75

The number of Vivacity detectors on the Oxfordshire road network feeding the Aimsun Live prediction engine

Aimsun Live, creating a county-wide hub of ingested real-time data feeds for Oxfordshire. That not only feels good to say, but also has great appeal to those trying to move forward with local authority data reuse and digitisation, maximising investment by integrating separate sub systems. At this point this project is only using the motorised vehicle counts but there is potential to include cycling data at a future point.

One project where cycling and walking data is clearly coming into its own is OmniCAV, led by Aimsun. OmniCAV focuses on modelling cars, HGVs, public transport, bicycles and pedestrians in a digital twin for the accelerated testing and certification of connected and automated vehicles.

Looking to the future

So that brings us up to date. It's still early days, but Aimsun and Vivacity are now actively working together to approach other possible customers with our technical integration, with an existing overlapping user base including, Leeds, Transport for Greater Manchester, Transport for London, to name just a few. It seems that, together, Aimsun and Vivacity can do a lot more to increase the use of public authority transport data, for a much more streamlined, innovative, digital information model that goes a long way in considering the future of transport models and systems. ✖

A CAV future will require unprecedented updates and standards for roadways and signs

When it comes to upgrading our national transportation systems, it won't be enough to simply fill in potholes and scrape the rust off bridges. Here in the United States, there's a vital need to refurbish what the Federal-Aid Highway Act of 1956 built, while revolutionizing the way we do it. Not exactly building the plane while it's airborne, but it's close. Developing connected-automated vehicles (CAVs) has proven a more complicated endeavour than first thought, but technological infrastructure advances are already here: sensors embedded in roadways not only guide CAVs but alert maintenance crews that potholes are about to appear; permeable friction course (PFC) pavement not only facilitates water drainage from a roadway (thereby reducing hydroplaning) but also improves safety for vulnerable road users by reducing splash and improving visibility. Researchers are currently studying innovations like these at The Texas A&M University System's Center for Infrastructure Renewal, a state-of-the-art facility developing smarter, resilient, more cost-effective infrastructure solutions for the 21st century.

But rebuilding infrastructure isn't just about restoring roads and bridges. The US National Committee on Uniform Traffic Control Devices recently recommended language to the Federal Highway Administration's Manual for Uniform Traffic Control Devices team on the need to standardize road-sign size, colour and mounting location along roadsides. It's important to build consensus across the public and private sectors on these issues – and many others — as current vehicles (equipped with limited Level 3 autonomous tech, like lane-keeping assistance) evolve into tomorrow's self-reliant CAVs. The ubiquitous nature of pattern recognition in our near-future transportation system necessitates coming up with acceptable standards to fundamentally ensure safety.
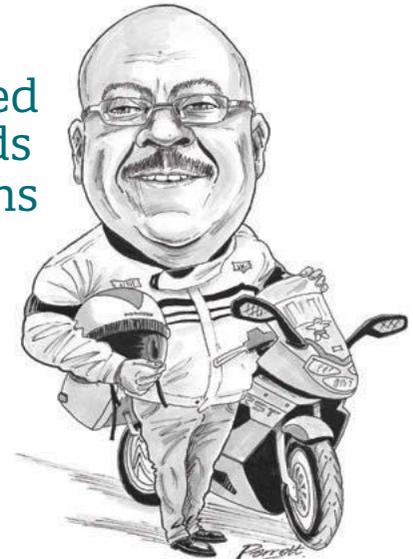
"REBUILDING OUR INFRASTRUCTURE ISN'T JUST ABOUT RESTORING ROADS AND BRIDGES"

500+

The number of different federally approved road signs in the USA

"The fundamentals" are what we're talking about here, and now is the opportune time to re-examine them. No one thinks about asphalt when they're driving on it. No one thinks, "What a feat of modern engineering this roadway is." But that doesn't mean it's not one. So, as we're prioritizing how to translate last century's build-it-out mentality into this century's build-it-smarter mindset, we should acknowledge that the process is at least as important as the product. While transportation infrastructure awaits funding priority, time isn't standing still on our roads and bridges; they continue to deteriorate, regardless of policy stalemate. The lack of action, while frustrating, invites us to reconsider how we think about the engineering principles underlying this vital foundation. We cannot afford to let this opportunity pass. Pothole politics make good headlines. Research and testing — guided by human insight and innovation — make good roadways.

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