

CHANGE NOTICE

Affected Document: IS-GPS-800 Rev H	IRN/SCN Number IRN-IS-800H-001	Date: 13-JAN-2022
Authority: RFC-00467	Proposed Change Notice PCN-IS-800G_RFC467	Date: 10-DEC-2021
Document Title: NAVSTAR GPS Space Segment / User Segment L1C Interfaces		
RFC Title: 2021 Proposed Changes to the Public Documents		

Reason For Change (Driver):

1. Reserved/spare bits in the CNAV/CNAV-2 in IS-GPS-200 are assumed to be a static bit pattern. With the current proposed implementation to fill those bits with a pseudorandom bit pattern, users are at risk of incorrectly using those bits for integrity checks.
2. The GPS III SV Configuration Code '101' confirms that the "alert" in HOW is still applicable. As such, one of the public stakeholder was requesting clarification to confirm if the "alert" in the HOW will also be applicable in the future undefined configuration codes. This is not sufficient for safety-of-life equipment that would need to have the confirmation because the alert is part of the "marginal" conditions leading to the selection/deselection of a satellite in a RAIM or ARAIM integrity context.
3. Current Issue of Data and Clock (IODC) requirement in IS-GPS-200 states that the IODC will be different from any value transmitted by the SV during the preceding 7-days. In certain occasions, current operations have shown not to follow that requirement.
4. The descriptions of how the navigation message changes with time (for example, transitions between data sets, or behavior under extended navigation) do not capture all the implementation differences between earlier SVs and GPS III/IIIF.
5. Documents need clarification and clean-up, as identified in past Public ICWGs and as newly-identified changes of administrative nature.

Description of Change:

1. Clarify language in IS-GPS-200, IS-GPS-705 and IS-GPS-800 to tell users to not utilize the spare/reserved bits.
2. Add clarification to the SV Configuration Code section for the undefined SV codes.
3. Modify or delete the IODC requirement.
4. Update the timing-related information to reflect the current implementation, including aspects specific to GPS III/IIIF. Also added deferred (from RFC-444 RSAM) a Timing Relationships section to ICD-GPS-700 following the Timing Relationships section outline in IS-GPS-200 to ensure the entire subject is covered for MNAV/M-Code.
5. Provide clarity and clean up identified administrative changes in all affected documents.

Authored By: RE: Tony Anthony **Checked By: RE: Meaghan Leonhardt**

AUTHORIZED SIGNATURES	REPRESENTING	DATE
DUNN.MICHAEL, Digitally signed by J.1171235045 <small>DUNN.MICHAEL.J.1171235045 Date: 2022.04.19 06:54:35 -0700'</small>	PNT Technical Director, MilComm & PNT Directorate, Space Systems Command (SSC)	19 April 2022

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El Segundo, CA 90245
CODE IDENT 66RP1

IS800-5:

Section Number:

1.2.0-1

WAS:

Utilizing the L1 open link defined in this document, GPS space vehicles (SVs), except Block II/IIA, IIR/IIR-M, and IIF SVs, shall transmit continuous earth coverage L1C signal that provides the ranging codes and the system data needed to accomplish the navigation mission to all users having RF visibility to SVs and suitable receivers.

Redlines:

Utilizing the L1 open link defined in this document, GPS space vehicles (SVs), except Block ~~II/IIA~~, IIR/IIR-M, and IIF SVs, shall transmit continuous earth coverage L1C signal that provides the ranging codes and the system data needed to accomplish the navigation mission to all users having RF visibility to SVs and suitable receivers.

IS:

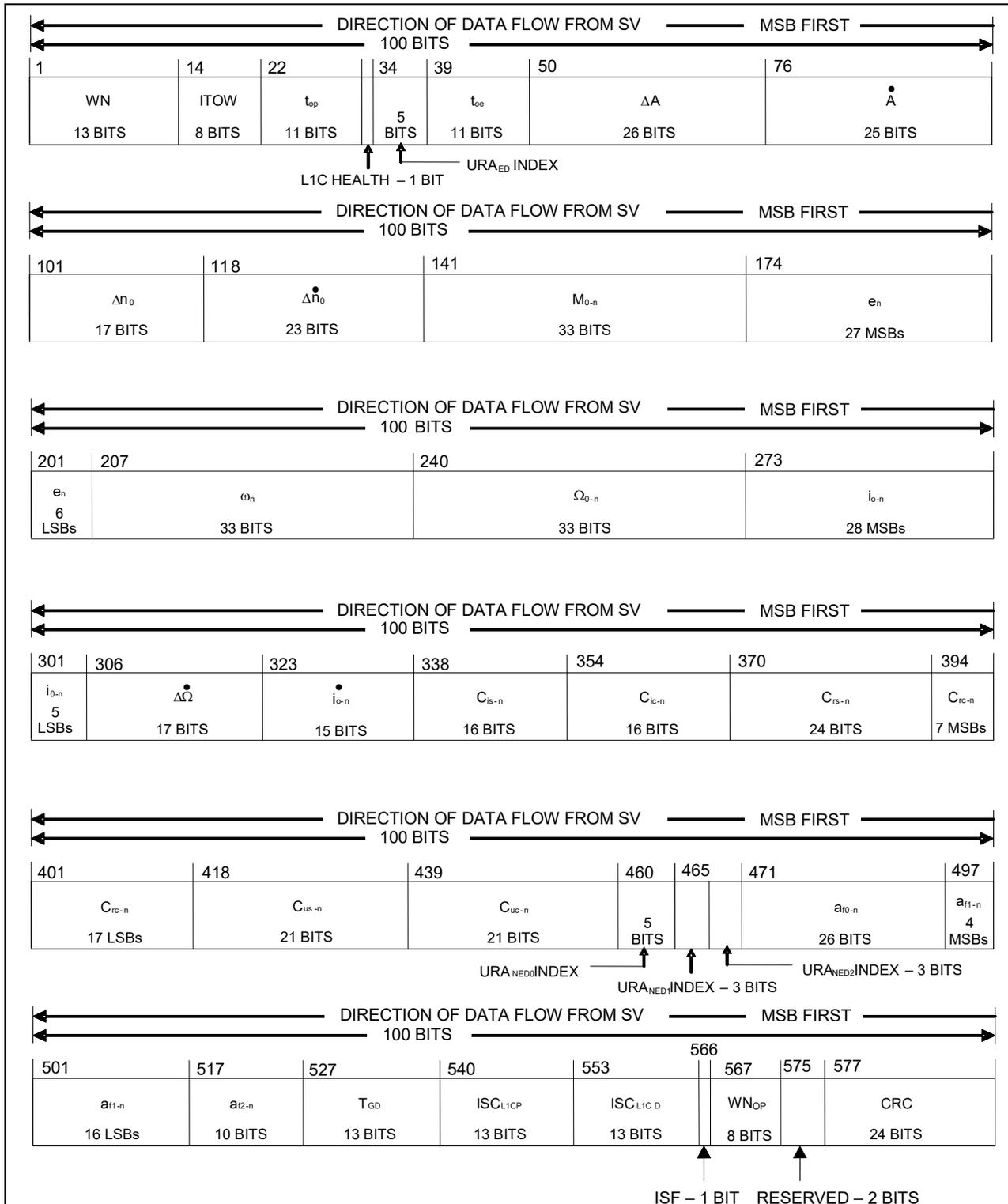
Utilizing the L1 open link defined in this document, GPS space vehicles (SVs), except Block IIR/IIR-M, and IIF SVs, shall transmit continuous earth coverage L1C signal that provides the ranging codes and the system data needed to accomplish the navigation mission to all users having RF visibility to SVs and suitable receivers.

IS800-145:

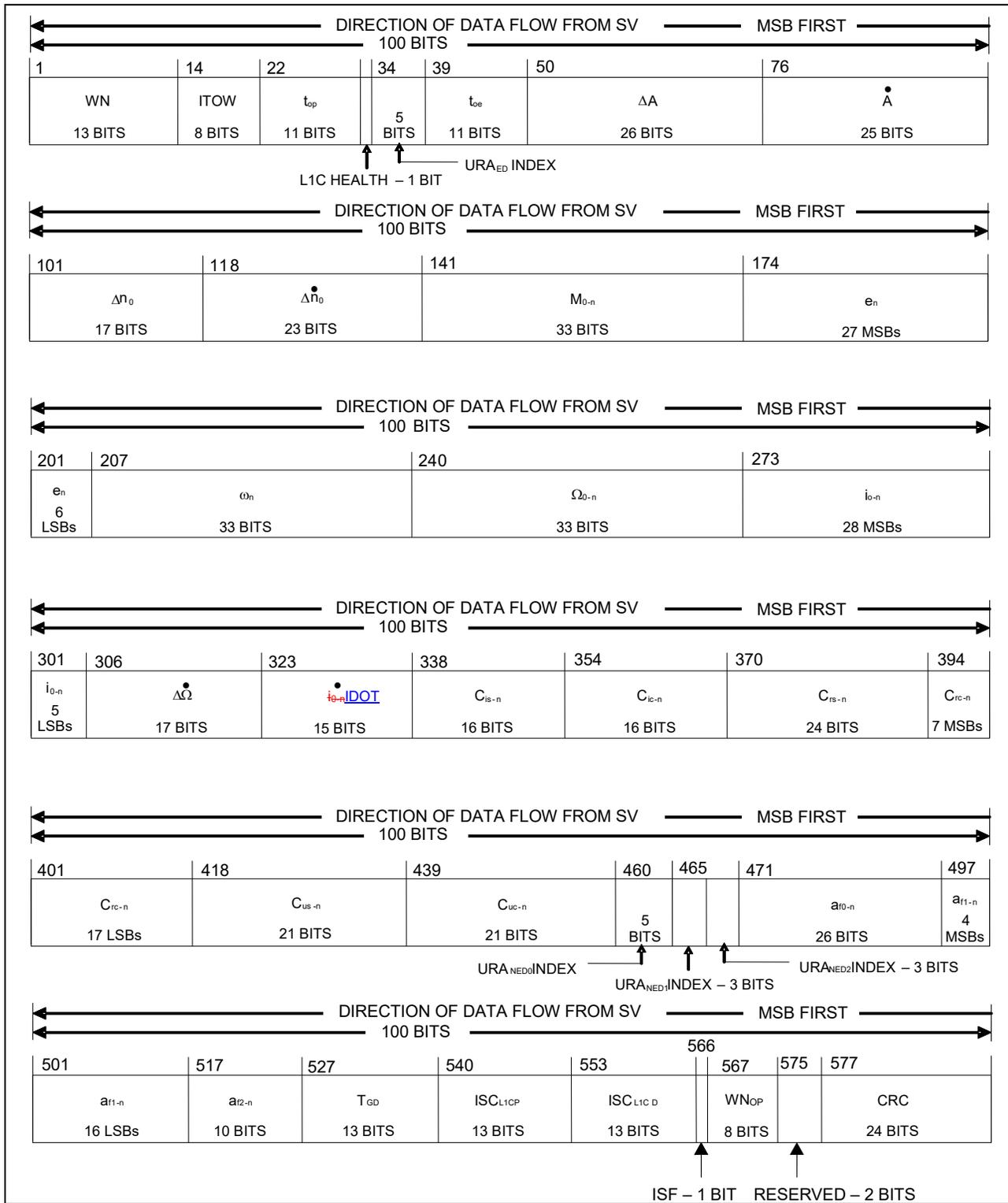
Section Number:

3.5.2.0-3

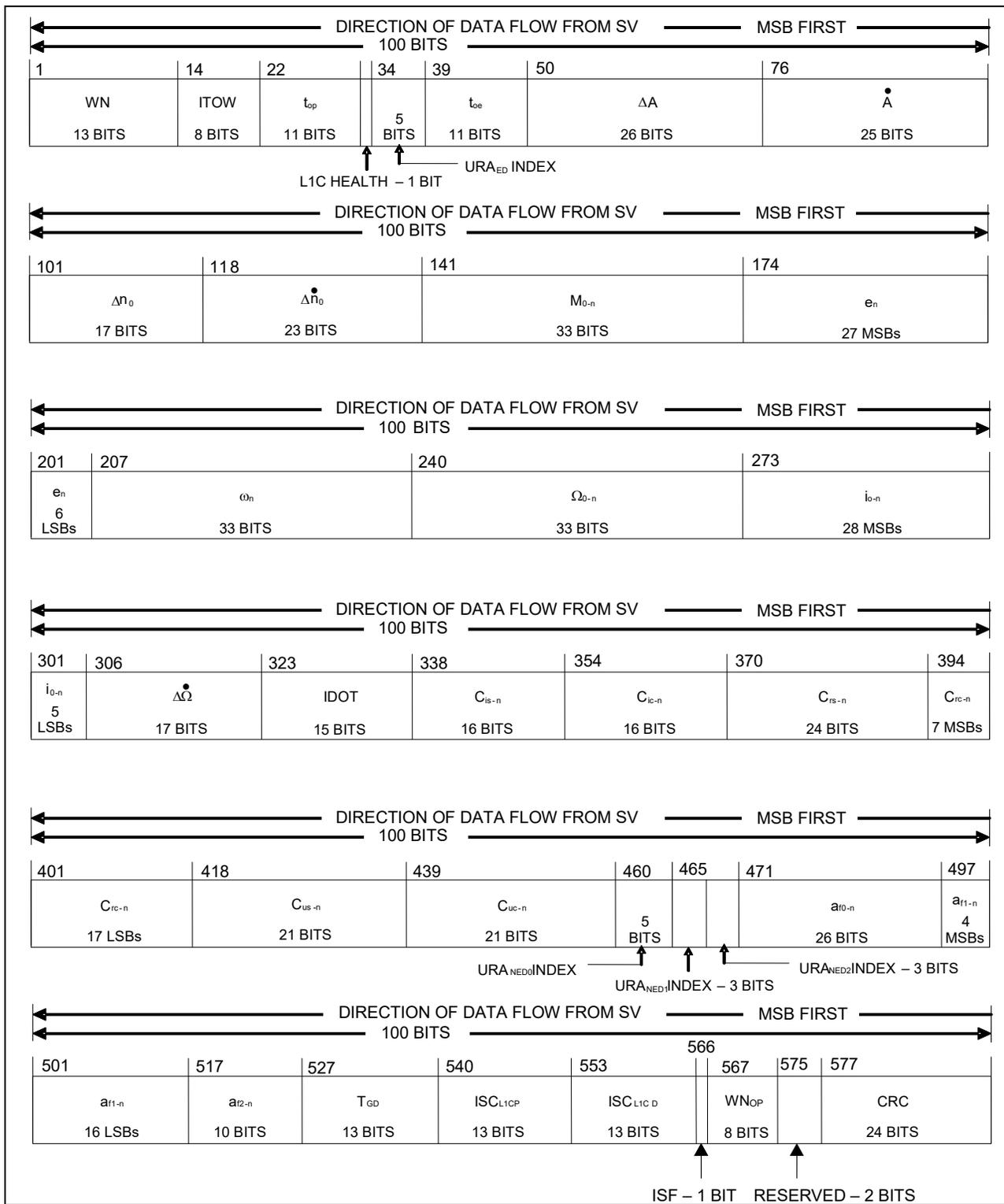
WAS:



Redlines:



IS:



IS800-160:

Section Number:

3.5.3.0-10

WAS:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range** *	Units
Ω_{0-n}	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	33*	2^{-32}		semi-circles
$\dot{\Delta \Omega}$ ****	Rate of right ascension difference	17*	2^{-44}		semi-circles/sec
i_{0-n}	Inclination angle at reference time	33*	2^{-32}		semi-circles
\dot{i}_{0-n}	Rate of inclination angle	15*	2^{-44}		semi-circles/sec
C_{is-n}	Amplitude of the sine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
	Amplitude of the cosine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
C_{ic-n}	Amplitude of the sine correction term to the orbit radius	24*	2^{-8}		meters
C_{rc-n}	Amplitude of the cosine correction term to the orbit radius	21*	2^{-30}		meters
C_{us-n}	Amplitude of the sine harmonic correction term to the argument of latitude	21*	2^{-30}		radians
C_{uc-n}	Amplitude of the cosine harmonic correction term to the argument of latitude				radians
<p>* Parameters so indicated are in two's complement notation;</p> <p>** See Figure 3.5-1 for complete bit allocation in Subframe 2;</p> <p>*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.</p> <p>**** Relative to $\Omega_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.</p>					

Redlines:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
Ω_{0-n}	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	33*	2^{-32}		semi-circles
$\dot{\Delta}^{\bullet}$ ****	Rate of right ascension difference	17*	2^{-44}		semi-circles/sec
Ω_{i0-n}	Inclination angle at reference time	33*	2^{-32}		semi-circles
$\dot{\Omega}_{i0-n}$ IDOT	Rate of inclination angle	15*	2^{-44}		semi-circles/sec
C_{is-n}	Amplitude of the sine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
C_{ic-n}	Amplitude of the cosine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
C_{rs-n}	Amplitude of the sine correction term to the orbit radius	24*	2^{-8}		meters
C_{rc-n}	Amplitude of the cosine correction term to the orbit radius	24*	2^{-8}		meters
C_{us-n}	Amplitude of the sine harmonic correction term to the argument of latitude	21*	2^{-30}		radians
C_{uc-n}	Amplitude of the cosine harmonic correction term to the argument of latitude	21*	2^{-30}		radians
<p>* Parameters so indicated are in two's complement notation;</p> <p>** See Figure 3.5-1 for complete bit allocation in Subframe 2;</p> <p>*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.</p> <p>**** Relative to $\dot{\Omega}_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.</p>					

IS:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
Ω_{0-n}	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	33*	2^{-32}		semi-circles
$\dot{\Omega}$ ****	Rate of right ascension difference	17*	2^{-44}		semi-circles/sec
i_{0-n}	Inclination angle at reference time	33*	2^{-32}		semi-circles
IDOT	Rate of inclination angle	15*	2^{-44}		semi-circles/sec
C_{is-n}	Amplitude of the sine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
C_{ic-n}	Amplitude of the cosine harmonic correction term to the angle of inclination	16*	2^{-30}		radians
C_{rs-n}	Amplitude of the sine correction term to the orbit radius	24*	2^{-8}		meters
C_{rc-n}	Amplitude of the cosine correction term to the orbit radius	21*	2^{-30}		meters
C_{uc-n}	Amplitude of the sine harmonic correction term to the argument of latitude	21*	2^{-30}		radians
	Amplitude of the cosine harmonic correction term to the argument of latitude				radians
<p>* 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 $\Omega_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.</p>					

IS800-161:

Section Number:

3.5.3.0-12

WAS:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
URANED0 Index	NED Accuracy Index	5*			(see text)
URANED1 Index	NED Accuracy Change Index	3			(see text)
URANED2 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
<p>* Parameters so indicated are in two's complement notation;</p> <p>** See Figure 3.5-1 for complete bit allocation in Subframe 2;</p> <p>*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.</p>					

Redlines:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
URA _{NED0} Index	NED Accuracy Index	5*			(see text 3.5.3.8)
URA _{NED1} Index	NED Accuracy Change Index	3			(see text 3.5.3.8)
URA _{NED2} Index	NED Accuracy Change Rate Index	3			(see text 3.5.3.8)
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, valid range is the maximum range attainable with indicated bit allocation and scale factor.

IS:

Parameter		No. of Bits**	Scale Factor (LSB)	Valid Range***	Units
URANED0 Index	NED Accuracy Index	5*			(see 3.5.3.8)
URANED1 Index	NED Accuracy Change Index	3			(see 3.5.3.8)
URANED2 Index	NED Accuracy Change Rate Index	3			(see 3.5.3.8)
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
ISCLICP	Inter-Signal Correction for L1C _P	13*	2 ⁻³⁵		seconds
ISCLICD	Inter-Signal Correction for L1C _D	13*	2 ⁻³⁵		seconds
WN _{op}	CEI Data Sequence Propagation Week Number	8	1		weeks
<p>* Parameters so indicated are in two's complement notation;</p> <p>** See Figure 3.5-1 for complete bit allocation in Subframe 2;</p> <p>*** Unless otherwise indicated in this column, valid range is the maximum range attainable with indicated bit allocation and scale factor.</p>					

IS800-182:

Section Number:

3.5.3.6.1.0-7

WAS:

Element/Equation	Description
$\Phi_k = v_k + \omega_n$	Argument of Latitude
$\delta u_k = C_{us-n} \sin 2\Phi_k + C_{uc-n} \cos 2\Phi_k$	Argument of Latitude Correction
$\delta r_k = C_{rs-n} \sin 2\Phi_k + C_{rc-n} \cos 2\Phi_k$	Radial Correction
$\delta i_k = C_{is-n} \sin 2\Phi_k + C_{ic-n} \cos 2\Phi_k$	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
$i_k = i_{o-n} + (i_{o-n-DOT})t_k + \delta i_k$	Corrected Inclination
$x_k' = r_k \cos u_k$	Positions in orbital plane
$y_k' = r_k \sin u_k$	
$\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega} \quad ***$	Rate of Right Ascension
$\Omega_k = \Omega_{0-n} + (\dot{\Omega} - \dot{\Omega}_e) t_k - \dot{\Omega}_e t_{oe}$	Corrected Longitude of Ascending Node
$x_k = x_k' \cos \Omega_k - y_k' \cos i_k \sin \Omega_k$	Earth-fixed coordinates of SV antenna phase center
$y_k = x_k' \sin \Omega_k + y_k' \cos i_k \cos \Omega_k$	
$z_k = y_k' \sin i_k$	
$*** \quad \dot{\Omega}_{REF} = -2.6 \times 10^{-9} \text{ semi-circles/second.}$	

Redlines:

Element/Equation	Description
$\Phi_k = v_k + \omega_n$	Argument of Latitude
$\delta u_k = C_{us-n} \sin 2\Phi_k + C_{uc-n} \cos 2\Phi_k$	Argument of Latitude Correction
$\delta r_k = C_{rs-n} \sin 2\Phi_k + C_{rc-n} \cos 2\Phi_k$	Radial Correction
$\delta i_k = C_{is-n} \sin 2\Phi_k + C_{ic-n} \cos 2\Phi_k$	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
$i_k = i_{o-n} + (\dot{i}_{o-n} \text{---} \text{IDOT})t_k + \delta i_k$	Corrected Inclination
$x_k' = r_k \cos u_k$	
$y_k' = r_k \sin u_k$	
	} Positions in orbital plane
$\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega} \quad ***$	Rate of Right Ascension
$\Omega_k = \Omega_{0-n} + (\dot{\Omega} - \dot{\Omega}_e) t_k - \dot{\Omega}_e t_{0e}$	Corrected Longitude of Ascending Node
$x_k = x_k' \cos \Omega_k - y_k' \sin \Omega_k$	
$y_k = x_k' \sin \Omega_k + y_k' \cos \Omega_k$	
$z_k = y_k' \sin i_k$	
	} Earth-fixed coordinates of SV antenna phase center
<p>*** $\dot{\Omega}_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.</p>	

IS:

Element/Equation	Description
$\Phi_k = v_k + \omega_n$ $\delta u_k = C_{us-n} \sin 2\Phi_k + C_{uc-n} \cos 2\Phi_k$ $\delta r_k = C_{rs-n} \sin 2\Phi_k + C_{rc-n} \cos 2\Phi_k$ $\delta i_k = C_{is-n} \sin 2\Phi_k + C_{ic-n} \cos 2\Phi_k$ $u_k = \Phi_k + \delta u_k$ $r_k = A_k(1 - e_n \cos E_k) + \delta r_k$ $i_k = i_{o-n} + (IDOT)t_k + \delta i_k$ $x_k' = r_k \cos u_k$ $y_k' = r_k \sin u_k$ $\dot{\Omega} = \dot{\Omega}_{REF} + \Delta\dot{\Omega} \quad ***$ $\Omega_k = \Omega_{0-n} + (\dot{\Omega} - \dot{\Omega}_e) t_k - \dot{\Omega}_e t_{oe}$ $x_k = x_k' \cos \Omega_k - y_k' \sin \Omega_k \sin i_k$ $y_k = x_k' \sin \Omega_k + y_k' \cos \Omega_k \sin i_k$ $z_k = y_k' \cos i_k$	<p>Argument of Latitude</p> <p>Argument of Latitude Correction } Radial Correction } Inclination Correction } Second Harmonic Perturbations</p> <p>Corrected Argument of Latitude</p> <p>Corrected Radius</p> <p>Corrected Inclination</p> <p>Positions in orbital plane</p> <p>Rate of Right Ascension</p> <p>Corrected Longitude of Ascending Node</p> <p>Earth-fixed coordinates of SV antenna phase center</p>
<p>•</p> <p>*** $\Omega_{REF} = -2.6 \times 10^{-9}$ semi-circles/second.</p>	

IS800-1173:

Insertion after object IS800-262

Section Number:

3.5.4.3.6.0-2

WAS:

<INSERTED OBJECT>

Redlines:

The Midi almanac parameters shall be updated by the CS at least once every 3 days while the CS is able to upload the SVs. If the CS is unable to upload the SVs, the accuracy of the Midi almanac parameters transmitted by the SVs will degrade over time.

Object Type: [Requirement](#)

IS:

The Midi almanac parameters shall be updated by the CS at least once every 3 days while the CS is able to upload the SVs. If the CS is unable to upload the SVs, the accuracy of the Midi almanac parameters transmitted by the SVs will degrade over time.

Object Type: Requirement

IS800-1057:**Section Number:**

3.5.4.7.1.7

WAS:

Object Heading: Satellite Fault Probability

Redlines:

Object Heading: Satellite Fault ~~Probability~~[Rate](#)

IS:

Object Heading: Satellite Fault Rate

IS800-1058:**Section Number:**

3.5.4.7.1.7.0-1

WAS:

Bits 50 through 53 of Subframe 3, Page 8 shall provide the assumed Satellite Fault Probability (R_{sat}) value for ARAIM at the current time for the associated GNSS constellation.

Redlines:

Bits 50 through 53 of Subframe 3, Page 8 shall provide the assumed Satellite Fault ~~Probability~~[Rate](#) (R_{sat}) value for ARAIM at the current time for the associated GNSS constellation.

IS:

Bits 50 through 53 of Subframe 3, Page 8 shall provide the assumed Satellite Fault Rate (R_{sat}) value for ARAIM at the current time for the associated GNSS constellation.

IS800-289:

Section Number:

3.5.5.1.0-2

WAS:

Cutovers of subframe 2 data to new CEI data sets will nominally occur on hour boundaries except for the first CEI data set of a new CEI data sequence propagation.

Redlines:

~~Cutovers of subframe 2 data to new CEI data sets will nominally occur on hour boundaries except for the first CEI data set of a new CEI data sequence propagation.~~

IS:

<DELETED OBJECT>

IS800-1158:

Section Number:

3.5.5.2.0-2

WAS:

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.

Redlines:

Cutovers to new CEI data sets will occur only on two-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~~two hours and therefore may be transmitted by the SV for less than ~~one~~two hourhours.

IS:

Cutovers to new CEI data sets will occur only on two-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 two hours and therefore may be transmitted by the SV for less than two hours.

IS800-1159:

Section Number:

3.5.5.2.0-3

WAS:

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.

Redlines:

~~The~~Except for the first CEI data set of a new CEI data sequence propagation, 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.

IS:

Except for the first CEI data set of a new CEI data sequence propagation, 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.

IS800-1172:

Insertion after object IS800-1159

Section Number:

3.5.5.2.0-4

WAS:

<INSERTED OBJECT>

Redlines:

The start time of the curve fit interval of the first CEI data set of a new CEI data sequence propagation may be later than the start time of the curve fit interval of the preceding CEI data set that was transmitted prior to the cutover. The beginning of the curve fit interval of the first CEI data set of a new CEI data sequence propagation will be a multiple of 300 seconds (5 minutes) relative to the start of week.

Object Type: [Info-Only](#)

IS:

The start time of the curve fit interval of the first CEI data set of a new CEI data sequence propagation may be later than the start time of the curve fit interval of the preceding CEI data set that was transmitted prior to the cutover. The beginning of the curve fit interval of the first CEI data set of a new CEI data sequence propagation will be a multiple of 300 seconds (5 minutes) relative to the start of week.

Object Type: Info-Only

IS800-917:**Section Number:**

6.2.8.1-2

WAS:

Symbol	Parameter Name	Subframe
\dot{A}	Change Rate in Semi-major Axis	2
ΔA	Semi-major Axis Difference at Reference Time	2
Δn_0	Mean Motion Difference from Computed Value at Reference Time	2
$\Delta \dot{n}_0$	Rate of Mean Motion Difference from Computed Value	2
Ω_0	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	2
$\Delta \dot{\Omega}$	Rate of Right Ascension Difference	2
ω	Argument of Perigee	2
a_{f0}	SV Clock Bias Correction Coefficient	2
a_{f1}	SV Clock Drift Correction Coefficient	2
a_{f2}	Drift Rate Correction Coefficient Index	2
C_{ic}	Amplitude of the Cosine Harmonic Correction Term to the Angle of Inclination	2
C_{is}	Amplitude of the Sine Harmonic Correction Term to the Angle of Inclination	2
C_{rc}	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius	2
C_{rs}	Amplitude of the Sine Correction Term to the Orbit Radius	2
C_{uc}	Amplitude of Cosine Harmonic Correction Term to the Argument of Latitude	2
C_{us}	Amplitude of Sine Harmonic Correction Term to the Argument of Latitude	2
e	Eccentricity	2
i_0	Inclination Angle at Reference Time	2
$i_{0-n-DOT}$	Rate of Inclination Angle	2
ISC_{L1CP}	Inter-signal Correction	2
ISC_{L1CD}	Inter-signal Correction	2
ISC_{L1CA}	Inter-signal Correction	3
ISC_{L2C}	Inter-signal Correction	3
ISC_{L5I5}	Inter-signal Correction	3
ISC_{L5Q5}	Inter-signal Correction	3
ISF	Integrity Status Flag ^{NOTE1}	2

Symbol	Parameter Name	Subframe
ITOW	Interval Time of Week	2
L1C	Signal Health (1 bits)	2
M_0	Mean Anomaly at Reference Time	2
T_{GD}	Group Delay Differential	2
t_{oe}	Time of Ephemeris	2
t_{op}	CEI Data Sequence Propagation Time of Week	2
URA_{ED} Index	Elevation Dependent User Range Accuracy, URA_{ED} Index	2
URA_{NED0} Index	NED Accuracy Index	2
URA_{NED1} Index	NED Accuracy Change Index	2
URA_{NED2} Index	NED Accuracy Change Rate Index	2
WN	Data Sequence Propagation Week Number	2
<p>NOTE1: Parameters so indicated are for CEI Refinement – not limited to curve fit. Parameters not indicated are needed for/limited to curve fit. Updates to parameters in table shall prompt changes in t_{oe}. Any parameter marked with NOTE1 may be changed with or without a change in t_{oe}.</p>		

Redlines:

Symbol	Parameter Name	Subframe
\dot{A}	Change Rate in Semi-major Axis	2
ΔA	Semi-major Axis Difference at Reference Time	2
Δn_0	Mean Motion Difference from Computed Value at Reference Time	2
$\Delta \dot{n}_0$	Rate of Mean Motion Difference from Computed Value	2
Ω_0	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	2
$\Delta \dot{\Omega}$	Rate of Right Ascension Difference	2
ω	Argument of Perigee	2
a_{f0}	SV Clock Bias Correction Coefficient	2
a_{f1}	SV Clock Drift Correction Coefficient	2
a_{f2}	Drift Rate Correction Coefficient Index	2
C_{ic}	Amplitude of the Cosine Harmonic Correction Term to the Angle of Inclination	2
C_{is}	Amplitude of the Sine Harmonic Correction Term to the Angle of Inclination	2
C_{rc}	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius	2
C_{rs}	Amplitude of the Sine Correction Term to the Orbit Radius	2
C_{uc}	Amplitude of Cosine Harmonic Correction Term to the Argument of Latitude	2
C_{us}	Amplitude of Sine Harmonic Correction Term to the Argument of Latitude	2
e	Eccentricity	2
i_0	Inclination Angle at Reference Time	2
\dot{i}_0 <u>IDOT</u>	Rate of Inclination Angle	2
ISCL1CP	Inter-signal Correction	2
ISCL1CD	Inter-signal Correction	2
ISCL1CA	Inter-signal Correction	3
ISCL2C	Inter-signal Correction	3
ISCL5I5	Inter-signal Correction	3
ISCL5Q5	Inter-signal Correction	3
ISF	Integrity Status Flag ^{NOTE1}	2
ITOW	Interval Time of Week	2
L1C	Signal Health (1 bits)	2
M_0	Mean Anomaly at Reference Time	2
TGD	Group Delay Differential	2

Symbol	Parameter Name	Subframe
t_{oe}	Time of Ephemeris	2
t_{op}	CEI Data Sequence Propagation Time of Week	2
URA_{ED} Index	Elevation Dependent User Range Accuracy, URA_{ED} Index	2
URA_{NED} $_0$ Index	NED Accuracy Index	2
URA_{NED} $_1$ Index	NED Accuracy Change Index	2
URA_{NED} $_2$ Index	NED Accuracy Change Rate Index	2
WN	Data Sequence Propagation Week Number	2
<p>NOTE1: Parameters so indicated are for CEI Refinement – not limited to curve fit. Parameters not indicated are needed for/limited to curve fit.</p> <p>Updates to parameters in table shall prompt changes in t_{oe}. Any parameter marked with NOTE1 may be changed with or without a change in t_{oe}.</p>		

IS:

Symbol	Parameter Name	Subframe
\dot{A}	Change Rate in Semi-major Axis	2
ΔA	Semi-major Axis Difference at Reference Time	2
Δn_0	Mean Motion Difference from Computed Value at Reference Time	2
$\Delta \dot{n}_0$	Rate of Mean Motion Difference from Computed Value	2
Ω_0	Longitude of Ascending Node of Orbit Plane at Weekly Epoch	2
$\Delta \dot{\Omega}$	Rate of Right Ascension Difference	2
ω	Argument of Perigee	2
a_{f0}	SV Clock Bias Correction Coefficient	2
a_{f1}	SV Clock Drift Correction Coefficient	2
a_{f2}	Drift Rate Correction Coefficient Index	2
C_{ic}	Amplitude of the Cosine Harmonic Correction Term to the Angle of Inclination	2
C_{is}	Amplitude of the Sine Harmonic Correction Term to the Angle of Inclination	2
C_{rc}	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius	2
C_{rs}	Amplitude of the Sine Correction Term to the Orbit Radius	2
C_{uc}	Amplitude of Cosine Harmonic Correction Term to the Argument of Latitude	2
C_{us}	Amplitude of Sine Harmonic Correction Term to the Argument of Latitude	2
e	Eccentricity	2
i_0	Inclination Angle at Reference Time	2
IDOT	Rate of Inclination Angle	2
ISCL1CP	Inter-signal Correction	2
ISCL1CD	Inter-signal Correction	2
ISCL1CA	Inter-signal Correction	3
ISCL2C	Inter-signal Correction	3
ISCL5I5	Inter-signal Correction	3
ISCL5Q5	Inter-signal Correction	3
ISF	Integrity Status Flag ^{NOTE1}	2
ITOW	Interval Time of Week	2
L1C	Signal Health (1 bits)	2
M_0	Mean Anomaly at Reference Time	2
T_{GD}	Group Delay Differential	2

Symbol	Parameter Name	Subframe
t_{oe}	Time of Ephemeris	2
t_{op}	CEI Data Sequence Propagation Time of Week	2
URA_{ED} Index	Elevation Dependent User Range Accuracy, URA_{ED} Index	2
URA_{NED} $_0$ Index	NED Accuracy Index	2
URA_{NED} $_1$ Index	NED Accuracy Change Index	2
URA_{NED} $_2$ Index	NED Accuracy Change Rate Index	2
WN	Data Sequence Propagation Week Number	2
<p>NOTE1: Parameters so indicated are for CEI Refinement – not limited to curve fit. Parameters not indicated are needed for/limited to curve fit.</p> <p>Updates to parameters in table shall prompt changes in t_{oe}. Any parameter marked with NOTE1 may be changed with or without a change in t_{oe}.</p>		

IS800-166, IS800-904, IS800-911, IS800-919, IS800-913, IS800-901:

This change removes the trailing period from all of the above headings.

Section Number:

<many>.

WAS:

<many>.

Redlines:

<many>.

IS:

<many>

CP Status = 'In Review': 13

CP Status = 'Applied': 6

of inserted requirements: 1

of modified requirements: 2

of deleted requirements: 1

of TBDs: 0

of TBRs: 0

of (added/modified) effectivities: 0

of VCRM additions: 0

of VCRM modifications: 0

of VCRM deletions: 0

of descriptive texts: 3

of (added/modified) tables: 4

of (added/modified) figures: 1

Verification Cross Reference Matrix:

Only new requirement objects and objects containing VCRM attributes that are being added, modified or deleted in this IRN/SCN will be shown in the "Was" and "Is" fields in the VCRM.

WAS:

DOORS ID	Object Number	Effectivity	AEP Effectivity	CS Effectivity	SS Effectivity	Highest Verification Level	Segment	System Verification Method
IS800-289	3.5.5.1.0-2	15		N/A	15	Module	SV US	Test Inspection

IS:

DOORS ID	Object Number	Effectivity	AEP Effectivity	CS Effectivity	SS Effectivity	Highest Verification Level	Segment	System Verification Method
IS800-289	<DELETED>	<DELETED>	<DELETED>	<DELETED>	<DELETED>	<DELETED>	<DELETED>	<DELETED>