

IS-GPS-200 ICWG MEETING MINUTES

Minutes Date: 12-Feb-2010
Minutes By: Gopal/Abayon
Meeting Date: 12-Feb-2010
Meeting Time: 0800 - 0910
Location: Teleconference
Chairs: Capt Neal Roach, USAF
Vimal Gopal, SE&I

Discussions:

- Welcome message and administrative announcements were made at the beginning of the meeting by Captain Neal Roach.
- First on the agenda was the new L2C phasing language additions. The L2C phasing language was presented to the group. Specifically, section 3.3.1.5.1 was modified in accordance with a comment from GPC to include the phase information of L2C with respect to L2P(Y). In addition, section 3.3.1.5.3 was modified in order to ensure user notification of phase discontinuities via non-standard code (NSC) when no L2C navigation message is being modulated.
- The ICC then went on to go over several additional changes to the document.
- Carrier Phase Noise (IS-GPS-200 Section 3.3.1.3):
 - The ICC explained that, due to programmatic issues, the GPSW has decided to defer the language change proposal for this section to a future revision. The GPSW is OK with the language change proposal, but due to testing and other contractual issues, the language is reverted back to the original spec until a resolution is made.
 - AJ VanDierendonck asked whether this would affect the Block IIIA design. Mike Munoz responded by stating that this does not affect Block IIIA's design and only affects how the requirement is tested.
- The ICC went on to discuss issues not related to IS-GPS-200. However, since the IS-GPS-705 and IS-GPS-800 were not on the original agenda, the ICC stated that this presentation is informal only and that the GPSW is looking to potentially hold another ICWG to go over these changes officially.
- Signal Coherence (IS-GPS-800 Section 3.2.1.7.1):
 - The ICC presented a comment that came out of GPSW review (after the September 2009 ICWG). The comment (from Soon Yi), requested the removal of "and C/A Code" from the 2nd sentence of the proposed language. The sentence has been modified now to read "On the L1 carrier, the chip transitions of the two modulating signals, L1C_D and L1C_P, shall be such that the average time difference between them, and between each and the transitions of L1P(Y), do not exceed 10 nanoseconds."
 - AJ VanDierendonck stated that because C/A is already coherent with P(Y), this should not be a problem.
- Correlation Loss (Section 3.3.1.2):
 - At this time, the ICC went back to the IS-GPS-200 document to go over a change in this section. Due to a contractual impact with the Boeing IIF program, the ICC added a column in the new

- table to specify that the correlation loss for IIF and prior blocks remains at 0.6 dB. The 0.3 dB number is only intended for Block III SVs.
- AJ mentioned that the 0.3 dB value reflects the real correlation loss and that we should not specify 0.6 dB since this value does not reflect reality. Karl Kovach agreed that this was the case and explained the reason behind this modification to the table was purely for contractual/programmatic reasons. Once the IIF SVs start launching, Karl recommended we come back to clean this table up.
 - AJ also mentioned that the new correlation loss language should be considered as a description change and not a spec change. He suggested that should be the way that Boeing should view this change.
 - Space Service Volume Group Delay Differential (IS-GPS-800 Section 3.2.1.8.3):
 - Soon Yi talked about this section, since it relates to a comment he submitted during the GPSW review.
 - Soon believes that the existing wording is not correct. Specifically, he believes that the sentence “Not applicable. See Sections 3.2.1.7.1 (Signal Coherence) and 3.5.3.9.1 (Inter-Signal Group Delay Differential Correction)” should be removed.
 - The ICC suggested that instead of the proposed sentence, that perhaps a TBD should be placed (as is done in IS-GPS-200 and IS-GPS-705). The ICWG body did not object to this. The ICC has taken the action to provide this new language for a future ICWG.
 - Chris Hegarty asked whether only the L2C phasing language was to be CCB’ed (and not the other ICWG approved changes). Captain Roach reassured Chris that all of the ICWG approved changes would be boarding including the L2C phasing changes.
 - The ICC explained that he would be moving forward with the original carrier phase noise language, the modified table for correlation loss and the new L2C phasing language.
 - Chris Hegarty mentioned that he was opposed to deferring the carrier phase noise language proposal
 - There was a concern about the Integrity Status Flag (ISF). The concern was centered around the way legacy equipment might react when a ‘1’ is broadcast in the navigation message for the ISF. Karl Kovach agreed that this is a legitimate concern. He agreed to speak with commenter on this issue separately and potentially bring this up at the next IS-GPS-200 ICWG, if necessary.
 - Another concern was brought up regarding the change of description of the A/S flags. Karl Kovach explained to the commenter that the A/S flag descriptions were just clarified as a result of a comment from Michael Dash. No other changes were made. This satisfied the commenter’s concern.
 - Captain Roach solicited feedback regarding the dial-in option for limited ICWG agendas. Some preferred “face-to-face” meetings, others preferred the telecon option.
 - The latest ICWG’ed documents will be posted on a website (with the URL provided for all stakeholders)
 - GPSW is currently looking to potentially having another ICWG in the early March timeframe to go over IS-GPS-705 and IS-GPS-800 changes.
 - Terry Schmitt asked about the Constellation Expansion PPIRN and whether it would be included in this update. Captain Roach stated that would be part of the next revision of the document and not this revision. Karl Kovach also agreed to provide an updated PPIRN that is “harmonized” with ICD-GPS-250.
 - All participants were requested to provide their names via email to the ICC.

Supporting Materials:

<input type="checkbox"/> IS-GPS-200_12Feb10.docx	<input type="checkbox"/>
<input type="checkbox"/> IS-GPS-200_CRM_12Feb10.docx	<input type="checkbox"/>
<input type="checkbox"/> IS-GPS-200_WAS-IS_12Feb10.docx	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Attendees:

Name	Company / Organization
Abayon, Annabelle	GPSW/SE&I
Backman, G.	Rockwell Collins
Baker, J.	Rockwell Collins
Brown, Steven	Lockheed Martin (GPS III)
Castro, Bob	Aerospace
Cignar, Ann	Trimble/USGIC
Crabb, Charles	ITT
Davis, Rick	Raytheon/OCX
Debower, M.	Rockwell Collins
Greening, Tom	Northrop Grumman/OCX
Grundman, Ron	GPS III SE&I
Hague, P.	Rockwell Collins
Hegarty, Chris	MITRE
Hietzke, Wolf	SAIC/SE&I
Hinkle, John	Raytheon/OCX
Jeffris, Mike	MITRE
Jelmeland, Tom	Boeing
Jone, J.	Novatel
Kalyanaraman, Sai	Rockwell Collins
Kawakami, Todd	GPSW/GPD
Kovach, Karl	GPSW/Aerospace
Manzano, L.	GPSW/Aerospace
Mullikin, Tom	Raytheon/OCX
Munoz, Mike	GPSW/SE&I
Naick, Purvis	GPSW/GPC
Neelson, J.	Rockwell
Notley, William	GPSW/GPC
Nuth, Vannaroth	GPSW/Aerospace
Peetz, Bruce	Trimble
Phillips, Sarah	Lockheed Martin (NG OCX)
Powers, Ed	USNO

Name	Company / Organization
Reigh, Daniel	Lockheed Martin
Ray, Jim	NOAA
Renfro, Brent	ARL, University of Texas
Ryling, K.	USNO
Schmitt, Terry	Rockwell Collins
Stump, K.	Rockwell Collins
Van Dierendonck, AJ	AJ Systems/FAA/NASA
VanDierendonck, K.	
Vaughan, P.	Northrop/OCX
Webster, E.	
Wyngard	NGA
Young, Larry	JPL

Action Items from this ICWG:

No.	Due Date	Actionee	Item	Resolution
1	25-Feb-10	Vimal Gopal	Update IS-GPS-705 and IS-GPS-800 with updated Signal Coherence language. And revert Carrier Phase Noise back to original requirement. Present at next ICWG.	Complete
2	25-Feb-10	Vimal Gopal	Add parenthetical example for signal coherence language.	Complete
3	25-Feb-10	Vimal Gopal	Update Space Service Volume Group Delay Differential with a TBD.	Complete

Action Items from last ICWG:

No	Due Date	Actionee	Item	Resolution
1	01-Jul-08	Thomas Davis	1) Replace "unauthorized user" with SPS/PPS or similar wording (from comment #4)	Completed. Updated in the document
2	02-Jul-08	Thomas Davis	2) Section 6.3.5.3, verify number of code pairs in table 6-11	Complete. updated in the document
3	Next ICWG	Karl Kovach	3) Align 200 to the results of the NPEF	Open
4	Next ICWG	Karl Kovach	4) Karl Kovach to present results of constellation expansion working group at next ICWG	Completed.
5	15-Jun-08	Mike Deelo	5) Correlate number of bits for t_{GGTO} within figure 30-8 and table 30-XI	Completed by V. Gopal

6	31-Jan-09	Mike Munoz	Coordinate with stakeholders possible solutions for redundant requirements throughout the 3 Public SIS docs.	Closed. Karl Kovach has provided a document that highlights all common requirements. GPSW is currently looking into ways to publicly release this document.
7	31-Jan-09	Karl Kovach Bruce Peetz	Review and provide new language for phase relationship before and after year 2020 for L2C. (comment 74)	Complete. New language incorporated into document. See phase relationship section.
8	31-Jan-09	Karl Kovach	Provide new language for how almanac data will be reported for the rest of the GPS PRNs defined in Section 6.3.5. (comment 91)	Complete. Methodology is explained in constellation expansion PPIRN.
9	31-Jan-09	Mike Deelo	Have the Correlation Loss/Phase noise WG discuss group delay issues/concerns (comment 83)	Completed. Changes incorporated into document.
10	05-Dec-08	Thomas Davis	Identify all inappropriate instances of "NAV" and replace with "navigation." (comment 69)	Closed.
11	31-Jan-09	Thomas Davis	Review older PIRNs for how they indicated a unique draft version number or date of a particular redline version	Closed. OBE.
12	31-Jan-09	Tom Stansell Karl Kovach Capt Hariharan	Research need for adding L2C PRN assignment for PRN 64-158	Closed. This issue will be OBE after Karl Kovach's PPIRN on constellation expansion (AI #8)
13	31-Jan-09	Mike Munoz	Verify P code sequence is correctly defined	Open

Next Scheduled Meeting:

The next ICWG is scheduled for March 10, 2010 from 0800 to 1200. We will be discussing the following topics as it relates to IS-GPS-200, IS-GPS-705 and IS-GPS-800:

- Signal Coherence
- Carrier Phase Noise
- Space Service Volume Group Delay Differential

For your reference, red-lined documents, CRMS and WAS/IS matrices is provided in the following website:

<http://www.losangeles.af.mil/library/factsheets/factsheet.asp?id=9364>

This ICWG will be a teleconference. Dial-in information is as follows:

Phone: 1-800-FON-SAIC

Code: 4511074

There are limited number of phone lines that will be available on a first-come-first-serve basis. Participants are encouraged to share lines if possible.