ATISYS Concept
www.atisys-concept.com

Head office:

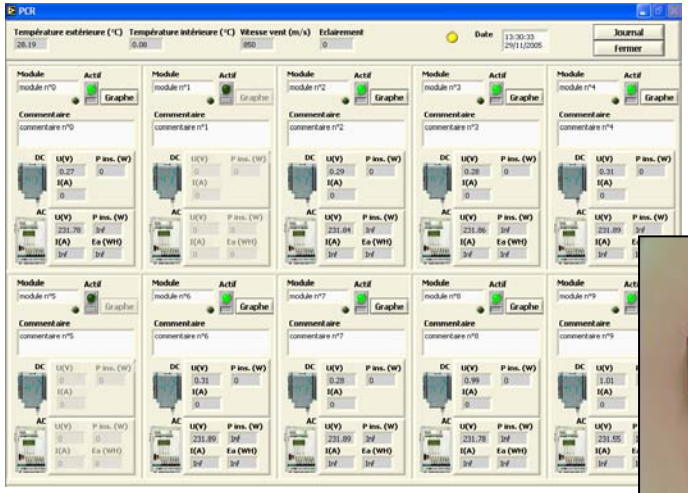
ATISYS Concept ZI de TOULON EST – BP145
901 avenue Alphonse Lavallée – 83088 – TOULON CEDEX 9
www.atisys-concept.com

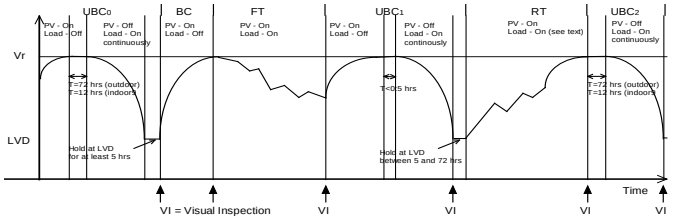
References in 2 actity domains

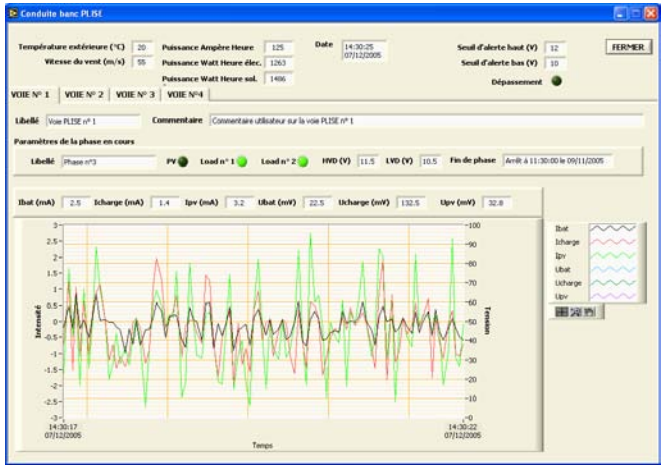
Metrology, monitoring & command/control

Energy innovative system conception and data analysis

Monitoring of PV test plateforms

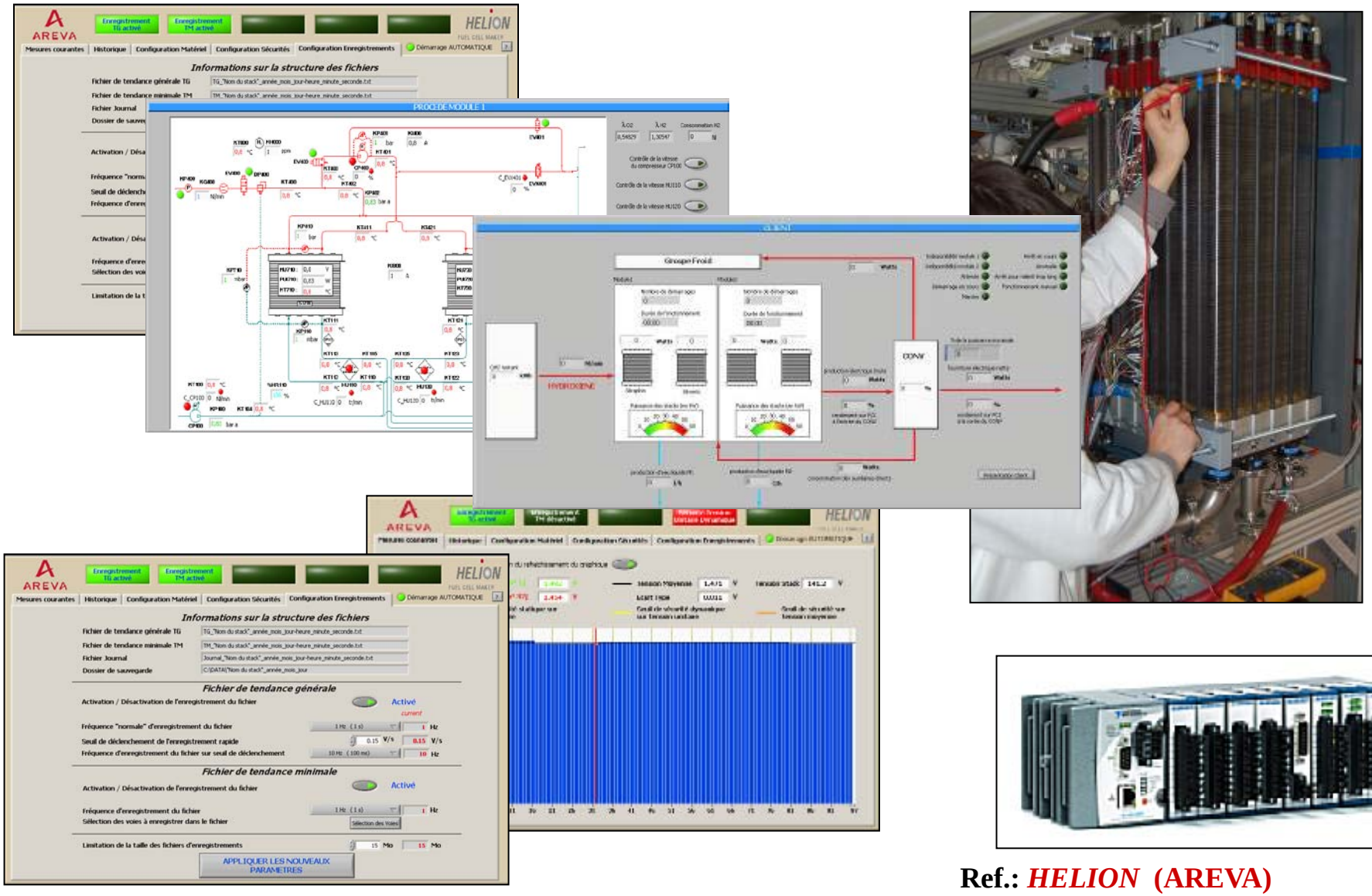






Référence: **CEA-INES**

COMMAND & CONTROL OF 80 kW PEM FUEL CELL



Ref.: ***HELION*** **(AREVA)**

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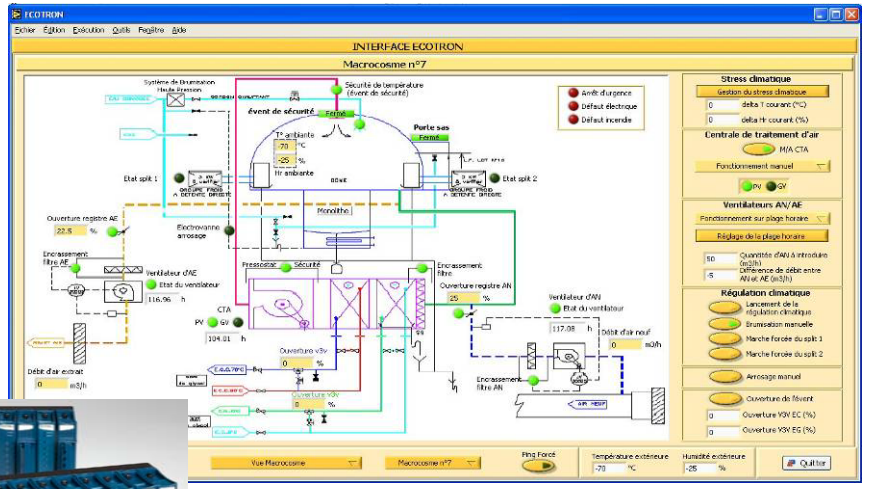
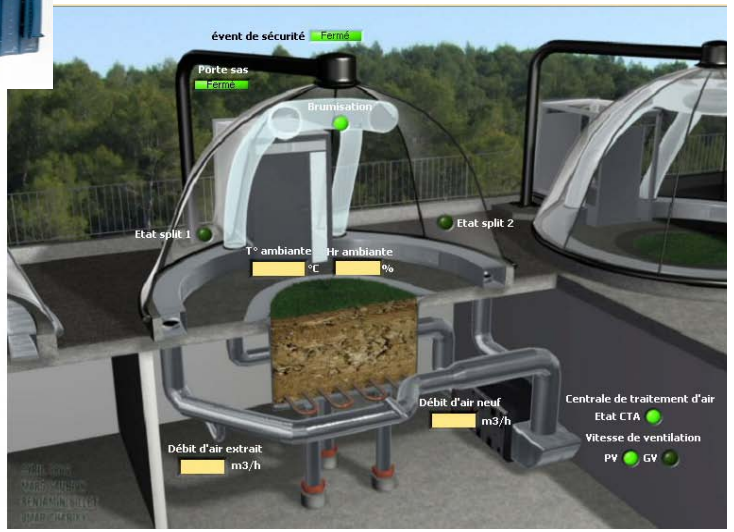
p.esparcieux@atisys.fr

COMMANDE/CONTRÔLE OF AN ECOLOGICAL TEST FACILITY « *ECOTRON* » PROJECT



Réf. : 80-WF



CUSTOMER : ***C.N.R.S. Délégation Languedoc-Roussillon***
Sub contracting of COFELY AXIMA (GDF SUEZ)

GOAL : Research European Platform for studying system ecoresponse to controled climat changes.

RÉALISATION : A measurement network including **69 transducers channels, 257 state channels, 60 analog control channels** and **257 action contro channels. System performs full data history.**

LA SOLUTION : **NATIONAL INSTRUMENTS Compact FieldPoint** (15 unitss**)** powered with **LabVIEW/RT, 3 dedicated PC**.

Wireless monitoring system: **COBWEB**

COBWEB powered by red lion

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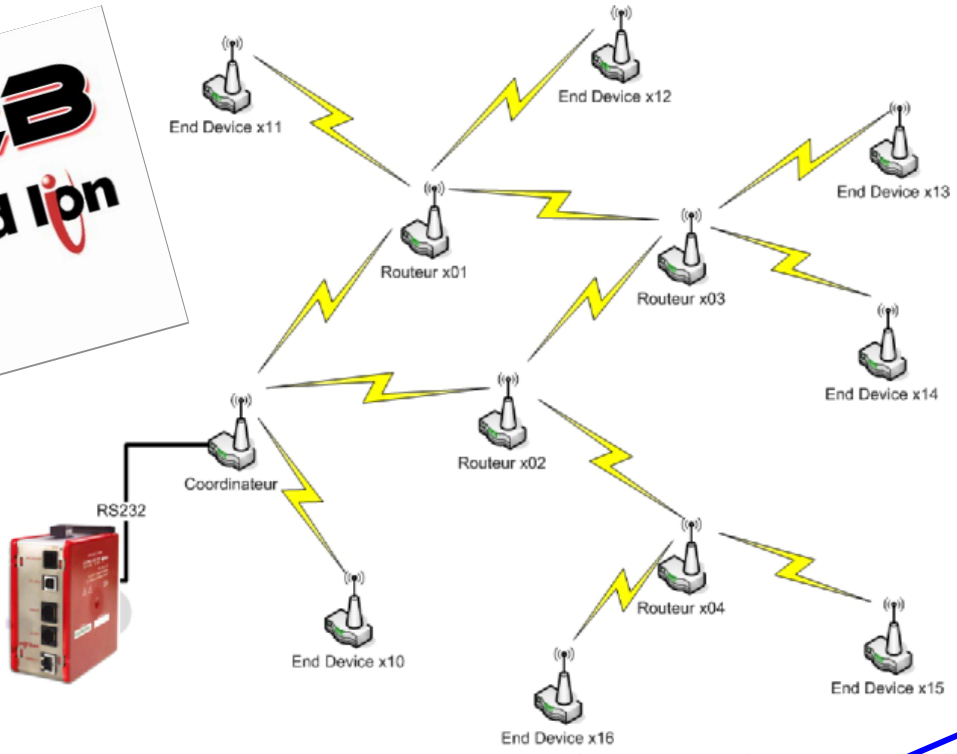
MODULAR PROCESS CONTROLER



COBWEB NETWORK (IEEE 802.15.4)

Concentrateur/Routeur
COBWEB

Thermo-hygromètre
COBWEB

APPLICATIONS

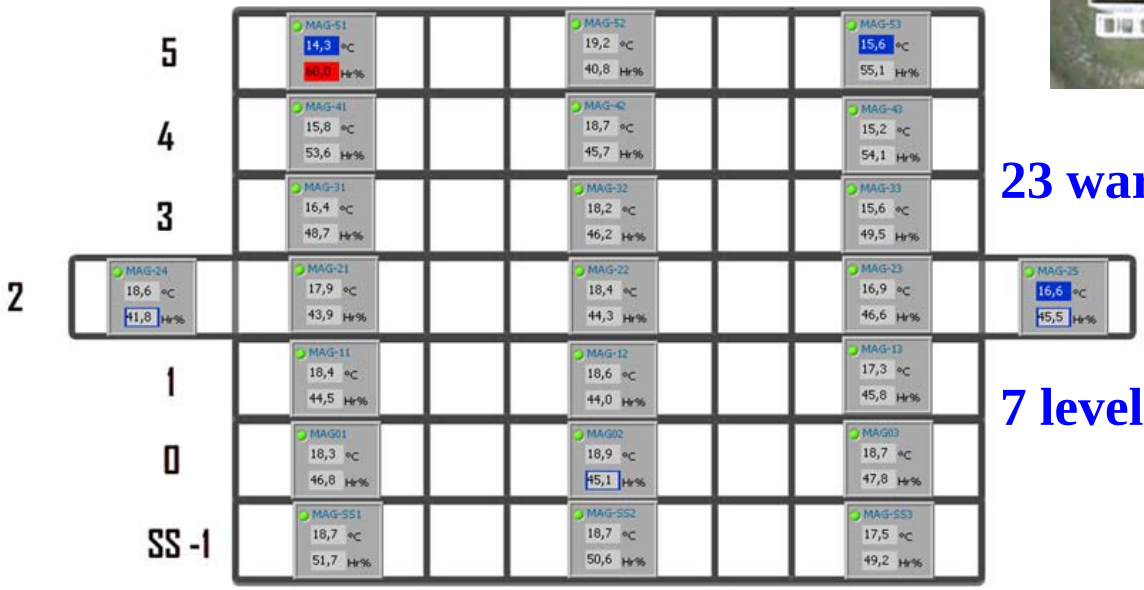
- Optimization of thermal comfort and Performances monitoring
- Hygrothermal ambient monitoring (laboratories, museums, foof industry, etc) …
- programmable alarms
- Transmission of alerts via GRPS, e-mail, etc …

MEASURED QUANTITIES

Temperature, RH, meteorological data, CO2 concentration, energy counting, …

Designed and produced by ATISYS
Try http://cobweb.atisys-concept.com/accueil.htm

On-line hygrothermal monitor of museum, archives, …



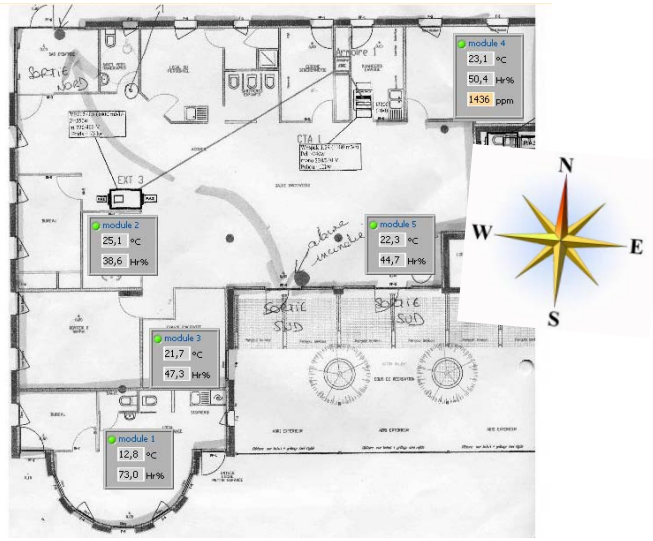
23 warehouses

7 levels

Département du Puy de Dôme

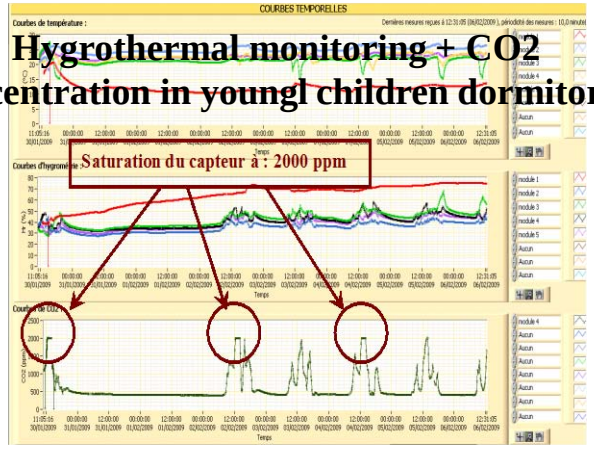
Thermal ambient monitoring and inner air quality control
(nurseries, schools, …)

Building view

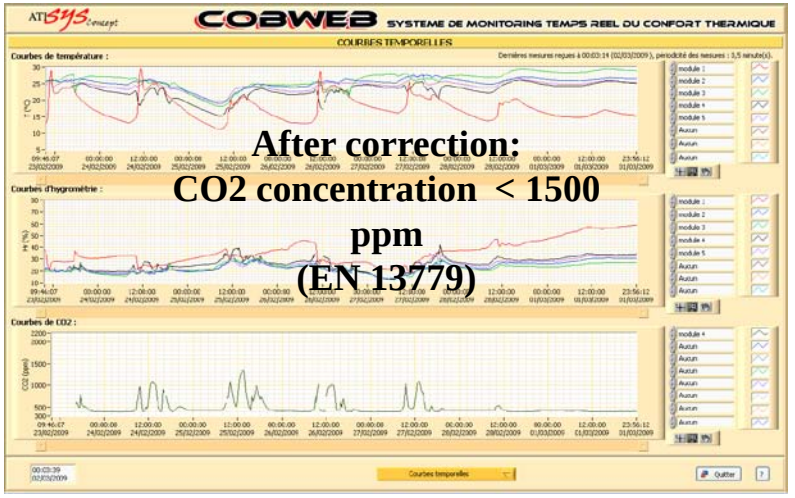


Building orientation

Hygrothermal monitoring + CO2 concentration in youngl children dormitory



After correction: CO2 concentration < 1500 ppm (EN 13779)



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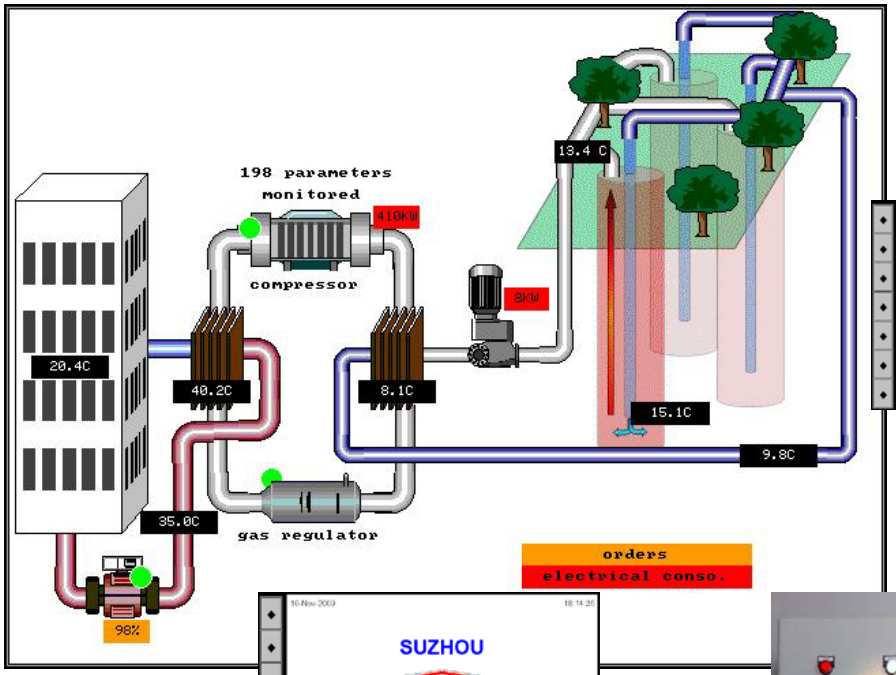
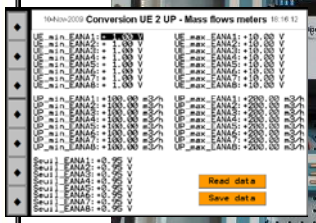
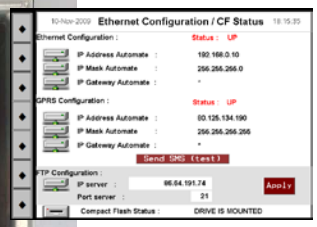
On-line performances monitoring of a high power reversible plant

CIAT (Suzhou - CHINA)



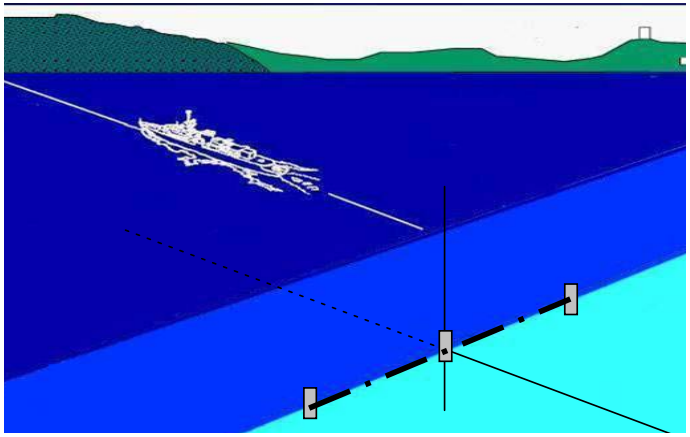


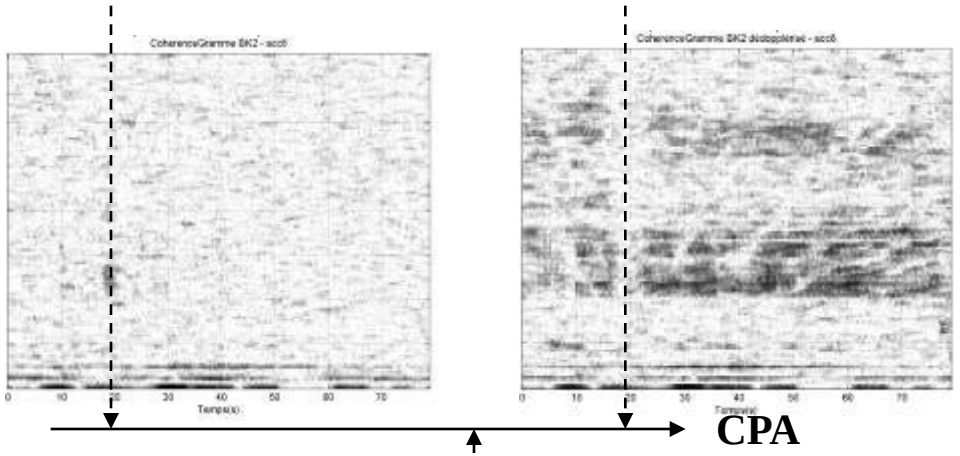


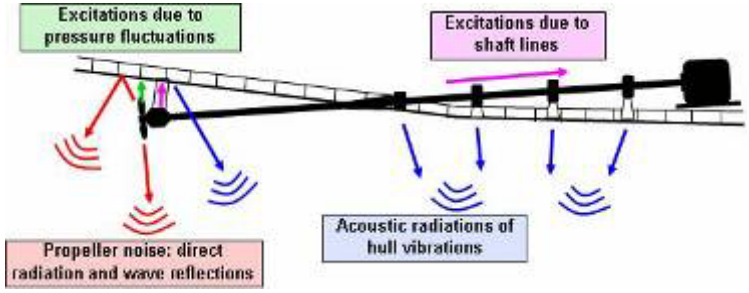
Client : **Groupe CIAT (Culoz)**

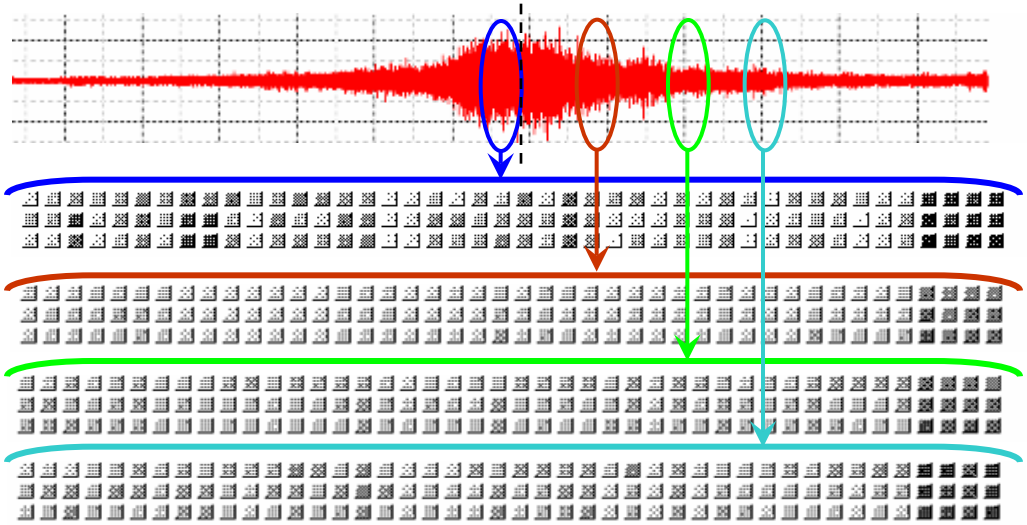
Réalisation :	Network of **16 température transducers** (PT100), **8 mass flowmeters**, **8 energy counters** and acquisition of **186 specific data** for 2 machineries (**CIAT**) via **MODBUS**. **monitoring and data history sent FTP** server **Remote acces using GPRS connexion**

Noise source identification on a ship





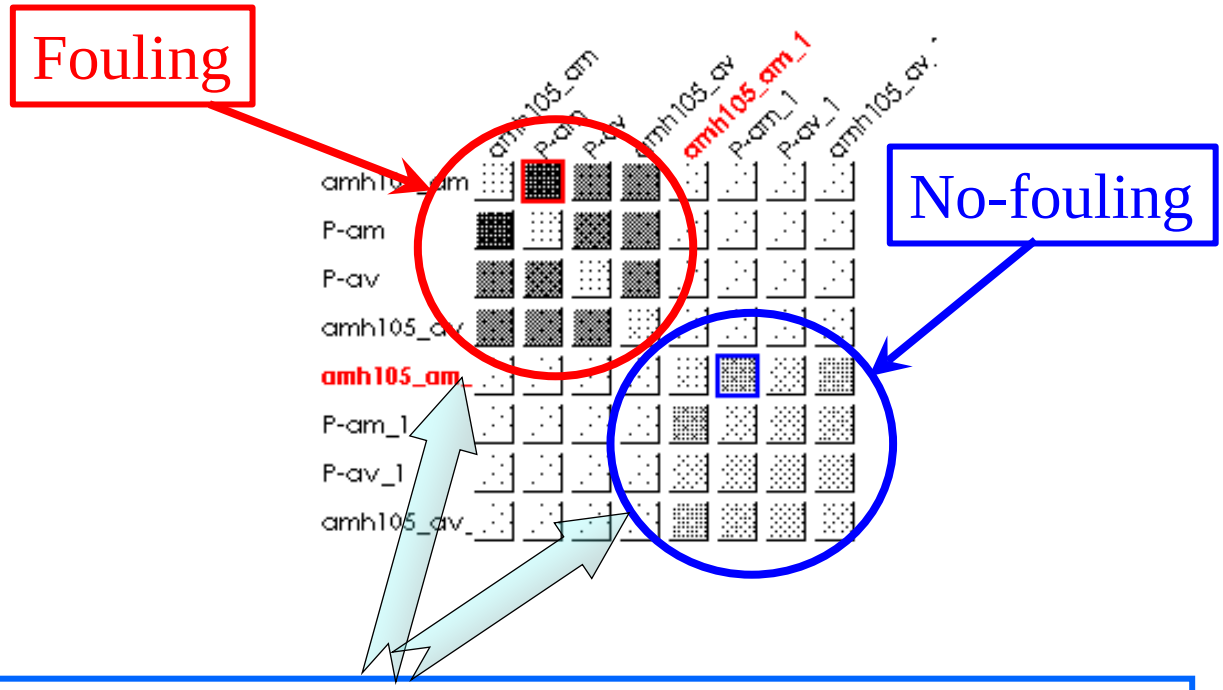




Ref.: **DCN (FRANCE)**
NUR (Goa-INDIA)
NSTL (Visakkapatnam – INDIA)
MTU (Mumbai – INDIA)

Non-intrusive detection of fouling in Heat Exchangers

on-line diagnostic of fouling level using vibrational response

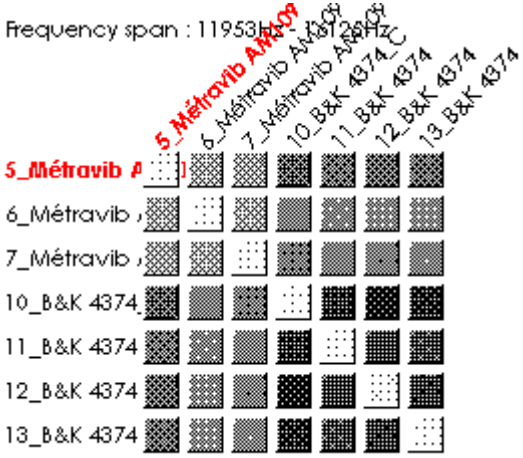


Matrix shows comparison between clean and fouling condition of broad-band dynamic behaviour, of the same heat exchanger, using the same measurement protocol.

Ref.: CEA - Commissariat à l'Energie Atomique)

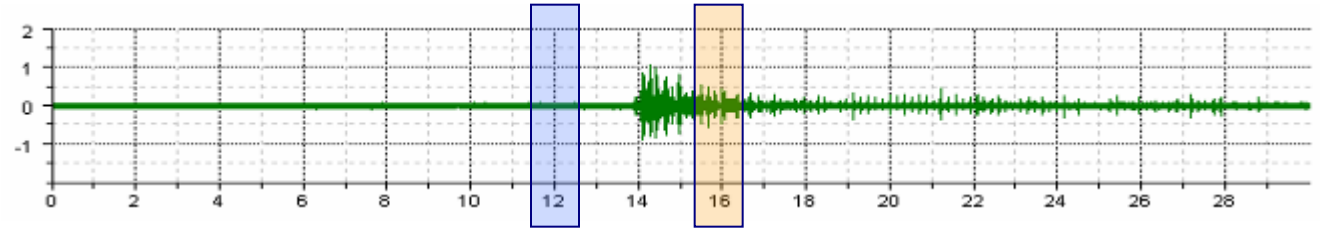
Rubbing in Gas Turbines

Define and validate method for real-time on-line diagnostic of rubbing in gas turbine



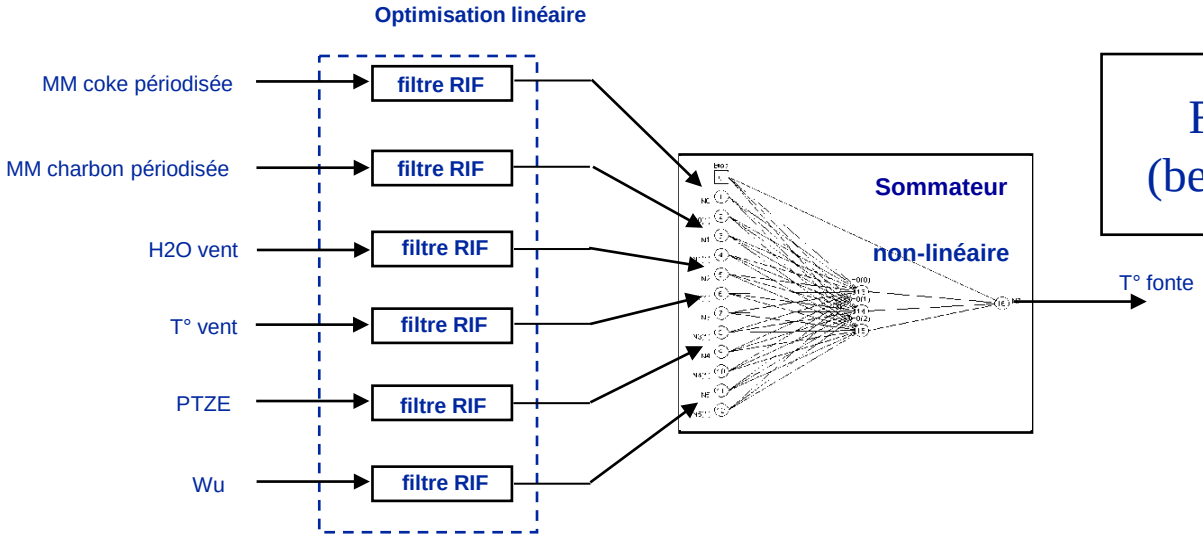
NO RUBBING

RUBBING



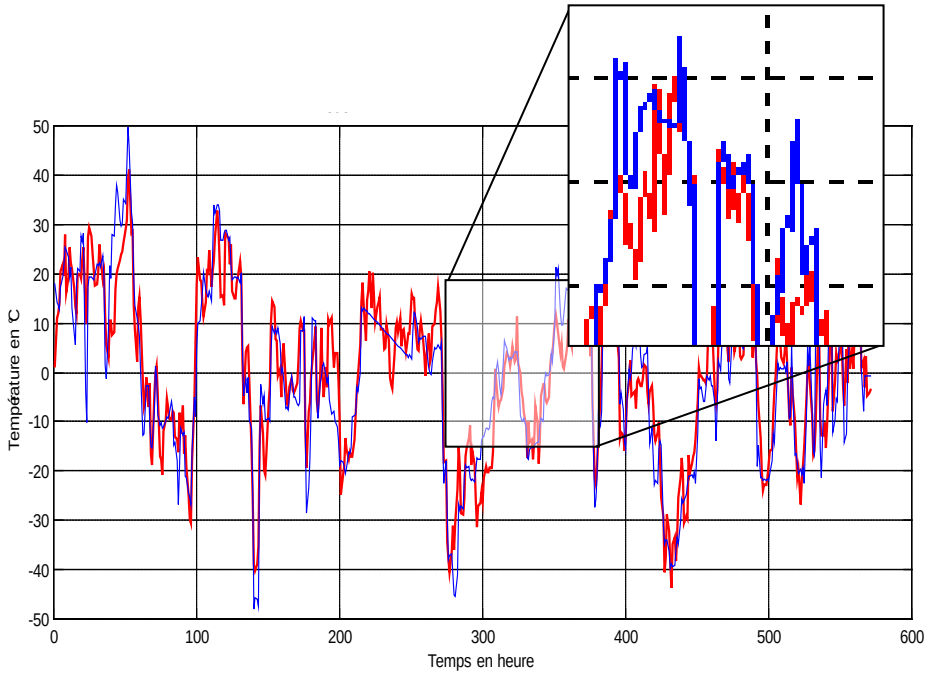
Ref.: EDF-DER

Neural-network cask-iron temperature prediction



Final prediction error is 7°C
(better linear prediction is 20°C)

GOAL : 10 hours notice prediction of cast-iron temperature prior to casting flow

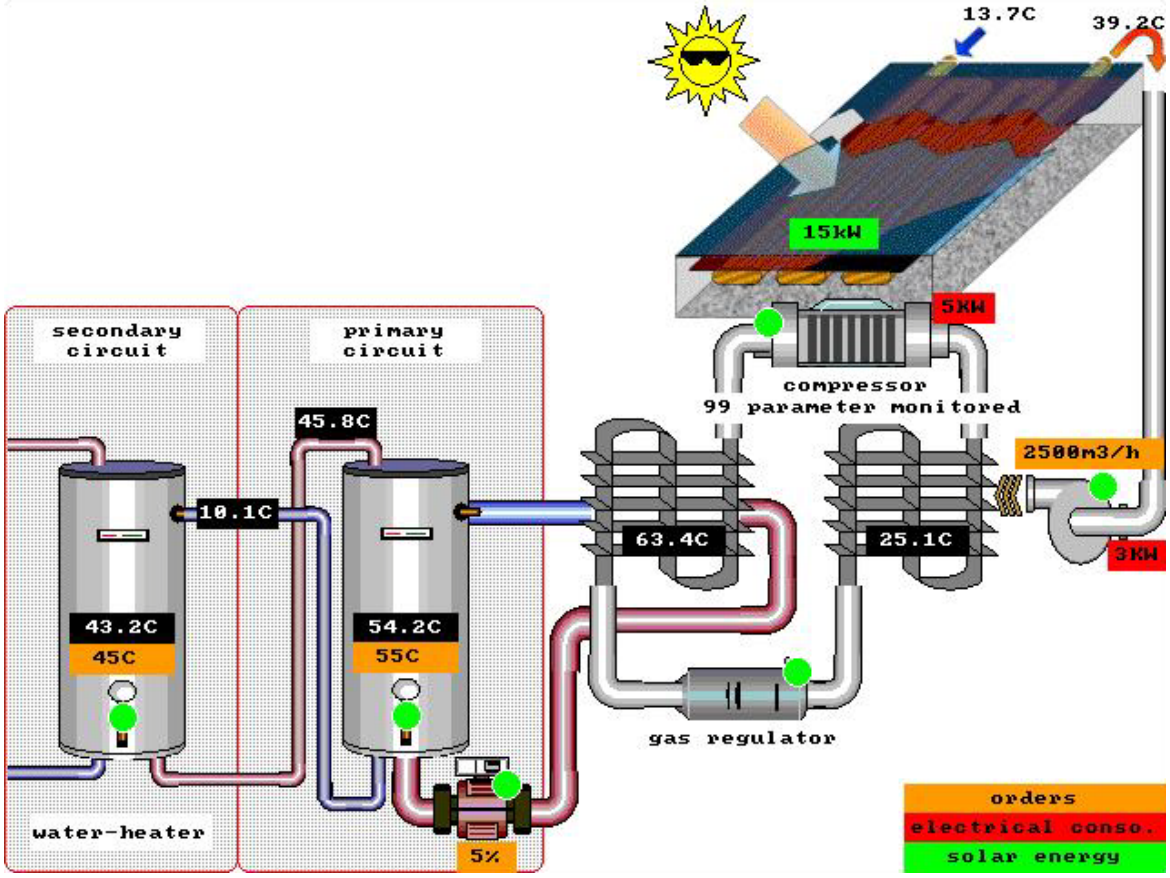


SOLUTION

- Physical analysis and memory dimensionning
- Quadratic optimisation of MISO (multiple input, single output) system
- Quadratic optimisation of memory non-linear system (Neural Net approach)
- Combining both approach for result improvement

Client : **Groupe ARCELOR MITTAL (SOLLAC)**

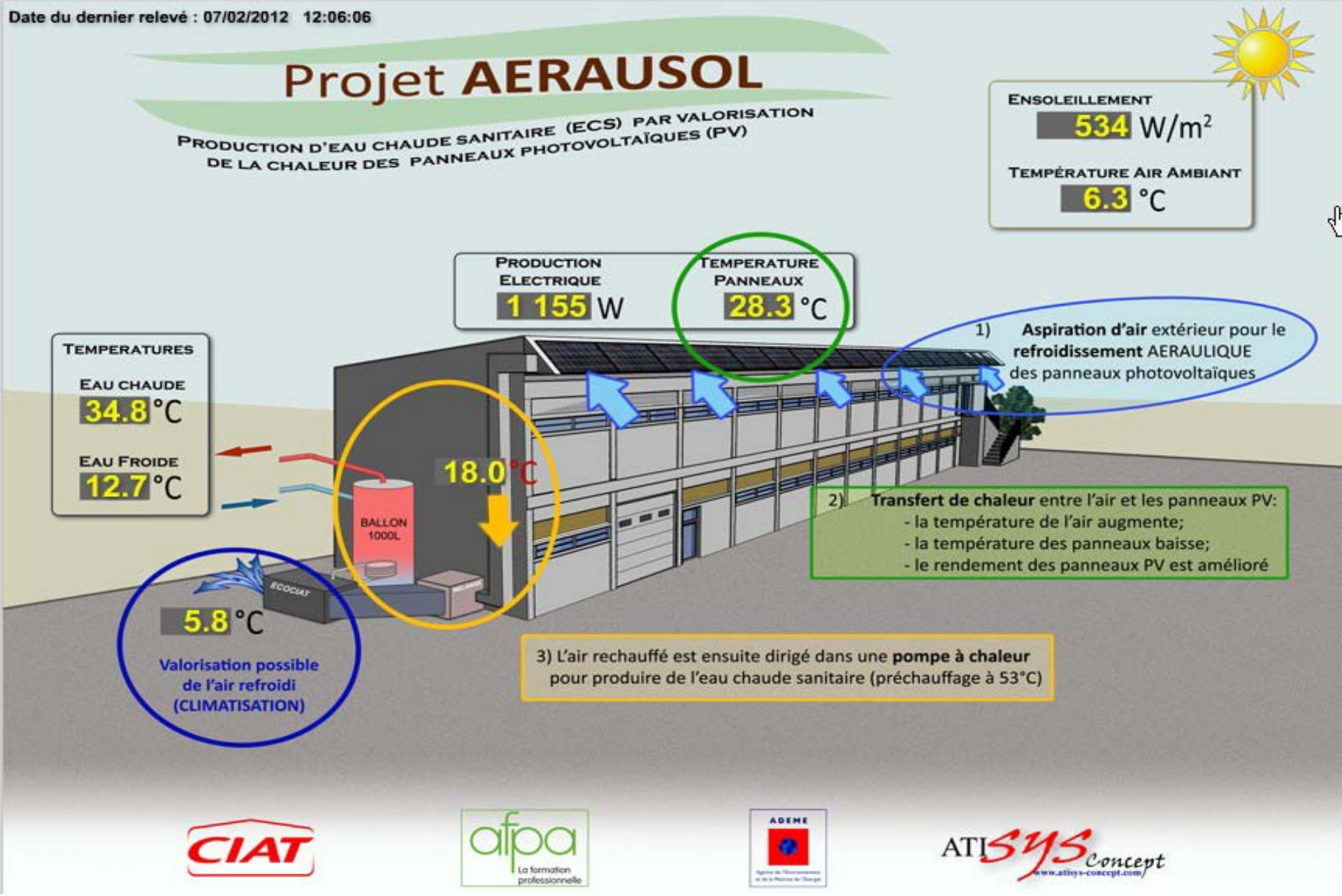
AERAUSOL project
use of air cooling of PV panels for DHW production (***CIAT*** Group)



Client : **Groupe CIAT (Culoz)**

- Network of **30 température transducers** (PT100), **2 mass flowmeters**, **8 energy counters** and acquisition of **99 specific data** for 2 machineries (**CIAT**) via **MODBUS**.
- **monitoring and data history sent FTP** server
- **Remote acces using GPRS connexion**

AERAUSOL project : use of air cooling of PV panels for DHW production (***CIAT*** Group)


Date du dernier relevé : 07/02/2012 12:06:06
Projet AERAUSOL
PRODUCTION D'EAU CHAUDE SANITAIRE (ECS) PAR VALORISATION DE LA CHALEUR DES PANNEAUX PHOTOVOLTAÏQUES (PV)
ENSOLEILLEMENT
534 W/m²
TEMPÉRATURE AIR AMBIANT
6.3 °C
PRODUCTION ELECTRIQUE
1 155 W
TEMPERATURE PANNEAUX
28.3 °C
TEMPERATURES
EAU CHAUDE
34.8 °C
EAU FROIDE
12.7 °C
18.0 °C
BALLON 1000L
ECOCIAT
5.8 °C
Valorisation possible de l'air refroidi (CLIMATISATION)
1) Aspiration d'air extérieur pour le refroidissement AERAULIQUE des panneaux photovoltaïques
2) Transfert de chaleur entre l'air et les panneaux PV:
- la température de l'air augmente;
- la température des panneaux baisse;
- le rendement des panneaux PV est amélioré
3) L'air rechauffé est ensuite dirigé dans une pompe à chaleur pour produire de l'eau chaude sanitaire (préchauffage à 53°C)
CIAT
afpa
La formation professionnelle
ADEME
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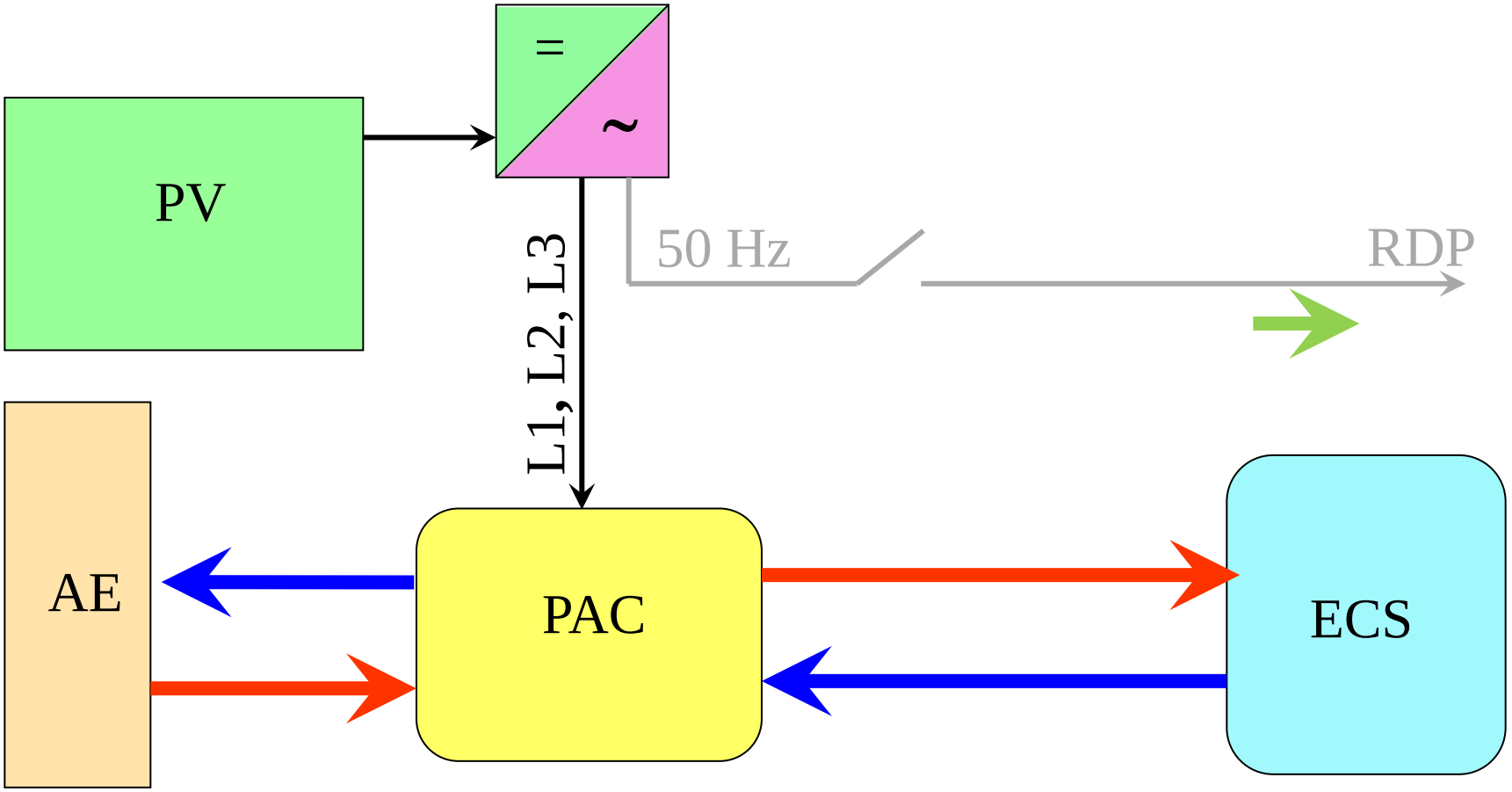
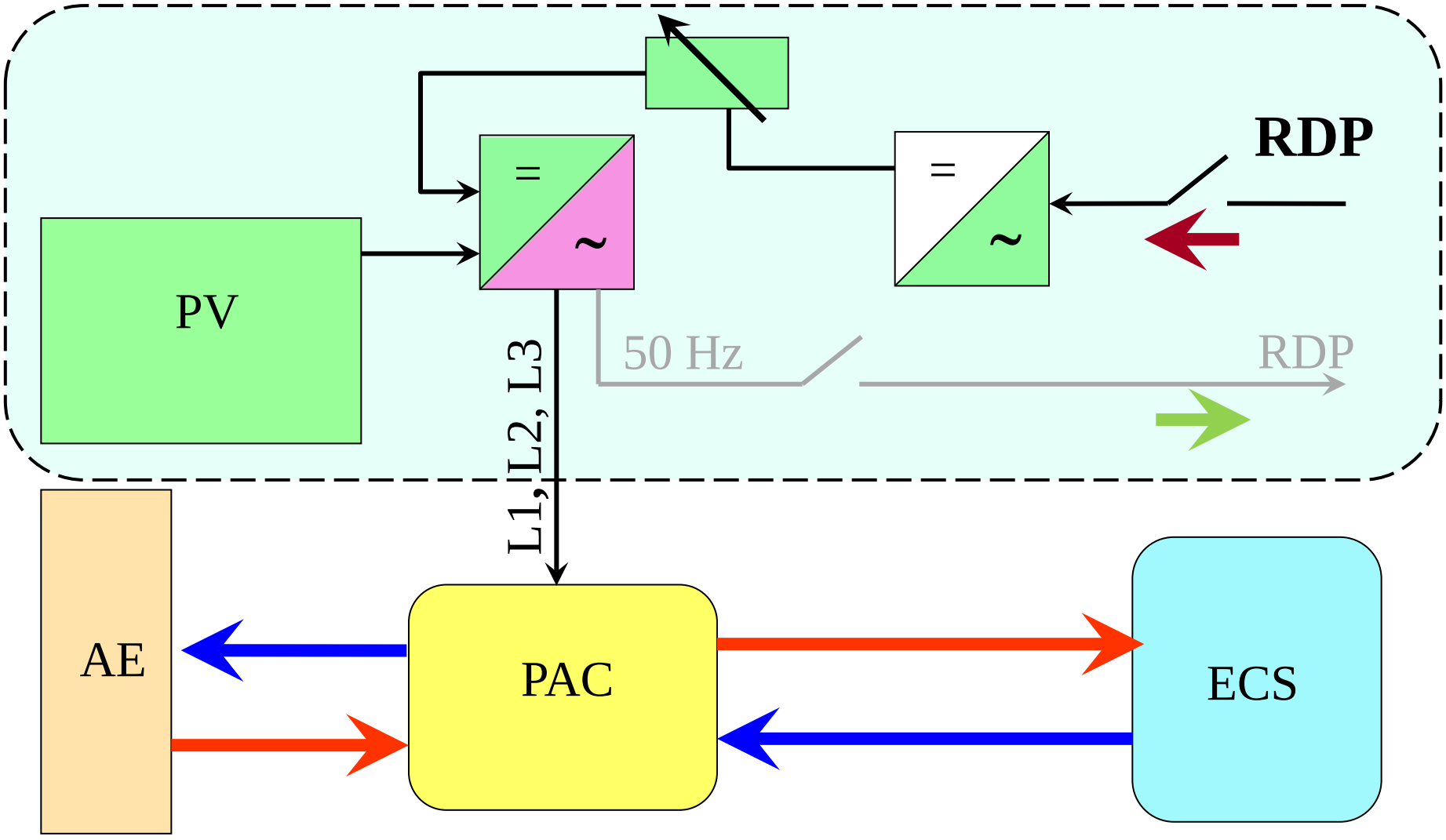
Coupling PV with heat-pump compressor

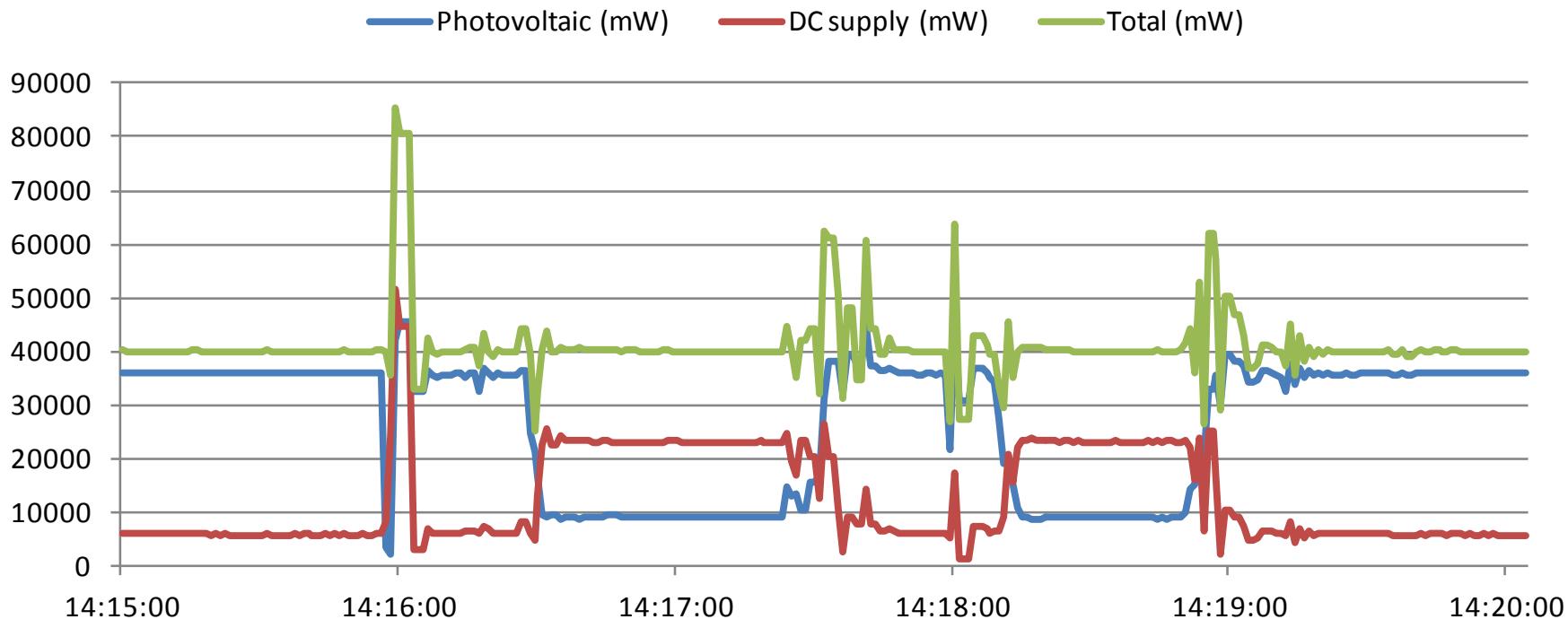
What about a passing cloud on PV field ?



Adaptive DC complementary supply with PV power



Adaptive DC complementary supply with PV power



Interest in IEA task

- Driving HP compressor with PV energy
- Adaptive HP compressor control with PV ressource

References

In FRANCE :

ARCELOR/SOLLAC, AREVA, CEA (Cadarache, Grenoble, LITEN/GREThi), **CIAT, CNRS Languedoc-Roussillon, COFELY AXIMA, Conseil Général du VAR, Archives Départementales du Puy-de-Dôme, DGA, DCNS DASSAULT AVIATION, EDF (DER, DTG), HELION, INES, IRSN, PSA, RENAULT, THALES SAFARE, TECHNICATOME, VALEO …**

Export :

QINETIQ (UK) , University of CRANFIELD (UK), Johannes Gutenberg Universität - MAINZ (Allemagne), Naval Underwater Range-GOA (Inde), Naval Scientific Technology Laboratory – NSTL (Inde), Machinery Technological Units-MTU (Inde)

Thank you for attention …