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59	Kawakami GPD	Page: 35a Para: 6.3.4	C	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. From: 6.3.4 Additional PRN Sequences. Among all unique L5-code sequences that could be generated using different initial states as described in Section 3.2.1.1, 74 sequences (37 I5 and 37 Q5) are selected and assigned in Table 3-I. An additional 346 sequences (173 I5 and 173 Q5) are selected and assigned with PRN numbers in the below Table 6-II. Any assignment of an L5 PRN number and its code sequence for any additional SV and/or other L5 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, will be selected from the sequences of Table 6-II. Final To: Rationale: Requested Change: 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.	PO Resolution: Defer Rationale: for ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Comment is in work. Action to Mike Munoz. Will remain open. 20-aug-09: the resolution resides within AI #18. 10/01/09: Pending language from Kovach. Will remain deferred.
35	S. Brown LMCO	Page: 55 Para: 20.3.3.1.1.1	C	Comment: suggested change: 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 of	PO Resolution: A/C Rationale: need ICWG discussion Concurrence: Concur	11/19/08: Removed entire sentence “On the IIF, these 13 bits are comprised of 10 LSBs (WN) that represent the 10 MSBs of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1 of IS-GPS-200, and 3 MSBs

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				IS-GPS-200). On the IIF, these 13 bits are comprised of 10 LSBs (WN) that represent the 10 MSBs of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1 of IS-GPS-200, and 3 MSBs (WNe) which are three extra bits to extend the range of transmission week number from 10 bits to 13 bits. 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 of IS-GPS-200). These 13 bits are comprised of 10 LSBs (WN) that represent the 10 MSBs of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1 of IS-GPS-200, and 3 MSBs (WNe) which are three extra bits to extend the range of transmission week number from 10 bits to 13 bits. Final 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 of IS-GPS-200). Rationale: GPS III uses a 32 bit Z count; removed reference to 29-bit Z count which is specific to the GPS II implementation	Rationale:	(WNe) which are three extra bits to extend the range of transmission week number from 10 bits to 13 bits." Changes made in real time during ICWG. Stakeholders concur. 20-aug-09: verified change is in document. 10-sept-09: also look at comment #18 for resolution.
34	S. Brown LMCO	Page: 23 Para: 3.3.4	C	Comment: suggested change: Is: 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 a modulo representation, limited by the physical space available. The most common limit is 10. From: b. The ten most significant bits of the Z-count are a modulo-1024 binary representation of	PO Resolution: A/C Rationale: for ICWG discussion Concurrence: Concur Rationale:	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. 20-aug-09: verified that the sentence " the most significant bits..." si in the document.

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				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 integer multiple of 1024 weeks, thereafter (i.e. 0, 1024, 2048, etc.). Final 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). Rationale: GPS III uses a 32 bit Z count; removed reference to 29-bit Z count which is specific to the GPS II implementation		
33	S. Brown LMCO	Page: 23 Para: 3.3.4	C	Comment: suggested change: Is: 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 binary number consisting of two parts as follows: From: In each SV the X1 epochs of the P-code of the L1 and L2 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: Final To: 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 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	PO Resolution: Accept Rationale: for ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Stakeholders Concur with proposed change. 20-aug-09: the change was made in the document. Removed "29-bit"10-sept-09 verified that change was fully implemented.
31	S. Brown	Page: 14	C	Comment: suggested addition: Is: For the angular	PO Resolution: A/C	11/19/08: Accept with some modification –

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	LMCO	Para: 3.3.1.9		range of ±14.3 degrees (±13.8 degrees plus pointing error for GPS III) from boresight, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. From: (N/A - new text) Final To: For the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. For Block IIIA the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Rationale: New text added to specifically address the L5 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.	Rationale: Space IPT (Soon Yi) has action to provide angular range required independent of pointing error. Concurrence: Concur Rationale:	replace “boresight” with “nadir” and remove pointing error. Changes made in real time during ICWG. Concurrence received at ICWG. 20-aug-09: verified that this verbiage will be consistent with the 700 document: text: "Terrestrial EIRP is relative to a 13.8 o + SV pointing error 4.3 off-nadir angle. " 27-aug-09: after speaking w/ Dr. Munoz, it was decided to take out the "+ SV pointing error" all together. we'll need to include this into the 700...still need to update document.
30	S. Brown LMCO	Page: 12 Para: 3.3.1.7	C	Comment: From: (N/A - new text) Final To: Is: Table 3-IV. Received Minimum RF Signal Strength in Space Service Volume Rationale: Added table to reflect GPS III L5 signal strength	PO Resolution: A/C Rationale: The title was changed to “Table 3-IV. Space Service Volume (SSV) Received Minimum RF Signal Strength for GPS IIIA and Subsequent Satellites over the Bandwidth Specified in 3.3.1.1” This is similar to language used in IS-GPS-200. Concurrence: Concur Rationale:	11/19/08: Comment accepted with modification – changes made in real time during ICWG. Remove “and subsequent” and replace “IIIA” with “III.” 20-aug-09: also removed "GEO based antenna" in table title. 06-sept-09: verified that this is in section 3.3.1.6 and that the change is in doc. 10/14/09: To be consistent with the 200, ICC placed "and subsequent" back into section.
29	S. Brown LMCO	Page: 11 Para: 3.3.1.6	C	Comment: From: (N/A - new text)	PO Resolution: A/C Rationale: for ICWG discussion	11/19/08: Part of action to determine if there is better language for “off axis power gain – Stakeholders concur. 12/05/08: Will incorporate language as proposed by

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				Final To: Is: The Block III SV shall provide L5 signals with the following characteristic: the L5 off-axis power gain relative power (referenced to peak transmitted power) shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir, and no more than 18 dB from EOE to 26 degrees off nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion. Rationale: New text added for GPS III-specific requirement	Concurrence: Concur Rationale:	commenter for this revision. 20-aug-09: ICC verified that this text is accepted w/ change barring the resolution to "monotonically decreasing." It was decided to leave in "monotonically decreasing to sync up with the 200. 10/11/09: see also comment #12 for resolution.
12	Thomas Nagle GPC	Page: 11 Para: 3.3.1.6	C	Comment: Add the L5 off-axis power gain (e.g., EOE to nadir; EOE to 20 degrees off nadir etc.) suggested text: added text: "The Block III SV shall provide L5 signals with the following characteristic: the L5 off-axis power gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir, and no more than 18 dB from EOE to 26 degrees off nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion." From: N/A Final To: The Block III SV shall provide L5 signals with the following characteristic: the L5 off-axis relative power (referenced to peak transmitted power) shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir, and no more than 18 dB from EOE to 26 degrees off nadir; the power drop off between EOE and ±26 degrees shall be in a monotonically decreasing fashion. Rationale: Important signal characteristics. Similar information is provided in IS-GPS-200 for L1 and L2.	PO Resolution: A/C Rationale: Concurrence: Concur Rationale:	5/23/08: Updated document accordingly and in real-time. Added row for block III for -157.0 dbW Concurrence: 11/19/08: See comment 29. 20-aug-09 verified text is in document with a small change: "power gain" was changed to "relative power per D. Munoz's recommendation.
3	M.A. Jeffris	Page:	C	Comment: This section should be consistent with	PO Resolution: A/C	5/23/08: Updated comment resolution,

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	MITRE	Para: 3.3.1.4		3.3.1.1. From: Replace the sentence: “In-band spurious transmissions shall be at least 40 dB below the unmodulated L1 and L2 carriers over the allocated 24 MHz channel bandwidth.” Final To: With“In-band spurious transmissions, from the SV, shall be at least or below -40 dBc below the unmodulated L5 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 L5 waveform.” Rationale: References bandwidth to 3.3.1.1.	Rationale: Sentence will be revised to read: “In-band spurious transmissions, from the SV, shall be at least 40 dB below the unmodulated L5 carrier over the band specified in 3.3.1.1. In-band spurious transmissions are defined as transmissions within the band spec Concurrence: Concur Rationale:	and made real-time change in doc. 20-aug-09: verified "band" is in doc. 10/01/09: Updated this section per ICWG concurrence. Included text…"at or below" instead of "at least." Also removed the text "below the unmodulated L5 carrier." Updated the PO resolution to A/C.
2	M.A. Jeffris MITRE	Page: Para: 3.3.1.2	C	Comment: Clarify wording and change numerical value to match 3.3.1.1. Suggested Change: Make changes as indicated: “Correlation loss is defined as the difference between the SV signal power received in a 24 MHz 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. From: 3.3.1.2 Correlation Loss. Correlation loss is defined as the difference between the SV power received in a 24 MHz bandwidth and the signal power recovered in an ideal correlation receiver. The worst case correlation loss occurs when the I5 carrier is modulated by the sum of the I5-code and the NAV data stream. For this case, the correlation loss apportionment shall be as follows: 1. SV modulation and filter imperfections: 0.6 dB 2. Ideal UE receiver waveform distortion (due to	PO Resolution: A/C Rationale: 5/23/08: This is included in the working group with respect to the action item from the IS-GPS-800 review. Concurrence: Concur Rationale:	11/19/08: New proposed change presented at ICWG by Bakeman. There was some discussion that the proposed change was written more like a factory test spec as opposed to a SIS spec. Action assigned to Mike Deelo to set up meeting with appropriate stakeholders to revise proposed change. Comment to remain open. 20-aug-09: the proposed verbiage was included and slightly varied. this section is also under review with respect to AI #12. 10-sept-09: ICC has placed proposed wording from the corr. loss tiger team as per AI #12. 10/01/09: This section was under rigorous review and ultimately the consensus of the ICWG community was to revert to wording similar to the IS-GPS-800.

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				24 MHz filter): 0.4 dB Final To: 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 using an exact replica of the waveform within an ideal sharp-cutoff filter bandwidth centered at L5, 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 filtering imperfections shall be 0.6 dB maximum. Rationale: "References bandwidth to 3.3.1.1		
1	M.A. Jeffris MITRE	Page: Para: 3.3.1.1	C	Comment: Clarify wording in first paragraph. Suggested change: The total allowable correlation loss, which is a function of signal and receiver bandwidth, shall be: From: The L5 signal is contained within a 24 MHz band centered about the L5 nominal frequency. Final To: The requirements specified in this document shall pertain to the signal contained within 24 MHz band centered about the L5 nominal frequency. Rationale: Makes wording consistent with other ISs.	PO Resolution: Accept Rationale: Sentence will be revised to read: "The requirements specified in this document shall pertain to the signal contained within 24 MHz band centered about the L5 nominal frequency." Concurrence: Concur Rationale:	06-sept-09: ICC confirmed that change is in document.
57	Thomas Nagle GPC	Page: 99 Para: Table 20-XI	S	Comment: Terms "totGGTO" and "WNotGGTO" are not defined in the CNAV message types. From: FROM "totGG Final To: TO" and "WNotGGTO" TO "tGGTO" and "WNGGTO"	PO Resolution: A/C Rationale: need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Discuss with Ed Powers. Determine if there has been any preference with Galileo. 30-jul-09: see comment #102 from the 200 for resolution. 081909: this will be closed when AI #9 is complete. 10-sept-09: verified that AI is not closed.

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				Rationale: Correction		
56	Thomas Nagle GPC	Page: 98 Para: 20.3.3.8.2	S	Comment: In the equation, terms “totGGTO”, “WN”, and “WNotGGTO” are not defined in the CNAV message types. From: “totGG Final To: TO”, “WN”, and “WNotGGTO” TO “tGGTO”, “WNn”, and “WNGGTO” Rationale: Correction and consistency with IS-GPS-800.	PO Resolution: A/C Rationale: need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Discuss with Ed Powers. Determine if there has been any preference with Galileo. 30-jul-09: see comment #102 from the 200 for resolution. 081909: this will be closed when AI #9 is complete.
55	Thomas Nagle GPC	Page: 96 Para: 20.3.3.7.4	S	Comment: Correction to equations of quasi-Keplerian elements. From: ic = i0 + Δi and Ωc = Ω0 + ΔΩ equations Final To: Rationale: Correction.	PO Resolution: Accept Rationale: need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Stakeholders agree to proposed change in order to make consistent with IS-GPS-200. 30-jul-09: accepted comment as is from recommendation. 06-sept-09: confirmed new equations is in document see also comment #21. duplicate
54	Thomas Nagle GPC	Page: 89 Para: 20.3.3.6.2	S	Comment: Term “WN” in the equation is not defined in the CNAV message types. From: FROM “WN” Final To: TO “WNn” Rationale: Correction.	PO Resolution: Reject Rationale: need ICWG discussion. Concurrence: Concur Rationale:	11/19/08: Comment withdrawn.
53	Thomas Nagle GPC	Page: 77 Para: 20.3.3.3.1.2.3	S	Comment: There are errors in the “PR” equations From: From “…+ SSVL5 - …” Final To: To “… + c SSVL5 - …” in the 2nd, and 4th equations of this section. Rationale: SSVL5 is the delay bias, therefore, need to convert to the range by multiplying with the speed of light, c.	PO Resolution: Reject Rationale: need ICWG discussion 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. 30-jul-09: see comment #81, 80 in 200 CRM. confirm that comment will be

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						withdrawn. 8/5/09: refer to RIL item from TBMWG for SSV location resolution. 8/13/09: refer to AI #50 for resolution. 10-sept-09: AI #50 was closed. The ICC will work with comment originator to ensure that this concern will be addressed with the appropriate document. This follows suit with the 200 resolution.
52	Thomas Nagle GPC	Page: 75 Para: 20.3.3.3.1.2.2	S	Comment: There are errors in the "PR" equations From: From "…+ SSVL5 - …" Final To: To "… + c SSVL5 - …" in the 2nd, and 4th equations of this section. Rationale: SSVL5 is the delay bias, therefore, need to convert to the range by multiplying with the speed of light, c.	PO Resolution: Reject Rationale: need ICWG discussion 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. 30-jul-09: see comment #81, 80 in 200 CRM. confirm that comment will be withdrawn. 83/608: refer to resolution of comments 81, 82. 8/5/09: refer to RIL item from TBMWG for SSV location resolution. 13-aug-09: GPC concurs with resolution and this comment is being tracked by the Action Item 50. 10-sept-09: AI #50 was closed. The ICC will work with comment originator to ensure that this concern will be addressed with the appropriate document. This follows suit with the 200 resolution.
50	Thomas Nagle GPC	Page: 68 Para: 20.3.3.2.4	S	Comment: Paragraph 20.3.3.2.4 has a couple of equations for URA_oc. The second one applies if t - t_op > 93,600 seconds. From: MUST SEE TEXT Final To: The second equation is: URA_oc = URA_ocb + URA_oc1 * (t - t_op) + URA_oc2 * (t - t_op - 93,600)^2 The second equation should most likely be: URA_oc = URA_ocb + URA_oc1 * (t	PO Resolution: Reject Rationale: need ICWG discussion Concurrence: Concur Rationale:	11/19/08: Comment withdrawn

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				- t_op - 93,600) + URA_oc2 * (t - t_op - 93,600)^2 Recommendation: Recommend that the equation be checked and if necessary corrected as shown above. Rationale: We believe the equation is incorrect.		
49	Thomas Nagle GPC	Page: 50 Para: Figure 20-8	S	Comment: Incorrect label and bit number for this parameter. From: FROM “t0GGTO 14 BITS” Final To: TO “tGGTO 16 BITS” Rationale: Consistency (with IS-GPS-800) and correct number of bits for this parameter.	PO Resolution: A/C Rationale: need ICWG discussion Concurrence: Concur Rationale:	11/19/08: The figure should contain 16 bits. Discuss terms with Ed Powers. Determine if there has been any preference with Galileo. The figure should contain 16 bits. 30-jul-09: tied to comment #102 for 200 CRM. Awaiting resolution. 13-aug-09: refer to AI #9 for resolution.10-sept-09: confirmed that the AI is still open, thus comment must be deferred.
47	Thomas Nagle GPC	Page: 37, 38a, 38b Para: App.I 10.1	S	Comment: Remove Boeing Co. Letter of Exception From: Final To: Rationale: It has nothing to do with this IS and is a contractual matter	PO Resolution: Reject Rationale: Only the PCO can approve removal of letters of exception. Concurrence: Concur Rationale:	11/19/08: Comment rejected at ICWG. Action assigned to GPC to provide more rationale for removal of the letter. 20-aug-09: AI# 52 has been assigned for resolution. 10-sept-09: AI52 is closed. Letters cannot be removed per PK.
46	Thomas Nagle GPC	Page: 14 Para: 3.3.1.7.3	S	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 may apply to the signal” applies. From: FROM “If this bias term is not applied to the signal, an additional 3.5 nanoseconds (two-sigma) accuracy degradation may apply to the signal.” Final To: TO “If this bias term is not applied to the signal, an additional 1.75 nanoseconds may apply to the absolute value of the mean differential delay with respect to the Earth-coverage signal.” Rationale: Clarity.	PO Resolution: Reject Rationale: for discussion at ICWG 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. 073009: see also comment #81 from the 200 document for resolution. 13-aug-09: refer to AI #50 for resolution. 10-sept-09: AI #50 was closed. this comment must be rejected since RIL item will be opened at a later time. The ICC will work with comment originator to ensure that this

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						concern will be addressed with the appropriate document. This follows suit with the 200 resolution.
45	Thomas Nagle GPC	Page: 13 Para: Table 3-IV	S	Comment: Missing Table 3-IV. Suggested change: please provide Table 3-IV From: N/A Final To: Table 3-IV. Space Service Volume (SSV) Received Minimum RF Signal Strength for GPS III Satellites over the Bandwidth Specified in 3.3.1.1 – GEO Based Antennas SV Blocks Signal I5 Q5 III and Subsequent -182.0 dBW -182.0 dBW Rationale: No table 3-IV.	PO Resolution: Accept Rationale: Concurrence: concur Rationale:	11/19/08: Table was added. Stakeholders Concur the comment is closed.
44	Thomas Nagle GPC	Page: 13 Para: 3.3.1.6.1	S	Comment: Please define the Space Service Volume users where the received signal levels in Table 3-IV apply, (LEO, MEO, or GEO?). Suggested Change: Add a sentence to indicate the SSV users are referred to users at GEO. From: N/A Final To: included "– GEO Based Antennas" in Table 3-IV table. Rationale: Important info to validate received signal levels.	PO Resolution: A/C Rationale: Values are for GEO. Added to Table 3-IV Concurrence: Concur Rationale:	11/19/08: Stakeholders concur. 8/6/09: please refer to comment #77 from 200 CRM. 13-aug-09: This issue is also deferred until the appropriate location for the SSV equations has been determined. Refer to AI #50 for way forward. 10-sept-09: AI #50 was closed. This comment does not pertain to AI #50 as a reference is included in table 3-IV. ICC has confirmed change is in document.
41	Thomas Nagle GPC	Page: 11-Oct Para: 3.3.1.3	S	Comment: Carrier phase noise should be specified as suggested for IS-GPS-800 in telecons during August 08. Suggested Change: 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 L-band carrier shall not exceed:	PO Resolution: A/C Rationale: for discussion at Public ICWG. Concurrence: Concur Rationale:	11/19/08: Comment was accepted with some modifications. The language of the proposed change will be modified and incorporated in the ICWG minutes for stakeholder review. 30-jul-09: there is an open action item for the 200 document. 13-aug-09: Refer to AI #12 for resolution.

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				-30 dBc at Df =1 Hz decreasing 30 dB/decade until it reaches Df = 10 Hz. From 10 Hz to 10,000 Hz it decreases at 10 dB per decade reaching -90 dBc at Df = 10,000 Hz." From: The phase noise spectral density of the un-modulated 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 root mean square (RMS). See additional supporting material for phase noise characteristics in section 6.3.2. Final 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 -80 dBc/Hz at 10 kHz. Spurs in the phase noise spectral density of the unmodulated carrier between 10 Hz and 10 kHz shall not exceed -40 dBc. Rationale: It is not appropriate to assume User Equipment receiver implementation. IS should specify the signal-in-space, not receiver performance.		10-sept-09: This AI #12 has been closed and the new text is in the document. 10/01/09: Changed language for this section to Bud Bakeman proposal. C. Hegarty took on a action to review two different alternatives in the requirement location of carrier phase noise. ICWG stakeholders agreed with option (b) of his package..i.e. -80 dBc/Hz at 10 kHz.
40	Thomas Nagle GPC	Page: 10 Para: 3.3.1.2	S	Comment: Correlation Loss in this paragraph has had a long-standing inconsistency: with this loss defined as the difference between power received in 24 MHz bandwidth and that recovered from a perfect 24 MHz correlator, there should be no additional loss due to "ideal receiver waveform distortion". Suggested Change: Change the last sentence to read "For this case, the correlation loss due to SV modulation and filter imperfections shall be less than 0.6 dB". From: Correlation loss is defined as the difference	PO Resolution: A/C Rationale: for discussion at Public ICWG. Concurrence: Concur Rationale:	11/19/08: New proposed change presented at ICWG by Bakeman. There was some discussion that the proposed change was written more like a factory test spec as opposed to a SIS spec. Action assigned to Mike Deelo to set up meeting with appropriate stakeholders to revise proposed change. Comment to remain open. 30-jul-09: Bud Bakeman has the action with his proposed wording. 200 POC will get language into documents (200). 13-aug-09: refer to AI #12 for resolution. 10-

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				between the SV power received in a 24 MHz bandwidth and the signal power recovered in an ideal correlation receiver. The worst case correlation loss occurs when the I5 carrier is modulated by the sum of the I5-code and the NAV data stream. For this case, the correlation loss apportionment shall be as follows: 1. SV modulation and filter imperfections: 0.6 dB 2. Ideal UE receiver waveform distortion (due to 24 MHz filter): 0.4 dB Final To: 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 using an exact replica of the waveform within an ideal sharp-cutoff filter bandwidth centered at L5, 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 filtering imperfections shall be 0.6 dB maximum. Rationale: Correctness		sept-09: This AI #12 has been closed and the new text is in the document. 10/01/09: This section was under rigourous review and the ultimately the consensus of the ICWG community was to revert to wording similar to the IS-GPS-800.
37	Thomas Nagle GPC	Page: Para:	S	Comment: Suggested Change: 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 From: Final To: Rationale:	PO Resolution: Defer Rationale: At the May 08 ICWG, Aerospace presented solution for the comment. Will be presented at Nov 08 ICWG. Concurrence: Concur Rationale:	11/19/08: Action assigned to Karl Kovach. See Action item #8 against IS-GPS-200. 30-jul-09: 200 POC contacted Karl for proposed text and he will provide some shortly. 13-aug-09: refer to AI #18 for resolution. 10-sept-09: verified that this AI for PRN expansion is still open.
36	Thomas Nagle GPC	Page: Title Pages	S	Comment: Title pages of document should indicate a unique draft version number or date of	PO Resolution: Accept	11/19/08: Action assigned to review older PIRNs – Thomas Davis. 06-sept-09: ICC has

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		Para:		this redline version. This draft version needs to be clearly identifiable from other draft version that might exist now or the near future. Is: Add unique draft version number or date. Recommend identifying it as IS-GPS-705 draft IRN-705-004 with a draft version date, but specific identifier is not important as long as it is unique From: No draft version number or date. Final To: Filename: IS-GPS-705_06-sept-09(or equivalent) 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 of the document including proposed IRN-705-004.	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: Concurrence: Concur Rationale:	confirmed that the 'draft' document has a latest revision date in the filename.
28	S. Brown LMCO	Page: 11 Para: 3.3.1.5	S	Comment: From: Referring to the phase of the I5 carrier when I5i(t) equals zero as the "zero phase angle", the I5 and Q5-code generator output shall control the respective signal phases in the following manner: when I5i(t) equals one, a 180-degree phase reversal of the I5-carrier occurs; when Q5i(t) equals one, the Q5 carrier advances 90 degrees; when the Q5i(t) equals zero, the Q5 carrier shall be retarded 90 degrees (such that when Q5i(t) changes state, a 180-degree phase reversal of the Q5 carrier occurs). The resultant nominal composite transmitted signal phases as a function of the binary state of the modulating signals are as shown in Table 3-II. Final To: Is: Referring to the phase of the I5 carrier when I5i(t) equals zero as the "zero phase angle", the I5 and Q5-code generator output shall control the respective signal phases in the following	PO Resolution: Accept Rationale: The “was” and “Is” appear to be reversed. 06-sept-09: ICC confirms reversal. Concurrence: Concur Rationale:	11/19/08: Comment is deferred – will be revisited when documents are placed in DOORS. 20-aug-09: ICC to look at whether the 705 already has the "shall" in the paragraph. From the redlined copy, it already has a shall in it. 06-sept-09: ICC has confirmed that "shall be retarded 90 degrees" is in both the IRN003 version and the latest redlined version. ICC to confirm with comment originator that comment is to be withdrawn.

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				manner: when I5i(t) equals one, a 180-degree phase reversal of the I5-carrier occurs; when Q5i(t) equals one, the Q5 carrier advances 90 degrees; when the Q5i(t) equals zero, the Q5 carrier will be retarded 90 degrees (such that when Q5i(t) changes state, a 180-degree phase reversal of the Q5 carrier occurs). The resultant nominal composite transmitted signal phases as a function of the binary state of the modulating signals are as shown in Table 3-II. Rationale: Changed a will to a shall to have a requirement; to facilitate requirements verification.		
27	S. Brown LMCO	Page: 9 Para: 3.2.2	S	Comment: Move Code Phase Assignments from Chapter 6 to Chapter 3 From: 3.2.2 NAV Data. The L5 CNAV data, D5(t), includes SV ephemerides, system time, SV clock behavior data, status messages and time information, etc. The 50 bps data is coded in a rate 1/2 convolution coder. The resulting 100 symbols per second (sps) symbol stream is modulo-2 added to the I5-code only; the resultant bit-train is used to modulate the L5 in-phase (I) carrier. The content and characteristics of the L5 CNAV data, D5(t), are given in Appendix II of this document. In general, the data content is very similar to that modulated on the L2 C channel of the SV. The L5 quadraphase (Q5) carrier has no data. Final 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: See disposition of comment #158 in IS-GPS-800 CRM: Karl Kovach provided approach at ICWG and has action to produce language for IS. 20-aug-09: this is also in line with comment 45 from the 20 CRM. There is an open AI for Karl Kovach. See AI #16 for resolution. 10-sept-09: verified that this AI for PRN expansion is still open.
25	Dr. Pam Neal SE&I	Page: Para: 3.2.1.2	S	Comment: Clarify wording to avoid confusion and make document consistent with IS-GPS-200.	PO Resolution: A/C	11/19/08: Changes made in real time during ICWG – replace “NAV” with “navigation” –

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: The NSI5 and NSQ5 codes, used to protect the user from a malfunction in the SV's reference frequency generation system (reference paragraph 3.2.1), are not for utilization by the user and, therefore, are not defined in this document. Final To: Is: The NDI5 and NSQ5 codes, used to protect the user from receiving tracking anomalous NAV data signals, are not for utilization by the user and, therefore, are not defined in this document. Rationale: This statement was changed in IS-GPS-200 to reflect the fact that the cause of anomalous NAV signals is not limited to a malfunction in the SV's reference frequency generation system.	Rationale: Changed wording as follows: "The NSI5 and NSQ5 codes, used to protect the user from receiving anomalous NAV signals (reference paragraph 3.2.1), are not for …"This wording is more consistent with section 3.2.1. Concurrence: Concur Rationale:	Stakeholders concur. 06-sept-09: confirmed that the change is in document. 10/01/09: made a real-time change to replace the word "receiving" to "tracking" and "data" to "signals" per ICWG stakeholder consensus.
24	Thomas Nagle GPC	Page: 91 Para: 20.3.3.9	S	Comment: Correction bits for message type 36. suggested change: TO "The requisite bits shall occupy bits 39 through 270 of message type 15 and bits 128 through 271 of message type 36." From: 270 Final To: 274 Rationale:	PO Resolution: A/C Rationale: 5/23/08: comment with correction to replace 270 with 274. Same as previous comment from 200 review. Concurrence: concur Rationale:	30-jul-09: see comment #34 from 200 CRM. Accepted w/ comment. 20-aug-09: verified accept w/ comment ---changed to "274."
23	Thomas Nagle GPC	Page: 90 Para: 20.3.3.8.2	S	Comment: Equation correction. 20.3.3.8.2 GPS and GNSS Time. The GPS/GNSS-time relationship is given by, tGNSS = tE – (A0GGTO + A1GGTO (tE – totGGTO + 604800 (WN – WNotGGTO) + A2GGTO (tE – totGGTO + 604800 (WN – WNotGGTO))2) Suggested Change: Add ")" in front of "+ A2GGTO" From: N/A Final To: ")" in front of "+ A2GGTO"	PO Resolution: Accept Rationale: 5/23/08: Comment deferred and an action has been assigned to SE&I to confirm correction. Concurrence: Concur Rationale:	06/20/08: The change was verified to be correct and was added to the document 20-aug-09 verified change is in document.

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				Rationale: Equation correction.		
21	Thomas Nagle GPC	Page: 88 Para: 20.3.3.7.4	S	Comment: Correction to equations of quasi-Keplerian elements. From: ic = i0 + Δi and Ωc = Ω0 + ΔΩ equations Final To: Rationale: Correction	PO Resolution: Accept Rationale: 5/23/08: Comment deferred and an action has been assigned to SE&I to confirm correction. Concurrence: concur Rationale:	11/19/08: Stakeholders agree to proposed change in order to make consistent with IS-GPS-200. 30-jul-09: accepted comment as is from recommendation. 06-sept-09: confirmed new equations is in document see also comment 55. duplicate
20	Thomas Nagle GPC	Page: 65 Para: 20.3.3.2.4	S	Comment: Paragraph 20.3.3.2.4 has a couple of equations for URA_oc. The second one applies if t - t_op > 93,600 seconds. The second equation is: URA_oc = URA_ocb + URA_oc1 * (t - t_op) + URA_oc2 * (t - t_op - 93,600)^2 The second equation should most likely be: URA_oc = URA_ocb + URA_oc1 * (t - t_op - 93,600) + URA_oc2 * (t - t_op - 93,600)^2 From: MUST SEE TEXT Final To: Recommendation: Recommend that the equation be checked and if necessary corrected as shown above. Rationale: We believe the equation is incorrect.	PO Resolution: Reject Rationale: 5/23/08: Comment deferred and an action has been assigned to SE&I to confirm correction. Concurrence: concur Rationale:	30-jul-09: see comment #98 from the 200 CRM. Comment withdrawn from that CRM
18	Thomas Nagle GPC	Page: 55 Para: 20.3.3.1.1.1	S	Comment: Symbols, WN and WNe, are not in message type 10. Suggested Change: Delete "(WN)" and "(WNe)". From: These 13 bits are comprised of 10 LSBs (WN) that represent the 10 MSBs of the 29-bit Z-count as qualified in paragraph 20.3.3.3.1.1 of IS-GPS-200, and 3 MSBs (WNe) which are three extra bits to extend the range of transmission week number from 10 bits to 13 bits. Final To: sentence deleted	PO Resolution: A/C Rationale: 5/23/08: comment. Will incorporate into document. Concurrence: Concur Rationale:	06/20/08: Changes added to document. 13-Aug-09: deleted the entire sentence with WN and Wne. GPC concurs

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: Correction.		
17	Thomas Nagle GPC	Page: 55 Para: 20.3.3.1.1	S	Comment: ICD does not define the Integrity Status Flag. Suggested Change: Add text to paragraph 20.3.3.1.1 to describe the Integrity Status Flag as shown in the attached draft PIRN-705-XXX(ISF). From: N/A Final To: The CNAV message will contain information that allows users to operate when integrity is assured. This is accomplished using an integrity assured URA value in conjunction with an integrity status flag. The URA value is the RSS of URAoe and URAoc; URA is integrity assured to the enhanced level only when the integrity status flag is “1”. Bit 272 of Message Type 10 is the Integrity Status Flag (ISF). A "0" in bit position 272 indicates that the conveying signal is provided with the legacy level of integrity assurance. That is, the probability that the instantaneous URE of the conveying signal exceeds 4.42 times the upper bound value of the current broadcast URA indexvalue, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10-5 per hour. A "1" in bit-position 272 indicates that the conveying signal is provided with an enhanced level of integrity assurance. That is, the probability that the instantaneous URE of the conveying signal exceeds 5.73 times the upper bound value of the current broadcast URA indexvalue, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10-8 per hour. The probability associated with the nominal and lower bound values of the current broadcast URA index are not defined. In this context, an "alert" is defined as any indication or characteristic in the conveying signal,	PO Resolution: A/C Rationale: 5/23/08 comment and will incorporate into document. However, a working group will be created to discuss further. Concurrence: Concur Rationale:	06/20/08: Changes added to document. 06-sept-09: ICC confirmed that the additional text for ISF is in the document. 10-sept-09: this proposed text from the PIRN has minor differences as shown in the "To" field of this comment. Stakeholders concur. changed PO resolution to A/C 10/14/09: Also additional text was added to synchronize with the 800 document. The new text added from the 10/1/09 ICWG is in blue. It is also noted that the URA "value" was replaced with URA "index" on two occurances in the second paragraph starting with the text "Bit 272 of Message Type 10 is the Integrity..."

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				as specified elsewhere in this document, which signifies that the conveying signal may be invalid and should not be used, such as, not Operational-Healthy, Non-Standard Code, parity error, etc. In this context, the term URA refers to the composite URA, calculated as the root-sum-squared of the individual URA components in the conveying signal. 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.		
16	Thomas Nagle GPC	Page: 41 Para: Fig. 20-1	S	Comment: ICD does not define the Integrity Status Flag. Suggested Change: Add text to paragraph 20.3.3.1.1 to describe the Integrity Status Flag as shown in the attached draft PIRN-705-XXX(ISF). From: N/A Final To: See Figure 20-1 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 comment and will incorporate into document. However, a working group will be created to discuss further. Concurrence: Concur Rationale:	06/20/08: Changes added to document. 06-sept-09: ICC confirmed that the figure additions for ISF is in the document.
14	Thomas Nagle GPC	Page: 35d Para: Table 6-II (sheet 4 of 6)	S	Comment: Incorrect “XB code Advance” for I5 PRN 153. From: For I5 PRN 153, change FROM “7912” Final To: TO “4912” Rationale: Correction.	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	5/23/08: Resolved in a previous comment. Comment withdrawn
8	Thomas Nagle GPC	Page: Para:	S	Comment:	PO Resolution: Reject	5/23/2008 Comment Withdrawn

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: Final To: Suggested Change: 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 Rationale:	Rationale: Concurrence: Concur Rationale:	
7	Thomas Nagle GPC	Page: Gen Para:	S	Comment: From: Final To: Suggested Change: Remove all tables documenting PRN codes and develop a new document for all PRN codes (Example attached) 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: Defer Rationale: Concurrence: Rationale:	5/23/08: reference action #10 from the 800 review yesterday. 13-aug-09: deferred comment. Need to speak with Tom Stansel and Karl Kovach for resolution.. 25-aug-09: get resolution rationale from the 200 CRM under a similar comment. 10-sept-09: It was decided by K. Kovach that referencing the public website was not a viable solution
61	Kawakami GPD	Page: 33 Para: 6.1	A	Comment: Requested Change: add WGS 84 to the acronym list From: N/A Final To: WGS 84 - World Geodetic System 1984 Rationale: correctness	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: ICC confirmed that change is in document.
60	Kawakami GPD	Page: 101 Para: 20.3.4.3	A	Comment: Requested Change: change “WGS-84” to “WGS 84” From: WGS-84 Final To: WGS 84 Rationale: correctness	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: ICC confirmed that change is in document. Confirmed that the rest of the document is consistent.

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58	Kawakami GPD	Page: 14 Para: 3.3.1.7.3	A	Comment: using both “degrees” and “°” Requested Change: decide which one will be used and then consistently use it throughout the document From: Final To: Requested Change: decide which one will be used and then consistently use it throughout the document Rationale: consistency	PO Resolution: Defer Rationale: 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:	06-sept-09: ICC certainly agrees with principle. this action will be deferred until the next revision when the document will be placed into DOORS of which a number of administrative issues will be resolved.
51	Thomas Nagle GPC	Page: 73 Para: 20.3.3.3.1.2.1	A	Comment: Please define the term “SSVL5” From: N/A Final To: Suggested Change: Add a sentence to define “SSVL5 is the Space Service Volume delay bias for the L5 frequency.” Rationale: Clarity	PO Resolution: Reject Rationale: need ICWG discussion 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. 8/5/09: refer to RIL item from TBMWG for SSV location resolution. 13-aug-09: refer to AI #50 to determine the timeframe at which comment can be resolved. 10-sept-09: AI #50 was closed. The ICC will work with comment originator to ensure that this concern will be addressed with the appropriate document. This follows suit with the 200 resolution.
48	Thomas Nagle GPC	Page: 40 Para: 20.3.3	A	Comment: Editorial comment From: From “…(UDRA) may be worse than indicated in the respective message types, and the SV should be used at the user’s own risk. Final To: TO “…(UDRA) may be worse than indicated in the respective message types.”	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: ICC confirmed deletion.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: "The SV should be used at the user's own risk" is not needed here.		
42	Thomas Nagle GPC	Page: 11 Para: 3.3.1.4	A	Comment: Commonly expressed as "L5 signal", instead of "L5 waveform". From: FROM "In-band spurious transmissions are defined as transmissions within the band specified in 3.3.1.1 which are not expressly components of the L5 waveform. Final To: TO "In-band spurious transmissions are defined as transmissions within the band specified in 3.3.1.1 which are not expressly components of the L5 signal." Rationale: Clarity	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: ICC confirmed that change is in document.
39	Thomas Nagle GPC	Page: 3 Para: 2.1	A	Comment: Change GP-03-001 dated 14 November 2003 to GP-03-001A, dated 20 April 2006. From: GP-03-001 , 14 November 2003 Final To: to GP-03-001A, current issue Rationale: Current Version	PO Resolution: A/C Rationale: Remove date. Most current revision applies Concurrence: Concur Rationale:	13-Aug-09: ICC noted that the update was to remove the date all together and put in "current issue." in the document. ICC also noted however, that this is different than that of the resolution of the 700. need to sync up…discussion to follow at the ICWG in Sept.
38	Thomas Nagle GPC	Page: 1 Para: 1.2	A	Comment: go to section 1.2 Approval and Changes. Suggested Change: Add the word "obtaining" before "approval" on the first sentence of the first paragraph. From: Final To: "obtaining" and "coordiantion" Rationale: Rationale is the ICC does not have approval authority	PO Resolution: A/C Rationale: Changed to "approval coordination". Concurrence: Concur Rationale:	13-Aug-09: ICC updated document and confirmed "obtaining" and "coordination" are in the doc.
32	S. Brown LMCO	Page: 16 Para: 3.3.2.1	A	Comment: Hoffman spelled incorrectly From: From Hoffman	PO Resolution: Defer Rationale:	06-sept-09: ICC will defer this admin correction to the next revision when the document will be placed into DOORS. ICC has noted the misspelling in the figure 3-3

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Final To: Is: Hofman Rationale: Spelling incorrect	Concurrence: Concur Rationale:	which is a picture, thus making it difficult for correction. The figure needs to be converted to an OLE object for ease of updating. This can be deferred when the document goes into DOORS.
22	Thomas Nagle GPC	Page: 89 Para: 20.3.3.7.5	A	Comment: Editorial comment – the dot of UDRA is in wrong place. From: UDRA (dot over the R) Final To: UDRA dot over the D) Rationale: Correction.	PO Resolution: Accept Rationale: 5/23/08: comment and corrected document real-time. Concurrence: Concur Rationale:	06-sept-09: ICC tried to place the dot back over the "D". Because of the difficulties in resolution of MS Word, the placement may not be perfect. This change will be addressed in the next revision as well since the document will be placed in DOORS after this revision.
19	Thomas Nagle GPC	Page: 59 Para: Table 20-I	A	Comment: Editorial comment. Under the "Parameter" column, add the parameter symbols and move the parameter descriptions to the next columns. From: Final To: WNn Week Number URAoe INDEX SV Accuracy Rationale: Clarity and consistency.	PO Resolution: A/C Rationale: 5/23/08: Will incorporate into document. Concurrence: Concur Rationale:	11 Jun 08: Changes added to document. 5/23/08 Will incorporate into document. 06-sept-09: ICC verified noted changes were in document as well s new Title descriptions "parameter" and "parameter description" were placed in document. Updated PO resolution to A/C.
15	Thomas Nagle GPC	Page: 40 Para: 20.3.3	A	Comment: Editorial comment From: From "… (UDRA) may be worse than indicated in the respective message types, and the SV should be used at the user's own risk." Final To: 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.	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	5/23/2008 Withdrawn comment. The comment #48 of this CRM is the same.
11	Thomas Nagle GPC	Page: 1 Para: 2 (Section 1.2) 3-6	A	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	PO Resolution: Accept Rationale:	5/23/08: Will update document accordingly. 06-sept-09: ICC confirmed there is no JPO reference. Replaced "JPO" with "GPS Wing" on front cover. Page as

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Operating Instruction (OI)." JPO has been renamed GPS Wing. From: Final To: Recommendation: Replace JPO with GPS Wing throughout the document. Rationale: Clarification	Concurrence: Concur Rationale:	well as sections 1.2 and 10.1
10	Thomas Nagle GPC	Page: 1 Para: 2 (Section 1.2) 1-3	A	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. From: ARINC Engineering Services , LLC Final To: SAIC Rationale: Clarification.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	5/23/08: Will update document accordingly. 06-sept-09: ICC confirmed that the change is in the document.
9	Thomas Nagle GPC	Page: Para: 1.2	A	Comment: Suggested Change: Eliminate the word "approval" from the first sentence. From: "approval" Final To: Rationale: Rationale is the ICC does not have approval authority	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	5/23/08: Reference action #10 from the 800 review yesterday. 13-Aug-09: this comment is OBE based on the resolution to comment #38 from this 705 worksheet.
6	Thomas Davis SE&I	Page: N/A Para: N/A	A	Comment: Remove reference to GPS Joint Program Office From: Change wording as follows: "Navstar GPS Joint Program Office" & "JPO" Final To: To "Navstar GPS Wing (GPSW)" & "GPSW"	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: ICC confirmed there is no JPO reference. Replaced "JPO" with "GPS Wing" on front cover. Page.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: The term is no longer used for the GPS program.		
5	Thomas Davis SE&I	Page: 1 Para: 1.2	A	Comment: Remove references to previous ICC From: Change wording as follows: "ARINC Engineering Services, LLC has been designated." Final To: To "Applications International Corporation (SAIC) has been designated…" Rationale: The SE&I is the new ICC for this document.	PO Resolution: Accept Rationale: EN revision. Concurrence: Concur Rationale:	EN Recommendation: Remove all references to a specific contractor. Change to "The Interface Control Contractor (ICC) designated by the government is responsible for…." same as comment #10.
4	Thomas Davis SE&I	Page: 35d Para: Paragraph 6.3.4 Table 6-II (sheet 4 of 6)	A	Comment: Incorrect Value in Table 6-II. Replace the XB Code Advance – Chips for PRN 153's I5 value: "7912" From: Replace "7912" Final To: With "4912" Rationale: The current value will produce an erroneous ranging code value.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	06-sept-09: confirmed that change is in document. Stakeholders to proved ICWG concurrence.
62	Thomas Nagle GPC	Page: 3 Para: Sec 2 2.1 GP-03-001	A	Comment: From: Change date from 14 Nov 2003 Final To: To 20 Apr 2006 Rationale: Update	PO Resolution: Reject Rationale: Duplicate of comment #39. Concurrence: Concur Rationale:	(05/21/09)
63	Thomas Nagle GPC	Page: Para: 3.3.1.2	C	Comment: Recommend modifying the requirement for correlation loss. Suggested Change: Change to: "3.3.1.2 Correlation Loss. suggested chaneg: 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	PO Resolution: A/C Rationale: This has been mentioned in previous comments. Currently, new language is being produced and should be available for review prior to the forthcoming ICWG. Concurrence: Concur	(05/21/09): 8/6/09: the correlation loss tiger team will determine the way forward regarding this comment. 13-aug-09: refer to AI #12 for resolution. 10-sept-09: ICC has placed the language per the corr. Loss tiger team. 10/01/09: This section was under rigourous review and the ultimately the consensus of the ICWG community was to revert to wording similar to the IS-GPS-

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				waveform with an ideal sharp-cutoff whose bandwidth corresponds to that in 3.3.1.1, and whose phase is linear over that bandwidth. The correlation loss apportionment to the SV shall be as follows: 1 SV modulation and filter imperfections: 0.6 dB From: Original Text: "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. The worst case correlation loss occurs when the I5 carrier is modulated by the sum of the I5-code and the NAV data stream. For this case, the correlation loss apportionment shall be as follows: 1 SV modulation and filter imperfections: 0.6 dB 2 Ideal UE receiver waveform distortion (due to 24 MHz filter): 0.4 dB" Final To: 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 using an exact replica of the waveform within an ideal sharp-cutoff filter bandwidth centered at L5, 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 filtering imperfections shall be 0.6 dB maximum.	Rationale:	800.

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				Rationale: 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 implementation.		
64	Thomas Nagle GPC	Page: 12 Para: 3.3.1.3	C	Comment: Recommend modifying the requirement for Carrier Phase Noise. Suggested Change: Change to: "3.3.1.3 Carrier Phase Noise. The one-sided 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 offset and -70 dBc/Hz at 10 kHz offset from the carrier frequency. "With this change, we suggest removing Section 6.3.2. From: The phase noise spectral density of the un-modulated 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 root mean square (RMS). See additional supporting material for phase noise characteristics in section 6.3.2. Final 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 -80 dBc/Hz at 10 kHz. Spurs in the phase noise spectral density of the unmodulated carrier between 10 Hz and 10 kHz shall not exceed -40 dBc. Rationale: Correction: The suggested change text provides the user with as much information as required and makes no assumption regarding the user implementation.	PO Resolution: A/C Rationale: This has been mentioned in previous comments. Currently, new language is being produced and should be available for review prior to the forthcoming ICWG. Concurrence: Concur Rationale:	(05/21/09): 8/6/09: the correlation loss tiger team will determine the way forward regarding this comment. 13-aug-09: refer to AI #12 for resolution. 10-sept-09: This AI #12 has been closed and the new text is in the document. 10/01/09: Changed language for this section to Bud Bakeman proposal. C. Hegarty took on a action to review two different alternatives in the requirement location of carrier phase noise. ICWG stakeholders agreed with option (b) of his package..i.e. -80 dBc/Hz at 10 kHz. see comment #41 of this CRM for details on the study.
65	Thomas Nagle GPC	Page: 13 Para: 3.3.1.5	C	Comment: Phase continuity is not specified in the interface specification. Suggested	PO Resolution: Reject	GPC Comment (5/09): GPC rejects absence of PO's recognition of GPC's follow-on

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				Change: Insert the following paragraph after paragraph 3.3.1.5 Phase Continuity While a satellite is broadcasting standard I5 code and standard Q5 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 I5 or Q5 carrier phase other than those attributable to the binary state of the modulating signals. From: 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 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. Final To: Suggested Change: Insert the following paragraph after paragraph 3.3.1.5 Phase Continuity While a satellite is broadcasting standard I5 code and standard Q5 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 I5 or Q5 carrier phase other than those attributable to the binary state of the modulating signals. Rationale: Most precision GPS positioning, velocity	Rationale: Karl Kovach has developed some continuity language to replace 3.3.1.5. Need to discuss the implementation at the next ICWG. Concurrence: Concur Rationale:	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. 8/6/09: see comment 74, 124, 125 from 200 CRM for resolution. need to touch base with Karl Kovach for proposed language. 10-sept-09: If there is Phase "discontinuity," that is a failure that would fall under section 3.2.5.2.3.2 Severe Signal Deformation of the SS-SS-800. There is nothing in the document that would allow a SV contractor to have a phase discontinuity that isn't considered a failure. placing a requirement in there for "continuity" may give the SV contractor the impression that phase discontinuities are allowed. In the other public SIS documents, phase continuity is in there becuase we are concerned with the interaction between two different signals on the same carrier.

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				determination and timing systems as well as applications using carrier phase require phase continuity.		
66	Thomas Nagle GPC	Page: 15 Para: 3.3.1.6.1	S	Comment: Specify the SSV users (GSO, MEO, or LEO). There is no worst polarization orientation for circularly polarized user receiving antenna. Suggested Change: From "The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized user receiving antenna at worst polarization orientation at the off-nadir angle of 26.0 degrees." TO "The minimum effective received signal power is measured at the output of a 0 dBi ideal right-hand circularly polarized (i.e., 0 dB ellipticity) user receiving antenna (in geosynchronous orbit) at 26.0 degrees off nadir and using 0 dB atmospheric loss." From: Space Service Volume (SSV) Received Signal Power Levels. The SV shall provide I5 and Q5 navigation signal strength at end-of-life (EOL), worst-case in order to meet the SSV minimum levels specified in Table 3-IV. The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized user receiving antenna at worst polarization orientation at the off-nadir angle of 26.0 degrees. The received signal levels are observed within the in-band allocation defined in paragraph 3.3.1.1. Final To: Space Service Volume (SSV) Received Signal Power Levels. The SV shall provide worst-case I5 and Q5 navigation signal strength at end-of-life (EOL), in order to meet the SSV minimum levels specified in Table 3-IV. The minimum received power is measured at the output of a 0 dBi right-hand circularly polarized (i.e. 0 dB axial ratio) user receiving antenna at normal orientation at the off-nadir angle of 26.0 degrees. The received signal levels are observed within the	PO Resolution: Reject Rationale: Will need ICWG concurrence. Concurrence: Concur Rationale:	GPC rejects PO's Resolution. GPC provided original text, "Was" and "Is". (05/21/09) 13-aug-09: this comment is based upon the resolution of AI#50 to determine timeframe when comment will be resolved. 10-sept-09: AI #50 is closed and this comment is not based upon its resolution. the text was updated real-time during the Govt. TIM. to align with the 200. ICC has changed PO resolution to Accept with change. 10/14/09: ICC placed the appropriate newly ICWG agreed up one verbiage: " (i.e. 0 dB axial ratio)" as blue text in the 'To' language

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				in-band allocation defined in paragraph 3.3.1.1. Rationale: Specify orbital users as well as correction to user polarization orientation.		
67	Thomas Nagle GPC	Page: 15 Para: 3.3.1.7.1	S	Comment: Specify the group delay uncertainty for block III SVs. Suggested Change: Add "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." From: 3.3.1.7.1 Group Delay Uncertainty. The effective uncertainty of the group delays shall not exceed 3.0 nanoseconds (two sigma). Final To: 3.3.1.7.1 Group Delay Uncertainty. The effective uncertainty of the group delays shall not exceed 3.0 nanoseconds (95% probability). Rationale: Use group delay uncertainty for block III SVs from IS-GPS-800A.	PO Resolution: Reject Rationale: Will add to topics for discussion at the ICWG; be prepared to provide rationale for tightening the requirement. Concurrence: Rationale:	(05/21/09): 8/6/09: ICC to get with Dr. Munoz for way forward. Analysis needed for relationship between the SS-SS-800 doc and ICD/IS's. 13-aug-09: this has been potentially accepted for the 705 document. A discussion will occur to determine if there are users who have this need. this is a MITRE request. refer to AI#24 for way forward. 27-aug-09: 200 ICC will coordinate with the PSICA working group to attain rationale for the potential cost/schedule impacts. 10sept-09: AI 24 is still open this is still under review for the 1ns. 10/01/09: ICWG (AJ and Chris H) concurred with leaving at 3.0 ns. Awaiting GPC concurrence. 10/14/09: also confirmed that the "(95% probability)" was replaced with "(two Sigma)" . This was due to the consensus of the ICWG that 95 % provides the user with more data points that 2sigma.
68	Thomas Nagle GPC	Page: 15 Para: 3.3.1.7.2	S	Comment: Specify the group delay differential for block III SVs. Suggested change: TO "For a given navigation payload redundancy configuration, the absolute value of the mean differential delay shall not exceed 30.0 nanoseconds. The random plus non-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 valid for signal measurement/averaging times of 10 milliseconds to 1 day."	PO Resolution: A/C Rationale: Rationale is insufficient for a change that may impact cost of the SV. 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: GPU will go back to comment originator to determine if there is an actual need for the tighter requirement. 25-aug-09: this comment for the 200 CRM (#134) was withdrawn. ICC to follow suit. need GPC final concurrence. 10-sept-09: Comment #134 is withdrawn, thus this

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				From: From "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)." Final To: The group delay differential between the radiated L1 and L5 signals (i.e. L1 P(Y) and L5 I5; and L1 P(Y) and L5 Q5) 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 30.0 nanoseconds. The random plus non-random variations about the mean shall not exceed 3.0 nanoseconds (95% probability), when including consideration of the temperature and antenna effects during a vehicle orbital revolution.. L1 and L2 group delay differential is described in 3.3.1.7.2 of IS-GPS-200. Corrections for the bias components of the group delay differential are provided to the users in the NAV message using parameters designated as TGD (reference paragraph 20.3.3.3.3.2 of IS-GPS-200) and Inter-Signal Correction (ISC) (reference paragraph 20.3.3.3.1.2). Rationale: Tighten the specs for Block III SVs.		comment will be withdrawn. 10/01/09: This section has been modified real-time at ICWG to be in synch with IS-GPS-200 10/14/09: The comment was not accepted, however, ICC changed the PO resolution to A/C since this section was under review at the last 10/1/09 ICWG. updated CRM
69	Thomas Nagle GPC	Page: 16 Para: 3.3.1.7.3	S	Comment: Please provide the values for the SSV group delay differential. From: N/A Final To: Suggested Change: Please provide the values.	PO Resolution: Reject Rationale: Per stakeholder agreement, values were to be placed outside of this document. See Action Item # 22 for IS-GPS-800. Concurrence: Concur	GPC Rejects PO's Resolution, again requesting these values be provided in this document. (05/21/09): 8/6/09: see comment 135 from the 200 CRM for resolution. See AI #50 for resolution. 10-sept-09: AI #50 was closed. this comment must be deferred since RIL item will be opened at a later time. changed the

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				Rationale: Requirement.	Rationale:	resolution to defer since this will be reviewed at a later time. 10-sept-09: this comment is OBE since this information will be placed in a separate document. ICC to coordinate with comment originator to ensure this comment will not be lost.
70	Thomas Nagle GPC	Page: 16 Para: 3.3.1.7.3	S	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-200E (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. From: Space Service Volume Group Delay Differential. The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service Volume is given by the Block III Space Contractor (TBD). The details are provided in TBD. Final To: Space Service Volume Group Delay Differential. The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD Rationale: Consistency and completion.	PO Resolution: A/C Rationale: Will change IS-GPS-800 to read "GPSIII". See Action Item # 22 for IS-GPS-800 (in reference to TBDs). Concurrence: Concur Rationale:	(05/21/09): 8/6/09: see comment #136 from the 200 CRM for resolution. Vimal has the action to go to Capt Roach for direction. 10-sept-09: ICC has synced up with the 200 for proposed verbiage in this section.
71	Thomas Nagle GPC	Page: 16 Para: 3.3.1.8	S	Comment: Please provide the further clarification of "On the L5 channel the chip transitions of the two modulating signals (i.e., that containing the I5-code and that containing the Q5-code) shall be such that the average time difference between the transitions does not exceed 10.0 nanoseconds	PO Resolution: A/C Rationale: Please provide more information on the changes. Concurrence: concur	(05/11/09) GPC withdraws comment. 10-sept-09: after further review, this comment has been addressed by the Corr. Loss tiger team. Changed PO resolution to accept. 10/01/09: Updated section in real-time at ICWG to synch up with IS-GPS-200 agreed

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				(two-sigma)." It was raised at the GPS IIIA NPE PDR. Suggested Change: Please clarify. From: 3.3.1.8 Signal Coherence. L5 transmitted signals for a particular SV shall be coherently derived from the same onboard frequency standard. All PRN signals shall be clocked coherently with the P(Y)-code signal transitions. On the L5 channel the chip transitions of the two modulating signals (i.e., that containing the I5-code and that containing the Q5-code) shall be such that the average time difference between the transitions does not exceed 10.0 nanoseconds (two-sigma). Final To: All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard. On the L5 channel, the chip transitions of the two modulating signals. L5I and L5Q, shall be such that the average time difference between them, and between each and the transitions of L5P(Y) and CA, do not exceed 10 nanoseconds. The variable time difference shall not exceed 1 nanosecond (2 sigma95% probability), when including consideration of th e temperature and antenna effect changes during a vehicle orbital revolution. Corrections for the bias components of the group delay differentail as provided to the users using parameters designated as ISCs (reference paragraph 20.3.3.3.1.2.) Rationale: Need requirement clarification from ICWG.	Rationale:	upon language. Included the 95% probability verbiage as discussed per stakeholders. Text in blue is the newly ICWG agreed upon text.
72	Thomas Nagle GPC	Page: 16 Para: 3.3.1.9	S	Comment: Section 3.3.1.9 Signal Polarization now states "The transmitted signal shall be right-handed circularly polarized (RHCP). For the angular range of ±14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4dB. For Block	PO Resolution: Accept Rationale: Since there are requirements that affect the IIF space contractor, we cannot remove the sentence.	(05/11/09) GPC rejects PO resolution citing the document should be configured for a given satellite. 8/6/09: Dr. Munoz recommends that we place some verbiage into the SS-SS-800 spec. ICC

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				IIIA the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Suggested Change: Remove the second sentence which states "For the angular range of ±14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4dB." From: The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of □14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4 dB. For Block IIIA the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Final To: The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Rationale: Correctness	Concurrence: Concur Rationale:	recommends including verbiage similar to the 700 document "±13.8 degrees plus pointing error for GPS III". ICC to request clarification to GPU. Action item to GPU. 13-aug-09: refer to AI #30 for resolution. 25-aug-09: deleted "+SV pointing error" in document. Updated document per commenter's proposed verbiage. changed resolution to Accept.
73	Thomas Nagle GPC	Page: 25 Para: 3.3.4	S	Comment: Tighten the accuracy of the requisite data for relating GPS time to UTC for block III SVs. From: "The L5 CNAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval will be such that it relates GPS time to UTC (USNO) to within 90.0 nanoseconds (one sigma)." Final To: "The L5 CNAV 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 to UTC (USNO) to within 90.0 nanoseconds (one sigma). For Block III SVs, the accuracy of this data during the transmission interval shall be such that it shall	PO Resolution: Reject Rationale: The previous ICWG discussions were only against the IS-GPS-800. This will be a topic of discussion at ICWG. Concurrence: Rationale:	(05/21/09): 8/6/09: ICC to take action to determine if this requirement is in the SYS-800 doc. 13-aug-09: refer to AI #26 for resolution. 10-sept-09: ICC has confirmed that AI#26 is still open, thus the comment must be deferred. 10/01/09: Changed to reject. 1.5 ns is only required once OCX comes on-line. Concurred to by Chris H. Awaiting concurrence from GPC.

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				relate GPS time to UTC(USNO) to within 1.5 nanoseconds (RMS over 30 days)" Rationale: Requirement for block III SVs from IS-GPS-800A.		
74	Thomas Nagle GPC	Page: 35 Para: 6.2.1	A	Comment: Changes to definition of URA proposed for IS-GPS-200 would be incorporated by reference into IS-GPS-705, since paragraph 6.2.1 of IS-GPS-705 simply references paragraph 6.2.1 of IS GPS-200. From: 6.2.1 User Range Accuracy. See paragraph 6.2.1 of IS-GPS-200. Final To: 6.2.1 User Range Accuracy. See Section 6.2.1 of IS-GPS-200. Rationale:	PO Resolution: A/C Rationale: Please clarify proposed change and resubmit Concurrence: Concur Rationale:	GPC Rejects PO's Resolution, based on the rejection this is actually a deferral and needs to remain an open issue until resolved. (05/21/09): 8/6/09: ICC to place a pointer to the 200 document to refer to those definitions. 10-sept-09: ICC confirms that this suffices in document synchronization with the 200 reference. 10/14/09: updated the document that reflects the 10/1/09 ICWG approved changes. Updated "paragraph" with "Section."
75	Thomas Nagle GPC	Page: 46 - 51 Para: Sec 10 Appendix 1	S	Comment: Delete Section 10 Appendix 1. Letters of Exception. From: Final To: Rationale: Letter of Exceptions are of a contractual nature and not part of an interface specification.	PO Resolution: Reject Rationale: Only the PCO can approve removal of letters of exception. Concurrence: concur Rationale:	(05/11/09) GPC rejects PO resolution and again refers to the rationale provided for this comment. 8/6/09: will move forward with non-concur. Wing's assessment is different than that of reviewer. See also the AI tracker...see action #52. initial assessment is that we cannot remove due to contracts.
76	Thomas Nagle GPC	Page: n/a Para: new	C	Comment: From: (none) Final To: Suggested Change: Add new paragraph 20.3.1.1, as follows: 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),	PO Resolution: Defer 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:	(05/11/09) GPC notes that PO resolution is actually a rejection of GPC's comment, and will be worked again at a later date and within a different document. GPC thus recommends the PO to reject our comment, while GPC in advance of this recommended action would accept this resolution change.

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				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.		
77	Thomas Nagle GPC	Page: 108 Para: Table 20-XI, and 20.3.3.8.2 (equation)	S	Comment: Parameters “totGGTO” and “WNotGGTO” are not defined in message type 35 of Figure 20-8. From: Final To: Suggested Change: Either made change in 20.3.3.8.2 and table 20-XI to match the parameters of Figure 20-8 or to change the parameters in Figure 20-8 to match parameters in 20.3.3.8.2 and table 20-XI. Rationale: Correct parameters.	PO Resolution: Reject Rationale: Duplicate of comments #57 & #56 within this CRM. Concurrence: Concur Rationale:	(05/21/09):
78	Thomas Nagle GPC	Page: Gen Para: Add new paragraph (20.3.1.1) that describes the OCX	C	Comment: There is no document identifying the requirements redundantly repeated in 200/705/800 documents. From:	PO Resolution: Reject Rationale: Duplicate of the original comment #104 made by GPA in the IS-GPS-200 CRM. Concurrence: Non-concur	GPC rejects PO Resolution as referenced duplicate comment has not been answered at this time, thus this comment remains in effect. (05/21/09) 08-13-09: this is outside of SE&I's scope and would require additional funding…SE&I stands by

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		assumptions regarding UE correlation characteristics used to make pseudorange measurements and a disclaimer that UE using different correlation characteristics may experience small additional User Range		Final To: 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 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 care about." There was also a similar/related comment submitted against the baseline 800 which was deferred. Suggested Change: These documents should be pulled from the CCB agenda until the sections in all three documents containing redundant requirements are identified. The document identifying the redundancies is essential in performing the review and providing comments. Rationale: It's critical that changes to IS-GPS-200 originate in the IS-GPS-200 ICWG process, and not first initiated as part of a change to 705 or 800. The only way to ensure this does not happen is to modify the wording in 705 and 800 to refer to 200 to the maximum extent possible. Assuming the POCs for these documents understands where all the redundancies are, putting something together should be a relatively minor task, and would be used by reviewers to identify the sections that should be referring back to 200. If the POCs do	Rationale:	rejection.

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				not know where all the redundancies are, they should not be putting forth any proposed interface changes until they identify where all the redundancies are.		
79	M Dash GPA	Page: Gen Para:	C	Comment: There is no document identifying the requirements redundantly repeated in 200/705/800 documents. From: Final To: 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 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 care about." There was also a similar/related comment submitted against the baseline 800 which was deferred. Rationale: There was also a similar/related comment submitted against the baseline 800 which was deferred.	PO Resolution: Reject Rationale: Duplicate of the original comment #78 made by GPC. Concurrence: Non-concur Rationale:	GPC rejects PO Resolution as referenced duplicate comment has not been answered at this time, thus this comment remains in effect. (05/21/09) 08-13-09: this is outside of SE&I's scope and would require additional funding…SE&I stands by rejection.
0	GPA	Page: Para:	C	Comment: From:	PO Resolution: Reject Rationale:	GPC rejects PO Resolution as referenced duplicate comment has not been answered at this time, thus this comment remains in effect. (05/21/09) 08-13-09: this is outside

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Final To: These documents should be pulled from the CCB agenda until the sections in all three documents containing redundant requirements are identified. The document identifying the redundancies is essential in performing the review and providing comments. Rationale: It's critical that changes to IS-GPS-200 originate in the IS-GPS-200 ICWG process, and not first initiated as part of a change to 705 or 800. The only way to ensure this does not happen is to modify the wording in 705 and 800 to refer to 200 to the maximum extent possible. Assuming the POCs for these documents understands where all the redundancies are, putting something together should be a relatively minor task, and would be used by reviewers to identify the sections that should be referring back to 200. If the POCs do not know where all the redundancies are, they should not be putting forth any proposed interface changes until they identify where all the redundancies are.	Concurrence: Non-concur Rationale:	of SE&I's scope and would require additional funding…SE&I stands by rejection.
80	Kawakami GPD	Page: 35a Para: 6.3.4	C	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. From: 6.3.4 Additional PRN Sequences. Among all unique L5-code sequences that could be generated using different initial states as described in Section 3.2.1.1, 74 sequences (37 I5 and 37 Q5) are selected and assigned in Table 3-I.	PO Resolution: Defer Rationale: Duplicate of comment #59 Concurrence: Concur Rationale:	(04/30/09) 11/19/08: Comment is in work. Action to Mike Munoz. Will remain open. 20-aug-09: the resolution resides within AI #16 10-sept-09: this is also based on the PRN expansion AI for Karl Kovach. Changed PO resolution to defer

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				An additional 346 sequences (173 I5 and 173 Q5) are selected and assigned with PRN numbers in the below Table 6-II. Any assignment of an L5 PRN number and its code sequence for any additional SV and/or other L5 signal applications, such as Satellite Based Augmentation System (SBAS) satellite signals, will be selected from the sequences of Table 6-II. Final To: Requested Change: 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. Rationale:		
81	Kawakami GPD	Page: 93 Para: 20.3.3.5	C	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. From: Final To: Requested Change: Rationale:	PO Resolution: Defer Rationale: Commenter must provide information that proves 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. Concurrence: Concur Rationale:	04/30/09: PO Resolution Update - Accept. The ICC POC clarified the comment with the originator and the Reviewer's Concurrence: Concur (04/30/09) 06-sept-09: ICC confirmed that there will be new ECEF to ECI equations placed into the document, however those equations will not be ready to be placed into the document until December. ICC moves to Defer the comment.
82	Charlton MITRE	Page: 3 Para: 2.2	A	Comment: line 2 From: Final To: Suggested Change: "Navigation" capitalized here while it was not in para 2.1. Make consistent.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC confirmed that "navigation" was capitalized. ICC also noted that it was capitalized in the previous revision.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: consistency		
83	Charlton MITRE	Page: 6 Para: 3.1	A	Comment: line 1 From: 3.1 Interface Definition. Final To: Suggested Change: “Navigation” capitalized here while it was not in para 2.1. Make consistent. Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated line 5 in the paragraph for consistency.
84	Charlton MITRE	Page: 8 Para: 3.2.1.1	A	Comment: line 2 From: Final To: Suggested Change: eliminate extra space following comma after “length” Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC confirmed that the admin change in in document.
85	Charlton MITRE	Page: 8 Para: 3.2.1.1	A	Comment: line 7 From: Final To: Suggested Change: use either “SV-ID” or “SV ID” throughout document Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC confirmed that the admin change in in document.
86	Charlton MITRE	Page: 9 Para: 3.2.1.2	A	Comment: line 2 Suggested Change: Here “navigation” is spelled out whereas it is abbreviated as “NAV” in para 3.2.1. Make consistent. From: navigation Final To: NAV Rationale: consistency	PO Resolution: Reject Rationale: NAV refers to the message. Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC confirmed that the general reference for navigation signals are lower case.
87	Charlton MITRE	Page: 12 Para: 3.3.1.1	A	Comment: line 1 Suggested Change: Add the word “the” between “within” and “24 MHz.” Should read “… signal contained with the 24 MHz	PO Resolution: Accept Rationale:	(05/05/09)

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				band …" From: 3.3.1.1 Frequency Plan. The L5 signal is contained within a 24 MHz band centered about the L5 nominal frequency. The carrier frequencies for the L1, L2 and L5 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 Δ f/f = -4.4647E-10, equivalent to a change in the I5 and Q5-code chipping rate of 10.23 MHz offset by a Δ f = -4.5674E-3 Hz. This is equal to 10.22999999543 MHz. The nominal carrier frequency (f0) -- as it appears to an observer on the ground – shall be 1176.45 MHz, or 115 times 10.23 MHz. Final To: Suggested Change: Add the word "the" between "within" and "24 MHz." Should read "… signal contained with the 24 MHz band …" Rationale: readability	Concurrence: Concur Rationale:	
88	Charlton MITRE	Page: 13 Para: 3.3.1.5	A	Comment: line 4 From: 3.3.1.5 Phase Quadrature. ..."zero phase angle", Final To: Suggested Change: Move comma to inside closing quotation mark Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
89	Charlton MITRE	Page: 13 Para: 3.3.1.6	A	Comment: line 1 From: 3.3.1.6 Signal Power Levels. The SV shall provide I5 and Q5 navigation signal strength at end-of-life (EOL), worst-case in order to meet the	PO Resolution: Accept Rationale: Will provide alternative language. Concurrence: Concur	(05/05/09) 06-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				minimum levels… Final To: Change wording to "The SV shall provide worst-case I5 and Q5 navigation signal strength at EOL in order to meet the minimum levels …" Rationale: awkward wording, readability	Rationale:	
90	Charlton MITRE	Page: 14 Para: Table 3-IV	A	Comment: Table 3-IV From: … Final To: Suggested Change: Move table so that it appears after first mention in text, not before. Rationale: Here Table 3-IV appears before first mention in para 3.3.1.6.1 on page 15.	PO Resolution: Accept 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) 06-sept-09: Moved table to end of section 3.3.1.6.1. updated TOC as well
91	Charlton MITRE	Page: 15 Para: 3.3.1.6.1	A	Comment: line From: 3.3.1.6.1 Final To: Suggested Change: Change wording to "The SV shall provide worst-case I5 and Q5 navigation signal strength at EOL in order to meet the SSV minimum levels …" Rationale: awkward wording, readability	PO Resolution: Accept Rationale: Will provide alternative language. Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document. 10/11/09: please refer to comment #66 of this CRM for resolution.
92	Charlton MITRE	Page: 15 Para: 3.3.1.7	A	Comment: line 3 From: 3.3.1.7 Equipment Group Delay. ... the users since it is included in the clock correction parameters relayed in the NAV data, and is therefore accounted for by the user computations of system time (reference paragraphs 20.3.3.2.3, 20.3.3.3.2.3 and 20.3.3.3.2.4). Final To: Suggested Change: delete "the" before "users" Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
93	Charlton MITRE	Page: 15 Para: 3.3.1.7.2	A	Comment: line 2 Suggested change: put in a ")" From: N/A Final To: "(" Rationale: grammar	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC left document as it stands. ")" after Q5 refers to the (i.e. …
94	Charlton MITRE	Page: 16 Para: 3.3.1.7.3	A	Comment: line 1 From: 3.3.1.7.3 Final To: Suggested Change: replace “between the radiated” with “for the radiated” Rationale: readability	PO Resolution: Reject Rationale: The current language is a placeholder only. Concurrence: Concur Rationale:	(05/05/09)
95	Charlton MITRE	Page: 16 Para: 3.3.1.7.3	A	Comment: line 3 From: 3.3.1.7.3 Final To: Suggested Change: use “Space Vehicle” or “Space Segment” instead of currently used “Space” Rationale: readability	PO Resolution: Reject Rationale: Correct as is. Concurrence: Concur Rationale:	(05/05/09)
96	Charlton MITRE	Page: 16 Para: 3.3.1.7.3	A	Comment: line 3 Suggested Change: replace “TBDs” with actual data if available From: TBDs Final To: actual data Rationale: completeness	PO Resolution: Defer Rationale: TBDs have not been resolved. Concurrence: Concur Rationale:	(05/05/09)
97	Charlton MITRE	Page: 16 Para: 3.3.2	A	Comment: line 1 Suggested Change: Delete “extra” hyphen after I5. From: I5- Final To: I5-codes	PO Resolution: A/C Rationale: Concurrence: Concur Rationale:	(05/05/09) Will add “code” after hyphen. 06-sept-09: added codes after hyphen.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: consistency – Previously hyphen only used when followed by the word “code.”		
98	Charlton MITRE	Page: 16 Para: 3.3.2	A	Comment: line 5 Suggested Change: delete the word “symbols” From: "symbols" Final To: N/A Rationale: readability – word “symbols” is redundant since the acronym “sps” stands for symbols per second	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
99	Charlton MITRE	Page: 9 Para: 3.2.2	A	Comment: line 2 Suggested Change: replace “coded” and “coder” with more standardized “encoded” and “encoder” From: coder and coded Final To: “encoded” and “encoder” Rationale: consistency - “Encoded” and “encoder” are the more commonly used terms. “Encoded” and “encoder” are used in paragraphs 3.3.2 and 3.3.3.1.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
100	Charlton MITRE	Page: 23 Para: 3.3.3.1.1	A	Comment: line 10 Suggested Change: replace “contains” with “contain” From: ...The navigation message is FEC encoded in a continuous process independent of message boundaries (i.e. at the beginning of each new message, the encoder registers illustrated in Figure 3-7 contains the last six bits of the previous message). Final To: contain Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
101	Charlton MITRE	Page: 33 Para: 6.1	A	Comment: terms Suggested Change: define “dBi” either in acronyms or at first use in document	PO Resolution: Accept	Accept 05/01/09 Will add to the Acronym list Concur (05/05/09) 06-sept-09: ICC

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: N/A Final To: dBi Decibels with respect to isotropic antenna Rationale: consistency – “dBW” is defined, but “dBi” is not	Rationale: These are standard engineering terms. Concurrence: Concur Rationale:	updated document with new acronym.
102	Charlton MITRE	Page: 34 Para: 6.1	A	Comment: line 3 Suggested Change: remove extraneous blank line From: Return Final To: n/a Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
103	Charlton MITRE	Page: 35 Para: 6.2.2.2.1	A	Comment: line 1 Suggested Change: add hyphen to specification title – should read “IS-GPS-200” From: N/A Final To: - Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document. It was noted that comment #154 of this CRM deleted the entire sentence.
104	Charlton MITRE	Page: 35 Para: 6.2.2.2.2	A	Comment: line 1 Suggested Change: eliminate extra space following the period after “SVs” From: N/A Final To: deleted " " Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.
105	Charlton MITRE	Page: 35 Para: 6.2.2.2.3	A	Comment: line 1 Suggested Change: add period at end of line From: n/a Final To: added "."	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: grammar		
106	Charlton MITRE	Page: 35 Para: 6.2.2.2.6	A	Comment: line 1 Suggested Change: add the word “planned” – should read “This planned block of operational SVs will …” From: The block of operational planned… Final To: This planned block of operational SVs Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 06-sept-09: ICC updated document per comment #169 comment.
107	Charlton MITRE	Page: 36 Para: 6.3.1 - 6.3.2	A	Comment: none Suggested Change: remove extraneous “white space” at bottom of page 36 and fix crowding at top of page 37 From: section break Final To: N/A Rationale: format/readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
108	Charlton MITRE	Page: 39 Para: none	A	Comment: blank page Suggested Change: remove blank page or mark as “intentionally left blank” From: blank page Final To: N/A Rationale: format/consistency	PO Resolution: Reject Rationale: Blank page does not appear for ICC POC. Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC confirmed there was no blank page when viewing the doc in "final" state.
109	Charlton MITRE	Page: 46 Para: 10.1	A	Comment: line 2 Suggested Change: put period inside closing quotation mark From: N/A and "GPS JPO" Final To: "." and "GPSW" Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document. Also confirmed there was an additional change from "GPS JPO" to "GPSW" in the section.
110	Charlton MITRE	Page: 46-51 Para: App 10	A	Comment: Figure titles all bumped to following pages. Suggested Change: correct formatting error to insure figure titles appear below	PO Resolution: Reject Rationale: ICC POC does not see these	(05/05/09) 09-sept-09: ICC confirmed that the figures titles will be at the bottom of each figure…there are 2 of them.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				respective figures From: Final To: Suggested Change: correct formatting error to insure figure titles appear below respective figures Rationale: readability	issues.05/05/09: Accept with comment. The ICC POC will ensure the final PDF version does not contain the error. Concurrence: Concur Rationale:	
111	Charlton MITRE	Page: 49 Para: none	A	Comment: blank page Suggested Change: remove blank page or mark as “intentionally left blank” From: Final To: Suggested Change: remove blank page or mark as “intentionally left blank” Rationale: format/consistency	PO Resolution: Reject Rationale: Blank page does not appear for ICC POC. Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC confirmed there was no blank page when viewing the doc in "final" state.
112	Charlton MITRE	Page: 65 Para: 20.3.3.1.1	A	Comment: line 3 Suggested Change: add comma and change “provide” to “provides” – should read “Message type 10, in conjunction with message type 11, provides …” From: …type10 …type 11, provide Final To: …type10, …type 11, provides Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
113	Charlton MITRE	Page: 65 Para: 20.3.3.1.1	A	Comment: line 4 Suggested Change: change “consist” to “consists” From: consist Final To: consists Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
114	Charlton MITRE	Page: 65 Para:	A	Comment: line 17 (3rd para, line 2) “toe” used here, but not defined until page 72 – should be	PO Resolution: Accept	(05/05/09) 09-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		20.3.3.1.1		defined at first use From: N/A Final To: (toe =Ephemeris data reference time of week) Rationale: “toe” used here, but not defined until page 72 – should be defined at first use	Rationale: Concurrence: Concur Rationale:	
115	Charlton MITRE	Page: 65 Para: 20.3.3.1.1	A	Comment: line 17 (3rd para, line 2) Suggested Change: change “assure” to “insure” From: assure Final To: insure Rationale: word usage	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
116	Charlton MITRE	Page: 65 Para: 20.3.3.1.1	A	Comment: para 5, line 4 From: Final To: Suggested Change: change “squared” to “square” Rationale: word usage/readability	PO Resolution: Reject Rationale: Correct as is. Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC concurred with original resolution.
117	Charlton MITRE	Page: 71 Para: none	A	Comment: blank page From: Final To: Suggested Change: remove blank page or mark as “intentionally left blank” Rationale: format/consistency	PO Resolution: Reject Rationale: Blank page does not appear for ICC POC. Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC concurred with original resolution.
118	Charlton MITRE	Page: 73 Para: none	A	Comment: blank page From: Final To: Suggested Change: remove blank page or mark as “intentionally left blank”	PO Resolution: Reject Rationale: Blank page does not appear for ICC POC. Concurrence: Concur	(05/05/09) 09-sept-09: ICC concurred with original resolution.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: format/consistency	Rationale:	
119	Charlton MITRE	Page: 76 Para: 20.3.3.2.1	A	Comment: para 2, line 3 Suggested Change: reword as " … any message of type 30 to 39 will provide …" From: any message type 30's (i.e. 30-39) Final To: any message of type 30 to 39 Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
120	Charlton MITRE	Page: 81 Para: 20.3.3.3.1.1	A	Comment: line 3 Suggested Change: change "bit length" to "bit lengths" From: bit length Final To: bit lengths Rationale: consistency with wording in paragraph 20.3.3.3.1.3 and elsewhere	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
121	Charlton MITRE	Page: 81 Para: 20.3.3.3.1.2	A	Comment: line 4 Suggested Change: change "bit length" to "bit lengths" From: bit length Final To: bit lengths Rationale: consistency with wording in paragraph 20.3.3.3.1.3 and elsewhere	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
122	Charlton MITRE	Page: 83 Para: 20.3.3.3.1.2.1	A	Comment: 2nd para Suggested Change: delete comma after "Where" From: "," Final To: N/A Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
123	Charlton MITRE	Page: 83 Para:	A	Comment: 3rd para Suggested Change: delete comma after "where"	PO Resolution: Accept	(05/05/09) 09-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		20.3.3.3.1.2.1		From: "," Final To: N/A Rationale: readability	Rationale: Concurrence: Concur Rationale:	
124	Charlton MITRE	Page: 84 Para: 20.3.3.3.1.2.2	A	Comment: line 1 Suggested Change: remove hyphen from “L1-C/A” From: L1-C/A Final To: L1 C/A Rationale: consistency - no hyphen used in similar wording elsewhere in document	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
125	Charlton MITRE	Page: 84 Para: 20.3.3.3.1.2.2	A	Comment: next to last line Suggested Change: change period at end of line to a comma From: "." Final To: "," Rationale: grammar	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
126	Charlton MITRE	Page: 85 Para: 20.3.3.3.1.2.3	A	Comment: inconsistent definition of symbols in equations From: Final To: Suggested Change: Either define symbols for first equation, or tie two equations together with an “and” and define symbols as currently done. Remove period at end of line defining speed of light. Replace period at end of sect to last line with a comma. Add period at end of last line. Rationale: consistency, readability and grammar	PO Resolution: Reject Rationale: Correct as is. Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC concurred with original resolution.
127	Charlton MITRE	Page: 85 Para:	A	Comment: line 3 Suggested Change: define Tiono	PO Resolution: Accept	(05/05/09) 09-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
		20.3.3.3.1.3		From: N/A Final To: (Tiono=Ionospheric correction parameter) Rationale: This quantity is not defined anywhere in this document and should be defined at first use.	Rationale: Concurrence: Concur Rationale:	
128	Charlton MITRE	Page: 86 Para: none	A	Comment: extraneous white space on page Suggested Change: delete extra white space From: " " Final To: N/A Rationale: format	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
129	Charlton MITRE	Page: 87 Para: 20.3.3.3.1.4	A	Comment: figure title bumped to next page From: " " Final To: N/A Rationale: format	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
130	Charlton MITRE	Page: 88 Para: 20.3.3.4.5	A	Comment: “Midi” not defined From: Final To: Suggested Change: define “Midi” either in acronym list or at first use in document Rationale: readability	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC agrees with principle, however, in the interest of time it is not prudent to place it in the document now. This item will be addressed when the document goes into DOORS, i.e. next revision.
131	Charlton MITRE	Page: 90 Para: none	A	Comment: extraneous white space on page Suggested Change: delete extra white space From: " " Final To: N/A Rationale: format	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
132	Charlton MITRE	Page: 90 Para: 20.3.3.4.6.1	A	Comment: line 1 Suggested Change: make "types" singular or change "contains" to "contain" From: contains Final To: contain Rationale: grammar/readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
133	Charlton MITRE	Page: 90 Para: 20.3.3.4.6.1	A	Comment: line 2 Suggested Change: delete "of" in "of 31" From: of Final To: N/A Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
134	Charlton MITRE	Page: 90 Para: 20.3.3.4.6.1	A	Comment: line 5 Suggested Change: change "range" to "ranges" From: range Final To: ranges Rationale: consistency with rest of document	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
135	Charlton MITRE	Page: 93 Para: 20.3.3.5.1	A	Comment: line 4 Suggested Change: change "range" to "ranges" From: range Final To: ranges Rationale: consistency with rest of document	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
136	Charlton MITRE	Page: 98 Para: 20.3.3.6.2	A	Comment: line 4 Suggested Change: change "using" to "to use" From: using Final To: to use	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: readability		
137	Charlton MITRE	Page: 98 Para: 20.3.3.6.2	A	Comment: “tutc” not defined Suggested Change: define “tutc” in acronyms or at first use From: N/A Final To: (tUTC= Coordinated Universal Time defined by the USNO) Rationale: readability	PO Resolution: Reject Rationale: As stated in the sentence the definition of tUTC can be found in IS-GPS-200. Concurrence: Rationale:	(05/05/09) 09-sept-09: ICC updated document.
138	Charlton MITRE	Page: 100 Para: 20.3.3.7	A	Comment: line 2 Suggested Change: change “types 34” to “type 34” From: types Final To: type Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
139	Charlton MITRE	Page: 100 Para: 20.3.3.7.1	A	Comment: 2nd para, line 4 Suggested Change: change “range” to “ranges” to be consistent with usage elsewhere in document From: range Final To: ranges Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
140	Charlton MITRE	Page: 100 Para: 20.3.3.7.2	A	Comment: line 4 Suggested Change: change “enables” to “enable” From: enables Final To: enable Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
141	Charlton MITRE	Page: 100 Para: 20.3.3.7.2	A	Comment: line 7 Suggested Change: change “data pair” to “data pairs” From: Users must utilize CDC and EDC data pair of	PO Resolution: Accept Rationale:	(05/05/09) 09-sept-09: ICC updated document…also put in "the" twice.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				same top-D and of same tOD. Final To: Users must utilize CDC and EDC data pairs of the same top-D and of the same tOD. Rationale: readability	Concurrence: Concur Rationale:	
142	Charlton MITRE	Page: 100 Para: 20.3.3.7.2	A	Comment: line 7 Suggested Change: define "top-D" here at first use From: N/A Final To: (top-D =DC data predict time of week) Rationale: acronym should be defined at first use – currently not defined until next paragraph	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
143	Charlton MITRE	Page: 101 Para: none	A	Comment: figure title bumped to next page From: Final To: Suggested Change: change format so figure title appears below respective figure Rationale: format	PO Resolution: A/C Rationale: ICC POC does not have the issue Concurrence: Concur Rationale:	05/05/09: Accept with comment. The ICC POC will ensure the final PDF version does not contain the error. Concur (05/05/09) 09-sept-09: ICC notes this issue will go away when the document goes into DOORS, at the next revision.
144	Charlton MITRE	Page: 103 Para: none	A	Comment: extraneous white space on page Suggested Change: delete extraneous white space on page From: " " Final To: N/A Rationale: format	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 09-sept-09: ICC updated document.
145	Charlton MITRE	Page: 103 Para: 20.3.3.7.3	A	Comment: definition of equation symbols From: Final To: Suggested Change: define all equation symbols here if not defined elsewhere	PO Resolution: Reject Rationale: Not all symbols need to be defined at first use. Concurrence: Concur	05/01/09: The symbols are defined in Table 20-V and Table 20-X. Concur (05/05/09)) 09-sept-09: ICC agreed with resolution.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale: all symbols should be defined in acronyms or at point of first use in document	Rationale:	
146	Charlton MITRE	Page: 104 Para: none	A	Comment: extraneous white space on page Suggested Change: delete extraneous white space on page From: " " Final To: N/A Rationale: format	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
147	Charlton MITRE	Page: 106 Para: 20.3.3.7.5	A	Comment: line 4 Suggested Change: change “has” to “have” From: has Final To: have Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
148	Charlton MITRE	Page: 107 Para: 20.3.3.8.1	A	Comment: line 3 Suggested Change: hyphenate “GPS like” to read “GPS-like” From: GPS like Final To: GPS-like Rationale: readability	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
149	Charlton MITRE	Page: 107 Para: 20.3.3.8.1	A	Comment: line 10 Suggested Change: change to read “… scale factors … the ranges …” as elsewhere in document From: range Final To: ranges Rationale: consistency	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
150	Tom Thede GPL	Page: 6 Para: Fig 3-1	S	Comment: Need to delete all references to Block II SVs	PO Resolution: Accept Rationale: The change will be made upon	(05/05/09) 10-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: Block II/IIA Final To: Block II Rationale: Block II characteristics are irrelevant to this document	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. Concurrence: Concur Rationale:	
151	Tom Thede GPL	Page: 33 Para: 6.1	A	Comment: Missing acronyms Suggested Change: Add “GPSW” to list of acronyms From: Final To: GPSW Global Positioning Systems Wing Rationale: Acronym used in document and not listed	PO Resolution: Accept Rationale: Concur Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
152	Tom Thede GPL	Page: 34 Para: 6.1	A	Comment: Missing acronyms Suggested Change: Add “SSV” to list of acronyms From: Final To: SSV Space Service Volume Rationale: Acronym used in document and not listed	PO Resolution: Accept Rationale: Concur Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
153	Tom Thede GPL	Page: 35 Para: 6.2.2.2	S	Comment: Block II From: N/A Final To: N/A Rationale: Block II characteristics are irrelevant to this document	PO Resolution: Accept 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. Concurrence: Concur Rationale:	(05/05/09) 10-sept-09: ICC updated document.
154	Tom Thede GPL	Page: 35 Para: 6.2.2.2.1	S	Comment: Need to delete all references to Block II SVs Suggested Change: Change second sentence	PO Resolution: Accept	(05/05/09) 10-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				to read, "These satellites are not operational and have all been placed in disposal orbits." From: 6.2.2.2.1 Block II SVs. See paragraph 6.2.2.2.2 of IS-GPS-200. These satellites do not broadcast the L5 signal. Final To: N/A 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. Concurrence: Concur Rationale:	
155	Martin/Wang/Yi/Bakeman Aerospace	Page: 10 Para: 3.3.1.2	S	Comment: From: 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. Final To: Is: (Revert to original language) Rationale: CRM disposition: section wording to remain open. Awaiting output of working group for wording.	PO Resolution: Reject Rationale: Concurrence: Concur Rationale:	(05/13/09) 10-sept-09: refer to Mike Deelo's power point presentation. Updated doc. Per presentation. There is proposed wording from the corr. Loss tiger team that has been vetted.
156	Martin/Wang/Yi Aerospace	Page: 12 Para: 3.3.1.6.1	S	Comment: From: Table 3-IV. Space Service Volume (SSV) Received Minimum RF Signal Strength for GPS III Satellites over the Bandwidth Specified in 3.3.1.1 Final To: Is: Table 3-IV. Space Service Volume Minimum Received L5 Signal Power - GEO Based Antennas Rationale: CRM disposition: minimum power	PO Resolution: Accept Rationale: Conflicting comments; need to resolve at ICWG. Concurrence: Concur Rationale:	(05/13/09) Accept. Further clarification of the orbit is required to conform with current GPS space segment requirements. 10-sept-09: ICC included the reference to the GEO Based antennas

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				levels apply to GEO orbits.		
157	Martin/Wang/Yi Aerospace	Page: 14 Para: 3.3.1.7.3	S	Comment: From: The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service Volume is given by the Block III Space Contractor (TBD). The details are provided in TBD. Final To: Is: (Remove) Rationale: CRM disposition: section should be removed from this document.	PO Resolution: Reject Rationale: Currently this is a placeholder until the TBD has been resolved. Concurrence: Concur Rationale:	(05/13/09) Accept. Consistency in needed among the civil specs.
158	Martin/Wang/Yi Aerospace	Page: 14 Para: 3.3.1.9	S	Comment: From: The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4 dB. For Block IIIA the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Final To: Is: The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4 dB. For Block IIIA the angular range of ±13.8 degrees (plus pointing error) from nadir, L5 ellipticity shall be no worse than 2.4 dB. Pointing error is described in paragraph 3.2.8.1.1.3 of SS-SS-800. Rationale: Clairity	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) Accept
159	C. Chui Aerospace	Page: 10 Para: 3.3.1.2	S	Comment: (1) In the definition of correction loss, it states that the receiver “ideally performs lossless correlation”. If that is the case, why a 0.4 dB loss is allocated to the correlation receiver? (2) It appears that there are words missing or misplaced in the 4 lines that define Correlation Loss Suggested Change: The vehicle payload	PO Resolution: A/C Rationale: Language is currently being reworked. Concurrence: Concur Rationale:	05/01/09: Concur to defer the resolution to the next ICWG. 10-sept-09: ICC has placed the language per the corr. Loss tiger team. 10/01/09: This section was under rigourous review and the ultimately the consensus of the ICWG community was to revert to wording similar to the IS-GPS-800.

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				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 L5: 0.6 dB (With a 30.69 MHz BW Rcvr) 0.4 dB (With a 24 MHz BW Rcvr) From: 3.3.1.2 Correlation Loss. Correlation loss is defined as the difference between the SV power received in a 24 MHz bandwidth and the signal power recovered in an ideal correlation receiver. The worst case correlation loss occurs when the I5 carrier is modulated by the sum of the I5-code and the NAV data stream. For this case, the correlation loss apportionment shall be as follows: 1. SV modulation and filter imperfections: 0.6 dB 2. Ideal UE receiver waveform distortion (due to 24 MHz filter): 0.4 dB Final To: Correlation loss is defined as the difference between the SV power received in the		

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				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 using an exact replica of the waveform within an ideal sharp-cutoff filter bandwidth centered at L5, 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 filtering imperfections shall be 0.6 dB maximum. Rationale: Solve the problems stated in Comments (1) and (2)		
160	C. Chui Aerospace	Page: 12 Para: Table 3-III	C	Comment: The Block IIIA I5 and Q5 powers given in Table 3-III agree with the numbers given in Table 3-XI of SS-SS-800C numerically. However, the received powers listed in Table 3-XI of SS-SS-800C are “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 the next update of IS-GPS-705 would provide a detailed definition of the reference receiver, which is not provided in the current update. Suggested Change: Based on the latest input, it appears that the L5 signals will not be generated using a majority combining scheme. The need to use a reference receiver to define the received L5 signal powers requires a discussion and resolution by the L5 ICWG and Space Segment Team. From: Final To: Rationale: Make sure the -157 dBW given in IS-	PO Resolution: Reject Rationale: ICC POC is unaware of any agreements. Please provide details and resubmit. Concurrence: Concur Rationale:	04/28/09: Accept with comment. The reference for the minimum power specifications in SS-SS-800 and the IS-GPS-200 need to be consistent. 05/01/09: Accept the 04/28/09 PO resolution with the following condition: Provide the definition of the Reference Receiver and establish a clear relationship between the “effective” received powers of I5 and Q5 given in Table 3-XI of SS-SS-800C and the received powers at the output of the reference receiving antenna within the bandwidth described in Table 3-III. 20-aug-09: it was decided that the details of the "reference receiver" will not go in this icd, thus the comment must be rejected. Commenter concurs with resolution. This also inline with the 200 CRM resolution.ICC to continue to work with B. Chiu to collaborate with LM in attaining his needed info.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				GPS-705 is consistent with the intent and capability of SS-SS-800C.		
161	C. Chui Aerospace	Page: 12 Para: Table 3-IV	C	Comment: The I5 and Q5 powers given in Table 3-IV agree with the numbers given in Table 3-XII of SS-SS-800C numerically. However, the received powers listed in Table 3-XII of SS-SS-800C are "effective received signal powers" which are "referenced to a receiver whose correlation outputs are calibrated against an RF signal without combining loss". Suggested Change: "Suggested Change" stated in Comment No. 2 applies. From: Final To: Rationale: See Comment No. 6	PO Resolution: Reject Rationale: Need to specify comment #2 and #6. Concurrence: Concur Rationale:	04/28/09: Accept with comment. The reference for the minimum power specifications in SS-SS-800 and the IS-GPS-200 need to be consistent. 05/01/09: Accept the 04/28/09 PO resolution with the following condition: Provide the definition of the Reference Receiver and establish a clear relationship between the "effective" received powers of I5 and Q5 given in Table 3-XII of SS-SS-800C and the received powers at the output of the reference receiving antenna within the bandwidth described in Table 3-IV. 20-aug-09: it was decided that the details of the "reference receiver" will not go in this icd, thus the comment must be rejected. Commenter concurs with resolution. This also inline with the 200 CRM resolution.ICC to continue to work with B. Chiu to collaborate with LM in attaining his needed info.
162	C. Chui Aerospace	Page: General Para: General	C	Comment: To approve SS-SS-800C last August, an agreement was reached that the next IS-GPS-705 update would provide a bandpass characteristics of the antenna coupler used by the SVs for shaping the transmitted power spectral density of L5. Such bandpass specification is not included here. From: Final To: Suggested Change: Add the SV filter/bandpass specification that will incur no more than 0.6 dB loss due to waveform distortion introduced by the filtering. Rationale: User equipment developers need such specifications to optimize the RF designs and	PO Resolution: Accept Rationale: ICC POC is unaware of any agreements. Please provide details and resubmit. 1/05/10: 0.6 dB is now in the "correlation loss" section. Concurrence: Concur Rationale:	04/28/09: Defer. Commenter wanted flatness and phase linearity requirements added to interface document. Will forward to Space IPT for final resolution. 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

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				verify the TRD performance requirements.		and for pseudorange bias" 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. 20-aug-09: this is being worked by Rom and Bob Chiu, what kind of information is proprietary. this is an ongoing action. an AI has been assigned to Rom--AI #53. 10-sept-09: Action #53 is still open. comment is deferred. 10/01/09: Changed to reject. Not appropriate for an interface document. Will provide information Mr. Chui needs directly. Awaiting concurrance from C. Chui.
163	Rhonda Slattery Aerospace	Page: General Para: General	A	Comment: Why are there so many changes where the language shows up as French or Portugese under track changes? From: Final To: Suggested Change: Figure out what you're doing that's causing this and either stop doing it or accept changes that are irrelevent Rationale: Confusion among reviewers	PO Resolution: Reject Rationale: This is how the MS Word document was received from the previous ICC. Concurrence: Concur Rationale:	05/05/09: Accept with comment. The commenter should double-check that they are reviewing the latest draft version. Latest version does not appear to have foreign language issues on the ICC POC's computer. 13-Aug-09: ICC has confirmed this issue is present with this document as well as others he has worked on. ICC will, however, will reject updating the document since we will place it in DOORS after this revision.
164	Rhonda Slattery Aerospace	Page: Para: Fig 3-1	S	Comment: Figure should be updated to include either GPS III or IIIA SVs, with future left in for SVs not defined in the ICD From: Final To: Suggested Change: Rationale: If the SV is defined in this update of the ICD then it is not future, it deserves it's own block	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	25-aug-09\:ICC need to update doc. 10-sept-09: ICC updated figure to include Block III reference and future SVs
165	Rhonda Slattery	Page:	S	Comment: What is the purpose of this new IIIA	PO Resolution: Reject	05/05/09: Defer. Need to verify that the

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
	Aerospace	Para: 3.3.1.6		paragraph? You have specific requirements for power. What does it add to say it's monotonically decreasing? From: 3.3.1.6 Signal Power Levels. The SV shall provide I5 and Q5 navigation signal strength at end-of-life (EOL), worst-case in order to meet the minimum levels specified in Table 3-III. The minimum received power is measured at the output of a 3 dBi linearly polarized user receiving antenna (located near ground) at worst normal orientation, when the SV is above a 5-degree elevation angle. The received signal levels are observed within the in-band allocation defined in paragraph 3.3.1.1. Additional related data is provided as supporting material in paragraph 6.3.1. Final To: Suggested Change: Delete or justify Rationale: Deletion of less-useful data	Rationale: The sentence lets the user know there will be no antenna nulls between the specified angles. Concurrence: Concur Rationale:	ICWG stakeholders need to know that there will be no antenna nulls between the specified angles. Concurrence: I'm willing to live with it, but having a specified power out to 26 degrees says the same thing, so it is duplicative. 20-aug-09: commenter concurs with resolution.
166	Rhonda Slattery Aerospace	Page: Para: 3.3.1.7.1-2	C	Comment: The values of these parameters are updated in SS-SS-800 to a tighter value. From: The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service Volume is given by the Block III Space Contractor (TBD). The details are provided in TBD. Final To: Suggested Change: Add SS-SS-800 value for IIIA. Rationale: Consistent baseline and accurate user knowledge.	PO Resolution: Reject Rationale: These requirements do not exist in the SS-SS-800. Concurrence: Rationale: The requirements do exist in both the SS and CS specifications. They are the requirements for the errors between two signals.	If you don't understand the comment, please call the commenter for clarification before rejecting. 20-aug-09: PSICA working group to take on action. AI #8 from the list. 10-sept-09: this item is still under review. Item is deferred until ICWG. 10/01/09: ICWG skateholders decided to change the PO resolution to reject. 705 is a requirements document for IIF as well as III.
167	Rhonda Slattery Aerospace	Page: Para: 3.3.1.7.3	S	Comment: Why is the space contractor for IIIA TBD? Suggested Change: Remove 1st TBD or clarify where it applies	PO Resolution: Accept Rationale:	10-sept-09: updated document and got rid of 1st TBD.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service Volume is given by the Block III Space Contractor (TBD). The details are provided in TBD. Final To: The group delay differential between the radiated L5 signal with respect to the Earth Coverage signal for users of the Space Service are provided in TBD. Rationale: The Space contractor is Lockheed, not TBD	Concurrence: Concur Rationale:	
168	Rhonda Slattery Aerospace	Page: Para: 3.3.1.9	S	Comment: Why is IIIA different from IIF? Are you leaving pointing error in IIF but not IIIA? In IS-200, all were changed to 13.8. See comments to 200. Suggested Change: See comments to 200 and make this consistent one way or the other. From: 3.3.1.9 Signal Polarization. The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±14.3 degrees from boresight, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Final To: The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±13.8 degrees from nadir, L5 ellipticity shall be no worse than 2.4 dB. Nominal values are listed in section 6.3.3. Rationale: Clarity of requirement and consistency across the baseline.	PO Resolution: Accept Rationale: IIF is under contract for the original language. Concurrence: Concur Rationale:	Don't understand response. IIF is on contract for IS-GPS-200 language also, but that was changed. 10-sept-09: ICC followed 200 resolution. See also comment #72 from this CRM.
169	Rhonda Slattery Aerospace	Page: Para: 6.2.2.2.6	S	Comment: Why not reference 200 like the previous paragraphs? Suggested Change: Either add reference or copy data from 200. See also comments there before copying.	PO Resolution: Accept Rationale: as administrative Concurrence: Concur	(05/05/09) 10-sept-09: ICC updated document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				From: The block of operational SVs will be termed "Block III" SVs. The Block III operational SVs will broadcast the L5 signal Final To: See paragraph 6.2.3.2.6 of IS-GPS-200. The III operational SVs do broadcast the L5 signal. Rationale: Consistent definitions across ICDs	Rationale:	
170	Rhonda Slattery Aerospace	Page: Para: 6.3.2	S	Comment: Need a IIIA version of this Add a IIIA version of this or TBD placeholder From: N/A Final To: A plot of a typical GPS Block III phase noise spectral density will be added when available. Rationale: Consistent vision across all SVs	PO Resolution: Accept Rationale: GPSIII hardware hasn't been built yet. Concurrence: Concur Rationale:	Understand your response, but you have added TBDs elsewhere for information that doesn't exist yet. Why not add them throughout? Or delete them elsewhere? 10-sept-09: ICC added a sentence to show that a plot will be added later.
171	Rhonda Slattery Aerospace	Page: Para: 6.3.3	S	Comment: Where is the GPS III version of this. Should it go out to space service volume angles? Suggested Change: Add IIIA version or TBD placeholder From: N/A Final To: A table of a typical GPS Block III ellipticity will be added when available. Rationale: Consistency between specification and ICD and complete definition of the Block III requirements.	PO Resolution: Accept Rationale: GPSIII hardware hasn't been built yet. Concurrence: Concur Rationale:	05/05/09: Defer. Will need to wait Understand your response, but you have added TBDs elsewhere for information that doesn't exist yet. Why not add them throughout? Or delete them elsewhere? 10-sept-0: a sentence has been added to show that a table will be added later.
172	Rhonda Slattery Aerospace	Page: Para: 6.3.4 and Section 3	C	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 From: Final To: Suggested Change: Add 8 more PRNs to	PO Resolution: Defer Rationale: Need to determine where the 40 broadcast PRNs requirement came from. Concurrence: 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. 25-aug-09: refer to AI #16 for resolution.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Section 3 Rationale: Current definition of UDRA does not cover all the IIIA and OCX errors.		
173	Rhonda Slattery Aerospace	Page: Para: 20.3.3.1.1.4 and 20.3.3.2.4	C	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)? Suggested Change: Clarify what errors are included in clock and ephemeris UDRA to show users that all errors are covered as described in the 800 specifications. From: N/A Final To: Text in section 20.3.3.2.4: Clock-related URA (URAoc) accounts for signal-in-space contributions to user range error that include, but are not limited to, the following: the net effect of clock parameter and code phase error in the transmitted signal for single-frequency users who correct the code phase as described in Section 20.3.3.3.1.1.1, as well as the net effect of clock parameter, code phase, and intersignal correction error for dual-frequency L1/L2 and L1/L5 users who correct for group delay and ionospheric effects as described in Section 20.3.3.3.1.2.2. Rationale: Complete update for IIIA and OCX	PO Resolution: Accept Rationale: Will forward to the space IPT for resolution. 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	25-Aug-09: 200 POC to provide verbiage consistent with the 200. 10-sept-09: ICC has reviewed the 200 and did not see any changes associated with this comment. ICC will keep this as a defer and ensure this will be discussed at the ICWG. 10/01/09: Changed to accept. Included definitions in the 20.3.3.2.4 section. 10/14/09: Updated this Comment's "To" language to reflect the true nature of the ICWG approved change.
174	Rhonda Slattery Aerospace	Page: Para: 20.3.3.5.1.1	C	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. Suggested Change: 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. From: N/A	PO Resolution: Accept Rationale: The commenter is encouraged to present the coordinate transformations at the Public ICWG. Concurrence: Concur Rationale:	05/05/09: Accept with comment. Will incorporate suggested change upon finalization of technical note 32 conventions. Concurrence: Non-concur. 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. 20-aug-09: 200 ICC to provide a note that the tech note 21 will change. 10-sept-09: ICC has placed the 200 verbiage in this document.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Final To: The equations described in this section are based on (International Earth Rotation and Reference Systems Service) IERS Technical Note 21. However, these equations will be updated to a new Technical Note in the next revision. Rationale:		
175	Chris Sedgwick 2SOPS	Page: 5 Para: Figure 3-1	S	Comment: Remove references to Block II satellites in the figure and any other reference in the IS. Last Blk II (SVN 15) disposed 6 Apr 07. From: 6.2.2.2 Operational SVs. The operational satellites are designated Block II, Block IIA... 6.2.2.2.1 Block II SVs. See paragraph 6.2.2.2.1 of ISGPS-200. There satellites do not broadcast the L5 signal. Final To: 6.2.2.2 Operational SVs. The operational satellites are designated Block II, Block IIA… N/A Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	The change will be made upon confirmation that all Block II satellites are in disposal orbits without any chance of becoming reactivated. 50 SW Concur, 1 May 09. 10-sept-09: removed all references to Block II SVs.
176	john buckley SE&I	Page: Para: 3.3.1.6.1	S	Comment: added "normal" to text to match 200 document. From: " " Final To: "normal" Rationale: document synchronization.	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	10/14/09: this change was incorporated during the Commentor TIM review on 7/30/09.
177	john buckley SE&I	Page: Para: 3.3.1.6	S	Comment: see 200 for the potential change in section 3.3.1.6 with respect to the clarification to change "power gain" to "antenna gain." there is an open action item 18 From: off-axis power gain Final To: off-axis relative power (referenced to meak transmitted power)	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	10/14/09: this change was incorporated during the Commentor TIM review on 8/27/09.

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale:		
178	john buckley SE&I	Page: Para:	S	Comment: The definition the NAV message needs to be reviwed throughout the document. In some instances, the "NAV" reference should be "CNAV" since we are dealing with the L5 signal. An Action Item from the 1-Oct-09 ICWG was also generated. From: NAV Final To: CNAV Rationale:	PO Resolution: Defer Rationale: Concurrence: Concur Rationale:	
179	john buckley SE&I	Page: Para:	A	Comment: Various formatting changes will take place to properly place this document into DOORS. From: Final To: Rationale:	PO Resolution: Defer Rationale: Concurrence: Concur Rationale:	
180	john buckley SE&I	Page: Para: 3.1	A	Comment: added verbiage to match the ICWG oonsensus. This supports GPS III Proposals From: "planned future Block III SVs" Final To: "subsequent Blocks of SVs" Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
181	john buckley SE&I	Page: Para: 20.3.3.1.1.4 and 20.3.3.2.4	S	Comment: After 10/01/09 ICWG discussion, the stakeholders agreed that a statement for the user to use the "upper Bound of the URA value should be written in document. From: N/A Final To: Integrity properties of the URA are specified with respect to the upper bound values	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				of the URA index (see 20.3.3.1.1) Rationale:		
182	john buckley SE&I	Page: Para: 6.2.2.2.2 - 6.2.2.2.6	A	Comment: Updated the section #'ing for the IS-GPS-200 document. From: Final To: Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
183	john buckley SE&I	Page: Para: 6.3.1	A	Comment: document was updated on 3/6/08 and has been ICWG approved From: "due to" Final To: "resultant of" Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
184	john buckley SE&I	Page: Para: 20.3.3.1.1 and 20.3.3.1.3	A	Comment: verfied there was a previously ICWG approved change in the document from 9/24/08 From: N/A Final To: (Block IIF) or SV (Block IIIA) Rationale:	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	
185	john buckley SE&I	Page: Para: 20.3.3.2.1	S	Comment: from ICWG discussion, it was decided to change the "shall" stamement in the first paragraph to read as a staement of current as-built configuration. From: The clock parameters in a data set shall be valid during the interval of time in which they are transmitted and shall remain valid for an additional period of time after transmission of the next data set has started. Final To: The parameters are applicable during the	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				time in which they are transmitted. Beyond that time they are still applicable, however, the most recent data set should be used since the accuracy degrades over time. Rationale:		
186	john buckley SE&I	Page: Para: 3.3.4	S	Comment: ICC has confirmed that there is no shall statement (i.e. requirement) for the information in the 2nd paragraph starting with " The L5 CNAV data contains the requisite data for relating GPS time…" This comment was brought up (by GPC) and rejected earlier(see comment #73 of this CRM), however, ICC believes that it should be revisited. need to synch up with the IS-200 From: “The L5 CNAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval will be such that it relates GPS time to UTC (USNO) to within 90.0 nanoseconds (one sigma).” Final To: “The L5 CNAV 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 to UTC (USNO) to within 90.0 nanoseconds (one sigma). Rationale:	PO Resolution: Defer Rationale: Concurrence: Concur Rationale:	(05/21/09): 8/6/09: ICC to take action to determine if this requirement is in the SYS-800 doc. 13-aug-09: refer to AI #26 for resolution. 10-sept-09: ICC has confirmed that AI#26 is still open, thus the comment must be deferred. 10/01/09: Changed to reject. 1.5 ns is only required once OCX comes on-line. Concurred to by Chris H. Awaiting concurrence from GPC.
186	john buckley SE&I	Page: 15 Para: 3.3.1.7.1	S	Comment: Updated documentat the 10/01/09 ICWG real-time to accomoate for the 95% probablilty upadate from the 2 sigma From: 3.3.1.7.1 Group Delay Uncertainty. The effective uncertainty of the group delays shall not exceed 3.0 nanoseconds (two sigma). Final To: 3.3.1.7.1 Group Delay Uncertainty. The effective uncertainty of the group delays shall not exceed 3.0 nanoseconds (95% probability).	PO Resolution: Accept Rationale: Concurrence: Concur Rationale:	

CID	Originator/Org.	Page/Para	Importance	Comment	PO Resolution & Concurrence	Notes
				Rationale:		
187	v. gopal SE&I	Page: 98 Para: 20.3.3.3.1.2.3	S	Comment: Remove the reference to autonav. From: Final To: Rationale: Autonav is a capability that is not being utlized by the GPSW. Furthermore, there should be no need to describe Autonav in SIS interface	PO Resolution: Defer Rationale: Concurrence: Concur Rationale:	