Drones for Inspection and Control in Industry 4.0

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*Abstract—*This paper presents a brief idea of drones, their technology and can be used for different purposes. New technologies such as machine learning, Artificial Intelligence (AI), the Internet of Things (IoT) and drones are transforming the workforce. Major aim of this project is for surveillance, inspection. The most important feature of the drone is the transmission of images and video in real time (FPV). They highlighted the safety areas, as risky tasks such as thermometry and specific tool maintenance can now be performed without exposing workers. Finally, more than 40 cases of use have been validated, mainly for the security of assets, for the areas of exploration, projects, engineering, construction, planning and logistics, maintenance, quality and environment, production and above all, personnel safety.

Keywords— surveillance drone, FPV drone, energy efficient drone, less noise, Industry 4.0.

1. Introduction

The 2016 was a drone’s year, a true revolution occurred in terms of the hardware and software used in both the manufacturing process and in controlling drones. This has made these devices easier to maneuver, able to fly more, be safer and able to obtain video footage and high-resolution photos at a professional level. In recent research it is clearly observed that drones are about to create a revolution in human life and industry. The most important aspect is that it can be used for effective surveillance at places where human being can’t reach. To reduce the cost of the drones, Low cost avionics System Prototypes are made. It makes the structure light as well as strong.

The paper deals with a drone which has its location being directed by GPS giving its exact location. The most important aspect of this paper deals with the detection of unidentified obstacles which tend to create disturbance in the normal environment. Capturing and reporting all minute details as the camera associated with it moves as per our direction. Using of GPS for automatic mission planning, the stabilization of the drone for proper surveillance and the FPV part are the advantageous where we can control it through the remote.

In our capture of models and alternatives for our company or industry we are going to raise a comparative of certain models of Drones with certain characteristics and using TOPSIS we will be able to arrive at our ideal solution.

The TOPSIS method has been selected because it is one of the most widespread and applied methods of operational research in the industry. It was developed by Hwang and Yoon (Technique for Order Preference by Similarity to Ideal Solution, 1995) based on the concept that it is desirable for a given alternative to be located at the shortest distance from an ideal positive solution and at the longest distance from an ideal negative solution.

1. Models of the interface

In the next section



Figure 1 Source own elaboration.

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