Smart roads

Innovation  >  Travel & Tourism  >  Connected highways increase driving safety and efficiency

CONNECTED HIGHWAYS INCREASE DRIVING SAFETY AND EFFICIENCY

TRAVEL & TOURISM

Modular, connected pavement slabs link emergency services, self-driving vehicles and traffic data for efficient, smart transport.

Integrated Roadways introduces pre-cast, connected pavement slabs that turn any road into a real information highway. The Kansas City-based technology startup created Smart Pavement for use in future smart roads. The company’s vision is a hard-working highway system that manages a variety of tasks while vehicles are in motion. The roads charge electric vehicles, connect passengers to high speed internet and alert emergency services immediately after an incident. Vehicles that slide off the road no longer have to wait for a passerby to phone in the accident. The sensors in the pavement record tire speed and location, thus immediately identifying when a vehicle leaves the road.

Pre-cast slabs greatly reduce construction and installation costs and integrates technology from the start. Repairs and upgrades are much quicker and less expensive to complete thanks to the pavement’s modularity. A router on each side of a slab connects it to its neighbors, making current analogue roads smart. The roads use the connections to relay traffic news and route suggestions to drivers and autonomous vehicles. Integrated Roadways is now beginning work on a pilot project with the Colorado Department of Transportation. The test will comprise half a mile of smart road and will run for five years.

In Sweden, the world’s first electrified road charges vehicles as they drive. A rail connected to the power grid is built in the road, transferring energy to the vehicle moving above it. It does so with a
movable arm that attaches underneath the vehicle to detect when there is a rail in the road. It’s not just vehicular traffic that is getting a sustainable upgrade. A bike path in Poland is charged by the sun and glows blue at night to illuminate the way for riders. Needing 30 to 60 minutes of daylight to fully charge, the phosphorescent path glows for up to eight hours. The team behind the design expects it to work for up to 20 years. What would help cities combine smart pedestrian sidewalks with electrified, smart roads and integrated cycle ways?

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