Claims

1. A rehabilitation apparatus for assisting with remobilisation of a user comprising a ground-engaging frame adapted for omni-directional movement and attached thereto at least one upstanding member for supporting:
   i) a variable body weight off-loading device whereby a user's body weight can be selectively off-loaded by a chosen amount and, operably coupled thereto,
   ii) a pelvic support brace wherein said brace has associated therewith a control device comprising a force/torque sensor whereby the motion of the user can be monitored and at least one defined period of a gait cycle or when the motion deviates from an expected pattern said body weight off-loading device is activated to take a pre-selected amount of body weight thereby supporting a user during the gait cycle or motion deviations;

   wherein said control device comprises mass (M) and damper (B) parameters that can be selectively controlled or set within the following ranges, respectively:

   $M_{X,Y} = 8\text{-}12\ kg$, and $B_{X,Y} = 80\text{-}140\ Ns/m$

   and so used as filters to determine the amount of force/torque accommodated by the apparatus.
2. The rehabilitation apparatus according to claim 1 wherein said sensor has six degrees of freedom.
3. The rehabilitation apparatus according to claim 1 wherein said mass and damper parameters are $M_{X,Y} = 10\ kg$, and $B_{X,Y} = 120\ Ns/m$.
4. The rehabilitation apparatus according to any one of claims 1-3 wherein said control device comprises a recorder whereby use of the apparatus by a user is recorded for subsequent inspection and/or downloading.
5. The rehabilitation apparatus according to any one of claims 1-5 wherein said control device comprises an electromyograph (EMG) and/or an inertial measurement unit (IMU) sensor based biofeedback system.
6. The rehabilitation apparatus according to any one of claims 1-5 wherein said pelvic support brace comprises a rear and two side engaging members against which a user can be supported.
7. The rehabilitation apparatus according to claim 6 wherein said members are adjustable.

8. The rehabilitation apparatus according to any one of claims 1-7 wherein said body weight off-loading device is adapted to move the trunk and/or pelvis of a user in a vertical plane.
9. The rehabilitation apparatus according to claim 7 wherein said body weight off-loading device comprises a vertical, slideable load-bearing support adapted for movement in a vertical plane.
10. The rehabilitation apparatus according to any one of claims 1-9 wherein said ground-engaging frame is provided with at least one active split offset castor (ASOC) unit comprising two coaxial wheels.
11. The rehabilitation apparatus according to claim 10 wherein said ground-engaging frame comprises a pair of said units.
12. The rehabilitation apparatus according to claims 10 or 11 wherein said frame is rectilinear and comprises two parallel side members and at least one rearward connecting cross-member wherein said ASOC unit is provided at the rear of each side member and either a steering wheel or a trailer wheel is provided at the front of each side member.
13. A control device for use in an apparatus according to any one of claims 1-12.