

World's First 8K Video Technology be Utilized to Inspect Road Infrastructure = Demonstration Experiment Started in the Metropolitan Expressway Tunnel =

Shutoko Engineering Co., Ltd.
Aero Asahi Corporation
ASTRODESIGN, Inc.

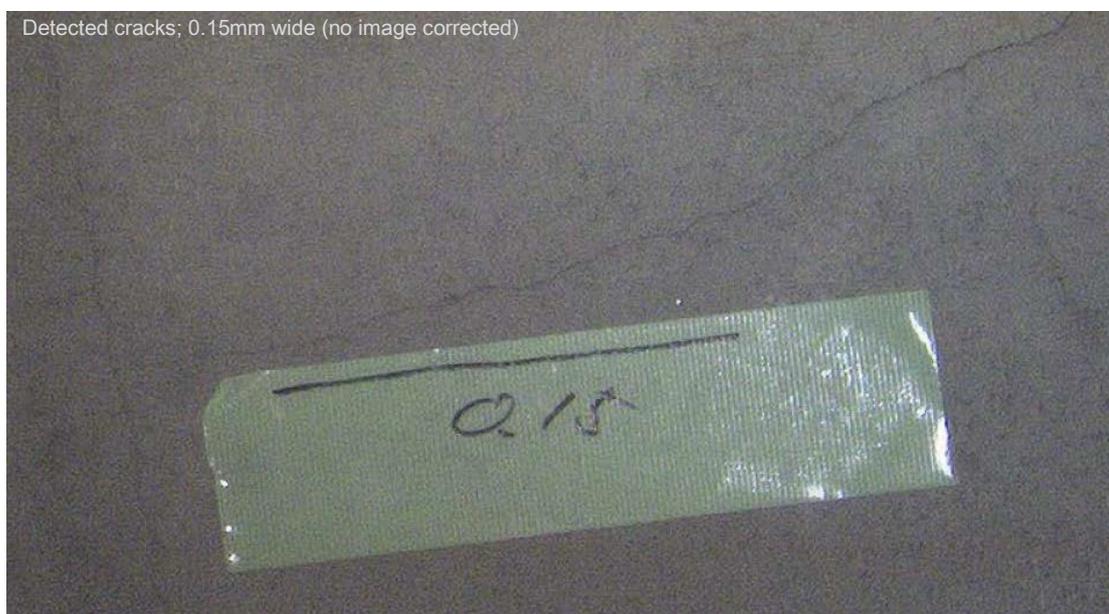
■ Overview

Three companies, Shutoko Engineering Co., Ltd. (Tokyo, President: Masahumi Ogasawara), Aero Asahi Corporation (Tokyo, President: Toshinori Ogure), and ASTRODESIGN, Inc. (Tokyo, President: Shigeaki Suzuki) have started to develop "8K" video technology, which was practically started broadcasting from December 1, 2018, for the road infrastructure inspection. It will improve efficiency of maintenance of the road in the aging progresses. This is the very first concept for the road infrastructure inspection in the world.

This "8K Video" means an image taken by an area sensor camera of approximately 33 million pixels (7680× 4320).

■ Demonstration Experiment in Metropolitan Expressway's Tunnel

On November 25, 2018 in the Metropolitan Expressway tunnel, ASTRODESIGN performed an experiment to detect the concrete cracks of the wall by using the 8K camera and video recording system developed by ASTRODESIGN equipped on the Mobile Mapping System developed by Aero Asahi Corporation. We have detected a crack as narrow as 0.15mm wide in such experiment.



■ Future Developments

8K video technology can be effectively utilized in various scenes of infrastructure maintenance. We will proceed with a development and implementation of 8K technology targeting for urgent social demands.

○Establishment of Tunnel Inspection Technology <Short Term>

Current Condition

Problem among Infrastructure in Japan is maintenance cost and efficiency as well as a lack of resources for tunnel inspection for road and railway.

Ideal State

- To establish quantitative inspection method by using 8K video and AI detection technologies
- To reduce inspection cost by saving time of visual confirmation in close proximity manually
 - To reduce a road regulation time by utilizing mechanized inspection to reduce social loss including traffic jams.

○Establishment of the Remote Diagnostic Technology <Medium Term>

Current Condition

No inspection expertise in rural area and foreign countries

Ideal State

- To establish remote examination technology by using 5G communication with 8K video in real time
- To support regional government with no sufficient technical staff by examination by experts
 - To have interactive communication between engineer and foreman by sharing cloud-based visual images

■ Corporate Information

Shutoko Engineering Co., Ltd. : <http://www.shutoko-eng.jp/>

As a member of the Metropolitan Expressway Company Group, Shutoko Engineering Co., Ltd. involves technical work such as inspection of structures, optimization of construction plans, support for quality assurance management, and technical consulting as core business. Provide secure and safe social infrastructure by providing advanced and reliable technical services that have high morals, technical skills and know-how that we have cultivated through business, abundant experience, and the latest technology and knowledge.

Aero Asahi Corporation : <https://www.aeroasahi.co.jp/english/>

Aero Asahi Corporation consists of aviation business and geo-spatial information business. In geo-spatial information business, we constantly pursue latest survey technology to provide solutions for disaster prevention measures, such as strengthening the landscape and infrastructure maintenance. We will contribute to society by utilizing measurement technology including MMS (Mobile Mapping System) and know-how of geographical information system (GIS) that we have cultivated over many years in the infrastructure maintenance field.

ASTRODESIGN, Inc. : <https://www.astrodesign.co.jp/english/>

ASTRODESIGN, Inc. is developing various hardware and software products of advanced technology such as 8K video based on high quality conversion technology and real time high speed digital signal processing technology. We actively utilize 8K video technology for a wide range of industrial fields including infrastructure maintenance which is a social issue.

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