CO-OPS Engineering Bulletin 21-001

Engineering Change: Update Iridium Time Epoch

Systems Affected: All new systems using an Iridium SBD transmitter

Originating Team: Chesapeake and Seattle Instrument Labs

Approval Date: 22 July 2021

Background: Iridium Short Burst Data (SBD) modems are used for telemetry at a number of water level and currents stations throughout the network. Iridium is useful in a variety of situations including where line of sight to the GOES satellite is not feasible and when power consumption is an issue.

Due to a bug in the Sutron Xpert operating system software an issue became apparent in May 2021 where units not synchronized to the Iridium network prior to early-May 2021 began utilizing the incorrect Iridium time epoch and setting the system time to May 2014. Ultimately, this will be rectified with an updated Sutron Xpert operating system but development has not yet been started and an availability date is currently unknown. For now, new systems brought online after May 2021 require a forced epoch reset using the procedure described below in order to provide the correct system time. Note that the fix is applied to the Xpert/9210 DCP operating system registry and not the modem itself.

Action Required: Set the Iridium epoch in all new systems being configured for deployment by doing the following after the SBD modem is connected to the DCP it will be deployed with and is on the air:

1)   Open a new file in Notepad.

2)   Enter the following command in the text document:

             !IRSE 05/11/2014 14:23:55

3)   Save the text file with an '.sbd' file extension, e.g., 'Epoch_Reset.sbd'.

4)   Attach the 'Epoch_Reset.sbd' file to an email, put the corresponding IMEI number in the subject line, leave the body of the message blank, and send the email to data@sbd.pac.disa.mil

5)   You will receive an e-mail response that the message has been queued. It should be applied within an hour and is often completed within a few minutes.

6)   To confirm the fix has been applied, synchronize the DCP time with your laptop and confirm that the system time doesn't revert back to May 2014 after the next transmission.

Estimated Time To Complete: 30 minutes per unit

References:
CO-OPS SOP 3.2.3.5 (E1) Standing Project Instructions for Coastal and Great Lakes Water Level Stations
CO-OPS 4.3.1.2 (B20) 9210 & Xpert Dataloggers Iridium Manual