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Convergence of hardware, software and data

STRABAG Switzerland goes all-digital on a pilot Swiss road reconstruction project and Eiffage is helping the Grand Paris Express get ready for a big year in France

Presented By: Ron Bisio, Senior Vice President



Better

-40%

productivity of the construction industry during the past 50 years

Faster

11%

construction projects completed on schedule

Safer

75%

chance of a site worker suffering a disabling injury during a 45-year career

Bigger

2x

size of the construction industry in 2033

Greener

37%

greenhouse gas emissions from constructing and operating buildings and infrastructure

Cheaper

9%

construction projects completed on budget

REALLY Bigger!

5x

size of construction technology spending in 2033



Grand Paris Express (FR)

Is part of the Grand Paris initiative and will enlarge the capacity of the regional and metropolitan rail of Paris by 200 kilometers. With a projected cost in the tens of billions, 90 percent of these new and upgraded lines are being constructed underground.

The project puts pressure on contractors to implement new technologies and workflows.

Eiffage GÉNIE CIVIL

The leading construction firm has been tasked with constructing several tunnel sections, like the L14 South line, using tunnel-boring machines (TBM).





Converge of hardware...

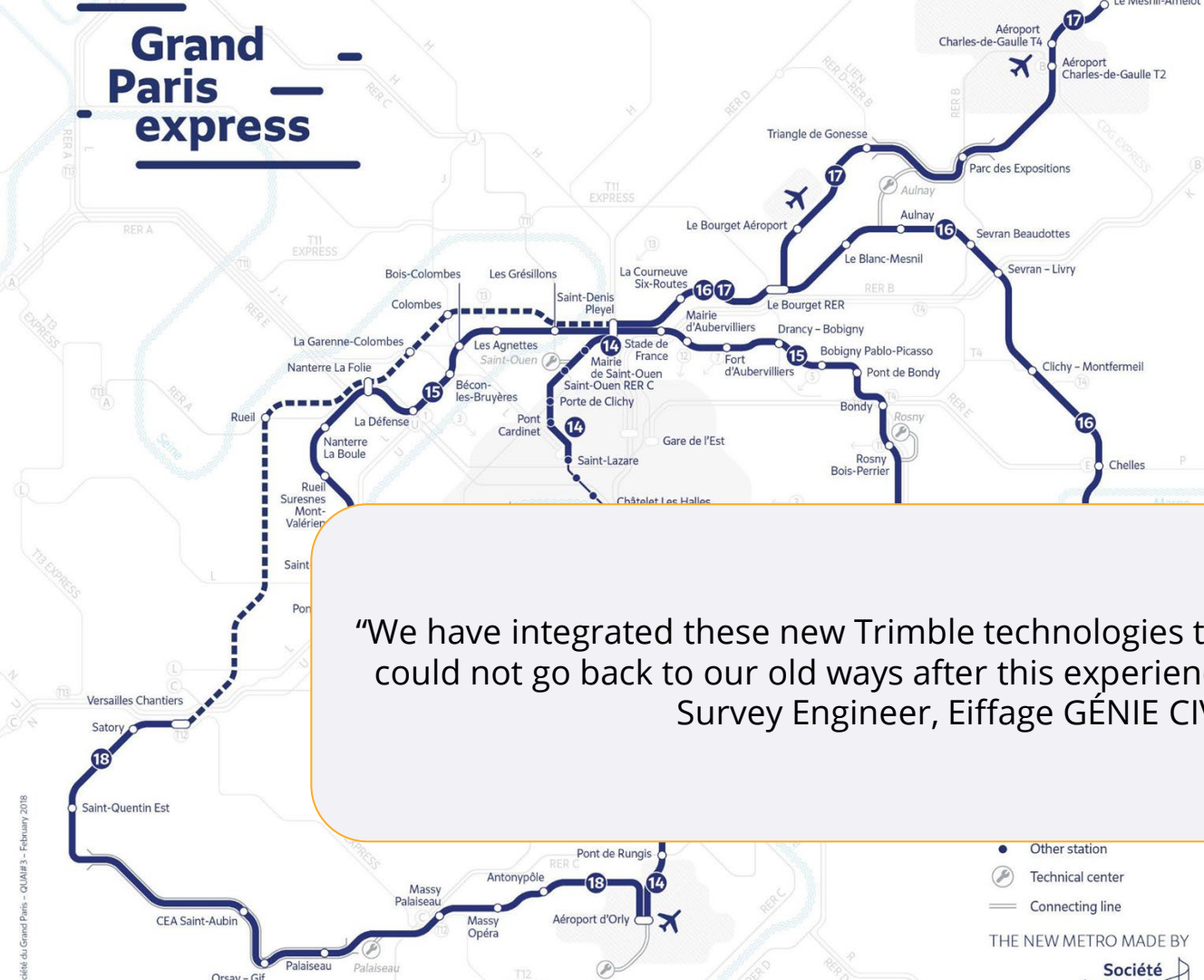
Total stations and scanners were used alongside tunnel-boring machines to automate precise as-built surveys and measurements, **facilitating real-time feedback and adjustments for project quality and efficiency.**

... and software and data

Specialised field software enabled precise tunnel measurements and analysis, integrating data collection with immediate on-site comparisons to designs, thereby **improving construction accuracy and decision-making** through advanced data utilization.



Grand Paris express



“We have integrated these new Trimble technologies to the way we work. We could not go back to our old ways after this experience.” — Olivier Gauche, Survey Engineer, Eiffage GÉNIE CIVIL

- Other station
 - ⊕ Technical center
 - Connecting line
- THE NEW METRO MADE BY
Société





Küsnacht municipality (SUI)

Tendered out a road renovation project as an all-digital Design & Build project, encompassing everything from the initial surveying, through the renovation of the road and sidewalk surfaces, as well as the underground services (gas, water, electricity)

Küsnacht wanted to lay the foundation for all-digital, data-enabled road maintenance

STRABAG Switzerland

Experienced in how connected construction workflows could boosted productivity throughout the design and construction phases





Converge of hardware...


Traditional GNSS and optical surveying equipment was combined with **cutting-edge mobile mapping technology to monitor progress and quality**, as well as to capture the final as-built. They leveraged 3D models and excavator machine control technology to drive productivity.

... and software and data

A **cloud-based Common Data Environment**—adhering to IFC standards—was developed as the **open collaboration tool** for getting data to and from other systems.

During all phases of the project the **GIS-based BIM model** formed the basis for estimation, calculation, and planning of the required materials and personnel.





“For all parties involved this was a **great learning experience** ... For the **excavator operators**, who needed to rely fully on the technology instead of getting out of the cabin to measure points, for the **utilities company workers** who were at first apprehensive of not having any paper drawings to go by, and for the **municipality officials**, who closely followed the project through weekly as-built model compilations”

“Everyone involved always had **access to all of the relevant data** during the construction process. And **even the residents could get an up-to-date status** report of the works from the dedicated web site accessible ... to get a clear understanding of what to expect in terms of inconvenience from the conducted in their street.”





Thank you

For Questions
or Feedback
please contact:
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 Ευχαριστώ
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 GRACIAS
 SALAMAT
 VIELEN DANK
 KÖSZÖNJÜK
 NGĀ MIHI
 उगुडा यनदर
 GRAZIE
 VINAKA
 KASIH
THANK YOU
 merci
 HVALA VAM
 DIOLCH
 MULŤUMIM
 Xin Cảm Ơn
 DZIĀKUJEMY
 ДЯКУЄМО
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 감사합니다
 ありがとうございます

