

# GNSS update

**Four** satellites were launched into Earth's orbit in December 2007, which should improve surveyors's options for picking up the second civil frequency, L2C.

**The** new launches were a GPS IIR-18(M) satellite, and three new GLONASS satellites which bring the Russian constellation to a total of 18 satellites. The plan is to increase the number of GLONASS navigation satellites to 24 by 2009.

For GPS-only users, the availability of a new GPS satellite does not change things much since it merely replaces an older satellite in Slot C1, keeping the total of GPS satellites orbiting the Earth to 31.

However, those with L2C GPS receivers named for GLONASS satellites will have access to one or two additional GLONASS satellites during certain times of the day.

The availability of more satellites bodes well for Topcon Positioning

Systems (TPS) receivers which utilize dual-constellation (GPS and GLONASS) signals.

Topcon pioneered dual-constellation positioning technology and has been utilizing dual-constellation signals in positioning solutions for more than six years.

For years Topcon's GPS+ was the only dual-constellation, satellite-based precision positioning system that allowed its users the option to access both the GPS and GLONASS satellite constellations.

With its line of G3 receivers, TPS customers will also be able to receive signals from the Galileo system, now being tested by the European Union.

The use of multi-constellation signals virtually eliminates job site downtime due to weak or obstructed satellite reception. More satellites



Topcon's GR-3 is the world's first RTK GPS+ satellite receiver to be able to capture signals from all three satellite-positioning systems – GPS, GLONASS and the planned European Union's Galileo system. The rugged and durable unit sets new standards for performance and accuracy in precise measurement and positioning. (Courtesy: Topcon)

to work with means more accuracy, more places in which to work, and shorter initialization times.

GLONASS is a dual-purpose global navigation system designed to serve the Russian Ministry of Defense and civil users. When all its 24 satellites become operation, the system will provide continuous navigation coverage allowing an unlimited number of domestic and foreign users at sea, in the air, and on land to determine precise coordinates, velocity, and time. ■