*Month 201\* – for immediate release Further information: Chris Pockett, +44 1453 524133*

**Renishaw robot makes guest appearance in the operating theatres of BBC hospital drama Holby City**

Renishaw’s *neuromate* stereotactic robot recently featured in an episode of the BBC drama Holby City. During the episode, *neuromate* assists with the treatment of an Obsessive-Compulsive Disorder (OCD) patient who undergoes a stereotactic Deep Brain Stimulation (DBS) procedure.

In the storyline, neurosurgeons use advanced MRI technology and Renishaw’s *neuroinspire* software to identify the region of the brain responsible for generating the OCD symptoms. A carbothane *neuroguide* guide tube kit is used to create tracts for the insertion of thin and flexible specialist electrodes. Powered by a battery pack implanted in the patient’s chest, the electrodes deliver a series of persistent electric impulses to stimulate the symptom-generating region of the brain. DBS can have remarkable therapeutic effects in the treatment of OCD, and other neuro-disorders such as Parkinson’s disease. To be effective, the electrical stimulation must be delivered at a high frequency, typically greater than 130 Hz.

The success of DBS depends on careful mapping and targeting of brain anatomy. Accurate positioning of electrodes is essential. The Renishaw range of products for stereotactic neurosurgery are designed to integrate into a comprehensive system for improved efficiency and safety at each stage of the DBS procedure, from planning through to verification and delivery.

Renishaw’s *neuroinspire* software provides neurosurgeons with an easy-to-use platform for target identification and trajectory planning. The software fuses MRI and CT datasets into a 3D volume, enabling neurosurgeons to explore the best available approach to the target, avoiding key anatomy and blood vessels.

Whilst the neurosurgeon remains in complete control of the procedure, *neuromat*e can assist by providing a stable base and accurately aligning the surgical tools in accordance with the neurosurgeon’s pre-planned trajectory. The ergonomic functionality of the *neuromate* robot combined with state of the art pre- and intra-operative imaging technology can improve chances of accurate electrode placement.

The *neuroguide* electrode delivery system, designed for use in DBS, is a long-term implant which facilitates electrode implantation by acting as a conduit, preventing the electrode from bending off target. The *neuroguide* system includes a radio-opaque stylette which can be used for target verification prior to electrode implantation.

The patient undergoing surgery in Holby City is kept awake during the DBS procedure. Historically, this would have been necessary to allow the neurosurgeon to monitor the patient’s response to treatment. A typical DBS procedure lasts 6-8 hours, which can be grueling for both patient and neurosurgeon. The prospect of remaining awake has often acted as a bottle-neck on the number of patients receiving the benefit of this treatment.

However, improvements in surgical imaging and supporting technology, including the products from Renishaw described above, means that DBS is increasingly available as an asleep procedure. Increasing confidence in the ability of medical technology to support accurate delivery reduces the need for the patient to be conscious for verification, greatly reducing stress and improving the patient experience.

**About Renishaw**

UK-based Renishaw is a world leading engineering technologies company, supplying products used for applications as diverse as jet engine and wind turbine manufacture, through to facial reconstruction and neuro surgery. It has over 4,000 employees located in the 35 countries where it has wholly owned subsidiary operations.

For the year ended June 2017 Renishaw recorded sales of £536.8 million of which 95% was due to exports. The company’s largest markets are China, the USA, Japan and Germany.

Throughout its history Renishaw has made a significant commitment to research and development, with historically between 14 and 18% of annual sales invested in R&D and engineering. The majority of this R&D and manufacturing of the company’s products is carried out in the UK.

The Company’s success has been recognised with numerous international awards, including eighteen Queen’s Awards recognising achievements in technology, export and innovation.

Renishaw is listed on the London Stock Exchange (LSE:RSW) where it is a constituent of the FTSE 250.

For further information on Renishaw’s range of products for stereotactic neurosurgery, visit [www.renishaw.com/neuro](http://www.renishaw.com/neuro)

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