

MECATRONIC PLATFORM

Achour DEBIANE
R&D Manager
CERTIA

MAIN CHARACTERISTICS

Modular test bench for :

- Motor testing,
- Gear box testing,
- Ball Screw and Roller Screw testing,
- The different combination between the components above.

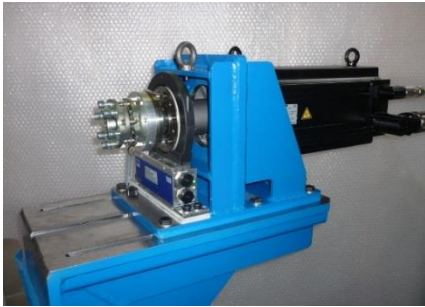
Actuation 2015 component evaluation

- This platform was the reference to develop and qualify the EMA (Electro Mechanical Actuator) components for Airbus . SAGEM, UTAS, ROLLVIS, SKF, LIEBHERR tested their component on this platform.

Modular tests bench CERTIA



The different subsystems of the test bench



Power pack 1

- Motor (3 motors)
- Transmission
- Torque sensor
- Velocity sensro
- Mechanical support
- Motor 1 (2 motors)
 - Maxime torque: 9.4Nm
 - Maximum velocity : 7200 tr/min
- Motor 3
 - Maxime torque : 47Nm
 - Maximum velocity : 2000 tr/min



Electrical Power bay (for motors) and acquisition bay



Hydraulic generation power

- Power cabinet
- Aerothermal system
- Pressure : 210 bars
- Flow : 45 L/min



Power pack 2

- Hydraulic actuator, manifold
- Force sensor
- Transmission
- Velocity sensor
- Stroke: 200mm
- Static force Max: 8576 daN

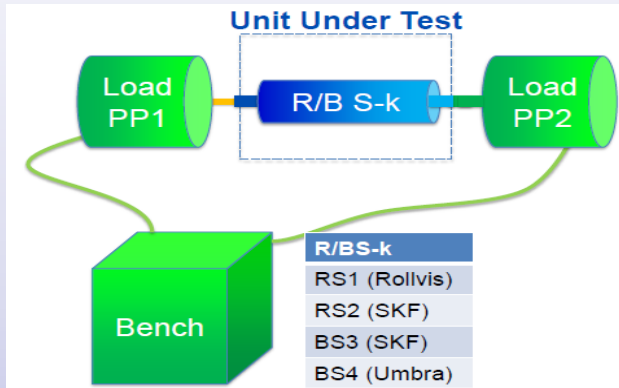


Monitoring system

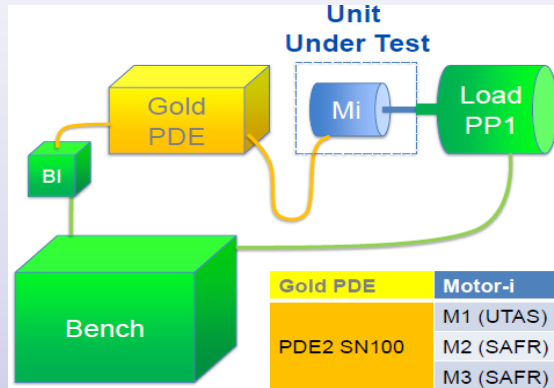
For more details >>>> Come to visit this installation as soon as possible.....

Different configuration of the test bench

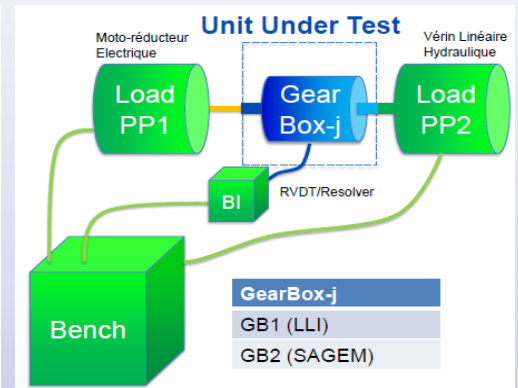
The test bench allows different components testing configuration



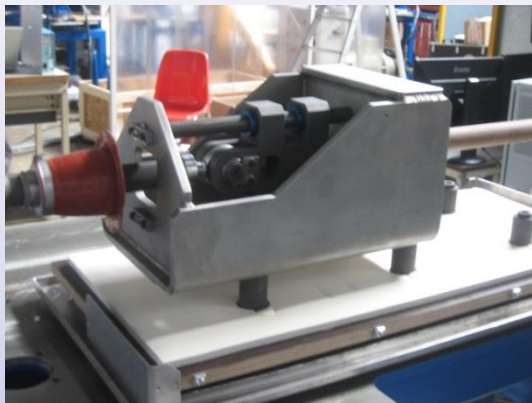
CREW testing



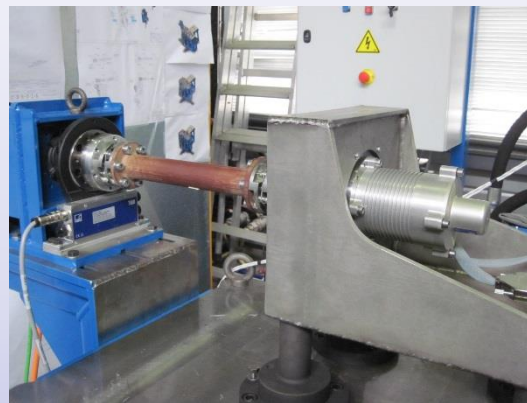
MOTOR testing



Gear Box testing



Ball/Roller Screw Configuration



Motor Configuration

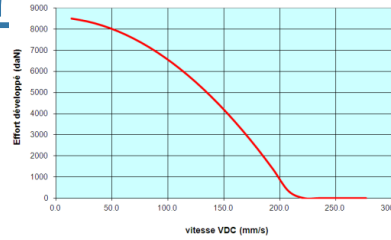


Gearbox configuration

Modular & mecatronic test bench CERTIA

Hydraulic Actuator

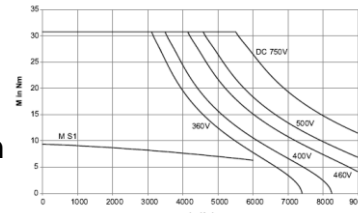
- Stroke: 200mm
- Static force Max: 8576 daN



Motors

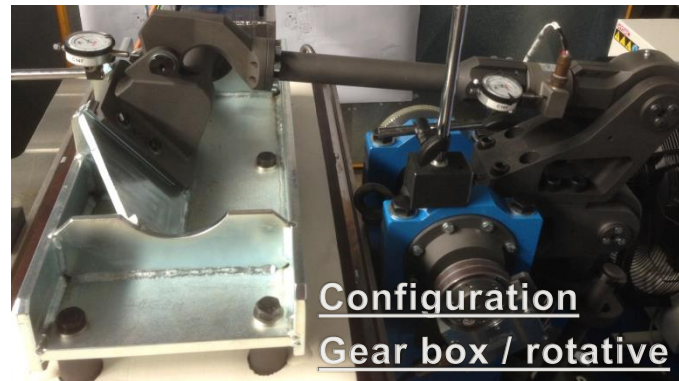
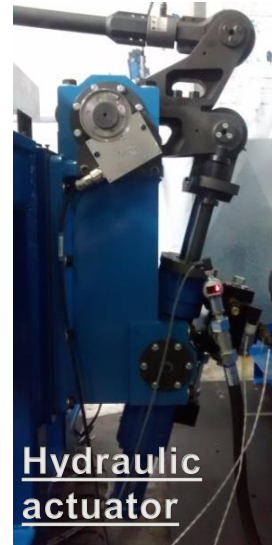
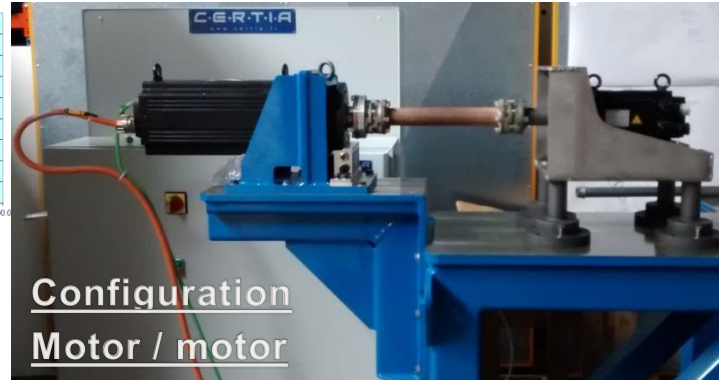
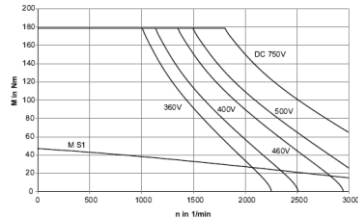
Motor 1 (2 motors)

- Maxime torque: 9.4Nm
- Maximum velocity : 7200 tr/min



Motor 2

- Maxime torque : 47Nm
- Maximum velocity : 2000 tr/min



Acquisition

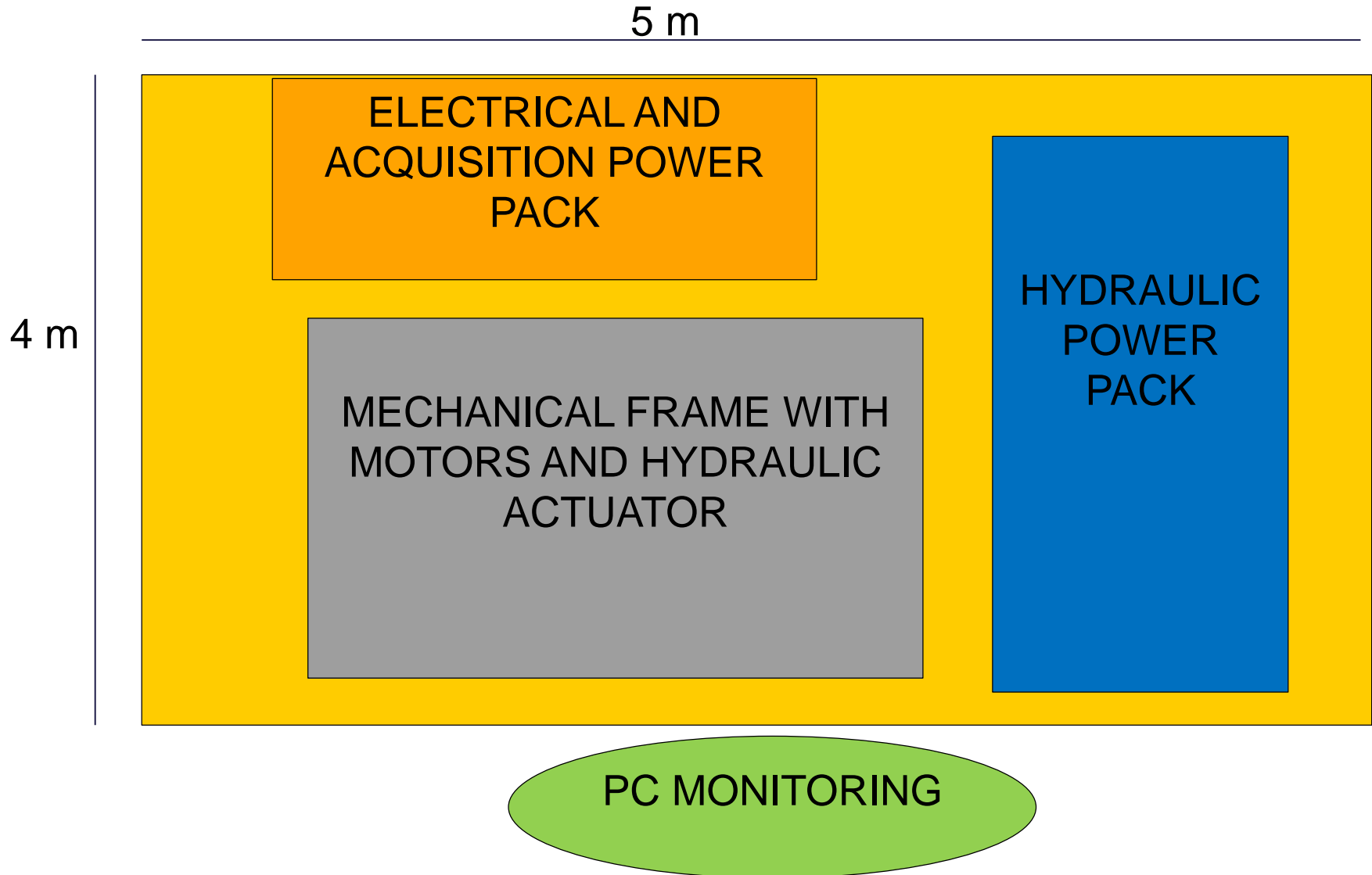
- Signal acquisition: 1KHz
- Force sensor: 90 kN
- Position sensor: 0 ,0027 °/Inc
- Torque sensor: 100 N.m

Control

- Force control loop
- Position control loop
- Velocity control loop
- Torque / current control loop



Layout advised



Contract maintenance :

- **Cost** : 12 K€ / year.

CERTIA services :

- Installation of the platform in customer facilities,
- Training for the customer team when the system is operated,
- Annual maintenance of the test platform : 2 days / year visit the installation and check all the functionalities (also calibration task).

Contact :

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