

New Topcon Technology Offerings for BIM Introduced at Intergeo



Topcon Positioning Group has presented a number of new solutions for [vertical construction](#) at [Intergeo 2019](#). Additions to the portfolio include availability of the new scanning robotic total station with an innovative construction verification workflow; a new 3D construction digital layout instrument; heads-up display glasses for total stations; and software and field controller enhancements improving functionality for a range of BIM applications and integrations.

“With our ever-expanding cities and increasing population, the need for vertical building construction continues to escalate,” said Ian Stilgoe, vice president GeoPositioning Europe, Topcon Positioning Group. “We must constantly pursue new technologies that accelerate the construction process and deliver never-before-seen productivity gains.

Building quickly is important, but it is also key to build correctly and to avoid costly rework. Our construction verification and digital layout solutions offer contractors newly available capabilities to capture reality and analyze directly on site to ensure and document that the project is being built according to the BIM model with dimensional accuracy.”

Construction verification

“The [GTL-1000](#), a unique combination of 3D scanner and integrated total station, is an excellent example of a Topcon transformative solution for the building construction process,” said Stilgoe. The solution is designed to speed up construction verification workflows from what traditionally took days to now only hours to complete. “Combined with ClearEdge3D Verity software, it offers a new standard for simplified construction verification workflows to give professionals a competitive advantage.” The new software provides web reports for quality assurance that are available to all project members online.

Topcon also has a new application for the GLS-2000 scanner for concrete floor flatness and floor levelness analysis through [ClearEdge3D Rithm for Navisworks](#) software. “The solution can provide important quality control information in minutes instead of what traditionally took days,” said Stilgoe. “With this integrated solution, you can reduce costs and rework by scanning and analyzing wet concrete and still have the ability to make adjustments prior to it curing. It is part of the Topcon comprehensive approach to modernize core concrete applications such as layout, quality control, and concrete screed with the latest capabilities in precise positioning technology.”

Robotic layout

Topcon is also adding a new edition to its layout navigator instrument line. With an expanded field of view and increased tracking capabilities, the layout tool, LN-150, allows users to import BIM models, PDF and CAD files; quickly set up and get straight to the task of laying out the job site or verifying that as-built conditions meet design specifications. “This easy-to-learn-and-use instrument allows contractors to automate and execute the layout process, increasing accuracy and saving costs and delays associated with outsourcing job site layout,” said Stilgoe. The instrument is optimized for use with Topcon MAGNET software and includes seamlessly integrated workflows with popular design software from Autodesk and Bentley Systems.

To complement the digital layout solutions at [Intergeo](#), Topcon is showing its hands-free, voice-activated MAGNET heads-up display for the LN series and the Topcon motorized total station portfolio. The wearable assistant provides visual layout directions via glasses that guide the operator to efficiently perform layout work at a construction site. The wearable assistant enables operators to use both hands to accurately mark layout points.

Additionally, Topcon introduces an advancement to its [TSshield](#) asset tracking service for total stations. “TSshield 3.0 protects your Topcon total station investment by keeping you aware of the instrument’s location, health and whether the device is being used appropriately; and provides security with remote locking and tracking functionality,” said Stilgoe. It reduces unscheduled downtime by allowing remote viewing of total station displays to modify settings and explain workflows. It restricts operations to defined areas and times of day and keeps total stations at optimal performance and in compliance with local laws. Messages are delivered directly to the instruments, a feature to improve workflows and operations.

Software, field computers, and integrations

Advancements to Topcon software through [MAGNET 6](#) for vertical construction support a broad number of industry file types. The

software now carries the Industry Foundation Classes (IFC) designation, which is a platform-neutral, open format specification. The new version further connects Topcon hardware users with 3D layout for multiple floor views, filtering by level and significantly improving BIM interfaces.

“Integrations are a key part of construction with the BIM approach. We continue to maintain a uniquely streamlined layout workflow for contractors working with office-to-field workflows from Autodesk BIM solutions,” said Stilgoe. “Additionally, our construction verification workflows run on top of Navisworks to allow for a familiar environment for contractors performing construction coordination. Topcon solutions integrate with BIM 360 and have recently been updated to support compatibility with Autodesk 2019 file formats.”

The new FC-6000 field controller drives Topcon optical instruments, GNSS receivers and software simultaneously. The updated processor includes faster, smoother rendering of 3D files and enables operators to store larger job files and run more applications and processes to efficiently manage workflows. “The controller is ideal for survey, horizontal and vertical construction applications,” said Stilgoe.

Additional information can [be found here](#).

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