Change Topic: Public Document Management (GPS III terminology and SSV group delay)

This change package accommodates the text changes to support the proposed solution (see table below) within the public Signals-in-Space (SiS) documents. All comments must be submitted in Comments Resolution Matrix (CRM) form.

The columns in the WAS/IS table following this page are defined below:

Section Number: This number indicates the location of the text change within the document.

(WAS) <Document Title>: Contains the baseline text of the impacted document.

Proposed Heading: Contains proposed changes to existing section titles and/or the titles to new sections

Proposed Text: Contains proposed changes to baseline text.

Rationale: Contains the supporting information to explain the reason for the proposed changes.

PROBLEM STATEMENT:
Extraneous, ambiguous, or missing information exists within the descriptive text for "GPS III terminology" and "space service volume group delay" within the public documents (IS-200, 705, and 800).
SOLUTION (Proposed):
Modify public documents (IS-200, IS-705, and IS-800) to address extraneous, ambiguous, or missing information as it pertains to GPS III terminology and SSV Group Delay (i.e. changing IIIA to III and adding SSV Group Delay .url)

Start of WAS/IS for IS-GPS-200E Changes

Section Number	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Proposed Heading	Public IS Document Management Proposed Text	Rationale
1.2	The Interface Control Contractor (ICC) designated by the government is responsible for the basic preparation, approval coordination, distribution, retention, and Interface Control Working Group (ICWG) coordination of the IS in accordance with GP-03-001. The Navstar GPS Wing (GPSW) is the necessary authority to make this IS effective. The GPSW administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction (OI). Military organizations and contractors are represented at the CCB by their respective segment member. All civil organizations and public interest are represented by the Department of Transportation representative of the GPSW.		The Interface Control Contractor (ICC) designated by the government is responsible for the basic preparation, approval coordination, distribution, retention, and Interface Control Working Group (ICWG) coordination of the IS in accordance with GP-03-001. The Navstar GPS Directorate (GPSD) is the necessary authority to make this IS effective. The GPSD administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction (OI). Military organizations and contractors are represented at the CCB by their respective segment member. All civil organizations and public interest are represented by the Department of Transportation representative of the GPSD.	Change to correct office name- GPS is no longer referred to as a Wing but is now referred to as a Directorate.

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3.2.3	**Table 3-III. Signal Configuration** (see below)		**Table 3-III. Signal Configuration** (see below)	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.

Left: IS-GPS-200 Rev E — Table 3-III. Signal Configuration

SV Blocks	L1 In-Phase*	L1 Quadrature-Phase*	L2** In-Phase*	L2** Quadrature-Phase*
Block II/IIA/IIR	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$ or $C/A \oplus D(t)$	Not Applicable
Block IIR-M***	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$	$L2\ CM \oplus D(t)$ with L2 CL or $L2\ CM \oplus D'(t)$ with L2 CL or $C/A \oplus D(t)$ or C/A
Block IIR-M/IIF/IIIA	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$	$L2\ CM \oplus D_C(t)$ with L2 CL or $C/A \oplus D(t)$ or C/A

Notes: 1) The configuration identified in this table reflects only the content of Section 3.2.3 and does not show all available codes/signals on L1/L2.
2) It should be noted that there are no flags or bits in the navigation message to directly indicate which signal option is broadcast for L2 Civil (L2 C) signal.

$\oplus$ = "exclusive-or" (modulo-2 addition)
$D(t)$ = NAV data at 50 bps
$D'(t)$ = NAV data at 25 bps with FEC encoding resulting in 50 sps
$D_C(t)$ = CNAV data at 25 bps with FEC encoding resulting in 50 sps

* Terminology of "in-phase" and "quadrature-phase" is used only to identify the relative phase quadrature relationship of the carrier components (i.e. 90 degrees offset of each other).
** The two carrier components on L2 may not have the phase quadrature relationship. They may be broadcast on same phase (ref. Section 3.3.1.5).
*** Possible signal configuration for Block IIR-M only during the initial period of Block IIR-M SVs operation, prior to Initial Operational Capability of L2 C signal. See paragraph 3.2.2.

Right: Public IS Document Management Proposed Text — Table 3-III. Signal Configuration

SV Blocks	L1 In-Phase*	L1 Quadrature-Phase*	L2** In-Phase*	L2** Quadrature-Phase*
Block II/IIA/IIR	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$ or $C/A \oplus D(t)$	Not Applicable
Block IIR-M***	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$	$L2\ CM \oplus D(t)$ with L2 CL or $L2\ CM \oplus D'(t)$ with L2 CL or $C/A \oplus D(t)$ or C/A
Block IIR-M/IIF/III	$P(Y) \oplus D(t)$	$C/A \oplus D(t)$	$P(Y) \oplus D(t)$ or $P(Y)$	$L2\ CM \oplus D_C(t)$ with L2 CL or $C/A \oplus D(t)$ or C/A

Notes: 1) The configuration identified in this table reflects only the content of Section 3.2.3 and does not show all available codes/signals on L1/L2.
2) It should be noted that there are no flags or bits in the navigation message to directly indicate which signal option is broadcast for L2 Civil (L2 C) signal.

$\oplus$ = "exclusive-or" (modulo-2 addition)
$D(t)$ = NAV data at 50 bps
$D'(t)$ = NAV data at 25 bps with FEC encoding resulting in 50 sps
$D_C(t)$ = CNAV data at 25 bps with FEC encoding resulting in 50 sps

* Terminology of "in-phase" and "quadrature-phase" is used only to identify the relative phase quadrature relationship of the carrier components (i.e. 90 degrees offset of each other).
** The two carrier components on L2 may not have the phase quadrature relationship. They may be broadcast on same phase (ref. Section 3.3.1.5).
*** Possible signal configuration for Block IIR-M only during the initial period of Block IIR-M SVs operation, prior to Initial Operational Capability of L2 C signal. See paragraph 3.2.2.

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3.3.1.7.3	The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD.		The group delay differential between the radiated L1 and L2 signals with respect to the Earth Coverage signal for users of the Space Service Volume are provided in <http://www.igs.org/products/ssv>.	This language was inserted to reference the website in which the

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				space service volume numbers would be hosted for the civil users.
3.3.1.9	The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±13.8 degrees from nadir, L1 ellipticity shall be no worse than 1.2 dB for Block II/IIA and shall be no worse than 1.8 dB for Block IIR/IIR-M/IIF/IIIA SVs. L2 ellipticity shall be no worse than 3.2 dB for Block II/IIA SVs and shall be no worse than 2.2 dB for Block IIR/IIR-M/IIF/IIIA over the angular range of ±13.8 degrees from nadir.		The transmitted signal shall be right-hand circularly polarized (RHCP). For the angular range of ±13.8 degrees from nadir, L1 ellipticity shall be no worse than 1.2 dB for Block II/IIA and shall be no worse than 1.8 dB for Block IIR/IIR-M/IIF/IIIA SVs. L2 ellipticity shall be no worse than 3.2 dB for Block II/IIA SVs and shall be no worse than 2.2 dB for Block IIR/IIR-M/IIF/III over the angular range of ±13.8 degrees from nadir.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
6.2.2.2.7	6.2.2.2.7	Block IIIB SVs		
6.2.2.2.7			The block of operational replenishment SVs are designated as SVNs 82-89. These SVs will provide at least 60 days of positioning service without contact from the CS.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference

Section Number	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Proposed Heading	Public IS Document Management Proposed Text	Rationale
				since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other
6.3.3	**6.3.3 *Extended Navigation Mode (Block IIIA).***	Extended Navigation Mode (Block III)		
6.3.3	The Block IIIA SVs shall be capable of being uploaded by the CS with a minimum of 60 days of data to support a 60 day positioning service. Under normal conditions, the CS will provide daily uploads to each SV, which will allow the SV to maintain normal operations as defined in paragraph 6.2.3.1 and described within this IS.		The Block III SVs shall be capable of being uploaded by the CS with a minimum of 60 days of data to support a 60 day positioning service. Under normal conditions, the CS will provide daily uploads to each SV, which will allow the SV to maintain normal operations as defined in paragraph 6.2.3.1 and described within this IS.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
20.3.2	Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of		Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days	Text as-written

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	uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. Block IIIA SVs have the capability to support operation for at least 60 days without contact from the CS. Alternating ones and zeros will be transmitted in words 3 through 10 in place of the normal NAV data whenever the SV cannot locate the requisite valid control or data element in its on-board computer memory. The following specifics apply to this default action: (a) the parity of the affected words will be invalid, (b) the two trailing bits of word 10 will be zeros (to allow the parity of subsequent subframes to be valid -- reference paragraph 20.3.5), (c) if the problem is the lack of a data element, only the directly related subframe(s) will be treated in this manner, (d) if a control element cannot be located, this default action will be applied to all subframes and all subframes will indicate ID = 1 (Block II/IIA only) (i.e., an ID-code of 001) in the HOW (reference paragraph 20.3.3.2) (Block IIR/IIR-M, IIF, and IIIA SVs indicate the proper subframe ID for all subframes). Certain failures of control elements which may occur in the SV memory or during an upload will cause the SV to transmit in non-standard codes (NSC and NSY) which would preclude normal use by the US. Normal NAV data transmission will be resumed by the SV whenever a valid set of elements becomes available.		of uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. Block III SVs have the capability to support operation for at least 60 days without contact from the CS. Alternating ones and zeros will be transmitted in words 3 through 10 in place of the normal NAV data whenever the SV cannot locate the requisite valid control or data element in its on-board computer memory. The following specifics apply to this default action: (a) the parity of the affected words will be invalid, (b) the two trailing bits of word 10 will be zeros (to allow the parity of subsequent subframes to be valid -- reference paragraph 20.3.5), (c) if the problem is the lack of a data element, only the directly related subframe(s) will be treated in this manner, (d) if a control element cannot be located, this default action will be applied to all subframes and all subframes will indicate ID = 1 (Block II/IIA only) (i.e., an ID-code of 001) in the HOW (reference paragraph 20.3.3.2) (Block IIR/IIR-M, IIF, and IIIA SVs indicate the proper subframe ID for all subframes). Certain failures of control elements which may occur in the SV memory or during an upload will cause the SV to transmit in non-standard codes (NSC and NSY) which would preclude normal use by the US. Normal NAV data transmission will be resumed by the SV whenever a valid set of elements becomes available.	implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other
20.3.3.4.1	Any change in the subframe 2 and 3 data will be accomplished with a simultaneous change in both IODE words. The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) shall assure that the t_{oe} value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover (reference paragraph 20.3.4.5).		Any change in the subframe 2 and 3 data will be accomplished with a simultaneous change in both IODE words. The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall assure that the t_{oe} value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover (reference paragraph 20.3.4.5).	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backw ards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or

Section Number	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Proposed Heading	Public IS Document Management Proposed Text	Rationale
				any other.
20.3.3.4.3	The user shall compute the ECEF coordinates of position for the phase center of the SVs' antennas utilizing a variation of the equations shown in Table 20-IV. Subframes 2 and 3 parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit of the predicted ephemeris of the phase center of the SVs' antennas (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the periods of the curve fit, the resultant accuracy, and the applicable coordinate system are given in the following subparagraphs.		The user shall compute the ECEF coordinates of position for the phase center of the SVs' antennas utilizing a variation of the equations shown in Table 20-IV. Subframes 2 and 3 parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) via a least squares curve fit of the predicted ephemeris of the phase center of the SVs' antennas (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the periods of the curve fit, the resultant accuracy, and the applicable coordinate system are given in the following subparagraphs.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.

20.3.3.4.3.1	Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curve-fit interval used by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) in determining the ephemeris parameters, as follows:
	
	    0 = 4 hours,
	
	    1 = greater than 4 hours.
	The relationship of the curve-fit interval to transmission time and the timing of the curve-fit intervals is covered in section 20.3.4.
			Bit 17 in word 10 of subframe 2 is a "fit interval" flag which indicates the curve-fit interval used by the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) in determining the ephemeris parameters, as follows:
			
			    0 = 4 hours,
			
			    1 = greater than 4 hours.
			
			The relationship of the curve-fit interval to transmission time and the timing of the curve-fit intervals is covered in section 20.3.4.
				Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text

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				and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
20.3.3.5.1.4	Page 25 of subframe 4 shall contain a four-bit-long term for each of up to 32 SVs to indicate the A-S status and the configuration code of each SV. The MSB of each four-bit term shall be the A-S flag with a "1" indicating that A-S is ON. The three LSBs shall indicate the configuration of each SV using the following code: Code SV Configuration 000 Reserved 001 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g. Block II/IIA/IIR SV). 010 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). 100 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA capability (e.g., Block IIIA SV). Additional codes will be assigned in the future, should the need arise.		Page 25 of subframe 4 shall contain a four-bit-long term for each of up to 32 SVs to indicate the A-S status and the configuration code of each SV. The MSB of each four-bit term shall be the A-S flag with a "1" indicating that A-S is ON. The three LSBs shall indicate the configuration of each SV using the following code: Code SV Configuration 000 Reserved 001 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2 (e.g. Block II/IIA/IIR SV). 010 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code signal capability, L2C signal capability (e.g., Block IIR-M SV). 011 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L2C signal capability, L5 signal capability (e.g., Block IIF SV). 100 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as described in paragraph 20.3.2, M-Code capability, L1C signal capability, L2C signal capability, L5 signal capability, no SA capability (e.g., Block III SV). Additional codes will be assigned in the future, should the need arise.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
20.3.4.4	The IODE is an 8 bit number equal to the 8 LSBs of the 10 bit IODC of the same data set. The following rules govern the transmission of IODC and IODE values in different data sets: (1) The transmitted IODC		The IODE is an 8 bit number equal to the 8 LSBs of the 10 bit IODC of the same data set. The following rules govern the transmission of IODC and IODE values in different data sets:	Text as-written implies that

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	will be different from any value transmitted by the SV during the preceding seven days; (2) The transmitted IODE will be different from any value transmitted by the SV during the preceding six hours. The range of IODC will be as given in Table 20-XI for Block II/IIA SVs and Table 20-XII for Block IIR/IIR-M/IIF/IIIA SVs.		(1) The transmitted IODC will be different from any value transmitted by the SV during the preceding seven days; (2) The transmitted IODE will be different from any value transmitted by the SV during the preceding six hours. The range of IODC will be as given in Table 20-XI for Block II/IIA SVs and Table 20-XII for Block IIR/IIR-M/IIF/III SVs.	this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other."

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20.3.4.4	**Table 20-XII. IODC Values and Data Set Lengths (Block IIR/IIR-M/IIF/IIIA)** | Days Spanned	Transmission Interval (hours) (Note 5)	Curve Fit Interval (hours)	IODC Range
---	---	---	---
1	2 (Note 4)	4	(Note 2)
2-14	4	6	(Note 2)
15-16	6	8	240-247 (Note 1)
17-20	12	14	248-255, 496 (Note 1) (Note 3)
21-62	24	26	497-503, 1021-1023 | Note 1: For transmission intervals of 6 and 12 hours, the IODC values shown will be transmitted in increasing order. Note 2: IODC values for blocks with 1-, 2- or 4-hour transmission intervals (at least the first 14 days after upload) shall be any numbers in the range 0 to 1023 excluding those values of IODC that correspond to IODE values in the range 240-255, subject to the constraints on re-transmission given in paragraph 20.3.4.4. Note 3: The ninth 12-hour data set may not be transmitted. Note 4: SVs operating in the Autonav mode will have transmission intervals of 1 hour per paragraph 20.3.4.4. Note 5: The first data set of a new upload may be cut-in at any time and therefore the transmission interval may be less than the specified value.		**Table 20-XII. IODC Values and Data Set Lengths (Block IIR/IIR-M/IIF/III)** | Days Spanned	Transmission Interval (hours) (Note 5)	Curve Fit Interval (hours)	IODC Range
---	---	---	---
1	2 (Note 4)	4	(Note 2)
2-14	4	6	(Note 2)
15-16	6	8	240-247 (Note 1)
17-20	12	14	248-255, 496 (Note 1) (Note 3)
21-62	24	26	497-503, 1021-1023 | Note 1: For transmission intervals of 6 and 12 hours, the IODC values shown will be transmitted in increasing order. Note 2: IODC values for blocks with 1-, 2- or 4-hour transmission intervals (at least the first 14 days after upload) shall be any numbers in the range 0 to 1023 excluding those values of IODC that correspond to IODE values in the range 240-255, subject to the constraints on re-transmission given in paragraph 20.3.4.4. Note 3: The ninth 12-hour data set may not be transmitted. Note 4: SVs operating in the Autonav mode will have transmission intervals of 1 hour per paragraph 20.3.4.4. Note 5: The first data set of a new upload may be cut-in at any time and therefore the transmission interval may be less than the specified value.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other
20.3.4.5	The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIA) shall assure that the t_{oe} value, for at least the first data set transmitted by an SV after a new upload, is different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover for transmission, the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall introduce a small deviation in the t_{oe} resulting in the t_{oe} value that is offset from the hour boundaries (see Table 20-XIII). This offset t_{oe} will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the t_{oe}.		The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall assure that the t_{oe} value, for at least the first data set transmitted by an SV after a new upload, is different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover for transmission, the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block III) shall introduce a small deviation in the t_{oe} resulting in the t_{oe} value that is offset from the hour boundaries (see Table 20-XIII). This offset t_{oe} will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the t_{oe}.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible

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				with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
30.3.3.1.3	The user shall compute the ECEF coordinates of position for the SV's antenna phase center (APC) utilizing a variation of the equations shown in Table 30-II. The ephemeris parameters are Keplerian in appearance; however, the values of these parameters are produced by the CS (Block IIR-M/IIF) and SS (Block IIIA) via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples: t, x, y, z expressed in ECEF coordinates). Particulars concerning the applicable coordinate system are given in Sections 20.3.3.4.3.3 and 20.3.3.4.3.4.		The user shall compute the ECEF coordinates of position for the SV's antenna phase center (APC) utilizing a variation of the equations shown in Table 30-II. The ephemeris parameters are Keplerian in appearance; however, the values of these parameters are produced by the CS (Block IIR-M/IIF) and SS (Block III) via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples: t, x, y, z expressed in ECEF coordinates). Particulars concerning the applicable coordinate system are given in Sections 20.3.3.4.3.3 and 20.3.3.4.3.4.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.

End of WAS/IS for IS-GPS-200E

Start of WAS/IS for IS-GPS-705A Changes

Section Number	IS-GPS-705 Rev A L5 SS and Nav User Segment Interfaces	Proposed Heading	Public IS Document Management Proposed Text	Rationale
1.2	The Interface Control Contractor (ICC) designated by the government is responsible for the basic preparation, obtaining approval coordination, distribution, retention, and Interface Control Working Group (ICWG) coordination of the IS in accordance with GP-03-001. The Navstar GPS Wing (GPSW) is the necessary authority to make this IS effective. The GPSW administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction (OI). Military organizations and contractors are represented at the CCB by their respective segment member. All civil organizations and public interest are represented by the Department of Transportation representative of the GPSW.		The Interface Control Contractor (ICC) designated by the government is responsible for the basic preparation, obtaining approval coordination, distribution, retention, and Interface Control Working Group (ICWG) coordination of the IS in accordance with GP-03-001. The Navstar GPS Directorate (GPSD) is the necessary authority to make this IS effective. The GPSW administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction (OI). Military organizations and contractors are represented at the CCB by their respective segment member. All civil organizations and public interest are represented by the Department of Transportation representative of the GPSD.	Change to correct office name- GPS is no longer referred to as a Wing but is now referred to as a Directorate.
3.3.1.7.3	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.		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<http://www.igs.org/products/ssv>	This language was inserted to reference the website in which the space service volume numbers would be hosted for the civil users.
20.3.3.1.1	Any change in the message type 10 and 11 ephemeris data will be accomplished with a simultaneous change in the t_{oe} value (t_{oe} =Ephemeris data reference time of week). The CS (Block IIF) or SV (Block IIIA) will ensure that the t_{oe} value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover. See Section 20.3.4.5 of IS-GPS-200 for additional information regarding t_{oe}.		Any change in the message type 10 and 11 ephemeris data will be accomplished with a simultaneous change in the t_{oe} value (t_{oe} =Ephemeris data reference time of week). The CS (Block IIF) or SV (Block III) will ensure that the t_{oe} value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover. See Section 20.3.4.5 of IS-GPS-200 for additional information regarding t_{oe}.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.
20.3.3.1.3	The user shall compute the ECEF coordinates of position for the SV's antenna phase center (APC) utilizing a variation of the equations shown in Table 20-II. The ephemeris parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block IIF) or the SV (Block IIIA) via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the applicable coordinate system are given in Sections 20.3.3.4.3.3 and 20.3.3.4.3.4 of IS-GPS-200.		The user shall compute the ECEF coordinates of position for the SV's antenna phase center (APC) utilizing a variation of the equations shown in Table 20-II. The ephemeris parameters are Keplerian in appearance; the values of these parameters, however, are produced by the CS (Block IIF) or the SV (Block IIIA) via a least squares curve fit of the predicted ephemeris of the SV APC (time-position quadruples; t, x, y, z expressed in ECEF coordinates). Particulars concerning the applicable coordinate system are given in Sections 20.3.3.4.3.3 and 20.3.3.4.3.4 of IS-GPS-200.	Text as-written implies that this only applies to GPS IIIA SVs. Recommend changing to generic "GPS III" reference since all GPS III satellites must be backwards compatible with this text and it needs to unambiguously apply to not only IIIA, but also IIIB, IIIC, or any other.

End of WAS/IS for IS-GPS-705A

11 May 2011

Start of WAS/IS for IS-GPS-800A Changes

Section Number	IS-GPS-800 Rev A Navstar GPS Space Segment/User Segment L1C Interface	Proposed Heading	Public IS Document Management Proposed Text	Rationale
1.3	The GPS Wing (GPSW) is the necessary authority to make this IS effective. The GPSW administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction. The GPSW CCB membership includes the United States Department of Transportation representative for civil organizations and public interest.		The GPS Directorate (GPSD) is the necessary authority to make this IS effective. The GPSD administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW Operating Instruction. The GPSD CCB membership includes the United States Department of Transportation representative for civil organizations and public interest.	Change to correct office name- GPS is no longer referred to as a Wing but is now referred to as a Directorate.
3.2.1.8.3	L1C SSV group delay differential parameters are provided in TBD.		The group delay differential for the radiated L1 signal with respect to the Earth Coverage signal for users of the Space Service Volume are provided in <http://www.igs.org/products/ssv>	This language was inserted to reference the website in which the space service volume numbers would be hosted for the civil users.

End of WAS/IS for IS-GPS-800A

11 May 2011