PROPOSED CHANGE NOTICE

Affected Document:	IRN/SCN Number	Date:
IS-GPS-800E	XXX-XXXX-XXX	DD-MMM-YYYY
Authority:	**Proposed Change Notice**	**Date:**
RFC-00374	IS800E_RFC374	01-MAY-2018

CLASSIFIED BY: N/A
DECLASSIFY ON: N/A

Document Title: NAVSTAR GPS Space Segment / User Segment L1C Interface

RFC Title: 2018 Proposed Changes to the Public Documents

Reason For Change (Driver):

The following 2 topics were deferred from the 2017 Public ICWG and will now be resolved by this RFC.

1. Currently the OAs that are published and archived contain plane/slot descriptions that are not in the constellation definition provided to the public in the SPS Performance Standard. The OA does not have the capability to correctly publish information regarding fore/aft position since moving to the 24+3 constellation with three expanded slots. In addition, the Points of Contact of the OA are not represented in a way that allows for efficient updates. This is a continuation of RFC-351, which was CCB-approved on 8-Jan-2018.
2. The linkage between different timing systems is not properly captured in the current technical baseline. With the current documentation, MNAV and CNAV users will calculate the wrong UT1 time immediately following a leap second change. This affects user applications that require high precision pointing, which may include optical telescopes or any military system with this requirement. Documents affected: IS-GPS-200, IS-GPS-705, and IS-GPS-800. The topic was part of RFC-354, which will be superseded due to the inclusion of this topic in this RFC.

The following topic resolves 3 document clean-up related activities:

3. a) Signal-in-space topics need clarification, as identified by the public in past Public ICWGs. Documents affected: IS-GPS-200 and IS-GPS-705. b) There were some administrative errors found during the UpRev process of the public documents. c) Contractor signatories are required for government-controlled documents.

(Pre-RFCs 718, 819, 861)

Description of Change:

1. Modify the OA as agreed to in ICD-GPS-240 and ICD-GPS-870.
2. The proposed changes to the impacted technical baseline documents would correctly calculate UT1 during a leap second transition.
3. a) Provide clarity for the list of signal-in-space topics identified by the public in documents IS-GPS-200 and IS-GPS-705. b) Clean up identified administrative changes in all public documents. c) Remove required contractor signatories from government-controlled documents.

Authored By: Philip Kwan **Checked By: Perry Chang, Philip Kwan, Amit Patel**

AUTHORIZED SIGNATURES	REPRESENTING	DATE
	GPS Directorate Space & Missile Systems Center (SMC) – LAAFB	

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution Is Unlimited

THIS DOCUMENT SPECIFIES TECHNICAL REQUIREMENTS AND NOTHING HEREIN CONTAINED SHALL BE DEEMED TO ALTER THE TERMS OF ANY CONTRACT OR PURCHASE ORDER BETWEEN ALL PARTIES AFFECTED.

Interface Control Contractor:
Engility (GPS SE&I)
200 N. Sepulveda Blvd., Suite 1800
El Segundo, CA 90245

CODE IDENT 66RP1

PROPOSED CHANGE NOTICE

Note: Repeat this Signature Page for each document signatory.

Affected Document:	**IRN/SCN Number**	**Date:**
IS-GPS-800E	XXX-XXXX-XXX	DD-MMM-YYYY
Authority:	**Proposed Change Notice**	**Date:**
RFC-00374	IS800E_RFC374	01-MAY-2018

RFC Title: 2018 Proposed Changes to the Public Documents

APPROVED BY:

With Comments: Yes ☐ No ☐

With Exceptions: Yes ☐ No ☐

_____	_____	_____
Name of Approving Organization	Authorized Signature	Date

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution Is Unlimited

THIS DOCUMENT SPECIFIES TECHNICAL REQUIREMENTS AND NOTHING HEREIN CONTAINED SHALL BE DEEMED TO ALTER THE TERMS OF ANY CONTRACT OR PURCHASE ORDER BETWEEN ALL PARTIES AFFECTED.

Interface Control Contractor:
Engility (GPS SE&I)
200 N. Sepulveda Blvd., Suite 1800
El Segundo, CA 90245

CODE IDENT 66RP1

RFC-374 Leap Second and Earth Orientation Parameters Proposed Changes

IS800-921 :
Insertion after object IS800-240

Section Number :
3.5.4.2.3.0-2

WAS :
N/A

Redlines :
When implementing the first equation in Table 30-VIII of IS-GPS-200, WN_{ot} and t_{UTC_EOP} are derived from data contained in subframe 3 page 1 (see Section 3.5.4.1). The Control Segment shall ensure the ΔUT1 and ΔU̇T1 values in a subframe 3 page 2 can be used with the UTC parameters (WN_{ot}, and Δt_{LS}) in subframe 3 page 1 to calculate the correct UT1 time, provided the t_{EOP} in subframe 3 page 2 is identical to the tot in subframe 3 page 1 and the two message types are transmitted within a continuous 4-hour period.

IS :
When implementing the first equation in Table 30-VIII of IS-GPS-200, WN_{ot} and t_{UTC_EOP} are derived from data contained in subframe 3 page 1 (see Section 3.5.4.1). The Control Segment shall ensure the ΔUT1 and ΔU̇T1 values in a subframe 3 page 2 can be used with the UTC parameters (WN_{ot}, and Δt_{LS}) in subframe 3 page 1 to calculate the correct UT1 time, provided the t_{EOP} in subframe 3 page 2 is identical to the t_{ot} in subframe 3 page 1 and the two message types are transmitted within a continuous 4-hour period.

Rationale :
Originally created as a part of RFC-354. This change explicitly specifies the relationship between message type 32 and message type 33, and the necessary conditions for the parameters within the messages to ensure a correct UT1 time calculation.

IS800-922 :
Insertion after object IS800-921

Section Number :
3.5.4.2.3.0-3

WAS :
N/A

Redlines :
When calculating t_{UTC_EOP} for Table 30-VIII in IS-GPS-200, the user shall only use data from a subframe 3 page 1 with the same t_{ot} as the t_{EOP} of the subframe 3 page 2 containing ΔUT1 and ΔU̇T1 where both messages were received within a continuous 4-hour window.

IS :
When calculating t_{UTC_EOP} for Table 30-VIII in IS-GPS-200, the user shall only use data from a subframe 3 page 1 with the same t_{ot} as the t_{EOP} of the subframe 3 page 2 containing ΔUT1 and ΔU̇T1 where both messages were received within a continuous 4-hour window.

Rationale :
Provide detailed instructions on how MT 32 and MT 33 shall only be used within a continuous 4-hour window

RFC-374 Cleanup Proposed Changes

IS800-159 :

Section Number :
3.5.3.0-8

WAS :

Table 3.5-1. Subframe 2 Parameters (1 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	Effective Range***	Units
WN	Data Sequence Propagation Week Number	13	1		weeks
ITOW	Interval time of week	8		0 to 83	(see text)
t_{op}	CEI Data sequence propagation time of week	11	300	0 to 604,500	seconds
L1C health		1			(see text)
URA_{ED} Index	ED accuracy index	5*			(see text)
t_{oe}	Ephemeris/clock data reference time of week	11	300	0 to 604,500	seconds
ΔA ****	Semi-major axis difference at reference time	26*	2^{-9}		meters
$\dot{A}$	Change rate in semi-major axis	25*	2^{-21}		meters/sec
Δn_0	Mean Motion difference from computed value at reference time	17*	2^{-44}		semi-circles/sec
$\Delta \dot{n}_0$	Rate of mean motion difference from computed value	23*	2^{-57}		semi-circles/sec^2
M_{0-n}	Mean anomaly at reference time	33*	2^{-32}		semi-circles
e_n	Eccentricity	33	2^{-34}	0.0 to 0.03	dimensionless
ω_n	Argument of perigee	33*	2^{-32}		semi-circles

* Parameters so indicated are in two's complement notation;
** See Figure 3.5-1 for complete bit allocation in Subframe 2;
*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.
**** Relative to A_{REF} = 26,559,710 meters.

Redlines :

Table 3.5-1. Subframe 2 Parameters (1 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	~~Effective~~Valid Range***	Units
WN	Data Sequence Propagation Week Number	13	1		weeks
ITOW	Interval time of week	8		0 to 83	(see text)
t_{op}	CEI Data sequence propagation time of week	11	300	0 to 604,500	seconds
L1C health		1			(see text)
URA_{ED} Index	ED accuracy index	5*			(see text)
t_{oe}	Ephemeris/clock data reference time of week	11	300	0 to 604,500	seconds
ΔA ****	Semi-major axis difference at reference time	26*	2^{-9}		meters
$\dot{A}$	Change rate in semi-major axis	25*	2^{-21}		meters/sec
Δn_0	Mean Motion difference from computed value at reference time	17*	2^{-44}		semi-circles/sec
$\Delta \dot{n}_0$	Rate of mean motion difference from computed value	23*	2^{-57}		semi-circles/sec^2
$M_{0\text{-}n}$	Mean anomaly at reference time	33*	2^{-32}		semi-circles
e_n	Eccentricity	33	2^{-34}	0.0 to 0.03	dimensionless
ω_n	Argument of perigee	33*	2^{-32}		semi-circles

* Parameters so indicated are in two's complement notation;
** See Figure 3.5-1 for complete bit allocation in Subframe 2;
*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.
**** Relative to A_{REF} = 26,559,710 meters.

IS :

Table 3.5-1. Subframe 2 Parameters (1 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
WN	Data Sequence Propagation Week Number	13	1		weeks
ITOW	Interval time of week	8		0 to 83	(see text)
t_{op}	CEI Data sequence propagation time of week	11	300	0 to 604,500	seconds
L1C health		1			(see text)
URA_{ED} Index	ED accuracy index	5*			(see text)
t_{oe}	Ephemeris/clock data reference time of week	11	300	0 to 604,500	seconds
ΔA ****	Semi-major axis difference at reference time	26*	2^{-9}		meters
$\dot{A}$	Change rate in semi-major axis	25*	2^{-21}		meters/sec
Δn_0	Mean Motion difference from computed value at reference time	17*	2^{-44}		semi-circles/sec
$\Delta \dot{n}_0$	Rate of mean motion difference from computed value	23*	2^{-57}		semi-circles/sec^2
M_{0-n}	Mean anomaly at reference time	33*	2^{-32}		semi-circles
e_n	Eccentricity	33	2^{-34}	0.0 to 0.03	dimensionless
ω_n	Argument of perigee	33*	2^{-32}		semi-circles

* Parameters so indicated are in two's complement notation;
** See Figure 3.5-1 for complete bit allocation in Subframe 2;
*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.
**** Relative to A_{REF} = 26,559,710 meters.

Rationale :

3/19/18: This table is inconsistent with "effective range" and "valid range" usage. Update this sheet to include "Valid Range" per RFC-288.

IS800-161 :

Section Number :
3.5.3.0-12

WAS :

Table 3.5-1. Subframe 2 Parameters (2 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	Effective Range***	Units
URA_{NED0} Index	NED Accuracy Index	5*			(see text)
URA_{NED1} Index	NED Accuracy Change Index	3			(see text)
URA_{NED2} Index	NED Accuracy Change Rate Index	3			(see text)
a_{f2-n}	SV Clock Drift Rate Correction Coefficient	10*	2^{-60}		sec/sec^2
a_{f1-n}	SV Clock Drift Correction Coefficient	20*	2^{-48}		sec/sec
a_{f0-n}	SV Clock Bias Correction Coefficient	26*	2^{-35}		seconds
T_{GD}****	Inter-Signal Correction for L1 or L2 P(Y)	13*	2^{-35}		seconds
ISC_{L1CP}****	Inter-Signal Correction for $L1C_P$	13*	2^{-35}		seconds
ISC_{L1CD}****	Inter-Signal Correction for $L1C_D$	13*	2^{-35}		seconds
WN_{op}	CEI Data Sequence Propagation Week Number	8	1		weeks

* Parameters so indicated are in two's complement notation;

** See Figure 3.5-1 for complete bit allocation in Subframe 2;

*** Unless otherwise indicated in this column, effective range is the maximum range attainable with indicated bit allocation and scale factor.

**** The bit string of "1000000000000" will indicate that the group delay value is not available.

Redlines :

Table 3.5-1. Subframe 2 Parameters (2 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	~~Effective~~Valid Range***	Units
URA_{NED0} Index	NED Accuracy Index	5*			(see text)
URA_{NED1} Index	NED Accuracy Change Index	3			(see text)
URA_{NED2} Index	NED Accuracy Change Rate Index	3			(see text)
a_{f2-n}	SV Clock Drift Rate Correction Coefficient	10*	2^{-60}		sec/sec^2
a_{f1-n}	SV Clock Drift Correction Coefficient	20*	2^{-48}		sec/sec
a_{f0-n}	SV Clock Bias Correction Coefficient	26*	2^{-35}		seconds
T_{GD}****	Inter-Signal Correction for L1 or L2 P(Y)	13*	2^{-35}		seconds
ISC_{L1CP}****	Inter-Signal Correction for $L1C_P$	13*	2^{-35}		seconds
ISC_{L1CD}****	Inter-Signal Correction for $L1C_D$	13*	2^{-35}		seconds
WN_{op}	CEI Data Sequence Propagation Week Number	8	1		weeks

* Parameters so indicated are in two's complement notation;

** See Figure 3.5-1 for complete bit allocation in Subframe 2;

*** Unless otherwise indicated in this column, ~~effective~~valid range is the maximum range attainable with indicated bit allocation and scale factor.

**** The bit string of "1000000000000" will indicate that the group delay value is not available.

IS :

Table 3.5-1. Subframe 2 Parameters (2 of 3)

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
URA_{NED0} Index	NED Accuracy Index	5*			(see text)
URA_{NED1} Index	NED Accuracy Change Index	3			(see text)
URA_{NED2} Index	NED Accuracy Change Rate Index	3			(see text)
$a_{f2\text{-}n}$	SV Clock Drift Rate Correction Coefficient	10*	2^{-60}		sec/sec^2
$a_{f1\text{-}n}$	SV Clock Drift Correction Coefficient	20*	2^{-48}		sec/sec
$a_{f0\text{-}n}$	SV Clock Bias Correction Coefficient	26*	2^{-35}		seconds
T_{GD}****	Inter-Signal Correction for L1 or L2 P(Y)	13*	2^{-35}		seconds
ISC_{L1CP}****	Inter-Signal Correction for $L1C_P$	13*	2^{-35}		seconds
ISC_{L1CD}****	Inter-Signal Correction for $L1C_D$	13*	2^{-35}		seconds
WN_{op}	CEI Data Sequence Propagation Week Number	8	1		weeks

* Parameters so indicated are in two's complement notation;

** See Figure 3.5-1 for complete bit allocation in Subframe 2;

*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.

**** The bit string of "1000000000000" will indicate that the group delay value is not available.

Rationale :

3/19/18: This table is inconsistent with "effective range" and "valid range" usage. Update this sheet to include "Valid Range" per RFC-288.

IS800-182 :

Section Number :
3.5.3.6.1.0-6

WAS :

Table 3.5-2. Elements of Coordinate System (part 2 of 2)

Element/Equation *	Description
$\Phi_k = \nu_k + \omega_n$	Argument of Latitude
$\delta u_k = C_{us\text{-}n}\sin 2\Phi_k + C_{uc\text{-}n}\cos 2\Phi_k$	Argument of Latitude Correction (Second Harmonic Perturbations)
$\delta r_k = C_{rs\text{-}n}\sin 2\Phi_k + C_{rc\text{-}n}\cos 2\Phi_k$	Radial Correction (Second Harmonic Perturbations)
$\delta i_k = C_{is\text{-}n}\sin 2\Phi_k + C_{ic\text{-}n}\cos 2\Phi_k$	Inclination Correction (Second Harmonic Perturbations)
$u_k = \Phi_k + \delta u_k$	Corrected Argument of Latitude
$r_k = A_k(1 - e_n \cos E_k) + \delta r_k$	Corrected Radius
$i_k = i_{o\text{-}n} + (i_{o\text{-}n}\text{-DOT})t_k + \delta i_k$	Corrected Inclination
$x_k' = r_k \cos u_k$ $y_k' = r_k \sin u_k$	Positions in orbital plane
$\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega}$ ***	Rate of Right Ascension
$\Omega_k = \Omega_{0\text{-}n} + (\dot{\Omega} - \dot{\Omega}_e)\, t_k - \dot{\Omega}_e\, t_{oe}$	Corrected Longitude of Ascending Node
$x_k = x_k' \cos \Omega_k - y_k' \cos i_k \sin \Omega_k$ $y_k = x_k' \sin \Omega_k + y_k' \cos i_k \cos \Omega_k$ $z_k = y_k' \sin i_k$	Earth-fixed coordinates of SV antenna phase center

*** $\dot{\Omega}_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.

Redlines :

Table 3.5-2. Elements of Coordinate System (part 2 of 2)

Element/Equation *	Description
$\Phi_k = \nu_k + \omega_n$	Argument of Latitude
$\delta u_k = C_{us\text{-}n}\sin 2\Phi_k + C_{uc\text{-}n}\cos 2\Phi_k$	Argument of Latitude Correction } Second Harmonic Perturbations
$\delta r_k = C_{rs\text{-}n}\sin 2\Phi_k + C_{rc\text{-}n}\cos 2\Phi_k$	Radial Correction
$\delta i_k = C_{is\text{-}n}\sin 2\Phi_k + C_{ic\text{-}n}\cos 2\Phi_k$	Inclination Correction
$u_k = \Phi_k + \delta u_k$	Corrected Argument of Latitude
$r_k = A_k(1 - e_n \cos E_k) + \delta r_k$	Corrected Radius
$i_k = i_{o\text{-}n} + (i_{o\text{-}n}\text{-DOT})t_k + \delta i_k$	Corrected Inclination
$x_k' = r_k \cos u_k$ $y_k' = r_k \sin u_k$	Positions in orbital plane
$\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega}$ ***	Rate of Right Ascension
$\Omega_k = \Omega_{0\text{-}n} + (\dot{\Omega} - \dot{\Omega}_e)\, t_k - \dot{\Omega}_e\, t_{oe}$	Corrected Longitude of Ascending Node
$x_k = x_k' \cos\Omega_k - y_k' \cos i_k \sin\Omega_k$ $y_k = x_k' \sin\Omega_k + y_k' \cos i_k \cos\Omega_k$ $z_k = y_k' \sin i_k$	Earth-fixed coordinates of SV antenna phase center

*** $\dot{\Omega}_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.

IS :

Table 3.5-2. Elements of Coordinate System (part 2 of 2)

Element/Equation	Description
$\Phi_k = \nu_k + \omega_n$	Argument of Latitude
$\delta u_k = C_{us\text{-}n}\sin 2\Phi_k + C_{uc\text{-}n}\cos 2\Phi_k$	Argument of Latitude Correction } Second Harmonic Perturbations
$\delta r_k = C_{rs\text{-}n}\sin 2\Phi_k + C_{rc\text{-}n}\cos 2\Phi_k$	Radial Correction } Second Harmonic Perturbations
$\delta i_k = C_{is\text{-}n}\sin 2\Phi_k + C_{ic\text{-}n}\cos 2\Phi_k$	Inclination Correction } Second Harmonic Perturbations
$u_k = \Phi_k + \delta u_k$	Corrected Argument of Latitude
$r_k = A_k(1 - e_n \cos E_k) + \delta r_k$	Corrected Radius
$i_k = i_{o\text{-}n} + (i_{o\text{-}n}\text{-DOT})t_k + \delta i_k$	Corrected Inclination
$x_k' = r_k \cos u_k$ $y_k' = r_k \sin u_k$ }	Positions in orbital plane
$\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega}$ ***	Rate of Right Ascension
$\Omega_k = \Omega_{0\text{-}n} + (\dot{\Omega} - \dot{\Omega}_e)\, t_k - \dot{\Omega}_e\, t_{oe}$	Corrected Longitude of Ascending Node
$x_k = x_k' \cos\Omega_k - y_k' \cos i_k \sin\Omega_k$ $y_k = x_k' \sin\Omega_k + y_k' \cos i_k \cos\Omega_k$ $z_k = y_k' \sin i_k$ }	Earth-fixed coordinates of SV antenna phase center

*** $\dot{\Omega}_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.

Rationale :

3/19/18: There is one asterisk at "Element/Equation" but in (part 1 of 2) the * represents A_REF, which is not referred to at all in this object. It does not seem to encompass the entire column. Furthermore, the * note isn't even included in this part of the Table. Hence, the asterisk will be removed.

IS800-251 :

Section Number :
3.5.4.3.4.0-1

WAS :
The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 signals of the SV whose PRN number is specified in the message or in the packet. For each health indicator, a “0” signifies that all signals on the associated frequency are okay and “1” signifies that some or all signals on the associated frequency are bad. The predicted health data will be updated at the time of upload when a new reduced almanac has been built by the CS. The transmitted health data may not correspond to the actual health of the transmitting SV or other SVs in the constellation.

Redlines :
The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 signals of the SV whose PRN number is specified in the message or in the packet. For each health indicator, a “0” signifies that all signals on the associated frequency are okay and “1” signifies that some or all signals on the associated frequency are bad. The predicted health data will be updated at the time of upload when a new reduced almanac has been built by the CS. The health bit indication shall be given relative to the "as designed" capabilities of each SV (see paragraph 20.3.3.3.1.4 of IS-GPS-200). The transmitted health data may not correspond to the actual health of the transmitting SV or other SVs in the constellation.

IS :
The three, one-bit, health indication in bits 44, 45 and 46 of subframe 3, page 4 and bits 31, 32 and 33 of each packet of reduced almanac refers to the L1, L2, and L5 signals of the SV whose PRN number is specified in the message or in the packet. For each health indicator, a “0” signifies that all signals on the associated frequency are okay and “1” signifies that some or all signals on the associated frequency are bad. The predicted health data will be updated at the time of upload when a new reduced almanac has been built by the CS. The health bit indication shall be given relative to the "as designed" capabilities of each SV (see paragraph 20.3.3.3.1.4 of IS-GPS-200). The transmitted health data may not correspond to the actual health of the transmitting SV or other SVs in the constellation.

Rationale :
4/20/2018: In addition to addressing the L1, L2, and L5 health bit question in the IS-GPS-200 and IS-GPS-705 documents, address it in IS-GPS-800. This change clarifies the health bits so that SVs which do not possess the capability to transmit L5 will transmit a bit that equates to a "healthy" signal by default (cited in 20.3.3.3.1.4 of IS-GPS-200).

IS800-871 :

Section Number :
3.5.5.2.0-1

WAS :
The following rule governs the transmission of t_{oe} in different CEI data sets: The transmitted t_{oe} will be different from any value transmitted by the SV during the preceding six hours. t_{op} does not have to match t_{oe}.

Cutovers to new CEI data sets will occur only on hour boundaries except for the first CEI data set of a new CEI data sequence propagation. The first CEI data set may be cut-in (reference paragraph 3.5.5.1) at any time during the hour and therefore may be transmitted by the SV for less than one hour.

The start of the transmission interval for each CEI data set corresponds to the beginning of the curve fit interval for the CEI data set. Each CEI data set remains valid for the duration of its transmission interval, and nominally also remains valid for the duration of its curve fit interval. A CEI data set is rendered invalid before the end of its curve fit interval when it is superseded by the SV cutting over to the first CEI data set of a new CEI data sequence propagation.

Normal Operations. The subframe 2 CEI data sets are transmitted by the SV for periods of two hours. The corresponding curve fit interval is three hours.

Redlines :
The following rule governs the transmission of t_{oe} in different CEI data sets: The transmitted t_{oe} will be different from any value transmitted by the SV during the preceding six hours. t_{op} does not have to match t_{oe}.

Cutovers to new CEI data sets will occur only on hour boundaries except for the first CEI data set of a new CEI data sequence propagation. The first CEI data set may be cut-in (reference paragraph 3.5.5.1) at any time during the hour and therefore may be transmitted by the SV for less than one hour.

The start of the transmission interval for each CEI data set corresponds to the beginning of the curve fit interval for the CEI data set. Each CEI data set remains valid for the duration of its transmission interval, and nominally also remains valid for the duration of its curve fit interval. A CEI data set is rendered ~~invalid~~obsolete before the end of its curve fit interval when it is superseded by the SV cutting over to the first CEI data set of a new CEI data sequence propagation.

Normal Operations. The subframe 2 CEI data sets are transmitted by the SV for periods of two hours. The corresponding curve fit interval is three hours.

IS :
The following rule governs the transmission of t_{oe} in different CEI data sets: The transmitted t_{oe} will be different from any value transmitted by the SV during the preceding six hours. t_{op} does not have to match t_{oe}.

Cutovers to new CEI data sets will occur only on hour boundaries except for the first CEI data set of a new CEI data sequence propagation. The first CEI data set may be cut-in (reference paragraph 3.5.5.1) at any time during the hour and therefore may be transmitted by the SV for less than one hour.

The start of the transmission interval for each CEI data set corresponds to the beginning of the curve fit interval for the CEI data set. Each CEI data set remains valid for the duration of its transmission interval, and nominally also remains valid for the duration of its curve fit interval. A CEI data set is rendered obsolete before the end of its curve fit interval when it is superseded by the SV cutting over to the first CEI data set of a new CEI data sequence propagation.

Normal Operations. The subframe 2 CEI data sets are transmitted by the SV for periods of two hours. The corresponding curve fit interval is three hours.

Rationale :
4/19/2018: Update "invalid" to "obsolete" because if the receiver interprets the data as invalid, then the receiver may stop using the data until it decodes new CEI data. Rather than do that, tell the user that the data is obsolete because it will be superseded by new data, but to continue using the old data until the receiver fully decodes the new CEI data.
