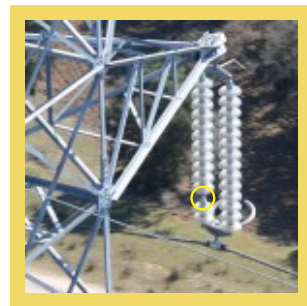
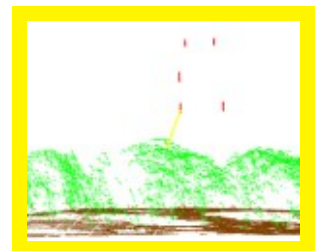


# Graded classification of Points of Interest



Albatroz Engineering  
April - June 2012



# Albatroz Engineering performs first railway assignment

Albatroz Engineering first contacted the railway inspection issues in 2007 in collaboration with the University of Huelva, Spain. The joint experiments on Spanish high speed trains (AVE, Alta Velocidad Española) were documented in the paper «Prototipo para la Monitorización de la Infraestructura Ferroviaria utilizando Sensores Lidar, Imagen de Vídeo y GPS: Primeros Resultados» (in Spanish).

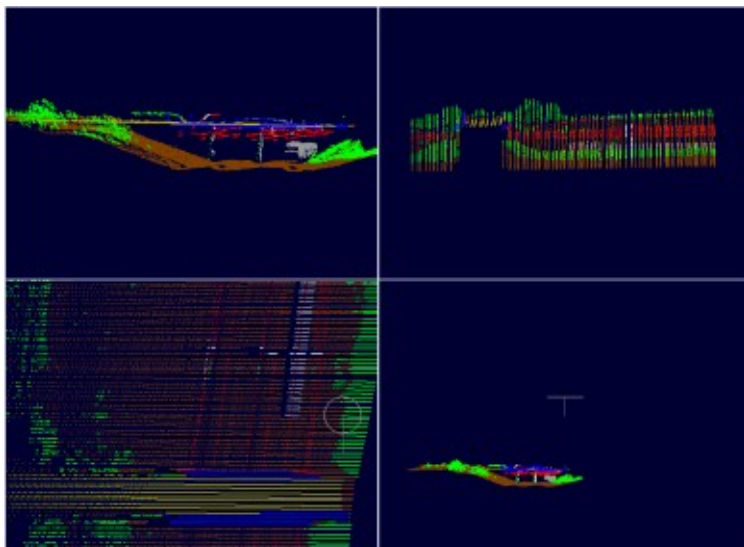


*Installation of two LiDARs, video camera and GPS on the front of a high speed train modified for railway inspection*

Trials focussed on the detection of non-conformities on the railway, ballast and adjacent zones (such as tunnels) from trains travelling at commercial speed.

Positive results were achieved at velocities up to 160km/h (about 100mph), with some detections occurring in real time.

Following a trial in 2011, the company was invited in 2012 to perform a pilot vegetation inspection for the French high speed railways (LGV, Lignes Grande Vitesse) focussing on vegetation management and safety. As the swath to be inspected is much wider than the railway and it is not always concave, the helicopter was the vehicle of choice to make sure that all the area around the railway is covered.



*Inspection snapshot: LiDAR classified data on the left and video on the right; the high-speed train is gray.*

20<sup>th</sup>-24<sup>th</sup> May

# International Conference on Environment and Electrical Engineering, IEEEIC2012

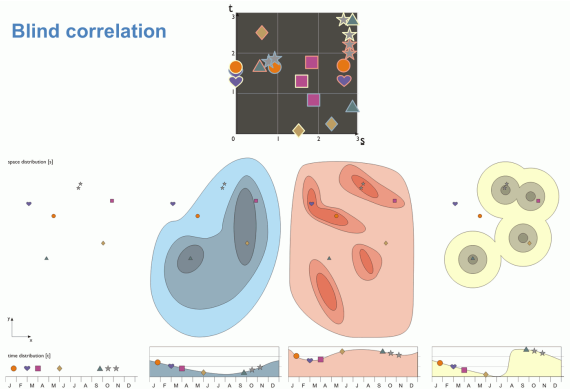
The IEEEIC conference was organised by the University of Rome Three with the support of IEEE. The venue was quite unusual: a cruise ship sailing from Venice on May 18<sup>th</sup>, through the Adriatic and the Aegean seas until reaching Athens and then returning to Venice on the 25<sup>th</sup>.

The program intertwined half-days of cultural discoveries on shore with engineering discussions on the papers presented while the ship was at sea. On occasion, discussions extended from the sessions to the evening during dinner until the ship's restaurants closed.

The papers covered a wide array of subjects dealing with power systems modeling and control for generation and transmission, integration of renewables in the context of smart grids, demand and supply management, grid contingencies, etc.. There was a predominance of university contributions and simulation studies.

Gomes Mota from Albatroz Engineering contributed to the conference with a paper on "How environmental factors impact line performance" co-authored by Ana Brantes, Luís Campos-Pinto from REN (Portuguese Transmission System Operator) and Francisco Azevedo from Universidade Nova de Lisboa.

The paper is based on field data from Portuguese transmission grid and introduces the five most important environmental issues - vegetation, lightning, forest fires, birds and fog combined with pollution and discusses methods to analyse their impact on quality of service.



*A detail of the presentation of «How environmental factors impact line performance»*



*IEEEIC2012 docked at Argostoli, Greece*

29<sup>th</sup> May 2012

## Qumrun Business Group and Albatroz Engineering sign representation agreement in Oman

At the culmination of months of contacts and learning about the electrical grid in Oman, its current condition and ambitious growth plan in the near term, Albatroz Engineering signed a representation agreement with Qumrun Business Group, headed in Qumrun, Muscat, for the joint development of grid maintenance practices in the Sultanate of Oman.

The Sultanate economy is thriving and the need for reliable and affordable electricity is a prerequisite for the development of Oman and its people. The transmission grid is being expanded to new development areas, namely refineries and ports but the existing grids, transmission and distribution as well, are under demand pressure to deliver more energy and meet higher quality of service standards.



**Qumrun Business Group, [QBG]** ([www.qbgoman.com](http://www.qbgoman.com)) embraces multiple companies and activities in the Sultanate and other Gulf Cooperation Council [GCC] countries including real estate, construction, financial services, facility management security, oil and gas, electricity and marine.



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Research, Development and Innovation

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