

## AI Inspection with Airdrone for HyD Structures and Public Road Surface

The maintenance performance of public roads depends on swift identification and rectification of defects, which are heavily relied on adequate inspections by technical grade staff. In view of the large scale of public roads (totally 2,107 km in Sep 2017) in Hong Kong, there is a need to study the feasibility in adopting new robotic technology to alleviate the heavy workload of technical grade staff.

This proposal is exploring the use of air drone for aerial photography to take photos/video of public road surfaces and train AI model for defects identification purpose. The video/photos taken would firstly be inspected manually to identify the defects and provide relevant labels. The photo/video taken can be split into training dataset and testing dataset for training the machine learning model to recognise defects.

This study would focus on assessing the feasibility in using aerial road condition photos to provide datasets with adequate details for identification and labelling of defects by human. As such, it could explore the feasibility in extending the uses of AI system for road defect detection under separate study in future. If resource allows, this study may explore using the labelled dataset to conduct the training and testing of AI recognition model as prototype for demonstration purpose.