

-----Original Message-----

From: CGSIC [mailto:cgsic-bounces@cgl.uscg.mil] On Behalf Of Civil Global Positioning System Service Interface Committee (CGSIC)
Sent: Monday, February 02, 2015 4:24 PM
To: cgsic@cgl.uscg.mil
Subject: CGSIC: Leap Second Implementation Problems

All CGSIC:

2015 GPS Future Leap Second Implementation

The GPS 50 bit-per-second navigation message transmitted by each GPS satellite (specifically Page 18, subframe 4) includes the parameters needed to relate GPS time to UTC (Coordinated Universal Time). That relationship is maintained through leap second implementation transitions by IS-GPS-200 compliant user equipment. For leap second transition, user equipment must utilize the notice regarding a scheduled future delta time due to leap seconds (Δt_{LSF}), together with the week number (WNLSF) and the day number (DN) at the end of which the leap second becomes effective.

On or about 21 January, 2015 those GPS navigation messages began to include future leap second data which indicates an increase in the leap second to become effective at the end of June, 2015. IS-GPS-200 revision H, dated 24 Sep 2013 paragraph 20.3.3.5.2.4 Coordinated Universal Time (UTC), documents the appropriate algorithm details to ensure correct utilization of the parameters above (including all potential truncated week number transitions and variations in time of processing relative to satellite upload timing near the future leap second effectivity).

The data upload for the June 30th leap second, initiated with SVN48/PRN07 at 18:33:56z on January 21st, was correctly executed. However, there are several receivers brands/models that seem to be mishandling this information and applying the leap second now. This is creating a negative one-second offset in faulty receivers. The U.S. Coast Guard Navigation Center has reports of these receivers causing synchronization issues with radios, computer systems, and data logging equipment. Users experiencing issues with GPS receivers that began on January 21st, 2015 should contact the receiver manufacturer to determine if the latest firmware or software patch can correct the issue.

V/R

Rick Hamilton
CGSIC Executive Secretariat
GPS Information Analysis Team Lead
USCG Navigation Center
703-313-5930

CGSIC one-way mailing list

Unsubscribe: <http://cgl.uscg.mil/mailman/listinfo/cgsic>

If you would like to report abuse of the CGLS listserv please send an email to: CGLSAdmin@uscg.mil