MAINTENANCE IS A GLOBAL PROBLEM

INSPECH
DIGITAL ROAD INSPECTION

The road to perfect condition

In every country, roads are an authority's most valuable asset. Yet keeping them in a safe condition seems to be a growing problem, with maintenance taking a back seat in the funding stakes. Real-term reduction in maintenance funding has resulted in huge backlogs of maintenance projects that far exceed the capability to pay to remediate or rehabilitate before deterioration accelerates towards the multiplied expense of reconstruction. The percentage of roads classified as being in poor condition is growing. Only through undertaking structured maintenance programmes together with innovation afforded by new digital technology, will we turn the tide. To make best use of the funding that is available, we need to work smarter, streamline preventative maintenance workflows and accelerate the operational process based on better knowledge of road conditions and make risk-based decisions to ensure safety, sustainability and value for money. With new initiative funding coming in some key places, we also need to be able to generate the capacity to utilize it to best effect. Performing road inspections faster and more frequently will give us the data. Using the data to more efficiently drive repairs in a more savvy and systematic way will help to gain lost ground. It is not too late!

Different countries, different conditions, same solution

As one of the fastest-growing countries in the world, the United Arab Emirates (UAE) has experienced massive infrastructural development over the last few decades. This development has been most evident in its road network, which has undergone a significant expansion, resulting in over 25,000km of roads in the Emirate of Abu Dhabi alone. The quality of these roads is also exceptional, with Abu Dhabi's road network ranking number one worldwide when it comes to road condition. Despite this impressive development, there are still challenges that the UAE faces when it comes to road maintenance.

With Abu Dhabi's unique type of road surface mix that can withstand extreme heat, the need for digital automated road inspection may seem not as pressing as in other countries, but there are still benefits to implementing such a system in the UAE. Regular inspections are still necessary to identify any potential issues that may arise. Digital automated road inspection can detect defects and abnormalities early and prevent them from becoming more severe, leading to significant repair costs and ensuring the continued safety of the road network.;

The U.S. government on the other hand has neglected its infrastructure for ages, deferring maintenance due to budget constraints. This has led to a severe degradation of the road network. Many roads in the United States were built several decades ago and exceeded their expected lifespan many years ago. Meanwhile, the number of vehicles on U.S. roads has increased significantly, leading to more wear and tear on the infrastructure. And then there are extreme weather conditions, such as hurricanes, floods, and snowstorms to account for. All of which have contributed to the deterioration of the country's infrastructure and the U.S. government has historically not prioritized infrastructure spending, leading to the need for a large-scale investment to bring the infrastructure back to an acceptable condition. Last year, the Biden Administration signed a whopping $1 trillion infrastructure bill into law. It would be an understatement to say that maintaining the infrastructure would have been a lot cheaper in the long run.

" INSPECH LOOKS TO COMPLEMENT OTHER ASPECTS OF THIS PROCESS BY PROVIDING A PRODUCT THAT BUILDS A BRIDGE TO CONNECT THE INSPECTION PROCESS AND ENABLE THE NEXT STEPS FOR ROAD MAINTENANCE.

Overall, around 51% of the local road network in England and Wales is reported to be in good structural condition (with 15 or more years of life remaining), equivalent to approximately 104,745 miles. Approaching a third (31%, equivalent to 63,668 miles) is now reported to be in adequate condition (5-15 years of life remaining) and 18% – 36,918 miles – in poor condition and having less than five years of life remaining.

The point is, despite the obvious difference in road conditions between the UAE and the US, both are in need of effective maintenance planning.

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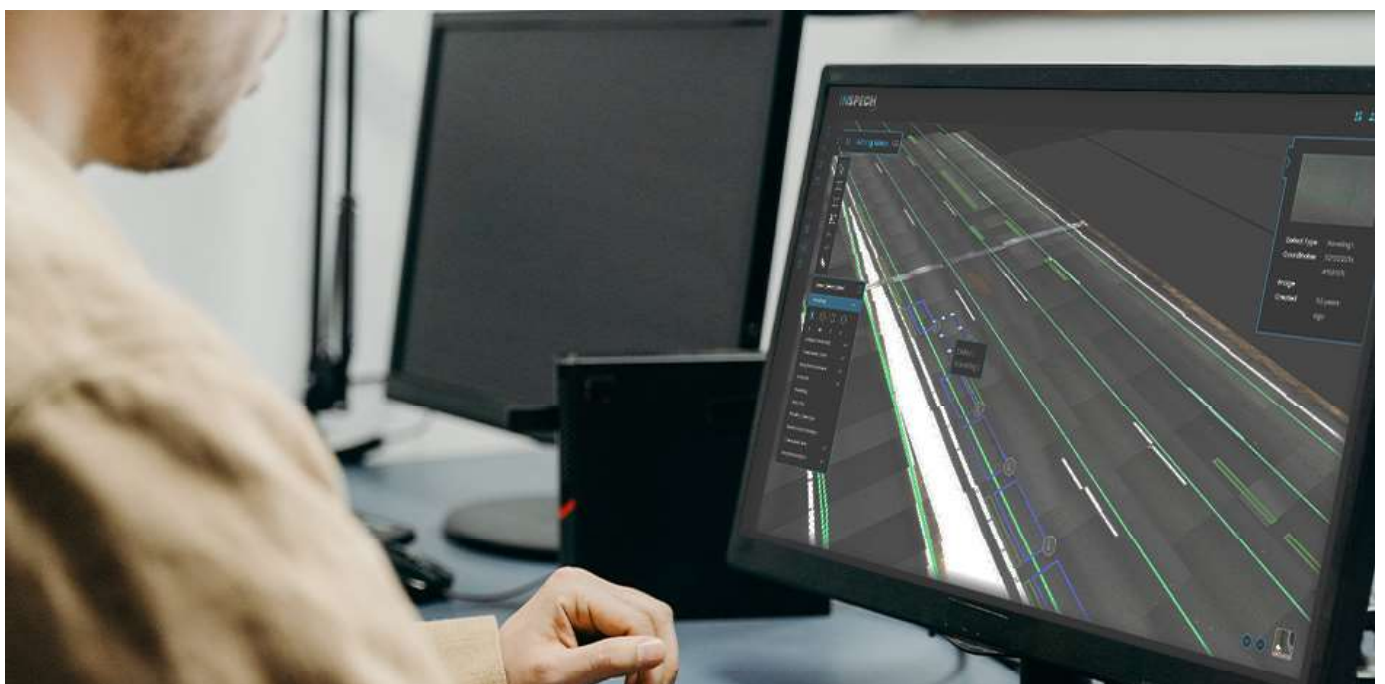
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KEEP YOUR EYES ON THE ROAD WITH **IN**SPECH

INSPECH is a software platform that offers end-to-end road inspection capabilities, including data capturing (via a partner ecosystem), data ingestion, section generation, visual inspection, mapping, and graphical data analytics overview. It is a tool that streamlines users' workflow, improves the process of completing an inspection and maintaining the performance of the road asset. Recorded video data together with geospatial referencing is used to create a dynamic digital twin of the roads, which enables inspectors to work with a virtual model to review defects identified and generate PCI-based condition assessments for road sections. **IN**SPECH's AI capability can assist further by automating recognition of defect classes and types together with measurement information. This can help accelerate inspections by up to 80% as the repetitive work is automated, leaving the inspector to focus on expert inputs as a QA validation process, or as we like to call it, 'the last mile check'.

Effective maintenance planning

One of the key benefits of **IN**SPECH is the ability to plan maintenance much more efficiently. By using the digital twin created from the road scans together with digital mapping, authorities can identify areas of the road that require repairs and prioritize them based on the severity of the damage. This approach enables road owners to perform maintenance activities before the damage becomes too extensive, leading to more significant repair costs.

Better budgeting

Another important benefit is the ability to create cost estimates more accurately. By using **IN**SPECH, authorities can estimate the costs associated with maintenance treatments and facilitate decision-making regarding allocation and best use of funds, resulting in improved budgeting and value for money.

Safer roads

Furthermore, digital automated road inspection has the potential to increase the safety of the road network. By identifying road defects early and performing preventative maintenance, authorities can reduce the risk of accidents caused by road defects and avoid vehicle damage and personal injury claims from the public.

INSPECH is typically used by Civil Engineers, Asset Managers and Asset Owners, like (local) governments.

In conclusion, digital automated road inspection is crucial globally, simply because it allows for early identification of road defects, a more efficient planning of maintenance activities, and accurate cost estimates. As the UAE continues to experience rapid infrastructural development, and as the U.S. is now beginning to repave their roads, the need for effective road maintenance will only increase. By investing in digital automated road inspection, every country can ensure that its road network either becomes or remains in excellent condition.

INSPECH Insights Solution

The solution is designed to empower users with the information they need to optimize their strategic operations, inspection processes and results to make more informed decisions about maintaining the reliability and availability of their road assets. The solution enables the user to determine the condition of their road network, determine maintenance for the medium and long term, identify the budget required for repair maintenance and to derive a deterioration rate based on inspection comparisons over time.

inspech.com/insights

INSPECH Assessment Solution

This solution offers a digital inspection tool with the option for AI-assisted inspection, reducing the time it takes to deliver inspection results from the inspector to the Asset Owner. This solution enables users to streamline the digital inspection process, enable a consistent execution of the inspection service and to simplify the workflow and handover process.

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> WE FIND THAT ROAD OPERATORS ARE UNDER INCREASING PRESSURE TO MEET QUALITY REQUIREMENTS AROUND SUSTAINABILITY AND SAFETY. WITH THE INSPECH SUBSCRIPTION, USERS CAN MAKE MORE INFORMED DECISIONS ABOUT MAINTAINING THE PERFORMANCE OF THEIR ROAD INFRASTRUCTURE. THIS ALLOWS THEM TO ADJUST THEIR ROAD MAINTENANCE PLANS TO FIT THE AVAILABLE BUDGET.

Norm Wilkinson, VP International Business Development of INSPECH

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