VSD hand-in

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Introduction

In this course we design and build a prototype for a UAS designed to monitor and detect objects on the ground for environmental purposes. Engineering as an area is converging towards developing more responsible technology, and as such it is important to consider how we choose to design our drone, in regard to ethics and environmental impact.

Opportunities and Risks

Monitoring the state and changes in the environment has become more crucial over recent years, and is a task we have been conducting for many years. The process requires a human workforce to observe and notate, which is an expensive and time consuming process. A drone would improve on the time and costs, as well as offering more accurate and detailed information to analyse. This is good news for the environment, but can impact human lives in negative ways as well, because this change in procedure will cost jobs. However, it might be worth sacrificing jobs in this area to gain an efficient tool that can improve environmental sustainability. Automation will improve the monitoring accuracy and provide consistent data every time which is a challenge if a human is collecting the data due to human error.

Moreover, another concern for impact on everyday lives is privacy which nowadays is highly rated human value. A drone that utilizes a camera to monitor the environment should only be able to inspect a certain area and operator should not be able to turn the camera or direct the UAV to a different location that was not meant to be inspected (Cavokian, 2012, p. 18).

A risk of disturbing calmness might need to be considered due to the sound the UAV makes when flying. When inspecting the environment in a region with population, it is an obvious risk that people might be disturbed. However, places like nature are also not completely safe in terms of calmness disturbance, because often there are people in nature parks or maybe even just walking on a path.

Monitoring certain environments might create situations where the drone is needed to come in close contact with the local wildlife. This kind of situation will more likely disturb some part of the local faune but it might be necessary in order to monitor a species that is of high interest such as an endangered species. In this case the drone should be designed in a way that makes it less visible and it shouldn’t produce a lot of noise in order to not disturb the animal that is observed. Also it is very important that the drone has a design feature that makes it easy to recognize that it’s main purpose is for surveying endangered species.

Discussion & Conclusion

A drone that monitors the environment overall is a good idea. That will be a step towards technological progress. On one hand it might influence jobs in a negative manner, but on the other hand autonomy will definitely improve efficiency and decrease human error in data collection.
Although, when building the drone capability caution is worth to consider, so that some features limit the UAV from performing a specific action, like turning the camera or changing the route, should be implemented in order to prevent users from breaking any privacy rules. Furthermore, from a technological standpoint the UAV should be as quiet as possible to minimize disturbance, especially during the monitoring of endangered wildlife which is very sensitive to changes in its environment.

bibliography

Cavokian A. (2012), *Information & Privacy Commissione*, Ontario, Canda.