

## 5 QUESTIONS TO € PAUL DIGNEY, PRESIDENT OF SSSI

# Getting Aligned with the Changing Needs of the Geospatial Industry



How are technological developments, skills shortages and the pandemic affecting the broader geospatial community in Australia? To find out, *GIM International* spoke to Paul Digney, president of the Surveying and Spatial Sciences Institute (SSSI), which is the peak Australian body for all professionals and custodians of quality geospatial data creation, storage, maintenance and use.

**2020 was an extraordinary year. How has the COVID-19 pandemic changed the way your organization operates, and which other factors are influencing the geospatial**

**business?**

The events of the last year have had a significant impact on all of us in many ways in terms of how we live and work, and many of those changes are likely here to stay. [SSSI](#) has taken a very proactive approach to managing the challenges of COVID-19 to support our members, profession and the broader geospatial community. The main effect has been our pivot towards delivering events and continual professional development via webinars that have attracted enormous interest throughout Australia and beyond. With many of our programmed face-to-face events cancelled, we provided more than 60 webinars between March and December 2020. A good example of this agile approach will be the delivery of our national spatial industry conference – Locate 2021 – as our first hybrid event. This will offer delegates who may not be able to travel the opportunity to attend Australia's premier geospatial event either online or through local hubs in their respective cities across Australia and New Zealand. Overall, whilst the broader geospatial industry within Australia has been affected by the pandemic, we have fared much better than other sectors. In fact, we have an important role to play as the pandemic continues to unfold with governments and authorities relying on measures that are inherently spatial in nature, such as [quarantining, contact tracing and social distancing](#). As governments work to reopen economies, they will rely increasingly on granular location information. To detect and extinguish new hotspots, public health officials will need to know the location of homes, the routes people take to work, and the parks and restaurants they visit, all of which hinges on geospatial information.

**Which new technologies do you foresee becoming important to your work?**

Many current and emerging technologies are highly relevant to SSSI and our members, but there is particular interest in spatial digital twins, satellite-based augmentation systems (SBASs) for GNSS positioning, artificial intelligence (AI) and machine learning. As the world has moved from data to models, there has also been an evolution occurring with digital twins. The early application of digital twins was moving to a 3D model as an improved design tool for the building of assets. More recently we have seen the advent of spatial digital twins applied to both the built and natural environment, from single buildings to parts of – or even whole – cities. There is now a global push to contribute to the concept of 'digital twin Earth' – an AI-driven digital replica of our planet that converts the full power of AI, Earth science and modelling, cloud computing and Earth-scale data about the environment, society and the economy into actionable insights for scientific, political and financial decision-makers. Whilst SBASs have been available for users in regions such as the US, Japan and Europe for several years, the introduction of a Southern Hemisphere system will have a significant impact in Australia. The Southern Positioning Augmentation Network which is being jointly developed by the Australian and New Zealand governments has recently completed an 18-month trial and will become fully operational in 2023. Its introduction will significantly improve the accuracy of positioning from 5-10 metres to 10 centimetres without the need for mobile or internet coverage and will provide significant economic efficiencies and safety improvements to sectors such as agriculture, construction and transport through better location-based data and mapping.

**Are you able to attract enough qualified personnel?**

In Australia, as in many countries, there is a widespread shortage of skilled personnel in the surveying/ geospatial science professions. This is being acutely felt in sectors such as transport infrastructure and resources which are currently seeing significant investment occurring in many regions of the country. The current capability deficiency is likely to continue until the mid-2020s before starting to swing back towards a surplus. Whilst there is a large demand for geospatial professionals, there have been some welcome developments on the supply side which have helped the profession meet some of the shortages. Notably, enrolments in undergraduate geomatics engineering degrees (incorporating surveying and geospatial science degrees) have been rising steadily over the last ten years. This is one area that SSSI and other associations have worked collaboratively with the broader industry. Initiatives such as 'A Life Without Limits' have helped to foster greater interest in surveying as a career amongst young people and provide clearer guidance regarding pathways into the profession. Diversity remains a challenge for our sector in Australia; studying surveying and geospatial sciences is still very much a male-oriented activity. The increase in enrolments in geomatic engineering courses is almost exclusively male, and the share of women in undergraduate geomatic engineering degrees has actually fallen. So there is much to be done to improve diversity and inclusion within our professions. In this context, SSSI has played a significant role in the Space, Spatial and Surveying Diversity Leadership Network (SSS-DLN): a sector-wide group of businesses, governmental and educational organizations aimed at providing visible advocacy for diversity and inclusion within the profession.

## What is your policy on crowdsourcing and open data?

Australia has broadly adopted a policy of open data and was largely championed by [ANZLIC](#), which is the peak government representative body in Australia and New Zealand responsible for geospatial information. It comprises the geospatial agencies from all states and national governments. Geoscience Australia, Australia's pre-eminent public sector geoscience organization and Australia's national government member of ANZLIC, has been committed to open data since 2008 when it began applying Creative Commons By Attribution (CC-BY) licensing to its data and products as the default. SSSI is highly supportive of the use and application of open data. Open-access licensing permits the innovative use of data and information so that research, industry and the community can generate economic, social or other outcomes of benefit. To maximize re-use of information and enable uptake by the broadest range of potential users, however, government data and information needs to be free, discoverable, based on open standards and accessible online in machine-readable formats. SSSI has led the way in community engagement in the use of crowd-sourced and open data. The catastrophic bushfires which caused devastation to many parts of Australia in early 2020 affected all Australians, and those in the surveying and spatial profession were keen to provide assistance in some way. This resulted in the coordination of the SSSI National Bushfire Recovery Map-a-thon, where over 600 surveying and geospatial professionals from 25 countries volunteered and worked together to map burnt infrastructures in seven different project areas affected by bushfires. This was followed up with a second even more successful Map-a-thon on 31 October 2020 that focused on bushfire preparedness for the upcoming bushfire season. Participants collected data on static water infrastructures (such as dams, water tanks and swimming pools). Once again, the OpenStreetMap (OSM) platform and Hot Tasker Manager were used to coordinate the mapping effort.

## In terms of meeting your goals, what is the biggest single challenge for your organization in the next five years?

The greatest challenge for SSSI is to remain relevant and continue to grow our membership base by meeting both the professional and personal development requirements of existing and new members with a broader range of services. This will require the ability to adapt and align with the changing needs of the industry and the members. Whilst we are currently seeing growth, there is still a trend for people to move away from professional organizations due to the increase in the availability of content online and the use of social platforms for networking.

*Paul Digney is the survey technical director for Jacobs Australia and president of Australia's Surveying and Spatial Sciences Institute (SSSI). He is a licensed surveyor in Tasmania and Victoria with over 25 years' experience in the surveying/spatial profession.*