Time References in GNSS

Author(s)  J. Sanz Subirana, J.M. Juan Zornoza and M. Hernández-Pajares,
Technical University of Catalonia, Spain.
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Regarding the GNSS, the GPS Time (GPST), GLONASS Time (GLONASST),
Galileo System Time (GST) and BeiDou Time (BDT) are the reference times used
in GPS, GLONASS and Galileo applications, respectively.

GPS Time (GPST) is a continuous time scale (no leap seconds) defined by the
GPS Control segment on the basis of a set of atomic clocks at the Monitor
Stations and onboard the satellites. It starts at 0h UTC (midnight) of January
5th to 6th 1980 (6.d0). At that epoch, the difference TAI−UTC was 19 seconds,
thence GPS−UTC=n − 19s. GPS time is synchronised with the UTC(USNO) at 1
microsecond level (modulo one second), but actually is kept within 25 ns.

GLONASS Time (GLONASST) is generated by the GLONASS Central
Synchroniser and the difference between the UTC(SU) and GLONASST should
not exceed 1 millisecond plus three hours[footnote 1] (i.e.,GLONASST = UTC(SU)
+ 3h − τ, where | τ | < 1milisec.), but τ is typically better than 1 microsecond.
Note: Unlike GPS, Galileo or Compass, GLONASS time scale implements leap
seconds, like UTC.

Galileo System Time (GST) is a continuous time scale maintained by the Galileo
Central Segment and synchronised with TAI with a nominal offset below 50 ns.
The GST start epoch is 0h UTC on Sunday, 22 August 1999 (midnight between
21 and 22 August).

BeiDou Time (BDT) is a continuous time scale starting at 0h UTC on January
1st, 2006 and is synchronised with UTC within 100 ns< (modulo one second),
[BeiDou-SIS-ICD-Test, 2011].