TECHNOLOGY OFFER

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Full-powered, Retro-fitting, Steering System for Flexible Endoscopes using Mixed Reality Glasses

Medical device and embedded software to improve maneuverability of endoscopes.

BACKGROUND

Until now, flexible endoscope steering systems are still analogue. As the investigator should be able to move the endoscope backward and forward in position, steer in both axes and, in case of intervention, also operate the intervention device, it can sometimes get tricky to fulfil those tasks at once with just two hands.

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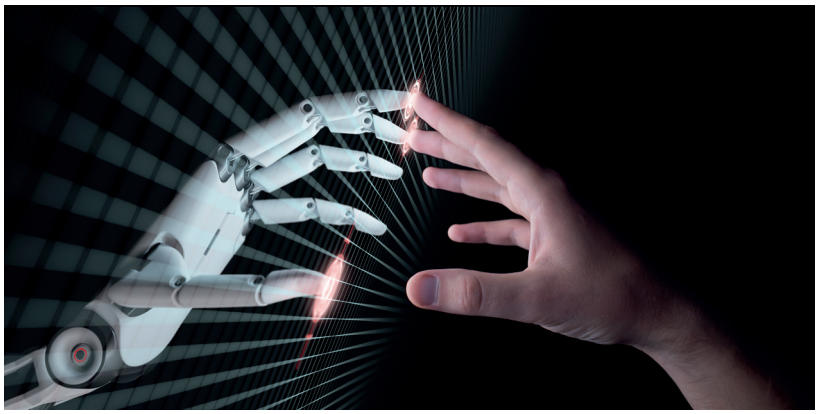
This system is a 3 step solution:

1. Full powered steering system: This attachable device is placed directly on the steering wheel of every three axis endoscope on the market. Two or more electric engines are powering the transmission to the endoscopic steering system. For higher security, a torque wrench is placed at the drive shaft. The fast closing closure system is implemented in case of system malfunction to downgrade to manual steering in the usual manner.
2. Embedded software sends the video from the camera to the mixed reality device, and transmits the 2-axis output of the mixed reality device back to the engines.
3. The head movement of the glasses are sent as output to the embedded software system and to the engines. A ratio of movement (head to endoscope) can be applied (1:1, 1:2, 1:1/2 etc.)



BENEFITS

- Gaining the steering hand of the investigator for intervention devices.
- Steeper learning curve of investigators.
- Physiological movement by using the head (not the eyes).
- Mixed Reality allows the operator to keep their environment in sight as well.
- Through digital steering, movement documentation, applied forces, and predefined movements, leads to far better detailed investigation documentation.
- First step for fully automated endoscopic investigation.
- Long distance steering of endoscopes, e.g. in civil engineering for aircraft investigation.
- Complete failsafe as it's possible to immediately downgrade to manual steering.

Foto: Shutterstock.com

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726.18

IP STATUS:
AT application filed (Priority), Know-how based

KEYWORDS:
- Steering system
- Mixed reality
- Flexible endoscope

SEEKING:
Development partner, Commercial partner, Licensing

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