High-Precision GNSS in a Four Constellation World

By Eric Gakstatter and Marian Jamieson and sponsored by

The Oregon GNSS Users Group

For those of you who have used high-precision GNSS for many years, you might remember how important it was in the 1980's and 1990's to use a satellite mission planning tool in order to optimize your GPS field time. If you didn't, you could be stuck waiting for enough satellites to be in view in order to gather enough data for a centimeter position. Then, in the early 2000's, the Glonass constellation began to mature and it opened our eyes as to the potential efficiency gained by our receivers using additional constellations. About that time, the European Union and China began developing their own satellite navigation systems; Galileo and BeiDou, respectively. A decade later, there are enough Galileo and BeiDou satellites in orbit that we can use them along with GPS and Glonass for high-precision GNSS positioning. If two constellations substantially increase our field productivity, how much more productivity could we gain using three or four constellations? This workshop will explore that question and present results from data we've collected and analyzed.

During the workshop, we will also discuss other evolving trends in high-precision GNSS such as GNSS real-time correction services, BYOD (Bring Your Own Device) data collectors, and software-based GNSS receivers.

When: **Monday, April 22, 2019 8:30am-4:00pm**
Where: **Chemeketa Eola—NW Wine Studies Center: 215 Doaks Ferry Rd. NW, Salem, OR 97304**
Lunch: **Yes, tasty lunch is provided**
Check-in: **7:30-8:30 AM (Preregistration only—No registration at the door) PDH Credits: 6.5**
Cost : **$60 members/$80 non-members**
First come, first served for up to 150 registrants. Attendees will be emailed any handout materials before the workshop and should be self-printed prior to your attendance. No handout materials will be provided at the workshop.

Eric Gakstatter is the founder of Discovery Management Group LLC located in Portland, OR. For 18 years, his firm has been dedicated to testing, deploying, and using high-precision GNSS technology for submeter and centimeter-level positioning. For more than 10 years, Eric was the Contributing Editor for high-precision at GPS World magazine, authoring over 200 technical articles. Eric began working with GPS receiver technology in 1990.

Marian Jamieson is a Civil Engineering graduate student (supervised by Dr. Michael Olsen) at Oregon State University with a concentration in Geomatics. She teaches introductory surveying labs at OSU in Plane Surveying, Surveying Theory, and Highway Location and Design. As an undergraduate student, Marian worked under Daniel Gillins (PLS, PhD) to compare web-based static GNSS post-processing services. This research is published in ASCE Journal of Surveying Engineering.

Questions: johnminor3537@gmail.com **or Chris Munson at** chris@munson-assoc.com
Send one registration per person to: Chris Munson, 233 Southwest Wilson Ave., Ste.5, Bend, OR 97702
Make checks payable to Oregon GNSS Users Group, or pay with PayPal on our website.
OGUG tax ID# 93-1282014 Website: http://www.ogug.net/special-events.html
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