Patent claims

1. An apparatus for the safe use of a vehicle simulator in the form of a simulation cockpit (3) actuated by means of a 6-axis robot around a pedestal with a slewing ring, in particular of a flight simulator, having

a) an access zone to said simulation cockpit (3), which is open only to those authorized and has a number of safeguards, wherein said simulation cockpit (3) is supported on a damping layer (4) when in the idle position, said layer being shaped to match the contour of its underside, and in its boarding zone on both sides lead respective boarding stairs (6), whose treads are provided with a sensor layer (7), which indicates access of a person to the overall system,

b) a rescue unit (13), which can be moved by an carriage (15) on a running rail (14) to each location of the operating zone of the vehicle simulator being supported around the pedestal (12) of the 6-axis robot by the slewing ring (17), wherein this rescue unit has a rescue platform (25) having a lifting unit (27), a railing (24) and a rescue slide (26),

c) a shock-absorbing surface installed throughout the entire operating zone, wherein said surface extends over the entire operating zone of the simulation cockpit (3), wherein the shock-absorbing surface comprises circular safety zones (28) and wherein by means of sensors detecting falling masses, in each safety zone (28) an air bag can inflate,

d) a projection surface (33, 34) made up of a plurality of planes.

2. The apparatus as claimed in claim 1, characterized in that

the simulation cockpit (3) is secured on a platform (32) which is, in turn, actuated not by just one 6-axis robot but by at least two 6-axis robots.

3~~)~~. The apparatus as claimed in claim 1 or 2, characterized in that
the access zone is formed by at least one access door safeguarded by at least one monitoring sensor (11), and in that each access door leads to a boarding stair (6), which is monitored by means of a sensor layer in respect of ~~entry and/or of~~ the weight of the person entering.

~~4) The apparatus as claimed in one of claims 1 to 3, characterized in that~~
~~a shock-absorbing surface installed in the safety zone consists of the covering of a multiplicity of airbag-like devices.~~

~~5)~~4. The apparatus as claimed in one of claims 1 to ~~4~~3, characterized in that
imminent failures in the robot components are detected by means of acoustic and/or optical means, and failures in the electrical systems are detected by means of smoke detecting means, and said failures are taken into account in the programming.

~~6)~~5. The apparatus as claimed in one of the preceding claims, characterized in that
an alarm is triggered in the event of predetermined fault indications or foreign-body indications.

~~7)~~6. A method for the safe use of a vehicle simulator in the form of a simulation cockpit (3) actuated by means of a 6-axis robot around a pedestal with a slewing ring, in particular of a flight simulator, having

a) an access procedure (method steps 1. to 5. and 11 to 19) which safeguards the access zone,

b) provision of a rescue unit which can be moved to any location of the vehicle simulator (method steps 6 to 10),

c) the provision of a shock-absorbing surface installed throughout the entire operating zone, wherein said surface extends over the entire operating zone of the cockpit (3) (method steps 6 to 10),

d) the provision of a projection surface (33, 34) made up of a plurality of planes, (method steps 6 to 10).

~~8)~~7. The method as claimed in claim ~~7~~6, characterized in that the simulation cockpit (3) is actuated not by just one 6-axis robot but by at least two 6-axis robots.

~~9) The method as claimed in either of claims 7 or 8, characterized in that a shock-absorbing surface installed in the safety zone consists of the covering of a multiplicity of airbag-like devices.~~

~~10)~~8. The method as claimed in one of claims ~~8 to 10~~6 or 7, characterized in that imminent failures in the robot components are detected by means of acoustic and/or optical means, and failures in the electrical systems are detected by means of smoke detecting means, and said failures are taken into account in the programming.

~~11)~~9. The method as claimed in one of claims ~~7~~6 to ~~10~~8, characterized in that an alarm is triggered in the event of predetermined fault indications or foreign-body indications.

~~12)~~10. A computer program having a program code for carrying out the method steps as claimed in one of claims ~~7~~6 to ~~11~~9 when the program is executed in a computer.

~~13)~~11. A machine-readable medium having the program code of a computer program for carrying out the method as claimed in one of claims ~~7~~6 to ~~11~~9 when the program is executed in a computer.