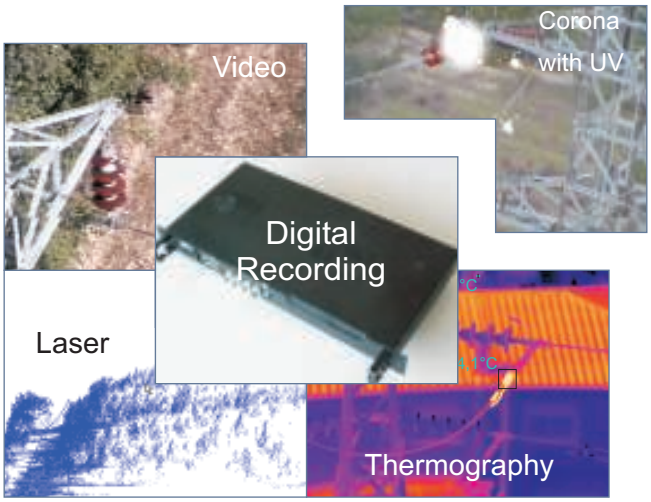
Power Line Maintenance Inspection

ENGLISH

New concept of over-head line inspection

This new concept embodies all types of technical inspection into one common mission.
The client defines the issues to be inspected and combines all sensor data into one common digital recording.
Later, it is possible to add new features as needs arise (illustrated with the Corona effect).



Integrating multiple sensors and inspection procedures yields the following benefits:

- **Enhanced detection and characterization of phenomena,** since anomalies may manifest through multiple phenomena,
- **Comprehensive view of the installation,** based on a better insight into the hardware wear out,
- **Reinforce fault insight** and overcome sensor shortcomings,
- **Data synchronisation** associates all data streams with time and location through GPS,
- **Asset management** associated with inspection databases,
- **Immediate reporting** of critical issues on the field.

Human driven real time inspections offer an optimal insight into the installations. However, the number of inspections or technicians that can be carried simultaneously is limited. Thus, Albatroz Engineering develops solutions combining human skills with signal processing to improve overall performance.

One team equipped with a **P**ower **L**ine **M**aintenance **I**nspection (PLMI) solution mounted on an aircraft can oversee large grids - more than 15000 km (10000 miles) per year - at minimum costs and free from third party constraints. Also, all medium, high and very high voltage over-head lines can be included in the maintenance routine. Moreover, PLMI can be used on ground vehicles, in case airborne inspection is not possible.

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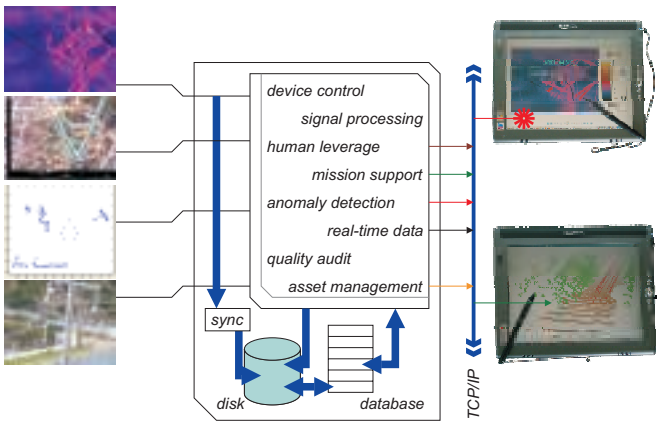
Albatroz Engineering proposes two modules: the **Digital Recording**, which is the core of the **PLMI** solution, and automatic real-time **Track Clearance**. Additional hardware is selected according to clients' needs; existing inspection devices can be included into **PLMI**.

Digital Recording

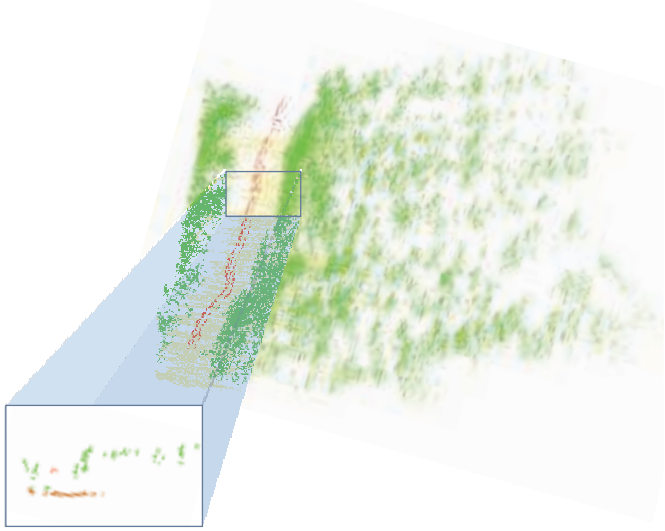
is based on a computer server that acquires data streams (images, movies, audio, numeric data, *etc.*), processes them, establishing a common time-location reference and stores them in a database in real-time.



The installation data is available to operators on-flight through a common Web browser. Multiple interfaces can be operated simultaneousl; each interface is customised for its own type of inspection.

Track Clearance

uses a laser range scanner associated with a GPS to create a 3D model of the environment around the installation.



The real time analysis computes the distance from the line to nearby obstacles. If the distance is too short, an anomaly is recorded and highlighted to the operator. Track Clearance operates fully automatically, producing a track report with anomalies, sags and geometric data, right after the end of the field mission.

Power Line Maintenance Inspection

- **integrates all types of inspection in one mission,**
- **integrates clients' equipment into the solution,**
- **generates immediate inspection reports,**
- **is operated autonomously by the maintenance team,**
- **can be upgraded with new inspection features.**

Sensor images are courtesy of **labelec**

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