Enabling city **digitalisation**
wherever you can go
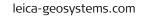
Two years of city mapping completed in only 5 weeks

Cabinet Brière created a digital map of the cities Ales and Gap in France to compare the historic and more modern infrastructure. Using these two towns as standards, the Électricité Réseau Distribution France would better understand, operate and manage the country's electricity distribution network.

Enabling understanding

PROJECT: City mapping in the cities of Alès and Gap, France

CUSTOMER: Cabinet Brière

SOLUTION: Leica Pegasus:Backpack, Leica Pegasus:Two, Leica Pegasus:MapFactory

OBJECTIVE: Create a digital map of the two towns, Alès and Gap, to analyse their infrastructure and improve the electricity network.
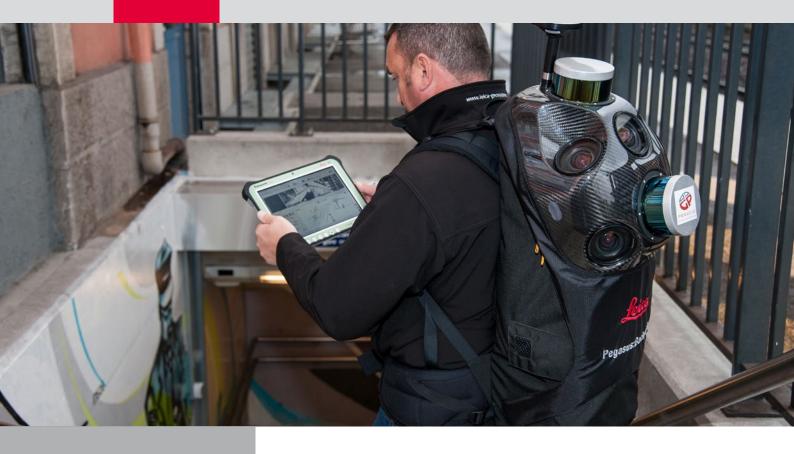
- when it has to be **right**

Leica
Geosystems

Roads. Building facades. Road signs. These are just a few of the assets surveying firm Cabinet Brière needed to map in the towns of Alès and Gap to provide a 3D digital map of the communes in southern France.

Needing to better understand, operate and manage the country's electricity distribution network, using these two towns as standards, the Électricité Réseau Distribution France (ERDF) contracted the 58-year-old firm known for revolutionising working methods, both in the office and in the field, with new technologies.

A unique combination for innovation

In 2015, the French government instated the Plan Corps de Rue Simplifié (PCRS) as a means to share plans of infrastructure between communities. This sharing of information promotes public safety and opens dialogue between community leaders.

To meet this requirement, ERDF needed a digital map of the entire cities of Alès and Gap to compare the two cities' historic and more modern infrastructure assets. ERDF turned to a pioneer in 3D surveying.

Cabinet Brière President Philippe Jeudy was one of the first users of the Leica Pegasus:One, a mobile reality capture platform attached to a vehicle for 3D laser scanning of active environments. Jeudy and his partner, Guy Perazio of Perazio Engineering, first tested the Leica Pegasus in 2012. Both seeing the opportunities in the mobile reality capture technology, they decided to invest and develop more business with their new capabilities.

Three years later, when the duo responded to the ERDF's solicitation for digitalising the two cities' assets, Jeudy and Perazio were by this time now experts in mobile reality capture. With their even more versatile Leica Pegasus:Two and the new Leica Pegasus:Backpack, the wearable reality capture solution with a LiDAR profiler and five high-dynamic cameras, the team was able to capture more than ever before.

"With the Leica Pegasus, I can complete any project without any technical limitations," said Jeudy. "Combining various forms of innovative technology, like SLAM (Simultaneous Localisation and Mapping) and LiDAR, Pegasus provides an integrated yet unique mapping solution."

Pegasus relies on the combination of a point cloud acquired through a 3D laser scanner, an image achieved through high-density cameras, a GPS sensor for defining the absolute position, and an inertial measurement unit to record all movements. When in GNSS-denied areas, such as under bridges or inside enclosures, frequently found in mapping city assets, the Pegasus:Backpack with SLAM technology is the first positon-agnostic solution capable of orientating itself to capture data. Working with these images and point clouds together, data is captured into a single platform and workflow – from the operator interface to a single-click post-processing.

The future of city asset mapping

In Alès and Gap, Cabinet Brière realised more than 90 per cent of the asset acquisition through the Pegasus:Two, while the rest of the acquisition was performed using the new Pegasus:Backpack. Able to go where vehicles couldn't, Jeudy was able to collect assets inside homes, parks with thick overhead foliage and pedestrian-only streets wearing the Backpack. For his first outing with the new technology, he found the familiarity accommodating.

"With the Backpack, I was comfortable since everyone knows how to wear one, which made the acquisition simple and fun," said Jeudy. "We need to enjoy our daily work while also providing accurate deliverables, and with Leica Pegasus, surveying becomes even more enjoyable and accurate."

Using Pegasus, the team was able to increase their productivity by an approximate 30 times, collecting a record of 600 kilometres in five weeks for the entire city of Alès. Using more traditional methods, such an acquisition, would have taken Jeudy more than two years.

The cities of Alès and Gap now have the complete digital map of their assets. City leaders can now feed the intelligent information into ERDF's database and communicate any new developments or construction.

According to Jeudy, the city of Alès is pleased with the practical implementation of these new and innovative technologies. As one of the pilot cities for ERDF, the city is setting the standard for the rest of the country in city digitalisation.

"Thanks to the comprehensive acquisition with the Leica Pegasus, the point clouds we produced give others a basis for creating new reports in 3D city modelling," said Jeudy. "To be the one to set that standard is a great achievement for us and our client, the city of Alès."

Visit leica-geosystems.com/mobile-mapping-contact to request a demo.

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Philippe Jeudy, President, Cabinet Brière

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