



Learning about  
our neighbours:  
the storks

**Albatroz Engineering**  
October - December 2011  
[albatroz-eng.com](http://albatroz-eng.com)

New office !

**May 28<sup>th</sup> - June 2<sup>nd</sup> 2011**

## **ERAC, CIGRE's Iberian-American Region Meeting**

**ERAC took place at Ciudad del Este, Paraguay, from May 28<sup>th</sup> to June 2<sup>nd</sup>. The meeting is organised according to CIGRE's sixteen study committees.**



*Francisco Azevedo presenting*

The work at Albatroz Engineering was presented in two papers, one on the design of inspection systems by João Gomes-Mota (B2, over-head lines); the other by Francisco Azevedo (CENTRIA, Centre for Artificial Intelligence of Universidade Nova de Lisboa), REN's Luís Campos Pinto and Jorge Casaca and Gomes-Mota about the environmental classification of the Portuguese transmission grid run by REN (C3, environment). The references are

J. Gomes-Mota, «*Desenhando uma família de sistemas de inspeção de linhas desde o peão até ao helicóptero tripulado*»

F. Azevedo, J. Gomes-Mota, L. Campos Pinto, J. Casaca, «*Caracterização da rede de transmissão portuguesa a partir de dados de inspeções de linhas*»

They are available for download at: <http://www.xiveriac.com/downloads/>. The papers are in Portuguese, one of the official languages (the other being Spanish). An English extended abstract is available at Albatroz Engineering website.

**September 18<sup>th</sup>-23<sup>rd</sup> 2011**

## **International conference on Condition Monitoring, Diagnosis and Maintenance (CMDM)**

**CMDM2011 gathered specialists on substation, generation and power lines maintenance and exploitation in Bucharest, Romania.**



The conference focused on Smart Grids and «modern management technology». It encompassed mathematical advances, software and field stories. Albatroz Engineering presented a paper:

J. Gomes-Mota, «*Unified status evaluation for reliability assessment of overhead power grids*»

This paper introduces a proposed path towards risk based asset management based on inspection and historical data, as described later in this brochure. Related approaches were presented for the remaining time of life of equipments at substations and over head grids.

August 2011

## New office in Lisbon



**Albatroz Engineering moved to a new office as a response to increasing activity. The new office offers a wider area, better electrical, air conditioning and IP networking facilities, a dedicated room for airworthiness and an improved workshop.**

The new office is located in central Lisbon, at Rua Maria 53 1º close to Avenida Almirante Reis, one of the main axes leading to the Castle «Castelo» and Lisbon's downtown «Baixa» (*see map below*) where the previous office was located.

While the previous office had room for up to 8 or 10 persons, the new one can host up to 20 persons. They are comfortably distributed in wide open-spaces and all workstations are bathed with sunlight.

The growing functions of the company have also benefited with a dedicated room for airworthiness documentation, a new workshop with higher safety provisions, a meetings room and a closed room for computer servers.



*Albatroz Engineering office at N38° 43' 26,7" W9° 7' 59.7"*

*The office relative to Lisbon map*

# Summary of education & internship activities

During 2011, Albatroz Engineering has strengthened ties with Universities, research laboratories and international organisations. The company welcomed six short term internships and four education programs: one doctoral and three master theses.

The six interns came from Portugal (3), Spain (2) and Poland. Their activities and interest were quite scattered:

1. market research,
2. power electronics,
3. over-head line parametric equations,
4. LiDAR 3D modeling for indoor and outdoor scenarios,
5. mobile interfaces for Tablets and
6. classification of equipment defects detected visually.

The last internship subject expanded into a Master thesis. Other subjects include:

- a) safe flight envelopes for over-head line inspection (aeronautics),
- b) automatic feature extraction from video (image processing),
- c) risk models for power grid reliability (artificial intelligence).

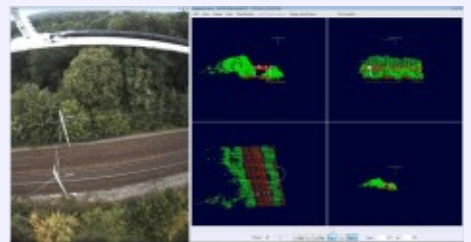
The company also participates in research efforts led by Universities in the fields of Unmanned Aerial Vehicles (UAV) and railway inspection.



*Tablet with Track Clearance report*



*Visual detection and classification of equipment defects*



*Railway inspection trial*

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Research, Development and Innovation

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