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Progressive RAILROADING

2022 MOW SPENDING REPORT

Despite inflation and other headwinds, many railroads will soldier on with programs, our 21st annual survey shows

STB reauthorization
hearing drew slew of critical remarks

Product Round-Up:
TODAY'S MONITORING TECHNOLOGIES

Product update: C&S engineering and design

Compiled by Julie Sneider, Senior Associate Editor

Bentley Systems Inc.

The way Bentley Systems Inc. designs rail infrastructure assets has changed significantly, according to Steve Cockerell, the company's industry marketing director of rail and transit.

"We've seen a shift from desktops to the cloud, 2D drawings to 3D modeling, and using BIM workflows that make time, cost and carbon integral to the decision-making process," Cockerell said in an email.

Fueled by the huge amounts of data available today — such as from Internet of Things-connected devices — the biggest change is the leveraging of digital twins to deliver different and improved outcomes, Bentley officials believe.

Digital twin technology connects assets in the physical and virtual worlds. Bentley's iTwin technology is designed to provide greater access to data, offer new levels of insight and visibility into challenges faced, and prompt better decisions for disciplines engaged across an asset lifecycle.

For example, as part of the Stone Arch Bridge rehabilitation project in Minneapolis, Collins Engineers Inc. employed digital twins to transform bridge inspection, gaining the ability to measure cracks and defects from the firm's office.

In addition, Arcadis has used Bentley's technology to quadruple the speed of adjusting designs while working on the Hurontario light-rail project in Ontario. The digital twin's visualization capabilities helped identify and resolve clashes ahead of construction, Bentley officials said.

Digital twins also can help organizations adopt more collaborative efforts, optimize design and construction and increase asset performance throughout operations, Cockerell said.

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Dayton T. Brown Inc.

Dayton T. Brown Inc. (DTB) provides dynamic, environmental, electromagnetic capability (EMC), electromagnetic interference (EMI) and structural testing services. The company operates a large, independent and comprehensive testing facility 24/7.

The laboratory offers a full suite of equipment testing for climatic, dynamic, EMI/EMC and engineering services for rail and transit products.

DTB supports the current and future needs of the Northeast Corridor collaboration team and railroad industry, said DTB Senior Director Tom Volpe in an email.

"We have been providing verification and testing for PTC radios and sub-systems, and offer full environmental qualification testing in accordance with transit authorities, AREMA, AAR and tailored procedures," he said.

Shown: One of Dayton T. Brown's PTC communications labs.

DTB's capabilities include radio testing and evaluation for vibration, shock, temperature, humidity, sand, salt, rain, icing and dust on communications and signaling components, systems and sub-systems.

The company has taken the test and engineering evaluation experience it's gained over the past decades in serving the railroad industry and applied it to meet railroads' and suppliers' PTC objectives and deadlines, DTB officials said. As an independent testing lab, the company has extensive experience in qualifying radios and trackside, wayside and carborne equipment, Volpe said.

Pintsch North America

For nearly a quarter century in the North American railroad market, Pintsch North America has provided a variety of custom-designed solutions, ranging from complex grade crossing systems to interlocking systems, switch protection systems and yard control applications.

This image shows an old relay case reconfigured by Pintsch with new train detection technology.

The company offers a combination of manufacturing and technical services. For example, Pintsch recently upgraded three unreliable grade crossing systems for an Iowa short line. Besides selling a system to the railroad, Pintsch's signal experts removed obsolete motion detectors, implemented necessary wiring changes, performed safety and commissioning tests, and updated the prints, company officials said in an email.

Also recently, Pintsch helped a customer who was seeking a solution for a unique track layout involving two switches and two terminal tracks within the boundaries of a crossing warning system. Pintsch designed a directional signal approach that solved the customer's problem at minimal additional expense, Pintsch officials said. The solution could not be implemented with typical crossing technologies, they added.

Moreover, Pintsch also recently helped a major transit agency find a solution for displaying a track occupancy while monitoring the number of cars on storage tracks. By utilizing its modular, networkable MC6 system, Pintsch provided a customized yard control solution.

Progress Rail

Progress Rail offers turnkey solutions for customers by providing design, wiring, structures and installation services. The company's signal engineering group has been designing wayside and grade crossing systems for railroads since 1992.

Progress Rail offers a range of products and services to help customers meet their C&S needs. Such services include planning and surveys; wayside, transit and crossing design; application software creation and testing; project management, and testing; and commissioning.

Progress Rail has experience with an array of signaling platforms and can test application software using either controllers in its own test labs or through industry standard simulators.

The company's wiring and installation units — based in Louisville, Kentucky, and Hudson, Wisconsin — work with Progress Rail engineering teams to ensure a seamless experience for the customer, company officials said in an email.

Progress Rail installed a signal bungalow as part of a larger project completed for a Chicago transit system.

Progress Rail also can provide its own signal structures, such as mast ladder platforms, cantilevers, signal bridges, platforms and flood platforms. The company's engineers work with customers to ensure their specifications are incorporated into a design. ■

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