CNET Reviews The Car Tech blog Nokia, Navteq show us how a map is ...

ɔkia, Navteq show us how a map is made

e take a spin in the True mapping car, which is used to collect the data that powers Nokia Maps 3.0 on the -new Lumia 822.

' Antuan Goodwin
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Credit: Antuan Goodwin/CNET)

you've ever wondered where the map data that powers your smartphone or portable navigation device ɔmes from, then you're in luck. Nokia stopped by recently with the new Lumia 822 Windows Phone 8 handset,

new Nokia Maps 3.0 app, and the awesome, street-scanning Navteq True car.
tting atop the True car is a pretty impressive bit of data acquisition equipment.

ding along with Nokia Maps and the True mapping car (pictures)

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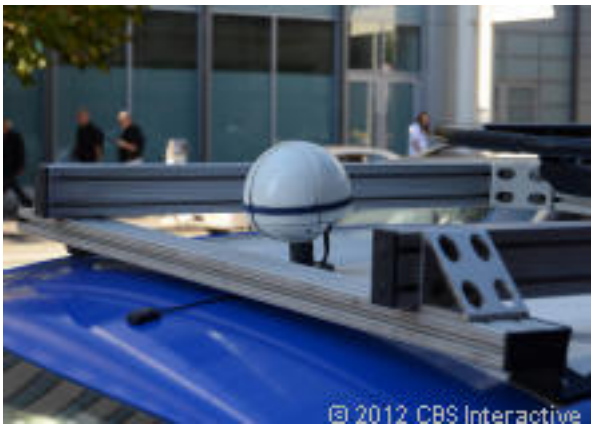
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the top of the tower is an array of cameras that capture a 360-degree street view as the True car rolls down e road. This scanned data is used in the street view that you get when zoomed all the way in on Nokia's ere.net online mapping service or new Nokia Maps Live Sight augmented reality destination search.

ıe most obvious bit of acquisition equipment is the camera and Lidar array atop the True car.
redit: Antuan Goodwin/CNET)

elow the first bank of cameras is a rotating Lidar (Light Detection and Ranging) array. This bank of 64 visible lasers rotates to scan the buildings on either side of the road, objects such as trees lining the road, ıd the road itself. As the lasers pass over the environment, more than 1.3 million points of data are captured very minute. Using this data Nokia and Navteq are able to capture 3D representations of everything that the ue car passes for a variety of uses. The resolution of the scan is so fine that I was even able to see the road arkings separating the drive lanes, indicating turn restrictions, and marking bike lanes and fire lanes. Color e impressed.

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oving down the tower, we came to a second bank of high-resolution cameras dedicated to sign scanning. ıese cameras can read the details on roadside signs, speed limits, and street names. Also on the roof is a ferential GPS sensor that tracks the vehicle's location with a much higher precision than your average ındheld or in-car GPS receiver. Further down and connected to the rear wheels are a pair of wheel encoders at track how fast and how far the vehicle has driven, adding an extra layer of redundancy and accuracy to the PS data. These sensors can also determine the grade of the road and its curvature and banking.
ıe True car is piloted by a local driver to the city being mapped who basically drives down every road in town, anning and mapping along the way. The driver adds his or her local knowledge of what roads are changing ıd what roads need additional scanning. The True car can scan the road at the posted speed limit, even at eeds up to 70 mph.

e got to see the end result of the scanning and data acquisition in action in the newest version of Nokia aps.
redit: Antuan Goodwin/CNET)

l of that data, millions of Lidar data points, GPS data, and panoramic images are processed by a massive mputer in the True car's wagon hatchback and funneled into a 10TB database that's stored locally. At the d of the day, the hard drives containing all of that data are removed and the scanned info uploaded to one of avteq's three worldwide central processing centers where the raw data is transformed into a full-color, 3D presentation of the roads traveled.
e GPS street data, speed limits, turn and lane restrictions, and other 2D data is used in mapping and vigation software, such as the new Nokia Maps 3.0 that I was able to see in action on the Nokia Lumia 822.

pics:
PS
gs:
ue car,
okia,
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