TITLE
Ankle Rehabilitation Platform

INVENTORS
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DESCRIPTION
The Advanced Robotics department is involved in an interdisciplinary and interdepartmental activity, oriented to human rehabilitation. With this perspective, researchers of the Italian Institute of Technology have developed this Ankle Rehabilitation Platform, a medical device able to accelerate and significantly improve the functional recovery of patients with ankle impairments. The simplicity and compactness of the device together with its redundant characteristic, which allows simultaneous control of position and stiffness, improves the quality of and increase the productivity of ankle physiotherapy delivered by the clinicians. The actuator, core of this rehabilitation device, presents unmatched technical features: High speed and force output, Backdrivability, Very high power to size ratio, Good power to weight ratio, Long stroke and high position resolution, The actuator is equipped with full state sensing, namely an encoder for position and velocity measurements and an axial load cell mounted on the tip of the moving piston. This allows to control the actuator in either position/velocity or force

APPLICATIONS
The rehabilitation device is already under test in a number of hospitals and one of the devices chosen by INAIL to start with IIT a joint project to improve the rehabilitation techniques and methods over the next three years.

KEYWORDS
Ankle rehabilitation, ankle functional recovery, ankle physiotherapy

BIBLIOGRAPHIC DATA
Attuatore lineare e dispositivo di riabilitazione incorporante tale attuatore
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