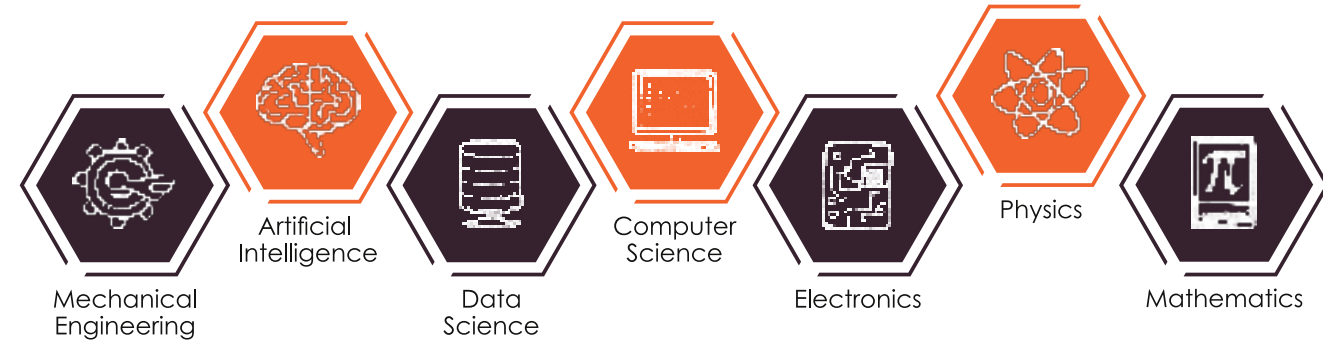


## About WINLEY

Winley, a member of Freetech Technology Group, was founded in 2020 by the Group's CEO Mr. Banting Sze. A graduate of the HKSTP Incubation Programme, Winley specialises in the intelligent, automated assessment and management of transportation infrastructure, driving innovation and enabling safer, more efficient mobility.

Our young and dynamic team brings together top-tier talent from Hong Kong's leading universities and world-renowned institutions, spanning a wide range of expertise.



We actively collaborate with prominent professors to shape applied innovation and ensure our solutions stay ahead of industry needs.



Professor Shing-Tung Yau and Shing-Tung Yau Center of Southeast University in Nanjing.



Professors Zou Jun and Ronald Lok Ming Lui, Department of Mathematics, Chinese University of Hong Kong.



Professor Zhen Leng, Hong Kong Polytechnic University.

## Our Mission

To create a positive global impact through meaningful innovation

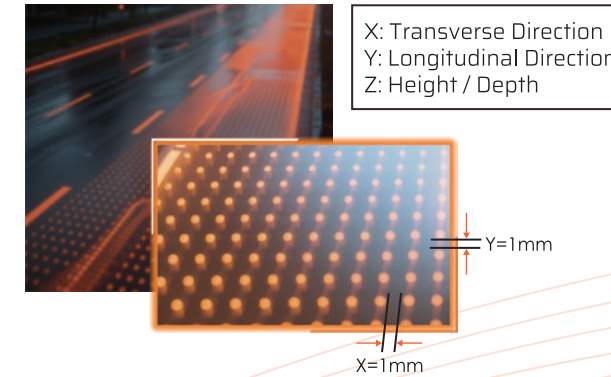
Winley inherits Freetech's deep technical foundation and unwavering commitment to innovation. Leveraging over 30 years of industry experience, we recognise the complex challenges faced by governments, road users, and society. This enables us to develop pioneering technologies that break convention and deliver real-world impact — just like iPAS, now adopted by the Hong Kong Highways Department.

## Product Features

### ROAD DOCTOR ASSESSOR



A special-purpose licensed vehicle equipped with self-developed high-resolution 3D sensors, multi-source navigation units, and dual wheel encoders. Ensures precise collection of pavement data with reliable geo-referenced information even in GPS-denied environments.



### ROAD DOCTOR STUDIO



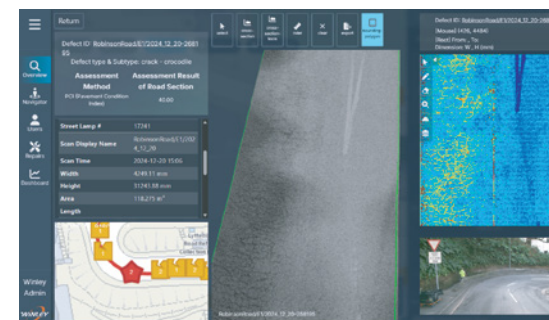
A real time, web-based platform accessible from any digital device.



Interactive, geo-referenced map for spatial visualisation



Severity mapping showing both individual defect specifications and overall regional condition metrics

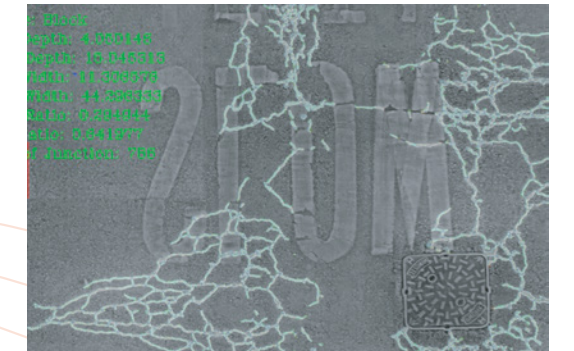


Built-in analytics interface with descriptive statistics and trend visualisations

### ROAD DOCTOR CORTEX



An analytics engine combining mathematical models, AI and computer vision algorithms, and decades of domain expertise to enable the automated detection, classification, and analysis of road distresses.



#### Key Capabilities

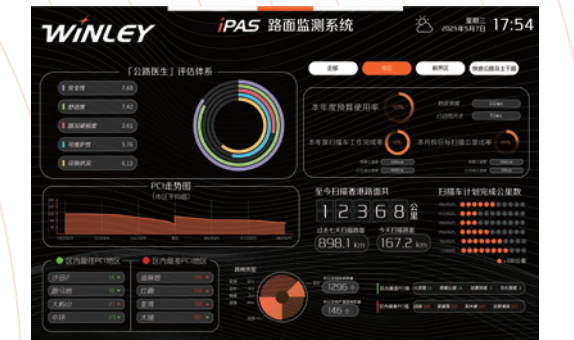
- Fully Automated Defect Detection and Identification
- Geo-referenced Data Processing
- Defect Physical Property Measurements
- Road Condition Analytics (simulation at every data point)
- Scoring and Evaluation Indicators

### ROAD DOCTOR INTELLIGENCE

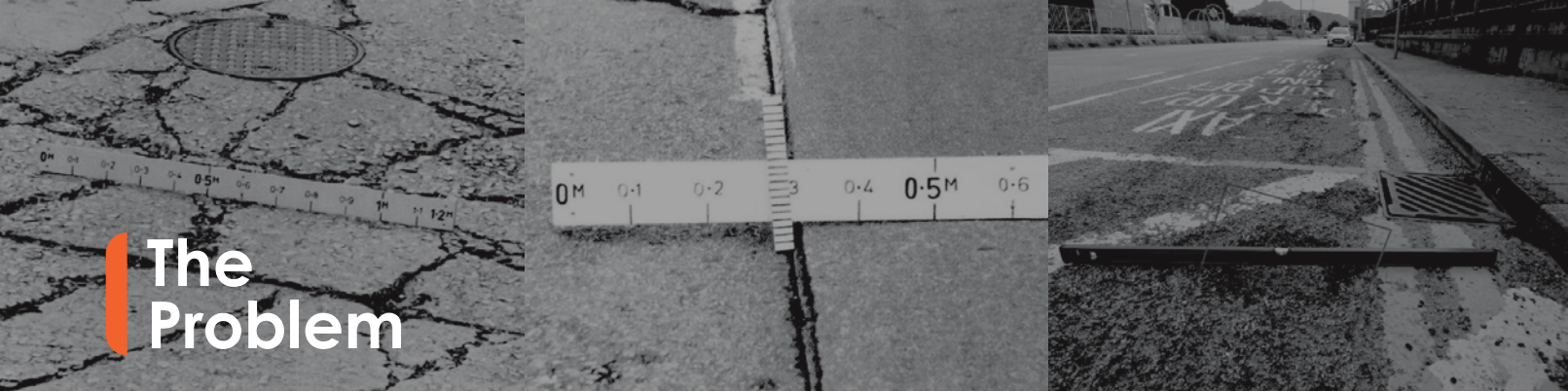


A world-leading, comprehensive road condition assessment framework featuring 100+ evaluation metrics across 5 dimensions (safety, evenness, structural condition, serviceability, facility condition), with 85% of indexes self-developed by Winley.

Enables long-term condition monitoring, accurate pavement performance forecasting, standardised acceptance testing, and intelligent budget planning.







## The Problem

Traditionally, road conditions have been assessed through manual inspection — a process that is inefficient, subjective, and error-prone. Transportation authorities worldwide face ongoing challenges in accurately identifying distresses and efficiently allocating maintenance funding to the areas most in need.

While technologies exist, many still fall short due to low data accuracy, poor geo-positioning, limited automation, and narrow applicability — hindering informed decision-making and progress toward smart transportation systems.

## Our Solution:

Intelligent Pavement Assessment System



Developed in-house by Winley and backed by our parent company's decades of industry expertise, iPAS is a fully integrated road assessment system. It combines advanced hardware and intelligent software to deliver data collection, analysis, and decision-making in a complete end-to-end solution.

With a deep understanding of the evolving needs of different stakeholders, iPAS offers a practical, forward-looking approach that not only delivers fast, safe, and accurate assessments, but also reduces costs, optimises resources, and supports data-driven maintenance planning.

Equipped with the world's most comprehensive evaluation framework and an intelligent forecasting engine, iPAS empowers transportation authorities to make smarter decisions, improve public satisfaction, and ensure safer, smoother journeys for all.



## How iPAS Delivers Real Impact



Streamline operations and reduce labour costs



Maximise budget impact with smarter resource allocation



Extend pavement life with continuous monitoring and prediction



Identify and predict risks to elevate road safety



Deliver smoother roads and a better travel experience



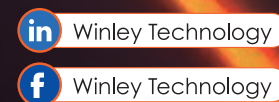
Revolutionise how roads are evaluated and managed

## Road Doctor Assessor Technical Specifications

Data Profiles	Up to 110 million / sec
Longitudinal Resolution	1 mm
Transverse Resolution	1 mm
Depth Resolution	0.3 mm
Speed Limit	Consistent resolution from 0 to 100 km / h
Max. Scanning Width	4 m
Applicable Road Types	Urban roads, highways, narrow streets, underwater tunnels, bridges, underpasses, mountain roads
Applicable Pavement Materials	Asphalt, concrete, anti-skid, metal, and others
Environmental Restrictions	Unaffected by sunlight and shadows, effective day and night



www.winley.com.hk



## Intelligent Pavement Assessment System

智慧道路評估系統

