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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.

<u>PROBLEM STATEMENT:</u>
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).
<u>SOLUTION (Proposed):</u>
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)

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
1.2		<p>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.</p>	<p>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 WingDirectorate (GPSWSMC/GP) is the necessary authority to make this IS effective. The GPSWSMC/GP 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 GPSWSMC/GP.</p>	<p>Change to correct office name- GPS is no longer referred to as a Wing but is now referred to as a Directorate . The correct acronym or shorthand notation the GPS Directorate is SMC/GP.</p>

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3.2.3		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Table 3-III. Signal Configuration</th> </tr> <tr> <th rowspan="2" style="text-align: center;">SV Blocks</th> <th colspan="2" style="text-align: center;">L1</th> <th colspan="2" style="text-align: center;">L2**</th> </tr> <tr> <th style="text-align: center;">In-Phase*</th> <th style="text-align: center;">Quadrature-Phase*</th> <th style="text-align: center;">In-Phase*</th> <th style="text-align: center;">Quadrature-Phase*</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Block II/IIA/IIR</td> <td style="text-align: center;">$P(Y) \oplus D(t)$</td> <td style="text-align: center;">$C/A \oplus D(t)$</td> <td style="text-align: center;">$P(Y) \oplus D(t)$ or $P(Y)$ or $C/A \oplus D(t)$</td> <td style="text-align: center;">Not Applicable</td> </tr> <tr> <td style="text-align: center;">Block IIR-M***</td> <td style="text-align: center;">$P(Y) \oplus D(t)$</td> <td style="text-align: center;">$C/A \oplus D(t)$</td> <td style="text-align: center;">$P(Y) \oplus D(t)$ or $P(Y)$</td> <td style="text-align: center;">$L2 CM \oplus D(t)$ with $L2 CL$ or $L2 CM \oplus D(t)$ with $L2 CL$ or $C/A \oplus D(t)$ or C/A</td> </tr> <tr> <td style="text-align: center;">Block IIR-MIIF/IIIA</td> <td style="text-align: center;">$P(Y) \oplus D(t)$</td> <td style="text-align: center;">$C/A \oplus D(t)$</td> <td style="text-align: center;">$P(Y) \oplus D(t)$ or $P(Y)$</td> <td style="text-align: center;">$L2 CM \oplus D_C(t)$ with $L2 CL$ or $C/A \oplus D(t)$ or C/A</td> </tr> </tbody> </table> <p>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.</p> <p style="text-align: center;">\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</p> <p>* 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-MSVs operation, prior to Initial Operational Capability of L2 C signal. See paragraph 3.2.2.</p>	Table 3-III. Signal Configuration					SV Blocks	L1		L2**		In-Phase*	Quadrature-Phase*	In-Phase*	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-MIIF/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	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Table 3-III. 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				<p>up” or “GPS III SV9-16” based on context</p> <p>GPS IIIC - use “GPS III SV17 and up” or “Future GPS III SVs” based on context</p>
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 TBD 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.
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 GPS III 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 and GPS III SVs over the angular range of ± 13.8 degrees from nadir.	References to Block II are obsolete and should

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				<p>be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p>

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				GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context
6.2.2.2.7	Block IIIB SVs		6.2.2.2.7 GPS III 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.	<p>Recommend that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p>

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				<p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
6.3.3	Extended Navigation Mode (Block IIA III)		6.3.3 Extended Navigation Mode (GPS III)	Recommended that the text read consistent with the GPS Directorate's request dated 11

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				<p>Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
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	The GPS 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	Recommended that the

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		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.	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.	<p>text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on</p>

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				<p>context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
20.3.2		<p>Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. Block IIIA SVs have the capability to 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.</p>	<p>Block II and IIA SVs are designed with sufficient memory capacity for storing at least 60 days of uploaded NAV data. However, the memory retention of these SVs will determine the duration of data transmission. Block IIR SVs have the capability, with current memory margin, to store at least 60 days of uploaded NAV data in the Block IIA mode and to store at least 60 days of CS data needed to generate NAV data on-board in the Autonav mode. BlockGPS IIA 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 IIAGPS III 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.</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS</p>

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				<p>III”</p> <p>GPS IIIA - when referring to SVs 1-8, use “GPS III SV1-8” or “GPS III-XX”</p> <p>GPS IIIB - use “GPS III SV9 and up” or “GPS III SV9-16” based on context</p> <p>GPS IIIC - use “GPS III SV17 and up” or “Future GPS III SVs” based on context</p>
20.3.3.4.1		<p>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).</p>	<p>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 GPS IIIA) shall assure that the toe value, for at least the first data set transmitted by an SV after an upload, is different from that transmitted prior to the cutover (reference paragraph 20.3.4.5).</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommend that the</p>

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Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				"Future GPS III SVs" based on context
20.3.3.4.3		<p>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.</p>	<p>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 GPS 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.</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommend that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8,</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
20.3.3.4.3.1		<p>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:</p> <p style="padding-left: 40px;">0 = 4 hours,</p> <p style="padding-left: 40px;">1 = greater than 4 hours.</p> <p>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.</p>	<p>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 (GPS IIIA) in determining the ephemeris parameters, as follows:</p> <p style="padding-left: 40px;">0 = 4 hours,</p> <p style="padding-left: 40px;">1 = greater than 4 hours.</p> <p>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.</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				context
20.3.3.5.1.2		<p>For Block II and IIA SVs, three sets of almanac shall be used to span at least 60 days. The first and second sets will be transmitted for up to six days each; the third set is intended to be transmitted for the remainder of the 60 days minimum, but the actual duration of transmission will depend on the individual SV's capability to retain data in memory. All three sets are based on six-day curve fits that correspond to the first six days of the transmission interval. For Block IIR/IIR-M, IIF, and IIIA SVs, multiple sets of almanac parameters shall be uploaded to span at least 60 days.</p>	<p>For Block IIR/IIR-M, IIF, and IIA GPS III SVs, three <u>five</u> sets of almanac shall be used to span at least 60 days. The first, <u>second</u>, and second <u>third</u> sets will be transmitted for up to six days each; the third <u>fourth and fifth sets will be transmitted for up to 32 days; the fifth</u> set is intended to be transmitted for the remainder of the 60 days minimum, but the actual duration of transmission will depend on the individual SV's capability to retain data in memory. All three <u>five</u> sets are based on six-day curve fits that correspond to the first six days of the transmission interval. For Block <u>The IIR/IIR-M first, IIF second, and IIIA third SVs, sets multiple are sets base of don almanac six parameters day shall curve be fits, uploaded to The span fourth at and least fifth 60 sets days are based on 32 day curve fits.</u></p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB -</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
20.3.3.5.1.4		<p>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:</p> <p>Code SV Configuration</p> <p>000 Reserved</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>100 A-S capability, plus flags for A-S and "alert" in HOW; memory capacity as</p>	<p>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:</p> <p>Code SV Configuration</p> <p>000 Reserved</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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 IIA GPS III SVs).</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommend that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
		<p>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 SVs).</p> <p>Additional codes will be assigned in the future, should the need arise.</p>	<p>Additional codes will be assigned in the future, should the need arise.</p>	<p>referring to the GPS III program in general, use “GPS III”</p> <p>GPS IIIA - when referring to SVs 1-8, use “GPS III SV1-8” or “GPS III-XX”</p> <p>GPS IIIB - use “GPS III SV9 and up” or “GPS III SV9-16” based on context</p> <p>GPS IIIC - use “GPS III SV17 and up” or “Future GPS III SVs” based on context</p>
20.3.4.4		<p>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 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</p>	<p>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 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 IIIIA SVs and Table</p>	<p>References to Block II are obsolete and should</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
		given in Table 20-XI for Block II/IIA SVs and Table 20-XII for Block IIR/IIR-M/IIF/IIIA SVs.	20-XII for Block IIR/IIR-M/IIF/ IIA and GPS III SVs.	<p>be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p>

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

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20.3.4.4		<table border="1" data-bbox="624 733 1547 1628"> <thead> <tr> <th colspan="4" data-bbox="634 739 1538 768">Table 20-XII. IODC Values and Data Set Lengths (Block IIR/IIR-M/IIF/IIIA)</th> </tr> <tr> <th data-bbox="634 774 826 883">Days Spanned</th> <th data-bbox="836 774 1028 883">Transmission Interval (hours) (Note 5)</th> <th data-bbox="1038 774 1230 883">Curve Fit Interval (hours)</th> <th data-bbox="1240 774 1529 883">IODC Range</th> </tr> </thead> <tbody> <tr> <td data-bbox="634 889 826 917">1</td> <td data-bbox="836 889 1028 917">2 (Note 4)</td> <td data-bbox="1038 889 1230 917">4</td> <td data-bbox="1240 889 1529 917">(Note 2)</td> </tr> <tr> <td data-bbox="634 923 826 951">2-14</td> <td data-bbox="836 923 1028 951">4</td> <td data-bbox="1038 923 1230 951">6</td> <td data-bbox="1240 923 1529 951">(Note 2)</td> </tr> <tr> <td data-bbox="634 957 826 985">15-16</td> <td data-bbox="836 957 1028 985">6</td> <td data-bbox="1038 957 1230 985">8</td> <td data-bbox="1240 957 1529 985">240-247 (Note 1)</td> </tr> <tr> <td data-bbox="634 991 826 1020">17-20</td> <td data-bbox="836 991 1028 1020">12</td> <td data-bbox="1038 991 1230 1020">14</td> <td data-bbox="1240 991 1529 1020">248-255, 496 (Note 1) (Note 3)</td> </tr> <tr> <td data-bbox="634 1026 826 1054">21-62</td> <td data-bbox="836 1026 1028 1054">24</td> <td data-bbox="1038 1026 1230 1054">26</td> <td data-bbox="1240 1026 1529 1054">497-503, 1021-1023</td> </tr> </tbody> </table> <p data-bbox="634 1104 1538 1165">Note 1: For transmission intervals of 6 and 12 hours, the IODC values shown will be transmitted in increasing order.</p> <p data-bbox="634 1201 1538 1318">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.</p> <p data-bbox="634 1354 1538 1382">Note 3: The ninth 12-hour data set may not be transmitted.</p> <p data-bbox="634 1419 1538 1479">Note 4: SVs operating in the Autonav mode will have transmission intervals of 1 hour per paragraph 20.3.4.4.</p> <p data-bbox="634 1516 1538 1576">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.</p>	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	<table border="1" data-bbox="1675 733 2685 1628"> <thead> <tr> <th colspan="4" data-bbox="1684 739 2675 768">Table 20-XII. 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IODC Values and Data Set Lengths (Block IIR/IIR-M/IIF/GPS 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	<p data-bbox="2778 727 2940 1110">Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p data-bbox="2778 1211 2940 1514">GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p data-bbox="2778 1614 2940 1796">GPS IIIA - when referring to SVs 1-8, use "GPS III"</p>
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Change Topic: Public Document Management (GPS III terminology and SSV group delay)

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
20.3.4.5		<p>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}.</p>	<p>The CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIAGPS III) shall assure that the toe value, for at least the first data set transmitted by an SV after a new upload, is different from that transmitted prior to the cutover (see paragraph 20.3.4.4). As such, when a new upload is cutover for transmission, the CS (Block II/IIA/IIR/IIR-M/IIF) and SS (Block IIIAGPS III) shall introduce a small deviation in the toe resulting in the toe value that is offset from the hour boundaries (see Table 20-XIII). This offset toe will be transmitted by an SV in the first data set after a new upload cutover and the second data set, following the first data set, may also continue to reflect the same offset in the toe.</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommended that the text read consistent with the GPS</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				context
30.3.3.1.3		<p>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.</p>	<p>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 GPS 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.</p>	<p>References to Block II are obsolete and should be deleted.</p> <p>Recommended that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p>

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-200 Rev E Navstar GPS Space Segment/Navigation User Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>

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

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

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

Section Number	Public Document Management (GPS III terminology and SSV group delay) Proposed Heading	IS-GPS-705 Rev A L5 SS and Nav User Segment Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	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 Wing Directorate (GPSW SMC/GP) is the necessary authority to make this IS effective. The GPSW SMC/GP 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 SMC/GP.	Change to correct office name- GPS is no longer referred to as a Wing but is now referred to as a Directorate. The correct acronym or shorthand notation the GPS Directorate is SMC/GP.
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 TBD 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.
6.2.2.2		The operational satellites are designated Block IIA, Block IIR, Block IIRM, Block IIF and Block III SVs. Characteristics of these SVs are provided below. These SVs transmit configuration codes as specified in paragraph 20.3.3.5.1.4 of IS-GPS-200. The navigation signal provides no direct indication of the type of the transmitting SV.	The operational satellites are designated Block IIA, Block IIR, Block IIRM, Block IIF and Block GPS III SVs. Characteristics of these SVs are provided below. These SVs transmit configuration codes as specified in paragraph 20.3.3.5.1.4 of IS-GPS-200. The navigation signal provides no direct indication of the type of the transmitting SV.	
6.2.2.2.5		See paragraph 6.2.2.2.6 of IS-GPS-200. The III operational SVs do broadcast the L5 signal.	See paragraph 6.2.2.2.6 of 5 IS-GPS-200. The III operational SVs do broadcast the L5 signal.	
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 GPS 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} .	Recommend that the text read consistent with the GPS Directorate's request dated 11 Jul 2011: GPS IIIA - when referring to the GPS III program in general, use "GPS III" GPS IIIA - when referring to SVs 1-8, use "GPS

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

Section Number	Public Document Management (GPS III terminology and SSV group delay) Proposed Heading	IS-GPS-705 Rev A L5 SS and Nav User Segment Interfaces	Public Document Management (GPS III terminology and SSV group delay) Redlines	Rationale
				<p>III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>
20.3.3.1.3		<p>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.</p>	<p>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 GPS 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.</p>	<p>Recommend that the text read consistent with the GPS Directorate's request dated 11 Jul 2011:</p> <p>GPS IIIA - when referring to the GPS III program in general, use "GPS III"</p> <p>GPS IIIA - when referring to SVs 1-8, use "GPS III SV1-8" or "GPS III-XX"</p> <p>GPS IIIB - use "GPS III SV9 and up" or "GPS III SV9-16" based on context</p> <p>GPS IIIC - use "GPS III SV17 and up" or "Future GPS III SVs" based on context</p>

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

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

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

Section Number	Space Service Volume Group Delay Proposed Heading	IS-GPS-800 Rev A Navstar GPS Space Segment/User Segment L1C Interface	Space Service Volume Group Delay Redlines	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 Wing Directorate (GPSW SMC/ GP) is the necessary authority to make this IS effective. The GPSW SMC/GP administers approvals under the auspices of the Configuration Control Board (CCB), which is governed by the appropriate GPSW SMC/ GP Operating Instruction. The GPSW SMC/ GP 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. The correct acronym or shorthand notation the GPS Directorate is SMC/GP.
3.2.1.8.3		L1C SSV group delay differential parameters are provided in TBD.	L1C SSV The group delay differential parameters for the radiated L1 signal with respect to the Earth Coverage signal for users of the Space Service Volume are provided in TBD < 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