



Cost Effective Positioning and Geo Data Seminar

April 20, 2017. Novosibirsk, Russia

Dear colleague,

We are pleased to invite you to attend the International Seminar on the role of Cost Effective Positioning and Geo Data. The Seminar will be jointly organized under auspices of FIG Commissions 3 and 5. It will be held within the frame of the XIII International Exhibition and Scientific Congress "Interexpo GEO-Siberia 2017", April 19-21, 2017.

For more than a decade a number of studies proved the approachability of decimeter- and centimeter-level accuracy in positioning by means of low-cost GNSS equipment such as navigation devices and smartphones. In 2016, a new release of Android 7 mobile operating system triggered the forthcoming revolution in availability of precise and accurate positioning. It was announced that under Android 7 applications would gain access to raw measurements including carrier phase from the built-in GNSS unit. Very soon it will probably make a large portion of mobile devices RTK-capable. In 2014 the estimated number of smartphone users worldwide exceeded 3 bln. Currently, more than 80 % of all smartphones are run on Android. Taking into consideration that RTKLIB free open source software has already been ported to Android OS, it is possible to assume that new high-precision smartphone-based RTK solutions may become available in a matter of months. Finally, precise low-cost GNSS solutions may have a huge impact on practices of geographic information acquisition, and contribute to the development of civil UAV applications, monitoring systems, and self-driving cars. At the same time, going from demonstration of technical feasibility to real life application is challenging and many problems are to be solved.

Objective of the seminar is to shape a vision for the future of cost-effective positioning technologies. Surveyors and geodesists are aware that GNSS is not the only possible solution. For some applications other instruments and sensors may provide more accurate or reliable results. In some environments, e.g. indoors, GNSS are practically inapplicable. That is why it is necessary to remember classical and innovative solutions like total stations, IMUs, laser scanning and photogrammetry. Spatial data processing is one more issue that must be kept in mind. Low-cost and open source GIS data management and analysis solutions will also be brought up during the seminar.

The seminar provides a good opportunity to bring producers of the survey-grade equipment, developers of precise low-cost solutions, surveyors, and other potential users together. The agenda of the seminar covers both hardware and software solutions. We strongly encourage everyone interested to get involved now and be part of making this event a success.

Herein is an open set of issues that are perhaps most relevant from our point of view.

What are the ways to make precise positioning widely available?

Which GNSS positioning methods are optimal for mass-market application?

How can technical aspects like processing of noisy data and dealing with multipath be handled?

What modifications should be done for those methods to make them mass-market-ready?

Will free online processing services, including PPP services, be the future?

How can GNSS be integrated with such sensors as IMUs?

How can open source solutions be integrated into surveying activities?
What role may low-cost solutions possibly play in the surveying industry?
Will VGI and other low-cost geo data sources perform an increasingly essential role in the future?
How will the leading indoor navigation for the mass-market look like in the nearest future?
Will open-source GIS be of importance for surveyors and other users?

Please feel free to offer your own topic.

Oral presentation

You are welcome to make a report at the Cost Effective Positioning and Geo Data Seminar. The working languages are English and Russian (simultaneous translation will be provided). Time reserved for an oral presentation is 15 minutes + 5 minutes of discussion for normal presentations. Invited presentation will have 20 minutes + 6 minutes discussion. Actual timing of each presentation will be available in the final program before the Seminar. Oral reports are accompanied by PowerPoint presentations. The speakers are entirely responsible for the presentation content (order, graphics etc.). Please make sure your presentation is in a commonly compatible format. Please prepare your presentation preferably using PowerPoint version 2010 or 2013 (although versions 2007 / 2003 are also supported). Presentations and handouts will be published on the FIG website. Authors may also publish a paper in the proceeding of Geo-Siberia.

For further information contact the organizers.

Interexpo Geo-Siberia

The XIII International Exhibition and Scientific Congress "Interexpo GEO-Siberia 2017" will be held at Novosibirsk Expocentre, 104, Stantsionnaya St., Novosibirsk, Russia. Additional information can be found in the brochure at: <http://sgugit.ru/en/geo-siberia/GEO-Siberia-2017-Brochure.pdf>
Official [website](#) of the event will have been updated by January 2017.

Visa

Those participants, who need to apply for a Russian visa to attend "Interexpo GEO-Siberia", should [download](#) and fill in the Application Form. The filled in form and scans of all pages of the passport must be sent to the Organizing Committee of "Interexpo GEO-Siberia".

Pay attention that it usually takes 30 days to issue an official letter of invitation. The electronic version of the latter will be sent to the applicant's address and the Russian Consulate stated by the applicant in the application form.

Contact

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The banner features a blue background with a satellite image of the Earth on the left. The text is white and yellow. At the top left, it says "Interexpo GEO-Siberia". At the top right, it says "19 – 21 April 2017 Novosibirsk". In the center, it says "XIII International scientific congress and exhibition". At the bottom, there is a row of logos for various organizations, including DVW, isprs, IEA, AGI, FIG, ICG, GIM INTERNATIONAL, ACCOMMUNIR, and EARSeL.

Interexpo GEO-Siberia 19 – 21 April 2017
Novosibirsk

XIII International scientific congress and exhibition

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