TITLE **Evotool**

DESCRIPTION OF TECHNOLOGY

Although laparoscopy is a minimally invasive surgery (MIS) technique in the pelvic cavity, in practice it can demand greater effort and concentration from surgeons and cause them higher levels of stress. In these operations surgeons have to place fingers, hands, wrists and arms in awkward positions that cause the arms and back to quickly tire, and the effects are often felt after the operation. In fact, for these professionals the positions adopted during an operation are among the commonest causes of postoperative pain and swelling.

According to preliminary research in the field, the main problem lies in the present design of the handles of conventional MIS instruments due to their being poorly adapted to the surgeons' requirements.

To get around these problems, the UPV's Institute of Design and Automated Production (IDF) and the Bioengineering Research Centre (CI2B), in collaboration with the Simulation Department of the La Fé Hospital of Valencia have designed the new *Evotool* specifically to allow surgeons to take up more comfortable positions during operations.

Evotool gives surgeons a wider range of possible positions and thus removes a lot of the strain to arms and back in long operations. The angle of the tool can be easily varied, thus avoiding uncomfortable postures. Little effort is required from wrists and hands to place the tool in position, reducing both the strain required and muscular fatigue.

Tests carried out have shown that *Evotool* can reduce the effort required in laparoscopy by up to 80% and avoid tiring positions, and thus irritating after-effects, for surgeons.

The new design can be fitted to different instruments either for laparoscopy (scalpels, needles and forceps) or those required for endoscopy and high-frequency devices for cauterizing, suturing and cutting during an operation.

COMMERCIAL APPLICATIONS

- Health Technology
    - Laparoscopic surgery
    - Endoscopy
    - Cauterizing, suturing or cutting during operations

TECHNICAL AND COMMERCIAL BENEFITS

- Another step in the evolution of a widely used surgical tool, incorporating considerable improvements as regards ergonomics and precision of use.
- Only 20% of the effort required by conventional laparoscopy tools is called for.
- Avoids awkward and tiring positions for surgeons as well as painful after-effects.

STATE OF TECHNOLOGY

Application tests have been successfully carried out with a prototype.

INDUSTRIAL AND INTELLECTUAL PROPERTY RIGHTS

5/01/2017 P201730009

COLLABORATION SOUGHT

TITLE **Evotool**

Companies interested in reaching an agreement on a patent license are invited to contact the developers.

VIEWS OF THE DEVICE

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