



**TITLE: CONFIGURABLE MULTI-ROBOTIC SYSTEM FOR TRAINING AND REHABILITATING HUMAN EXTREMITIES**

**TECHNOLOGY DESCRIPTION**

Configurable system of multiple training robots and / or rehabilitation of the upper extremity, which is comprised of two or more interconnected robots through an interconnection and anchoring system.

Each robotic unit of the multirobotic system of training and / or rehabilitation of the upper extremity is composed by: (i) A movement transmission system formed by one or several links operated by electric motor-reducers; (ii) A control system adaptable to the multirobotic configuration used; (iii) A training / virtual

therapy system that adapts the possible training or therapeutic games to be performed to the configuration detected, and to the assistance provided by the robotic device; (iv) A patient restraint system; and (v) An interconnection and anchoring system for other robotic units.

**BUSINESS APLICACIÓN SECTORS**

Medical rehabilitation sector: This technology has its main field of application in the total or partial rehabilitation of people who have totally or partially lost control of the motor function of the upper extremities.

**TECHNICAL ADVANTAGES AND BUSINESS BENEFITS**

The training / virtual therapy system has therapeutic exercises or training games that require bilateral coordination or work on bilaterally, enhancing these aspects in the functional recovery of the acquired deficit.

Similarly, the proposed multirobotic system has control strategies for two or more users to cooperate to achieve a common goal in a virtual game and / or compete, which increases their motivation and increases the intensity of training and / or rehabilitation with the consequent benefit for the users.

In addition, the system has a control mode in which a user (therapist) guides another user during the game by receiving information on the interaction forces between the robot and the guided user. These sensations and data are very important for the therapist to evaluate the user during the performance of therapeutic exercises or training games.

**TECHNOLOGY DEVELOPMENT LEVEL**

Developed at the laboratory level

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**SEARCHED COLABORACIÓN**

Collaboration with interested companies to carry out proof of concept that facilitate their commercialization and industrial implementation.



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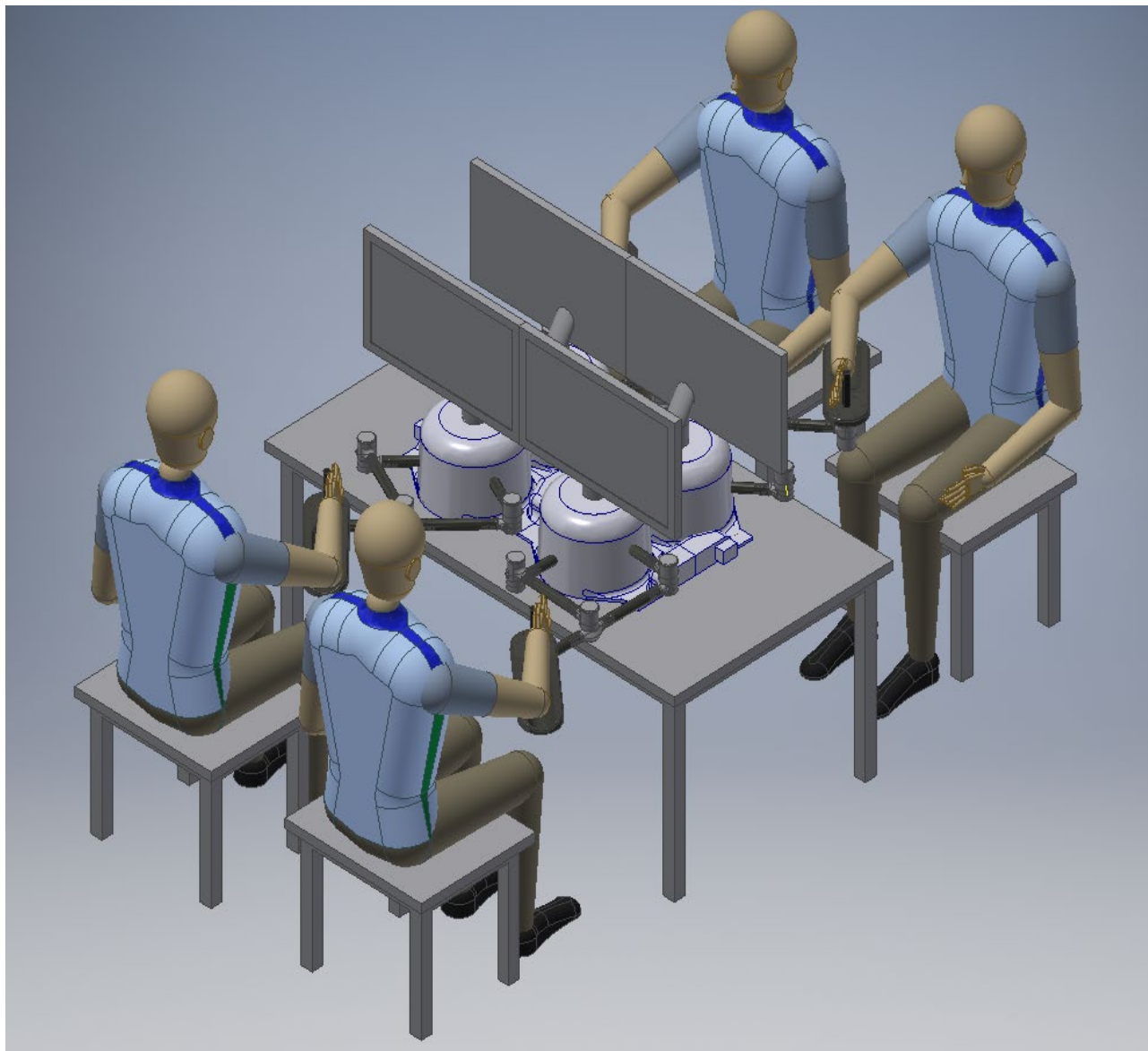


Imagen 1: Robot

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