Change Topic: Removal of Obsolete Information from the Public Signal-in-Space (SiS) Documents

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.

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

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

Proposed Object Text: Contains proposed changes to baseline text.

PROBLEM STATEMENT:
The current revision of the public signals in space documents contain obsolete information regarding the Coordinated Universal Time Offset Error (UTCOE), User Range Error (URE) associated with Block II/IIA SVs, and contradictory information regarding the duration of extended navigation mode for Block II/IIA SVs. If these requirements remain in a public facing document, incorrect and unrealistic expectations may be levied upon the current and future GPS architectures.
SOLUTION: *(Proposed)*
Remove the obsolete information from IS-GPS-200.

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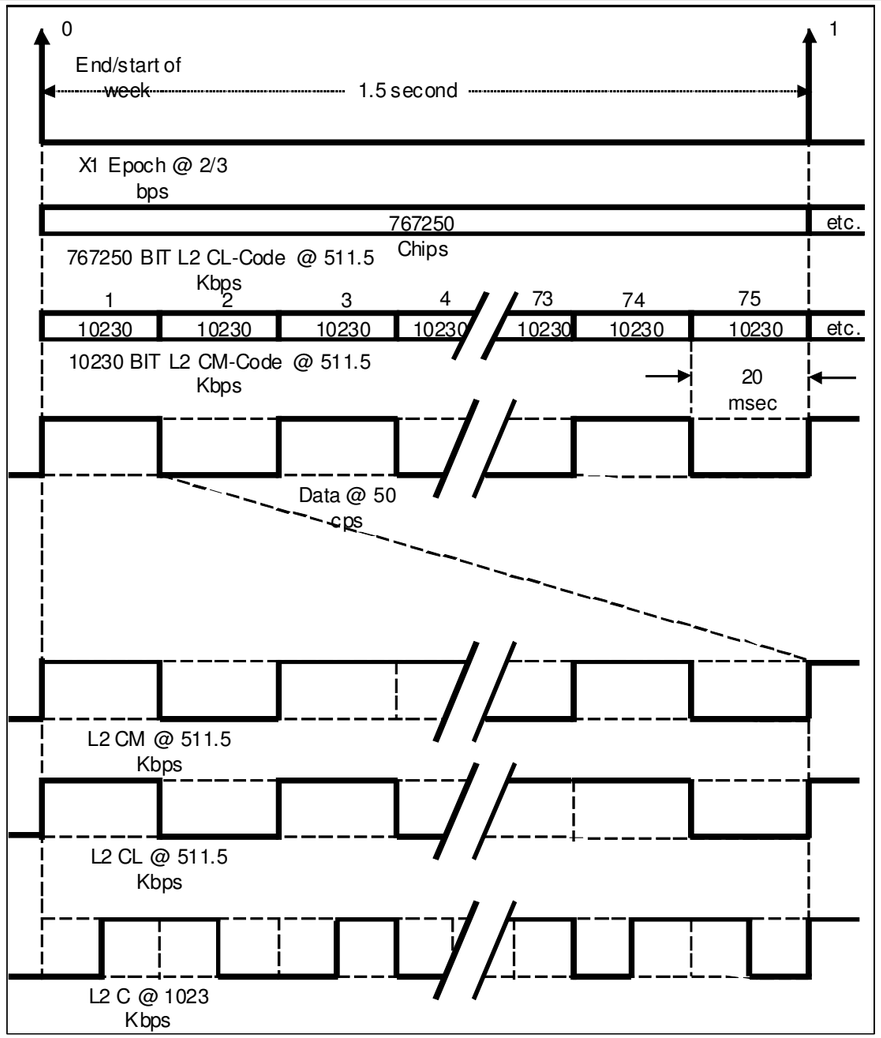
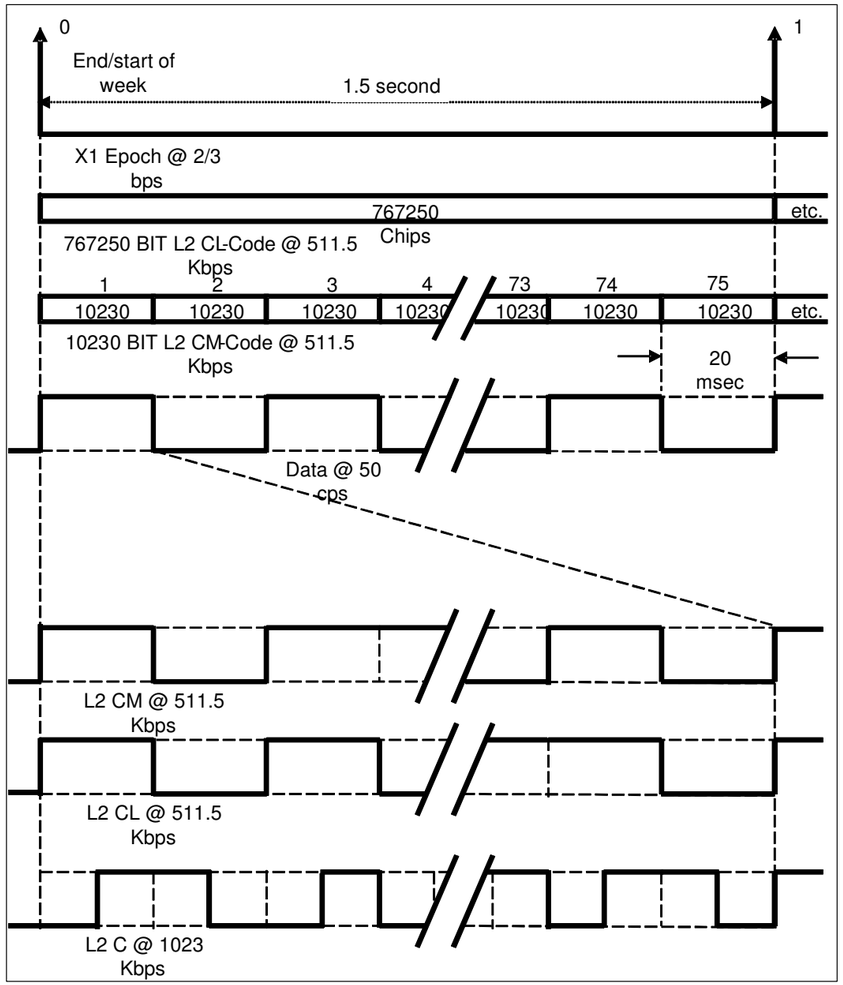
Section	IS-GPS-200 RevG (5 Sep 2012) Navstar GPS Space Segment/Navigation User Interfaces	Proposed Removal of Obsolete Information from the Public Signals in Space Documents
3.3.2.4	 Figure 3-12. L2 CM-/L2 CL-Code Timing Relationships	 Figure 3-12. L2 CM-/L2 CL-Code Timing Relationships

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3.3.4	The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it relates GPS time (maintained by the MCS of the CS) to UTC (USNO) within 90 nanoseconds (one sigma). This data is generated by the CS; therefore, the accuracy of this relationship may degrade if for some reason the CS is unable to upload data to a SV. At this point, it is assumed that alternate sources of UTC are no longer available, and the relative accuracy of the GPS/UTC relationship will be sufficient for users. Range error components (e.g. SV clock and position) contribute to the GPS time transfer error, and under normal operating circumstances (two frequency time transfers from SV(s) whose navigation message indicates a URA of eight meters or less), this corresponds to a 97 nanosecond (one sigma) apparent uncertainty at the SV. Propagation delay errors and receiver equipment biases unique to the user add to this time transfer uncertainty.	The NAV data contains the requisite data for relating GPS time to UTC. The accuracy of this data during the transmission interval shall be such that it relates GPS time (maintained by the MCS of the CS) to UTC (USNO) within 20 nanoseconds (one sigma). This data is generated by the CS; therefore, the accuracy of this relationship may degrade if for some reason the CS is unable to upload data to a SV. At this point, it is assumed that alternate sources of UTC are no longer available, and the relative accuracy of the GPS/UTC relationship will be sufficient for users. Range error components (e.g. SV clock and position) contribute to the GPS time transfer error, and under normal operating circumstances (two frequency time transfers from SV(s) whose navigation message indicates a URA of eight meters or less), this corresponds to a 97 nanosecond (one sigma) apparent uncertainty at the SV. Propagation delay errors and receiver equipment biases unique to the user add to this time transfer uncertainty.

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30.3.3.6.2

Table 30-IX. UTC Parameters

Parameter		No. of Bits**	Scale Factor (LSB)	Effective Range***	Units
A_{0-n}	Bias coefficient of GPS time scale relative to UTC time scale	16*	2^{-35}		Seconds
A_{1-n}	Drift coefficient of GPS time scale relative to UTC time scale	13*	2^{-51}		sec/sec
A_{2-n}	Drift rate correction coefficient of GPS time scale relative to UTC time scale	7*	2^{-68}		sec/sec^2
Δt_{LS}	Current or past leap second count	8*	1		seconds
t_{ot}	Time data reference Time of Week	16	2^4	604,784	seconds
WN_{ot}	Time data reference Week Number	13	1		weeks
WN_{LSF}	Leap second reference Week Number	8	1		weeks
DN	Leap second reference Day Number	4***	1		days
Δt_{LSF}	Current or future leap second count	8*	1		seconds

* Parameters so indicated shall be two's complement with the sign bit (+ or -) occupying the MSB;
** See Figure 30-6 for complete bit allocation;
*** Unless otherwise indicated in this column, effective range is the maximum range attainable with indicated bit allocation and scale factor;
**** Right justified.

Table 30-IX. UTC Parameters

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* Parameters so indicated shall be two's complement with the sign bit (+ or -) occupying the MSB;
** See Figure 30-6 for complete bit allocation;
*** Unless otherwise indicated in this column, effective range is the maximum range attainable with indicated bit allocation and scale factor;
**** Right justified.