

## UNMANNED ROVER FOR THE INSPECTION OF A 380 KV A.C. TUNNELLED POWER LINE

Laser designed and built a rover for TERNA to inspect the Favazzina tunnel, which becomes an impassable environment for worker safety when it is under tension (380 KV).



## ROVER SPECIFICATIONS

- Speed: 5 km/h
- Parking brake
- Autonomy: > 8 hours
- Overcoming slopes 20 %.
- Battery level threshold signaling for automatic return to base
- HMI (Human Machine Interface) for remote control (start, stop, presence of obstacles, position, stationing, etc.) and display of main operating parameters (battery level, autonomy, speed, etc.)
- Obstacle detector with emergency stop
- Automatic operation, even without the presence of the operator, on programmed and semi-automatic route with return to the base in case of loss of control by the operator, in case of anomaly, low battery or other critical situations.





## ON-BOARD SENSORS

- Fixed and pan and tilt cameras
- LIDAR for 3D reconstruction of the surveyed
- Anti-collision system
- Communication system
- Air temperature sensor:  $-60 \div +80$  °C
- Humidity sensor:  $0 \div 100\%$  Rh
- Atmospheric pressure sensor:  $800 \div 1100$  hPa
- Opacity sensor for smoke detection
- Sensor for the detection of dust and particulates (suspended dust,  $PM_{10}$  particulate particles and  $PM_{2.5}$  fine particulates, etc.).
- Sensor for the detection of ammonium  $NH_4$
- Sensor for the detection of ammonia  $NH_3$
- Sensor for the detection of nitrite and nitrate  $NO_2/NO_3$
- Sensor for the detection of sulfur dioxide  $SO_2$

