UNCLASSIFIED Change Topic: Clarification of CNAV Broadcast Intervals

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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 CNAV/CNAV-2 broadcast intervals tables in IS-GPS-200, IS-GPS-705, and IS-GPS-800 do not clearly convey the separate, distinct characteristics between each type of almanac message data (Reduced Almanac, Midi Almanac) and associated message type numbers (Message Type 31 and 37, respectively); nor do the tables note the operational flexibility retained by AFSPC.

A literal reading of the existing CNAV/CNAV-2 broadcast intervals tables has -- and will likely continue to -- cause the Control Segment to waste valuable CNAV/CNAV-2 throughput broadcasting unnecessary CNAV/CNAV-2 messages.

SOLUTION: (Proposed)

Clarify the differences/separation/options for each CNAV message type/data, message type number, and associated broadcast intervals.

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	GPS-200 RevG (5 Sep	2012) Navstar GPS Space	Segment/Navigation User I	nterfaces	Prop	oosed Changes		
.3.4.	Table 30-XII. Message Broadcast Intervals					Table 30-XII. Message Broadcast Intervals		
	Message Data	Message Type Number	Maximum Broadcast Intervals [†]			Message Data	Message Type Number	Maximum Broadcast Intervals
	Ephemeris	10 & 11	48 sec			Ephemeris	10 & 11	48 sec
	Clock	Type 30's	48 sec	-		Clock	Type 30's	48 sec
	ISC, IONO	30*	288 sec			ISC, IONO	30*	288 sec
	Reduced Almanac	31* or 12	20 min**			Reduced Almanac	31* or 12	20 min**,***
	Midi Almanac	37	120 min**			Midi Almanac	37*	120 min**,****
	EOP	32*	30 min			EOP	32*	30 min****
	UTC	33*	288 sec			UIC	33*	288 sec
	Diff Correction	34* or 13 & 14	30 min***			Diff Correction	34* or 13 & 14	30 min***,****
	GGTO	35*	288 sec			GGTO	35*	288 sec****
	Text	36* or 15	As needed			Text		As needed****
	 * Also contains SV clock correction parameters. ** Complete set of SVs in the constellation. *** When Differential Corrections are available. † The intervals specified are maximum As such, the broadcast intervals may be shorter than the specified value. 					 * Also contains SV clock correction parameters. ** Complete set of SVs in the constellation. *** When Differential Corrections are available. **** Optional (interval applies if/when broadcast). † The intervals specified are maximum As such, the broadcast intervals may be shorter than the specified value. 		

Rationale

The current CNAV broadcast intervals tables in IS-GPS-200 do not clearly convey the separate, distinct characteristics between each type of almanac message data (Reduced Almanac, Midi Almanac) and associated message type numbers (Message Type 31 and 37, respectively); nor do the tables note the operational flexibility retained by AFSPC.

A literal reading of the existing CNAV/CNAV-2 broadcast intervals tables has -- and will likely continue to -- cause the Control Segment to waste valuable CNAV throughput broadcasting unnecessary CNAV messages.

Message Type 37 includes SV clock correction parameters. Therefore, it should have an asterisk.

The 5 asterisk (*****) note found in the original 13 May 2013 PIRN stating "Either Reduced Almanacs or Midi Almanacs, but not both" note has been deleted as a footnote from IS-GPS-200 since it implies that operators must choose either Reduced or Midi Almanacs and continue to transmit either Reduced or Midi almanacs in favor of the other. There are users who will utilize either the Reduced or Midi Almanacs and do not want to see either type of data cut out of use.