GDi Localis – integrirana rješenja u upravljanju prostorom jedinica lokalnih samouprava

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GDi Localis – GIS Grada skup je integriranih rješanja koji čine sustav koji putem interneta omogućava dostup podacima od općeg i posebnog interesa širokom krugu korisnika, od Ureda gradonačelnika, preko upravnih odjela, gradskih službi i komunalnih poduzeća, sve do mjesnih odbora i građana. GDi Localis omogućava većem broju ljudi pridobivanje informacija na razumljiviji način i u novom svjetlu. Mnogi podaci u koje su bila uložena vrlo velika sredstva pretvaraju se u razumljivu i uporabljivu informaciju, posebno u kontekstu ostalih prostornih informacija. Sljedeća korist od GDi Localisa jest veća učinkovitost gradskih službenika. U mnogim slučajevima službenici u upravnim odjelima neće morati odlaziti iz ureda da bi dobili određeni podatak, a s druge strane neka od radnih mjesta koja tradicionalno izdaju podatke u ovakvom ili onakvom obliku, što često znači precrtavanje planova i karata i njihovo međusobno ručno preklapanje, bit će rasterećena velikog dijela tih poslova i moći će se posvetiti drugim poslovima i unapređenjima za koja obično nema vremena. I konačno, poslovanje gradske uprave postaje transparentnije korištenjem GDi Localisa, pa se građani mogu uključiti u procese odlučivanja o prostornom razvitku i održivom razvoju.

Ključne riječi: GIS, Localis, Grad

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Use of Airborne Laser Scanning Data for Updating Topographic Maps and Databases

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Topographic maps and topographic databases are basic parts of spatial data infrastructure. Every

administration needs regularly updated spatial data for administrative tasks, environmental monitoring, spatial management and many other purposes. Traditional methods for capturing and regular updating of topographic data (aerial photogrammetry, field checking) became too expensive and too time consuming for users and also for national mapping agencies' budgets. The technology of laser scanning (LiDAR) has significantly affected the principles of spatial acquisition of topographic and other physical data about the environment. A very important advantage of LiDAR capturing is its speed; it allows capturing a large area in a short period with high density. The main results of an airborne LiDAR survey are clouds of georeferenced points containing data on the reflection order and the intensity of the returned pulse. Therefore, airborne laser scanning data seems to be one of the most promising data sources for deriving different spatial data and for quick, inexpensive regular updating of topographic maps and databases. Some countries (Austria, Switzerland, Germany, Slovenia, Italy, etc.) have already started to systematically cover the entire territory or at least the most populated areas with LiDAR data. Such systematically collected data can be used for regular updating of topographic data. In order to collect and classify topographic contents from the LiDAR point cloud, classification between points representing echoes from different surfaces have to be made in advance. The next step is to recognize individual objects and phenomena and define edges between them (i.e. edges defined by buildings, roads, etc.). The success of recognition depends on the LiDAR point density per surface unit. Recognition can be made by manual recognition of objects in different derived presentations (e.g. hillshading), while semi-automated or automated methods should be much more attractive. Orthophotos can significantly improve the interpretation of objects and phenomena too. The presentation will show some experiences with LiDAR data in Slovenia. Several tests were done, using different resolution of sample data, different type of terrains, like flat karst terrain, mountain karst terrain, flat areas, marshy terrain, steep slopes, etc. In addition to manual recognition, some rules were extracted which can be followed in attempt to partially automate the procedure of recognising specific features for updating topographic maps. Finally, several orienteering maps produced mostly using LiDAR data and orthophoto images will be presented.

Keywords: topographic data, airborne laser scanning, terrain features

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