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(54) **HYBRID USER-INTENTION-ASSESSMENT BASED CONTROL SYSTEM FOR A SMART WALKING ASSIST SYSTEM**

(57) The invention deals with the control system design, inclusion and implementation in a smart walking assist system. The walking assist system comprises a platform with a U-shaped base frame (13) and two wheels driven by drivetrain units (8, 9) and with two un-actuated wheels (10, 11); a user-supporting system comprising a pair of vertical struts (3, 5) attached by means of elastic connecting joints (6, 7) to the base frame (13), a horizontal strut (2) that interconnects the vertical struts (3, 5) on the upper end thereof, and a user harness (4) attached to the horizontal strut (2), wherein the elastic connecting joints (6, 7) allow the pivotal deflection of the struts (3, 5) from the neutral vertical position (17); a control system; and a device for measuring the deflections of the struts (3, 5), wherein the control system enables the platform to actively follow the intended motion of the user on the basis of a signal received from the device.

