Fast! Steady! Accurate!

——vRTK is speeding up road construction with Live-view Stakeout

Many surveying projects will be suspended or affected in March and April due to the rainy days, especially for those projects with short project circles since they can only carry on stakeout work for one or two kilometres on rare sunny days. The surveying processes are slow and fail to meet the project schedules.

With the introduction of vRTK, a visual RTK with a live-view function, road reconstruction in bad weather is no longer a problem. The process of the stakeout in old county road reconstruction projects will be driven by this latest surveying technology.

Project background

The construction setting out process in road renovation projects will always be interrupted by ditches, woods and other barriers when using traditional RTK or total station, thus the efficiency and data accuracy will be affected greatly, especially in the county roads, villages and other complex environments. Enhancing the precision of position data and meeting the project schedule would be very difficult for traditional positioning methods due to the technology and operational limitations.

Accuracy requirements

Accuracy of stakeout within 3cm

Assignment difficulties

The projects normally carry out in the surrounding area of villages, residential areas and high-tech zones, and it is vital to make sure the transportation in the everyday life of the residents and enterprises will not be influenced when the road is being renovated. And, importantly, underground water and electrical pipelines should be well protected and not damaged by the construction process. Since the project timeline is tight, the whole stakeout work should be completed quickly.

Using RTK for stakeout is efficient, but it is difficult to locate the exact sample point in the last 10cm. Also, tilt measurements of wall corners and ditches are very time and energy consuming.

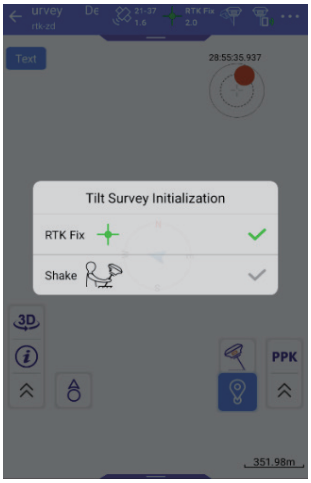
Solution

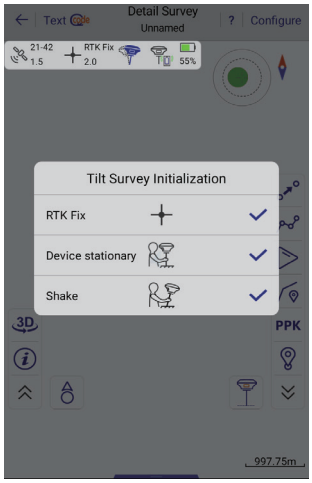
Equipment: vRTK

Using vRTK for stakeout to meet a tight deadline without sacrificing quality. The combination of RTK and imagery measurement helps to mark out the stakeout points in the visual image, and the surveyor can find the points quickly and move on to the next step.

360-degree AR stakeout in the controller or real-time stakeout with the host receiver provides an immersive stakeout experience without keeping your head down to check the stakeout points frequently.

Procedure





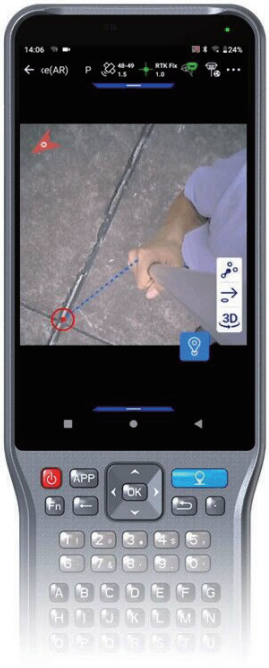
1. Road design file import

2. Advanced tilt survey experience

With the new tilt survey experience, we won't need to operate another initialization step separately or hold the alignment bar, making measurement easier and faster.

3. AR Live-view stakeout

The controller camera would be activated when open the AR stakeout page, and we can get near to the stakeout point with the real-time imagery navigation. The controller image will switch to the receiver automatically when we are near the point, so the point in the real-time image of the bottom camera can be marked directly, and we can see the field location of the stakeout point clearly.



After completing a sample point, click ‘Next’, the imagery will guide us to the next nearest sample point.

User Comments

"The efficiency increases at least twice by using RTK image for a stakeout."

"Even a novice can find the exact sample point accurately without a professional’s instruction."

“We were capable to proceed 2 or 3 kilometres a day in a layout survey of a village like this, ” says Mike, “but now we can complete 7 or 8 kilometres a day after being equipped with vRTK.”

In the past, the most time-consuming part of the RTK stakeout was the 10cm near the exact position since it was really hard to find the point in such a short distance, and we can only ask the skilled can do the stakeout work.

Now, the vRTK directs us to the stakeout point accurately without spending too much time. The time of “people find points” has ended, now it is the era of “points find people”, we would say the working efficiency is improved by the visual RTK GNSS receiver tremendously.

More information at https://en.hi-target.com.cn/become-our-partner/

About Hi-Target

Established in 1999, Hi-Target is the first professional high-precision surveying and mapping instrument brand to be successfully listed in China. Hi-Target provides a wide range of surveying equipment including GNSS Receivers, CORS Stations, Total Station, 3D Laser Scanners, GIS Data Collectors, UAV/UAS, and Hydrographic Products to offer complete solutions for various industries. As the leading brand in the geospatial industry, Hi-Target invests heavily to bring the latest positioning technology and innovation.

For over 20 years, Hi-Target has had approximately 3,300 employees worldwide, with a network of 28 subsidiaries, 28 branches, and more than 200 partners in over 60 countries to service and support our customers.

Visit us at: www.hi-target.com.cn
E-mail: info@hi-target.com.cn
Phone: +86 20 2868 8296