Section	WAS	IS	Rationale
Cover Page and Table of Contents	Formatting for 4 Sept 08 version.	Updated formatting for 19 Oct 09 version.	Accuracy.
1.3	Science Applications International Corporation has been designated the Interface Control Contractor (ICC) and is responsible for the basic preparation, obtaining approval, distribution, retention, and Interface Control Working Group (ICWG) coordination of this IS in accordance with GP-03-001A.	The Interface Control Contractor (ICC), designated by the government, is responsible for the basic preparation, obtaining approval, distribution, retention, and Interface Control Working Group (ICWG) coordination of this IS in accordance with GP-03-001A.	Consistency with other public interface documents (IS-GPS-200 and IS-GPS-705)
2.1	NA	*Formatting Changes:* -Left align "None" -Add parantheses to document dates -Lower case "c" on "Current"	ICC Discretion
3.1	L1Cp	$L1C_p$	Accuracy and Consistency.
3.2.1.1	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 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.	ICC Discretion for formatting.
3.2.1.1	1.02299999954 MHz	1.02299999954326 MHz	SV clock rate updated to reflect all significant digits
3.2.1.1	within 30.69 MHz	within a 30.69 MHz	Readability
3.2.1.2	The transmitted signal shall be Right-Hand Circularly Polarized (RHCP). For an angular range of ±14.3 degrees from boresight, the L1 ellipticity shall be no worse than 1.8 dB.	The transmitted signal shall be Right-Hand Circularly Polarized (RHCP). For an angular range of ±13.8 degrees from nadir, the L1 ellipticity shall be no worse than 1.8 dB.	Accuracy.
3.2.1.4	In-band spurious transmissions are defined as transmissions within the band which are not expressly components of the L1 waveforms.	In-band spurious transmissions, from the SV, shall be at or below -40 dBc over the band specified in 3.2.1.1. In-band spurious transmissions are defined as transmissions within the band specified in 3.2.1.1 which are not expressly components of the L1 signal.	Accuracy and Consistency.
3.2.1.5	The correlation loss apportionment due to SV modulation and filter imperfections shall be 0.2 dB maximum.	The correlation loss apportionment due to SV modulation and filtering imperfections shall be 0.2 dB maximum.	Consistency with other public interface documents (IS-GPS-200 and IS-GPS-705)

Section	WAS	IS	Rationale
3.2.1.6	3.2.1.6 Signal Component Phase Relationship (TBD) [Note: one of the following four alternative paragraphs will be selected once the GPS Block IIIA design is defined. Each of these alternatives defines a different phase relationship information between the two L1C components, as well as the relative phase relationship between L1CP and L1 C/A signal (reference IS-GPS-200). These phase relationships will be fixed and the phase relationship will be finalized once the Block IIIA SV design is selected]	3.2.1.6 Signal Component Phasing 3.2.1.6.1 Phase Relationship Carriers of the two L1C components defined in Section 3.1 shall be in the same phase within ±100 milliradians. Carriers of the two L1C components shall be in the same phase (within ±100 milliradians) as the P(Y)-code carrier. See IS-GPS-200 for phase relationships to other L1 signals. 3.2.1.6.2 Phase Continuity while a satellite is broadcasting standard L1CP code and standard L1CD code signals with data which indicates L1C signal health is OK, the CS/SS will not command an operation causing an intentional phase discontinuity. This does not apply to phase discontinuities caused by signal modulation, and phase discontinuities are subject to the requirements of 3.2.1.6.1.	Most precision GPS positioning, velocity determination and timing systems as well as applications using carrier phase require phase continuity. Modified by Karl Kovach and Tom Nagle.
	[Alternative 1. Carriers of the two L1C components defined in Section 3.1 shall be in phase quadrature within ±100 milliradians. The L1CP signal carrier shall lag the L1CD carrier by 90 degrees, so that L1CP carrier phase is the same (within ±100 milliradians) as C/A-code carrier phase, and L1CD carrier phase is the same (within ±100 milliradians) as P(Y)-code carrier phase. Referring to the phase of the L1CD carrier when L1CDi(t) equals zero as the "zero phase angle", the L1CD and L1CP values shall control the respective signal phases in the following manner: when L1CDi(t) equals one, a 180-degree phase reversal of the L1CD-carrier occurs; when L1CPi(t) equals one, the L1CP carrier advances 90 degrees; when the L1CPi(t) equals zero, the L1CP carrier shall be retarded 90 degrees (such that when L1CPi(t) changes state, a 180-degree phase reversal of the L1CP carrier occurs).]		

Section	WAS	IS	Rationale
	[Alternative 2. Carriers of the two L1C components defined in Section 3.1 shall be in phase quadrature within ±100 milliradians. The L1CD signal carrier shall lag the L1CP carrier by 90 degrees, so that L1CD carrier phase is the same (within ±100 milliradians) as C/A-code carrier phase, and L1CP carrier phase is the same (within ±100 milliradians) as P(Y)-code carrier phase. Referring to the phase of the L1CP carrier when L1CPi(t) equals zero as the "zero phase angle", the L1CD and L1CP values shall control the respective signal phases in the following manner: when L1CPi(t) equals one, a 180-degree phase reversal of the L1CP-carrier occurs; when L1CDi(t) equals one, the L1CD carrier advances 90 degrees; when the L1CDi(t) equals zero, the L1CD carrier shall be retarded 90 degrees (such that when L1CDi(t) changes state, a 180-degree phase reversal of the L1CD carrier occurs).]		
	[Alternative 3. Carriers of the two L1C components defined in Section 3.1 shall be in the same phase within ±100 milliradians, with the same carrier phase (within ±100 milliradians) as C/A-code carrier phase. Referring to the phase of the L1CP and L1CD carrier when L1CPi(t) equals zero as the "zero phase angle", the L1CD and L1CP values shall control the respective signal phases in the following manner: when L1CPi(t) Å L1CDi(t) equals one (where Å indicates exclusive or) a 180-degree phase reversal of the L1CP and L1CD carrier occurs; when L1CPi(t) Å L1CDi(t) equals zero the L1CP and L1CD carrier phase is not changed.]		

Section	WAS	IS	Rationale
	[Alternative 4. Carriers of the two L1C components defined in Section 3.1 shall be in the same phase within ±100 milliradians, with the same carrier phase (within ±100 milliradians) of P(Y)-code carrier phase. Referring to the phase of the L1CP and L1CD carrier when L1CPi(t) equals zero as the "zero phase angle", the L1CD and L1CP values shall control the respective signal phases in the following manner: when L1CPi(t) Å L1CDi(t) equals one (where Å indicates exclusive or) a 180-degree phase reversal of the L1CP and L1CD carrier occurs; when L1CPi(t) Å L1CDi(t) equals zero the L1CP and L1CD carrier phase is not changed..]		
3.2.1.7.1	All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard. The L1C signal shall be clocked coherently with the P-code signal transitions. On the L1 channel, the chip transitions of the two modulating signals (i.e., L1CD/L1CP) shall be such that the average time difference between the transitions shall not exceed 10 nanoseconds 95% of the time for signal measurement periods of between 20 microseconds and 1 minute	All transmitted signals for a particular SV shall be coherently derived from the same on-board frequency standard. On the L1 carrier, the chip transitions of the two modulating signals, L1Cd and L1Cp, shall be such that the average time difference between them, and between each and the transitions of L1P(Y), do not exceed 10 nanoseconds. The variable time difference shall not exceed 1 nanosecond (95% probability), when including consideration of the temperature and antenna effect changes during a vehicle orbital revolution. Corrections for the bias components of the time difference are provided to the US in the CNAV-2 message using parameters designated as ISCs (reference paragraph 3.5.3.9.1).	The L1CP-code and the L1CD-code can be synchronized with the same flip-flop register/registers connecting to the same clock driver line. With today technology, less than 10 ns (two-sigma) is readily achievable. Modified by Soon Yi.
3.2.1.7.2	The duration of the “+1 polarity” portions of the BOC (1, 1) code shall equal the duration of the “-1 polarity” portions of the BOC (1, 1) code within 1 nanosecond as measured at the zero crossing point. The duration of the “+1 polarity” portions of the BOC (6, 1) code shall equal the duration of the “-1 polarity” portions of the BOC (6, 1) code within 1 nanosecond as measured at the zero crossing point.	The duration of the “+1 polarity” portions of the BOC (1, 1) code shall equal the duration of the “-1 polarity” portions of the BOC (1, 1) code within 5 nanoseconds as measured at the zero crossing point. The duration of the “+1 polarity” portions of the BOC (6, 1) code shall equal the duration of the “-1 polarity” portions of the BOC (6, 1) code within 5 nanoseconds as measured at the zero crossing point.	LM design driving.

Section	WAS	IS	Rationale
3.2.1.8.1	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.	The effective uncertainty of the group delay shall not exceed 1.5 nanoseconds (95% probability).	LM design driving.
3.2.1.8.2	The reference for group delay differential for GPS signals is the L1 P(Y) signal. The group delay differential between the radiated signals (i.e. L1 P(Y) and L1CD; L1 P(Y) and L1CP) 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 configuration, 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. Corrections for the bias components of the group delay differential are provided to users in the navigation message.	Not applicable. See Sections 3.2.1.7.1 (Signal Coherence) and 3.5.3.9.1 (Inter-Signal Group Delay Differential Correction).	NA for IS-GPS-800 since it only covers one signal, L1C.
3.2.1.8.3	NA	3.2.1.8.3 Space Service Volume Group Delay Differential Not applicable. See Sections 3.2.1.7.1 (Signal Coherence) and 3.5.3.9.1 (Inter-Signal Group Delay Differential Correction).	NA for IS-GPS-800 since it only covers one signal, L1C.

Section	WAS	IS	Rationale
3.2.1.9	The SV shall provide an L1C signal strength at End-of-Life (EOL), worst-case, in order to meet the minimum effective received signal levels specified in Table 3.2-1. For terrestrial user, the minimum effective received signal 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 elevation angle is higher than 5-degree and assuming 0.5 dB atmospheric loss. For orbital user, 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 23.5 degrees off nadir and using 0 dB atmospheric loss. The received signal levels are observed within the in-band allocation defined in Para. 3.2.1.1. The effective received signal power is referenced to a receiver whose correlation outputs are calibrated against an RF signal without combining loss.	The SV shall provide an L1C signal strength at End-of-Life (EOL), worst-case, in order to meet the minimum effective received signal levels specified in Table 3.2-1. Any combining operation done by the SV and associated loss is compensated by an increase in SV transmitted power and thus transparent to the user segment. For terrestrial users, the minimum effective received signal 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 elevation angle is higher than 5 degrees and assuming 0.5 dB atmospheric loss. For orbital users, the minimum effective received signal power is measured at the output of a 0 dBi ideal right-hand circularly polarized (i.e. 0 dB axial ratio) user receiving antenna (in geosynchronous orbit) at 23.5 degrees off nadir and using 0 dB atmospheric loss. The received signal levels are observed within the in-band allocation defined in Para. 3.2.1.1	Clarity, consistenvy, and grammar.
3.2.1.9	The SV shall provide signals with the following characteristic: the off-axis power gain shall not decrease by more than 2 dB from the Edge-of-Earth (EOE) to nadir, nor more than 10 dB from EOE to 20 degrees off nadir, and no more than 18 dB from EOE to 23.5 degrees off nadir; the power drop off between EOE and ±23.5 degrees off nadir shall be in a monotonically decreasing fashion. The SV attitude error shall be less than 0.5 degree.	The SV shall provide signals with the following characteristic: the 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, nor more than 10 dB from EOE to 20 degrees off nadir, and no more than 19.5 dB from EOE to 23.5 degrees off nadir; the power drop off between EOE and ±23.5 degrees off nadir shall be in a monotonically decreasing fashion.	Clarity.
3.2.1.9	Higher received signal levels than those shown in Table 3.2-1 can be caused by such factors as SV attitude errors, mechanical antenna alignment errors, temperature-induced transmitter power variations, voltage variations and power amplifier variations, and due to variability in link atmospheric path loss.	Higher received signal levels than those shown in Table 3.2-1 can be caused by such factors as SV temperature-induced transmitter power variations, voltage variations and power amplifier variations, and due to variability in link atmospheric path loss.	Accuracy.
3.2.1.9 Table 3.2-1	NA	Add note below to table and add asterik to "orbital" values in table. *Over 99.5% of the solid angle inside a cone with a 23.5 degree half-angle with its apex at the SV and measured from 0 degrees at the center of the Earth.	Clarity.
3.2.2.1.1	for t = 0 to 10222	for t = 0 to 10222,	Grammar
3.2.2.1.1	the seven bit values	composed of seven bit values	Grammar

Section	WAS	IS	Rationale
3.2.2.1.2	1800-bits	1800-bit	Grammar
3.2.2.1.2 Table 3.2-3 (sheets 1-3)	mi,j	mij	Accuracy
3.2.2.1.2 Table 3.2-3 Figure 3.2-2	Table 3.2-3 Notes: The polynomial coefficient is given as m11, … , m1.	Table 3.2-3 Notes: The polynomial coefficient is given as 1, m10, … , m1, 1. Figure 3.2-2: Add note: "For S1 polynomial, m11 is equal to 1"	Clarify S1 polynomial equations. Account for 12 bits in the m terms.
3.2.2.2	The non-standard codes, used to protect the user from a malfunction in the SV,	The non-standard codes, used to protect the user from tracking an anomalous navigation signal,	Accuracy
3.2.3	NA	Add "the" before "L1C"	Grammar
3.2.3.1	The message modulated onto the L1CD signal consists of subframe, frame, and superframe. Subframe and frame are shown in Figure 3.2-3. A frame is divided into three subframes of varying length. Multiple frames (i.e. superframe) are required to broadcast a complete data message set to users.	The message modulated onto the L1CD signal consists of subframes and frames, as shown in Figure 3.2-3. A frame is divided into three subframes of varying length. Multiple frames are required to broadcast a complete data message set to users.	Clarity.
3.2.3.1	corresponds to the time epoch	corresponds to the SV time epoch	Clarity.
3.2.3.2	using a 8-stage	using an 8-stage	Grammar
3.2.3.2	The UE received 52	The 52 UE received	Grammar
3.2.3.3	NA	Add period following “otherwise” in symbol definitions for first equation	Grammar
3.2.3.3	NA	Add period following polynomial definitions	Grammar
3.2.3.3	NA	End line with m(X) equation with a period	Grammar
3.2.3.3	NA	Remove 1), 2), 3), 4), 5), a), b) for clarity.	Grammar
3.2.3.5	After reading out the last (38th) symbol in Column 1, Column 2 symbols are read out from top to bottom and this process continues until the last symbol (38th) of the last column (46th) is read out.	After reading out the last symbol of the 38th row in Column 1, Column 2 symbols are read out from top to bottom and this process continues until the last symbol in the 38th row of the last column (46th) is read out.	Readability
3.2.3.5	NA	Delete "The above described block interleaver…less than or equal to z."	First paragraph and figure 3.2-6 already understandable.
3.3	NA	Add “and” before “L1C”	Readability
3.3	NA	Add “the” before “L1Cp”	Readability
3.3	NA	Add “the” before “L1Cd”	Readability
3.3	NA	Make format consistent throughout document (i.e. use either BOC (x,y) or BOC(x,y) everywhere)	Readability
3.3	NA	Add “they” before “are” and add “the” before “bits” and add “the” before “L1Cd”	Readability

Section	WAS	IS	Rationale
3.3	NA	Insert “degrees” after 180	Readability
3.3	NA	Insert “the” before “L1Cp” and "signal" after.	Readability
3.3	NA	Insert “for” before “L1Cp”	Readability
3.3	NA	Insert “they” before “are aligned” and insert “the” before “bits”	Readability
3.4.1	NA	Insert “with” before “zero time-point”	Readability
3.4.1	NA	Delete second “shall” and change “relate” to “relates”	Grammar
3.4.1	NA	Delete comma between “weeks” and “thereafter”	Grammar
3.4.2	NA	Remove a., b., c., d. for clarity.	Grammar
3.5.2	NA	Insert “word” after “9-bit data”	Grammar
3.5.2 Figure 3.5-1	NA	Add "Integrity Status Flag" to Bit 566.	Need to define ISF for IS-GPS-800.
3.5.2 Figure 3.5-2	Bits 177-228 designated reserved	Bits 177-228 designated for ISCs	Designate bits for ISCs.
3.5.2 Figure 3.5-4	T_oa	t_oa	Correction
3.5.2 Figure 3.5-5	T_oa	t_oa	Correction
3.5.3	NA	Delete extra space following semi-colon	Readability.
3.5.3	Any change in the subframe 2 ephemeris and clock data will…	Any change in the subframe 2 ephemeris and clock data shall…	Accuracy
3.5.3	The CS will…	The SV shall…	Accuracy
3.5.3	NA	The eight LSBs of toe for each data set shall be different from the eight LSBs of toe transmitted during the previous six hours by the SV.	Accuracy.
3.5.3	The general format of clock data of subframe 2 consists of data fields for SV clock correction coefficients. The clock parameters of subframe 2 describe the SV time scale during the period of validity. 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.	The general format of clock data of in subframe 2 consists of data fields for SV clock correction coefficients. The clock parameters of subframe 2 describe the SV time scale during the period of validity. The parameters are applicable during the 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.	Clarify verbiage: "additional period of time".
3.5.3.4	NA	Add period to end of line of second paragraph.	Grammar
3.5.3.4	subframe 3 pages 3 and 4.	subframe 3, pages 3 and 4.	Readability
3.5.3.6	For each ephemeris parameter contained in subframe 2, the number of bits, the scale factor of the LSB (which is the last bit received), the range, and the units are as specified in Table 3.5-1.	For each ephemeris parameter contained in subframe 2, the bit lengths, scale factors, ranges, and units are given in Table 3.5-1.	Consistency.

Section	WAS	IS	Rationale
3.5.3.6.1	parameters are produced by the CS via a least squares	parameters are produced by the SV via a least squares	Accuracy.
3.5.3.7	The number of bits, the scale factor of the LSB (which is the last bit received), the range, and the units of clock correction parameters shall be as specified in Table 3.5-1.	The bit lengths, scale factors, ranges, and units of the clock correction parameters shall be as specified in Table 3.5-1.	Consistency.
3.5.3.7.1	the single-frequency L1 user and the dual-frequency users	the single-frequency (L1) user and the dual-frequency (L1/L2 and L1/L5) user	Paragraph incorrectly limited to only L1/L2.
3.5.3.8	NA	Add paragraph: 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 3.5.3.9.1, 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 3.5.3.9.2 and Section 3.5.3.9.3.	Recommend that the IS make clear whether the URA terms account for errors in the inter-signal group delay differential corrections.
3.5.3.8		Add period after "Index".	Grammar
3.5.3.9	the bit length	the bit lengths	Grammar
3.5.3.9.1	NA	Change period at end of "ISCL1CD = tL1P(Y) - tL1CD" to a comma and delete comma following "where" on next line. Delete "is" following parentheses. Add: For the preceding equations, the following definitions apply:	Readability.
3.5.3.9.2	NA	Delete colons, add period to end of equations Add: For the preceding equations, the following definitions apply: Line up equal signs for better readability. Delete "where" in two places.	Readability.
3.5.3.9.3	NA	Delete colons, add period to end of equations Add: "For the preceding equations, the following definitions apply:" Line up equal signs for better readability. Delete "where" in two places.	Readability.

Section	WAS	IS	Rationale
3.5.3.10	NA	Add paragraph: 3.5.3.10 Integrity Assurance The L1C 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'.	SS-SYS-800 states that the system is to provide an integrity assurance URA with an integrity status flag. There is no mention of an integrity assured URA in this section nor is there mention of an integrity status flag. Since the L1C signal is expected to appear on GPS III satellites, the IS should begin to address these issues now.
3.5.3.10	3.5.3.10 Integrity Status Flag (ISF) Bit 566 of subframe 2 shall be the Integrity Status Flag (ISF). A "0" in bit position 566 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 current broadcast URA value, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10^-5 per hour. A "1" in bit position 566 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 current broadcast URA value, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10^-8 per hour.	3.5.3.10.1 Integrity Status Flag (ISF) Bit 566 of subframe 2 shall be the Integrity Status Flag (ISF). A "0" in bit position 566 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 index, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10^-5 per hour. A "1" in bit position 566 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 index, for more than 5.2 seconds, without an accompanying alert, is less than 1 x 10^-8 per hour. The probabilities associated with the nominal and lower bound values of the current broadcast URA are not defined. In this context, an "alert" is defined as any indication or characteristic in the conveying signal, 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.	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.
3.5.4	Every subframe 3 pages begin with an 8-bit PRN number of the transmitting SV with a range of 0 (00000000) to 255 (11111111). Each subframe 3 page is identified by a 6-bit page number provided in bits 9 through 14 of subframe 3.	Every subframe 3 page begins with an 8-bit PRN number of the transmitting SV with a range of 0 (00000000) to 255 (11111111). Each subframe 3 page is identified by a 6-bit page number provided in bits 9 through 14.	Readability.
3.5.4.1	Subframe 3, Page 1, Figure 3.5-2, contains the UTC and ionospheric correction parameters. The contents of subframe 3, Page 1 are defined below, followed by material pertinent to the use of the data.	As depicted in Figure 3.5-2, subframe 3, page 1 contains the UTC and ionospheric correction parameters. The contents of subframe 3, page 1 are defined below, followed by material pertinent to the use of the data.	Readability.

Section	WAS	IS	Rationale
3.5.4.1.1	NA	Fix capitalization errors in "Page" and "Subframe".	Readability.
3.5.4.1.1.1		DtUTC = DtLS + A0-n + A1-n (tE – tot + 604800 (WN – WNot)) + A2-n (tE – tot + 604800 (WN – WNot))2	Changed subscripts to match the rest of the document
3.5.4.1.2	subframe 3 page 1	subframe 3, page 1	Readability.
3.5.4.2	Subframe 3 page 2, Figure 3.5-3,	Subframe 3, page 2, as depicted in Figure 3.5-3,	Readability.
3.5.4.2.1	GPS like	GPS-like	Grammar
3.5.4.2.1	The number of bits, the scales factor (LSB), the range, and the units of the GGTO parameters are given in Table 3.5-4.	The bit lengths, scale factors, ranges, and units of the GGTO parameters are given in Table 3.5-4.	Consistency.
3.5.4.2.2	Subframe 3 page 2 shall contain earth orientation parameters. The EOP message provides users with parameters to construct the ECEF and ECI coordinate transformation (a simple transformation method, that does not contain for EOP, is defined in Section 20.3.3.4.3.3.2 of IS-GPS-200). The number of bits, scale factors (LSBs), the range, and the units of all EOP fields of subframe 3, page 2 are given in Table 3.5-5.	Subframe 3, page 2 shall contain earth orientation parameters. The EOP message provides users with parameters to construct the ECEF and ECI coordinate transformation (a simple transformation method, that does not account for EOP, is defined in Section 20.3.3.4.3.3.2 of IS-GPS-200). The bit lengths, scale factors, ranges, and units of all EOP fields of subframe 3, page 2 are given in Table 3.5-5.	Readability and Consistency.
3.5.4.3	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.1	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.3	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.4	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.5	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.5	The number of bits, the scale factor (LSB), the range, and the units of the reduced almanac parameters are given in Table 3.5-6.	The bit lengths, scale factors, ranges, and units of the reduced almanac parameters are given in Table 3.5-6.	Consistency.
3.5.4.3.5.1.1	in subframe 2	of the subframe 3	Readability.
3.5.4.3.6	NA	Add comma after "subframe 3"	Consistency.
3.5.4.3.6	The number of bits, the scale factor (LSB), the range, and the units of…	The bit lengths, scale factors, ranges, and units of…	Consistency.
3.5.4.3.6 Table 3.5-7	NA	Add comma after "subframe 3"	Readability.
3.5.4.4	NA	Add comma after "subframe 3"	Consistency.
3.5.4.4.1	NA	Add comma after "subframe 3"	Consistency.
3.5.4.4.1	NA	as depicted in	Consistency.
3.5.4.4.1	The number of bits, the scale factor (LSB), the range, and the units of…	The bit lengths, scale factors, ranges, and units of…	Consistency.
3.5.4.4.4.1	of	as depicted in	Consistency.
3.5.4.4.4.2 Table 3.5-8	NA	Add comma after "subframe 3" and fix capitalizations	Consistency.

Section	WAS	IS	Rationale
3.5.4.5	NA	Add "as depicted in"	Consistency.
3.5.4.5	NA	Add comma after "subframe 3" and fix capitalizations	Consistency.
3.5.5.1	NA	Delete "a"	Grammar
6.2.1	6.2.1 User Range Accuracy User range accuracy (URA) is a statistical indicator of the ranging accuracies obtainable with a specific SV. URA is a one-sigma estimate of the user range errors in the navigation data for the transmitting satellite. It includes all errors for which the Space and Control Segments are responsible. It does not include any errors introduced in the user set or the transmission media. While the URA may vary over a given subframe fit interval, the URA index (N) reported in the navigation message corresponds to the maximum value of URA anticipated over the fit interval.	6.2.1 User Range Accuracy User Range Accuracy (URA) is a statistical indicator of the GPS ranging accuracy obtainable with a specific signal and SV. Whether the integrity status flag is 'off' or 'on', 4.42 times URA bounds instantaneous URE under all conditions with 1 -1e-5 per hour probability. When the integrity status flag is 'on', 5.73 times URA bounds instantaneous URE under all conditions with 1-1e-8 per hour probability.	Definition of URA should be consistent between the GPS III specifications and the interface documents. The current definition of URA in this document lacks specificity.
6.2.1	NA	Add Notes: Note #1: URA applies over the curve fit interval that is applicable to the NAV data from which the URA is read, for the worst-case location within the intersection of the satellite signal and the terrestrial service volume. Note #2: The URA for a particular signal may be represented by a single parameter in the NAV data or by more than one parameter representing components of the total URA. Specific URA parameters and formulae for calculating the total URA for a signal are defined in the applicable Space Segment to Navigation User Segment ICD's	Same as above.

Section	WAS	IS	Rationale
6.2.1	NA	Add sub-definitions: 6.2.1.1 Integrity Assured URA When the integrity assurance monitoring is available, as indicated by a the "integrity status flag" being set, the URA value is chosen such that the probability of the "actual" URE exceeding a threshold is met (see section 3.5.3.10 for probability values). The URA value is conveyed to the user in the form of a URA index values. The URA index represents a range of values; for integrity assurance applications, it is prudent to use the RSS of the largest URA index values in the URA index range. 6.2.1.2 User Differential Range Accuracy User Differential Range Accuracy (UDRA) is a statistical indicator of the GPS ranging accuracy obtainable with a specific signal and SV after the application of the associated differential corrections (DC parameters).	Same as above.
6.3.1.1	Additional L1C Ranging Codes Sequences	Additional L1C Ranging Code Sequences	Grammar
6.3.1.1 Table 6.3-1	BOC(1,1)	BOC (1,1)	Consistency.
6.3.2	ADD	6.3.7 Pre-Operational Use. Before any new signal or group of signals (e.g., L1C, L2C, L5, or M) is declared operational, the availability of and/or the configuration of the broadcast signal or group of signals may not comply with all requirements of the relevant IS or ICD. For example, the pre-operational broadcast of L2C signals from the IIR-M satellites did not include any NAV or CNAV data as required by IS-GPS-200. Pre-operational use of any new signal or group of signals is at the users own risk.	Language accompanying phasing relationship. Modified by B. Carroll of A5P.
3.3.1.6.2	While a satellite is broadcasting standard L1CP code and standard L1CD code signals with data which indicates L1C signal health is OK, the CS/SS will not command an operation causing an intentional phase discontinuity. This does not apply to phase discontinuities caused by signal modulation.	While a satellite is broadcasting standard L1CP code and standard L1CD code signals with data which indicates L1C signal health is OK, there will not be any commanded operation causing an intentional phase discontinuity. This does not apply to phase discontinuities caused by signal modulation. Phase discontinuities are subject to the requirements of 3.2.1.6.1	To address comment during GPSW review (Soon Yi).

Section	WAS	IS	Rationale
Note: Administrative changes (i.e. spelling corrections, grammar, minor clarifications) may not be represented in this Was/Is matrix.			