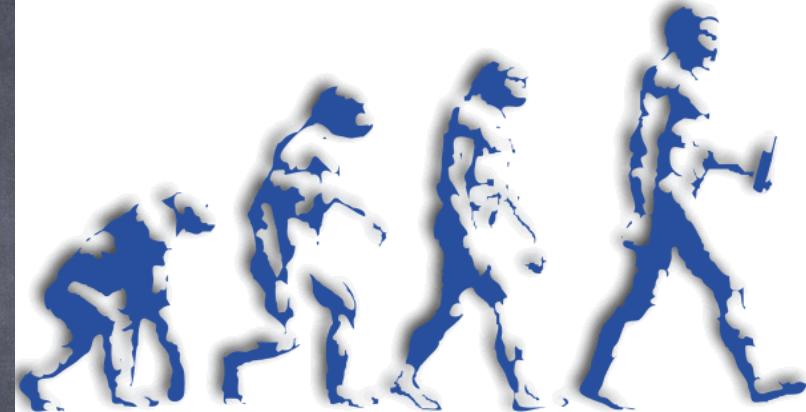




e-voluzione srl  
F.M.Sacerdoti

# e-voluzione

## evolution paths for industries



[e-voluzione.it](http://e-voluzione.it)

Prototype Development

Hardware/Software Systems

Signal and Image Analysis systems

Advanced software development

Technology and Innovation consultancy

MIMIT: Albo dei  
certificatori ricerca e  
sviluppo e innovazione



Anagrafe Nazionale  
delle Ricerche

# e-voluzione

**HW**

Sensors

PLC

FPGA

Controls

Automation

Measurement  
Systems

Engineering

Consultancy & Implementation

**SW**

DB

SPC

Software

Vision  
Systems

UI/UX

# Awards

**F.M.Sacerdoti** has developed since 1988 hardware/software systems for companies and research centers, from Artificial Intelligence systems to advanced industrial control, to complex measurement systems. He develops the ground control center for four Space Shuttle missions and for several Sounding Rockets.

He is Adjunct Professor at **Temple University** (Philadelphia - USA)

He is teacher at University "Federico II" of Sound Engineer

He was teacher at **Apple Developer Academy**

He was **Visiting Scientist** at CERN (Geneva)

He is **Certified LabView Architect** of National Instruments

He is **Certified Professional Instructor** of National Instruments

**9 patents - 3 patent pending**

He won three years one after the other the second place of National Instruments for the **best Test & Measurement italian application**

**Consultant** for the Italian Ministry for the diffusion of Innovation and Research (DIRCE). Innovation project evaluator for Friuli-Venezia Giulia Region

**ECSS Software Engineer** Certified by European Space Agency (ESA)

**Euroleader Award**

e-voluzione was one of the three best space companies all over Europe between the BICs.



**3 BOOKS**  
**55 INTERNATIONAL PAPERS**  
**19 INVITED SPEAKING**

# Our customers

Hewlett Packard  
Enterprise

**rexroth**  
A Bosch Company



**Wabtec**  
CORPORATION



**IPM GROUP**

**PRYSMIAN**  
CABLES & SYSTEMS

  
COMUNE DI NAPOLI

**PIRELLI**



Centro Italiano Ricerche Aerospaziali

**CIRA**

**A. Abete**



**esa**

**AVIO**  
ADVANCED VISION INTO ORBIT

**VITROCISSET**  
a LEONARDO company

[www.e-voluzione.it](http://www.e-voluzione.it)

# Some systems realized in the past by F.M.Sacerdoti



## Prova di Flusso :

**Evoluzione Software**

The collage includes the following components:

- Top Left:** A flow monitoring interface showing analog inputs for Tamb (0.00 °K) and Pin/Pamb (0.0000), with a red 'Fuori Range' indicator.
- Top Center:** A screenshot of the "ELBE Oil Flow Monitoring System 1.07" showing a flow curve over time and a table of flow channel settings.
- Top Right:** A screenshot of the "Control Center" showing a tree view of RAS 1, Config 1, Configuration, Alarms, PTP, and Analysis.
- Middle Left:** A screenshot of a configuration interface for a flow splitter, showing a tree view of Configuration, Unit 1, and Flow Sensors.
- Middle Center:** A screenshot of a log viewer showing a list of events with columns for Date Time, Source, Value, and Description.
- Middle Right:** A screenshot of a ladder logic editor showing a complex control program.
- Bottom Left:** A screenshot of a timer configuration interface with sections for Variant, Timer, and Timers.
- Bottom Center:** A screenshot of a data acquisition and monitoring interface showing a graph of Stato Sistema (System Status) for Canale 1, and a table of data including 34, 36, 130, 226, and 622.
- Bottom Right:** A screenshot of a software interface for managing programs and responses, showing a ladder logic diagram and a graph titled Conteggi (Counts).

# E-voluzione Hardware



# Ground Control Centers



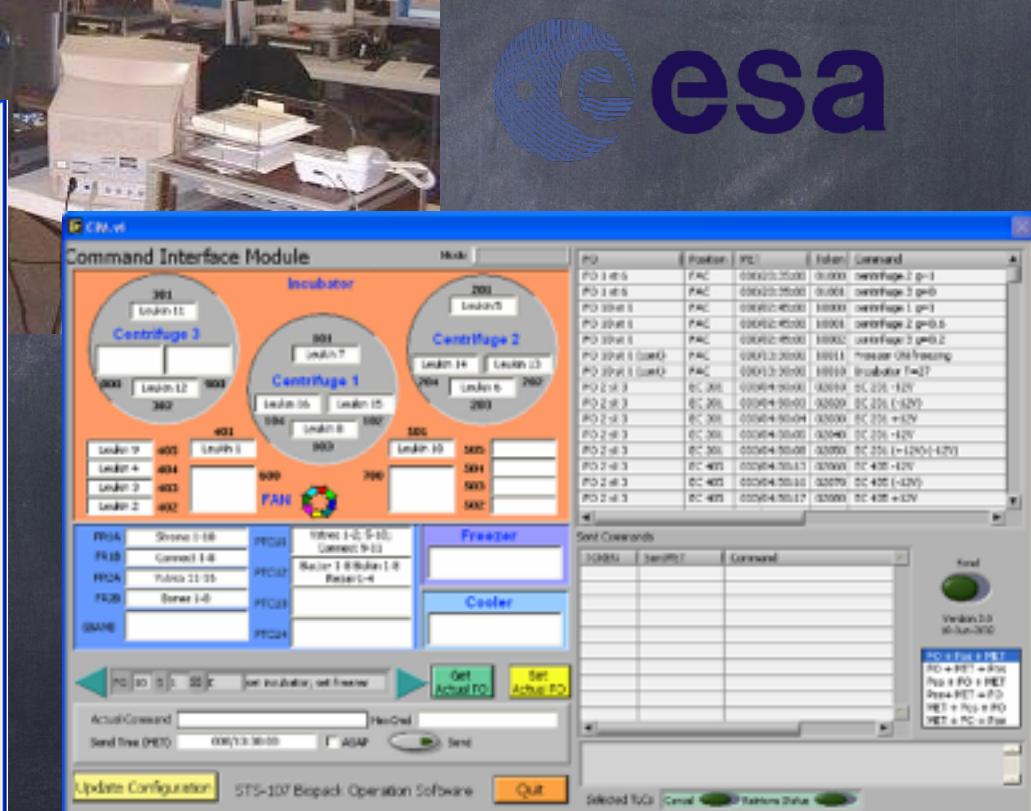
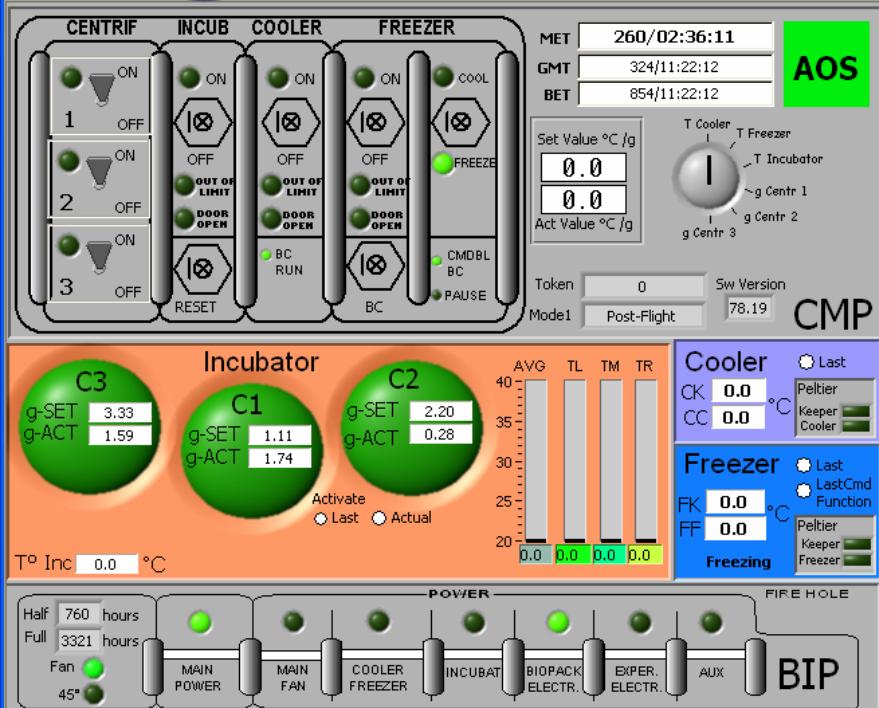
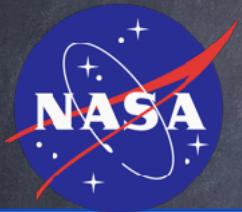
# Space Shuttle Missions



Control Center Design and Development  
Mission Operations



# STS-107



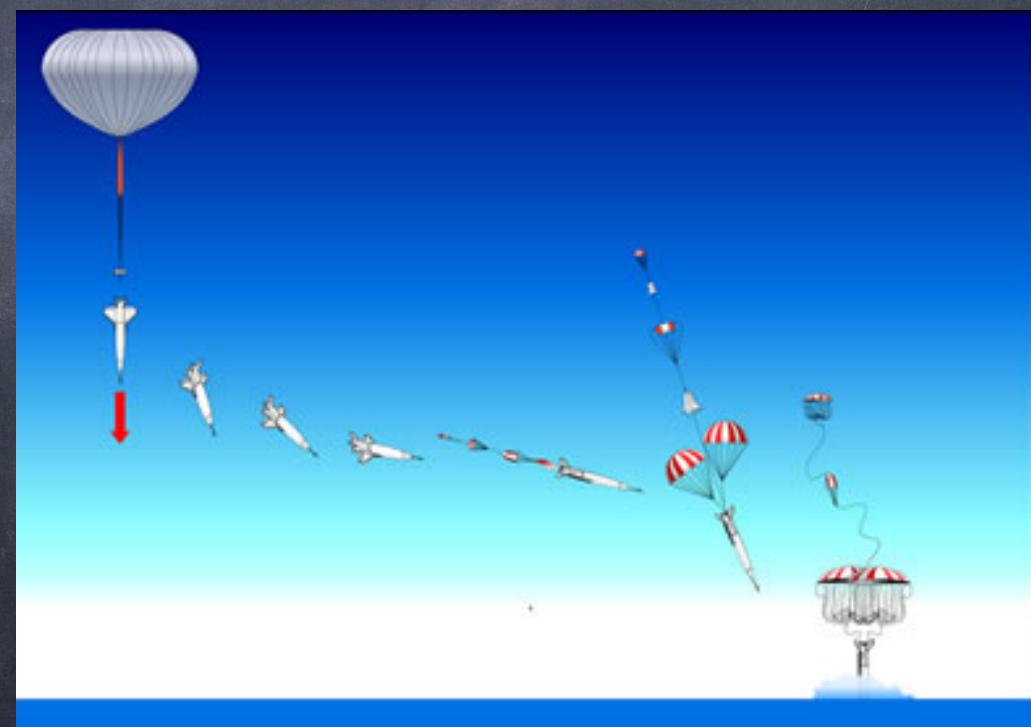
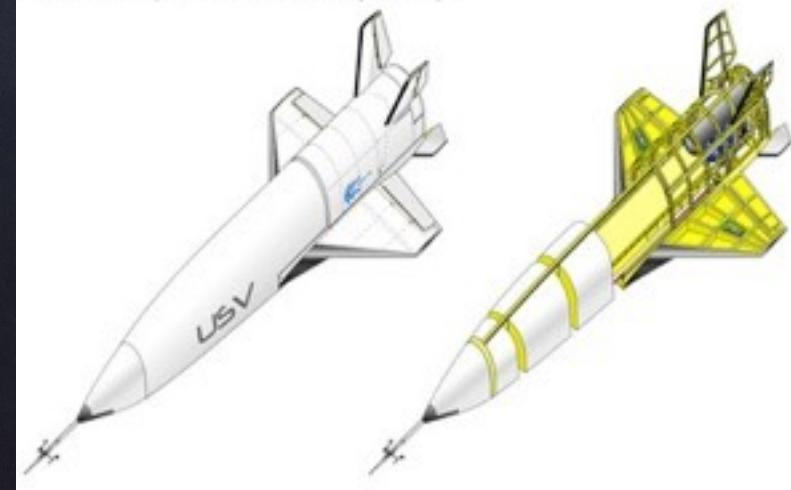


Italian Aerospace Research Centre

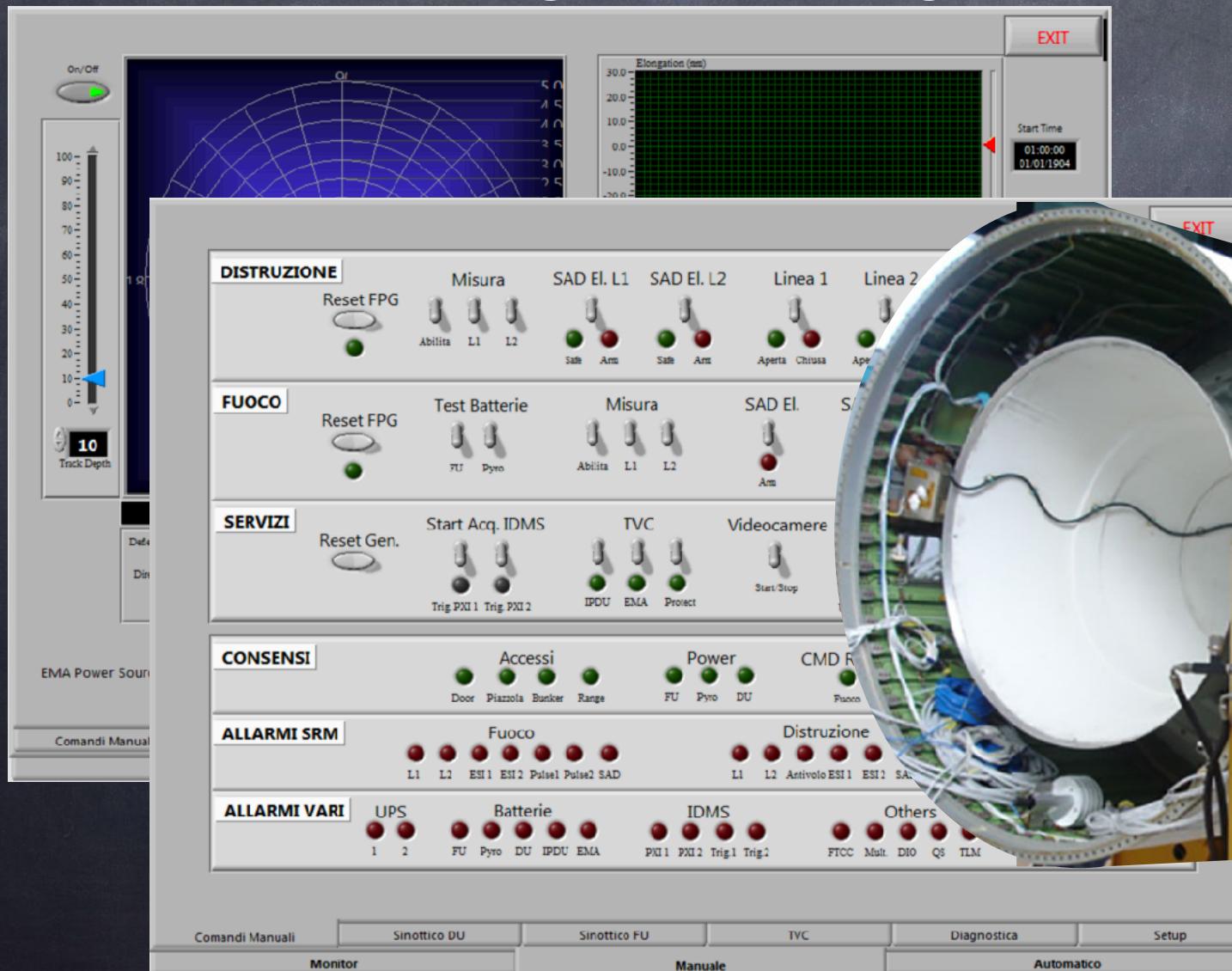


- MCC (Mission Control Center) Redesign and upgrade for USV (Unmanned Space Vehicle) Polluce Mission

USV - Unmanned Space Vehicle  
FTB 1 - Flight Test Bed #1  
3D views (with and without panels)



# Avio Rocket Engine Firing Test Control





# Avio

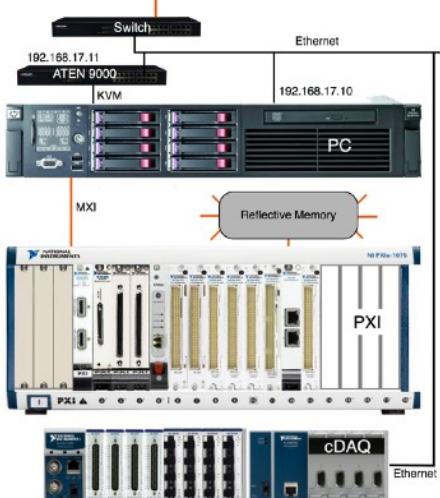
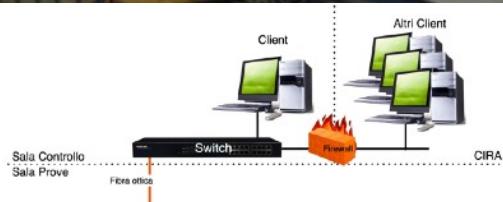
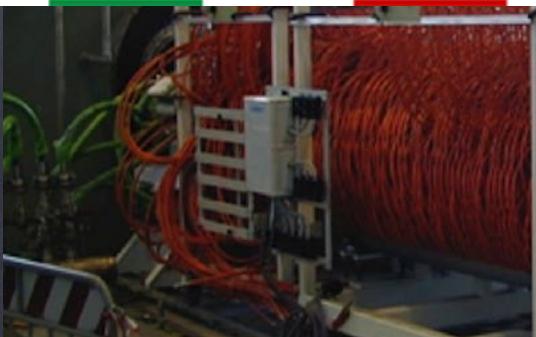
## SRM Data Acquisition System

The screenshot displays a complex mission control software interface with multiple panels:

- Configuration:** Shows file path C:\IDMS\Dat\Configottobre\_Global\_20181004\_142107.kcf, and buttons for LOAD MISSION CONFIG (green) and CLEAR MISSION CONFIG (red).
- Calibration & Test:** Shows 'Last Configuration Start Time' as 00:00:00 DD/MM/YYYY. It has a 'START CAL & TEST' button (grey), a 'CLEAR CAL & TEST' button (red), and a 'CALIBRATION OK' status indicator.
- RT Monitor Channels:** Displays 'Upload Results' for IDMSS1 and IDMSS2, both showing 'OK'. It also lists RT Monitor Channels: Ch1>ANALOG 1 and Ch2>DIGITAL 2.
- Selected PXI:** Shows 'Selected PXI' set to IDMSS2, with 'ACQ & REC' active. Status: 'Rec in progress' at 01/06/2018 10:10:20, duration 41.06. Below is a detailed table of recording parameters for various slots (0-15) and modules (ch0-ch9). The table includes columns for SLOT, MODULE DESCRIPTION, HW, IREQ, REC, DELAY, DURATA, RECORDING PROGRESS, ENABLE, and ALARM.
- Mission Description:** Set to SRM ZEFIRO 40.
- Rec & Trigger Settings:** Includes 'Record Mode' (set to ALL), 'Trigger Type' (set to Trig Hardware), and a list of triggers: IDMSS1 (green), IDMSS2 (green), ETCC (red), and others (grey). A large digital clock shows RCS Time: 17:58:23, 23/10/2018. Status indicators include 'TRIG & REC OK' (green) and 'Last REC Start Time' (00:00:00.00 DD/MM/YYYY).
- Global Alarms:** Shows a large green box with 'PXI TLM OK'.
- Acquisition Setup:** Includes a camera view of a launch site with a fire, a timestamp 'Calibration OK', and a table of connection status for various components: MSS2 (EXECUTE, 10/10/2017 11:10:14, Calibration OK), TCC (NOT CONNECTED, 01/01/1904 01:00:00, ---), and others (NOT CONNECTED, 01/01/1904 01:00:00, ---).
- REC Commands:** Buttons for 'START ACQ' (grey) and 'ABORT ACQ' (red).



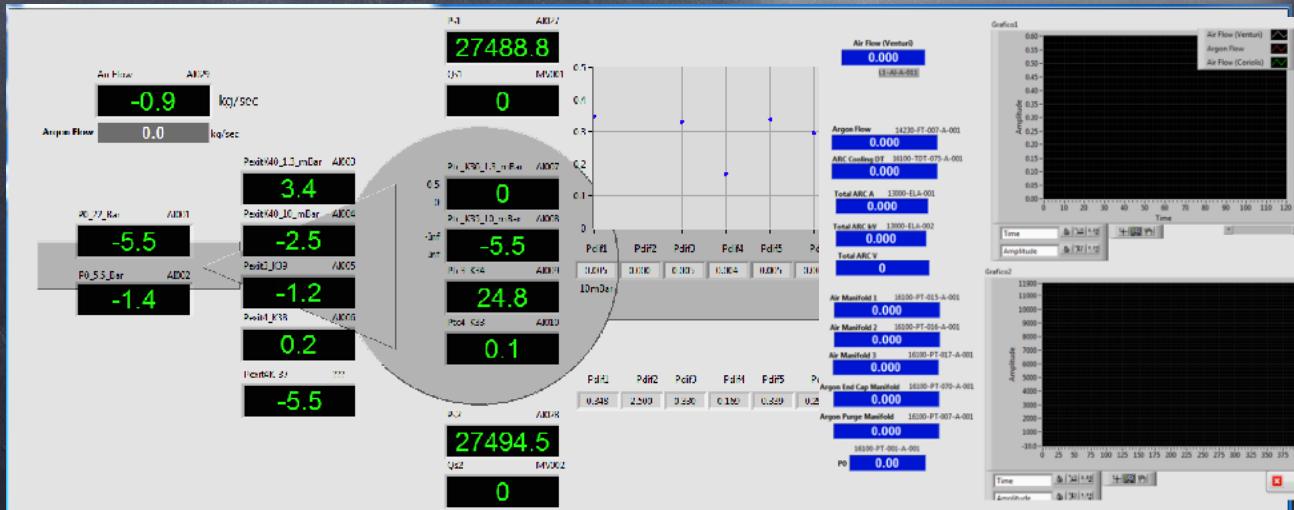
Italian Aerospace Research Centre



L'architettura di EvoPWT



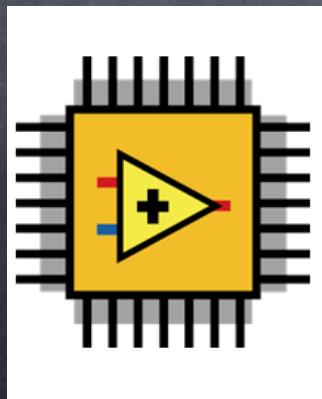
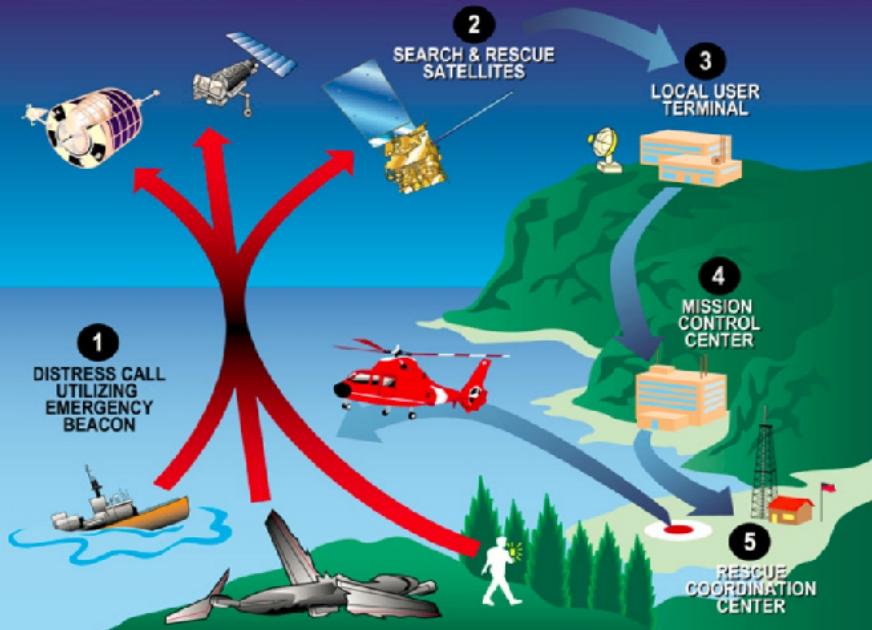
# PWT (Plasma Wind Tunnel) Data Acquisition System



# MEOLUT

 **VITROCISSET**  
a LEONARDO company

## COSPAS-SARSAT System Overview

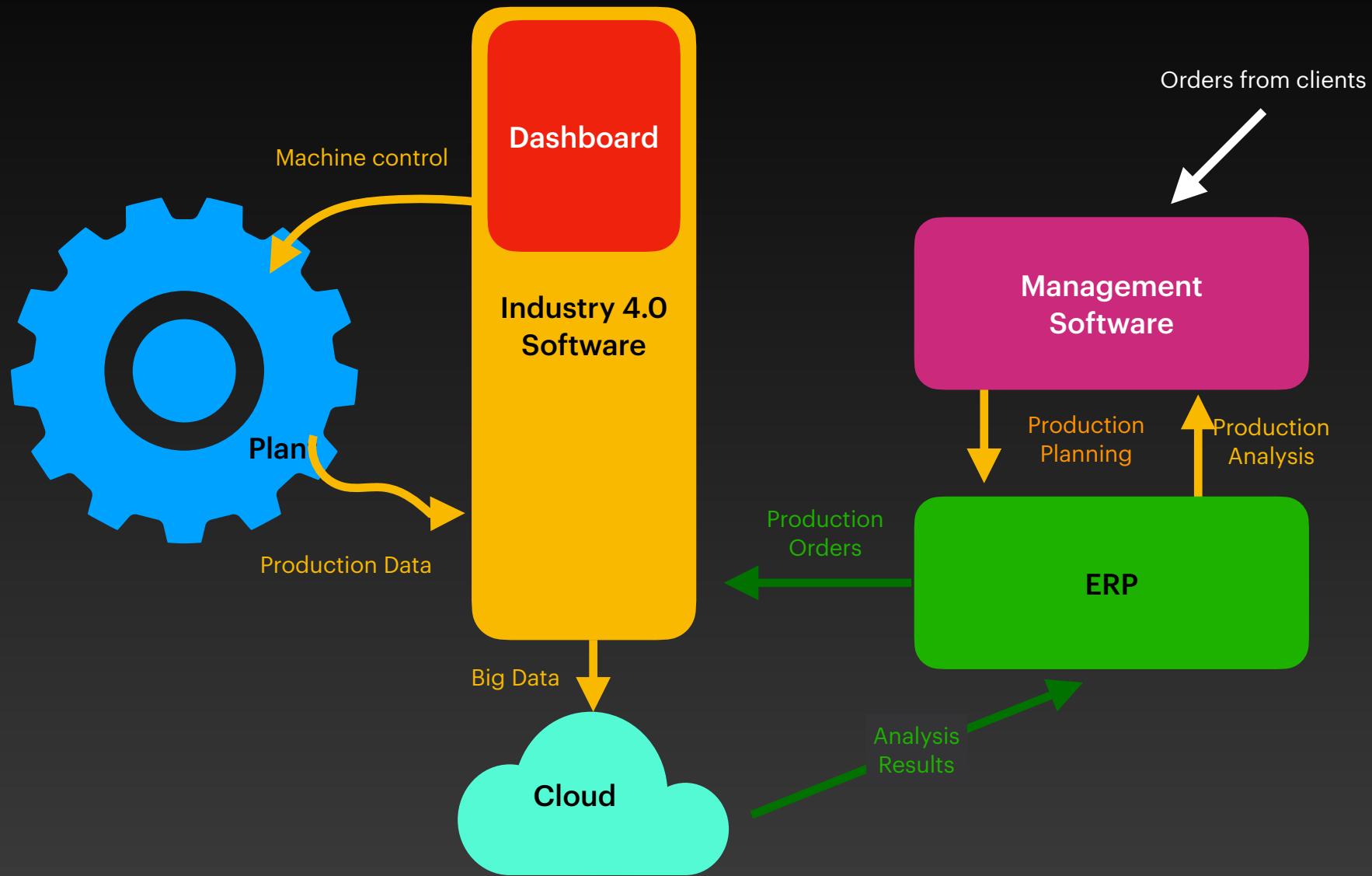


- FPGA/PXI System to analyze signals coming from Beacons

# Industry 4.0

## Interconnections

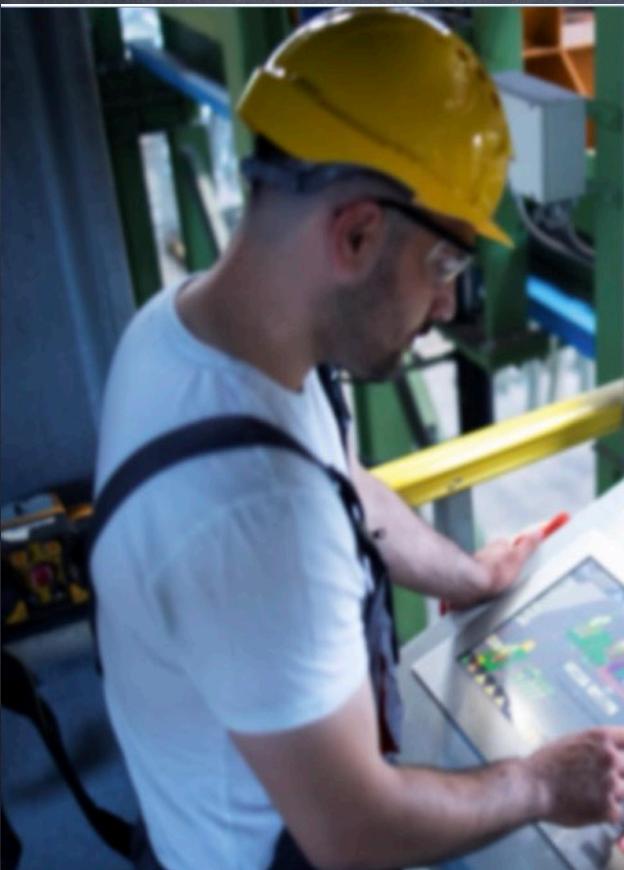
# Interconnection



# 4S-FACTORY



Scalable  
Suitable  
Simple  
Smart



Integrated Management  
Tool to interconnect  
industrial machinery

IN COOPERATION WITH



4S-FACTORY

user

SELEZIONA ODL

ODL DATA CLIENTE COD.ARTICOLO Q.

MACCHINA

COD.ARTICOLO QUANTITA'

PARAMETRO 2 PARAMETRO 3

GG/MM/AAAA HH/MM/SS

Climate: downstairs

Humidity: 7% Temperature: 64 °F

Climate: upstairs

Humidity: 5% Temperature: 70 °F

Climate: bedroom

Humidity: 20% Temperature: 63 °F

HVAC History

HVAC History

HVAC History

# Roncoroni SpA

## Real Time Production Monitoring system

**Log Book rev. 94**

**Registro degli eventi**

Data/Ora	Comm.	Op1	Op2	Macc.	Evento	Valore	Note
15/05/2006 6.44.00				9	Macchina alimentata		
15/05/2006 6.44.00	12035	11	1	10	Macchina alimentata		
15/05/2006 6.44.00	12035	11	1	10	Macchina alimentata		
15/05/2006 6.44.00	12035	11	1	10	Macchina alimentata		
15/05/2006 6.44.00	12035	11	1	10	Inizio lavorazione	Art:7	39070009, cartone g/g gr 650
15/05/2006 6.44.00	12035	11	1	10	Inizio lavorazione	Art:7	39070009, cartone g/g gr 650
15/05/2006 6.44.00	12035	11	1	10	Inizio lavorazione	Art:7	39070009, cartone g/g gr 650
15/05/2006 6.44.00	12035	11	1	10	Cod.op.1 non esistenti		
15/05/2006 6.44.00	12035	11	1	10	Cod.op.1 non esistenti		
15/05/2006 6.44.00	12035	11	1	10	Cod.		
15/05/2006 6.44.00	12035	11	1	10	Cod.		
15/05/2006 6.44.00	12035	11	1	10	Cod.		
15/05/2006 6.44.00	12184	3	25	11	Macchina alimentata		
15/05/2006 6.44.00	12184	3	25	11	Macchina alimentata		
15/05/2006 6.44.00	12184	3	25	11	Inizio lavorazione		
15/05/2006 6.44.00	12184	3	25	11	Inizio lavorazione		
15/05/2006 6.44.00	12184	3	25	11	Inizio lavorazione		
15/05/2006 6.44.00	12184	3	25	11	Inizio lavorazione		
15/05/2006 6.44.00				27			

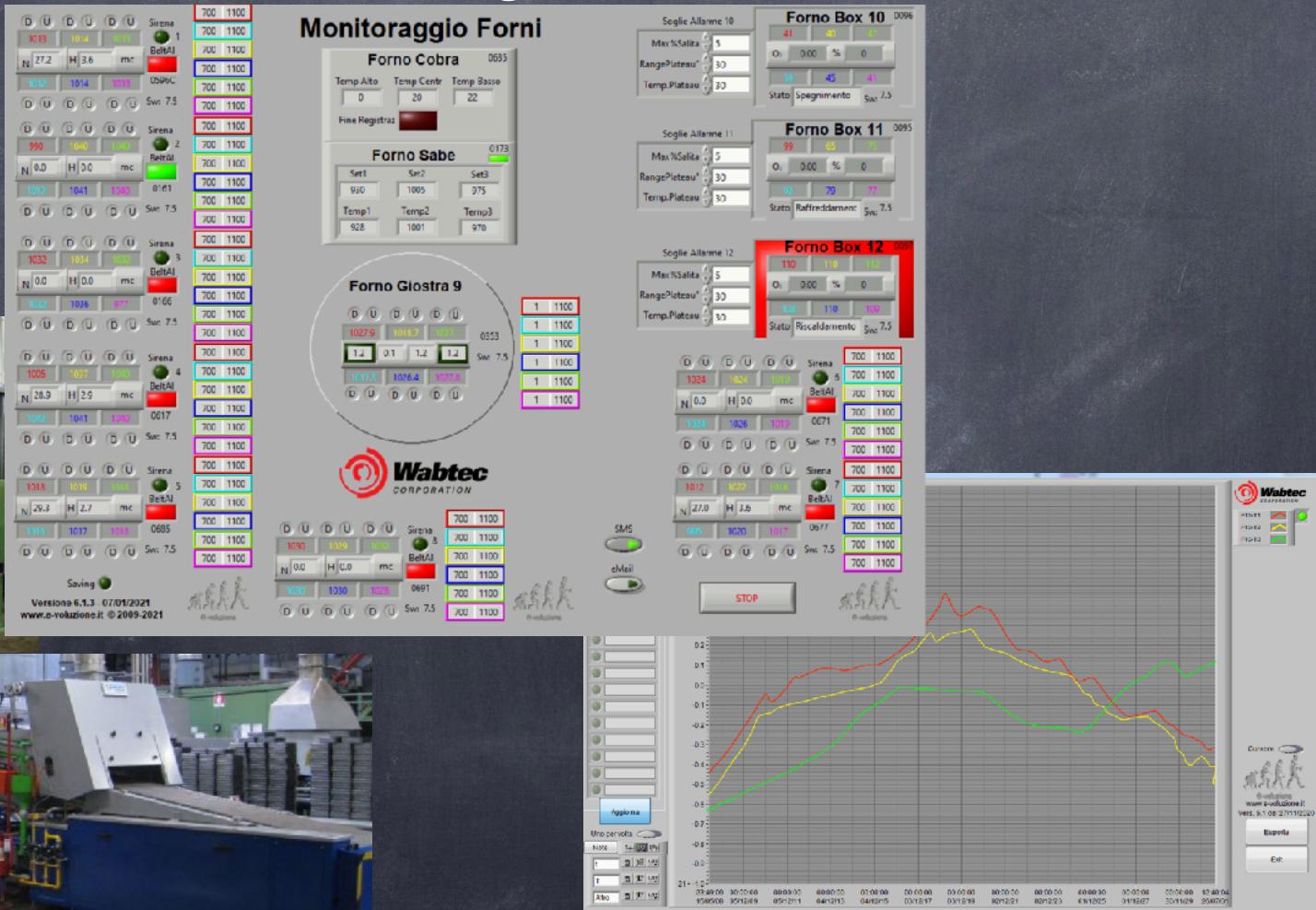
Calcolo metri e minuti x Mese o settimana



# Cofren-Wabtec

**Wabtec**

# Plant ovens monitoring & analysis



# Caterpillar Fluid Systems

**Dashboard Overview:**

- Pressione:** Realtime - last minute. Includes a chart for Pumpa\_ingranaggi\_pressione\_out\_attuale (479-485) and Pumpa\_ingranaggi\_pressione\_in\_attuale (122-130).
- Assorbimento:** Realtime - last 10 minutes. Includes a chart for Assorbimento\_motore\_estrusore (114.61 Watt) and Assorbimento\_motore\_pompa\_ingranaggi (37.27 Watt).
- Ovalizzazione:** Value: 005.
- Diametro:** Value: 153.
- Eccentricita:** Value: 030.
- Spessore parete:** Value: 071.
- Temperatura a zone:** Realtime - last minute. Shows temperatures for Zone\_1\_(testa), Zone\_2\_(pompa), Zone\_3\_(cilindro\_1), Zone\_4\_(matrice\_2), and Zone\_5\_(matrice\_2). Data from 2019-03-28 at 18:11:47 shows values: 70, 70, 65, 65, 71.
- Temperatura Uscita:** Bar chart comparing Temperature\_uscita\_estruso (blue bar, ~78) and Temperature\_uscita\_pompa (green bar, ~90).

- Big data acquisition
- Whole plant KPIs

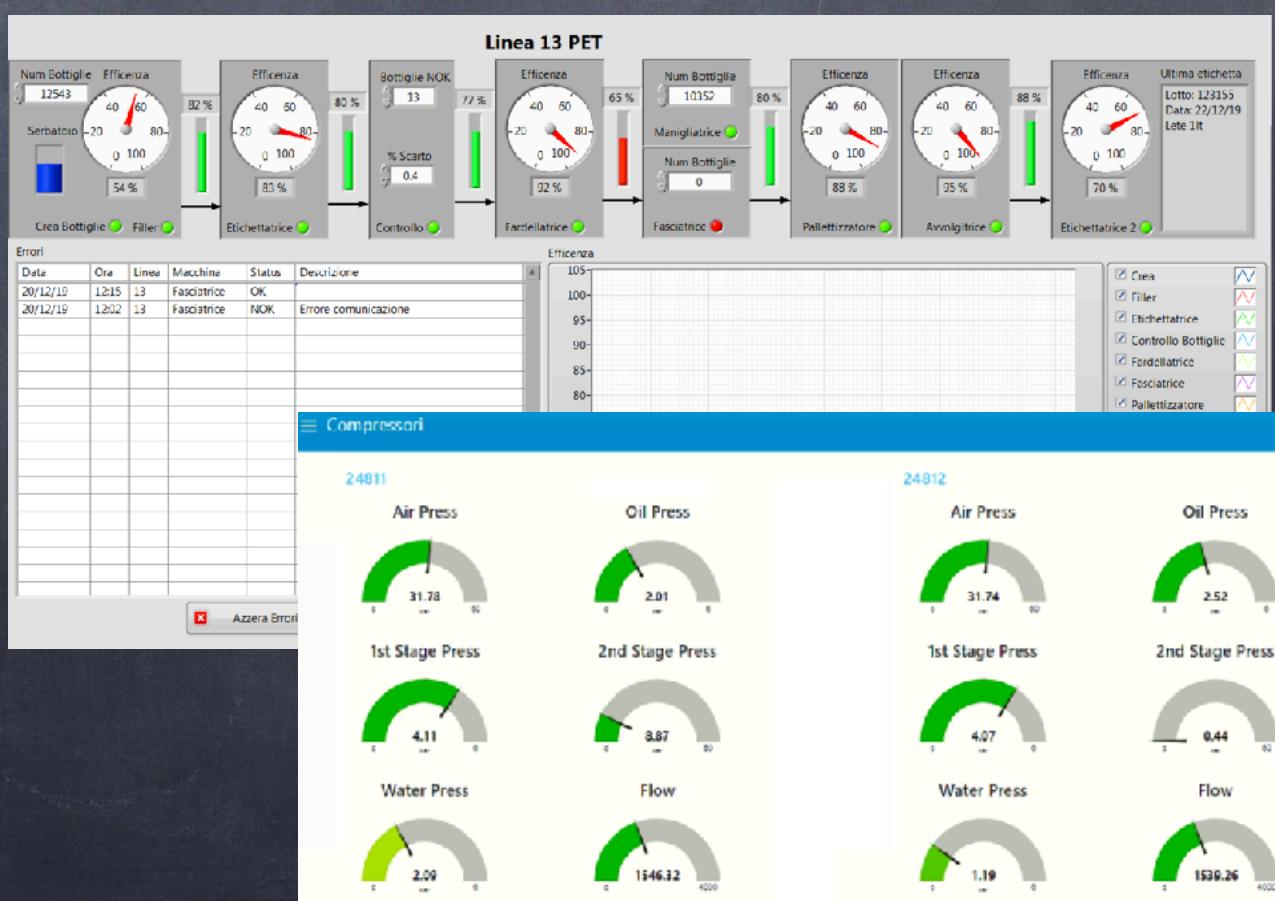
**Hewlett Packard Enterprise**



# Acqua Lete



## IoT plant data acquisition system



# Tecnocap



P35 Linea 1		P35 Linea 2		P35 Linea 3	
PRESS		PRESS		PRESS	
Emergency Off Mode	Initialization Active	Emergency Off Mode	Initialization Active	Emergency Off Mode	Initialization Active
Automatic Mode	Setup Mode	Automatic Mode	Setup Mode	Automatic Mode	Setup Mode
Wait for External Control	Ready	Wait for External Control	Ready	Wait for External Control	Ready
Press in Prod	0	Press in Prod	0	Press in Prod	0
Error Code	Timestamp	Error Code	Timestamp	Error Code	Timestamp
0	N/A	0	N/A	0	N/A
0	N/A	0	N/A	0	N/A
0	N/A	0	N/A	0	N/A
0	N/A	0	N/A	0	N/A
MAIN DRIVE		MAIN DRIVE		MAIN DRIVE	
Main Drive ON	Main Drive OFF	Main Drive ON	Main Drive OFF	Main Drive ON	Main Drive OFF
Manual Mode	By Motor Mode	Manual Mode	By Motor Mode	Manual Mode	By Motor Mode
Clutch ON	Clutch OFF	Clutch ON	Clutch OFF	Clutch ON	Clutch OFF
Flywheel Stopped	●	Flywheel Stopped	●	Flywheel Stopped	●
Strokes/Min	181	Strokes/Min	149	Strokes/Min	206
Total Sheets	839640	Total Sheets	461335	Total Sheets	703379



PRESS B		Kuka	
Automatic Mode	Format:	63RSB	Item Evento
Wait for External Control	Strokes/Min	192	Item Description Nr Fermi
Setup Mode	Caps/Min	0	Customer
Emergency Off Mode	Caps Produced (lh)	28080	Lot Number
	Caps Produced (lh)	449268	Caps Produced
			<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <span>Scatole in uscita - Baia 1</span> </div> <div style="text-align: center;"> <span>Scatole in uscita - Baia 2</span> </div> </div>
PRODUCTION ORDER		PRODUCTION ORDER	
Scrap (lh)	0.5 %	Articolo 53SP18276X7-30F	Articolo 480P16480X7-400
Scrap (lh)	0.0 %	Formato BARESA PESTO GENOVESE	Formato CONAD ALICI
TLC Scraps (lh)	0	Descrizione Articolo FILLI POLLI S.P.A.	Descrizione Articolo VIDYA SRL
TLC Scraps (lh)	0	Cliente 20-1722-1	Cliente 20-0546-1
TLC Scraps (lh)	0	Lotto	Lotto
	Emergency:	0.0 %	0.0 %

# Industry 4.0

Consultancy, OpEx/6Sigma, Security

# Industry Consultancy

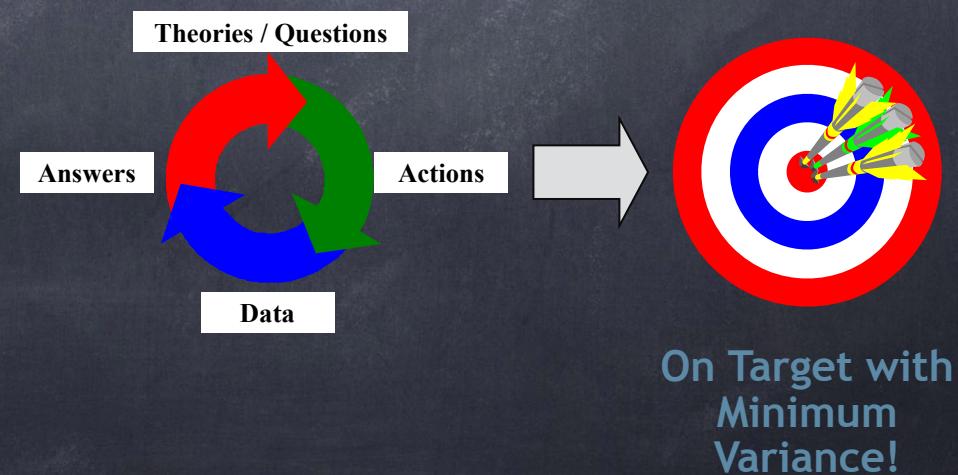
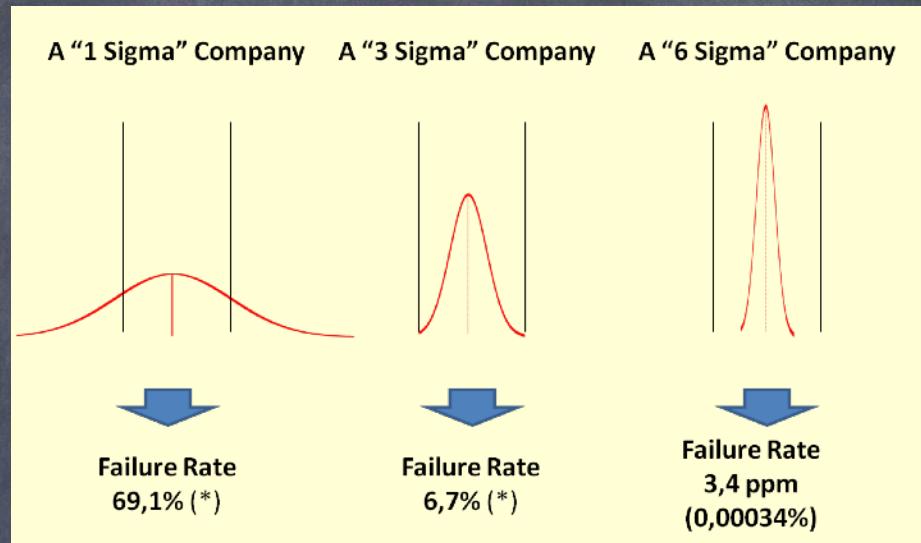
- ⦿ Expert report on industry 4.0 or other public funded projects
- ⦿ Innovation Management
- ⦿ Security Management and procedures
- ⦿ ISO standards
- ⦿ CE Certifications
- ⦿ Training

# OpEx/6-Sigma Consultancy

- Best Internal Quality
  - No Design Reloops,
  - Zero Scraps,
  - No Reworks,
  - Highest Efficiency,
  - Lowest Costs

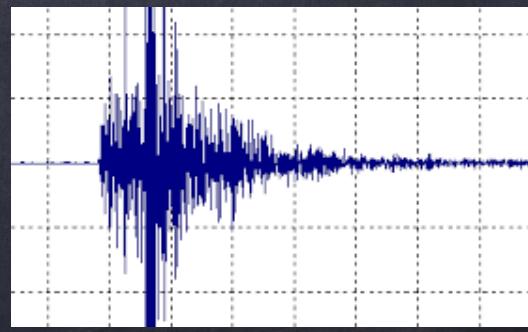
- Best External Quality
  - Product Leadership = Innovation + Quality + Reliability + Best Value.

- OpEx – Six Sigma:
  - to use the appropriate tool, ...
  - at the appropriate time, ...
  - in the appropriate manner, ...
  - to guide engineering work.



# Security

- ⦿ Security Day
  - ⦿ Training on Security procedures
  - ⦿ Psychological experience
  - ⦿ Training on Plant Security
- ⦿ SicurQuest:
  - ⦿ Educational game for safety and emergency management.
  - ⦿ Target: schools, public bodies, companies
  - ⦿ Recipients: pupils, teachers, workers
  - ⦿ Roles: emergency coordinator, first aid worker, people assigned to specific tasks, ecc.

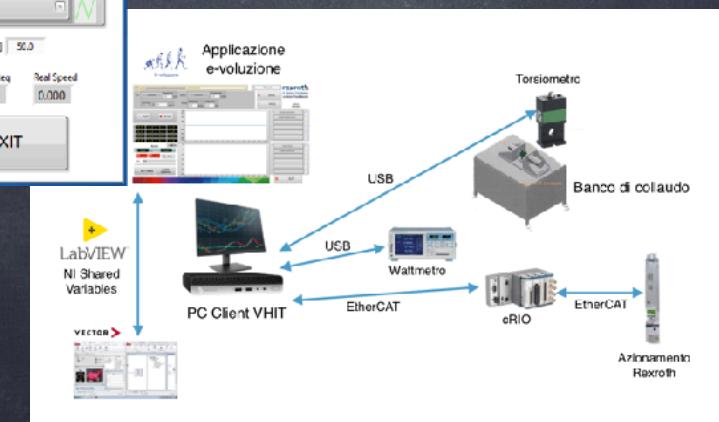
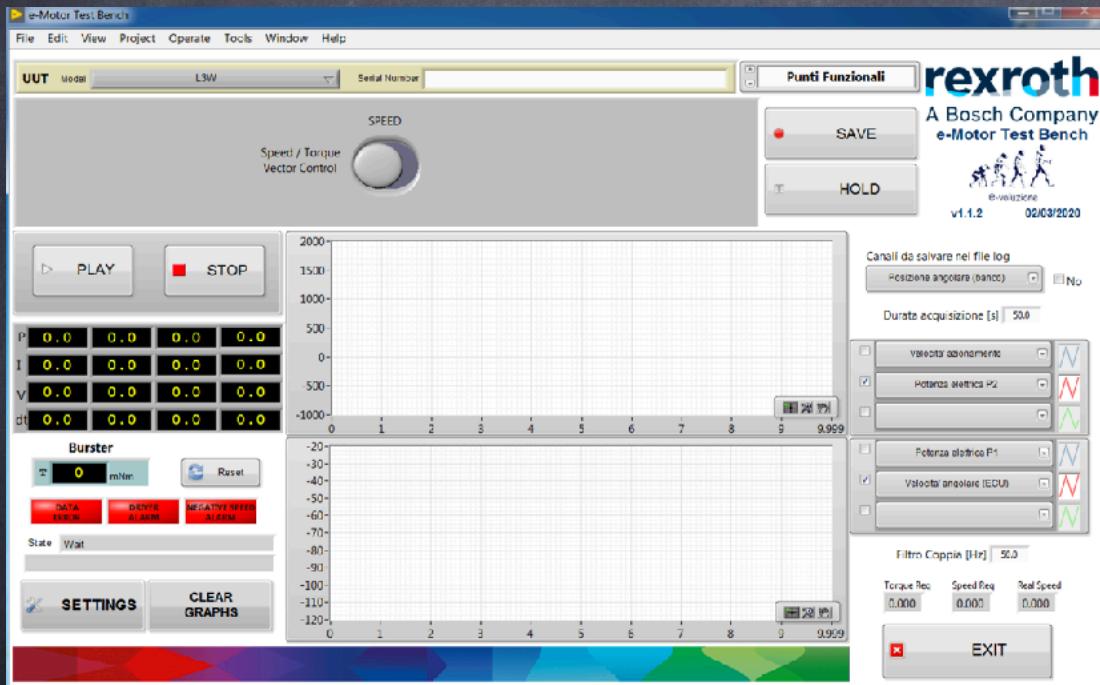


# Test Benches

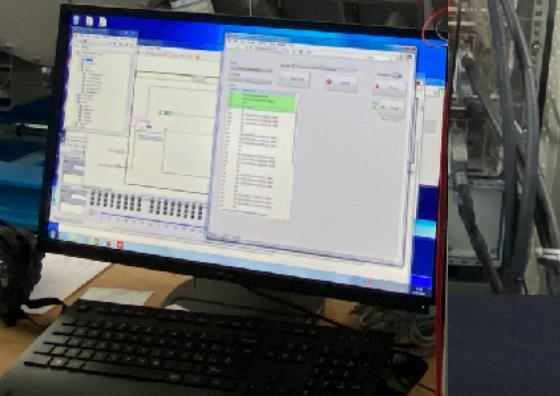
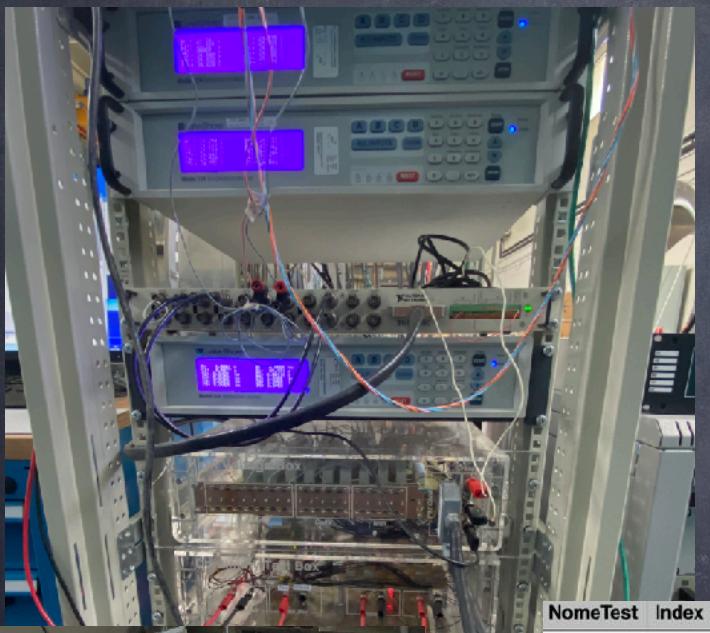
# Bosch Rexroth

**rexroth**  
A Bosch Company

## Test bench software for e-Cars Engine components



# Test equipment for SYS-100 FAIR Synchrotron



NomeTest	Index	Comando	Parametri	Commenti
-- Inizio misure alta tensione			-----	-----
HV		SO		tutti i rele' nella condizione di Diseccati
HV		SG	B1,B2,B3,B4,B5,B6,B7,B8	Rele a GND
HV		SG	V0,V1,V2,V3,V4,V5,V6,V7,V8,V9	Rele a GND
HV		SF	HV	Switch Off HV
HV		VA	numElem,9	Modifica l'interfaccia utente (9 elementi dell'array)
HV		SO	B1-	diseccato B1-
HV	0	MG	B1+,0,120,600,1e+6,5000,B1-,30000	Switch to V, aspetta 0 sec, Megger per 120 sec Megger a 600 V, Valore atteso > 1e+8, poi lo mette a 0,atternde 5 secondi, mette a GND il rele' iniziale, atternde 30 secondi,lo diseccita
HV	0	MG	B1+,0,120,1500,1e+6,5000,B1-,30000	Megger a 1500 V
HV	0	MG	B1+,0,120,2000,1e+6,5000,B1-,30000	Megger a 2000 V

# Avio

# Test bench for Jet Engines

**MathScript**

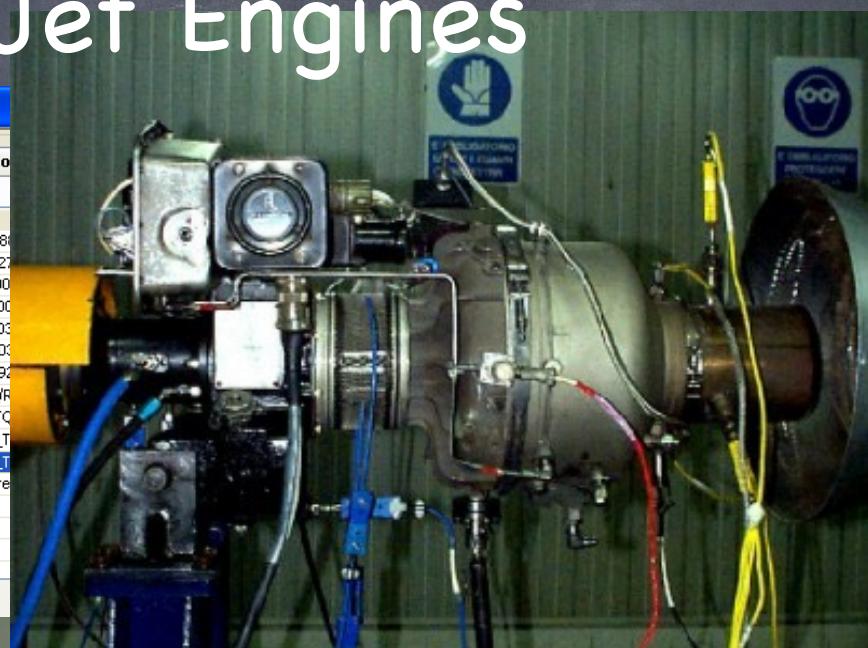
Config Acq & Calc   Config Standard   Config Arinc   Config General   Config Display & Allarmi   Co

**Physical Channel**

Canale Fisico	Alias
DAQ	
PXI-6602-1	
Freq_ch0	NH1
Freq_ch1	NPT1
Freq_ch2	NL1
Freq_ch3	
Freq_ch4	
Freq_ch5	
Freq_ch6	
Freq_ch7	
PXI-6602-2	
Freq_ch0	Pamb
Freq_ch1	PS8
Freq_ch2	PSCELL2
Freq_ch3	PTI1
Freq_ch4	PTI2

**Calculated Channel**

Nº	Name	Formula
0	TB1CR	((TB1*1.8+32)+459.68)
4	WBVcorr	'0.5)*0.04508*(DP_BV*2)
0	EEC_NH	EEC_NH%*33300
0	EEC_NPT	EEC_NPT%*20000
0	EEC_TQ	EEC_TQout%*1203
0	EEC_TargTQ	EEC_TQbug%*1203
0	EEC_Power	EEC_TQ*NPT/16.68192
0	EEC_PowerCorr	EEC_Power/Delta/P
0	TQERR_AFUEEC	EC_TQ-AFU_TQ)/(EEC_TQ
0	DTQ_DYNEEC	DynoTq-EEC_T
0	DTQ_DYNAFU	DynoTq-AFU_T
0	MOP_RGB	MOP-RGB01Pre
0	SGBASE	1*0.795
0	ScalWF1	1*1.62
0	ScalWF2	1*1.57

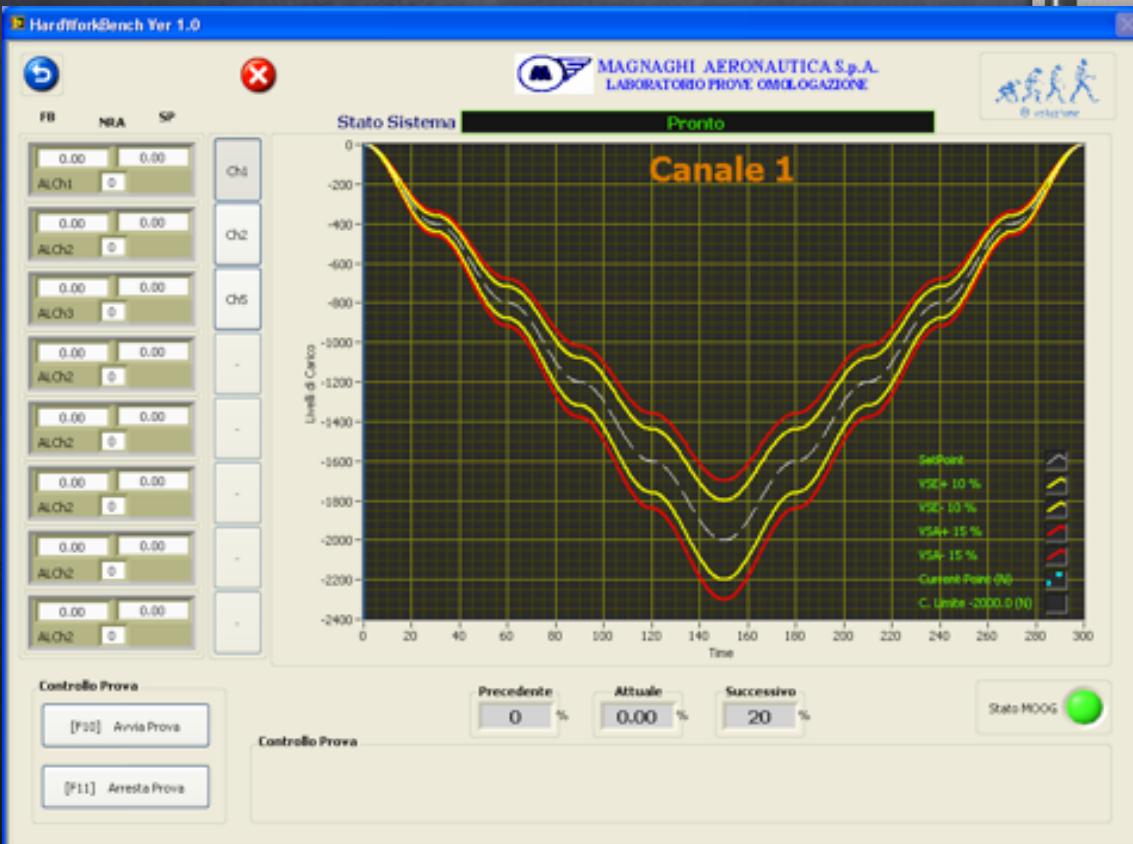




MAGNAGHI AERONAUTICA SpA

# Magnaghi Aeronautica

## Landing Gears Static Test Bench





# IPM Group

## Public phone test bench

XPTS Applications Launcher

**XPTS Payphone Test System**

Applications groups

- Test
- Calibration
- Maintenance
- FileManagement

Wait please ..

IPM GROUP

e-evoluzione

HW Calibration Utility

**XPTS HW modules calibration utility**

Prog. Battery

Power Supply

CD generator

Dal Tono gen

XPTS Payphone Test System

Date	Time	Station	Test time	User	Last DUT sample
10/10/05	14:48	1	1'157	Admin	
Modem carrier level					
Modem connect test	-9.00	-12.00	-9.00	Green	Green
Teles. 10dB	0.00	-33.00	-33.00	Green	Green
Return loss spec. band	15.00	55.00	55.00	Green	Green
RXlin=0	-0.00	-11.00	-9.00	Green	Green
TX lin=0	3.68	-0.50	8.52	Green	Green
Line 1	1x.00	1.00	1.00	Green	Green
Wallplate current	0.46	1.30	0.51	Green	Green
Ring test	0.00	0.00	0.00	Green	Green
DC/d12P frequency	9.55	5.00	1.00	Green	Green
DC/d12HSG frequency	6x.17	51.21	19.04	Green	Green
DC/d12HSG resistance/Current	129.50	120.00	99995.00	Green	Green
DC/d12HSG voltage/Resistance	9.00	6.00	10.00	Green	Green
Modem L1C level	9.50	13.00	9.00	Green	Green
Modem L1G frequency deviation	-0.37	-1.50	1.52	Green	Green
Modem L1H level	6.00	8.00	6.00	Green	Green
Modem L1H frequency deviation	-0.34	-1.50	1.52	Green	Green
Modem L1HSG Gratio	2.63	1.00	3.00	Green	Green

PASS

System status

Passed

Port error

XPTS Profiles List Management Utility

Server list

- 200Utha.cfg -> Rev.U 19/06/03
- 2000dkr.cfg -> Rev.L 1/04/03
- 2kaustria.cfg -> Rev.J 25/05/05
- 2kgilter.a.cfg -> Rev.O 1/09/06
- 2kunghenr.cfg -> Rev.J 01/08/05
- 2malesi.cfg -> Rev.E 10/12/05
- 2maranit.cfg -> Rev.Z 07/03/05
- 2spagov.cfg -> Rev.V 20/C/04
- 2tunes.cfg -> Rev.I 16/05/05
- stdtbr12khz.cfc -> Rev.C 23/06/05
- tp2cuba.cfg -> Rev.4 20/12/05
- uricomarocco.cfg -> Rev.3 20/10/04

Local list

- r200Utha.cfg -> Rev.U 15/06/03
- r2000dkr.cfg -> Rev.1 1/04/03
- r2kaustria.cfg -> Rev.U 25/05/05
- r2kgilter.a.cfg -> Rev.O 03/05/06
- r2kunghenr.cfg -> Rev.U 07/08/05
- r2malesi.cfg -> Rev.A 13/12/05
- r2maranit.cfg -> Rev.B 1/03/05
- r2spagov.cfg -> Rev.C 20/03/04
- r2tunes.cfg -> Rev.D 16/05/05
- stdtbr12khz.cfc -> Rev.C 23/06/05
- tp2cuba.cfg -> Rev.2 20/12/05
- uricomarocco.cfg -> Rev.3 20/10/04

Update remote server

Profile file

Update local list

XPTS Payphone Test System

Admin

# Avio

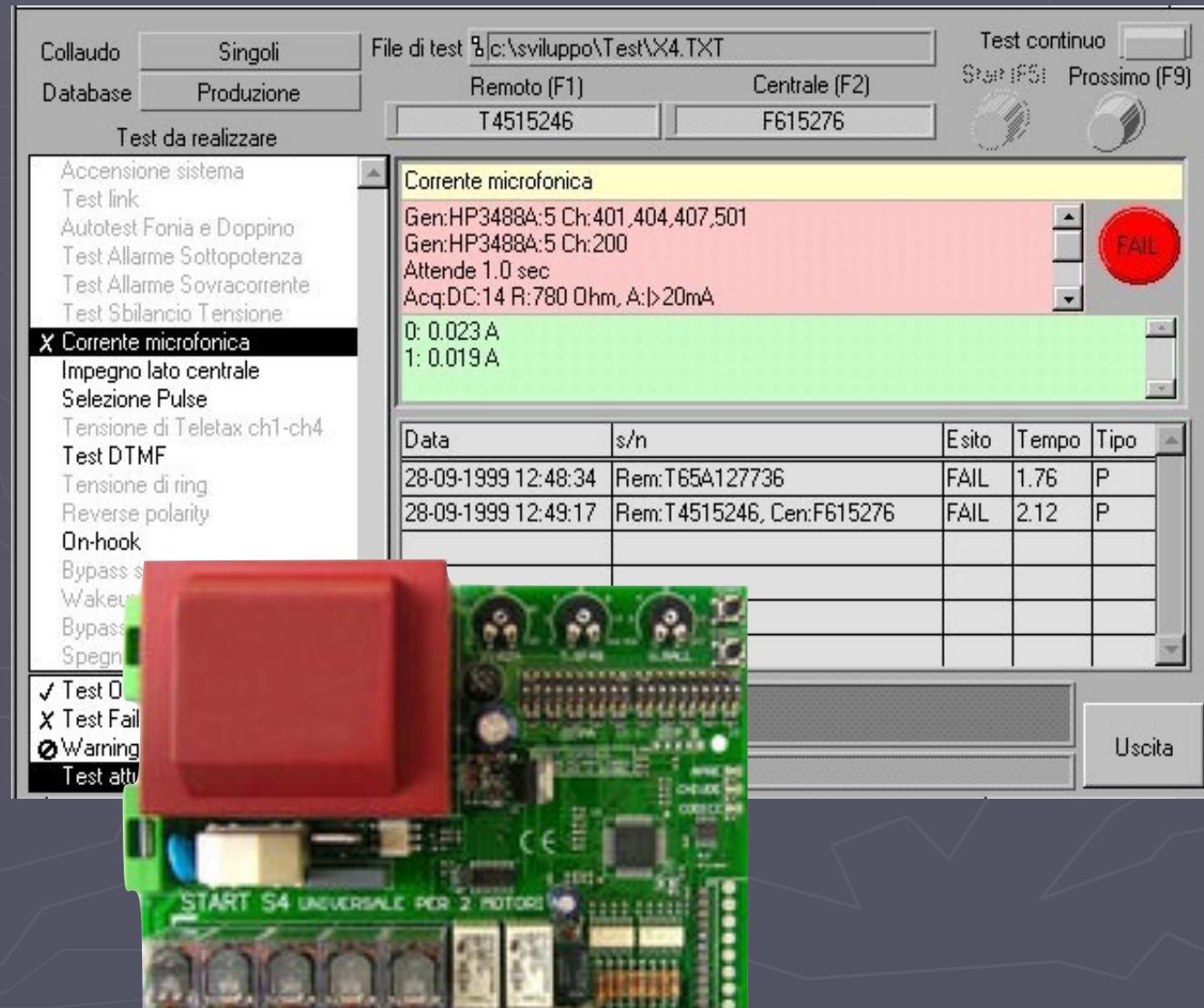
Avio Aero  
A GE Aviation Business

## NGV Fluxometry Test bench



# Test in a Text: user-programmable test procedure

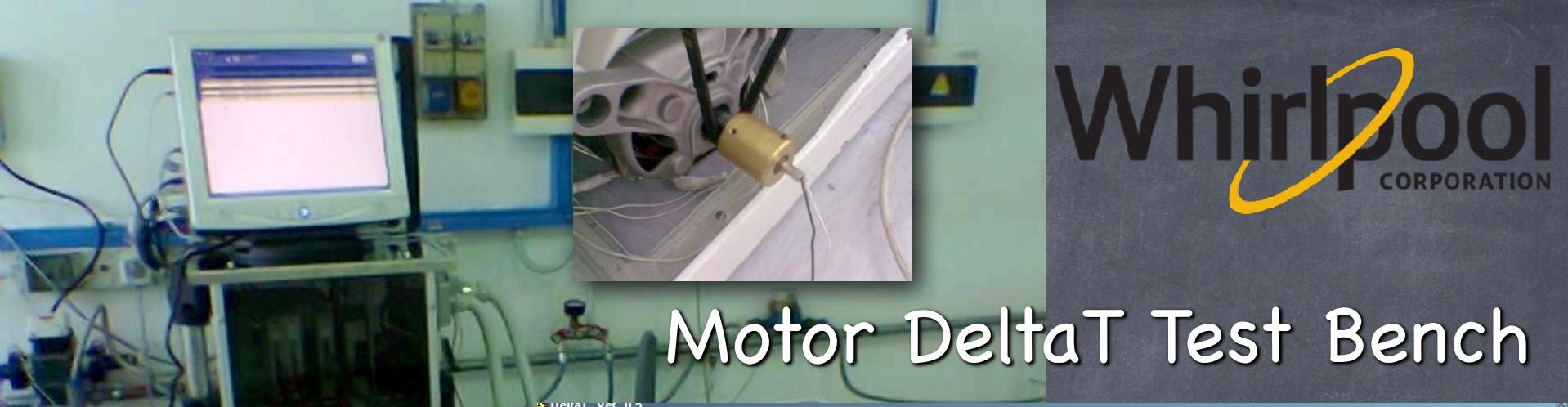
Test system to test voltages, currents, frequencies, etc. where the test programming is defined in a text file and the results are saved on a DB



# WASHTEST

Washing machine test  
according to EN-60456





# Motor DeltaT Test Bench



# Marconi Mobile

- ▶ Mobile phones test bench



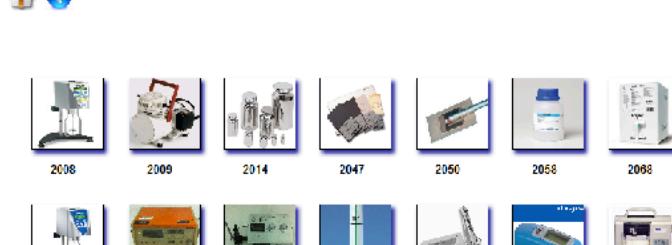
# e-Met



Metrology Caivano site



**Edificio: E Stanza: 1 Banco n°: 12**



### Scheda di controllo strumento

- Metrology under control
  - Charts printing
  - Maintenance & calibration planning
  - Email warnings

# e-Downtime



Analisi Rendimento e Downtime

PPG e - Downtime

Line or department: Resins department Start week: 01/01/2013

Start date: 01/01/2013 End date: 31/12/2013

Legend:

- MTZ 169.9166%
- RPHAK 0.1763 h 16489
- LOGIS ICA 180.2333%
- Effective hours available for the production 7100.0032/61
- Available hours not planned 7100.033464

44.79%  
45.1%  
1.14%  
0.71%  
0.00%

Logout Back Export to Excel Unconfirm DT

Copyright e-evoluzione srl 2013  
Version 1.0.0

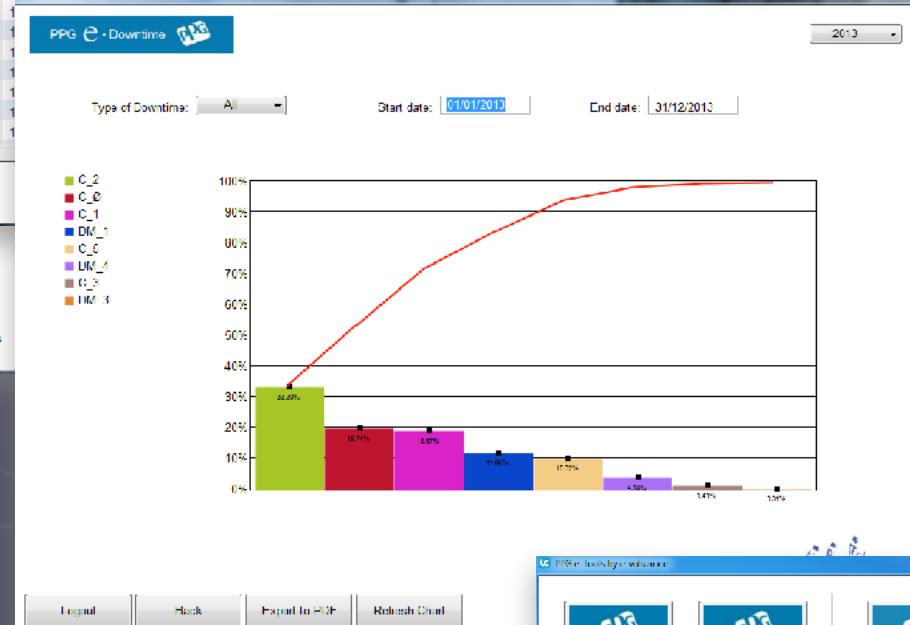
Analisi Rendimento e Downtime

PPG e - Downtime

2013

Line	Typology	Subject	Week	Start date/hour	End date/hour
C_2	LOGISTICA	STAZIONAMENTO PRIMI	1	02/01/2013 06:00	04/01/2013 16:16
C_1	LOGISTICA	STATO MATERIALE PRIME	1	03/01/2013 06:00	04/01/2013 08:20
C_5	REPARTO	DATI ITANK SA 1007	1	03/01/2013 22:30	04/01/2013 05:30
C_5	REPARTO	MANCANO ADDETTI	1	04/01/2013 19:30	05/01/2013 03:30
C_0	REPARTO	DI LUITORE INFA OCCUPATO	1	05/01/2013 08:00	05/01/2013 10:00
C_1	REPARTO	MANCANO ADDETTI	1	06/01/2013 08:20	06/01/2013 10:15
C_0	REPARTO	MANCANO ADDETTI	1	06/01/2013 18:00	06/01/2013 23:59
C_2	REPARTO	DI LUITORE LINEA OCCUPATO	2	07/01/2013 00:00	13/01/2013 23:59
C_0	REPARTO	MANCANO ADDETTI	2	07/01/2013 00:00	08/01/2013 10:10
C_1	REPARTO	MANCANO ADDETTI	2	08/01/2013 11:16	08/01/2013 21:16
C_0	RLPARTITO	MANCANO ADULTI	2	09/01/2013 16:00	09/01/2013 18:00
C_0	RLPARTITO	MANCANZA AUTOMOLAVAGNA	2	09/01/2013 22:00	10/01/2013 04:30
C_1	REPARTO	DI LUITORE LINEA OCCUPATO	2	10/01/2013 01:50	11/01/2013 16:30
C_5	REPARTO	MANCANO ADDETTI	2	10/01/2013 17:30	11/01/2013 04:30
C_5	MTZ	TRAMOCCIA TR-1002	2	11/01/2013 06:00	11/01/2013 15:20
C_1	MTZ	POMPE	2	11/01/2013 17:10	11/01/2013 19:55
C_2	REPARTO	MANCANO ADDETTI	2	11/01/2013 22:16	11/01/2013 23:30
C_0	REPARTO	MANCANO ADDETTI	2	11/01/2013 22:16	11/01/2013 23:30
C_1	REPARTO	DI LUITORE LINEA OCCUPATO	2	12/01/2013 00:00	12/01/2013 00:00
C_2	REPARTO	DI LUITORE LINEA OCCUPATO	2	12/01/2013 00:00	12/01/2013 00:00
C_0	REPARTO	MANCANO ADULTI	2	12/01/2013 00:00	12/01/2013 00:00
C_0	RLPARTITO	POSTIRALLONE_SA_1002	3	12/01/2013 00:00	12/01/2013 00:00
C_0	RLPARTITO	MANCANO ADULTI	3	12/01/2013 00:00	12/01/2013 00:00
C_2	REPARTO	MANCANO ADDETTI	3	12/01/2013 00:00	12/01/2013 00:00
C_5	REPARTO	MANCANO ADDETTI	3	12/01/2013 00:00	12/01/2013 00:00

- Downtime History
- Downtime Analysis
- Downtime impact on production
- Secure Remote DB



Logout Back Export to PDF Refresh Chart



e-evoluzione  
2013-2014 versione webclient  
v1.0.0

Create the Reporting Profile

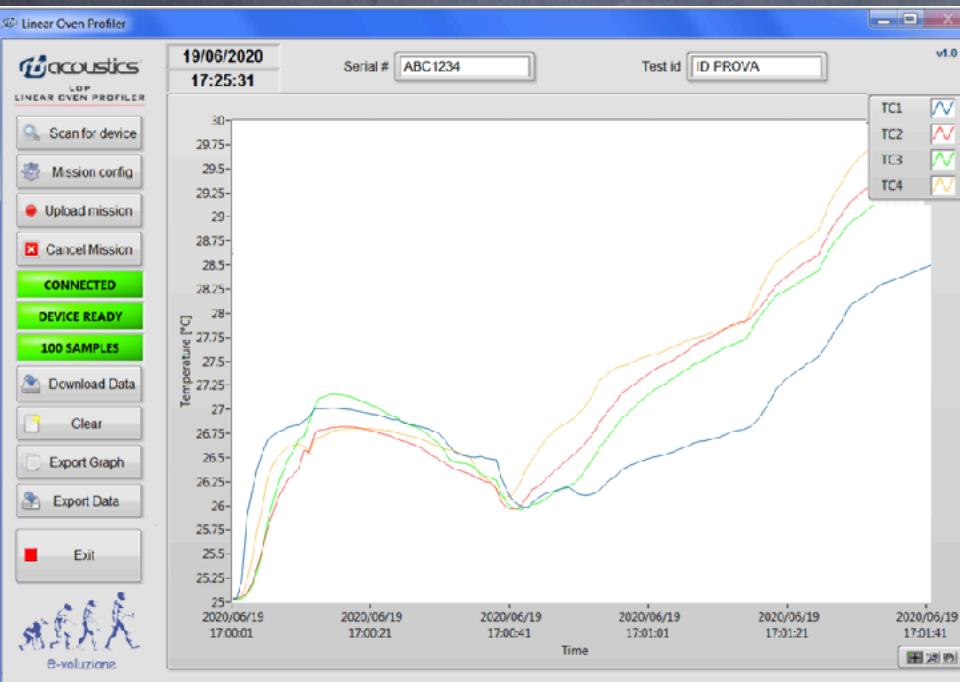
# Measurement & Control



# LOP

# Linear Oven Profiler

Measure internal temperature in  
linear ovens with a complete  
temperature profile output

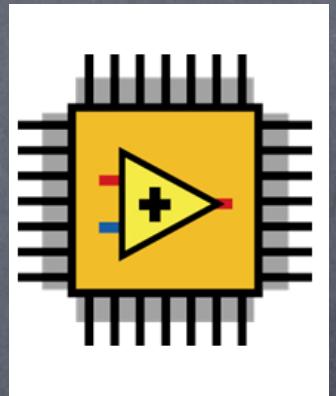


# Chattering RealTime Control



A. Abete

Real time control of  
CNC speed to reduce  
Chattering effects



# ERMAS



Realisation of a new additive  
machine to create 3D printer  
with deposition

# Whirlpool

## Timer Programming



Variant

- 461971074161
- 461971074171
- 461971075641
- 461971076241
- 461971079191
- 461971079201
- 461971079211
- 461971079212
- 461971081171
- 461971081521**
- 461971081781
- 461971081791
- 461971081792
- 461971082061
- 461971087961
- 461974480041
- 461974480051
- 461974480061
- 461974480071
- 461974480081
- 461974480091
- 461974
- 461974
- 461974
- 461974
- 4619

da programmare      Timer programmati      da fare

1      0      0

**8 soluzioni**

Timer  
12NC TSW

Operazioni da effettuare

- attesa tre secondi
- scrive il file variant nella EPROM
- verifica 1 EPROM
- scrive il codice del variant
- verifica il codice del variant
- scrive dimensione vasca**
- verifica dimensione vasca
- scrive il dato di conferma programmazione
- controllo conferma programmazione

Timers

**Gamma**  
**AlphaInvensys**  
**Omega**  
**AlphaElbi**  
**SC1**

Bangha etichetta

Esporta

A photograph showing a worker in a dark shirt working at a workstation in a factory setting, surrounded by equipment and blue crates.

# Quality Control

# Cofren-Wabtec

Laser Vision System  
Dimensional control  
100% in line



10:20:24

Interfaccia Utente | Misura | Manutenzione | State Profilometri | 1 2 | Attesa Pezzo | Ultimo Pezzo OK | e-evoluzione.it | www.e-evoluzione.it | Copyright 2011-2022 | All Rights Reserved Worldwide | STOP | v3.0.0

**3D Reconstruction**

Lato Bianco Lato Rosso

ControlCode All

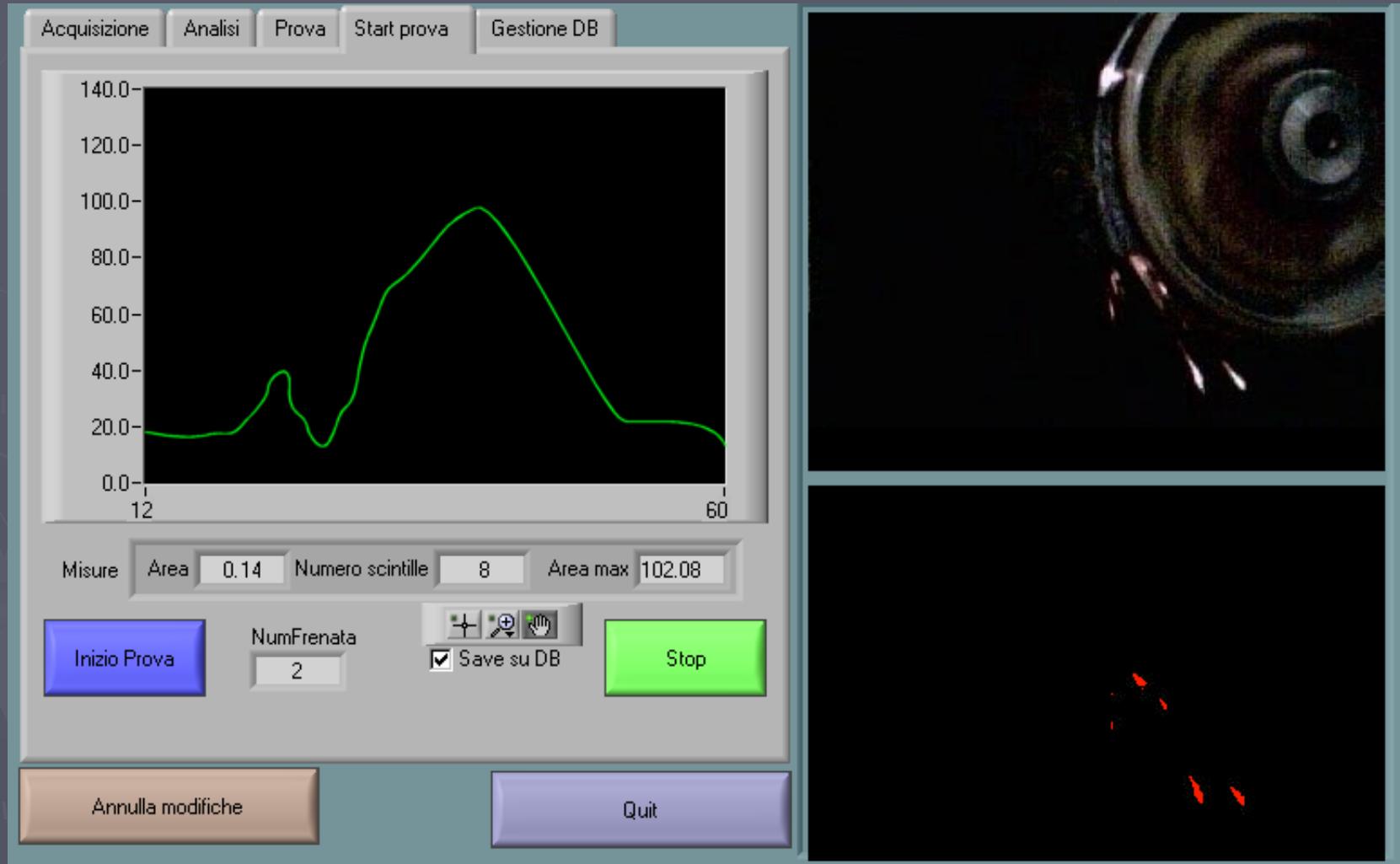
**Cofren S.r.l.**  
A Wabtec Subsidiary

e-evoluzione.it

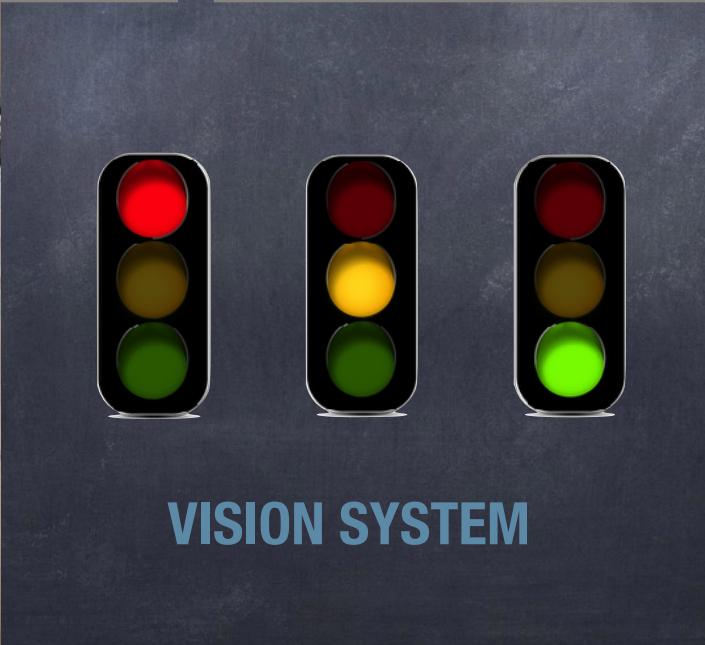
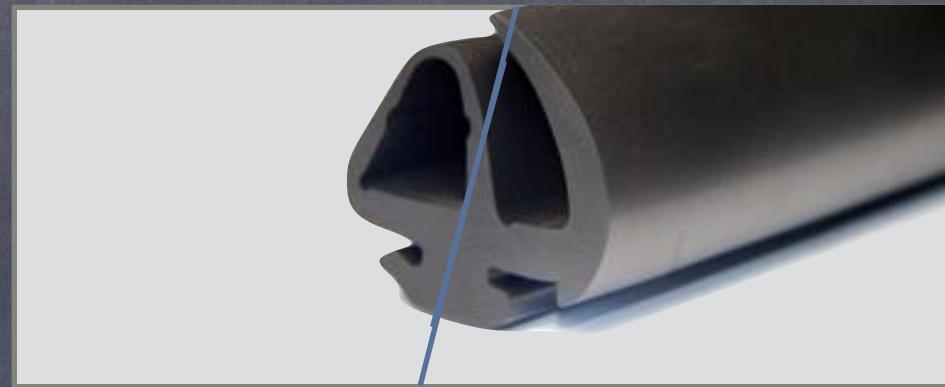
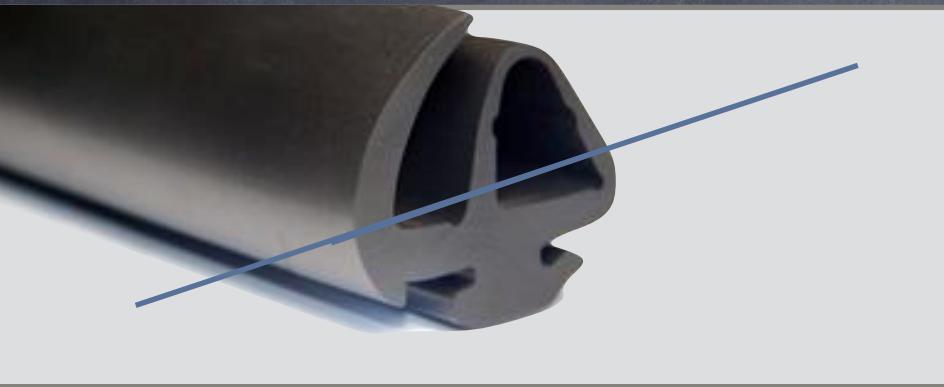
# Train wheel brakes sparking test



**Wabtec**



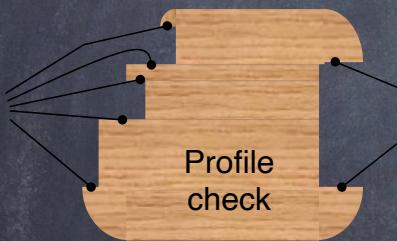
# ATG - Extruded plastics Quality Control



# Prosit – Wood Quality



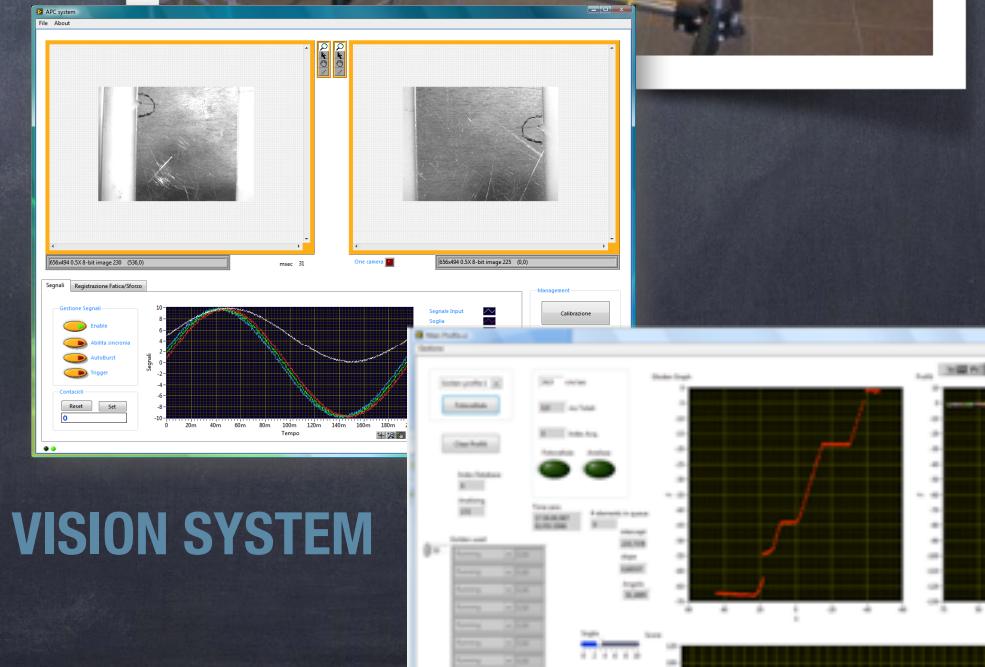
Defects



Profile



Color



VISION SYSTEM

# Whirlpool

CORPORATION

## Quality Control



Postazione: 1

Riparatore:

Turbo:

Modello:



10/01/2005 14.33.05

Log utente  
Log off  
Contattare

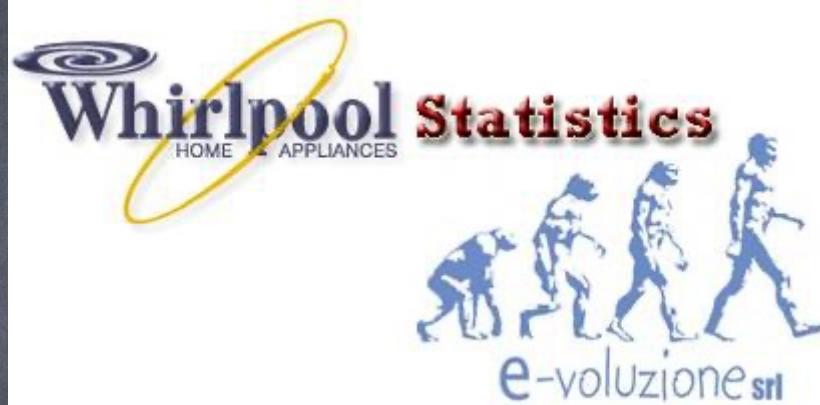
Seleziona componenti		Seleziona componenti		
Pugliese Simone	Paradisi Nicola	130	226	622
Dizio. Ciao.		mollone vasca	boccola piedino	distanziale perno staffaggio
		34	36	710
		MAL MONTATO/ INSERITO	MANCA	perno staffaggio
		34	36	719
		MAL MONTATO/ INSERITO	MANCA	Pannelli antirumore
		34	36	905
		MAL MONTATO/ INSERITO	MANCA	traversa mobile
		34	36	201
		MAL MONTATO/ INSERITO	MANCA	mobile Assiemaggio
		34	36	233
		MAL MONTATO/ INSERITO	MANCA	schiendale
		34	36	203
		MAL MONTATO/ INSERITO	MANCA	ammortizzatore
		34	36	234
		MAL MONTATO/ INSERITO	MANCA	sella mollone
		34	36	222
		MAL MONTATO/ INSERITO	MANCA	fastex fermo ammortizzatore
		34	36	621
		MAL MONTATO/ INSERITO	MANCA	staffa imballo
		34	36	Annula
		MAL MONTATO/ INSERITO	MANCA	< Precedenti

Digitare dae demanda

0 complessivo

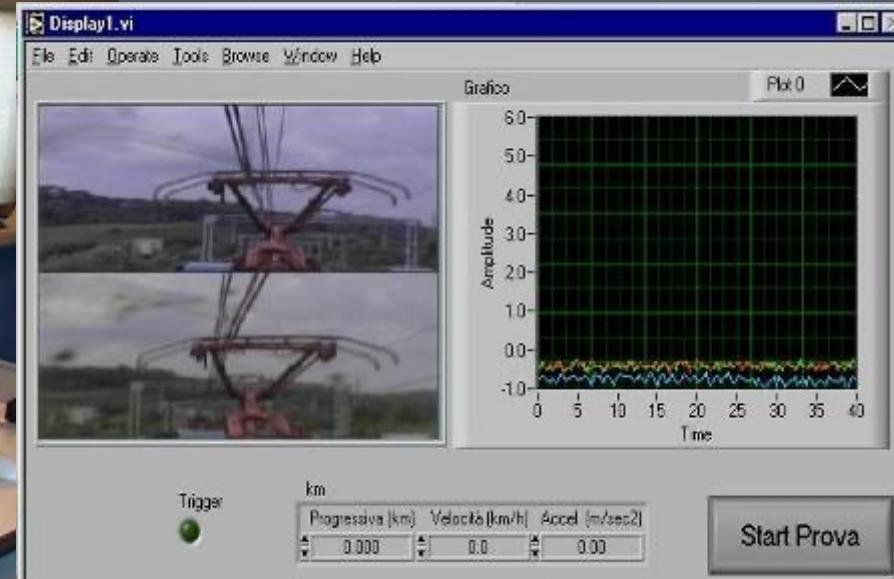
Area Componente Intesa

Area	Componente	Intesa	Q.tà	FOR	Q.tà	FOR	Q.tà	FOR	Q.tà	FOR
Assiemaggio			201	1,99%	301	1,99%	201	1,99%		
Colleudo			117	1,16%	117	1,16%	117	1,16%		
Lavatrice			117	1,16%	117	1,16%	117	1,16%		
Totali			416	4,12%	416	4,12%	416	4,12%		
I.P.U. 1			1.376	13,62%	1.376	13,62%	1.376	13,62%		
I.P.U. 4			1.257	12,45%	1.257	12,45%	1.257	12,45%		
I.P.U. 5			3.528	34,93%	3.530	34,95%	3.530	34,95%		
I.P.U. 6			241	2,29%	241	2,39%	241	2,29%		
I.P.U. 8			3.391	33,57%	3.391	33,57%	3.391	33,57%		
Washing Unit			10.527	104,23%	10.529	104,25%	10.529	104,25%		
Totali complessivo										

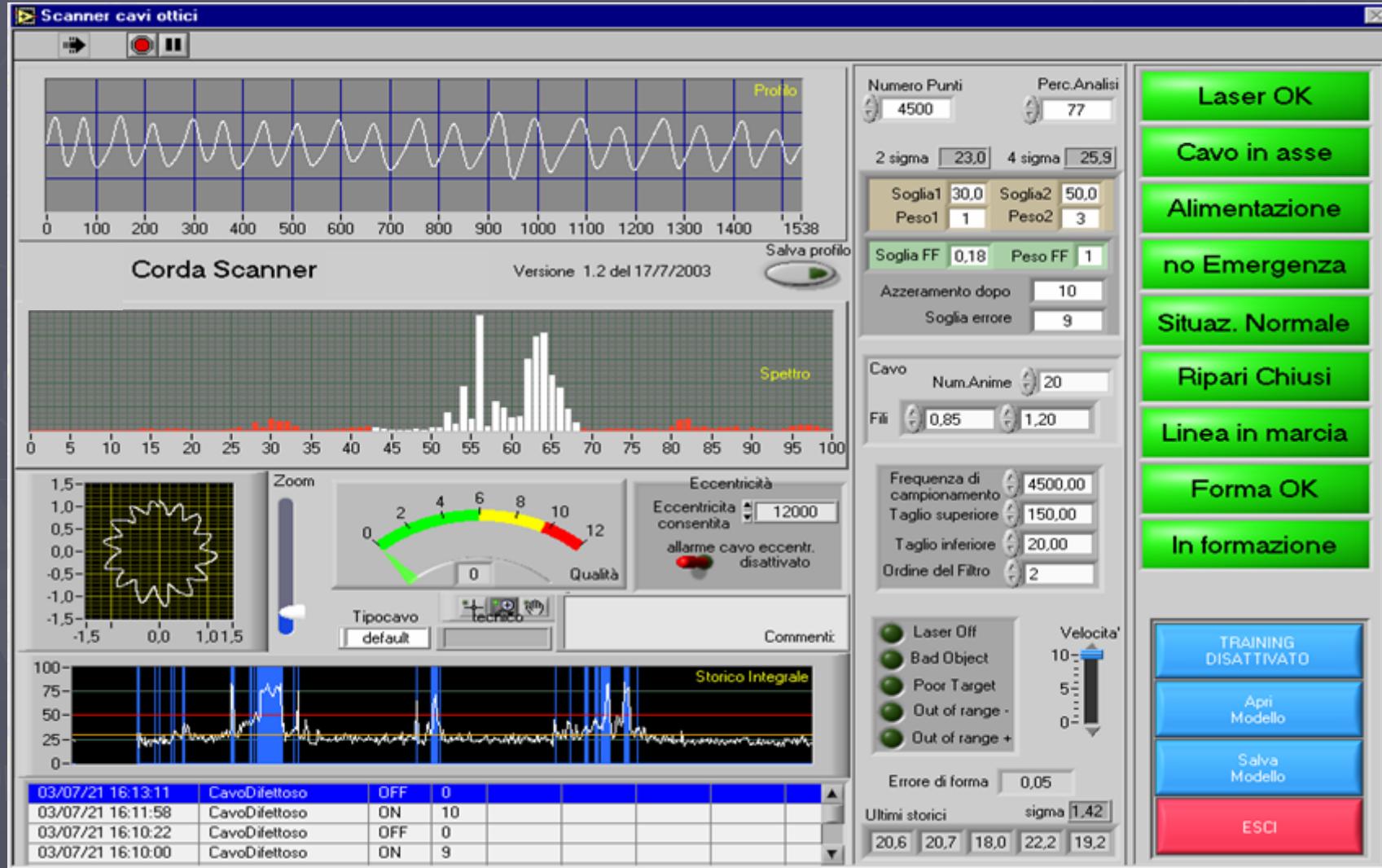


- System to measure production defects
- Production statistics
- New components or new defects management

# Pantographs

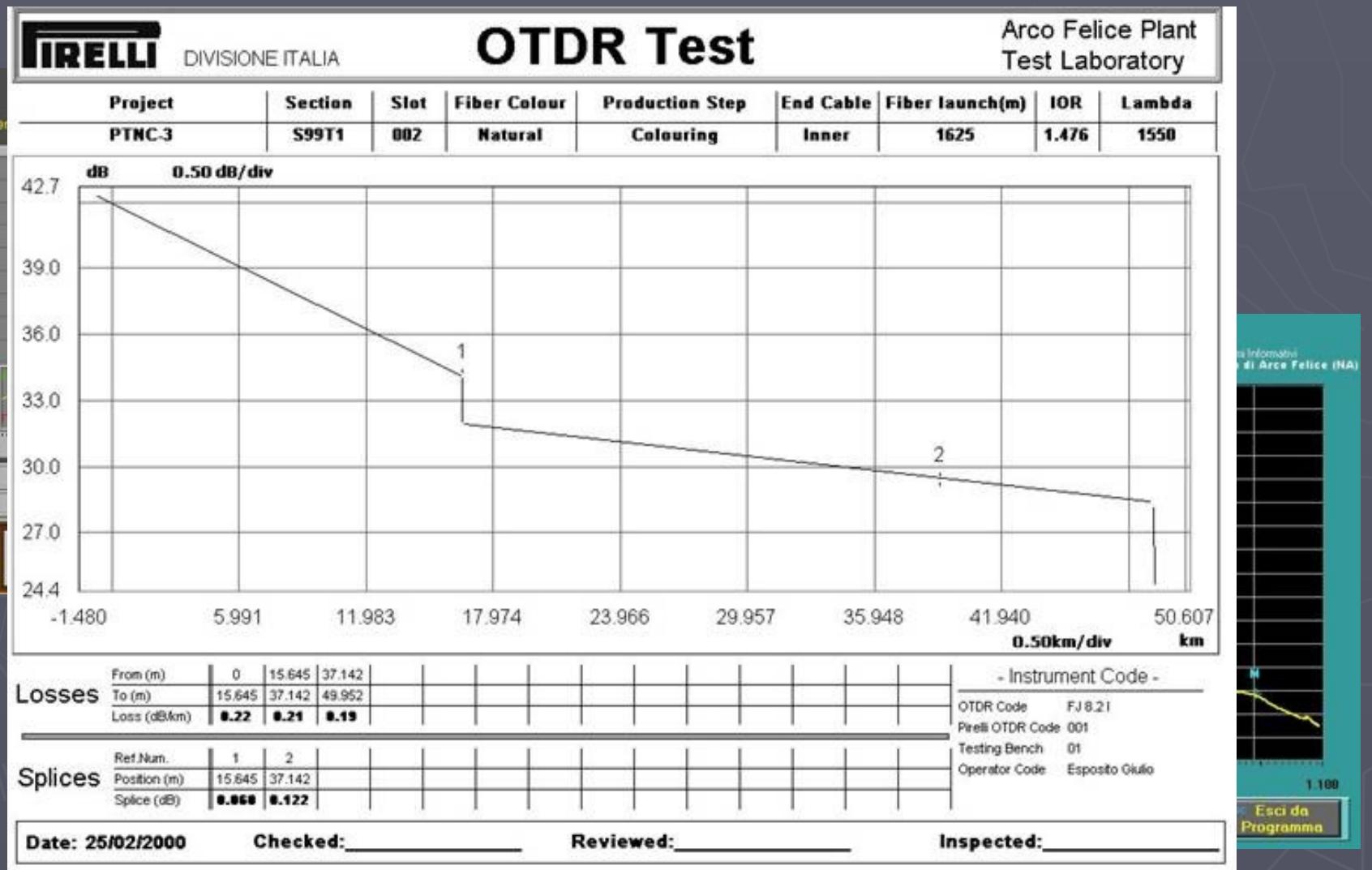


# Optical cables Rope test

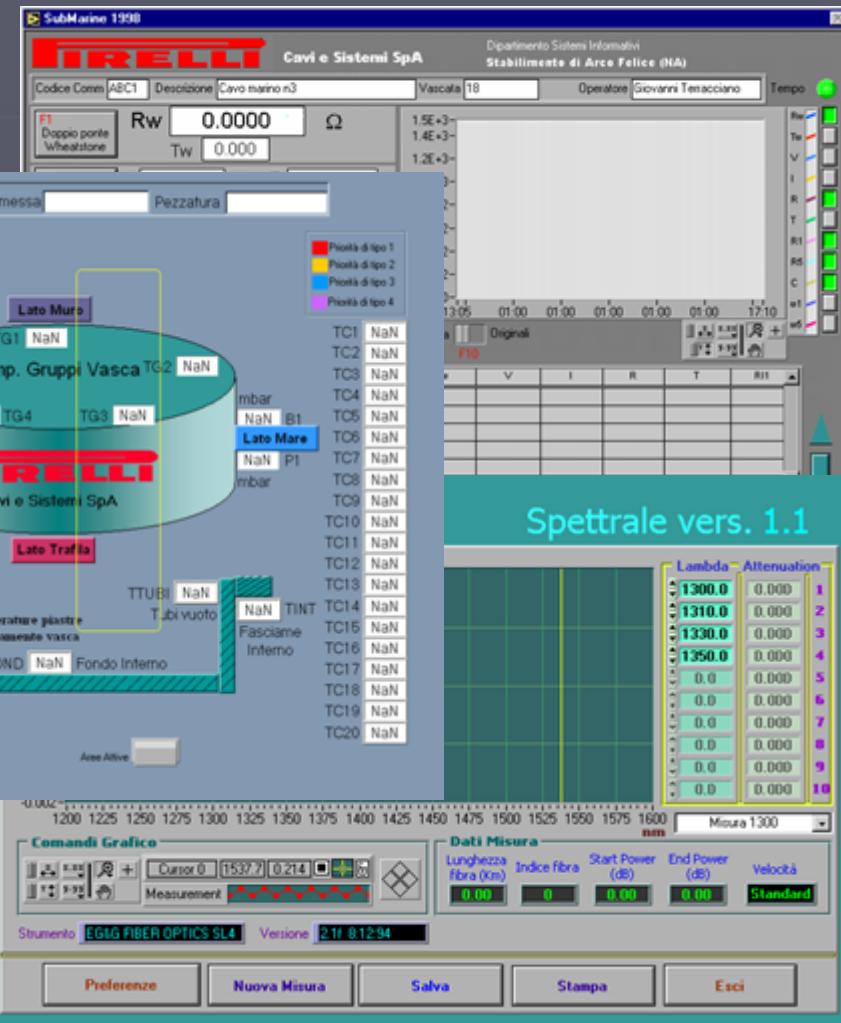
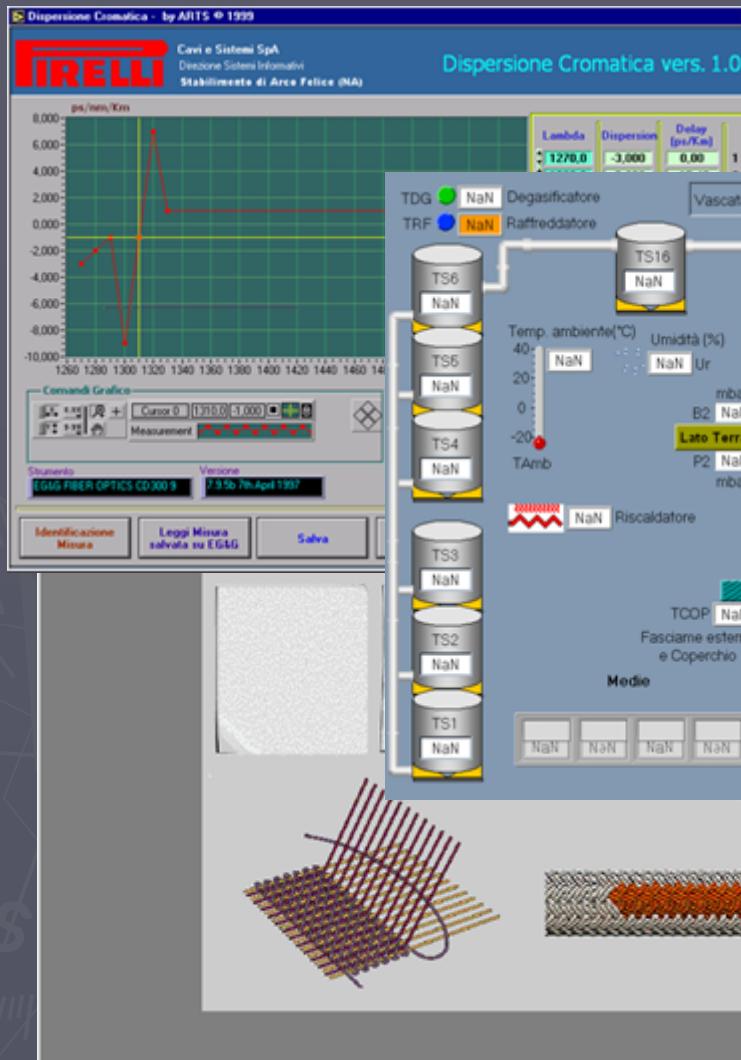


# Optical Time Domain Reflectometry

## OTDR



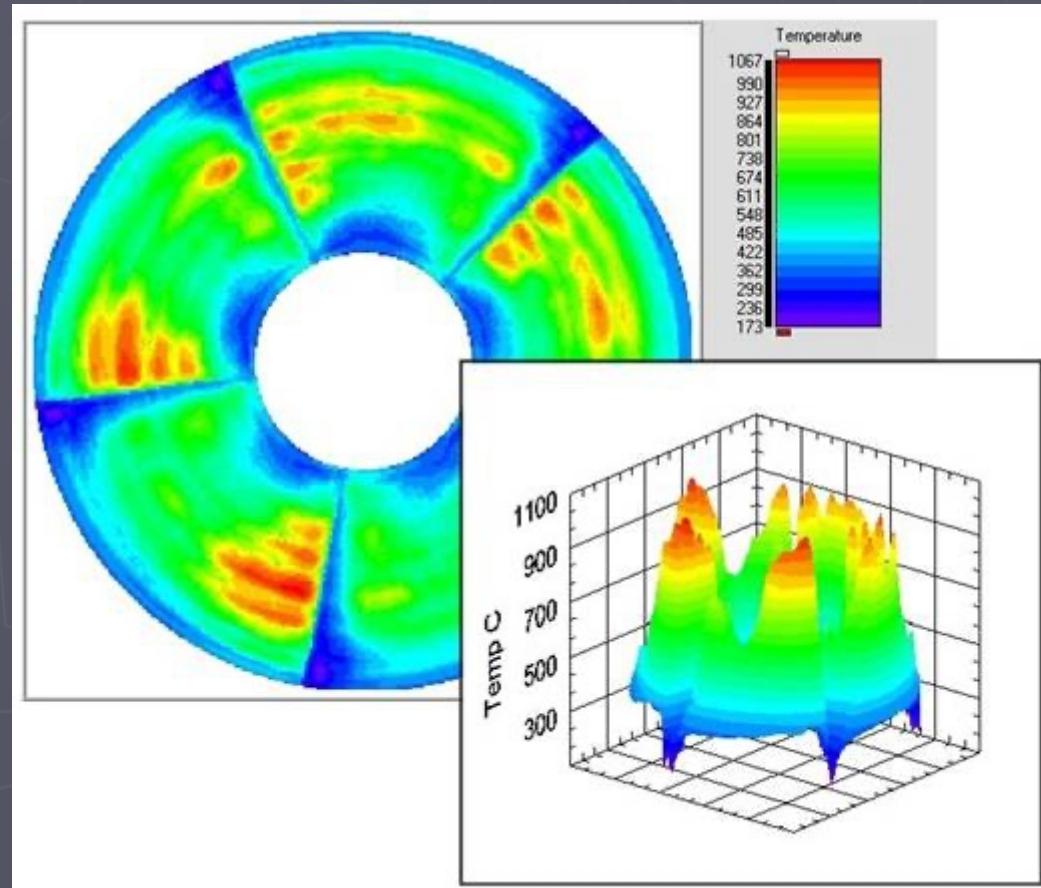
# Various Pirelli Systems



# Thermowheel: Termographic images representation



THERMOWHEEL system acquires thermographic images from linear thermal imaging cameras and shows the exact positioning of measured points, both in the case of disk brakes and wheels measurements



# Machinery

# ITAG

## Maria: Folding Machine

- Innovative MMI
- Linux-based
- Touch Screen



# ITAG

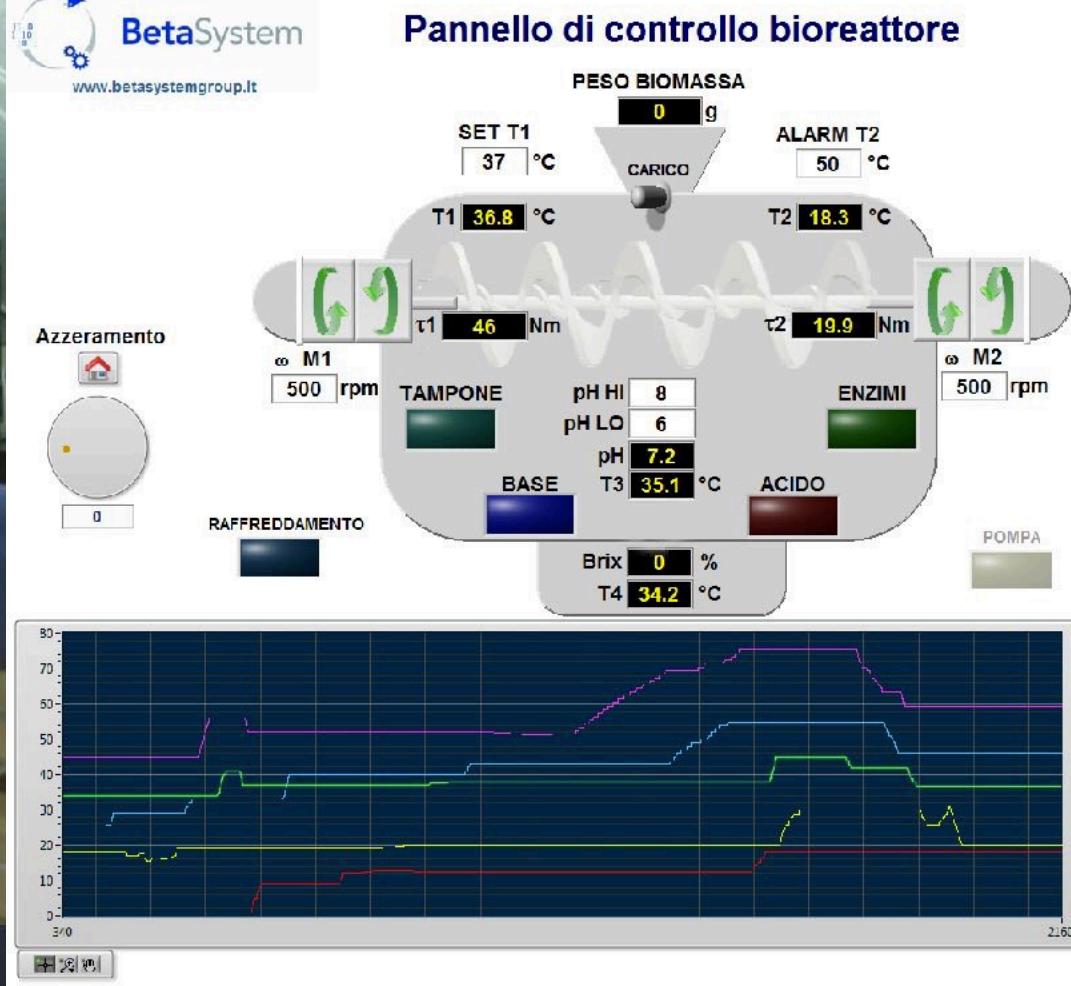
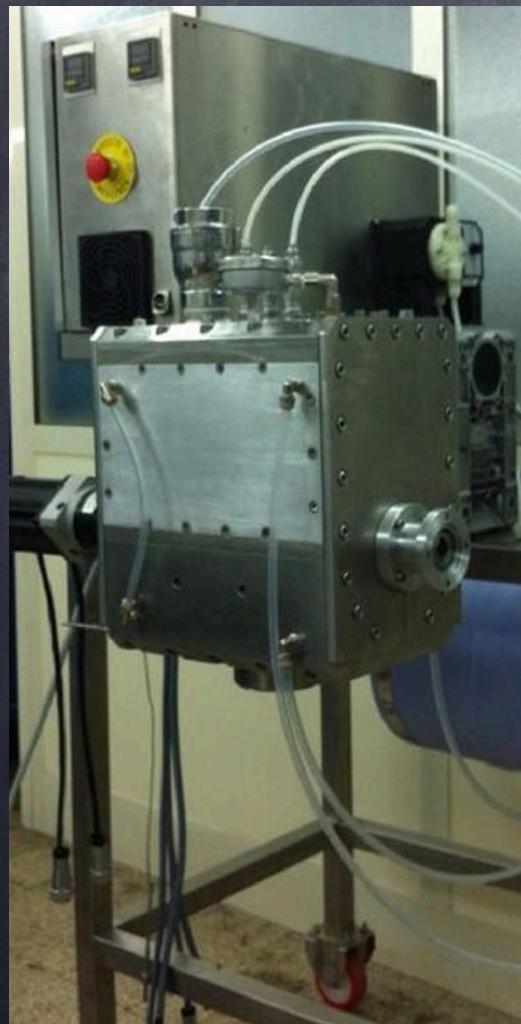
## Cassandra:

### Automatic recognition



# ENEA

## Reactor control



07/11/2013  
12:10:49

Selezione Setup

Gestione Setup

Arresta Setup

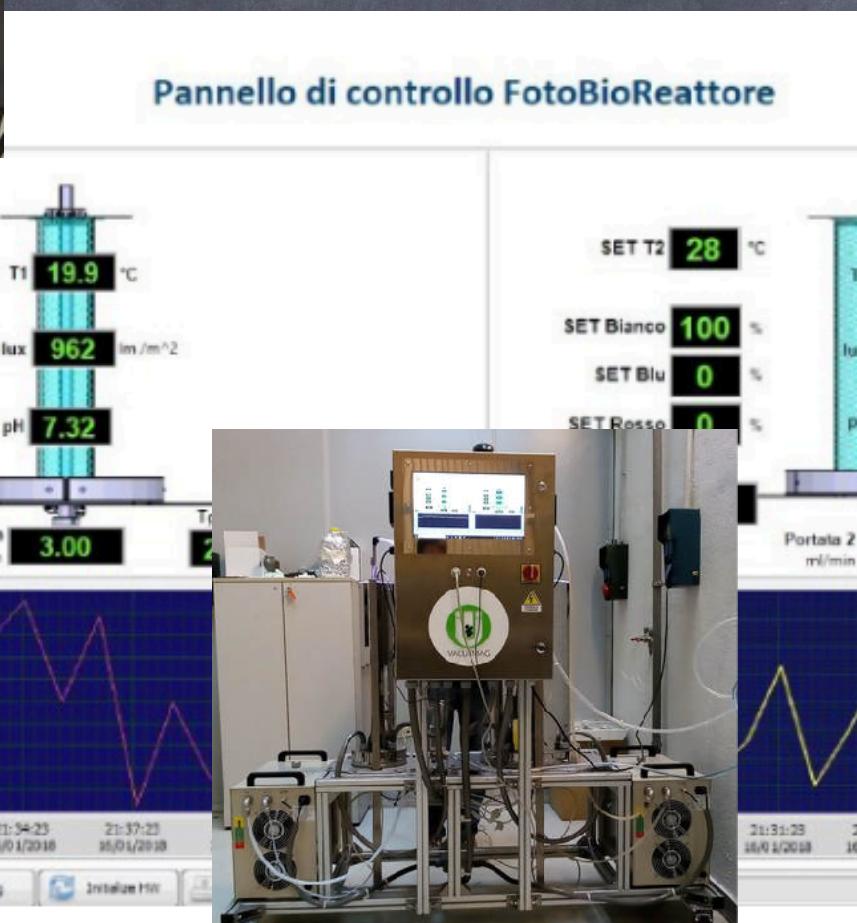
Avvia Setup

Sblocca Comandi

EXIT

# ENEA

## Photo-Bio-Reactor



# Patents

# EN ISO 20471

## ► High visibility clothing Vision System

The image displays a comprehensive system for inspecting high-visibility clothing. On the left, there are photographs of various high-visibility garments (jackets, vests, and trousers) and a screenshot of the 'HVCU' software interface. The software shows parameters for a 'Capo' (garment), including color selection (Yellow, Class F1), ID (2095244), and name (AGNOLITTO MARIO). It also displays analysis results for 'Colore 1' and 'Colore 2' with reflectance values (0.32, 0.29) and R/T values (0.05, 0.05). A 'STOP' button is visible. Below the software is a schematic diagram of the optical system, showing light paths from a 'Scanner' through lenses and mirrors to a 'Tunnel' and a 'Capo' (garment). The diagram includes labels for 'Photo', 'CP4', 'PP5', 'CP5', 'PP3', 'CP3', 'PP2', 'CP2', 'Scansico', and 'Gammel Leader'. On the right, a color calibration chart shows a gradient from blue to red with a color bar at the top.

**HVCU**  
e-voluzione S1.2007-2018  
v5.0 del 09/05/2018

**PARAMETRI CAPO**

Colore: Giallo Classe: F1

ID Gruccia: 2095244

Mimicola: 3000352007

Nome: AGNOLITTO MARIO

Logia Capo: altro

Manuale: OFF

**ANALISI**

Qualità: Colore 1: 0.32 Colore 2: 0.29

R/T: 0.05 R/T: 0.05

Colore 1: 0.32 Colore 2: 0.29

R/T: 0.05 R/T: 0.05

**SINOTTICO**

Photo

CP4

PP5

CP5

PP3

CP3

PP2

CP2

Scansico

Tunnel

Distanza Capo: NESSUNA

**Capo**

Gammel Leader

Modo Operativo: MANUTENZIONE

STOP

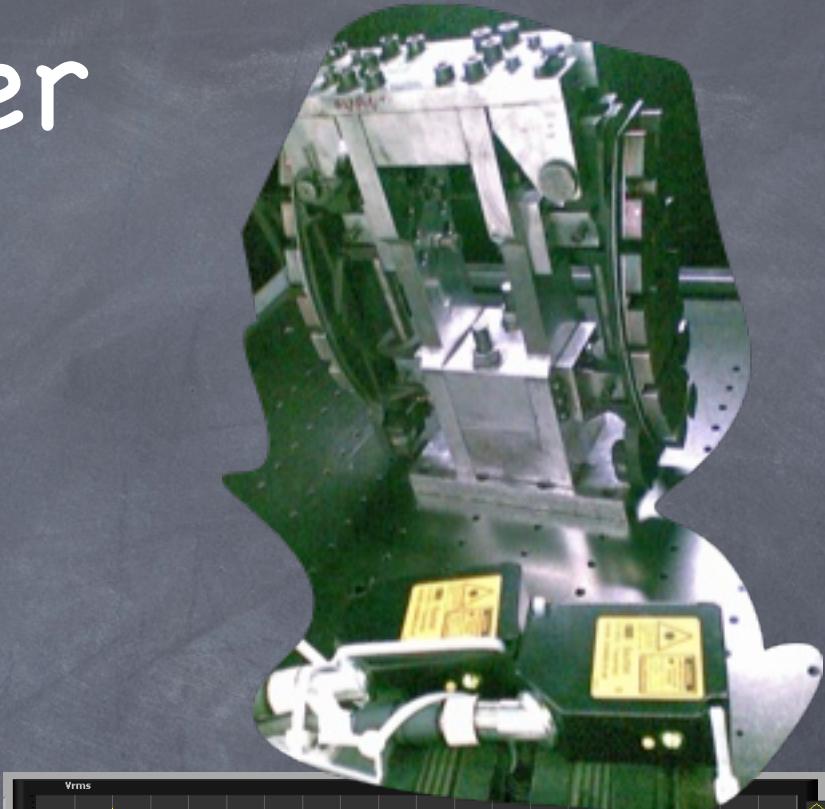
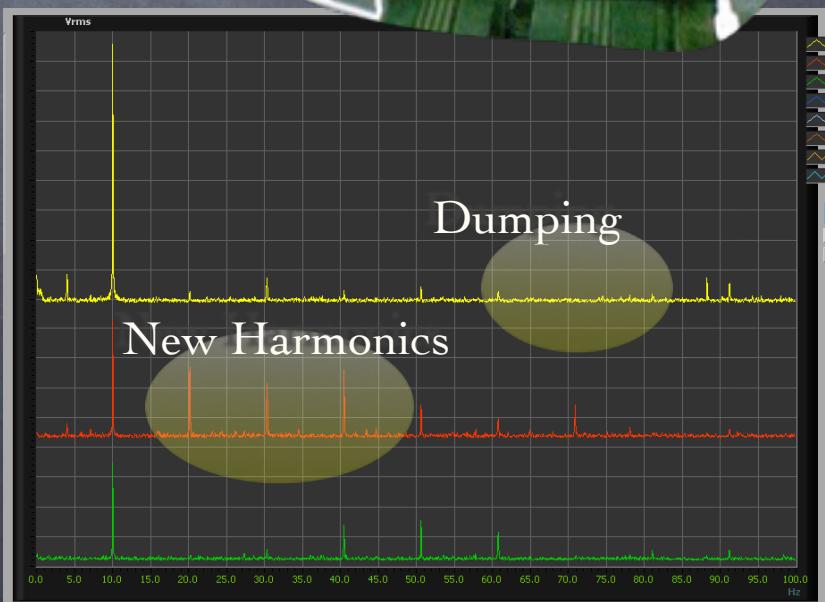
International Patent

By ADP Srl - Consorzio di Istruzioni per la Vendita e la Difesa dell'Industria Italiana - Ver. 1.0

# Laser Vibrometer

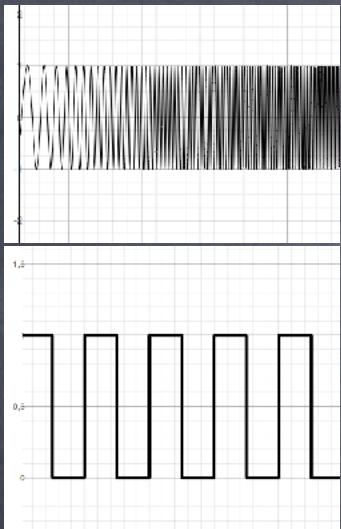


Italian Patent 0001369738

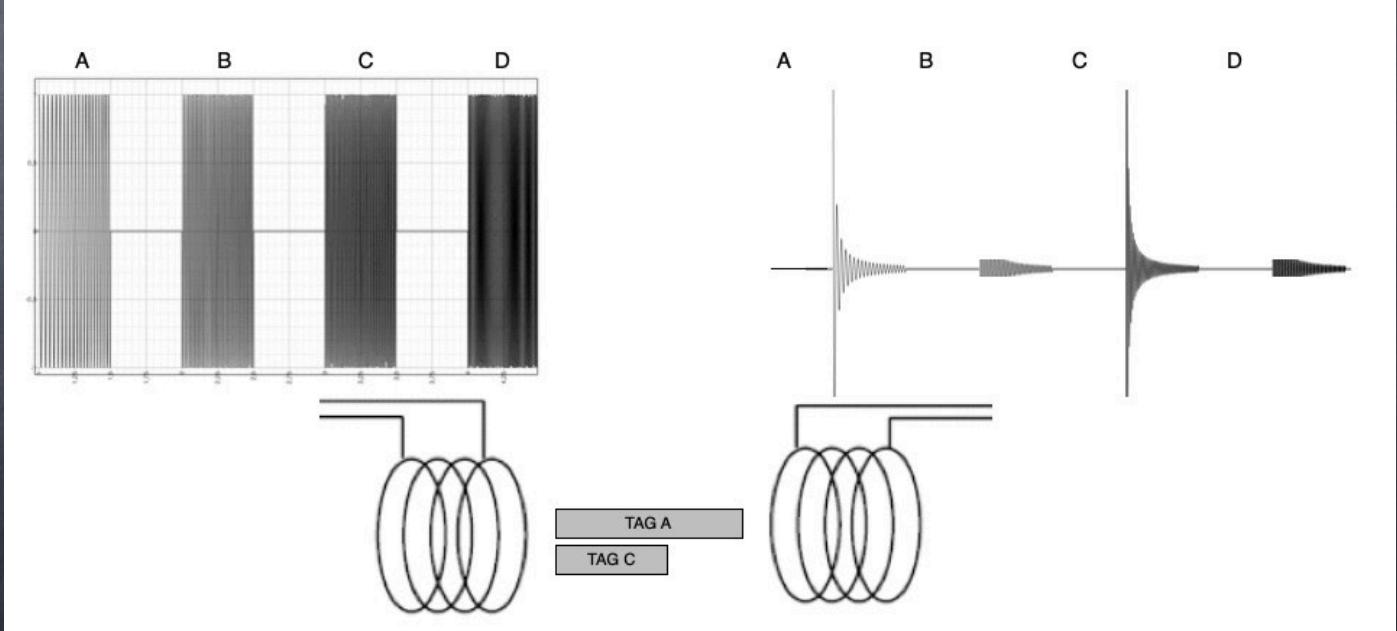
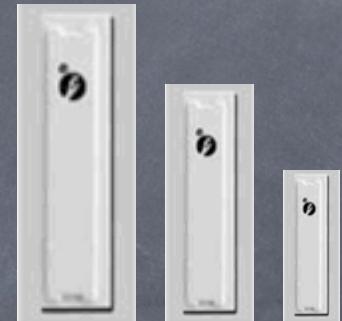
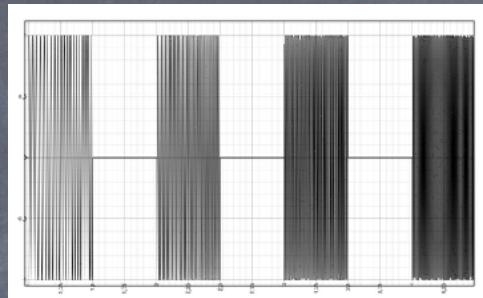


# Magnetostriictive tags

Italian Patent 0001398170



X

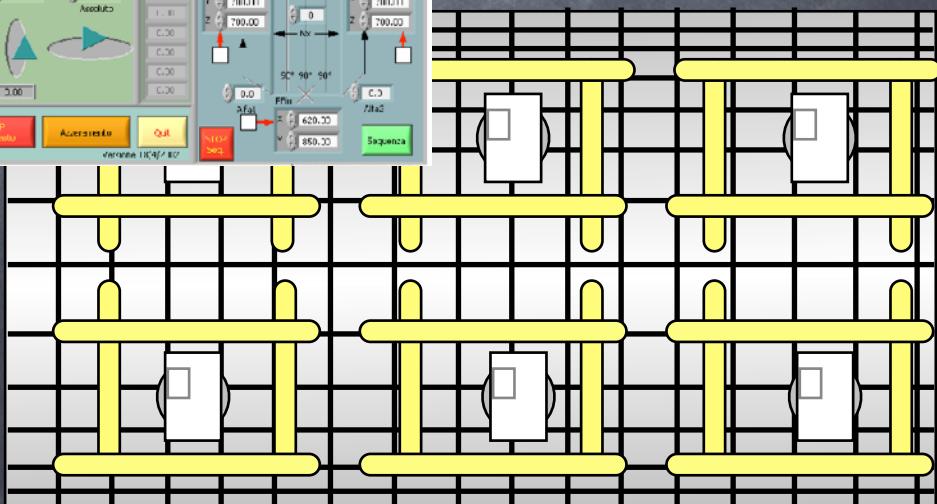
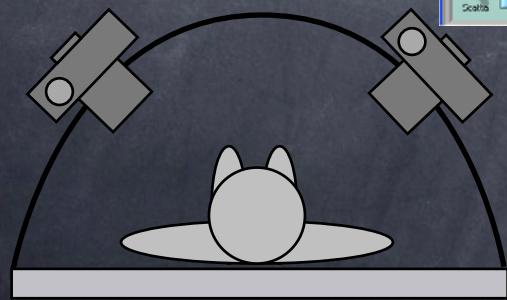
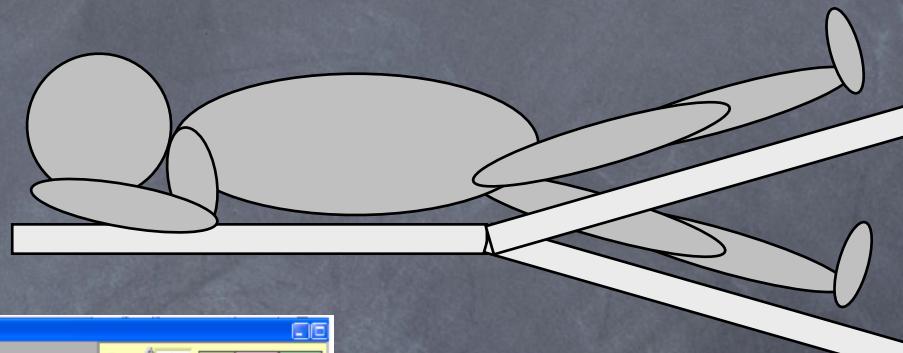
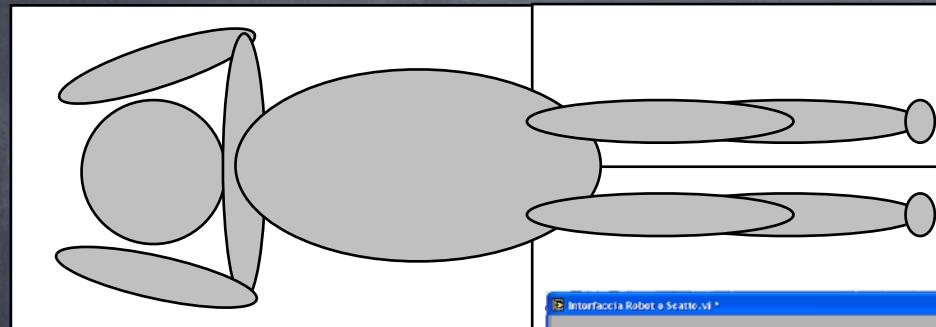


WITH

**promete**

# TotalBody Acq.System

Italian Patent 0001397636



# Button Fixing Device

World Patent 0001397636

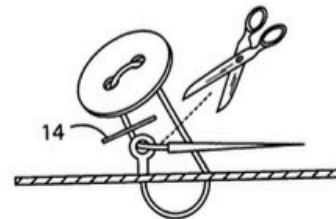
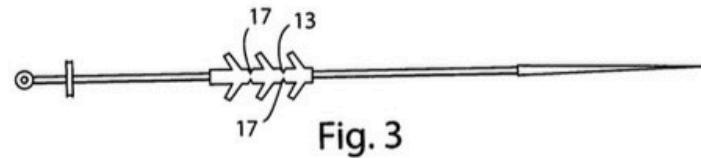
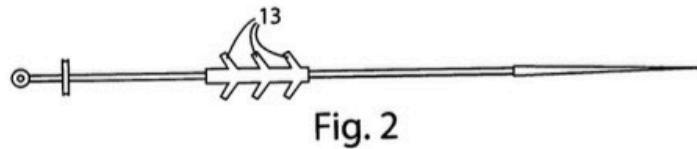
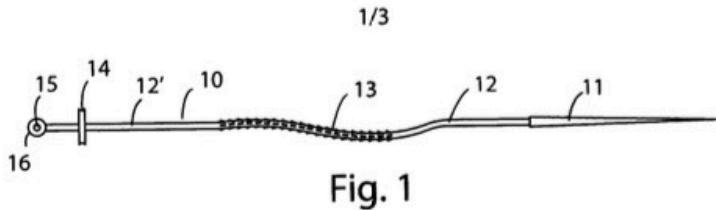
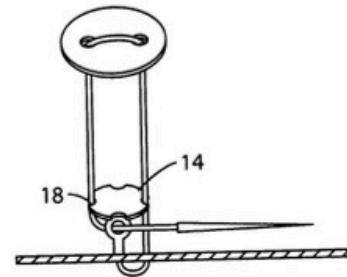
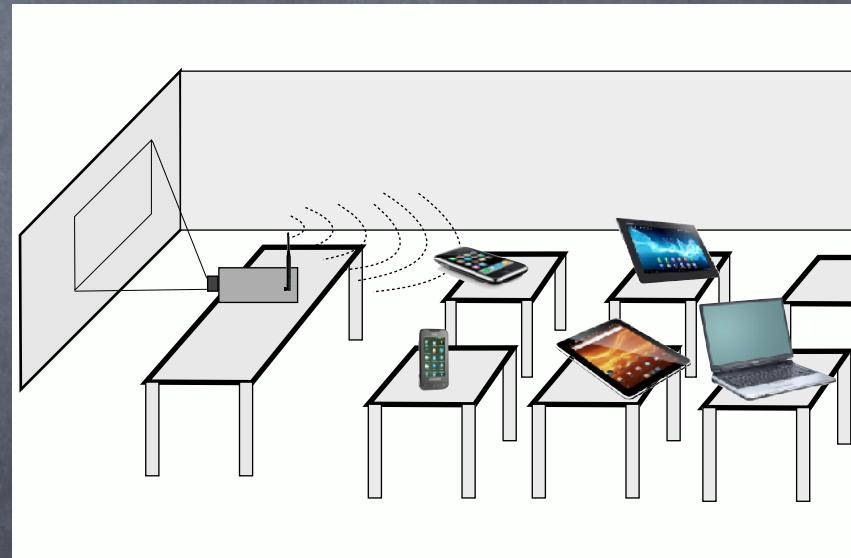


Fig. 4



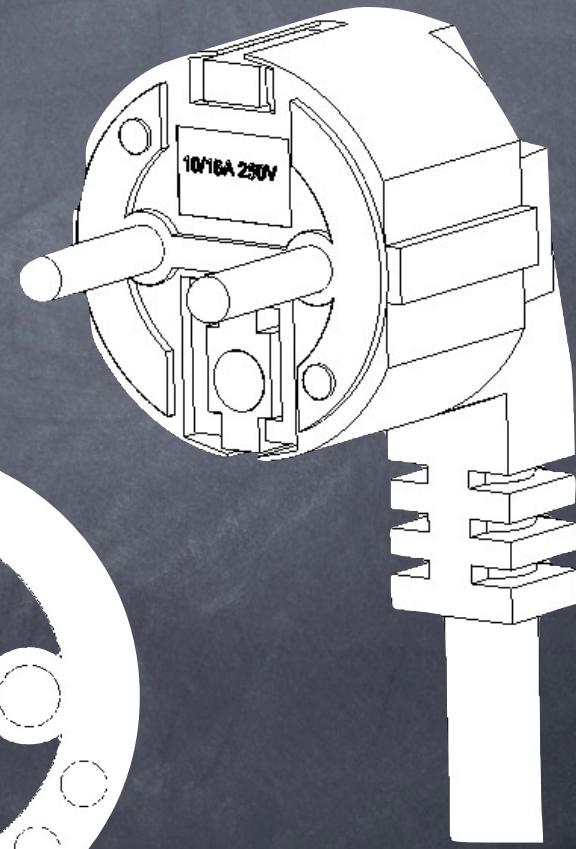
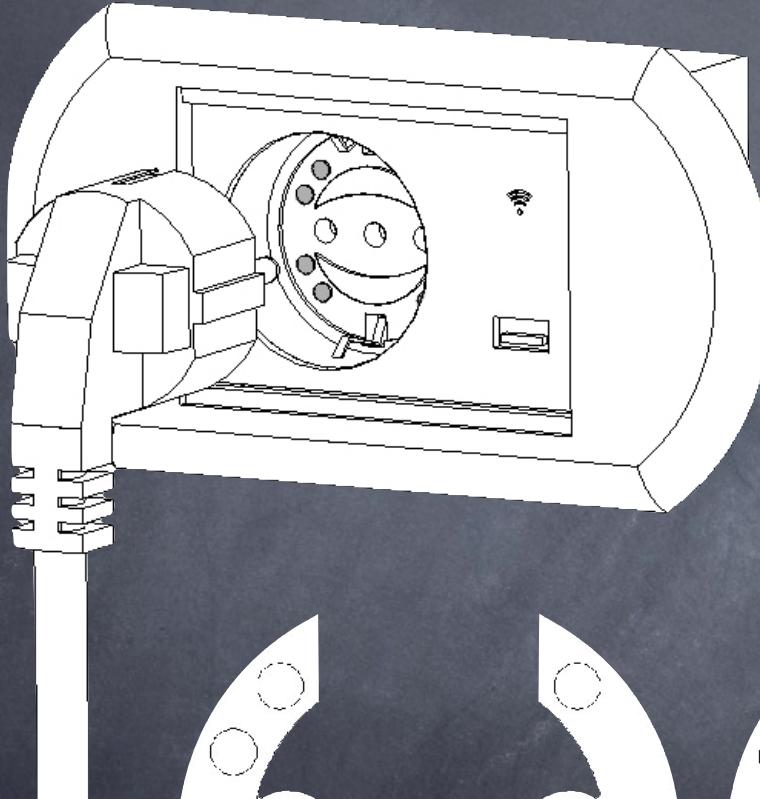
# Didactic Projector

Italian Patent 0001422138

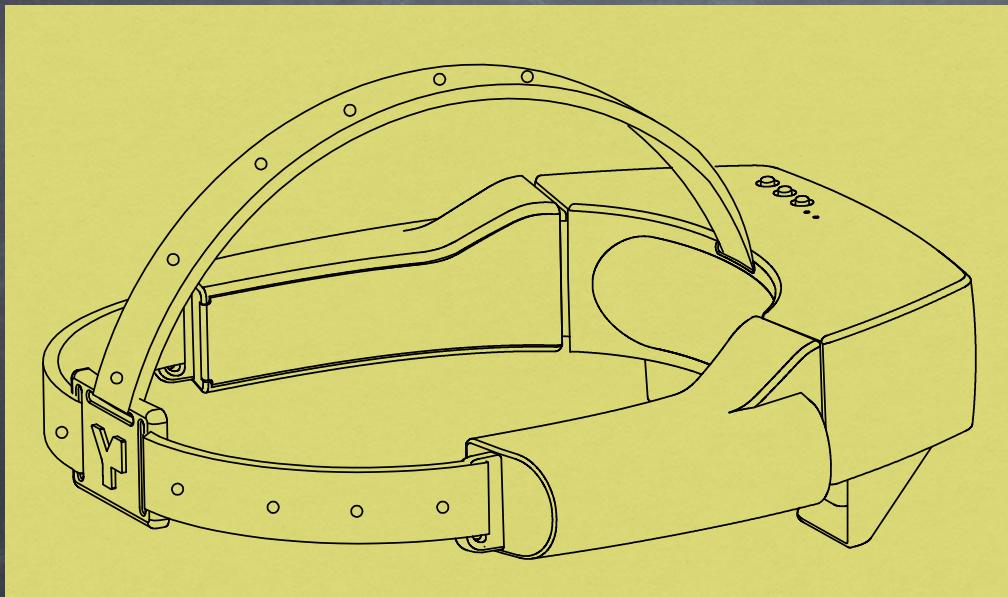


# Load identification System

Italian Patent 0001426198

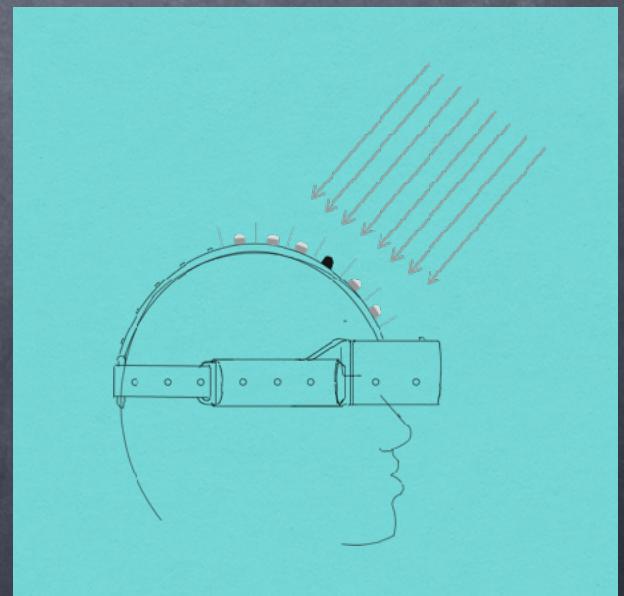


# Main light identification for AR systems



Y Q U B I Q U O

Italian Patent  
102020000020302



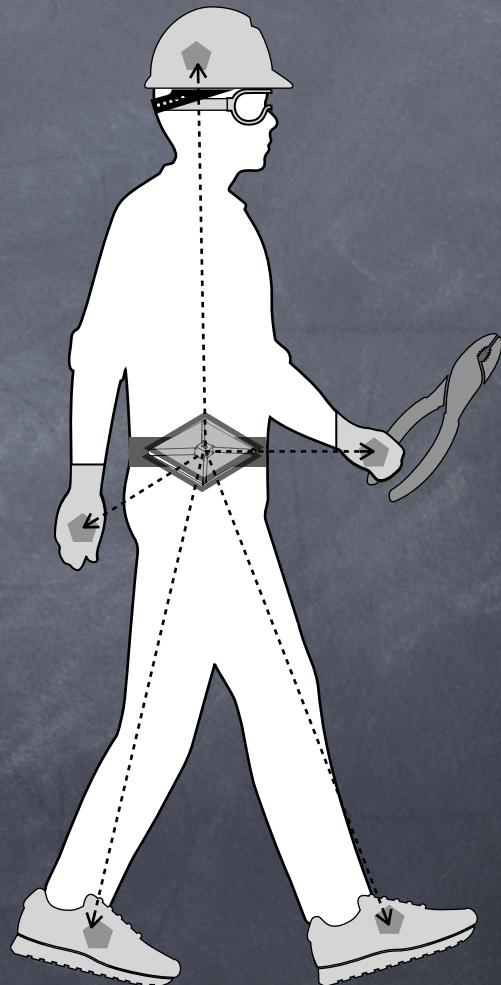
# PPE Check



Problem:

Control the presence and position of Personal Protective Equipments (PPE) for a worker to certify the application of Safety

Patent  
102021000012086

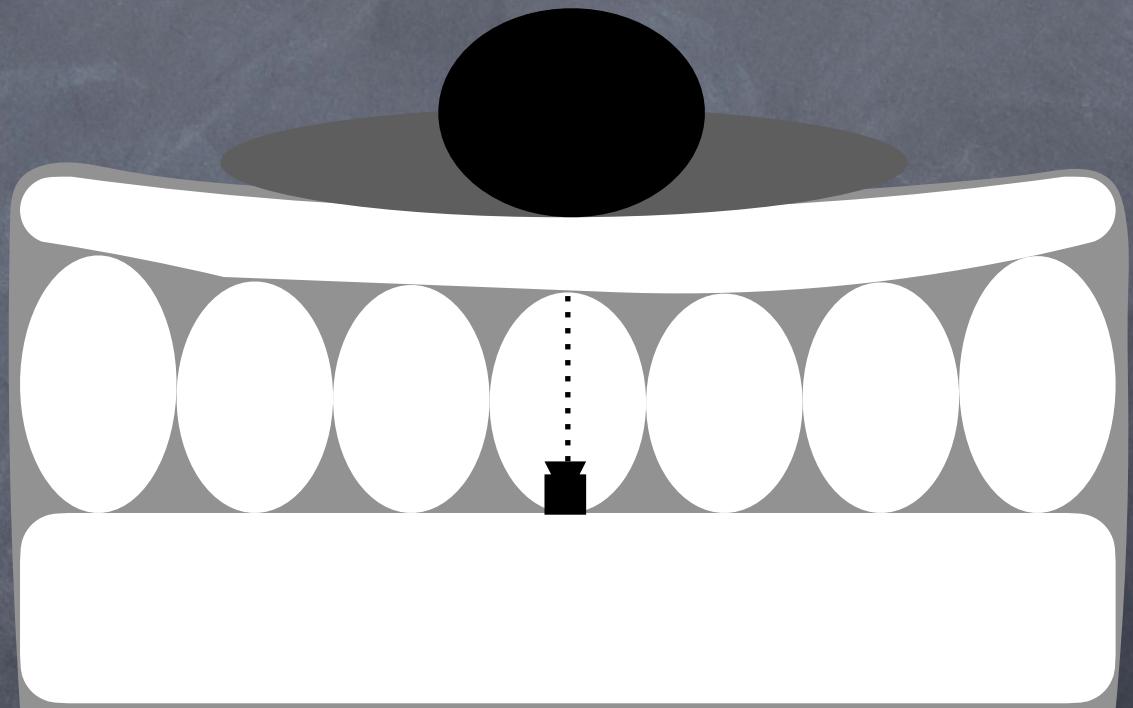


# Mattress Usury

Italian Patent  
102021000020912

FOR

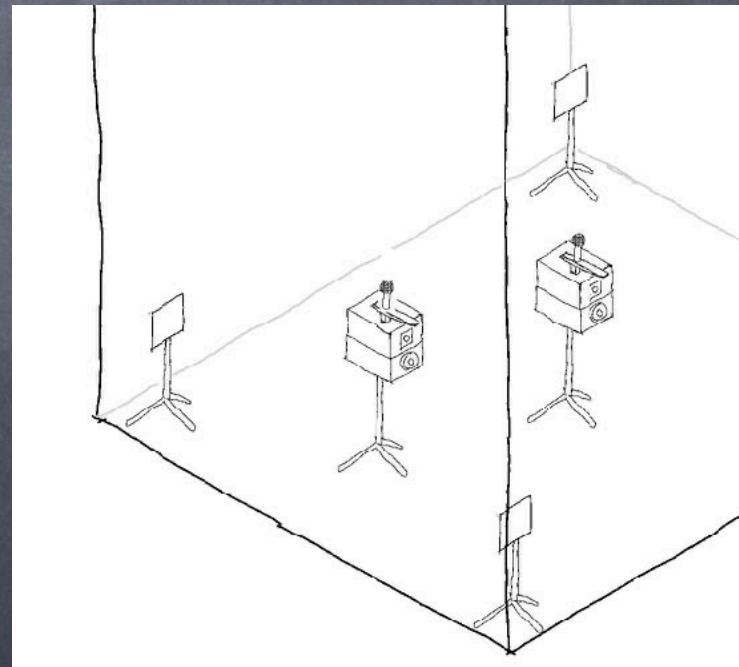
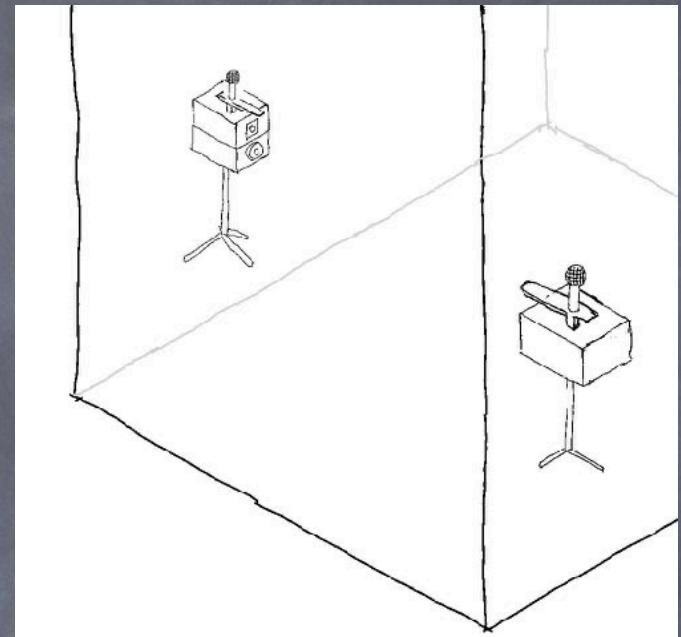
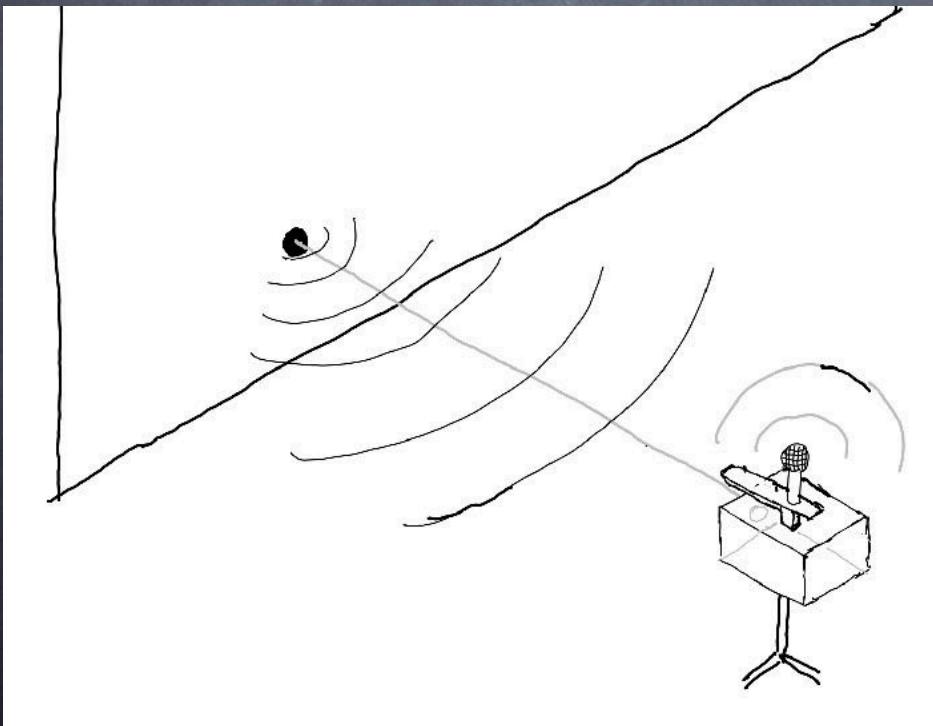
**VALFLEX®**  
italian bed system



# Patent Pending and Other Ideas

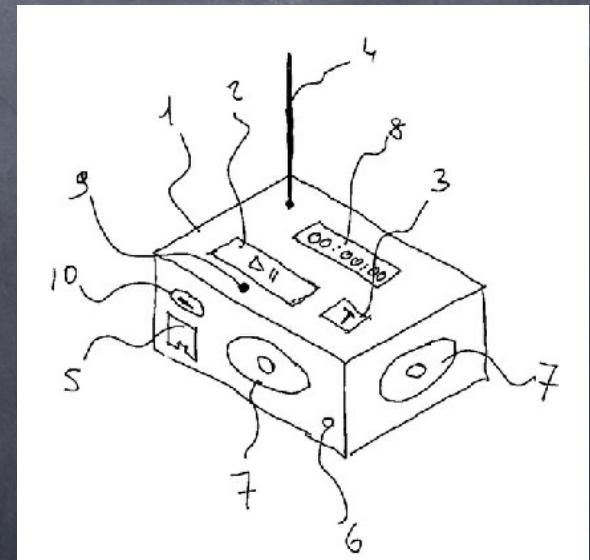
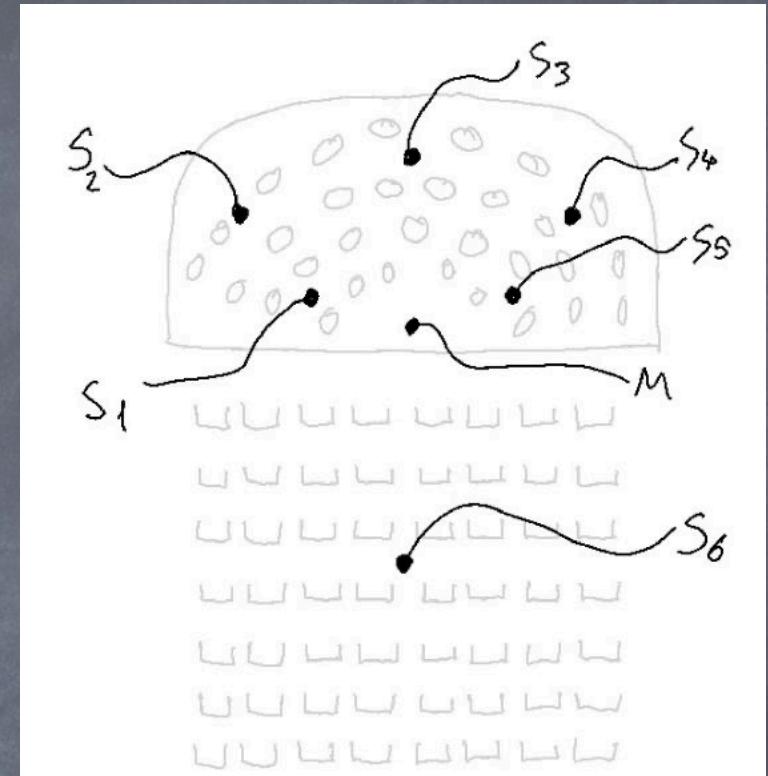
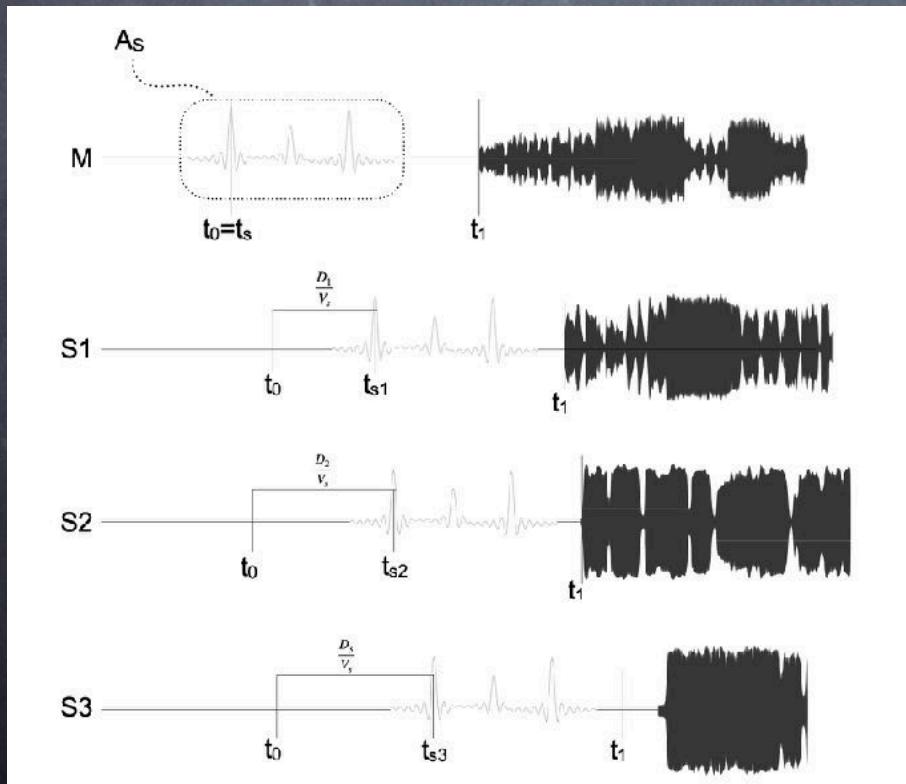
# Acoustic Measurement System

Patent pending



# Stage Recording

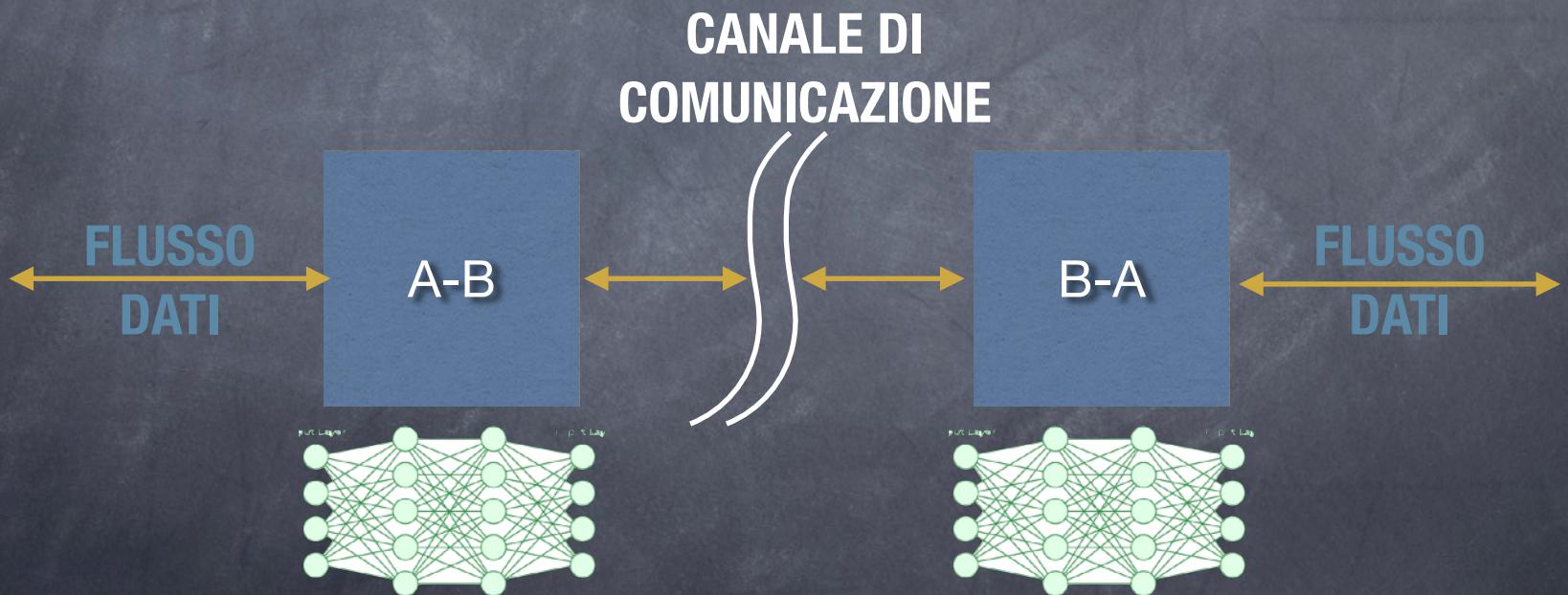
Patent pending



# AI Crypto

Patent pending

Twin Chips to have a secure data connection





# Protocol and Document Management

SIAE © n.  
D000018548



- Mail forward to store
- Web browser to search and retrieve

Logout automatico 08:54    fms ▾

1 / 91

The left panel shows a search bar with 'Cerca...' and a 'Cerca...' button. Below it are filters for 'Contenuto', 'Keywords', 'Stato' (with radio buttons for 'Tutti', 'Solo attivi', and 'Solo rimossi'), 'Tipo protocollo' (set to 'Non selezionato'), 'Categoria' (set to 'Non selezionato'), 'Note', and search fields for 'Protocollo', 'Anno', 'Dal' (14/07/2023), 'Al' (14/07/2023), 'Responsabile', 'Mittente', 'Destinatario', and 'CC'. At the bottom are buttons for 'Chiudi', 'Nome ricerca', 'Salva ricerca', and 'Cerca'.

The right panel is the 'General / Edox Dashboard'. It includes a bar chart titled 'Numero di protocolli x categorie' with the following data:

Categoria	Value
Offerta	267
Offerta	21
Qualità	15
Fattura	13
Progetto	10
Ordine	4
Idee	3
Fornitore	3
Tasse	2
commerciale	1

Below the bar chart is a pie chart titled 'Numero di categorie' showing the distribution of categories. A line graph at the bottom tracks the 'Numero di protocolli' from 2019 to 2023.

**FULL SEARCH**

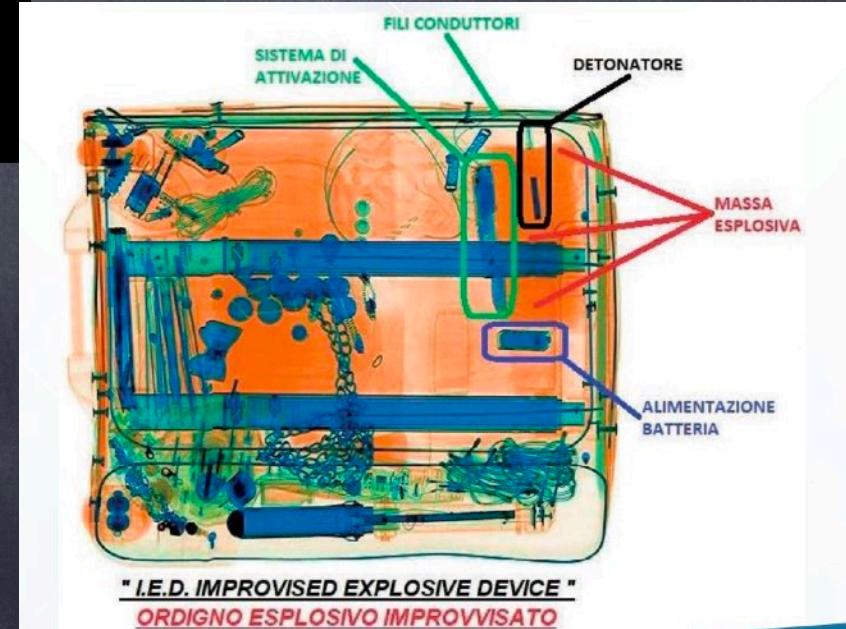
**DASHBOARD**

# XBAG

## Luggage Screening Simulator



Adopted by



Museums, Education,  
Research



Telescope



# International Forum of Culture 2007 Monterrey Mexico



Design and development of technology inside  
Comune di Napoli's stand

# EVOQUEST

## CLASS INTERACTIVE ROLE PLAYING GAME



GeoQuest (2) \*

To which crystalline system corresponds?

Question

Diagram showing a crystal lattice with angles  $\beta \geq 90^\circ$ ,  $\alpha, \gamma = 90^\circ$ . The axes are labeled  $a$ ,  $b$ , and  $c$ .

Multiple Choice

Hexagonal      Monoclinic

Trigonal      Tetragonal

Triclinic      Orthorhombic

Answer connect to 192.168.1.4:8895

Life    physicists    chemists    engineers    historians    advisers

100	100	100	100	100	100
-----	-----	-----	-----	-----	-----

Group life points

0

0

GeoQuest (2) \*

From what were characterized the lower limbs of the Giants?

Class Answer

65%

15%

20%

Corps snakes

Long rods

Corazze

To answer connect to 192.168.1.4:8895

Life    physicists    chemists    engineers    historians    advisers

100	100	100	100	100	100
-----	-----	-----	-----	-----	-----

No of Answers

8

# ESPRA

# Space didactic balloon experiment to study the atmosphere



- ⦿ Balloon delivery to study the atmosphere.
  - ⦿ Ground control center
  - ⦿ Different degree of schools





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