





The tracking is all done via sensors. In the case of a 2014 BMW, a sensor the size of an old flip phone went into the car when it left its home terminal in Livermore, Calif, and sent real-time data to DAS and ThingLogix all along the car's journey to Atlanta.

Rob Rastovich is the CTO of ThingLogix and gives an example of when data can turn into "actionable intelligence".

"The car is in Texas now, where was it before? Is that a problem or not?" says Rastovich. "I see a weather system coming in so I know that car isn't going anywhere anytime soon."

One of the greatest things about rich, real-time data like this, says Rastovich, is that it can be integrated with other data. "From when the car is first picked up from the owner's home, data goes into the cloud (in their case, Salesforce.com), including anything found during a "walk around" including any dents, etc. So instead of a brand

new tracking system, we integrate *all the data* with the customer's original account already in Salesforce."

Rastovich says there are many other practical applications using data from moving vehicles.

"Think of the cable trucks that go home to home. The data can tell you how healthy that truck is. When does it need its next oil change? It also lets you schedule services based on where the trucks are physically located. And ... tells you if the truck driver is running personal errands during the day! Did they deviate from their regular route?"

And says Rastovich, think of your own practical uses, like putting a sensor in your teenager's car so you know the maximum number of miles they're driving, and where they might be speeding! Tim Higgins, COO of DAS, paints a picture of where he wants to go with real-time data:

"We want to be able to plan loads and deliveries long before vehicles arrive using predictive modeling based on vehicle location, rate of transport and environmental conditions." Higgins says the data is now all transmitted over new 4G wireless networks.

Sensors Built Into The Car



And then there are dozens of sensors that go into your car on the factory floor. David Buchko is at BMW's U.S. headquarters in New Jersey and says there's a ton of data even in the BMW Key Reader.

"The 'key' has become far more important than just for starting the car. And it's all wireless – there's no physical connection to the car whatsoever." Buchko says a lot of data is now stored in the Key Reader, which mechanics can use during service checks.

Patrick Day is the service manager at the downtown San Francisco BMW dealership. He says sensors "alert" the car when it needs service, and then the car (not you) calls the dealer. (At least for now, it doesn't make the actual appointment for you.) But BMW is alerted and they call the owner to schedule something. This is called "teleservice". A cell phone is embedded in the car.

Says Day, "We see what the environmental conditions were when the problem started occurring, at what speed the car was traveling, what the fuel level was, oil temp, engine temp. It's not a foolproof diagnostic maintenance plan – the service guy is still needed."

A glimpse into the future

Buchko at BMW's NJ headquarters, says the company is working with chief of trauma at the William Layman Research Center in Miami, Florida, to use data coming from car sensors to help in accidents.

"Sometimes, an accident victim may look fine but then go to the ER and have a catastrophic medical condition. We created new algorithms so the data can be sent to an ER from the scene, and even to the first responders (paramedics) *before* they arrive at the accident. They know earlier whether to call a medevac helicopter, etc."

In the medical profession, they call this "the golden hour" – when many life-threatening injuries can be treated.

This is all what's happening today. Now think what this will look like *in the future*. With a simple hand gesture, your car will drive itself to your new home – no need for a carrier truck.

We'd love to hear your comments! Not only what you can do with your own connected car, but where you see the future heading.