Circuit Breaker Endurance Test

The Context:

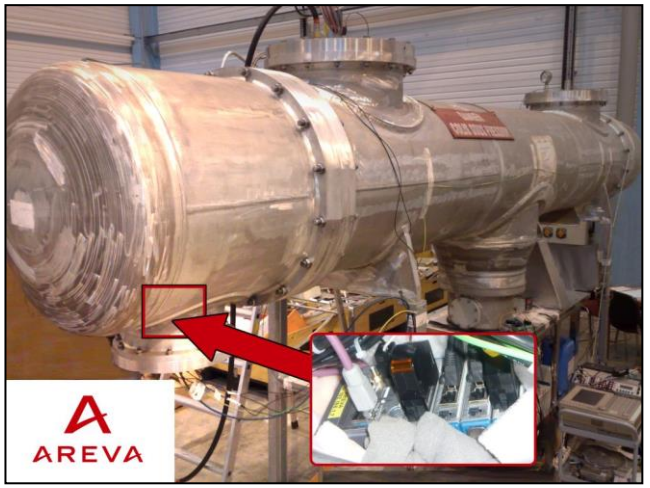
AREVA T & D, AREVA subsidiary, is one of three world leaders specializing in transmission and distribution of electricity. At Aix-les-Bains, they design, produce and provide after-sales services for gas-insulated substations (GIS) from 245 to 550 kV. To guarantee quality and safety, it is important to verify the performance and endurance of the circuit breaker.

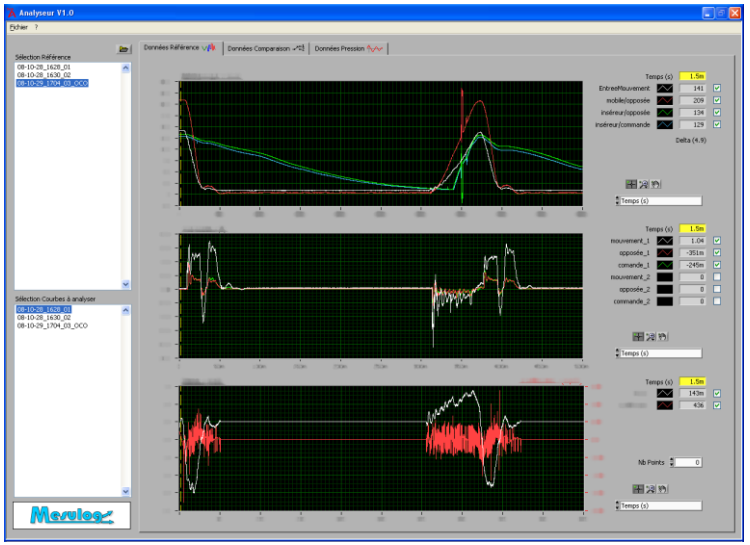
The Challenge:

Develop a full embedded data acquisition system placed inside the circuit breaker. The system must be rugged, simple and scalable to perform measurements inside the pressurized circuit breaker for an endurance test.

The Solution:

Based on NI CompactRIO, a rugged and customizable system, a LabVIEW application (Real-Time and FPGA) was developed to build an embedded data logger that can be use inside the circuit breaker.





Technical Details :

- NI CompactRIO System running LabVIEW Real-Time and FPGA application
- Scalable and high-performance system through its direct integration into the circuit breaker
- Rough environmental conditions : low pressure (0.01 mbar), high pressure (8 bar) and vibrations
- Sample rate of 10 kHz during 600 ms with one trigger every minute
- Data stored in Excel files
- Post-analysis LabVIEW application for validation

MESULOG
Luc DESRUELLE
137 rue de Mayoussard 38430 Moirans
Tél : 04.76.35.20.17 E-mail : ld@mesulog.fr

AREVA T&D
Jean-Luc RAYON
1, avenue Paul Doumer 73106 Aix-les-Bains
FRANCE
Tél : +33.4.79.88.77.21 E-mail : jean-luc.rayon@areva-td.com