

Paving the Road to Real-time Change Modelling



How can we address the need for frequent large-scale mapping in order to model real-time change? In this column, John Welter, president of geospatial content solutions at Hexagon Geosystems, zooms in on two necessities in order to meet the demands of our changing world, which also requires the mapping profession to change.

My job requires frequent travel, and one thing that regularly strikes me during my trips is that we are living in a time of rapid change. Cities are changing due to growth, rural areas are developing as transportation infrastructure evolves, farmlands are adapting to feed a growing population and our urban areas seem to be multiplying overnight to provide housing. At Hexagon, we are fond of the saying 'You can't manage what you don't measure'. In the context of these changes, 'measure' means 'map'. The challenge with

such rapid change is that it outpaces the way we map. We recognize that changes have occurred, start a lengthy process to secure a budget, issue a tender and acquire new data to capture the changes. But the new maps are often too late to be useful to manage the change and simply confirm what we already know.

To keep up with our changing world, mapping also needs to change. To achieve this, the old model needs to evolve into programmes that continuously capture and make updated map data easily available. Such 'content as a service' (CaaS) programmes collect data according to consistent specifications and continual refresh schedules, creating a standardized product suitable for many applications. The users of these applications are collectively underwriting the collection cost and can, therefore, pay a significantly reduced price. Using the principle of a sharing economy gives everyone equal access to the same data, and as such, democratizes high-quality aerial data – a previously highly exclusive commodity.

The second necessity is more efficient airborne sensing technology which enables the collection of more data in a single flight to reduce the time and cost of making maps. However, the sensor alone does not get the job done. With growing amounts of collected raw data, processing speeds need to be increased in parallel, allowing for the swift delivery of the processed data to the end customer. Hybrid sensors and workflows that capture and process imagery and Lidar data simultaneously will be the driver to map large-scale projects more frequently.

At Hexagon, we have invested in making this a reality and will continue to do so. With our network of collection partners, the [HxGN Content Program](#) – our CaaS initiative – is now entering its seventh year of continuous collection. The programme has captured 25 million square kilometres of data in North America and Europe which is easily available online via purchase or subscription models. In 2016, we launched the world's first airborne sensor that simultaneously captures nadir and oblique images and Lidar elevation data: the [Leica CityMapper](#) and [HxMap](#) workflow. And in 2019, we announced a 40% productivity enhancement with the CityMapper-2, allowing airborne mapping companies to collect more data during every flight.