Vivid Technology

Photogrammetry has been in existence for over 150 years. How will its future look? Forecasts are difficult, particularly if they concern the future, as Mark Twain acknowledged. However, in parallel with my article on the status and features of Digital Photogrammetric Workstations (DPW) (see page 28) and my product survey published on our website, I would like to complete the tripod by discussing here how DPWs may progress over the coming five to ten years, with a focus on image types, block sizes, automation, and photogrammetry entering the GIS mainstream.

When looking at the diversity of images recorded today, it is easy to forecast that DPWs will be able to process all types of satellite images, synthetic aperture radar (SAR) data and oblique aerial imagery in tandem with nadir images. DPWs will also progress towards fusing different data sources, such as 2D vector maps, Lidar Digital Elevation/Surface Models and image texture, resulting in the further automation of the creation of 3D city models. The software modules able to execute such tasks will become part of existing DPWs. As computer power is still mushrooming, the block size which can be handled for carrying out aero-triangulation and block adjustment will gradually increase from around 20,000 images today to over 100,000 images in the future.

Six-digit blocks, together with distributed processing at locations throughout world thanks to the internet, will induce the need for advanced on-line workflow management software, and the particular nature of extracting geodata from imagery dictates high dedication of such software. When it comes to 3D feature mapping, the extraction of buildings will be automated to such a level that a human operator just needs to point to a building in the 3D visual model while identifying its type. Next, smart computer algorithms will extract its 3D outlines in vector format. Furthermore, photogrammetric modules will be increasingly integrated with GIS software to support urban planners, environmentalists and many others in highly specialised tasks.

The perfection of true ortho-imagery generation will receive a boost from the needs of land administration and cadastral surveyors. As information extraction from images will become increasingly carried out by non-specialists, development of robust, reliable and 'monkey-proof' software will feature high on manufacturers' priority lists. Raising automation levels is the major challenge in a setting where SAR and oblique imagery, push-broom scans and satellite data increasingly accompany digital frame images. Automation should go hand in hand with substantial attention to designing software which is robust, reliable and accurate. Advances do not usually occur suddenly but instead develop gradually. When looking back over time spans of one or two decades, the progress of photogrammetry is astonishing, which warrants its survival as a vivid technology in the future.

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