

Inspiring GISTAM 2015 Conference Connects Researchers and Practitioners

GISTAM 2015, the 1st International Conference on Geographical Information Systems Theory, Applications and Management, took place in Barcelona, Spain, from 28-30 April. GISTAM 2015 was held in conjunction with ICEIS 2015 and ENASE 2015, covering a broad range of related fields including all aspects of geographical information.

► <http://bit.ly/1RfbBDh>



Cityworks.

Application Integration Offers Public Works Professionals Remote Inspection Capabilities

Cityworks, the GIS-centric public asset management platform, was demonstrated live on the main stage at the 2015 Cityworks User Conference working seamlessly with CycloMedia's Street Smart Application. The integration illustrates the power of leveraging Esri's ArcGIS cloud-based solutions with visualisation and management tools to create an innovative use of technologies for remote asset management.

► <http://bit.ly/1RfbMOG>

Precise but Slow, or Quick but Dirty?



Many indigenous poor in less-developed countries have rights to land but those rights are not formally registered. The lack of tenure security creates instabilities and threats of forced eviction, and blocks an escape from the helix of poverty. A new weapon in the battle against poverty, as advocated by FIG and the World Bank, is to speed up registration of rights for the poor and the vulnerable by deploying a broad spectrum of geodata acquisition techniques for delineating parcel boundaries depending on need (see FIG Publication 60 and the January 2015 issue of *GIM International*). The traditional techniques are precise but costly and labour-intensive, while their operation requires well-trained professionals. The result of such archaic approaches is progress at a snail's pace. It could take decades – or even centuries – before all the rights of the 75% of the world population still lacking access to formal registration have been recorded with top-end tools in precision surveys. The fit-for-purpose approach offers a fast track to securing land rights and ensuring effective land use in countries where land administration is immature or in decay. The basic underlying thinking of the concept is: Why should it be a case of one size fits all? Why should property boundaries in predominantly agricultural areas be measured with the same high-precision equipment operated by highly qualified professionals as in rapidly growing urban conglomerates, where land is scarce and expensive? Today an abundance of geodata acquisition techniques are available, ranging from precision GNSS to unmanned

airborne systems (UASs) and high-resolution Earth observation imagery. There are cheap mobile GIS handhelds and there are smartphones in the hands of billions. Some tools provide highly accurate parcel boundaries but require time-consuming, highly skilled labour. Other tools are quick and dirty but may support the goal at hand, namely to safeguard subsistence farmers' rights to land by enabling delineation of general boundaries. As the nearby city encroaches ever closer and the threat of expropriation or even expulsion looms, the general boundaries may be incrementally upgraded to fixed boundaries. The fit-for-purpose concept recognises that aerial and high-resolution satellite images are suitable alternatives, and they also cost three to five times less than field surveys.

Recently, the European Space Agency (ESA) has put the Sentinel-2A into orbit on 23 June 2015 (see page 22). Four of the 13 spectral bands captured by Sentinel-2A are similar to the satellites equipped with optical sensors suited to topographic and cadastral mapping. The same is true for its forthcoming twin. Extensive research on the early SPOT 1, 2 and 3, the payload of which – like Sentinel-2 – consisted of push-broom scanners, has shown that images with a GSD of 10m which capture the visible and near-infrared parts of the electromagnetic spectrum are suited for mapping at scale 1:50,000. As Sentinel-2 has the same GSD as the early SPOTs, the images could be used for filling gaps in the topographic maps of the world or for updating outdated 1:50,000 maps. Added to this, the Sentinel-2 pair has the potential to operate as an alternative fit-for-purpose technology for capturing general boundaries. A distinctive advantage is that the images can be obtained free of charge, which makes them affordable for covering the rural territories of developing countries. Of course, objects in satellite images are only identifiable if they are covered by at least five to six pixels, depending on the shape. Hence plots and agricultural fields with an area upwards of 500 square metres can be outlined as general boundaries. It would be worthwhile to conduct pilots to assess the potential of Sentinel-2 in the fit-for-purpose concept. ◀