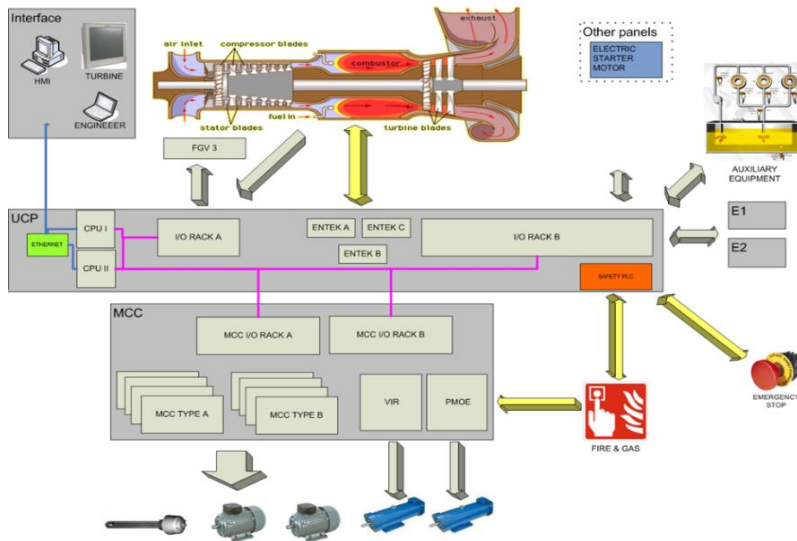


Gas turbine control system



WIDE PLANT CONTROL

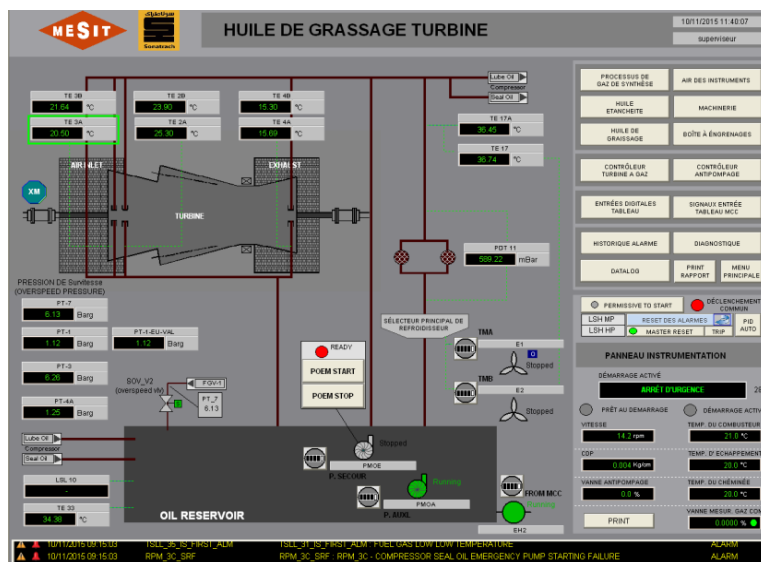
The **Mesit@1 PLC** provides single plant control for your most valuable asset, enabling comprehensive, connected plant automation. It offers a common hardware and software platform and common configuration for both safety and control. In addition, maintenance, diagnostics, spare parts, logistics, alarms, databases, and training are required for just one system simplifying operations.

FLEXIBLE AND AVAILABLE

The **Mesit@1 PLC** is an open source platform for multiple applications. Flexible and is open allowing you to complete plant solutions delivering advanced performance, operability, and availability.

OPEN SOURCE

An open source software suite MESIT@OS is used with the MESIT@1 PLC and related systems for programming, configuration, trending, and analyzing diagnostics. It provides a single source of quality, time-coherent data at the controller and plant level to understand and adjust how your plant is operating in real time.



MESIT@1 PLC has many drawbacks:

- the gas generator manufacture owes the control algorithms and do not share them with the customer
- the interconnection of those systems many signals are required
- these interconnections introduce latencies
- feedforward actions are hard to implement within this architecture due to the high cost of new interconnecting signals
- different hardware platforms drive to high maintenance costs (spare parts, configuration software, know-how, etc).

TYPICAL SENARIO

In the world of the gas turbine control system, a typical scenario depicts a dedicated control system mating the gas turbine itself, or even only the gas generator. Sometimes there are plenty of different control systems to control Gas generator, the power turbine, the compressor and the auxiliary subsystems, together with those systems aimed to protect the machine against vibrations, displacement and over speed. Example: a dual shaft gas turbine driving centrifugal compressor. this system could typically be built with the following controllers:

- MK V/VI controller of the gas generator;
- PLC used to control the power turbine and the auxiliary systems;
- controller (such as CCC) to manage:
 - a. the antisurge protection of the centrifugal compressor;
 - b. the performance control of the centrifugal compressor;
 - c. the load sharing of the centrifugal compressor within a set of many compressors.

OUR SOLUTION

Our approach is algorithm driven. The focus is to use strongly tested control algorithm covering all the aspects of the system (ranging from the fuel control of the GG to the antisurge valve of a centrifugal compressor), implementing it on a single powerful PLC system, choosing the brand together with the customer.

Our approach is based on:

- a library of control algorithm, written in a platform independent language
- engineering phase for selecting proposer control algorithm to cover all the controls
- methods for interconnecting algorithm
- methods for implementing algorithm within the chosen PLC
- methods for performing dynamic simulation to test the control capabilities of the system.



EPC NEW GAS GENERATOR IN AMENAS ALGERIA

In **Amenas** is the largest wet gas development project in Algeria with four primary gas fields. We provided the EPCI of a complete brand new **8.2 MW turbo alternator**.



EPC REVAMPING GAS COMPRESSOR HASSI MESSAOUD ALGERIA

Replacement of Unit R200 **Fiat TG7** gas turbine in **Hassi Messaoud** Refinery that has a crude oil processing capacity of 1.1 million tons per year.

