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"A.E.s.SLic" AI Technology that Automatically Evaluates the Surface Quality of Lining Concrete

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Overview

Nishimatsu Construction Co., Ltd. and sMedio, Inc. have jointly developed an artificial intelligence (AI)-based technology called "A.E.s.SLiC" that automatically evaluates the quality of concrete surface layers based on photographic data of lining concrete. This technology enables stable judgments that are not affected by the skill level of the evaluator and can also be used to identify areas requiring improvement in construction methods and to formulate remedial measures.

Specification

This system is structured with a tablet machine, a cloud-based server, and a PC terminal. The AI system is cloud-based, and when a photograph of the concrete lining surface taken with a tablet or digital camera is input into the AI system, the system automatically evaluates the quality of the concrete surface layer and outputs the results. The AI system automatically evaluates six items, including surface bubbles, peeling, and color irregularities. Each item is scored in five levels, with the low-scoring areas requiring improvement indicated on a diagram of the concrete lining. The evaluation points can be output as a time-series graph or table, which can be used as a tool to determine the effect of quality improvement.

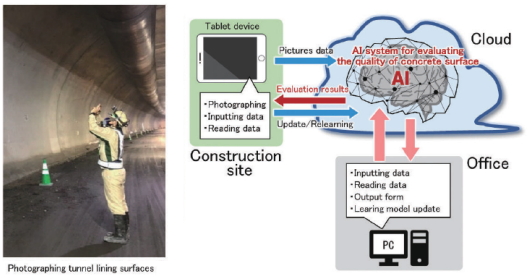

Fig.1 Conceptual diagram for AI system

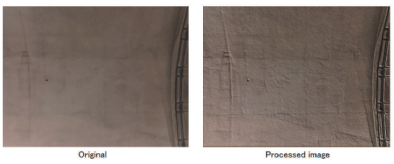

Fig.2 Sample of a Processed Image (Left: Original Right: Processed)

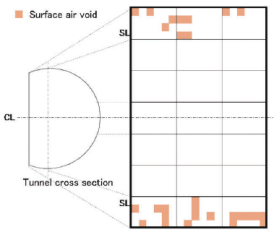

Fig.3 A Diagram Image Showing Lining Parts that Need Improvement (surface bubbles)