

Thyssenkrupp Test Tower GNSS Monitoring Safety System

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SUMMARY

The Thyssenkrupp test tower in Rottweil is the tallest tower in Germany. Built in record time, this 246-meter-high tower is home to the newest generation of rail-mounted elevators, and no longer to cable as in the past. With speeds of more than 75 km / h, Thyssenkrupp is revolutionizing vertical urban transport.

GERB was commissioned to install a 280-tonne pendulum on the 21st floor to counteract the tower's movements under wind pressure and also to put the structure in motion to simulate maximum loads and verify that the elevators move correctly. This is a brilliant achievement in honor of German engineering.

The company CGEOS - Creative Geosensing (Mont, Yvoir in Belgium) was responsible for designing and installing a geometric monitoring system based on the use of high precision GNSS RTK.

Currently the movements of the Rottweil tower are controlled by the solution developed entirely by CGEOS and reports in real time X and Y displacements at millimeter accuracy. The use of GNSS receivers and antennas designed and produced by ComNav Technology Ltd. Shanghai PR China has definitively contributed to the success of that project.

The geometric monitoring solution developed by CGEOS - Creative Geosensing can also be deployed to control large construction cranes (during high winds), cooling towers of nuclear power plants, historic buildings, but also bridges, dams and all infrastructures whose leaders are confronted with dynamic behavior. The paper will report the technical details of the installation, the application developed and the actuator feedback.

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