Geospatial Management of Earth Resources

FIG Commissions 5 (Positioning and Measurement) and 6 (Engineering Surveys), together with the Siberian State Academy of Geodesy (SSGA) held a workshop on ‘Innovative Technologies for Efficient Geospatial Management of Earth Resources' on Lake Baikal in Listvyanka, Russia, from 23rd to 30th July 2009. The conference was attended by about forty participants. The technical programme included twenty presentations in four technical sessions.

Speakers

Participants and guests were welcomed by Prof. Dr Alexander D. Afanasyev, vice-rector for Scientific Studies, Irkutsk State Technical University, Prof. Dr Lothar Gruendig, FIG WG 6.3 chair, Prof. Vladimir Seredovich, SSGA, vice-rector for innovative activities), Boris I. Ivlev, director of the Foundation for Assistance to Small Innovative Enterprises for the Novosibirsk Region, Dr Sergey A. Miller, president, GIS Association, and Prof. Anatoly L. Okhotin, president, Baikal Union of Mining Surveyors.

Discussion

Topics for discussion included:

- prediction of deformation and movement of earth's surface and engineering structures in areas of tectonically active zones using geodetic observations
- terrestrial laser-scanning systems, and their use
- GIS technologies for planning, construction and planning, construction, operation and maintenance of oil & gas, industrial, power industry plants and infrastructure
- provision of geo-information for problem solving in ecology, geomorphology, geology and geophysics
- real-time GNSS applications in development of oil & gas fields
- airborne Lidar, Synthetic Aperture Radar and digital photogrammetric technologies and their applications, e.g. in civil engineering and emergency situation prediction
- earth remote sensing.

Results

The main target groups are educational bodies and the oil & gas industry. The rapid development of new innovative technologies forces the need for meetings all over the world for better exchange of knowledge regarding efficient usage. To achieve the millennium goals, transmission of knowledge concerning rapid technological changes in geodesy, photogrammetry, GIS, remote sensing, CORS and DGNNS augmentation systems also have to be central to modern educational programmes. Interdisciplinary development of new methods and algorithms for interpretation of the results of monitoring systems is required. Time must be reduced between scientific pilot-project studies and implementation for commercial use. New standards for 3D navigation and data processing are urgently needed.

Monitoring

Great attention was given to data integration received from airborne Lidar survey and remote sensing to solve the problems of Earth's resources monitoring. The presentations made by the participants were devoted to the key problems of sharing data from aerial and terrestrial laser scanning, including mobile terrestrial complexes and aerial photographic, thermal and hyperspectral data. Most participants emphasised the fact that only a combined approach could provide any real solutions to Earth's resources management problems.

The Siberian State Academy of Geodesy has published the technical programme and workshop proceedings on paper and on CD-ROM (including presentations).