





The camera unit enables to acquire the shift of the copter and senses crack by image processing. Quantitative analysis makes crack detection more





The hammering unit hammers object surfaces and is driven by a motor and a spring. The echo is captured using a microphone and is analyzed to see if there are defects. Quantitative analysis makes defect detection more precise.

Current Accomplishments (2/2)



The motion simulator of the multi-copter accelerates R&D of the multi-copter system.



Visual sensor

& distance sensor

Achievements

International conference

- Overview : Device enabling easy inspection; the device flying • Takahiro Ikeda, Kenichi Ohara, Akihiko Ichikawa, Toshio with propeller that is equipped with a simple Fukuda, "Pilot Study on Control of One DoF Manipulator on manipulator implemented inspection device. Quadcopter for Hammering Check," Proc. of 2015 Intl. Symposium on Micro-NanoMechatronics and Human Japanese Patent Application No. 2015-091386 Science, pp. 199, November 23 - 25, 2015.
- Junpei Kishikawa, Kenichi Ohara, Takahiro Ikeda, Akihiko Overview : Main moving device controlling own position hanged Ichikawa and Toshio Fukuda, "Vision-based Localization for Atomated UAV Automated Multicopter Control," Proc. of 2016 Intl. Symposium on Micro-NanoMechatronics and Human Science, TP-14, November 28 - 30, 2016.
- Domestic conference: 6 presentation

Goals

Numeric goals



Attitude control Crack detection Self-position estimation Onboard IMU Force Force Decide inspecting poin mmering test put inspecting path ering unit pervise contro

The control system is being developed; the multi-copter could be controlled by tablet/PC inputting path.

Patent (Japanese Domestic)

Title of invention : Device for flight

Title of invention : Device for moving

by plural wire-reel suspension mechanism modulating the length of the wire. The device can move with equipped propulsion mechanism in a direction that it is not bound by the suspension mechanism. Japanese Patent Application No. 2015-091387