-03-001 was removed. However, the dates of documents called out in sec 2 are part of the technical requirements defined within the document. Reject this change and leave the date in Suggested Change:	PO Resolution: Reject Rationale: See comment #67. Concurrence: Non-concur Rationale: The date of reference document are part &	Resolution to #67 "Accept with comment. Remove date. Most current revision applies."

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				From: To: Rationale: Part of the technical requirements definition in IS-GPS-200 comes from any documents it calls out. By extension, that includes any reference documents. Since IS-GPS-200 is called out in many contracts, assuming the date/revision can be identified elsewhere in the contract runs the risk of different contracts calling out different versions of reference documents when they are also calling out the same version of IS-GPS-200. In order to ensure all programs are functioning to the same rules regarding interface management, the date of the ICWG charter should be retained.	parcel of the technical description being provided. Stating "most current version" results in a requirement that is a moving target and allows for technical requirements changes on various contracts that can bypass the CCB process. In the case of the ICD, which gets on multiple contracts by being called out in a spec, identifying the dates of references in the ICD is the only way of ensuring these multiple contracts are working to the same interface definition. The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	
271	M. Dash GPA	Page: 14 Para: 3.3.1.1, 3.3.1.4	Critical	Comment: The change in bandwidth for GPS IIIA vs. previous satellites is unclear. Since the codes defined within this document are not changing for GPS III this reads as an interface requirements change, when it is probably not intended that way. Also, what is missing is a statement of the UE requirements, i.e. what bandwidth must an ICD-GPS-200 compliant RCVR support? With 20.46 identified all these years, it was assumed that the UE simply had the same requirement. However, if GPS III introduces a new bandwidth definition, it becomes unclear what the interface requirement will be for UE intending to be compliant with this draft version of the interface document. Reject these changes and come up with wording that more clearly communicates what part of the interface requirements is really changing, with regard to the codes/signals defined in IS-GPS-200 only. If this is just to let readers know that bandwidth allocated to GPS is wider than the bandwidth taken up by the codes/signals defined	PO Resolution: Accept Rationale: Duplicate of GPC comment #120. 9/1/09: Theis section has been rewritten substantially. Please re-review to see if your comment still applies. Concurrence: Concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	Resolution to #120 "Accept. Agree there has been a lot of swirl regarding the bandwidths. The ICC POC will propose new language for the next ICWG." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #120. The commenter will be added to comment #120 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur. 11/16/09: changed to 'accept'. this section was modified real-time at ICWG, in the presence of the commentor.

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				in IS-GPS-200, then that can be stated separately as information. Alternatively, if the intent is to change the bandwidth that future UE incorporate, then that has to be clearly stated somehow. Suggested Change: From: To: Rationale: Per sec 1.1, this document defines the interface between the Space and User segments. All the parameters defining this interface need to be clearly communicated from the perspective of both the User and Space segment so that there is a clear understanding of the interface requirements. Subtle differences between generations of SVs may be interesting information, but do not always constitute a change in interface requirements. The requirements being levied on the User Segment need to be clearly stated.		
272	M. Dash GPA	Page: 14 Para: 3.3.1.4	Administrative	Comment: The first sentence is provided as a completely new sentence, when only the reference to bandwidth has changed, e.g. “allocated 20.46 MHz channel bandwidth” is being changed to “band specified in 3.3.1.1”. Yet, reference to L2 has been dropped. Is this intentional? Assuming the absence of L2 was unintentional, it should be put back in. Otherwise please explain why l2 was dropped. (S) Also, the changes identified should be concise, showing only the portions affected and not the whole sentence, as indicated in the comment. (A) Suggested Change: From:	PO Resolution: Accept Rationale: Duplicate of GPC comment #123. 9/1/09: Changed to accept. Concurrence: Concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	Resolution to #123“Accept. The sentence should include L2 as follows: “In-band spurious transmissions, from the SV, shall be at least 40 dB below for both L1 and L2 unmodulated carriers over the respective bands specified in 3.3.1.1.” Subject to approval at next ICWG.” 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #123. The commenter will be added to comment #123 in the ‘Reviewer Name’ cell to provide him an independent opportunity to concur/non-concur.

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				To: Rationale: There should be a spurious transmission requirement for L1 and L2		
273	M. Dash GPA	Page: 15 Para: 3.3.1.6	Critical	Comment: By adding information specific to GPS III (which was also done for IIF), it becomes unclear what the overarching interface requirement is vs. satellite peculiar information/requirements, e.g. what is the interface requirement on the User Segment. If the information in this new third paragraph (as well as the second paragraph) does not conflict with the information in the first paragraph of 3.3.1.6, then the added text is not really a change in interface requirements, but just capturing how GPS III specific design information. If so, the added information may lead one to assume that UE should be designed to work with specific generations of SVs, instead of designing to an overarching interface requirement. If the information in this new third paragraph (as well as the second paragraph) does not contradict the requirement in the first paragraph of 3.3.1.6, then delete it. If this new paragraph is addressing a new interface requirement that is not compatible with the first paragraph, then there could be a very big problem with GPS III being backward compatible with fielded UE. Suggested Change: From: To: Rationale: This document needs to first be clear on the overarching interface requirement that equally applies to all UE and SV configurations. Adding	PO Resolution: Reject Rationale: Duplicate of GPC comment #126. This has been a long standing problem, and the ICC does not know how to resolve it. The proposed solution only partially resolves the problem. 12/17/09: This comment is hinting at the need for a overarching document that specifies the entire GPS constellation. Concurrence: Non-concur Rationale: The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	Resolution to #126 “Defer. This has been a long standing problem, and the ICC does not know how to resolve it. The proposed solution only partially resolves the problem.” 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #126. The commenter will be added to comment #126 in the ‘Reviewer Name’ cell to provide him an independent opportunity to concur/non-concur.

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				specific details about various SV configurations is secondary, and if done so, measures need to be taken to make the requirement clear, e.g. what is the requirement being placed on the User Segment?		
274	M. Dash GPA	Page: 17 Para: Table 3-V a/b	Critical	Comment: Per my comment to 3.3.1.6, the addition of GPS III peculiar information should be done in such a way as to detract from what the actual interface requirement is. Create a single table that identifies an absolute min and max signal strength for the following: P(Y) on L1, P(Y) on L2, C/A on L1, C/A on L2, and L2C on L2. As long as the table clearly identifies the interface requirement, it's okay to add rows to convey SV peculiar information. Refer to notional table 3-V after this comments matrix. Suggested Change: From: (See IS-GPS-200 IRN-001) To: Table 3-V Received RF Signal Strength (notional) Signal Strength (dBW) - L1 P(Y) L2 P(Y) L1 C/A L2C Requirement - Min -163.0* -166.0* -160.0* -164.5 Max -155.0* -158.0* -153.0* -153.0 IIA/IIR - Min -161.5 -164.5 -158.5 -164.5 Max -155.0 -158.0 -153.0 N/A IIR-M/IIF - Min -161.5 -161.5 -158.5 -160.0 Max -155.0 -155.0 -153.0 -153.0 III - Min -161.4 -161.4 -158.5 -160.0 Max -155.0 -155.0 -153.0 -153.0 * - Values from ICD-GPS-200 Rev C and earlier, the versions many UE are designed against Rationale: There needs to be a clearly stated interface requirement that applies regardless of UE or SV configuration. This needs to be stated in terms of a min and max value, especially given that	PO Resolution: Reject Rationale: While the comment has merit, the max power values are currently "not expected to exceed" values (see section 6.3.1). This change has no impact on the technical baseline and represents a restructuring of the interface document so it is not a high priority at this time. 9/1/09: Maximum powers are defined in section 6.3.1. Concurrence: Non-concur Rationale: This is a interface specification defining the interface between the Space and User Segments. Part & parcel of defining the interface is defining upper and lower bounds regarding signal strength that is considered compliant. This is essential the User Segment in designing the RF front end. Max and min signal strength values from this document are used to define the max and min signal levels expected/allowed at the RF connector of a RCVR.	

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				flex power can be used re-allocate power to Y-code.		
275	M. Dash GPA	Page: 17 Para: Tbl 3-V C	Substantive	Comment: This table implies that Space Service users may only use GPS III SVs. If so, that needs to be stated somehow, but is probably impractical (e.g. expecting space service UE to design to specific configurations of SV). Need to add clarification regarding how the space service user equipment is to incorporate (or not incorporate) IIF and earlier SV configurations. Suggested Change: From: To: Rationale: Even though this is a new requirement, and there is no expectation for IIF and earlier to meet it, there need to be clarification as to whether the UE can assume the information in this table with regard to any SVs it may track.	PO Resolution: Reject Rationale: Duplicate of GPC comment #130. 9/1/09: Please submit suggested language for review. Concurrence: Non-concur Rationale: The intent of the comment was not to suggest that Space Service volume needs to apply to IIF and earlier, but to address what Space Service UE is supposed to do with a mixed constellation given that Space Service requirements are only guaranteed for GPS III. Should Space Service UE avoid tracking IIF and earlier, or should all SVs be used? The proposed change is silent on this. Given this is a Space to User Segment interface document, understanding UE requirements with regard to 200 compliance is important. The fact that GPC duplicated and submitted a comment I authored is not grounds for rejecting a GPA comment, particularly in the case where the resolution to the GPC comment was Accept. The resolution should be changed to match or simply refer to the other similar comment, but not have a completely different resolution.	Resolution to #130 “Reject. There are no power level requirements for any SVs prior to GPSIII” 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #130. The commenter will be added to comment #130 in the ‘Reviewer Name’ cell to provide him an independent opportunity to concur/non-concur.
276	M. Dash GPA	Page: 19, 84-94, 96, 98 Para: 3.3.1.9, Fig 20-1, 30.3.3.1, Fig 20-2	Critical	Comment: Need positive confirmation that these changes, bore sight to nadir and Integrity Status Flag, have no impact on the fielded UE within the Army. Provide time to coordinate with military UE vendors to positively confirm whether or not the proposed change impacts fielded UE. Suggested Change: From: To:	PO Resolution: Reject Rationale: Duplicate of GPC comment #137. Concurrence: Non-concur Rationale: This is not a comment process, but a comment against the change being proposed, i.e. will the proposed change impact any configurations on either side of the interface? Since we know that question has not been answered in the case of military UE, going ahead with the change places an	Resolution to #137 “Reject. The comment is process oriented and out of scope. Provide comments against the ICWG charter to the ICC POC and they will be forwarded to the appropriate group.” 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #137. The commenter will be added to comment #137 in the ‘Reviewer Name’ cell to provide him

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				Rationale: The ICWG phase did not allow enough time (as described in the ICWG charter), or provide the right kind of change description, for tasking to flow down to UE vendors to specifically get feedback on the impacts of this proposed change. The CCB review stage is also shortened and presumes contractor coordination has already been completed. We don't want to risk a problem down the road that is observed in the field, forcing a decision to turn off this integrity function while the problem is sorted. As was done with the WAGE and PRN 32 issues, there needs to be a method of positively determining impacts on the various fielded UE.	unnecessary risk in the User Segment.	an independent opportunity to concur/non-concur.
277	M. Dash GPA	Page: 35 Para: Fig 3-10	Administrative	Comment: When I print out this document, the word "Register" is missing from the "G2" block. I also tried converting the file to PDF, and it is missing there, but shows up on screen. This could be one of those Word nuances that shows up differently on different computers, but need to make sure the final PDF version (which is supposed to print the same from every computer) does not lose text from this figuire. Suggested Change: From: To: Rationale:	PO Resolution: Accept Rationale: Duplicate of GPC comment #138. After further review, the PO Resolution has changed to: Accept. The ICC POC will ensure the PDF version of the document will contain the correct Concurrence: Concur Rationale: The comment simply recommends that care be taken when creating the PDF. Rejecting the comment implies that the document POC is refusing to take care when creating the PDF file, which is unacceptable.	Resolution to #138 "Reject. The ICC PDF version displays and prints correctly. The users should only provide PDF related comments against the official PDF version produced by the Wing." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #138. The commenter will be added to comment #138 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
278	M. Dash GPA	Page: 58 Para: 6.3.4	Administrative	Comment: This comment is regarding the statements "In the Autonav mode the Block IIR/IIR-M/IIF/directional crosslink-capable III SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma for Block IIR/IIR-M" and "If the	PO Resolution: Defer Rationale: Duplicate of GPC comment #145. 9/1/09: Changed to defer. Concurrence: Non-concur	Resolution to #145 "Defer. The paragraph needs to be revised to differentiate "Autonav" from "Autonomous Navigation". Waiting for resolution from NCWG on UHF Autonav tentatively scheduled for Jun 09" 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only

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				CS is unable to upload the SVs, the Block IIR/IIR-M/IIF/directional crosslink-capable III SVs will maintain normal operations for period of at least 60 days after the last upload". Why is there a reference to all blocks of SVs in the beginning of the sentence, but only a reference to block IIR/IIR-M at the end of the sentence? (S) Is there really any need to differentiate by SV since the statement applies to Autonav where implemented in any SV?(A) Suggested Change: From: ... In the Autonav mode the Block IIR/IIR-M/IIF SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma for Block IIR/IIRM. URE of 6 meters, one sigma, is expected to support 16 meter SEP accuracy under a nominal position dilution of precision. If the CS is unable to upload the SVs, the Block IIR/IIR-M/IIF SVs will maintain normal operations for period of at least 60 days after the last upload. To: ... In the Autonav mode the SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma and "If the CS is unable to upload the SVs, the SVs will maintain normal operations for period of at least 60 days after the last upload" Rationale: In this case, the state is true for SVs that implement autonav, so it is unnecessary to point out all the SV types. The previous sentences clarify which SVs have an autonav requirement.	Rationale: The change proposed has nothing to do with the use of Autonav vs. Autonomous Navigation, but instead had to do with not invoking every generation of satellite when simply stating "SV" will do. There is no need to wait on a discussion of "Autonav" vs. "Autonomous Navigation" to incorporate this comment.	because it was a duplicate comment, not based on the comment content. The resolution is in comment #145. The commenter will be added to comment #145 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
279	M. Dash GPA	Page: 96 Para: 20.3.3.1,	Administrative	Comment: "authorized user" and "unauthorized user" have been replaced with "precise positioning	PO Resolution: A/C	Resolution to #149 "Accept with comment. The changes were made per the GPC

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		20.3.3.2, 20.3.3.3.1.3, 20.3.3.5.1.9, 30.3.3.2.4		service user" and "standard positioning service user" globally throughout the document. However, the terms "authorized" and "unauthorized" are used in many other documents in reference to whether or not access to PPS is authorized. Unauthorized referred to both SPS UE as well as unkeyed PPS UE. The terminology change in IS-GPS-200 creates a semantics disconnect with other documents. A couple of options: 1. Reverse the change 2. Somewhere add definitions of PPS user and SPS user that clarify that an unkeyed PPS device qualifies as SPS user, and take an action to update all the other GPSW technical baseline documents to replace the terms "authorized" and "unauthorized" with "PPS" and "SPS" Suggested Change: From: To: Rationale: This change in this document causes semantics disconnect with other GPSW documents. The disconnect needs to be addressed.	Rationale: Duplicate of GPC comment #149. 9/1/09: Changed to A/C 10/15/09: added a paranthetical at the first instances of "SPS user" and "PPS user" to clarify what is being meant Concurrence: Concur Rationale: The change in terminology is part of what is being proposed, and that proposed change will create a terminology disconnect with other documents. If this revision is going to introduce a terminology disconnect with other documents, then the POC needs to address it somehow, either reject the change, accept an action to track down all the other documents that use the terms "authorized" and "unauthorized", or some other solution to the problem created by this proposed change (e.g. providing definitions clarifying what the terms authorized and unauthorized mean)	suggested language, which was concurred upon at the May 08 ICWG. See comment #13. GPC should decide amongst themselves and provide suggested terminology." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #149. The commenter will be added to comment #149 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
280	M. Dash GPA	Page: 96, 172 Para: 20.3.3.1, 30.3.3.1.1	Substantive	Comment: The new text uses the words "without an accompanying alert". What alert? There is no other change in the document suggesting that an accompanying alert will be added to the Legacy Nav message, so where is this alert coming from? Add wording clarifying what is meant by "an accompanying alert" and where that alert is found, whether somewhere in the signal or provided externally. Suggested Change:	PO Resolution: Accept Rationale: Duplicate of GPC comment #150. 9/1/09: Changed to accept. Concurrence: Concur Rationale: This verbiage is part of the proposed change and it is incomplete. Addressing this should not be deferred. This comment needs to eb addressed before this document is updated and if necessary defer the	Resolution to #150 "Defer. The changes were made per the GPC suggested language, which was concurred upon at the May 08 ICWG. See comments #24 & #31. The ICC POC does not know what GPC's original intent was; GPC should provide recommended updated language." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The

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				From: To: Rationale: These references to the "without an accompanying alert" need to be accompanied with a description of where the alerts may be found.	update.	resolution is in comment #150. The commenter will be added to comment #150 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
281	M. Dash GPA	Page: 109 Para: 20.3.3.4.1, 20.3.3.4.3, 20.3.3.4.3.1, 20.3.4.5, 30.3.3.1.1, 30.3.3.1.3	Substantive	Comment: There are a number proposed changes added to address the fact that requirements traditionally performed by the CS are now going to be performed by the SV in the case of GPS IIIA. However, whether the CS or SV performs the task is irrelevant from an interface definition perspective. Change the wording to make "what" the action is the requirement and not "who". For example: 20.3.3.4.1:"The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) shall assure that the toe value, for at least the first data set transmitted by an SV after an upload, is shall be different from that transmitted prior to the cutover (reference paragraph 20.3.4.5)" 20.3.3.4.3:"…the values of these parameters, however, are produced by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit…" 20.3.3.4.3.1:"Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curve-fit interval used by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) in determining the ephemeris parameters, as follows:" 20.3.4.5:"The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) shall assure that the toe value, for at least the first data set transmitted by an SV after a new upload, is shall be different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover	PO Resolution: Defer Rationale: Duplicate of GPC comment #153. Concurrence: Concur Rationale: Not sure if the resolution to #153 is agreeing to make the change or not. If not, then Non-conur. Whether or not thi is a "system wide" effort has nothing to do with making the recommend change here	Resolution to #153 "Accept with comment. Need to do this holistically; this requires a system-wide effort. This is a low priority" 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #153. The commenter will be added to comment #153 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.

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				for transmission, the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall introduce a small deviation in the toe resulting in the toe value that is offset from the hour boundaries (see Table 20-XIII) shall be introduced. This offset toe will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the toe. When the toe, immediately prior to a new upload cutover, already reflects a small deviation (i.e. a new upload cutover has occurred in the recent past), then the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall introduce an additional deviation to the toe when a new upload is cutover for transmission) shall be introduced." 30.3.3.1.1:"The CS (Block IIR-M/IIF) and SS (Block III) will assure that the toe value, for at least the first data set transmitted by an SV after an upload, is shall be different from that transmitted prior to the cutover" 30.3.3.1.3:"The ephemeris parameters are Keplerian in appearance; however, the values of these parameters are produced by the CS (Block IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples: t, x, y, z expressed in ECEF coordinates)" Suggested Change: From: To: Rationale: This states the information from an interface requirements perspective regardless of whether the CS or the SV is performing the action, and eliminates the need to update the wording		

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				with each addition SV configuration type.		
282	M. Dash GPA	Page: 127 Para: 20.3.3.5.1.4	Critical	Comment: A comment was submitted against this section. At the ICWG, I took an action to provide some alternative wording, which I provided 20 Nov 2008. Key aspects of that wording are missing, e.g. clarifying that UE should not be ignoring SVs that in the future may actually set this field to values that are currently undefined. Suggested Change: From: Code - SV Configuration 001 - "Block II/IIA/IIR" SV (A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2). 010 - “Block IIR-M” SV 011 - “Block IIF” SV To: Code SV Configuration 000 No A-S capability, no flags for A-S; memory capacity is other than described in paragraph 20.3.2 (e.g.,Block I SV). OR 000 Reserved 001 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g.,Block II/IIA/IIR SV). 010 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). 100 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA	PO Resolution: Accept Rationale: Duplicate of GPC comment #154 Related to comment #111 Concurrence: Concur Rationale: What happened at the ICWG is that this was discussed, but I could not come up with alternate wording on the spot (no final changes were made in “real time”, so I took an action item, which I provided the next day. ICWG actions are part of the ICWG and as such my proposed wording needs to go into this document and should not be put off. A critical part of my ICWG comment was to have wording to tell UE developers how to deal with SVs that set this field to a value defined in Undefined in the version of the IS the UE is designed against. This was not resolved at the ICWG meeting, but was part of my action item, which is an extension of the ICWG. What I provided under the action item should have been sent out the ICWG community as part of the minutes.	Resolution to #154 “Defer. At the Nov 09 ICWG, proposed language changes were made in real-time. Mike Dash was given the action to revise the following removed language: “Users can assume that SVs with a numerically larger (binary sense) configuration code will be backwards compatible with this version of IS-GPS-200.” The suggested language was inserted into the ICWG meeting minutes. The commenter’s new language will be brought to ICWG” 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #154. The commenter will be added to comment #154 in the ‘Reviewer Name’ cell to provide him an independent opportunity to concur/non-concur. The suggested wording will not be added for CCB since it was not provided or approved by the ICWG stakeholders. V. Gopal: Use "Reserved" for the alternate language. 29-sept-09: there is an ICWG consensus to include Mike's propsed verbiage with respect to the undefined codes as well as the paragraph below the table.

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				capability (e.g., Block IIIA SV). (e.g.,Block IIIA SV). 101-111 Undefined The undefined codes will be assigned definition in the future, should the need arise. While UE developers can't anticipate what future definitions will be assigned to the undefned codes, UE shall be able to acquire and track SVs that transmit codes identified above as "Undefined" IAW applicable UE requirements." Rationale: It's critical that UE not unilaterally discard any SV that sets these three bits to an undefined value		
283	M. Dash GPA	Page: 176, 178 Para: 30.3.3.1.3, Table 30-1, "****"	Administrative	Comment: The Word file shows a change in "Table 30-II" being replaced with "Table 30-II". It doesn't look like anything has changed. Has something changed? If not, why is this showing up as changed text? Please clarify. Suggested Change: From: To: Rationale: Not sure if there really is a change here and I'm somehow missing it.	PO Resolution: Reject Rationale: Duplicate of GPC comment #155. Concurrence: Concur Rationale: The version I downloaded did show this as a change. All I was looking for is clarification as to whether or not there really is a change being proposed.	Resolution to #155 "Reject. The ERB version does not contain any insertion markings for Table 30-I or Table 3-II. The ERB version is located on the Livelink website." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #155. The commenter will be added to comment #155 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
284	M. Dash GPA	Page: 188 Para: 30.3.3.3.1.1.2	Administrative	Comment: Was/Is matrix indicates there is a change to the equation, but I can't tell what the change is. The draft document has no change bar next to the equation. Is there really a change being proposed here? Please clarify. Suggested Change: From: To:	PO Resolution: Reject Rationale: Duplicate of GPC comment #156. Concurrence: Concur Rationale: The version I downloaded did show this as a change. All I was looking for is clarification as to whether or not there really is a change being proposed.	Resolution to #156 "Reject. The change does not show up when track changes is on. This is a flaw/issue with MS Word. The Was/Is matrix takes precedence." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #156. The commenter will be added to comment #156 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-

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				Rationale: Not sure if there really is a change here and I'm somehow missing it.		concur.
285	M. Dash GPA	Page: 206 Para: 30.3.3.9	Administrative	Comment: The Word file shows a change in "Table 30-" being replaced with "Table 30-". It doesn't look like anything has changed. Has something changed? If not, why is this showing up as changed text? Please clarify. Suggested Change: From: To: Rationale: Not sure if there really is a change here and I'm somehow missing it.	PO Resolution: Reject Rationale: Duplicate of GPC comment #157. Concurrence: Concur Rationale: The version I downloaded did show this as a change. All I was looking for is clarification as to whether or not there really is a change being proposed.	Resolution to #157 "Reject. Section 30.3.3.9 does not reference "Table 30-". Please resubmit with correct section number." 05/04/09: ICC POC spoke to the commenter and explained that the reject was given only because it was a duplicate comment, not based on the comment content. The resolution is in comment #157. The commenter will be added to comment #157 in the 'Reviewer Name' cell to provide him an independent opportunity to concur/non-concur.
300	T. Nagle GPC	Page: Para: 3.3.1.8	Substantive	Comment: Many users of GPS use the coherence among carriers, and between codes and carrier phases. The required coherence/commensurability should be specified. Suggested Change: From: 3.3.1.8 Signal Coherence. All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard; all digital signals shall be clocked in coincidence with the PRN transitions for the P-signal. On the L1 channel the data transitions of the modulating signals (i.e., that containing the P(Y)-code and that containing the C/A-code), L1 P(Y) and L1 C/A, shall be such that the average time difference between the transitions does not exceed 10 nanoseconds (two sigma). To: 3.3.1.8.1 "Signal Coherence among codes. All transmitted codes, data bits, and carriers for a particular SV shall be coherently derived from the same on-board frequency standard; all digital	PO Resolution: Reject Rationale: Comment received after deadline 9/1/09: Comment is OBE. This section's language has been replaced per the CL/PN WG Concurrence: Concur Rationale:	

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				signals shall be clocked in coincidence with the PRN transitions for the P-signal and occur at the P-signal transition. On the L1 channel the data transitions of the modulating signals (i.e., those containing the P(Y), C/A, and L1C codes), shall be such that the average time difference between the transitions does not exceed 10 nanoseconds. 3.3.1.8.2 Signal Coherence among carriers. All transmitted codes, data bits, and carriers for a particular SV shall be coherently derived from the same on-board frequency standard. The phase relationship among various carriers shall be defined by Phasei/ Phasej = Fi/ Fj * time, where Phasei is the phase of the carrier at frequency Fi. Any pair of carrier phases may deviate from this relationship by no more than 10 milliradian. Rationale: Add specification of the coherence among carriers and between carriers and codes.		
301	Bruce Peetz (Trimble) External	Page: Para: 3.3.1.5.1 Table 3-III	Critical	Comment: Fix phase relationships of L2 signals. Suggested Change: Delete 2nd paragraph of 3.3.1.5.1. Delete ** footnote of table 3-III. Add a note in 6.3 that says the IS will be updated in the future to allowing L2 phase relationships to change after 2020. Suggested Change: From: To: Rationale: Uncertain phase relationship between L2P and L2C impede, or possibly prevent, transition from semicodeless to L2C for precision commercial use. Receivers, which must be used in pairs for precision, and in practice are frequently used in networks, cannot be successfully mixed (semicodeless / L2C) with uncertain phase,	PO Resolution: Reject Rationale: 12/17/09: An alternative proposal has been proposed that should work a little better. Please see comment #336, 337 Concurrence: Not Required Rationale:	9/30/09: Changed language in section 3.3.1.5.1 to accomdate Trimble's request. However, technical issues still exist that need to be resolved.

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				disincentivizing users to migrate away from semicodeless. The proposal here is to fix the phases explicitly in this paragraph, and put a note in 6.3 allerting users to a future change in the IS allowing the L2 phase relationships to change after 2020.		
302	V. Gopal SE&I	Page: Para: 3.3.1.7.3	Substantive	Comment: The SV contractor is irrelavent to this document and their name does not need to be provided. Suggested Change: From: Space Service Volume Group Delay Differential. The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume shall be provided by the Block III Space Vehicle contractor (TBD). The details are provided in TBD. To: Space Service Volume Group Delay Differential. The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD. Rationale: See comment.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
303	V. Gopal SE&I	Page: Para:	Substantive	Comment: Remove all instances of Autonav and Autonomous Navigation Mode from the interfaces Suggested Change: From: To: Rationale: Per the Generalized Commanding WG, these features are not supported at all via OCX Increment 1 and Block IIIA	PO Resolution: Defer Rationale: Concurrence: Concur Rationale:	

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304	M. Deelo SE&I	Page: Para:	Substantive	Comment: Suggested Change: From: Correlation loss is defined as the difference between the SV power received in a 20.46 MHz bandwidth and the signal power recovered in an ideal correlation receiver of the same bandwidth. The correlation loss apportionment shall be as follows: 1. SV modulation imperfections 0.6 dB 2. Receiver waveform distortion 0.4 dB (due to 20.46 MHz filter) To: The vehicle payload correlation loss considered here is the total allowable, associated with the L1 and L2 30.69 MHz bandwidth RF signals transmitted by the payload, for L1P(Y), L2 P(Y), CA and L2C, due to filtering in the payload (e.g., multiplexers), plus a limited allowance (approximately 0.2 dB) for any loss due to unexpected signal distortion caused by other payload electronics. This correlation loss can be demonstrated by comparing the code correlation powers from the payload signal with those from a linear unfiltered signal generator which emulates the payload signal formation and is free of correlation that is not an expected result of signal combining. This comparison requires equal RF power in a 30.69 MHz bandwidth from both the payload and waveform generator, and the use of a correlating receiver with an approximate ideal filter. The difference in correlation power from this comparison is the defined payload correlation loss. The total allowable correlation loss, which is a function of signal and receiver bandwidth, shall be: For C/A & L2C : 0.3 dB (With a 30.69 MHz BW Rcvr)	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	29-sept-09: new verbiage to section 3.3.1.8 (signal coherence) has been recommended at the ICWG for clarification. " corrections for the bais components of the time defference are provided to the US in the CNAV message…" see comment #305. 29-sept-09: there are concerns that exist in which there is no spec now for a 20.46MHz B/W. B. Chiu also, brings up a concern that receivers have a 28MHz filter. ICC has changed the text from 24 MHz to 20.46MHz in the table of section 3.3.1.2. ICWG consensus has included new verbiage in the document. A new paragraph was included as such: " the correlation loss is defined as the difference between the SV power received in the bandwidth defined in 3.3.1.1... we will need to devise a way to show which verbiage has been deleted from the original CCB released document. this paragraph replaced the original proposed verbiage from Bud Bakeman. see document.

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				0.2 dB (With a 24 MHz BW Rcvr) For L1P(Y) & L2P(Y): 0.6 dB (With a 30.69 MHz BW Rcvr) 0.4 dB (With a 24 MHz BW Rcvr) Rationale: Provides the user with the total correlation loss, associated with the specified code RF powers on the ground, to be considered in the design of a receiver, and provides the payload contractor with a method of measuring the correlation loss in the factory with available hardware. The two receiver bandwidths reflect IIF and GPSIII test set capabilities. The allowable correlation loss, which is a function of signal as well as receiver bandwidth, will, of course, be unique for each of IS-200, -700, -705, and -800, and are based on an Aerospace simulation study.		
305	M. Deelo SE&I	Page: Para:	Substantive	Comment: Suggested Change: From: All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard; all digital signals shall be clocked in coincidence with the PRN transitions for the P-signal and occur at the P-signal transition speedrate. On the L1 channel the data transitions of the two modulating signals (i.e., that containing the P(Y)-code and that containing the C/A-code), L1 P(Y) and L1 C/A, shall be such that the average time difference between the transitions does not exceed 10 nanoseconds (two sigma). To: All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard. On the L1 carrier, the chip transitions of the modulating signals, CA and L1P(Y), and on the L2 carrier the chip transitions of	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

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				L2P(Y) and L2C, shall be such that the average time difference between the chips on the same carrier do not exceed 10 nanoseconds. The variable time difference shall not exceed 1 nanosecond (2 sigma), when including consideration of the temperature and antenna effect changes during a vehicle orbital revolution. Rationale: The “average (2 sigma)” requirement is mathematically incorrect, and it is desirable to separately measure the mean and variations. It is also desirable to include in the variations the non-random changes as the vehicle orbits the earth.		
306	M. Deelo SE&I	Page: Para:	Substantive	Comment: Suggested Change: From: The phase noise spectral density of the unmodulated carrier shall be such that a phase locked loop of 10 Hz one-sided noise bandwidth shall be able to track the carrier to an accuracy of 0.1 radians rms. To: The phase noise spectral density of the unmodulated carrier shall not exceed the magnitude of a straight line (on a log-log plot) between -30 dBc/Hz at 1 Hz and -60 dBc/Hz at 10 Hz, and another straight line between -60 dBc/Hz at 10 Hz and -90 dBc/Hz at 10 KHz. (The spectrum between 1 and 10 KHz, when integrated as linear values, multiplied by two and square rooted, is equal to .034 radians rms.) Also, the spurs shall not exceed -40 dBc. Rationale: A change from the existing spec is proposed to avoid a difficult analysis to associate the spectrum being measured by the contractors and the specified phase lock loop performance. The specified spectrum is based on worst case IIF	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	29-sept-09: LM has provided wording have the ICWG review the content. LM recommends changing the value of "-90 dBc/Hz at 10 kHz" to "-80 dBc/Hz at 1kHz". Also proposed to change the values of 1 and 10 kHz to 10Hz and 100kHz.

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				experience. The inclusion of an integrated value is only to provide information which can provide convenience during automatic test procedures. Although spurs may be seen when measuring in-band interference, the inclusion of a spurs limit in this requirement is to assure that they are observed along with the spectrum when utilizing phase noise test equipment.		
307	M. Deelo SE&I	Page: Para:	Substantive	Comment: Suggested Change: From: The group delay differential between the radiated L1 and L2 signals (i.e., L1P(Y) and L2P(Y), L1P(Y) and L2C) is specified as consisting of random plus bias components. The mean differential is defined as the bias component and will be either positive or negative. For a given navigation payload redundancy configuration, the absolute value of the mean differential delay shall not exceed 15.0 nanoseconds. The random variations about the mean shall not exceed 3.0 To: The group delay differential between the radiated L1 and L2 signals (i.e. L1 P(Y) and L2 P(Y), L1 P(Y) and L2 C) is specified as consisting of random plus bias components. The mean differential is defined as the bias component and will be either positive or negative. For a given navigation payload redundancy configuration, the absolute value of the mean differential delay shall not exceed 15.0 nanoseconds. The variations about the mean shall not exceed 3.0 nanoseconds (two sigma), when including consideration of the temperature and antenna effects during a vehicle orbital revolution. Corrections for the bias components of the group delay differential are provided to the US in the Nav message using parameters designated as TGD (reference	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	29-sept-09: there has been discussion at ICWG to remove the word "ramdon." this is due to the fact that variations about the mean differential imply variations are random. Also, the 2sigma reference also implies random variations. Stakeholders concur that the text needs to be changed to include "random and non-random" and change "2sig" to 95% probability. ICC to leave in the remaining proposed text "when including consideration...."

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				paragraph 20.3.3.3.3.2) and Inter-Signal Correction (ISC) (reference paragraph 30.3.3.3.1.1). Rationale:		
308	M. Deelo SE&I	Page: Para:	Substantive	Comment: Suggested Change: From: The SV shall provide L1 and L2 navigation signal strength at end-of-life (EOL), worst-case, in order to meet the minimum levels specified in Table 3-V. To: The SV shall provide L1 and L2 navigation signal strength at end-of-life (EOL), worst-case, in order to meet the minimum levels specified in Table 3-V,when measured with a receiver whose correlation outputs are calibrated against RF signals without combining loss. Rationale: When the correlation power for codes is reduced by the signal combining, the RF power on the ground must be increased to sustain the intended correlation power for the user. This is assured by using a properly calibrated receiver for power measurements.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	29-sept-09: updated the section realtime. ICWG stakeholders have provided new verbiage. Included the sentence. Any combining loss…" and deleted the original proposed change from the corr. Loss working group. ICC to include the complete changes from the redlined document.
309	J. Tracy (ITT) External	Page: Para: 6.3.4	Substantive	Comment: Defines URE performance in autonomous navigation mode only for Block IIR/IIR-M. Suggested Change: From: 6.3.4 Autonomous Navigation Mode. The Block IIR/IIR-M, Block IIF, and directional crosslink-capable Block III SV in conjunction with a sufficient number of other Block IIR/IIR-M, Block IIF or directional crosslink-capable Block III SVs, operates in an Autonav mode when commanded by the CS. Each Block IIR/IIR-M/IIF/directional crosslink-	PO Resolution: Defer Rationale: 12/17/09: This comment will be resolved in the next revision. The plan is to remove all instances of Autonav. Concurrence: Not Required Rationale:	

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				capable III SV in the constellation determines its own ephemeris and clock correction parameters via SV-to-SV ranging, communication of data, and on-board data processing which updates data uploaded by the CS. In the Autonav mode the Block IIR/IIR-M/IIF/directional crosslink-capable III SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma for Block IIR/IIR-M. URE of 6 meters, one sigma, is expected to support 16 meter SEP accuracy under a nominal position dilution of precision. If the CS is unable to upload the SVs, the Block IIR/IIR-M/IIF/directional crosslink-capable III SVs will maintain normal operations for period of at least 60 days after the last upload. To: Rationale: Need to set expectations/requirements for IIF and Block III (would assume it is better than the earlier Blocks IIR/IIR-M).		
310	J. Tracy (ITT) External	Page: Para: 20.3.3.5.1.4	Substantive	Comment: This change shows Codes going from SV Block (with implied capability) to just capabilities. Seems like there may be an issue if IIF SV is launched without L5, or a GPS III SV is operated as a IIF or IIR-M SV (no L1C) capability. Descriptions in Table shows that a GPS III SV has no SA capability, however when operated as a IIF or IIR-M SV (no L1C), there will be a disconnect. Previous designation did not have ambiguity. May want to add code for intermediate capability. Suggested Change: From: 001 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g.,Block II/IIA/IIR SV).	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, check the original comment. We seem to be missing stuff.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				010 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). 100 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA capability (e.g., Block IIIA SV). To: Rationale: The Code setting (if done by the CS and not forced by the SV) allows for a Block III SV to have lower capabilities such as L1C turned off/not operating. If this was the case and the code set to 011 on a Block III SV then one might expect SA capability on that SV, which the Block III SVs will not support. If these settings are fixed by type of SV then may not be an issue.		
311	M.Vilaboy (ITT) External	Page: Para: Table 3-Vb	Substantive	Comment: The received minimum RF signal strength for GPS III defined in Table 3-Vb are not consistent with the values defined in SS-SS-800C, Table 3-XI (e.g., IS-GPS-200E defines L1 P(Y) and L2 P(Y) to be -161.4 dBW, while SS-SS-800C defined the value to be -161.5 dBW; and IS-GPS-200E defines L2 C/A and L2C to be -160.0 dBW, while SS-SS-800C defined the value to be -158.5 dBW. Suggested Change: From: To:	PO Resolution: Accept Rationale: Values were changed to be consistent. Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale:		
312	M.Vilaboy (ITT) External	Page: Para: 30.3.3.1.1	Substantive	Comment: The CNAV toe section references back to section 20.3.4.5 for detection of a nav data cutover which is inconsistent with the CNAV message fit interval and location of toe within the fit interval. The referenced paragraph (20.3.4.5) provides a sample algorithm that implies a new nav message is available when the toe does not fall on the hour boundary. This is not the case with CNAV if modernized curve fit intervals of 3 hours are used. Suggested Change: From: Section 30.3.3.1.1 Any change in the Message Type 10 and 11 ephemeris data will be accomplished with a simultaneous change in the toe value. The CS (Block IIR-M/IIF) and SS (Block III) will assure that the toe value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover. See Section 20.3.4.5 for additional information regarding toe. Section 20.3.4.5 A change from the broadcast reference time immediately prior to cutover is used to indicate a change of values in the data set. The user may use the following example algorithm to detect the occurrence of a new upload cutover: DEV = toe [modulo 3600] If DEV ≠ 0, then a new upload cutover has occurred within past 4 hours. To: Rationale: Inconsistency between CNAV and NAV may have adverse affects on UE requiring constant nav data refreshes using the quoted algorithm.	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, check the original comment. We seem to be missing stuff.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
313	M.Vilaboy (ITT) External	Page: Para: Table 30-I	Administrative	Comment: Table was updated to include ISCs for L5I and L5Q, but 30.3.3.3.1.1 introductory paragraph and related algorithm paragraphs (30.3.3.3.1.1.1 and 30.3.3.3.1.1.2.) do not mention L5 at all. Update referenced paragraphs to include algorithms or reference appropriate section in IS-GPS-705 to ensure consistency with algorithms. Suggested Change: From: To: Rationale: Provided ISC parameters for L5, but do not refer user how to use them.	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, check the original comment. We seem to be missing stuff.
314	L.Doyle (ITT) External	Page: Para: 20.3.3.4.3	Administrative	Comment: The current proposed change lists each SV block. Since the SS and CS must meet the exact same requirement in the navigation message, the source is irrelevant to the important point of this paragraph. In addition, listing how each SV block generates the message will require a document update for each new SV type even though no significant information has changed. Suggested Change: From: User Algorithm for Ephemeris Determination. The user shall compute the ECEF coordinates of position for the phase center of the SVs' antennas utilizing a variation of the equations shown in Table 20-IV. Subframes 2 and 3 parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit of the predicted ephemeris of the phase center of the SVs' antennas (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars	PO Resolution: Defer Rationale: This is correct and will be incorporated into the next revision. Concurrence: Rationale:	

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				concerning the periods of the curve fit, the resultant accuracy, and the applicable coordinate system are given in the following subparagraphs. To: User Algorithm for Ephemeris Determination. The user shall compute the ECEF coordinates of position for the phase center of the SVs' antennas utilizing a variation of the equations shown in Table 20-IV. Subframes 2 and 3 parameters are Keplerian in appearance; the values of these parameters, however, are produced via a curve fit of the predicted ephemeris of the phase center of the SVs' antennas (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the periods of the curve fit, the resultant accuracy, and the applicable coordinate system are given in the following subparagraphs. Rationale: Document maintainability would improve if the source of the curve fit is simply deleted. Also not necessary to constrain in this document how the SS will implement the curve fit – this information is not required by the UE to do its job.		
315	L.Doyle (ITT) External	Page: Para: 20.3.3.4.3.1	Administrative	Comment: The current proposed change lists each SV block. Since the SS and CS must meet the exact same requirement in the navigation message, the source is irrelevant to the important point of this paragraph. In addition, listing how each SV generates the message will require a document update for each new SV type even though no significant information has changed. Suggested Change: From: 20.3.3.4.3.1 Curve Fit Intervals. Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curve-fit interval used by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) in	PO Resolution: Defer Rationale: This is correct and will be incorporated into the next revision. Concurrence: Rationale:	

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				determining the ephemeris parameters, as follows: To: 20.3.3.4.3.1 Curve Fit Intervals. Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curve-fit interval used to determine the ephemeris parameters, as follows: Rationale: Document maintainability would improve if the source of the curve fit is simply deleted.		
316	L.Doyle (ITT) External	Page: Para: 20.3.4.4 (Table 20-XII)	Administrative	Comment: The current proposed change lists each SV block. This will require a document update for new SV block even though no relevant information has changed. If the change is made as shown, then it will be easier to maintain the document and it is more readable. Suggested Change: From: 20.3.4.4 (Table 20-XII) "Table 20-XII. IODC Values and Data Set Lengths (Block IIR/IIR-M/IIF) To: 20.3.4.4 (Table 20-XII) "Table 20-XII. IODC Values and Data Set Lengths (Block IIR and subsequent Blocks) Rationale: Improved document maintainability.	PO Resolution: Defer Rationale: This is correct and will be incorporated into the next revision. Concurrence: Rationale:	
317	L.Doyle (ITT) External	Page: Para: 30.3.3.2.4	Substantive	Comment: The SV accuracies possible with the definition of URAoc1 do not seem reasonable given current SV accuracy requirements. The smallest URA growth rate that can be represented with an index of 7 yields a rate of 1/(2^(4+7)) or about 5E-4. At this rate, the URA grows to 1.76 meters at the end of the 2 hours which is unreasonable since this absolute minimum defined URA growth rate. Suggested Change: From: N = 4 + URAoc1 Index	PO Resolution: New Rationale: Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: N = 9 + URAoc1 Index Rationale: Representation is more consistent with SV accuracy.		
318	M. Jones (ITT) External	Page: Para: 20.3.3.4.3	Administrative	Comment: Too implementation specific for a UE ICD Suggested Change: From: User Algorithm for Ephemeris Determination. The user shall compute the ECEF coordinates of position for the phase center of the SVs' antennas utilizing a variation of the equations shown in Table 20-IV. Subframes 2 and 3 parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit of the predicted ephemeris of the phase center of the SVs' antennas (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the periods of the curve fit, the resultant accuracy, and the applicable coordinate system are given in the following subparagraphs. To: Rationale: In principle, curve fit can be tailored for best accuracy at a given AOD, but would not necessarily be least-squares overall. This provides no information the UE must know to compute a fix.	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, check the original comment. We seem to be missing stuff.
319	B. Renfro (ARL-UT) External	Page: Para: 20.3.3.4.1 para. 1	Substantive	Comment: Define the AODO term such that it remains useful even if the NMCT is no longer broadcast. NOTE: This is the first of a set of four linked comments. They must be implemented together or the result will be nonsensical. Suggested Change:	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, contact Brent to explain this to you.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: Bits 288 through 292 of subframe 2 shall contain the Age of Data Offset (AODO) term for the navigation message correction table (NMCT) contained in subframe 4 (reference paragraph 20.3.3.5.1.9). To: Bits 288 through 292 of subframe 2 shall contain the Age of Data Offset (AODO) term. Rationale: The SPS Performance Standard (SPS PS) specifies several metrics in terms of Age of Data (AoD). Examples include the various URE metrics defined in SPS PS September 2008, Section 3.4. To support verification of the SPS PS, the broadcast navigation message should contain a means to allow after-the-fact reconstruction of the AoD from a reasonably complete set of navigation message data. In the current definition, the status of the AODO field is unclear in the condition that the no correction table is available (20.3.3.5.1.9, AI=102). The proposed change retains the current usage of the AODO in support the NMCT, but amplifies the role of the AODO as an independent quantity that will be available regardless of the state of the NMCT. NOTE: It would be preferable to have additional bits such that the AODO field could cover the entire length of an upload (at least during the time the SV is in Normal Operations as specified is IS-GPS-200. However, given the limited number of bits available in subframes 1, 2, 3, the AODO field is a reasonable compromise that provides the required functionality.		
320	B. Renfro (ARL-UT) External	Page: Para: 20.3.3.4.1 para. 1	Substantive	Comment: Define the AODO term such that it remains useful even if the NMCT is no longer broadcast. delete para. 6 (information moved to new	PO Resolution: New Rationale:	Vimal, contact Brent to explain this to you.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				20.3.3.4.1.1) (Starts "the AODO word is provided…", ends "…given in paragraph 20.3.3.4.4.") Suggested Change: From: To: Rationale: See previous comment	Concurrence: Rationale:	
321	B. Renfro (ARL-UT) External	Page: Para: New 20.3.3.4.1.1	Substantive	Comment: Define the AODO term such that it remains useful even if the NMCT is no longer broadcast. Add new para. "20.3.3.4.1.1 Age of Data Offset (AODO) – The AODO term is provided in subframe 2 to enable the user to determine tkp, the time associated with the Kalman filter state used to generate the set of navigation message data currently being broadcast. tkp is also related to the validity time for the navigation message correction table (NMCT) contained in subframe 4 (reference paragraph 20.3.3.5.1.9). See 20.3.3.4.4 for a description of how tkp is used in relation to the NMCT. Users desiring to use tkp shall first examine the AODO term. If the AODO term is 27900 seconds (i.e., binary 11111), then the time tkp is too far in the past to be represented within the limitations of the format and tkp is not available. If the AODO term is less than 27900 seconds, the user shall compute tkp using the ephemeris toe parameter and the AODO term from the current subframe 2 as follows: OFFSET = toe [modulo 7200] If OFFSET = 0, then tkp = toe – AODO If OFFSET > 0, then tkp = toe – OFFSET + 7200 - AODO Note that the foregoing computation of tkp must	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, contact Brent to explain this to you.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				account for any beginning or end of week crossovers; for example, If t* - tkp > 302,400 then tkp = tkp + 604,800 If t* - tkp < -302,400 then tkp = tkp – 604,800 * t is GPS system time at time of transmission.” Suggested Change: From: To: Rationale: See previous comment.		
322	B. Renfro (ARL-UT) External	Page: Para: 20.3.3.4.4	Substantive	Comment: Define the AODO term such that it remains useful even if the NMCT is no longer broadcast. NOTE: This is the last of a set of four linked comments. They must be implemented together or the result will be nonsensical. Replace the first paragraph (starts “User desiring to take advantage”, and ends “* t is GPS system time at time of transmission.”) with the following: “Users desiring to take advantage of the NMCT data provided in page 13 of subframe 4 shall first determine tkp as described in 20.3.3.4.1.1. If tkp is not available, then the NMCT currently available from the transmitting SV is invalid and shall not be used. If tkp is available, then the validity time for that NMCT (tnmct) is equal to tkp (i.e. tnmct = tkp).” Suggested Change: From: To: Rationale: See previous comment. Note that the text being removed was in large part moved to the proposed new 20.3.4.1.1.	PO Resolution: New Rationale: Concurrence: Rationale:	Vimal, contact Brent to explain this to you.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
323	M. Dash GPA	Page: 101 Para: 20.3.2	Substantive	Comment: The amount of memory the SVs has is irrelavent to the user. Suggested Change: From: Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. Block IIIA SVs have the capability to store support operation for at least 60 days without contact from the CSof uploaded data. To: DELETE Rationale: See comment.	PO Resolution: Defer Rationale: Will need to do more research on this before removing. Due to constrained timelines, this will have to wait for Rev F. Concurrence: Concur Rationale:	
324	V. Gopal SE&I	Page: 15 Para: Table 3-iii	Substantive	Comment: Include IIIA in the last row Suggested Change: From: Block IIR-M/IIF To: Block IIR-M/IIF/IIIA Rationale: IIIA will meet the same values that were spec'ed for IIR-M/IIF	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
325	V. Gopal SE&I	Page: Para:	Substantive	Comment: Added SSV in acronym list Suggested Change: From: To:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: See comment.		
326	V. Gopal SE&I	Page: 198 Para: 30.3.3.1.1.1	Substantive	Comment: Suggested Change: From: Bits 39 through 51 of message type 10 shall contain 13 bits which are a modulo-8192 binary representation of the current GPS week number at the start of the data set transmission interval (see paragraph 6.2.4). These 13 bits are comprised of 10 LSBs that represent the ten MSBs of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1, and 3 MSBs which are extra bits that extend the range of transmission week number from 10 to 13 bits. To: Bits 39 through 51 of message type 10 shall contain 13 bits which are a modulo-8192 binary representation of the current GPS week number at the start of the data set transmission interval (see paragraph 6.2.4). Rationale: To synch up with IS-GPS-705 document	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
327	Unknown SE&I	Page: Para: 3.3.4b	Substantive	Comment: Suggested Change: From: NEW To: The most significant bits of the Z-count are a binary representation of the sequential number assigned to the current GPS week (see paragraph 6.2.4). This is modulo representation, limited by the physical space available. The most common limit is 10.The ten most significant bits of the Z-count are a modulo 1024 binary representation of the sequential number assigned to the current GPS week (see paragraph 6.2.4). The range of this count is from 0 to 1023 with its zero state being defined as the GPS week number zero and every	PO Resolution: A/C Rationale: Concurrence: Concur Rationale:	Changed language to read: The most significant bits of the Z-count are a binary representation of the sequential number assigned to the current GPS week (see paragraph 6.2.4). This was presented in the Nov 08 ICWG. Stakeholders all concurred.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				integer multiple of 1024 weeks, thereafter (i.e. 0, 1024, 2048, etc.). Rationale:		
328	Unknown	Page: Para: 3.3.1.6	Substantive	Comment: Suggested Change: From: NEW To: The Block IIIA SV shall provide L1 and L2 signals with the following characteristic: the L1 off-axis relative power (referenced to peak transmitted power) gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir; the L2 off-axis power gain shall not decrease by more than 2 dB from EOE to nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion. Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	This change did not have a CRM associated with it originally. However, it was presented at the ICWG for stakeholder review.
329	B. Renfro (ARL-UT) External	Page: Para:	Substantive	Comment: Week rollover test for tnmct is incorrect. Suggested Change: From: Note that the foregoing computation of tnmct must account for any beginning or end of week crossovers; for example, if t* - tnmct > 302,400 then tnmct = tnmct + 604,800 if t* - tnmct < -302,400 then tnmct = tnmct - 604,800 * t is GPS system time at time of transmission. To: Note that the foregoing computation of tnmct must account for any beginning or end of week crossovers; for example,	PO Resolution: New Rationale: Concurrence: Rationale:	Section number is missing. Go in and fill it out, Vimal!

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				if tnmct < 0 then tnmct = tnmct + 604,800. By default, the week number associated with tnmct is the same as the week number of the toe, but the week number associated with tnmct must be reduced by 1 if tnmct is adjusted by adding 604,800. Note: Since AODO is defined as a positive value (5 bits, no sign), the equation toe – AODO can yield a result less than 0, but cannot yield a result larger than toe. Therefore, there is no need for a second test for a positive rollover. Rationale: Existing description is incorrect. See memo "Comment on Error in IS-GPS-200D Section 20.3.3.4.4", B. Renfro, 15 Sep 2009 for complete details.		
330	S. Brown LMCO	Page: 39 Para: 6.3.4	Substantive	Comment: Clarify that GPS III autoNav does not work with any Block IIs Suggested Change: From: 6.3.4 Autonomous Navigation Mode. The Block IIR/IIR-M, Block IIF, and directional crosslink-capable Block III SV in conjunction with a sufficient number of other Block IIR/IIR-M, Block IIF or directional crosslink-capable Block III SVs, operates in an Autonav mode when commanded by the CS. Each Block IIR/IIR-M/IIF/directional crosslink-capable III SV in the constellation determines its own ephemeris and clock correction parameters via SV-to-SV ranging, communication of data, and on-board data processing which updates data uploaded by the CS. In the Autonav mode the Block IIR/IIR-M/IIF/directional crosslink-capable III SV will maintain normal operations as defined in paragraph 6.2.3.1 and as further described within this IS, and will have a URE of no larger than 6 meters, one sigma for Block IIR/IIR-M. URE of 6 meters, one sigma, is expected to support 16	PO Resolution: Defer Rationale: 11/15/09: Changes related with ANM/AutoNav are all deferred to the next revision Concurrence: Concur Rationale:	Vimal, go back and research this comment. It looks as though the comment section has been 'cut off'.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				meter SEP accuracy under a nominal position dilution of precision. If the CS is unable to upload the SVs, the Block IIR/IIR-M/IIF/directional crosslink-capable III SVs will maintain normal operations for period of at least 60 days after the last upload. To: Rationale: See comment.		
331	S. Brown LMCO	Page: 31 Para: 3.3.1.1	Substantive	Comment: GPS III does not have a 20.46 MHz band Suggested Change: From: 3.3.1.1 Frequency Plan. For Block IIA, IIR, IIR-M, IIF and III satellites, the requirements specified in this IS shall pertain to the signal contained within two 20.46 MHz bands; one centered about the L1 nominal frequency and the other centered about the L2 nominal frequency. (see Table 3-Vb). For Block III and subsequent satellites, the requirements specified in this IS shall pertain to the signal contained within two 30.69 MHz bands; one centered about the L1 nominal frequency and the other centered about the L2 nominal frequency. (see Table 3-Vc). The carrier frequencies for the L1 and L2 signals shall be coherently derived from a common frequency source within the SV. The nominal frequency of this source -- as it appears to an observer on the ground -- is 10.23 MHz. The SV carrier frequency and clock rates -- as they would appear to an observer located in the SV -- are offset to compensate for relativistic effects. The clock rates are offset by f/f = -4.4647E-10, equivalent to a change in the P-code chipping rate of 10.23 MHz offset by a f = -4.5674E-3 Hz. This is equal to 10.2299999954326 MHz. The nominal carrier frequencies (f0) shall be 1575.42 MHz, and 1227.6	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				MHz for L1 and L2, respectively. To: 3.3.1.1 Frequency Plan. For Block IIA, IIR, IIR-M, and IIF satellites, the requirements specified in this IS shall pertain to the signal contained within two 20.46 MHz bands; one centered about the L1 nominal frequency and the other centered about the L2 nominal frequency. (see Table 3-Vb). For Block III and subsequent satellites, the requirements specified in this IS shall pertain to the signal contained within two 30.69 MHz bands; one centered about the L1 nominal frequency and the other centered about the L2 nominal frequency. (see Table 3-Vc). The carrier frequencies for the L1 and L2 signals shall be coherently derived from a common frequency source within the SV. The nominal frequency of this source -- as it appears to an observer on the ground -- is 10.23 MHz. The SV carrier frequency and clock rates -- as they would appear to an observer located in the SV -- are offset to compensate for relativistic effects. The clock rates are offset by f/f = -4.4647E-10, equivalent to a change in the P-code chipping rate of 10.23 MHz offset by a f = -4.5674E-3 Hz. This is equal to 10.2299999954326 MHz. The nominal carrier frequencies (f0) shall be 1575.42 MHz, and 1227.6 MHz for L1 and L2, respectively. Rationale: See comment.		
332	S. Brown LMCO	Page: 33 Para: 3.3.1.6.1	Substantive	Comment: Suggested Change: From: 3.3.1.6.1 Space Service Volume (SSV) User-Received Signal Levels. For SSV users in Geostationary Earth Orbit (GEO), the SV shall provide L1 and L2 navigation signal strength at end-of-life (EOL), worst-case, in order to meet the	PO Resolution: Accept Rationale: Placed a note in the table explaining this. Concurrence: Concur Rationale:	

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				minimum levels specified in Table 3-Vc. The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized user receiving antenna at normal orientation, at the off-nadir angles defined in Table 3-Vc. The received signal levels are observed within the in-band allocation defined in paragraph. 3.3.1.1. To: 3.3.1.6.1 Space Service Volume (SSV) User-Received Signal Levels. For SSV users in Geostationary Earth Orbit (GEO), the SV shall provide L1 and L2 navigation signal strength at end-of-life (EOL), worst-case, in order to meet the minimum levels specified in Table 3-Vc over 99.5% of the solid angle indise a cone. The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized (i.e. 0 dB ellipticity) user receiving antenna at normal orientation, at the off-nadir angles defined in Table 3-Vc. The received signal levels are observed within the in-band allocation defined in paragraph. 3.3.1.1. Rationale: Include the 99.5% requirement from SS-SS-800D, and match IS-800 verbiage.		
333	S. Brown LMCO	Page: Para: 2.2	Administrative	Comment: Govt misspelled Suggested Change: From: 2.2 Non-Government Documents. To: Rationale: See comment.	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	
334	S. Brown LMCO	Page: Para: 6.3.6	Critical	Comment: Suggested Change: From: 6.3.6 PRN Code sequences expansion. The	PO Resolution: Defer Rationale: Deferring to Karl Kovach's PPIRN on "Constellation Expansion". Submitted wording by Karl should be in line with your suggested change.	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				additional PRN sequences provided in this section are for information only. The additional PRN sequences identified in this section are not applicable to Block II/IIA, IIR/IIR-M, IIF SVs. In addition, the current valid range for GPS PRN signal number for C/A- and P-code is 1 – 37 as specified in Table 3-I. The PRN sequences provided in this section are for other L1/L2 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, and potential use in the future by GPS. To: 6.3.6 PRN Code sequences expansion. The additional PRN sequences provided in this section are for information only. The additional PRN sequences identified in this section are not applicable to Block II/IIA, IIR/IIR-M, IIF SVs. In addition, the current valid range for GPS PRN signal number for C/A- and P-code is 1 – 37 as specified in Table 3-I. The PRN sequences provided in this section are for other L1/L2 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, and potential use in the future by GPS. Rationale: Update additonal PRN to use LNAV	Concurrence: Concur Rationale:	
335	K. Kondo External	Page: Para: 30.3.3.1 (Table 30-II Sheet 1 of 2)	Administrative	Comment: The relativistic clock correction term is calculated by using a variable, "A", in section 20.3.3.3.3.1 "User Algorithm for SV Clock Correction" of IS-GPS-200D and IS-GPS-200E (draft). Table 30-II "Elements of Coordinate System" in section 30.3.3.1 "Message Type 10 and 11 Ephemeris and Health Parameters", however, does not describe "A" but "A0" and "Ak". I think the description that "A=A0" (or "A=Ak") should be added there. Suggested Change:	PO Resolution: Reject Rationale: This is not true. Sqrt(A) is found in the CNAV message. Using this, we can compute Ak using the equation in Table 30-II. Using Ak, we can compute A0 (also found in Table 30-II). Therefore, A is not equal to A0 or Ak. Concurrence: Not Required Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale:		
336	T. Nagle GPC	Page: Para: 3.3.1.5.1	Critical	Comment: The current draft of IS-GPS-200, Section 3.3.1.5.1, Phase Quadrature, second paragraph, states that the phasing of L2C with respect to L2P is either in phase or in phase-quadrature. The draft provides no means for the receivers to identify which phase relationship is being broadcast. Suggested Change: From: For Block IIR-M, IIF, and subsequent blocks of SVs, the two L2 carrier components shall be either in phase quadrature or in the same phase (within ±100 miliradians) – see Section 6 for additional information. The civil signal carrier component is modulated by any one of three (IIF) or four (IIR-M) different bit trains as described in paragraph 3.2.3. The resultant composite transmitted signal phases will vary as a function of the binary state of the modulating signals as well as the signal power ratio and phase quadrature relationship. Beyond these considerations, additional carrier components in Block IIR-M, IIF, and subsequent blocks of SVs will result in composite transmitted signal phase relationships other than the nominal special case of Table 3-IV. To: For Block IIR-M, IIF, and subsequent blocks of SVs, the two L2 carrier components shall be either in phase quadrature or in the same phase (within ±100 miliradians) – see paragraph 3.3.1.5.3 for additional information. The civil signal carrier component is modulated by any one of three (IIF) or four (IIR-M) different bit trains as described in	PO Resolution: A/C Rationale: Although this comment may be valid, it has not been properly vetted via an ICWG. This comment is deferred for discussion at the next ICWG. 1/05/09: Changed to A/C based on ERB comments and Col Goldstein decision. See ERB CRM for final language. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				paragraph 3.2.3. The resultant composite transmitted signal phases will vary as a function of the binary state of the modulating signals as well as the signal power ratio and phase quadrature relationship. Beyond these considerations, additional carrier components in Block IIR-M, IIF, and subsequent blocks of SVs will result in composite transmitted signal phase relationships other than the nominal special case of Table 3-IV. The current phase relationship of the two L2 carrier components (L2C and L2P(Y)) shall be indicated by means of bit 273 of the CNAV Type 10 Message (See section 30.3.3), where zero indicates phase quadrature, with the L2C lagging the L2P(Y) by 90 degrees, and one indicates that L2C and L2P(Y) are in-phase. If the CNAV message is not available, then the L2C and L2P(Y) shall be fixed in phase quadrature. Rationale: The utility of civilian GPS signals for dual-frequency precision applications depends on a known and uninterrupted carrier phase which is algorithmically essential. For a dual-frequency receiver having the L2C signal capability to fulfill the performance function now performed by user equipment using semi-codeless/codeless techniques, the phase relationship needs to be known and fixed (either fixed in-phase or in quadrature. Dual-frequency receivers are used in precision application networks and, at a minimum, in pairs. For successful transition from semi-codeless, networks will need to consist of receivers that do not have L2C capability—the installed base—along with those that do. If the receivers do not have knowledge of the phase relationship between L2C and L2P, then all the receivers must use semi-codeless if any one of them is not L2C capable. If the receivers do not have knowledge of the phase relationship between L2C and L2P, then		

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				all the receivers must use semi-codeless if any one of them is not L2C capable. This in turn kills the motivation for adoption of L2C. A phase notification via the CNAV message would alleviate this problem. Furthermore, along with the phase relationship change taking place while the satellite is set to non-standard code or unhealthy, the message can always represent the current phase between L2C and L2P. The alternatives to solving this problem are: 1) Fix the phase of L2C to L2P forever. 2) Allow the phase of L2C to vary as in the current draft, but with message notification to the user that identifies the current phase relationship.		
337	T. Nagle GPC	Page: Para: 3.3.1.5.3	Critical	Comment: The current draft of IS-GPS-200, Section 3.3.1.5.3 basically states that the SV will be set unhealthy during any intentional phase discontinuity. Unfortunately, prior to the availability of the CNAV messages on L2C, there will be no health bits to be observed. Suggested Change: From: While the satellite is broadcasting standard C/A, P(Y), and L2C codes with data that indicates that C/A, P(Y), and L2C signal health (respectively) is OK, the CS/SS will not command an operation causing an intentional phase discontinuity. This does not apply to phase discontinuities caused by signal modulation. To: While the satellite is broadcasting standard C/A, P(Y), and L2C codes with data that indicates that C/A, P(Y), and L2C signal health (respectively) is OK, the CS/SS will not command an operation causing an intentional phase discontinuity. This does not apply to phase discontinuities caused by	PO Resolution: A/C Rationale: Although this comment may be valid, it has not been properly vetted via an ICWG. This comment is deferred for discussion at the next ICWG. 1/05/09: Changed to A/C based on ERB comments and Col Goldstein decision. See ERB CRM for final language. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				signal modulation. Prior to health data being available on L2C, satellites will be set unhealthy using the non-standard code. Rationale: IS-GPS-200 was written with the assumption that CNAV data is available on L2C. However, this is not the case, nor will be for some time. The suggested change provides a mechanism to keep users from using the unhealthy signals.		
401	S. Hutsell 2SOPS	Page: 80 Para: 6.1	Administrative	Comment: Suggested Change: From: GPSW - Global Position System Wing To: GPSW - Global Positioning System Wing Rationale: Correctness	PO Resolution: Accept Rationale: Concurrence: Rationale:	
402	C. Sedgwick 2SOPS	Page: Para:	Administrative	Comment: Remove all references to GPS Block II in the document (with the exception of 6.2.2.2.1, leave as is). Suggested Change: From: To: Rationale: The last GPS Block II was disposed 6 Apr 07 (SVN15).	PO Resolution: Defer Rationale: This comment is completely valid and will definitely be done in the next revision. We are not doing this now due to time constraints. Concurrence: Rationale:	
403	B. Carroll A5P	Page: 105 Para: 6.3.7	Substantive	Comment: Suggested Change: From: 6.3.7 Pre-Operational Use. Before Initial Operational Capability (IOC) is declared for any new signal or group of signals (e.g., L2C, L5, M, L1C, etcetera), the availability of and/or the configuration of the broadcast signal or group of	PO Resolution: Accept Rationale: The intent of the paragraph is preserved even with this newly suggested language. This comment is almost administrative in nature. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				signals may not comply with all requirements of the relevant IS or ICD. For example, the pre-IOC broadcast of L2C signals from the IIR-M satellites did not include any NAV or CNAV data as required by IS-GPS-200. Pre-IOC use of any new signal or group of signals is at the users own risk. To: 6.3.7 Pre-Operational Use. Before any new signal or group of signals (e.g., L1C, L2C, L5, or M) is declared operational, the availability of and/or the configuration of the broadcast signal or group of signals may not comply with all requirements of the relevant IS or ICD. For example, the pre-operational broadcast of L2C signals from the IIR-M satellites did not include any NAV or CNAV data as required by IS-GPS-200. Pre-operational use of any new signal or group of signals is at the users own risk. Rationale: AFSPC/A3 does not declare IOC or FOC on signals, only capabilities. Both the decision and declaration that signals are operational (monitoring in place, trained crews, etc.) will be made by USSTRATCOM/ JFCC SPACE.		
404	J. Fong Aerospace	Page: 60 Para: 6.2.1	Administrative	Comment: Suggested Change: From: 1-1e-5 per hour probability To: 1E-5 per hour probability Rationale: Clarity	PO Resolution: Reject Rationale: The intent here is to provide a very high probability (i.e. 99.999… %). Concurrence: Rationale:	
405	J. Fong Aerospace	Page: 60 Para: 6.2.1	Administrative	Comment: Suggested Change: From: 1-1e-8 per hour probability	PO Resolution: Reject Rationale: The intent here is to provide a very high probability (i.e. 99.999… %). Concurrence:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: 1E-8 per hour probability Rationale: Clarity	Rationale:	
406	J. Fong Aerospace	Page: 60 Para: 6.2.1.1	Administrative	Comment: Suggested Change: From: When the integrity assurance monitoring is available, as indicated by a the “integrity status flag” being set to “1” …. To: When the integrity assurance monitoring is available, as indicated by a the “integrity status flag” being set to “1” Rationale: Grammar - "a" not needed	PO Resolution: Accept Rationale: Concurrence: Rationale:	
407	J. Fong Aerospace	Page: 60 Para: 6.2.1.1	Administrative	Comment: Suggested Change: From: The URA value is conveyed to the user in the form of a URA index values. To: The URA value is conveyed to the user in the form of URA index values. Rationale: Grammar - "a" not needed	PO Resolution: Accept Rationale: Concurrence: Rationale:	
408	C. Chiu Aerospace	Page: 5 & 6 Para: 3.2.1	Critical	Comment: For Block IIIA, the P(Y) ranging code described in 3.2.1 could be majority-combined with L1C’s in accordance with the GPS IIIA PDR baseline. Also there is a possibility that the PDR baseline could be replaced with a different combining technique known as “POCET”. The ICD update does not have a description of the combining schemes involved. More importantly, the ICD update does not provide user equipment developers a definition of the actual P(Y) transmitted from Block IIIA SV’s. Add the combining schemes for the ranging code(s)	PO Resolution: Defer Rationale: Will bring the issue to the SEIT Council. The commenter will be involved in this process. 7/23/2009: Being addressed by the GPS III IPT 9/1/09: Signal combining details are considered proprietary by LM and therefore cannot be included in this document or any public document. 12/17/09: On RIL. Aalap Shah working this issue with Bob. Concurrence:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				involved, and adjust/modify the ICD requirements that are impacted by the chosen combining scheme. Suggested Change: From: To: Rationale: User equipment developers need the specification of the combining scheme to design some of the receiver's processing blocks and to evaluate the effect of "de-combining" performed by the user equipment.	Rationale:	
409	C. Chiu Aerospace	Page: 17 Para: Table 3-Vb	Critical	Comment: SS-SS-800C does not define received signal power simply on the basis of the power within the bandwidth specified in 3.3.1.1 as stated in the table title of Table 3-Vb. Rather, the received powers listed in Table 3-XI of SS-SS-800C are the "effective received signal powers" which are "referenced to a receiver whose correlation outputs are calibrated against an RF signal without combining loss". To approve SS-SS-800C last August, an agreement was reached at that time that a detailed definition of the reference receiver (e.g., frontend band-pass characteristics, shape of the actual input signal waveform, what is/are calibrated, etc) will be specified in the next IS-GPS-200 update. Add the definition of the receiver that is used to establish the "effective received signal power" Suggested Change: From: To:	PO Resolution: Accept Rationale: 04/28/09: The reference for the minimum power specifications in SS-SS-800 and the IS-GPS-200 need to be consistent. 09/11/09: Will Work with Chiu to make sure he gets the information he needs. 12/17/09: Section 3.3.1.2 indicates that combining loss will be compensated for by the space vehicle. Change was made at September ICWG. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: The significance of the power level specifications given in Table 3-Vb is unclear without the definition of such receiver.		
410	C. Chiu Aerospace	Page: 17 Para: Table 3-Vb	Critical	Comment: (1) The minimum "effective received signal power" for P(Y) on both L1 and L2 are specified as -161.5 dBW in Table 3-XI of SS-SS-800C. That is, 0.1 dBW lower than those given in Table 3-Vb numerically. (2) The C/A or L2C signal power (-160 dBW) on L2 given in Table 3-Vb numerically disagrees with the minimum "effective received power" (-158.5 dBW) specified in Table 3-XI of SS-SS-800C. Make appropriate changes and make sure the power level specifications consistent with the definition of the reference receiver used to establish the power levels. Rename received power as "effective received power". Suggested Change: From: To: Rationale: Need to be consistent with the payload capability as defined in SS-SS-800C.	PO Resolution: Accept Rationale: The 0.1 dB difference accounts for the increase in filter size to 30.69 MHz. Not all documents have caught up. 04/28/09: This comment is related to comment #239. 12/17/09: Power level for P(Y) has been changed to -161.5 dBW. Also, part 2 of the comment has been resolved along with comment #239 Concurrence: Rationale:	
411	C. Chiu Aerospace	Page: General Para: General	Critical	Comment: To approve SS-SS-800C last August, an agreement was reached at that time that the next IS-GPS-200 update would specify the bandpass characteristics of the triplexer/quadraplexer used by the SVs to shape the transmitted power spectral density. Such bandpass specifications are not included here. Add the specifications described above. Suggested Change: From:	PO Resolution: Defer Rationale: 04/28/09: Commenter wanted flatness and phase linearity requirements added to interface document. Will forward to Space IPT for final resolution. 7/23/2009: Kevin Kane to provide email on how to specify filter characteristics 9/9/09: Per Mike Munoz, the details were provided to the commentor off-line and this comment is therefore OBE. 12/17/09: Changed to defer per discussion with Bob. Will work with LM to find out a resolution (i.e. establish	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: User equipment developers need such specifications to optimize the RF designs and verify the TRD performance requirements.	and upper bound for the filter characterstics). Concurrence: Rationale:	
412	T. Nagle GPC	Page: Para: 3.2.1	Critical	Comment: There is no requirement option for no data on L2CM. Add option to Table 3-III. Suggested Change: From: To: Rationale: May continue to operate as we do today (i.e.no data w/L2CM)	PO Resolution: Reject Rationale: Pre-operationally, signal performance is not guaranteed as specified in section 6.3.7. Concurrence: Rationale:	
413	T. Nagle GPC	Page: Para: 3.3.1.2	Critical	Comment: The correlation loss is for the signal power received, not the SV power received. Suggested Change: From: Correlation loss is defined as the difference between the SV power received in the bandwidth defined in 3.3.1.1 (excluding signal combining loss) and the signal power recovered in an ideal correlation receiver of the same bandwidth… To: Correlation loss is defined as the difference between the signal power received in the bandwidth defined in 3.3.1.1 (excluding signal combining loss) and the signal power recovered in an ideal correlation receiver of the same bandwidth… Rationale: Correct term for comparison	PO Resolution: Accept Rationale: This comment is not critical and is administrative. Concurrence: Rationale:	
414	T. Nagle GPC	Page: Para: 3.3.1.5.1	Critical	Comment: The current draft of IS-GPS-200, Section 3.3.1.5.1, Phase Quadrature, second paragraph, states that the phasing of L2C with respect to L2P is either in phase or in phase-quadrature. The	PO Resolution: Accept Rationale: Per Col Goldstein decision.	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				draft provides no means for the receivers to identify which phase relationship is being broadcast. Suggested Change: From: To: For Block IIR-M, IIF, and subsequent blocks of SVs, the two L2 carrier components shall be either in phase quadrature or in the same phase (within ±100 miliradians) – see paragraph 3.3.1.5.3 for additional information. The civil signal carrier component is modulated by any one of three (IIF) or four (IIR-M) different bit trains as described in paragraph 3.2.3. The resultant composite transmitted signal phases will vary as a function of the binary state of the modulating signals as well as the signal power ratio and phase quadrature relationship. Beyond these considerations, additional carrier components in Block IIR-M, IIF, and subsequent blocks of SVs will result in composite transmitted signal phase relationships other than the nominal special case of Table 3-IV. The current phase relationship of the two L2 carrier components (L2C and L2P(Y)) shall be indicated by means of bit 273 of the CNAV Type 10 Message (See section 30.3.3), where zero indicates phase quadrature, with the L2C lagging the L2P(Y) by 90 degrees, and one indicates that L2C and L2P(Y) are in-phase. If the CNAV message is not available, then the L2C and L2P(Y) shall be fixed in phase quadrature. Rationale: The utility of civilian GPS signals for dual-frequency precision applications depends on a known and uninterrupted carrier phase which is algorithmically essential. For a dual-frequency receiver having the L2C signal capability to fulfill	Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				the performance function now performed by user equipment using semi-codeless/codeless techniques, the phase relationship needs to be known and fixed (either fixed in-phase or in quadrature. Dual-frequency receivers are used in precision application networks and, at a minimum, in pairs. For successful transition from semi-codeless, networks will need to consist of receivers that do not have L2C capability—the installed base—along with those that do. If the receivers do not have knowledge of the phase relationship between L2C and L2P, then all the receivers must use semi-codeless if any one of them is not L2C capable. If the receivers do not have knowledge of the phase relationship between L2C and L2P, then all the receivers must use semi-codeless if any one of them is not L2C capable. This in turn kills the motivation for adoption of L2C. A phase notification via the CNAV message would alleviate this problem. Furthermore, along with the phase relationship change taking place while the satellite is set to non-standard code or unhealthy, the message can always represent the current phase between L2C and L2P. The alternatives to solving this problem are: 1) Fix the phase of L2C to L2P forever. 2) Allow the phase of L2C to vary as in the current draft, but with message notification to the user that identifies the current phase relationship.		
415	T. Nagle GPC	Page: Para: 3.3.1.5.1	Administrative	Comment: Change +/- 100 milliradians to degrees Suggested Change: From: To: +/- 5.7 degrees (although we suspect it is much better than this in reality)	PO Resolution: Reject Rationale: This may be true, however, this unit (milliradians) has been used since the inception of the document and could add confusion if it is changed. Concurrence:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Signal phasing (quadrature) is described in terms of degrees	Rationale:	
416	T. Nagle GPC	Page: Para: 3.3.1.5.3	Critical	Comment: The current draft of IS-GPS-200, Section 3.3.1.5.3 basically states that the SV will be set unhealthy during any intentional phase discontinuity. Unfortunately, prior to the availability of the CNAV messages on L2C, there will be no health bits to be observed. Suggested Change: From: To: Prior to health data being available on L2C, satellites will be set unhealthy using the non-standard code. Rationale: IS-GPS-200 was written with the assumption that CNAV data is available on L2C. However, this is not the case, nor will be for some time. The suggested change provides a mechanism to keep users from using the unhealthy signals.	PO Resolution: Accept Rationale: Per Col Goldstein decision. Concurrence: Rationale:	
417	T. Nagle GPC	Page: 29 Para: Table 3-Va	Critical	Comment: Minimum received signal strength for L2C does not reflect actual performance. Separate IIR-M L2C power level into a separate line and change IIR-M L2C received signal strength from -160.0 dBW to -161.4 dBW. Note that the Block IIF power level remains unchanged at -160.0 dBW. Suggested Change: From: To: Rationale: All IIR-M satellites have been launched, and therefore this specification will have no influence on this class of satellite. Lockheed	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Martin's letter of exception dated 26 May 2003 in IS-GPS-200D version shows acceptance with the -161.4 dBW value, but not with the -160.0 dBW value. The -161.4 dBW value was proposed by the U.S. Air Force in its 8 November 2002 PIRN-200C-007B to ICD-GPS-200C		
418	T. Nagle GPC	Page: 29 Para: Table 3-Va	Critical	Comment: Table 3-Va title refers only to Block II satellites, yet includes power levels for Block III 20.46 MHz bandwidth signals. Suggested Change: From: Received Minimum RF Signal Strength for Block IIA, IIR, IIR-M, and IIF Satellites To: Received Minimum RF Signal Strength for Block IIA, IIR, IIR-M, IIF, and III Satellites Rationale: Resolve discrepancy between the title and its content.	PO Resolution: Accept Rationale: This is not a critical comment and is administrative Concurrence: Rationale:	
419	T. Nagle GPC	Page: 30 Para: 3.3.1.7.3	Critical	Comment: Within each SV's service volume, the spatial group delay differential should be consistent with the temporal group delay and differential in 3.3.1.7 for all users. The current paragraph does not address spatial group delay differential for terrestrial users. Specify the absolute value of the mean group differential delay to be consistent with 3.3.1.7.2 for terrestrial users. Suggested Change: From: Space Service Volume Group Delay Differential. The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD. To: Spatial Variation of Group Delay Differential. The group delay differential between the radiated	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD. Within the +13.8 degrees from nadir of Earth Coverage signal for the users of the Terrestrial Service, the absolute mean spatial variability of group delay differential between the radiated L1 and L2 signals shall not exceed 15.0 nanoseconds, consistent to 3.3.1.7.2. Rationale: Throughout the entire Earth coverage service volume, the Group Delay Differential should never mislead "ionosphere corrected" error for all single frequency users using TGD as currently defined in 20.3.3.3.3.2.		
420	T. Nagle GPC	Page: Para: 3.3.1.7.3	Critical	Comment: Please provide the values for the SSV group delay differential. Please provide the values. Suggested Change: From: To: Rationale: Requirement	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	
421	T. Nagle GPC	Page: 31 Para: 3.3.1.9	Critical	Comment: The reference to Block IIIA, not just III, is provided. Why this specificity? Is Ellipticity going to change in later versions of the Block III? Best to stay with a simple "Block III" reference. Suggested Change: From: IIIA To: III Rationale: Minimize effort required later. Note that this is a comment that should be applied to other instances of the term "IIIA" throughout this document.	PO Resolution: Defer Rationale: This comment is valid and the plan is to have this completed for the Rev F Concurrence: Rationale:	

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422	T. Nagle GPC	Page: Para: 3.3.4	Critical	Comment: Need tighter requirement on the accuracy of the requisite data for relating GPS time to UTC for block III SVs. Suggested Change: From: The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it relates GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). To: The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it relates GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). For Block III SVs, the GPS CS shall control the GPS time scale to be within 50 nanoseconds (95% probability) of UTC (USNO) (modulo one second) and the accuracy of the data on L1 NAV and L2 CNAV during the transmission interval shall be such that it relates GPS time to UTC(USNO) to within 1.5 nanoseconds (RMS over 30 days).”Effectivity 15 Rationale: Tighten requirement for block III SVs based on IS-GPS-800A.	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	
423	T. Nagle GPC	Page: 57 Para: 6.1	Administrative	Comment: Wrong abbreviation used for decibel with respect to 1 watt. Suggested Change: From: dbw To: dbW Rationale: dBW is the right abbreviation, and it is	PO Resolution: Accept Rationale: Concurrence: Rationale:	

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				used correctly elsewhere in the report		
424	T. Nagle GPC	Page: 63 Para: 6.3.1	Critical	Comment: “Not expected to exceed” values are provided for Block IIA/IIR/IIR-M/IIF, but not for III. Table 3-Va has added minimum received values for Block III in this version, and should include maximum received values as well. Amend para 6.3.1 to include “For Block III SVs, the maximum received signal levels as a result of these factors is not expected to exceed <number to be supplied> dBW and <number to be supplied> dBW, respectively, for the P(Y) and C/A components of the L1 channel and L2 channel.” Suggested Change: From: To: Rationale: Guidance on the maximum values for received power for Block III signal is needed to be consistent with the guidance on the other signals.	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	
425	T. Nagle GPC	Page: 79 Para: 10.3	Critical	Comment: Lockheed Martin letters of exception for 26 May 2003 and 27 September 2004 are not needed if the minimum power level is changed per previous comment to page 29, Table 3-Va regarding minimum received signal strength for L2C, and should be removed. The contractor should provide background information to support why L2CNAV as being listed as an exception. Delete 26 May 2003 Letter from Lockheed Martin. Delete 27 September 2004 letter from Lockheed Martin, pending receipt of justification for exception to L2CNAV. Suggested Change: From:	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				To: Rationale: All Block IIR satellites have been launched and therefore there is nothing that can be done to modify the spacecraft end-of-life minimum power levels or on-board functionality relating to the L2CNAV message.		
426	T. Nagle GPC	Page: 84 Para: 10.3	Critical	Comment: Request contractor provide background information to support letter of exception by Boeing, dated December 6, 2004. The content of the L2 CNAV message is essential for use of second civil frequency. Remove letter of exception by Boeing, pending receipt of justification for letter of exception. Suggested Change: From: To: Rationale: Allowing this letter of exception to remain in the document precludes full implementation of the L2 CNAV message on the Block IIF satellites.	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	
427	T. Nagle GPC	Page: Para: Figure 20-1. Data Format (sheet 8 of 11)	Administrative	Comment: Editorial change (a “C” redundancy in the last line). Delete an extra “C “ in the last line. Suggested Change: From: To: Rationale: Editorial	PO Resolution: Accept Rationale: Concurrence: Rationale:	
428	T. Nagle GPC	Page: Para: Figure 20-1. Data	Administrative	Comment: Editorial change (a “C” redundancy in the last line). Delete an extra “C “ in the last line.	PO Resolution: Accept Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		Format (sheet 9 of 11)		Suggested Change: From: To: Rationale: Editorial	Concurrence: Rationale:	
429	T. Nagle GPC	Page: Para: 20.3.3.3.1.5	Critical	Comment: Current IODC does not require it to change every time of detecting any change in the correction parameters. For Block III, this requirement can be tighten for block III SVs. Suggested Change: From: The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters. To: The IODC indicates the issue number of the data set and thereby provides the user with a convenient means of detecting any change in the correction parameters. For Block III SVs, the IODC shall change when detecting any change in the correction parameters. Rationale: Tighten the IODC requirement for block III SVs.	PO Resolution: Defer Rationale: This comment will be considered for the next PIRN release in conjunction with the next public ICWG. Concurrence: Rationale:	
430	T. Nagle GPC	Page: Para: Table 30-XI, and 30.3.3.8.2 (equation)	Administrative	Comment: Parameters “totGGTO” and “WNotGGTO” are not defined in message type 35 of Figure 30-8. Either made change in 30.3.3.8.2 and table 30-XI to match the parameters of Figure 30-8 or to change the parameters in Figure 30-8 to match parameters in 30.3.3.8.2 and table 30-XI. Suggested Change:	PO Resolution: Accept Rationale: Changed subscripts to be consistent with definitions. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: To: Rationale: Correct parameters.		
431	M. Dash GPA	Page: Para:	Critical	Comment: At the ICWG, it was revealed that a newer draft document, compared to the version that was sent out for review, was created and the ICWG was limited to discussing the changes in that later draft and some of the comment associated with the affected sections. The ICWG did not go through all the comments submitted against the version of the document sent out for review. As such, many comments, including most of mine, were left w/o being discussed at the ICWG with the document POCs determining resolutions on their own. In particular, there were a number of critical comments submitted previously that were rejected and non-concurred. Provide a venue to address comments that were not discussed at the last ICWG and discontinue the practice of arbitrarily introducing new versions of draft documents in the middle of a formal review cycle. Suggested Change: From: To: Rationale: The ICWG is a formal event in which a formal draft set of changes are sent out for review, and discussed. By creating an additional draft revision while the document was under review, revision control was broken. The ICWG also is supposed to provide an opportunity to discuss comments submitted against a proposed interface change.	PO Resolution: Accept Rationale: Your comment is noted and your comments from previous ICWGs are still valid and are being tracked and worked. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
432	M. Dash GPA	Page: Para:	Critical	Comment: As part of the CCB process, as I understand it, something is supposed to be sent out from Config Management to PK to request contract impact assessments to all the contracts identified as being affected. At the last CUE IPT, when the CM person identified 200E as being on the agenda, we talked about this and the PK representative indicated they were not aware of any request for impact assessment of 200E on DAGR, MAGR-2K, or ADAP. Something in the process didn't occur. This document should not be approved until the contractual impacts are determined. The DAGR program is in the process of drafting a task for Rockwell to assess the impacts of the two ICD-GPS-227 PIRNs on DAGR, and will amend to include IS-GPS-200E, but that won't be on contract before end of January. Something similar needs to occur for MAGR-2K and ADAP Suggested Change: From: To: Rationale: Assessing the specific impacts on contracts that call out this document, or any earlier version of it, is essential. The only way to do this is to execute impact assessment tasks within the auspices of those contracts. Contrary to what some might believe, announcing an ICWG does not constitute a contractual impact assessment. A contractual impact assessment is a significant effort beyond a cursory review of the draft document. A review of the specific requirements on contract, as well the current design (e.g. reviewing source code and possibly conducting simulator tests) is needed. Without knowing the	PO Resolution: Accept Rationale: Agree that contract impact assessments need to be done. Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				impacts to the User Segment programs, the GPSW would be assuming a large risk in approving the Space the User Segment interface document.		
433	M. Dash GPA	Page: Para:	Critical	Comment: At the TBMWG, the game plan slide did not call out the GB-GRAM contract as affected, despite common knowledge that the one thing in common all UE have is that they interface with GPS satellites. That rationale provided was that since the GB-GRAM calls out "ICD-GPS-200" and this document is "IS-GPS-200", GB-GRAM isn't affected. Assess impacts to programs calling out earlier versions of this document, which include when the nomenclature was "ICD-GPS-200". Suggested Change: From: To: Rationale: "ICD-GPS-200C" and "IS-GPS-200E" are not different documents, but different versions of the same document as evidenced by the revision history table in the document. Refusing to assess the impact of IS-GPS-200E on contracts that call out ICD-GPS-200 (Rev C or earlier) will result in an incomplete assessment of impacts. The document nomenclature was ICD-GPS-200 decades before it was changed to IS-GPS-200. The change in nomenclature did not create a new document, as evidenced by the first version of IS-GPS-200 being designated revision D. Impact assessment should be done for programs that call out an earlier version of the document regardless of whether there is a change in the nomenclature.	PO Resolution: Accept Rationale: Will work with CM to see if GB-GRAM should be listed. Concurrence: Rationale:	
434	M. Dash GPA	Page: Para:	Critical	Comment: As a result of the revision and quality control related issues, I was asked to give presentation at the EIT. As a result, the issues I raised were acknowledged and a new process was	PO Resolution: Accept Rationale: Tech pubs is now involved with these documents	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				implemented, but it will go into effect for Cycle 5A. Given IS-GPS-200 is probably the single most critical document in the system, the GPSW's "best foot forward" should be applied to this document, as well as the other public documents. Consider using the new revision control process for the public ICDs Suggested Change: From: To: Rationale: This latest version of documentation is still presenting issues, such as: -disconnects between the was/is matrix and the redlined document -deletions in the redlined document not in the last approved version Assuming there is as clear understanding of the proposed changes, it should not be difficult to create a was/is matrix that complies with the new guidelines, then allowing tech pubs to make the changes to the last CCB approved version of the document. Despite the improvement of the newly proposed process, it can't undo revision control/quality problems resulting from the current process that could cause problems down the road if approved "as is".	Concurrence: Rationale:	
435	M. Dash GPA	Page: Para:	Critical	Comment: This interface is a "Transmitter to Receiver" type of interface, yet the IS in many places is not written that way. While there are interface requirements levied on the transmitter (i.e. satellite), the document is largely silent on what it means for the Receiver to be compliant. This is going to cause problems when as systems engineers for GPS, the GPSW can't make assumptions about how the User Segment is	PO Resolution: Reject Rationale: While there may be merit to this comment, this is not within the scope of this review nor is it something that the ICC can do anything about. Suggest you bring this philosophy with the EN chief. Concurrence:	

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				supposed to comply with the IS. The IS doesn't even indicate how UE is supposed to treat aspects of the interface that haven't been defined yet, such as spare/reserved bits or spare/reserved values that a set of bits can potentially assume. Nor does it indicate that UE designs approaches based on observed performance or signal characteristics not captured in the interface document are done so at the developer's risk. Seriously consider re-examining this document at some point, along with the other Space to User Segment interface documents (700, 705, 800), to clearly define areas of transmitter and receiver compliance, as well as limiting these documents to defining what is pertinent to transmitter and receiver interface compliance, without adding additional information that is SV configuration peculiar or Control Segment specific that doesn't directly relate to the interface requirements definition. Suggested Change: From: To: Rationale: These interface specifications/ICD defining the Space to User Segment interface need to cover both Space and User Segment requirements with regard to interface compliance. Historically, this document has not really covered User Segment compliance, but as time goes on, the many variations with how UE can be designed will end up taking away the GPSW's ability to manage the interface in the future and could lead to insurmountable backward compatibility issues when procuring new SV configurations. Note; I used the term "transmitter" so as not to be limited	Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				to GPS SVs as the only transmitters that can comply with this interface document.		
436	R. Hilario GPV	Page: Para:	Substantive	Comment: Many of the statements in the requirements section, Section 3, contain statements that are rather descriptive as opposed to being prescriptive. Therefore, a lot of material in Section 3 tend to sound like a tutorial rather than requirements. Revise statements to use the words “shall,” the emphatic form of the verb, throughout section 3 of the specification to denote a requirement. “Will” may be used to express a declaration of purpose on the part of the Government. Suggested Change: From: To: Rationale: Distinguishes those that are requirements. See also para. 4.6.6 of MIL-STD-961E.	PO Resolution: Defer Rationale: This is comment is true and will be considered for the next revision. Concurrence: Rationale:	
437	R. Hilario GPV	Page: Para:	Administrative	Comment: “TBDs” need to be defined. Suggested Change: From: To: Rationale: Define requirements.	PO Resolution: Defer Rationale: The SSV group delay parameters will be included as part of the next revision. Concurrence: Rationale:	
438	R. Hilario GPV	Page: Para: 6.1	Administrative	Comment: GPSW definition needs to be corrected. Suggested Change: From: To: Global Positioning Systems Wing	PO Resolution: Accept Rationale: Concurrence: Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale:		
439	R. Hilario GPV	Page: Para: 6.3	Substantive	Comment: If supporting material is intended to be requirements, they should find a place in Section 3, where requirements are spelled out. For example, paragraph 6.3.3 states, “The Block IIIA SVs shall be capable of being uploaded by the CS with a minimum of 60 days of data to support a 60 day positioning service.” Suggested Change: From: To: Rationale: Requirements should all be in Section 3, not under a section (Section 6) entitled “Notes.”	PO Resolution: Defer Rationale: This is comment is correct and will be considered for the next revision. Concurrence: Rationale:	
440	V. Gopal SE&I	Page: Para: 3.3.1.5.3	Administrative	Comment: In order to stay synchronized with language in IS-GPS-800, the following language change has been made Suggested Change: From: While the satellite is broadcasting standard C/A, P(Y), and L2C codes with data that indicates that C/A, P(Y), and L2C signal health (respectively) is OK, the CS/SS will not command an operation causing an intentional phase discontinuity. To: While the satellite is broadcasting standard C/A, P(Y), and L2C codes with data that indicates that C/A, P(Y), and L2C signal health (respectively) is OK, there will not be any commanded operation causing an intentional phase discontinuity. Rationale: Synchronization	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	