

GPS Clocks and PMU Inter-operability Issues



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Common Clock Installation Issues

- 1344 Enable
 - Sometimes results in year 2000 in time/date field
 - Major clock manufacturer lists this feature deep in their product manual.
- Coax loading
 - Two PMUs in same rack
 - One had valid clock, the other didn't
- PMU/Clock Compatibility
 - One clock model worked; the other didn't
 - Use a higher quality clock

➤ ***Utilities not prepared for precise time***

Long Term Maintenance Issues

- Field technicians set up and maintain PMU's
 - Not familiar with clock precision needed for synchrophasors
- ***Maintenance will become a problem***
- Need engineering support during PMU installation and maintenance
- Need support from PMU & clock vendors



Emerging Clock Issues

- Standards changing —> multiple & incomplete
- Legacy Equipment Issues
 - C37.118.2 compatibility with C37.118-2005
 - Coax to ethernet
 - Time quality bit definition
 - Backup time source during failure & resynch.

➤ ***Leap second: June 30, 2012***

