

# Buho

## norcontrol

knowledge for industry



### Dual airborne system for visual and thermographic inspection

- ▶ Fast and precise inspection
- ▶ Predictive maintenance
- ▶ Images archive
- ▶ Data-bases
- ▶ GPS system

NORCONTROL, based on its experience in power line inspections and the application of predictive maintenance techniques, has created and developed the **BUHO system** for the **inspection and control of linear infrastructures from a helicopter**.

### Characteristics

The system is endowed with the most **modern audio-visual equipment** for the aerial images reception in motion, completed with **GPS positioning techniques**.

Equipped with:

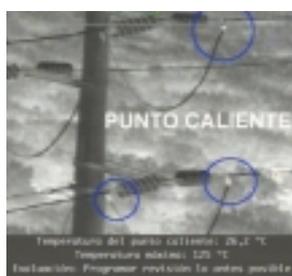
- **Gyro Stabilized Dual Platform**, with:
  - Video camera with long-range zoom.
  - High resolution infrared camera.
- **GPS system** to position zones of interest and help to the navigation.
- **High features video recorders and monitors.**
- **Laboratory of analysis and data treatment.**

### Services offered

The Buho system offers to its clients a **powerful tool for the linear infrastructure inspections**, that can be checked without service interruption and with high speed, reducing the traditional patrols to a minimum.

Simultaneously, **the visual and thermographic inspections are carried out and the GPS coordinates** of the spots of interest are captured.

The Buho system carries out **predictive maintenance through thermography**, incorporating a high resolution infrared camera. After a hot spot detection, the thermogram is captured to allow the thermal analysis in the laboratory, adjusting the object parameters, with the aim of calculating the temperature and making an extrapolation of the most unfavourable service conditions of the facility.



The obtained data are compared with the historical ones to predict the hot spot effective risk and carry out a follow-up control of the temporal evolution.

As quality register, **the images of the zones of interest and deficiencies found out** with its space-temporal reference will remain archived.

**soluziona**

calidad y medio ambiente

## Final product

As a result of the analysis that NORCONTROL specialists carry out in the laboratory with the information collected during the flight, **the Buho system provides the following information:**

- Video tape/CD/DVD with the whole inspection.
- Digital photographs of the zones of interest.
- Inventory of the inspected facilities.
- GPS coordinates of the zones of interest.
- Reports of the hot spots detected.
- Data-bases with the defects found out.

## Applications

### High and medium voltage overhead power lines inspections



- Visual inspection.
- Thermograph inspection with detection of hot spots.
- Positioning of singular spots.
- Different types of inspection according to the detail required.

### Environment



- Detection of uncontrolled emissions to river basins or open sea.
- Diffusion of dumping and environment influence.
- Assessment of impacts on landscape derived from motorways, industrial or mining sites, dams and reservoirs, etc...

### Fire fighting

- Surveillance of special dangerous zones.
- Follow-up control of fronts.
- Measurement of effective temperatures reached.
- Control to stop the re-emergence of fires.
- Cartographic location of the affected zone.

### Periodic follow-up control of linear infrastructure works

- Control of the temporary evolution of the works.
- Impact on landscape evolution.
- Data-base/GIS with real coordinates of the pathway, and digital cartography overlapped.

### Gas and oil pipelines

- Visual inspection of the pipelines right-of-way.
- Indexed graphic registration of the condition of the right-of-way.
- As-built coordinates of the right-of-way.