



NEW MAP DATA COLLECTION TECHNOLOGY

A COMBINATION OF ROTATING LIDAR, PANORAMIC AND HIGH RESOLUTION CAMERAS PLUS GPS AND IMU POSITIONING

Developed to further advance the scale, speed and efficiency of map data collection, the new NAVTEQ True™ system utilises a combination of LIDAR, panoramic and high resolution cameras and GPS and IMU positioning. It will enable an increasing range of advanced data to be integrated into maps at a lower cost and opens the door to numerous possibilities in new product development.

All collected data is geo-referenced so both imagery and 3D data points can be superimposed to create a more highly detailed digital representation. This is the critical platform needed to move digital maps from 2D to 3D and has resulted from the work NAVTEQ has undertaken to accelerate the collection, creation and storage of 3D map data and visuals.

All the components are housed in one unit to enable a more sophisticated synchronisation of the range of data inputs captured during collection - it also allows for easier large scale deployment by the company's staff of geographic analysts.

Located throughout the world, the geographic analysts combine technology with local, hands on knowledge and develop contacts which help them establish when and where changes to the road network are taking place. From Bahrain to Boston they all use consistent processes to build maps which adhere to a single global data specification.

Rotating LIDAR

This LIDAR collection system uses a proprietary architecture which can capture over 1.5 million 3D data points every second which is a significant advance over other LIDAR systems. As the rotating lasers can collect over a longer range (up to around 120 metres) and at higher speeds, road sign information can be gathered while driving within the speed limit whilst at the same time capturing detail on a small mile marker.

Sixty four rotating lasers collect 360 degree LIDAR images which again compares very favourably to other LIDAR systems using single line scans collecting to an angle of 90 degrees.

Other NAVTEQ True features include the ability to automatically generate attributes such as bridge height and lane width down to the centimetre. It is possible to look behind objects and better generate accurate dimensions in the execution of 3D representations versus those seen when using sources such as aerial imagery.

Panoramic and High-Resolution Cameras

The use of both multi-view and panoramic cameras is distinctive and impacts not only on collection, but also on the efficiency with which data can subsequently be processed and then brought to customers. Panoramic cameras provide the ability to capture an immersive picture of a location to support the production of street level imagery. The simultaneous use of multi-view cameras supports capture of additional detail such as menus outside a restaurant – all of which can be collected on the same drive by.

GPS and IMU Positioning are the other crucial tools helping to provide accurate geo-positioning of the vehicle at all times. The addition of Inertial Measurement Units (IMU) is also key to the appropriate collection of hard to capture attributes, such as curve and slope, which require a greater level of positioning accuracy.

Global Rollout

When NAVTEQ's geographic analysts first began driving the roads over twenty years ago, they used paper maps and pens to denote changes in the road network. Technology has since revolutionised the process and the company continues to lead the industry by deploying yet more innovative collection tools and software to increase the efficiency and accuracy of the data collection.

NAVTEQ True has been designed to provide a seamless transition from the existing technology and integration will begin in the US followed closely by Europe and, by the end of 2010, will also include field collection vehicles in APAC.

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