SUMMARIES

Jarosław Bydłosz, Piotr Parzych, Janusz Dąbrowski: **The Possibilities of Real Estates Market Development in Poland in Connection with INSPIRE Directive** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

Nowadays, some works concerning INSPIRE directive implementation and transposition are taking place in Poland. As we know the target of INSPIRE directive is establishment and development of spatial information infrastructure in the European Union. The INSPIRE directive, the project of act on spatial information infrastructure that transponds the INSPIRE directive into the polish law and two systems that manage information on cadastral parcels and real estates are shortly described in the paper. These systems are the Cadastre for Grounds and Buildings and the Land Register. The integral part of Cadastre for Grounds and Buildings is the Register of Prices and Values for Real Estates. This register is the data set containing information on real estates transaction and results of estates valuation. The information on transaction price usually concerns the whole estates as it has been bought. There is no information on estates elements like parcels or buildings prices, so we do not know separate land or building element prices. Such data are very difficult for interpretation, conclusion reaching and application in themes "Cadastral parcels" and "Buildings" defined in the INSPIRE directive.

It is proposed in this paper to use statistical estimation models to solve this problem. The parametrical estimation model may be used for well developed estates markets, whereas for poorly developed markets the conditional estimation model is possible for application. The employment of the latter was suggested for the real estate market in Poland here.

Keywords: INSPIRE directive, real estates valuation, conditional statistical model

Jan W. Dobrowolski, Ananya S. Guha: **Open University and Modern Distance Learning for Sustainable Development in India and Poland** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

The paper attempts to analyse, as to how distance education mechanisms can be effectually used for sustainability in areas of the human environment, health and management of the natural resources. Short review of methodological experiences in education of

knowledge-based society for common action with experts for promotion sustainable development is based on over 20 years activity in this field of the AGH Open University and the Open Seminars on Sustainable Development and ca. 40 years of informal, problem-solving education in linkage with interdisciplinary case studies. Further this model will be sustainable in terms of clean technology used, for the benefit of the human environment and better quality of life. The concept is related to long-term international cooperation of the Polish author (e.g. from 1983 with Indian scientists) on human ecology, medical elementology, ecotoxicology and biotechnology as well as future requirements of the National Open University in India.

Keywords: Sustainable development, knowledge-based society, Open University, interactive e-learning, human ecology, environmental biotechnology, ICT sustainable model of education

Adam Doskocz, Władysław Dąbrowski: **Estimation of Horizontal Accuracy of the Large-Scale Digital Maps** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

Today, government and self-government institutions as well as businesses deploy spatial information in the broadly defined concept of management. This is realized by theoretical and practical efforts supporting the development and updating of digital map databases and their effective and rational (preceded by an analysis of their quality) application for execution of economic tasks.

The paper presents estimation of horizontal accuracy of digital maps produced by means various methods: new total station survey (object A), recalculation of previous direct measurements (orthogonal and polar surveys) (object B), manual vectorisation of a raster orthophotomap image (object C) and graphical-and-digital processing of analogue maps (object D). Carried out investigations shown that digital data produced by various methods do not always support the development of geodetic documentation at the required accuracy level. The authors postulate the need to estimate the accuracy of the databases of large-scale maps to ensure the transparency of relations between map producers and map users, and to guarantee that national geodetic and cartographic resources meet the relevant quality standards.

Keywords: large-scale digital maps, horizontal accuracy, control surveying, total station

Paweł Hanus, Ryszard Hycner: **Surveying Aspect of Land Information Registration in Poland** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

Within land information one can distinguish spatial (surveying) and legal information. The former deals with information about loca-

tion of objects and their attributes. Results of capturing surveying information are various data and documents concerning different measurements, for example subdivision or delimitation of real estate. Land information captured by surveying methods is presented in the shape of surveying files, registered in surveying documentation centre, which functions in Poland on three levels: country, province and district (local). The essential for surveyors is local one, where surveys data and documents concerning most important sorts of surveying works have been registered and kept. In the paper, the basis rules of registration of land information in surveying aspect in local documentation centre, have been shown. There has also been presented circulation of information between the centre and surveyor, activities of the centre and relations between surveying documentation centre and other units and users.

Keywords: land information, surveying documentation centre, circulation of information in surveying documentation centre

Łukasz Kulesza: **ISO 19113:2002 with Reference to Digital Terrain Models** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

The ISO 19113:2002 standard establishes the principles for quantifying the quality of geographic data and specifies components for reporting quality information. It also provides an approach to organizing information about data quality. According to it, the issue of quality is a multifactor problem and includes such elements like: completeness, logical consistency, positional accuracy, temporal accuracy, thematic accuracy. Its principles are applicable to digital geographic data, however they can be extended to many other forms of geographic data such as maps, charts and textual documents. For data users it answers a crucial question whether or not specific geographic data is of sufficient quality for their particular application. Additionally it may be used for describing quality requirements.

Digital Terrain Models (DTM) are a very important information layer in GIS applications. Multiple spatial analyses are being held with the usage of DTM – starting from simple queries, through map analysis derived from DTM: slope and aspect maps and finally finding application in complex modelling of environmental phenomenon. Recently more and more attention is paid to the GIS analysis credibility, which makes the quality issues and data sets accuracy more important then ever. Owing to fact that quality is an extensive concept, one criterion assessment cannot be applied to every possible situation. Domain of the problem as well as the goals of specific application need to be recognized and the acquired knowledge must be confronted with the information regarding possessed data. It is in connection with the reliability and fitness to use issue which states that every certain DTM is appropriate only for some set of applications, and the user must be aware of that. It is important for the user to have the sense of purpose.

Whether a DTM is of sufficient quality for particular application depends on the data itself and on the purpose of its usage.

In current work an attempt was made to discuss the issues regarding DTM quality in the light of guidelines included in ISO 19113:2002 Standard. Practical example of quality assessment of few chosen DTM obtained from different sources was introduced.

Keywords: quality, ISO, error, credibility, Digital Terrain Model (DTM)

Anita Kwartnik-Pruc, Zofia Śmiałowska-Uberman: **Selected Evidence of Acquisition and Loss of Property Rights in Regulation of Property Legal Status** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

During the performance of surveying and legal works for the purposes of administrative and judicial proceedings, generally a necessity arises to examine the legal status of the property based on excerpts from the land and mortgage register and Land and Property Register. In the course of the examination, discrepancies between the entries in both registers, or (and) between the entries and the actual legal status of the real estate are often detected. The authors, familiar with the problems, mainly of individuals, regarding the ways of acquisition and loss of ownership rights and other property rights, have elaborated these legal documents, whose legal consequences are not widely known, and are of great importance to real estate sale transactions, especially in the process of land acquisition for public roads. These documents constitute the basis for entries in the land and mortgage register, as well as in Land and Property Register. In case of lack of an entry, they are independent evidence of an acquisition or loss of rights to the property.

Keywords: primary rights, derivative rights, normative legal act, non-normative legal act, property ownership deed

Maciej Michałowski: **The Attempts to Identify the Sources of the Emission of Phenol Compounds in the Upper Dunajec Catchment** • Geomatics and Environmental Engineering 2011, Vol. 5, No. 1

Dunajec – a river in south Poland, together with the San River, is the most important right-bank tributary of the Vistula River. It flows into the Vistula River at its 160.6 km. The Upper Dunajec area starts at the spring and ends at the mouth of the Ochotnica stream (including the stream itself). The catchment of the upper Dunajec is placed in two districts: Tatrzański and Nowotarski. It is very important to keep the catchment as clean as possible due to the fact that it supplies both districts with drinkable water. The goal of my paper was to find out to

what extent the upper Dunajec catchment was contaminated with phenols. All contaminants in water mostly come from chemical substances, bacteria and other microorganisms that are present in natural waters in huge amounts. These contaminants are permanent and resistant towards chemical or biochemical processes that are supposed to purify the water. Phenol and its derivatives are very toxic, ones of the most burdensome compounds for the environment. Sources of phenol compounds emission can be divided into two groups: of natural and of anthropogenic origin, i.e. resulting from human activity in industry, agriculture as well as in tourism. The most dangerous substances that cause contamination of water with phenols are wastewaters coming from plastics, paint pigments, varnish or glue factories and from pharmaceutical companies. Municipal wastewaters tend to contaminate water with phenols as well, however to smaller extent. Phenol and its derivatives are widely used in many branches of industry as well as in agriculture. In order to mark phenol concentrations, I applied the photometric method.

Keywords: Dunajec, phenols, water pollution, spectrophotometry