TOKNAV

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TOKNAV
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GNSS Application Solution

PRODUCT BROCHURE



- GNSS Receiver Manufacturer
- Professional OEM&ODM
- Over 15 years experience in R&D and manufacturing

ABOUT US

Company Introduction

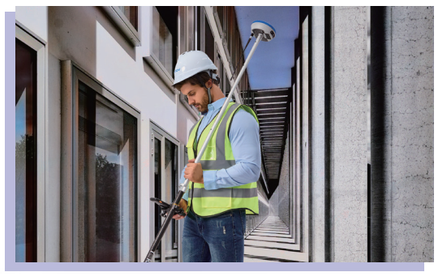
Guangzhou Toksurvey Information Technology Co., Ltd. was founded in 2019 by a team of R&D engineers. The company team has nearly 15 years of R&D background. At present, the company has nearly 2,500 square meters of office and factory, complete set of research equipment, and strong technical background.





Our company is committed to the R&D, production and sales of high-precision satellite positioning terminal products. More than 60% of the employees are engineers. Driven by technological innovation, the company maintains a steady growth rate of 60% every year.

At present, the company has successfully launched high-precision GNSS RTK (T5 series, T10 series, T20 series and T30 series), portable RTK receiver (P8 series), high-precision CORS station (NET660 series), data controller, GNSS antenna, and pre-marking robot to the market. We not only provide positioning products, but also provide a series of application solutions.





Our Targets

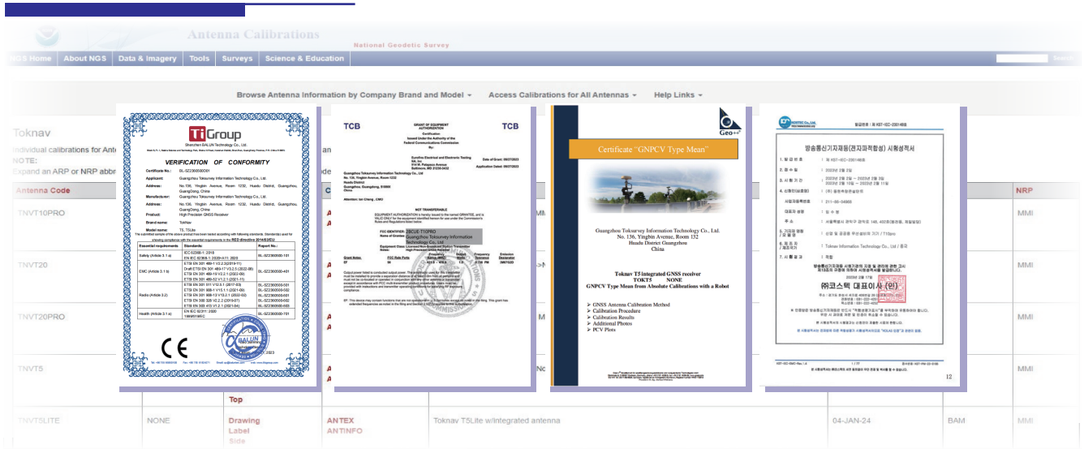
Mission	Vision	Value	Slogan
Make positioning more precise and easier.	Working together to improve global surveying quality.	To become a leader in the global surveying and mapping service.	Your reliable supplier in positioning!

Fields of Application

TOKNAV products can be widely used in precision surveying & mapping, mining operations, deformation monitoring, autonomous driving and other fields. We currently have a number of mature GNSS application solutions, such as deformation monitoring, CORS network, pre-marking robots, etc. TOKNAV products have passed CE, FCC, KC, NGS, IGS and other certifications, and are exported to more than 70 countries and regions around the world. Our products are well received in the global market, and now we have become a system integration supplier in the global market.

- Construction
- Monitoring
- Mapping & GIS
- Surveying
- Agriculture
- Marine

Certifications



CONTENT

Products

Deformation Monitoring 1

CORS and VRS Service 3

Pre-Marking Robot 5

Deformation Monitoring

The GNSS based monitoring system is widely applied in the fields of landslide geological hazard monitoring, dam deformation monitoring, mining area surface subsidence monitoring, tailings reservoir deformation monitoring, bridge deformation monitoring and high-rise building deformation monitoring and other fields with potential safety hazards, which can effectively prevent and avoid disasters and ensure safety of important facilities and people's property.



Characteristic

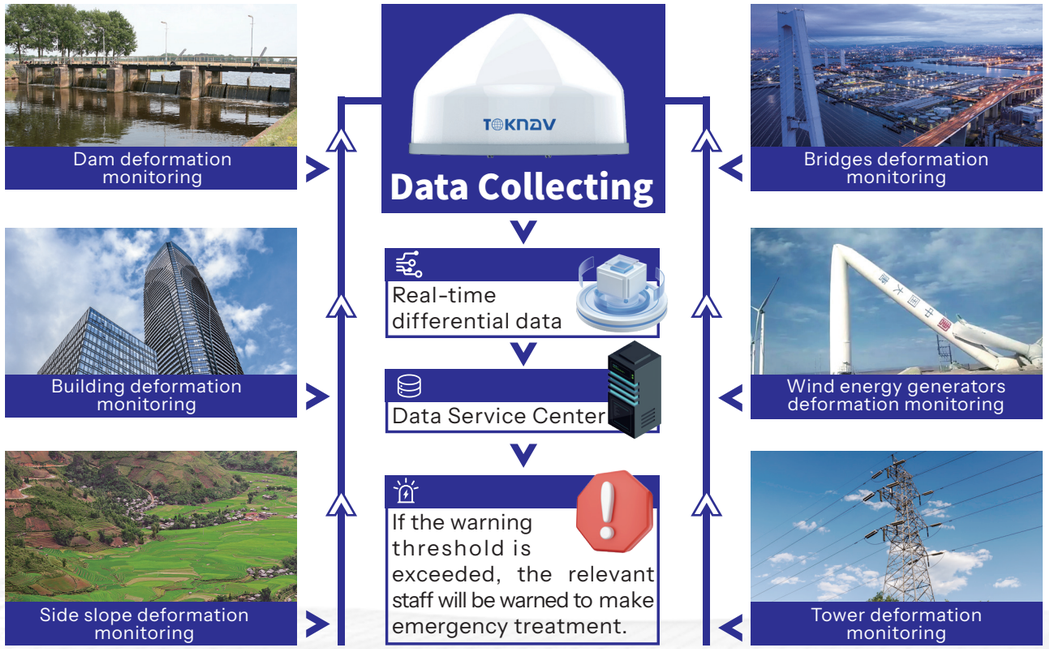
Flexible control
There is no need for line-of-sight between the stations, and the positioning options are flexible.

High real-time
For the collected data, output data results in real time.

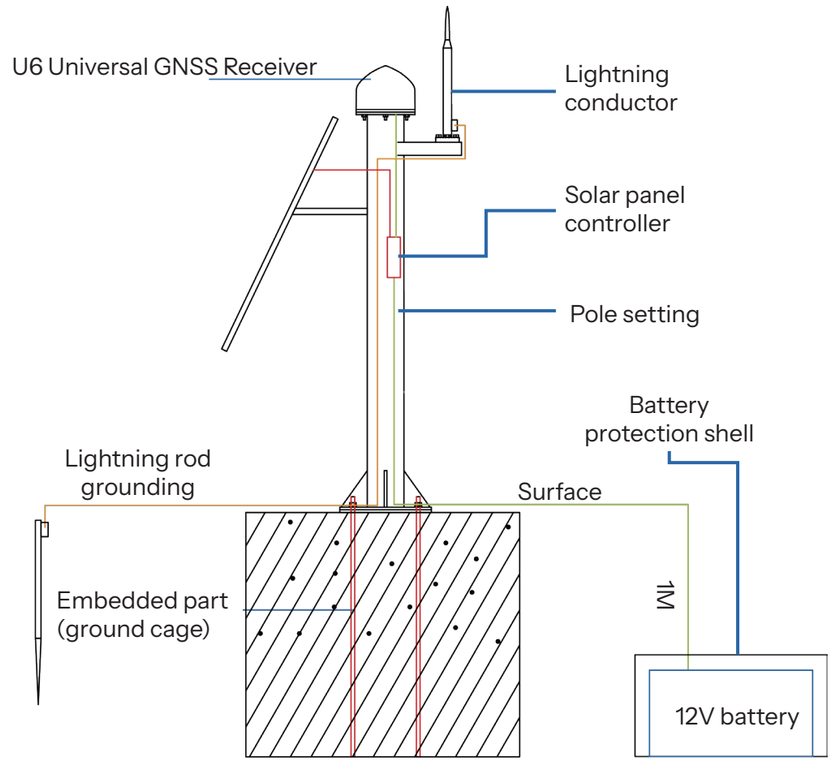
Simple operation platform
Easy to operate, data is intuitive and easy to understand.

Automatic monitoring
Automatic acquisition, processing, analysis and early warning of horizontal displacement and vertical displacement.

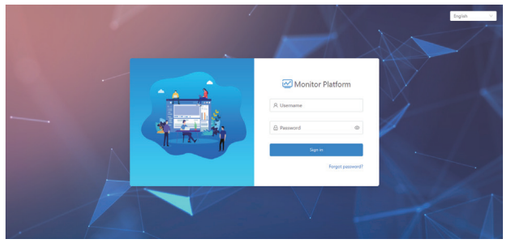
Product Schematic Diagram



Product Mix



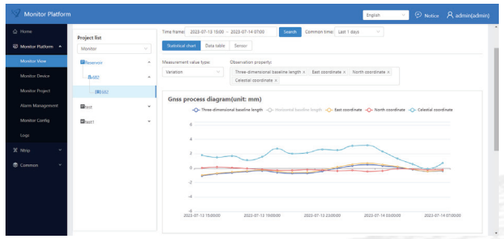
Platform Display



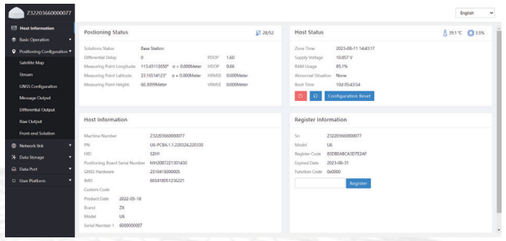
Login interface



Position display



Monitoring



Device management

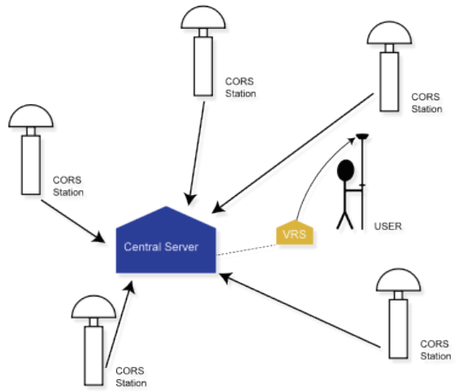
CORS and VRS Service

VRS Service

Definition

VRS is a kind of Network Real Time Kinematic (NRTK) technology.

- VRS generate and provide a virtual reference station data near user's position based on the regional real reference station for user to calculate RTK.
- VRS requires 3G/4G/5G to support communication.





Features & Benefits

- Instant access to RTK corrections.
- Centimeter-accurate corrections tailored to your geographic location.
- Built-in redundancy to ensure connectivity, consistency and quality.
- Cost-effective and simple to use.
- Professionally-managed and secure.
- Streamlined workflows, done right the first time.

Working Principle

Definition

We provide instant access to RTK corrections using a CORS GNSS network, proprietary software platform and VRS service monitoring platform.

VRS SERVICES

- Monitoring Platform
- Software Platform
- CORS GNSS Network

Application Areas









TOKNAV

Advantage of Our Technology

Full-stack self-developed software and hardware technology

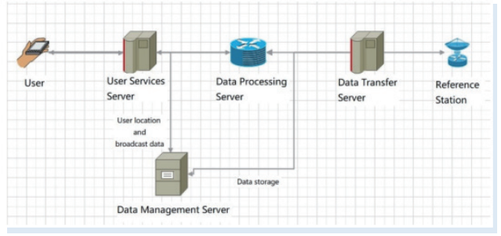
- The algorithms, software, and hardware used in our VRS service are independently developed.

Meeting various high-precision application needs

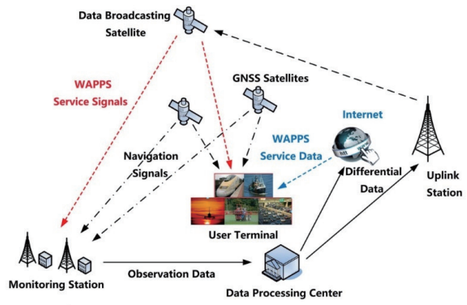
- Includes surveying users, agricultural drones for crop protection, building monitoring, geological disaster monitoring, car lane-level navigation, electric bicycles, and other types of users.

Ability to serve a massive number of users

- Data management, data processing, and user services are independent of each other through a data bus.
- Not only possesses powerful service capabilities of individual servers, but also supports a massive number of concurrent users through server expansion.

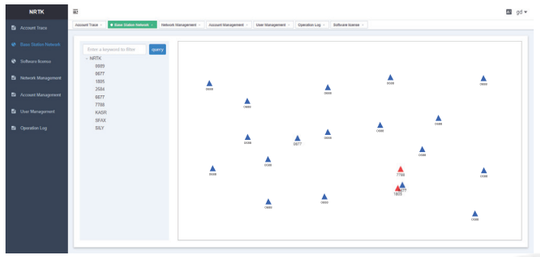


Capability of satellite-based and ground-based fusion processing

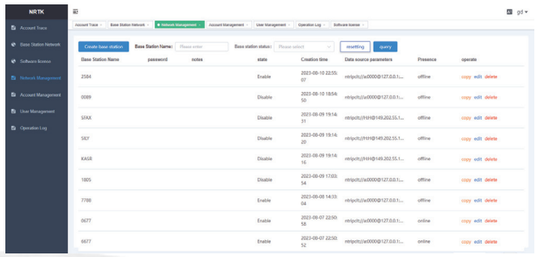


- Capable of satellite-based and ground-based fusion processing, enabling network RTK and PPP-RTK fusion processing.
- Ensures high-performance positioning in low-latitude area through processing multi-GNSS data and refining ionospheric models.

Platform Display



Base station network



Device management

Pre-Marking Robot

TR10 Pre-Marking Robot is an automated auxiliary operation robot capable of road measurement, marking, and line drawing. By integrating with high-precision positioning, it achieves efficient, reliable, and precise line operations, with pre-marking accuracy reaching within 2cm. This cutting-edge robot enhances road auxiliary line printing and spraying efficiency while minimizing manual labor and associated costs.



Characteristic

High-precision Positioning

The TR10 supports full constellation and full frequency signal tracking with 1408 channels. Its antenna can simultaneously receive signals from BDS, GPS, GLONASS, GALILEO, SBAS, and QZSS satellites, enabling full constellation positioning. The robot also supports real-time kinematic (RTK) differential positioning and can access the Beidou ground-based augmentation system for high-precision positioning. By combining high-precision positioning with robotic operations, it achieves reliable and repeatable centimeter-level line marking accuracy.

Long Battery Life and High Speed

The TR10 Pre-Marking Robot is equipped with a built-in 24V/20Ah lithium battery, providing a range of 15km and a top speed of 7.2km/h. Additionally, it supports customization for different battery capacities, offering a maximum range of up to 30km.

Multi-functional

The TR10 can accommodate different sizes of spraying devices and can achieve different types of markings, such as dots, lines, curves, numbers, letters, and patterns.

High Adaptability

The TR10 Pre-Marking Robot is compact and equipped with two 200W hub motors, enabling it to perform operations smoothly on rough surfaces like grass and gravel roads, with the ability to make sharp turns and climb slopes up to 20 degrees.

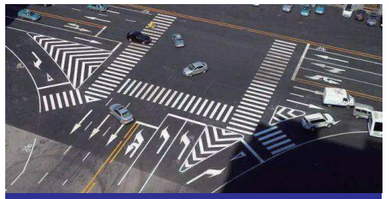
Easy to Operate

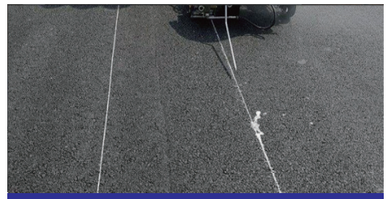
Combining a controller with an Android tablet and our custom-developed app allows field operators to easily learn and operate the device with minimal training.

Supports Multiple File Formats

The app supports various file formats, including dxf, csv and etc., enabling the robot to follow designed construction plans for seamless implementation.

Application

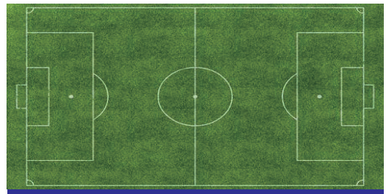

Municipal road


Measurement guidance

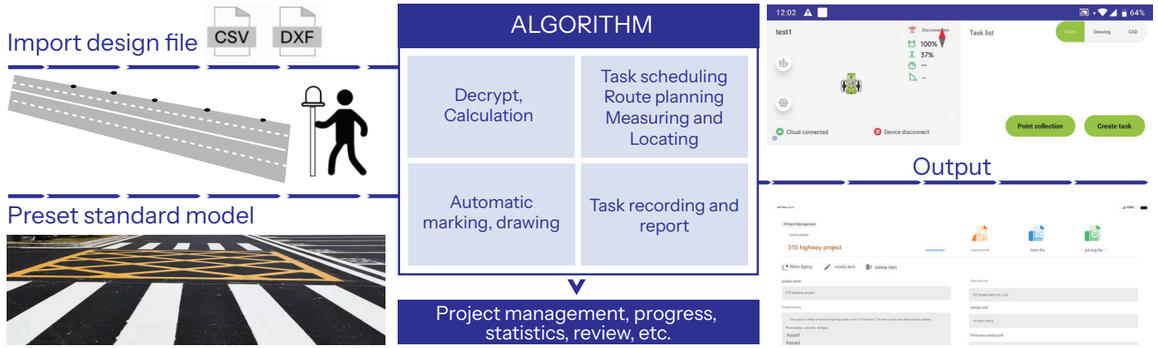

Highway


Parking lot


Special marking


Sport fields

System Architechure



System

Physical

- Dimensions L*W*H: 1152mm*542mm*658mm
- Wheelbase: 400mm
- Wheel Track(mm): 465mm
- Weight(empty): 20kg
- Weight(85% of fuel): 28kg

Battery

- Battery type: Lithium battery 24V / 20Ah
- Charging time(95%): 4h
- Endurance: 15km

Environment

- Communication: CAN
- Operating temperature: -10℃~60℃
- Storage temperature: -10℃~45℃
- IP rating: IP3X

Mobility

- Motor specification: Hub motor 200W*2
- Maximum speed(m/s): 2m/s
- Minimum turning radius: 0°(In-place steering)
- Slope: 20°

Performance

- Speed: 0.5m/s~1m/s
- Materials: Latex paint/Titan white liquid
- Hopper capacity: 7.5L
- Error: ⩽2cm
- Line types: Dots, lines, curves, numbers, letters, patterns