DYSTURBANCE
Testbed description
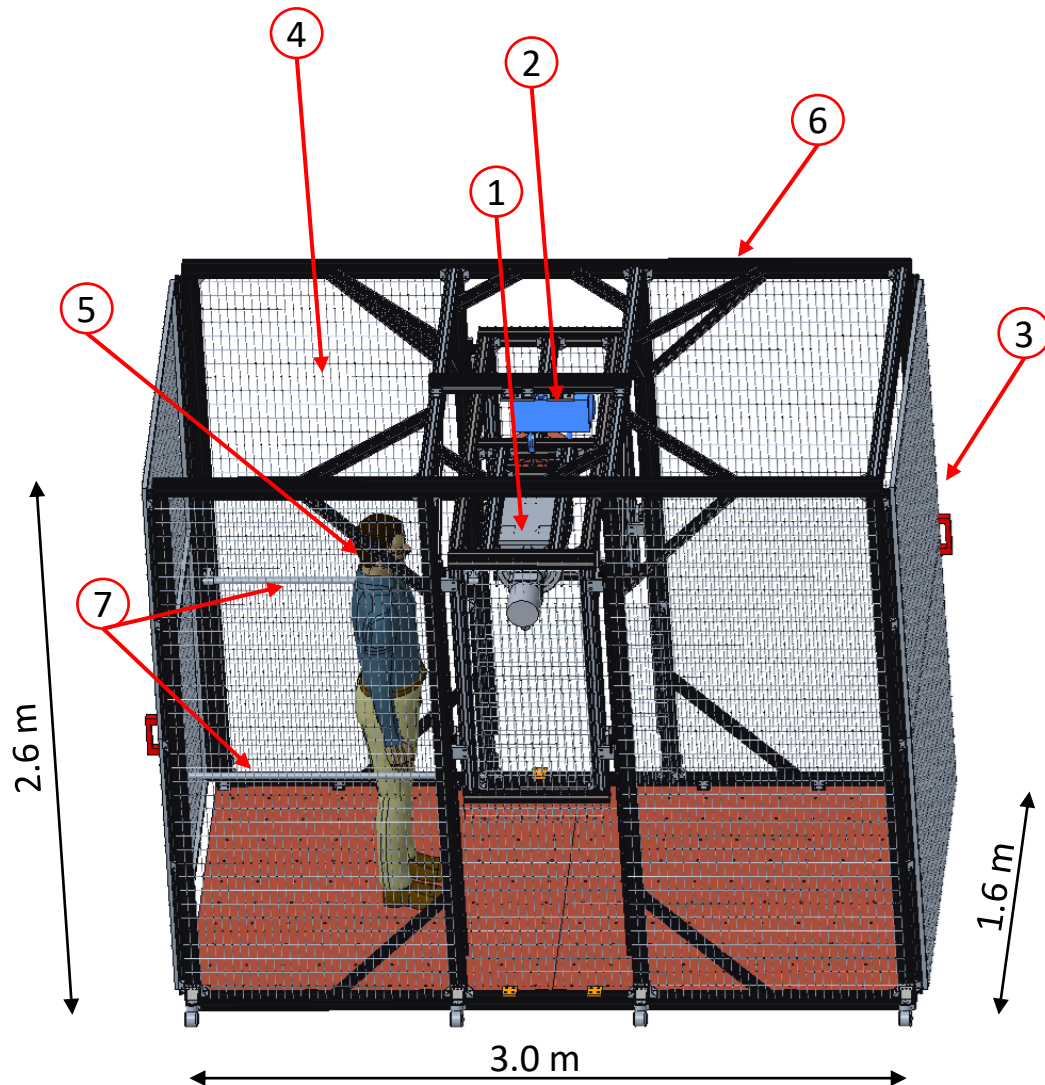
S. Monteleone, F. Negrello, G. Grioli, M.G. Catalano, F. Bonomo, M. Garabini
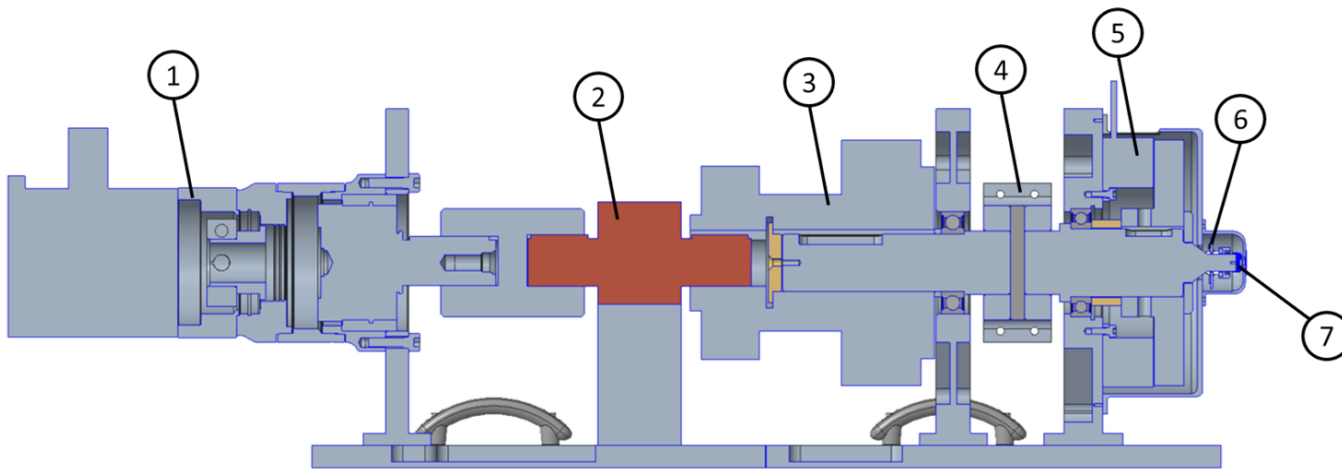
TestBed Description

1. Actuation unit
2. Electrical Crane (to adjust pendulum height)
3. Sensorized Safety door
4. Safety panels
5. Position of the agent under testing
6. Frame
7. Handrails

Actuation Unit Description

1. Servomotor
2. Torque Sensor
3. Electro-Magnetic Clutch
4. Pendulum Connection
5. Electro-Magnetic Brake
6. First Position Sensor
7. Second Position Sensor

TestBed Description

	Components	Code	Link to catalog.
Actuation	Servo Motor	Omron R88M-1M1K520T-S2(Q)	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/i189e_r88m-1_1s-series_servo_motor_datasheet_en.pdf
	Gearbox	APEX PEII155-030/R88M-1M1K520	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/PEII_Series.pdf
	Electro-Magnetic Clutch	MWM EMSL210/DF-G.E.	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/MWM%20EMSL210.pdf
	Electro-Magnetic Brake	MWM EMFL210/DF-C-MI	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/MWM%20EMSL210.pdf
Sensing	Angular position Encoder (control side)	Renishaw BR10SCB14B16CD00 / BA150AB02AA00	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/ORBIS-BRD01_06_EN_data_sheet.pdf
	Angular position Encoder (Sensing side)	Austria Microsystem AS5048A	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/AS5048_DS000298_4-00.pdf
	Torque Sensor (control side)	FUTEK-FSH02060	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/torque_sensor-trs605.pdf
	Piezoelectric Sensor (Sensing side)	Dytran 1051V6	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/dytran_1051V6_ds.pdf
	DAQ board	National Instruments PCIe-6321	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/NI_PCIe6321.pdf

TestBed Description

	Components	Code	Link to catalog.
Control	Servo drive	Omron R88D-1SN15H-ECT	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/i188e_r88d-1sn_-ect_1s-series_servo_drive_datasheet_en.pdf
	PLC motion controller	Omron NX102-1000	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx1_p130-e1_dita_1_7_csm1063211.pdf
	PLC I/O module	Omron NX-PF0730	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx-series_system_unit_-_nx-pd_pf_pc_tbx_datasheet_en.pdf
	PLC I/O module	Omron NX-ID5442	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx-series_digital_i_o_unit_-_nx-id_ia_od_oc_md_datasheet_en.pdf
	PLC I/O module	Omron NX-OD5256	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx-series_digital_i_o_unit_-_nx-id_ia_od_oc_md_datasheet_en.pdf
	PLC I/O module	Omron NX-AD2604	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx-series_analog_i_o_unit_-_nx-ad_da_datasheet_en.pdf
	PLC I/O module	Omron NX-ECS112	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nx-series_position_interface_unit_-_nx-ec0_ecs_pg0_datasheet_en.pdf
	Industrial PC	Omron NYB35-413M1	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/nyb_industrial_box_pc_datasheet_en.pdf
	Clutch driver	AFE 150	https://github.com/CentroEPiaggio/dysturbance/blob/master/Dlutasheets/AFE.pdf
	Brake driver	AFE 200	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/AFE.pdf
Structure	Aluminum Profiles	HFSG6-6060	
Safety	Safety door system	Pizzato FS2996D024	https://github.com/CentroEPiaggio/dysturbance/blob/master/Datasheets/Pizzato%20FS2996D024.pdf