** The author(s) of each abstract is/are solely responsible for the content.*

ABSTRACTS

Updating geospatial data by creating a high resolution digital surface model

Iuliana-Adriana Cuibac-Picu(Romania)

Keywords: LiDAR, LAKI II, MDT, MDS

Abstract

Smart Cities are no longer just an aspiration, they are a necessity. For a city to be smart, accurate data collection or improvement the existing ones is needed, also an infrastructure that allows the integration of heterogeneous geographic information and sensor networks at a common technological point.

Over the past two decades, laser scanning technology, also known as LiDAR (Light Detection and Ranging), has become a very important measurement method, providing high accuracy data and information on land topography, vegetation, buildings, and so on. proving to be a great way to create Digital Terrain Models. The digital surface model is a statistical representation of the terrain surface, including in its dataset the elements on its surface, such as construction or vegetation.

The data from the following article is from the LAKI II project "Services for producing a digital model of land by aerial scanning, aerial photographs and production of new maps and orthophotomaps for approximately 50 000 km2 in 6 counties: Bihor, Arad, Hunedoara, Alba , Mures, Harghita including the High Risk Flood Zone (the border area with the Republic of Hungary in Arad and Bihor)", which are obtained through LiDAR technology with a point density of 8 points per square meter. The purpose of this article is to update geospatial data with a higher resolution digital surface model and to demonstrate the visual differences between a digital surface model accomplished at a resolution of 1 metre and the improved digital surface model accomplished at a resolution of 10 centimeters.

The digital surface model will be included in the existing geographic information system of the city Marghita in Bihor County, and it will be used to help develop studies on land use, transport planning system and geological applications. It could also be used to detect changes over time to archaeological sites, to create countur lines maps, flight simulation programs, or other viewing and modeling applications.