Change Topic: Public Signals in Space Requirements Disconnects

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.

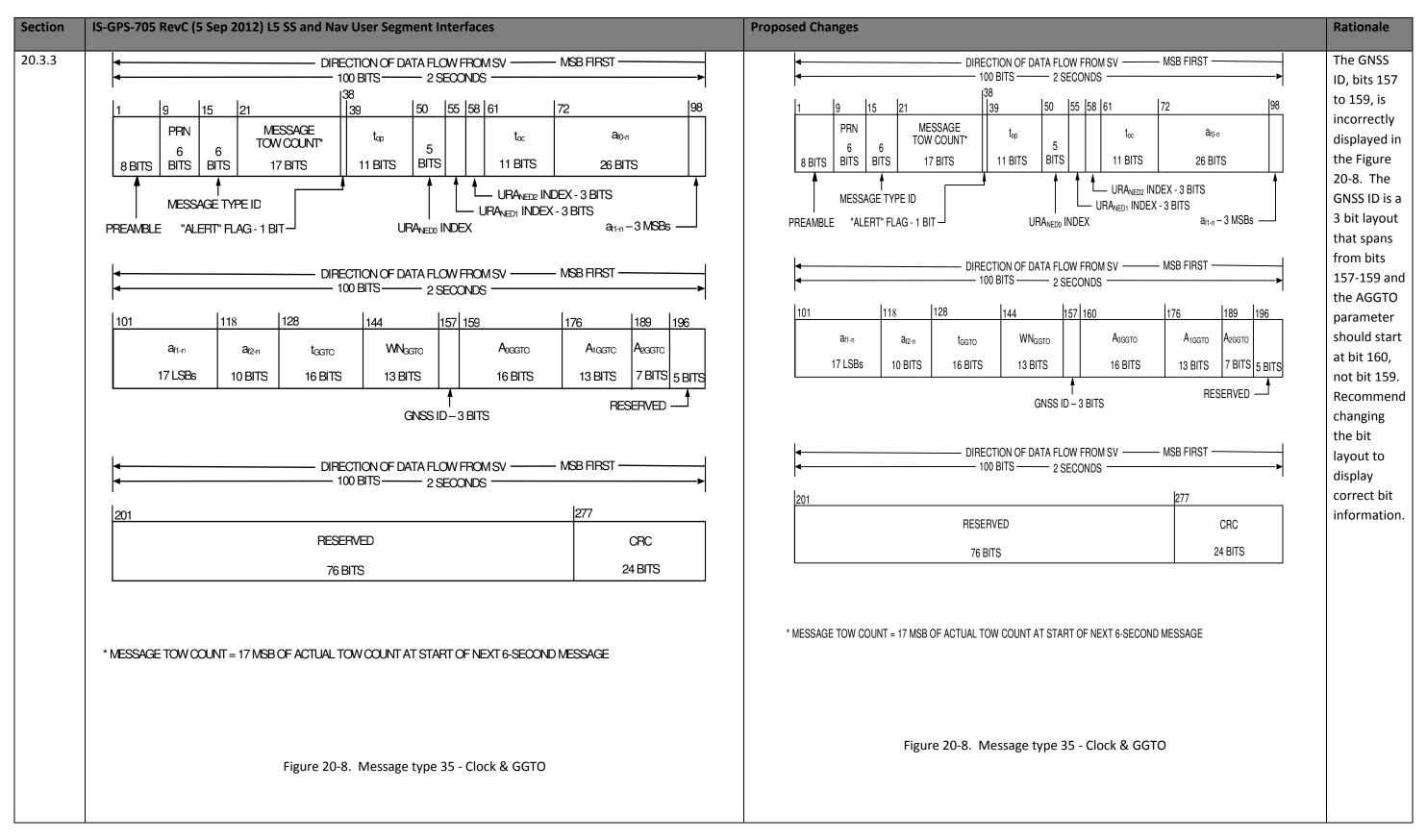| PROBLEM STATEMENT: |
| --- |
| The current public signals in space documents contain incorrect information (L2C message duration, GNSS ID bit assignments), and missing information (L5 ellipticity values). If these disconnects are not resolved, receiver manufacturers will have issues designing to incorrect requirements and the Directorate will be misrepresenting the current and future GPS system performance in a public document. |
| SOLUTION: (Proposed) |
| Resolve the incorrect (L2C message duration, GNSS ID bit assignments), and missing (L5 ellipticity values) requirements in the public signals in space documents |

12 Sep 2013

Section	IS-GPS-705 RevC (5 Sep 2012) L5 SS and Nav User Segment Interfaces	Proposed Changes	Rationale
6.3.3	As an aid to user equipment receiver designers, a table is provided (Table 6-I) of a typical GPS Block IIF ellipticity as a function of angular range. A table of a typical GPS III ellipticity will be added TBD.	As an aid to user equipment receiver designers, a table is provided (Table 6-I) of a typical GPS Block IIF and GPS III ellipticity as a function of off-boresight angle.	Update from TBD from RFC-00077.
6.3.3	Table 6-I. Typical Ellipticity vs Angular Range Angle (deg) ±0 ±2 ±4 ±6 ±8 ±10 ±12 ±14.3 Ellipticity (dB) 1.5 1.5 1.5 1.5 1.5 1.5 1.5 2.0	Table 6-I. Typical Ellipticity vs Off-Boresight Angle See table below.	Update from TBD from RFC-00077.

Table 6-I. Typical Ellipticity vs Off-Boresight Angle

Angle (deg)	±0	±2	±4	±6	±8	±10	±12	±14.3
GPS Block IIF Ellipticity (dB)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0
GPS III Ellipticity (dB)	0.8	0.8	0.8	1.1	1.3	1.4	1.4	1.3

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Section	IS-GPS-705 RevC (5 Sep 2012) L5 SS and Nav User Segment Interfaces	Proposed Changes	Rationale
20.3.3	 * MESSAGE TOW COUNT = 17 MSB OF ACTUAL TOW COUNT AT START OF NEXT 6-SECOND MESSAGE Figure 20-8. Message type 35 - Clock & GGTO	 * MESSAGE TOW COUNT = 17 MSB OF ACTUAL TOW COUNT AT START OF NEXT 6-SECOND MESSAGE Figure 20-8. Message type 35 - Clock & GGTO	The GNSS ID, bits 157 to 159, is incorrectly displayed in the Figure 20-8. The GNSS ID is a 3 bit layout that spans from bits 157-159 and the AGGTO parameter should start at bit 160, not bit 159. Recommend changing the bit layout to display correct bit information.

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Section	IS-GPS-705 RevC (5 Sep 2012) L5 SS and Nav User Segment Interfaces	Proposed Changes	Rationale
20.3.3.8.1	Message Type 35 provides SV clock correction parameters (ref. Section 20.3.3.2) and also, shall contain the parameters related to correlating GPS time with other GNSS time. Bits 155 through 157 of message type 35 shall identify the other GPS-like navigation system to which the offset data applies. The three bits are defined as follows; 000 = no data available, 001 = Galileo, 010 = GLONASS, 011 through 111 = reserved for other systems. The number of bits, the scales factor (LSB), the ranges, and the units of the GGTO parameters are given in Table 20-XI. See Figure 20-8 for complete bit allocation in message type 35.	Message Type 35 provides SV clock correction parameters (ref. Section 20.3.3.2) and also, shall contain the parameters related to correlating GPS time with other GNSS time. Bits 157 through 159 of message type 35 shall identify the other GPS-like navigation system to which the offset data applies. The three bits are defined as follows; 000 = no data available, 001 = Galileo, 010 = GLONASS, 011 through 111 = reserved for other systems. The number of bits, the scales factor (LSB), the ranges, and the units of the GGTO parameters are given in Table 20-XI. See Figure 20-8 for complete bit allocation in message type 35.	Text should match the bit allocation map in IS-GPS-705C, Figure 20-8.