

# Three Trends at SPAR International 2017

By Geoff Jacobs



## VR

**AT SPAR**, I saw solid case study presentations and user references where the benefits of VR were clearly articulated and documented. These were in the design domain where VR enables more effective communication of proposed designs and existing conditions to clients and project stakeholders. The most popular immersive means was some sort of headset or goggle (e.g. Oculus), not caves or large immersive wall displays.

Noteworthy was Trimble's demo of a "mixed-reality" solution using Microsoft's HoloLens goggle that enables the wearer to see both virtual reality and his/her surrounding physical world at the same time.

Another example: DAT/EM's Point Cloud VR does exactly what the name implies, including the ability to take measurements using handheld gaming controllers. My take is that VR has progressed beyond video gamers into the AEC world and now has momentum there.

## Scanning in Construction

**IN ADDITION TO USE CASES FOR REALITY CAPTURE** in VDC (virtual design and construction), I saw noteworthy new product offerings from point cloud software vendors. ClearEdge's Verity point cloud software is 100% targeted at construction verification (details at right), while Leica Geosystems has a new feature for floor-flatness/floor-leveling analysis and reporting within its Cyclone point cloud software and CloudWorx for AutoCAD plug-in. Yet another vendor of point cloud construction/fabrication deviation analysis software, SKUR, announced an alliance with Bechtel, a major global AEC design and construction firm.

## Walk-around Scanning/Mapping

**I LEARNED THAT MANY OF THESE PRODUCTS** are indeed selling, with practical case studies documenting their cost benefits. In addition, new vendor offerings underscored the growing investment in this space.

For example, two walk-around mapping vendors unveiled their first production versions: one was a backpack or handheld version from Indoor Reality and the other a handheld (you need two hands) by Paracosm.

My takeaway is that the 2-3 cm accuracy of many walk-around devices is finally finding viable applications in the as-built, construction verification, and building/site/facility documentation world.

The very close range (<3m) hand-held or tripod solutions with higher accuracy were also finding good applications, and estimated unit shipments for some of these vendors were surprisingly high.



## New Products

### Trimble's New Total Station: S5 Ti-M



**THE S5 TI-M** was designed as a powerful, cost-effective solution scalable for monitoring projects of any size, from short-term jobs to multi-year construction operations. The S5 Ti-M's performance and capability are ideal for monitoring buildings above tunnel construction and close to excavation sites. It's also suited for monitoring the subsidence of road surfaces and embankments.

### Verity Construction Verification Software

**CLEAREGE3D'S VERITY 1.0** verifies the accuracy of new construction against design/fabrication models, giving general contractors insight into their construction projects. It analyzes point-cloud data of the as-built construction against the design/fabrication models, identifying variances, missing elements, or other potentially costly construction errors. The variance data and corrected model can be exported to Autodesk's Navisworks 3D design review software for as-built clash detection and analysis.

### Topcon's GNSS Receiver Boards

**THE NEW B111 AND B125 BOARDS** are designed for use with a broad range of positioning applications.

The boards use the GPS, GLONASS, BeiDou, and Galileo constellations with the B111 tracking signals in the L1 and L2 frequency band, while the B125 adds signals in the L5 band. Both boards are designed to provide scalable positioning from sub-meter DGPS positioning to sub-centimeter RTK positioning.

### New MicroSurvey Packages

**MICROSURVEY** embeddedCAD 2018 provides users with a new ribbon interface on a complete survey drafting toolkit, including COGO, DTM, traversing, adjustments, volumes, contouring, and more, and it includes the new AutoCAD OEM 2018. MicroSurvey inCAD 2018 adds the MicroSurvey feature set to the latest Autodesk software—including AutoCAD 2018, AutoCAD Civil 3D 2018, and AutoCAD Map 3D 2018—to offer a complete survey drafting toolkit.