Mandatory firmware upgrade for all MC73xx Modems

Issue: GPS 2019 Week Rollover

Modems affected: MC7304, MC7350, MC7330, MC7354, MC7354MNA

Summary:

The Global Positioning System (GPS) contains a week number field which is a 10-bit binary number. This limits the range of the week number to 0 – 1023, or 1024 total weeks.

GPS week zero started Jan 6, 1980. The first 1024 weeks counter ran out and rolled over on August 21, 1999. **The GPS week counter will reset again in November 2019.**

The modems used by Cisco have a buffer designed in, so that these modems won't be affected by the GPS rollover on April 6, 2019; The rollover date on these modems is November 3, 2019, at which point the date will roll over to March 19, 2000.

Once the GPS week counter resets, the ability to get GPS position fix is unaffected.
The only impact is the **date** reported in 'Timestamp (GMT)' field under 'sh cellular gps' output, and some NMEA sentences (i.e. GPRMC). **If customer applications make use of these parameters, there may be some impacts.**

All Cisco SKUs with MC73xx modems will be impacted by the GPS week counter reset.

For customers with Cisco SKUs using MC73xx products that utilize the **date** reported in the 'sh cellular gps' command, or the GPRMC info in NMEA sentences, it is recommended to upgrade the modems with the new firmware packages posted on Cisco CCO:
https://www.cisco.com/c/en/us/support/interfaces-modules/lte-wireless-wan-interfaces/tsd-products-support-series-home.html

Option 1

Firmware package:
MC73xx_GPS_Rollover_Fix.spk

This package can be used on any of the MC73xx modems (MC7304, MC7354, MC7350, MC7354MNA, MC7330) running any carrier firmware. Upgrading the modems with this package will fix the GPS Rollover issue. This is the recommended option for customers already on 5.5.58.xx firmware

Option 2

Firmware packages:

MC7304: MC7304_1102029_05.05.58.00_00_TELSTRA_005.014_000.spk
MC7350: MC7350_1102036_05.05.58.01_00_VZW_005.009_000.spk
MC7354MNA: MC7354MNA_1102407_05.05.58.01_00_VZW_005.006_000.spk
MC7354: MC7354_1102037_05.05.58.00_00_ATT_005.013_000.spk

If the modem is already on firmware 5.5.58.x, upgrading with this package, will upgrade only the modem OEM PRI to address the GPS rollover issue. The modem firmware version will continue to be 5.5.58.xx. If modems are running older firmware versions, the modem firmware will be upgraded to 5.5.58.x along with the OEM PRI to address the GPS rollover issue.

Based on the carrier network these SKUS are deployed on, please follow the firmware upgrade instructions:
https://www.cisco.com/c/en/us/td/docs/routers/access/interfaces/firmware/Firmware_Upgrade.html

*This option is recommended for customers that want to upgrade the modem firmware in addition to applying the fix for the GPS rollover issue. The caveat with this option is for customers that are running the following carrier firmware packages:

MC7304 modem -> Generic (GENEU) firmware

MC7350 modem -> Sprint firmware

MC7354 modem -> Generic (GENNA) firmware
US-Cellular firmware

MC7354MNA -> ATT firmware
US-Cellular firmware
Generic (GENNA) firmware
Verizon firmware

These customers would have to upgrade with the firmware package that has the fix for the GPS Rollover issue (listed above) corresponding to the modem. Following this they would have to do a second upgrade to load the corresponding carrier that they are operating on (steps are outlined in the Firmware Upgrade Document)

PIDS affected:

EHWIC-4G-LTE-VZ	NIM-4G-LTE-ST	C819GW-LTE-MNA-AK9	IR829GW-LTE-VZ-AK9	C899G-LTE-JP-K9
EHWIC-4G-LTE-VZPRM	NIM-4G-LTE-STPRM	C819GW-LTE-GA-EK9	IR829GW-LTE-GA-EK9	
EHWIC-4G-LTE-AT	NIM-4G-LTE-GA	C819HG-LTE-MNA-K9	C881G-4G-GA-K9	
EHWIC-4G-LTE-ATPRM	NIM-4G-LTE-GAPRM	CGM-4G-LTE-GA	C887VAG-4G-GA-K9	
EHWIC-4G-LTE-AU	NIM-4G-LTE-VZ	CGM-4G-LTE-MNA	C896VAG-LTE-GA-K9	
EHWIC-4G-LTE-CA	NIM-4G-LTE-VZPRM	CGM-4G-LTE-MNA-AB	C897VAG-LTE-GA-K9	
EHWIC-4G-LTE-GB	NIM-4G-LTE-NA	IR809G-LTE-GA-K9	C897VAMG-LTE-GA-K9	
EHWIC-4G-LTE-GBPRM	NIM-4G-LTE-NAPRM	IR809G-LTE-VZ-K9	C897VAGW-LTE-GAEK9	
EHWIC-4G-LTE-ST	C819G-4G-NA-K9	IR809G-LTE-NA-K9	C899G-LTE-GA-K9	
EHWIC-4G-LTE-STPRM	C819G-4G-ST-K9	IR829GW-LTE-GA- CK9	C899G-LTE-NA-K9	
EHWIC-4G-LTE-VZ	C819G-4G-VZ-K9	IR829GW-LTE-GA- SK9	C899G-LTE-ST-K9	
C819G-4G-GA-K9	C819G-LTE-MNA-K9	IR829GW-LTE-NA-AK9	C899G-LTE-VZ-K9	