

# Digital Maintenance with Drone-Inspection & 3D Technology

Two-wheeled Multi-Copter, Maintenance Management System

Advanced Technology

## Customer Benefits

- Inspecting Buildings & Infrastructures safely & easily via Drone & Tablet PC
- Recording Degradation Correctly by Digital Inspecting Tool, Detecting Degradation Efficiently by Auto-Detecting
- Visualizing Distribution & Transition of Degradation via Degradation-Records (Photo, Shape) on 3D Data Model\*<sup>1</sup>

We confirm our technology is applicable via an empirical test of SIP Ejima Bridge Project\*<sup>2</sup> in Japan. The 3D Data model is based on a international standard\*<sup>3</sup> and can be applied to a large number of applications. Our method can also be applied to buildings & infrastructures.

### <Conventional>

**1. Inspecting**  
Checking Closely by Eyes

Inspecting Vehicle Rope Access

**2. Recording Degradation**  
Memo & Digital Camera

Memo Photo

**3. Data Management**  
Managing by Reports

Index Memo Photo Reports

### <Digital>

**1. Inspecting**  
Utilizing Drone & Tablet PC  
Safely & Easily

**High Resolution**

**2. Recording Degradation**  
Tool & Auto Detection  
Detecting Efficiently

**Recording Correctly by Tool**

**3. Data Management**  
Managing by 3D Data Model  
Display Records & Map

**Visualizing Records**

\*1: According to MLIT, it is based on a draft of 3D Product Delivery Manual (Bridge Part) for Inspection Robot.

\*2: Performed by Regional Implementation Support Team (Tottori university) from SIP -Infrastructure Maintenance, Renovation, and Management-.

\*3: A data model that extends IFC (Industry Foundation Classes) as an ISO standard for 3D data model in buildings & infrastructures.

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