

Reusable chip-on-tip camera for surgical robot



Sagentia Innovation was asked to develop high performance 2D and 3D chip-on-tip cameras for a robotic surgery system. In order to meet the cost per use targets, the camera needed to be suitable for multiple uses.

Expertise and domain knowledge

- Optical system design
- Surgical visualisation
- Reusable surgical instruments
- Robotic surgery



The project story:

In undertaking this development, Sagentia Innovation:

- Conducted the optomechanical design of the 2D camera to achieve the required resolution, field of view, depth of field and illumination
- Integrated the camera with the overall robotic surgery system
- Identified high quality optical component suppliers, allowing the commercial supply chain to be established
- Designed the camera enclosure for cleaning and sterilisation during reprocessing by hospitals, testing prototypes to FDA guidance and AAMI standards incl. TIR 12 and TIR 30
- Developed electronics suitable for the environmental conditions imposed by steam sterilisation and vaporised hydrogen peroxide sterilisation

Having successfully developed the 2D camera, Sagentia Innovation moved on to the 3D version:

- Specified the camera using practical assessment of visual comfort to 3D
- Undertook rapid design and development of first prototypes of the next generation camera in order to promote the product at the annual AAO conference

Contact us

info@sagentiainnovation.com

+44 1223 875200

www.sagentiainnovation.com

Results: deliverables and outcomes

- Novel design suitable for repeat cleaning and sterilisation
- Best in class optical performance
- 510k clearance and market launch