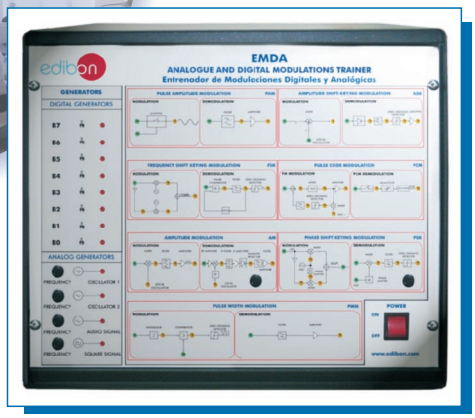
HIGHER EDUCATION

TELECOMMUNICATIONS LABORATORY

(3HE)



* Center: "....."

* Country: "....."

* Date: "....."

* Issue: "....."

Quality Certificates:

ISO 9000: Quality Management
(for Design, Manufacturing, Commercialization and After-sales service)

European Union Certificate
(total safety)

Certificates ISO 14000 and **ECO-Management and Audit Scheme**
(environmental management)

Worlddidac Quality Charter Certificate
(Worlddidac Member)

Higher Education Telecommunications Laboratory

(3HE)

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- Project content.

- Technical areas available.

- Economical proposal.

- Classroom and Laboratory Lay Out (Example).

- Main teaching units (included in priority 1).

- Main target.

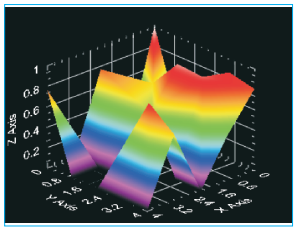
- Project options covered.

- Project conditions.

- Teaching techniques used.

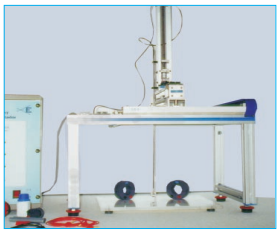
Project content

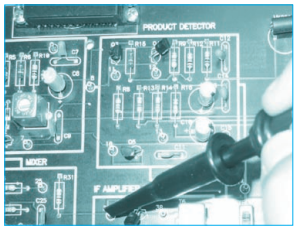
Modern design

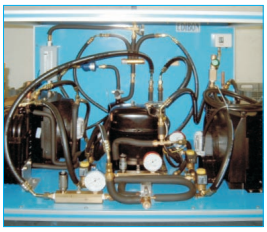


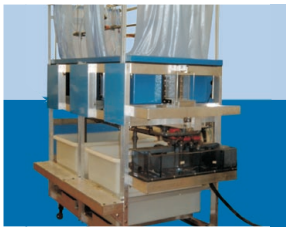
Main blocks

Products

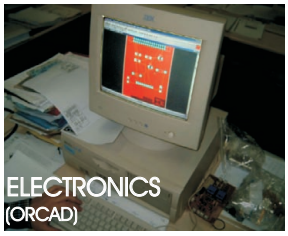


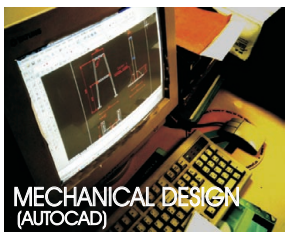






Full units design





Technical areas available

- Physics.

- Electronics.

*** Communications.**

- Electricity.

- Energy.

- Automation & Systems.

- Process Control.

- Complements, Instruments and Tools.

***Main area directly related with Telecommunications laboratory labelled in bold letters.**

Note: The complete technical design “is ready” at our premises

Economical Proposal

Teaching Units:

"Priority 1"

0200. Electronics
0213-210/10S: Elementary Electronics (10 CAI + CAL)
0213-211/10S: Elementary Electronics (10 CAI + CAL)
0213-212/10S: Elementary Electronics (10 CAI + CAL)
0260: Industrial Electronics Module
0300. Communications
0321-310/10S: Analog Communications (10 CAI + CAL)
0321-320/10S: Digital Communications (10 CAI + CAL)
0321/5B: Analog and Digital Communications (5EBC-100)
0330: Telephony Module
0340: Applied Communications Module
0300/ESN: EDIBON Scada-Net for Electronics & Communications
0500. Energy
0510: Energy: Modular Power System Simulator Basic Module
0511: Energy: Modular Power Simulator "ESN"

"Priority 2"

0100. Physics
0110: 3D Physics Basic Module
0200. Electronics
0230: Transducers and Sensors Module
0240: Control Electronics Module
0250: Digital Electronics Module
0270: Microprocessors Module
0200/ESN: EDIBON Scada-Net for Electronics & Physics

"Priority 3"

0400. Electricity
0433-430/10S: Industrial Electric Installations (10 CAI + CAL)
0433-431/10S: Industrial Electric Installations (10 CAI + CAL)
0433-432/10S: Industrial Electric Installations (10 CAI + CAL)
0600. Automation & Systems
0610: PLC Trainer
0620: PLC Process Emulators Applications Module
0652: Automation (Control) Module
1000. Process Control
1010: Process Control Basic Module
1000/ESN: EDIBON Scada-Net for Process Control

Complements, Instruments and Tools:

5100. Complements, Instruments and Tools
5110-1: Cupboard & Shelves Module (1 unit)
5120-10: Computer Module(10 units)
5122: Teaching Aids Module
5124: Complete Health & Safety
5142-1: Electricity Toolkit Module(1 unit)
5143-20: Electronics Toolkit Module(20 units)

Services:

* Furnitures:
* Electrical, Water and Air Installation and others laboratory services
* Installation of all units supplied, Starting up, Training, Teacher Training and Technology Transfer

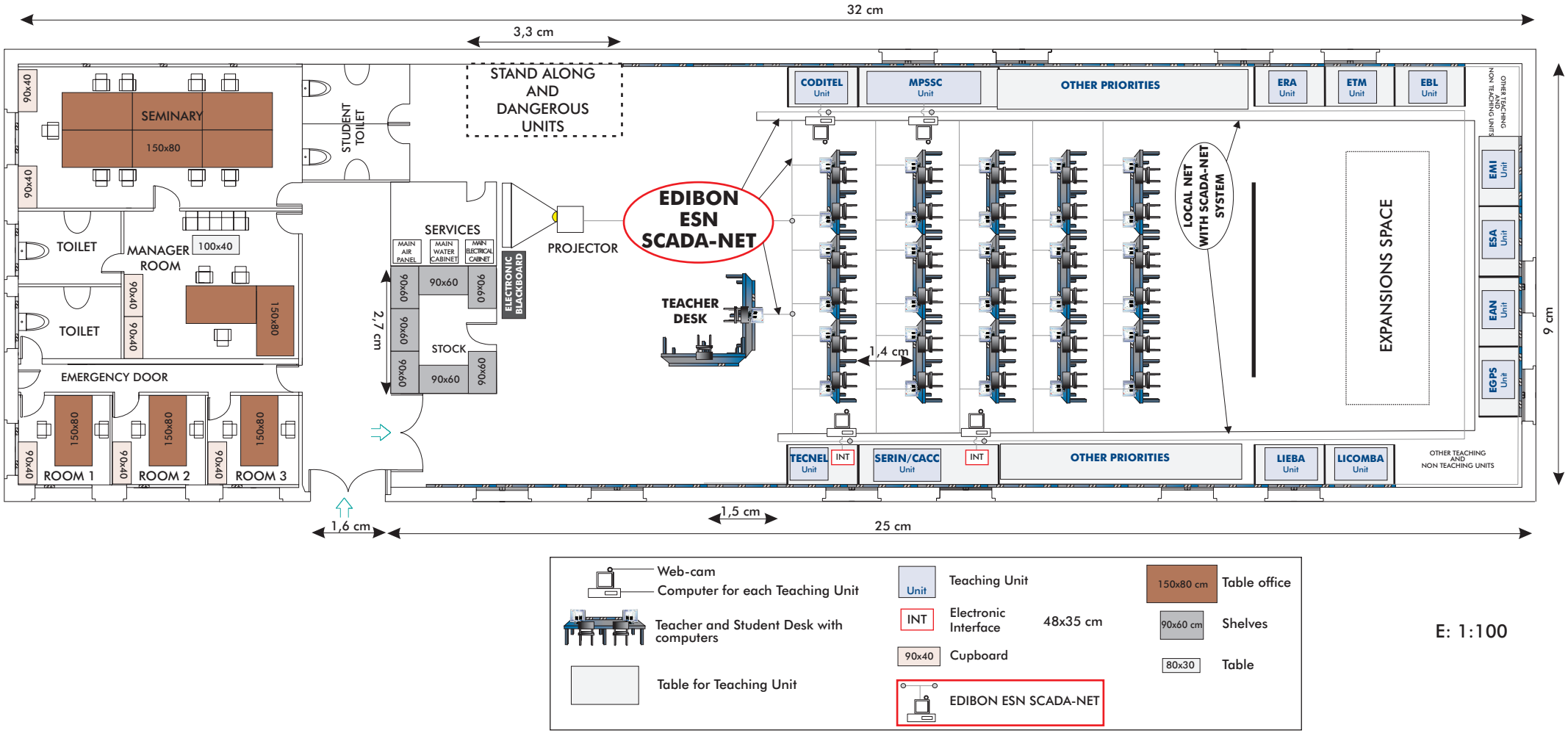
Classroom and Laboratory Lay Out

HIGHER EDUCATION

TELECOMMUNICATIONS LABORATORY

(Example of Priority 1)

(3HE)



E: 1:100

Main Teaching Units
(included in priority 1)

Priority 01:

LIEBA	Basic Electronics and Electricity Integrated Laboratory.
TECNEL	Computer Controlled Teaching Unit for the Study of Power Electronics. (Converters: DC/AC+AC/DC+DC/DC+AC/AC).
SERIN/CACC	Computer Controlled Industrial Servosystems Trainer (for AC and DC Motors).
LICOMBA	Communications Integrated Laboratory
CODITEL	Telephony Systems Trainer.
EGPS	GPS Trainer
EAN	Antenna Trainer
ESA	Satellite Trainer
EMI	Microwave Trainer
EBL	Bluetooth Trainer
ETM	Cellular Mobile Trainer
ERA	Radar Trainer
MPSSC	Modular Power System Simulator with Scada Control System

Main target

* To help the students:

  - By “quick” understanding.
  - By “clear” understanding (clear concepts).
  - By “saving” time.
  - By “extending” the laboratory to their homes.

* To help the teachers:

  - By “easy” teaching.
  - By increasing the teaching “efficiency”.
  - By “reducing” teaching costs (less time consume).
  - By “integrating” classroom and laboratory in the same place.

Project options covered

This *"Higher Education Telecommunications Laboratory"* will cover the following:

a) To train students at laboratory.
b) To train trainers.
c) To be used for training and update educators in current teaching technologies.
d) To give courses to workers in the industry, as it simulates industrial process.
e) To be used for carrying out applied research, in several processes and different technical areas.
f) To be used as research tool for international projects.
g) To train other countries teachers.

Project conditions

The *"Higher Education Telecommunications Laboratory"* includes the following technical and commercial conditions:

a) Technical conditions:

- Laboratories adaptation.
- Installation of all units supplied.
- Starting up for all units.
- Training about the exercises to be done with any unit.
- Teacher training related with the teaching unit and the teaching techniques used.
- Technology transfer.

b) Commercial conditions:

- Packing.
- Financing Charges.
- C.I.F. Charges.

c) Other conditions:

- 8 Manuals for each teaching equipment:

. Required services manual.
. Assembly and installation manual.
. Interface and software/control console manual.
. Set in operation manual.
. Safety norms manual.
. Practices manual.
. Maintenance manual.
. Calibration manual.

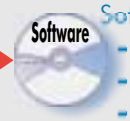
TEACHING TECHNIQUES USED

3D. EDIBON THREE DIMENSIONS SYSTEM

Unit

Interface

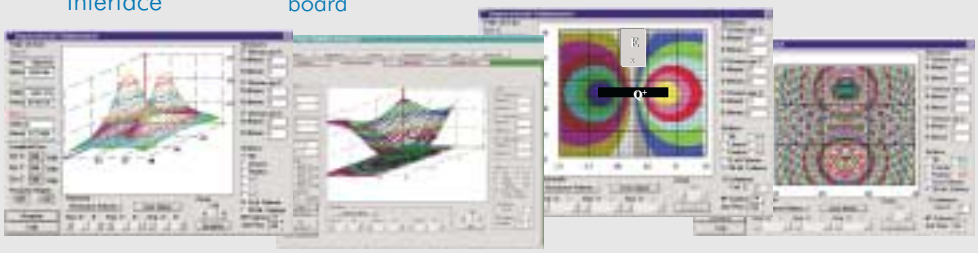
Data acquisiton board



Software included:
-Control
-Data Acquisition
-Data Management

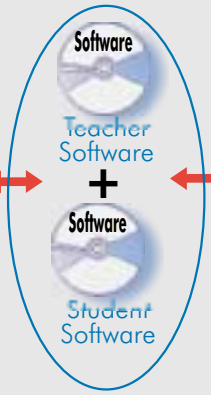
Used for:

Physics (Magnetic fields, Electrical fields, Mechanics, Acoustics, Optics, Thermodynamics and Fluid Mechanics)



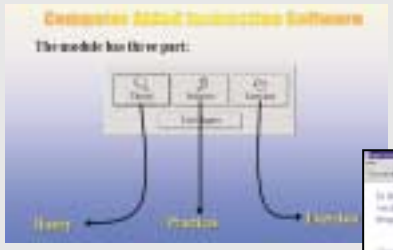
CAI. COMPUTER AIDED INSTRUCTION SYSTEM

Unit



Used for:

Basic Electronics and Electricity.
Communications.
Basic Mechanics.
Basic Fluid Mechanics.



EDAS. EDIBON DATA ACQUISITION SYSTEM

Unit

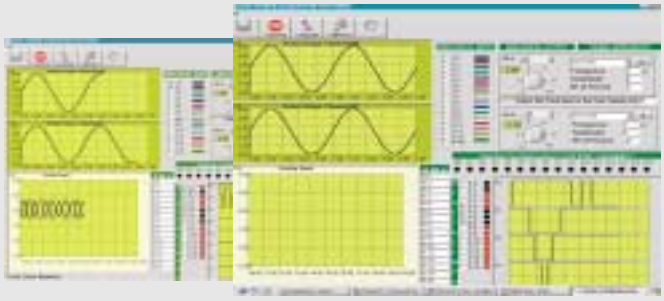
Interface

Data acquisiton board

Data Acquisition Software

Used for:

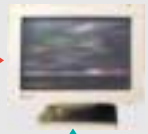
Basic Electronics.
Communications.
Electricity.



RTC. EDIBON SYSTEM FOR HIGH ELECTRONICS (Real time control)

Unit

Data acquisiton board



Control Software

Option: Simulation Software

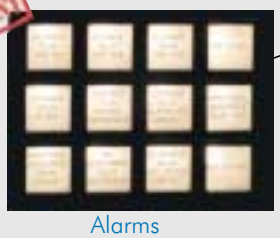
Used for:

High Tech Electronics (Control Electronics, Digital Electronics and Industrial Electronics).

HYBRID. **EDIBON TEACHING HYBRID SYSTEM (ENERGY)**

EDIBON PATENT

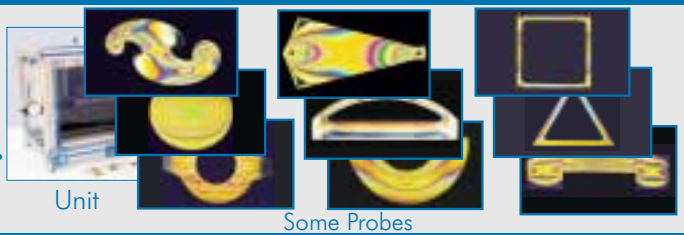
Used for:
Energy Power Plants.



Alarms

PHOTOELASTICITY

Used for:
Strength of Materials.

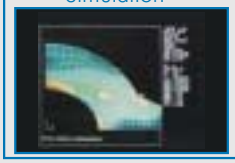


Unit

Some Probes

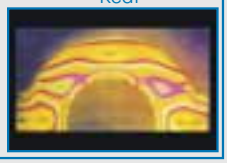
RESULTS

Simulation



Diferences between the simulation and the photoelastic reality.

Real



SACED. **EDIBON COMPUTER CONTROL SYSTEM:Control+Data Acquisition+Data Management**

EDIBON PATENT

Unit

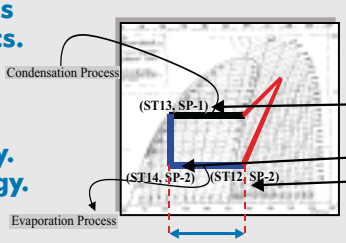
Interface

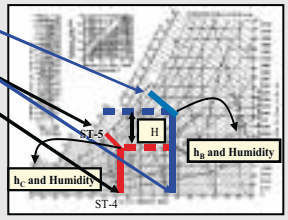
Data Acquisiton board

Software included:
-Control
-Data Acquisition
-Data Management

PLC option

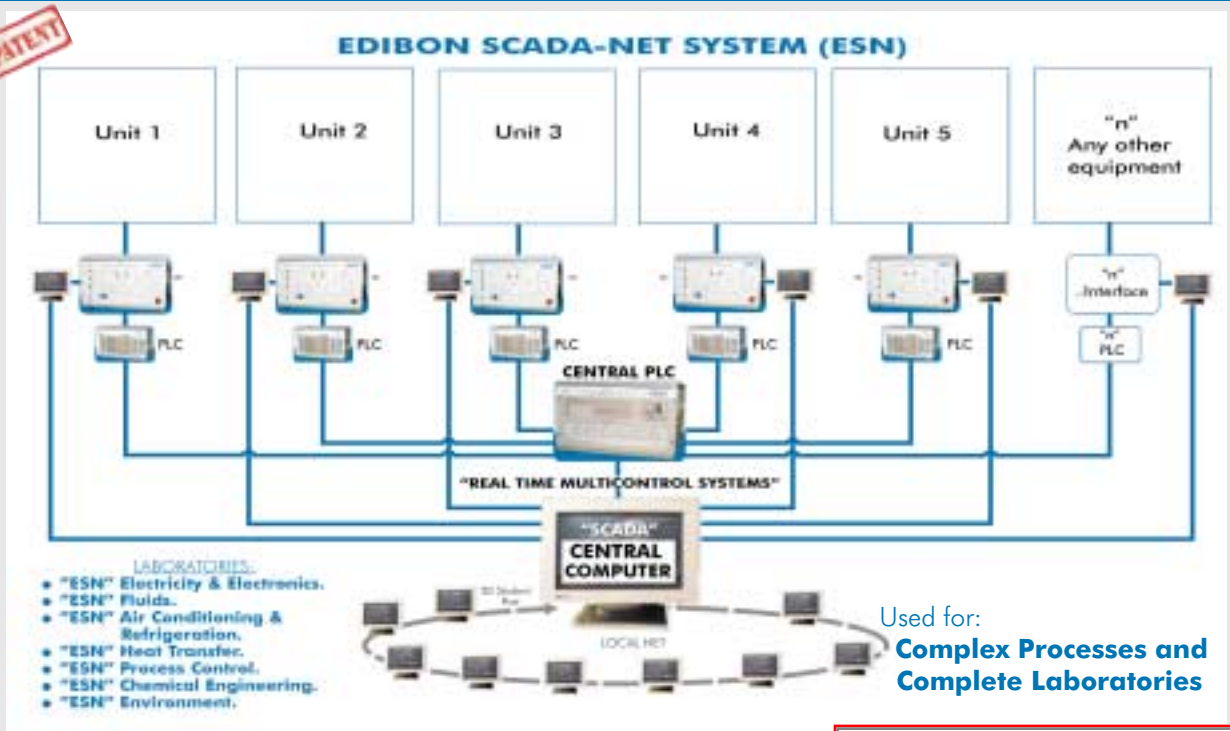
Used for:
Fluid Mechanics.
Aerodynamics.
Thermodymanics &Thermotechnics.
Process Control.
Chemical Engineering.
Food Technology.
Water Technology.
Environment.





ESN. **EDIBON SCADA-NET SYSTEM**

EDIBON PATENT



Used for:
Complex Processes and Complete Laboratories

WEB: www.edibon.com

Information in detail-CLICK HERE