



MARINE IMAGING SYSTEMS

MARINE FIELD SERVICE BULLETIN

FSB Number	<u>1319340162</u>
FSB Title	<i>IAS Leap Second actions</i>
Date	12/02/2016
Originator	Michael Rooker
Product Group	Acquisition
Product Name	DigiSTREAMER
Product P/N	

Synopsis:

“Atomic clocks are more stable than the rate of the earth rotation since the latter undergoes a full range of geophysical perturbations at various time scales (lunisolar and core-mantle torques, atmospheric and oceanic effects, ...) Leap seconds are needed to keep the two time scales in agreement, i.e. UT1-UTC smaller than 0.9 second. So, when necessary a "leap second" is introduced in UTC.” (see References)

Affects:

The introduction of the Leap Second to GPS time can cause a timing error in the IAS system, as the DUAZ time is used to time-stamp the collected data samples during recording. Additionally the ias-recorder uses the GPS time from the DUAZ to establish or set the Network Time Protocol time for all other systems in the IAS rack.

Problems/Symptoms:

If the system is recording during the Leap Second event, there is the possibility of introducing a data shift due to the difference in collection vs recording time, as they reference the GPS time stamp. If the event occurs mid-record, this will result in a large error in the data recorded for that shot interval.

Action Required:

There is no patch necessary for this event, as the DUAZ will automatically adjust and report the correct time at the appropriate interval.

It is, however, recommended that the user not be recording during the Leap Second event, due to the potential corruption of the recorded data. To ensure that the IAS system adjusts appropriately, as well as syncs with Navigation following the event, it is recommended that if on line, recording be suspended for a short period of time from 23:55 to 00:10. No recording of seismic data should be attempted during this time frame. If nearing the Start of Line, then recording should be delayed until after this time period.

Tools Required:

None.

Parts Required:

None.

Safety Issues:

None.

Procedure:

Disable or delay shooting from 23:55 to 00:10 UTC during the Leap Second events.

Leap Second schedules are published online at:

<https://www.iers.org/SharedDocs/News/EN/BulletinC.html>

Q. C. Process:

None.

References:

<https://hpiers.obspm.fr/iers/bul/bulc/ntp/leap-seconds.list>

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