

Telematics and the rise of smart mobility

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Jessica Royer Ocken reports on new telematics tech that delivers better traffic and navigation information and allows OEMs to offer wider services

Government agencies, environmental advocates, insurance carriers, consumers—there are calls from all sides for better fuel efficiency, less time spent idling in traffic jams, and all around better driving habits. Fortunately, advancing telematics technology offers a great way to tackle these challenges.

The new digital TPEG information system can be delivered via DAB/HD radio or over IP via cellular network, offering much more specific and localized traffic information than the analog TMC system, delivered via FM radio. TPEG updates include more context and are able to offer some traffic-flow predictions.

If properly equipped, TPEG updates can even communicate with the car's navigation system so drivers are better able to make decisions about whether to choose an alternate route. TPEG systems are also able to pack in lots of additional details, like fuel prices at nearby stations and available parking, without requiring more bandwidth.

Safety-critical information

The TPEG system also provides “a great opportunity to inform drivers of safety-critical information,” says Amaury Cornélis, coordinator for the Traveler Information Services Association (TISA), the organization managing standards for traffic information systems.

He predicts a future in which drivers have premium traffic information so they not only know “where the traffic jams are and what's the quickest way from A to B,” but they also have local hazard warnings, temporary construction and detour updates, and emergency notifications delivered right to their cars.

As more and more vehicles are equipped to access this smart mobility information, there will be abundant benefits for both travelers and vehicle manufacturers.

In addition to the improvements over analog TMC traffic information, TPEG moves beyond driving to look at ‘multimodal’ transportation. Some of TISA's members (TISA is comprised of former members of two different forums: one for TMC standards and one for TPEG standards) are developing applications to deliver public transportation information via TPEG as well as weather information apps.

Mobility gets smart

And for those who are using TPEG information in their cars, it can upgrade the way they travel. Currently, drivers may enter a destination in their navigation system when they're going somewhere new, but not for their daily commute.

However, there are now TPEG-based services available that automatically check a driver's usual route and issue an alert if they detect construction or an unusual traffic problem. "It's more intuitive traffic information," explains Jack Bergquist, a senior analyst with the automotive group at IHS. "You're not just putting in an address. It's real time and relevant. That's a great advantage."

But TPEG's advantages are not just for travelers. TPEG-equipped in-vehicle telematics system is a great marketing tool and selling point for OEMs. But if they opt for a TPEG over IP system, which can also receive information back from the head unit or a smartphone in equipped vehicles, OEMs can analyze data coming from the vehicles to improve traffic information.

Or, OEMs might opt to sell this anonymous floating car data, such as speed and location of vehicles, to a larger service provider so it could be used to improve the accuracy of traffic information for everyone on the road. (For stories on the related field of V2V/V2X, see [Special report: Telematics and V2V/V2X technologies](#) [2].)

Who pays?

There is, of course, a cost to creating a system that uses cellular networks. The bandwidth TPEG requires is not in the same range as streaming a movie or even streaming music, but it does take some bits and bytes. And that requires payment, perhaps by the OEM or third-party device creator rather than the end-user. TPEG services could likely negotiate a discounted data rate into their contract with mobile carriers.

Bergquist points out that systems like Ford's Sync, which he describes as "not quite TPEG over IP," uses "just voice minutes, not even data" to function in the vehicle. (For more on data, see [Telematics and UBI: The data challenges](#) [3], [Telematics and the value of data](#) [4], [Telematics: How positive customer relationships improve ROI](#) [5] and [Telematics and probe data: The revenue opportunities](#) [6].)

Bergquist also envisions a business model in which TPEG traffic and navigation information is bundled with other services, such as weather information, email access, and emergency calling, and offered as a subscription service for a monthly fee.

Bundling makes sense and increases the appeal, Bergquist explains, noting that TomTom Live in the UK does quite well in countries with badly snarled traffic (Belgium, anyone?), but not as well elsewhere. "For an OEM to make that [service] viable, they can't have only a tenth of their customers subscribing if they're paying access rights for [traffic information for] the whole region," he says.

TPEG over DAB

Delivery of TPEG over DAB is less expensive because a blanket of information can be sent out rather than individual messages for each receiver as a cellular network requires. But a digital radio-based system offers only one-way transmission, so service providers using this approach will definitely need to purchase traffic data from another source. And they won't have their own data to sell to offset the cost.

Because there are a number of possible business models and pros and cons to each delivery method, as well as because certain parts of the world are better equipped for HD radio (which has taken off in North America) than others, TISA anticipates that both methods of TPEG delivery will coexist, along with systems that are able to use both—DAB radio where it's available and a cellular network when it isn't.

TISA also predicts that because of the large number of TMC devices already in circulation, that service will continue as long as FM bandwidth continues to be available.

Bergquist cites lingering public suspicion about sharing information and the currently fragmented market for traffic-information providers as two additional remaining hurdles to a widely deployed TPEG system.

TISA is now the official registry of service IDs, so any organization in the world that wants to deploy a system can contact it for a unique ID. The organization has also developed easy-to-implement encryption keys for TISA members that want to make sure services are accessed only by those who've paid for them.

It is working to develop and maintain not just standards for TPEG use, Cornélis explains, but also "guidelines for deployment and implementation."

Jessica Royer Ockenis a regular contributor to TU.

For more on smart mobility, check out [V2V & V2I for Auto Safety USA 2013](#) [7] on July 9-10 in Novi, MI.

For all the latest telematics trends, check out [Telematics India and South Asia 2013](#) [8] on April 17-18 in Bangalore, [Insurance Telematics Europe 2013](#) [9] on May 7-8 in London, [Data Business for Connected Vehicles Japan 2013](#) [10] on May 15-16 in Tokyo, [Telematics Detroit 2013](#) [11] on June 5-6, [Content & Apps for Automotive Europe 2013](#) [12] on June 18-19 in Munich, [Insurance Telematics USA 2013](#) [13] on September 4-5 in Chicago, [Telematics Russia](#) [14] 2013 on September 9-10 in Moscow and [Telematics Munich 2013](#) [15] on November 11-12.

For exclusive telematics business analysis and insight, check out TU's reports: [In-Vehicle Smartphone Integration Report](#) [16], [Human Machine Interface Technologies](#) [17] and [Smart Vehicle Technology: The Future of Insurance Telematics](#) [18].

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[2] <http://analysis.telematicsupdate.com/v2x-safety/special-report-telematics-and-v2w2x-technologies>

[3] <http://analysis.telematicsupdate.com/insurance-telematics/telematics-and-ubi-data-challenges>

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