Geomatics Indaba 2017 PAPERS

This special edition of the *South African Journal of Geomatics* is dedicated to papers submitted for Geomatics Indaba 2017. It shows that most of the recent research is done in different applications of GIS, laser scanning and data processing and cover areas such as economics, service provision and mine safety.

Kathryn Arnold, Alize le Roux and Marcelle Hattingh analysed the impact of three Gautrain stations on property prices and sales between 2006 and 2015. GIS spatial analysis and the deeds database was used for the analysis. The results varied per station and showed that proximity to a station does not necessarily assure increased property value.

Lauren Hankel and colleagues used GIS, high resolution satellite imagery and Google StreetView to ascertain the locations of schools. Due to the varying form of schools it is challenging to automate their identification from satellite imagery by using machine learning/image processing techniques. The available data might not be useful for planning due to the degree of positional inaccuracy. Ethel Baloyi and colleagues investigated the placement of ambulance stations in Tshwane, the number of ambulances at each and the improvement of service delivery. The paper concludes that GIS provide a versatile and useful means of testing the implications of demand scenarios and standards relating to service provision and thereby contribute to better informed decision making. The aim of the paper by David McKelly is to provide an indication of the value of comparative analyses of the spatial trends and impacts of the tourism sector in local economies in South Africa. Apart from the coastal cities and traditional tourism destinations, it also shows the significance of tourism spend in the local economies in a range of municipalities.

Mawande Ngidi and colleagues proposes the application of a hybrid technique using dasymetric mapping and areal interpolation principles to overcome the issues of transferring data from arbitrary spatial units to fit for purpose analysis zones. The outcome is an algorithm allowing the disaggregation and aggregation of population data to any spatial unit with a high level of accuracy. The goal of the study by Ogunode and Akombelwa was to apply a suitable algorithm for land surface temperature estimation from Landsat-8 dataset that gives a good accuracy. This is important for land classification, energy budget estimations as well as agricultural production.

Hendrik Grobler has two papers dealing with mine survey applications. He describe a laboratory test to determine the feasibility of laser scanning for the detection, measurement and analysis of corrosion in structures. His second paper discusses the

process of developing a low-cost navigation system towards a real-time information management system for a mining operation. Benefits from the system may be applied in underground navigation and guiding rescue services in the search of illegal miners in abandoned mines.

This variety of research should stimulate further research, development and collaboration in all the fields of the geomatics industry.