Go *Farther.*

Are you a company that:

- has jobs that require intensive video monitoring and processing? *Examples include security or building mapping*
- would benefit from efficient and self-reliant systems?
- enjoys pioneering innovative solutions to common problems?

If so, the autonomous product we have developed is perfect for you.

What we do

We are a group of young innovators that has developed a streamlined way to maximize the efficiency of certain autonomous processes. Most specifically, we have concentrated our efforts on the largest constraint to most devices; power requirements.

No one likes to be constrained by a battery! The run-to-charge time ratio of the common battery is low and forget the hassle of manually removing and replacing the battery every time it goes dead! Our unique solution offers a way to complete your tasks, virtually hands-free.

Through our innovative process, you don't have to deal with the mess and hassle of manually recharging your devices.

"Imagine *NEVER* needing to change batteries again!"

DIRTY

CSE 477- Dirty Bit

University of Washington
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Autonomously Recharging Drones

"Perpetually powering your progress"

Dirty Bit
A CSE 477 Project

Work *Smarter*.

Our drones are capable of autonomously carrying out tasks and self-charging.

> "All you need to do is give the drone a task!"

Applications

Our product is perfect for self-reliant applications that require heavy video monitoring and surveillance while maintaining the agility and mobility of an airborne device.

Our drones can act as stand alone 360° cameras, capable of sending back critical information to the main server. The drone's live video feed can be streamed to an off-site location where further processing can occur. Given certain parameters, the drones can respond automatically to changing situations, or can be set in observer-only mode.

Additionally, the drones can be dispatched by the server to complete tasks and will automatically return to charge once the battery becomes low.

Benefits

- **RELIABLE:** Our autonomous devices provide reliable information *24/7*, freeing people to perform more complex tasks.

- **EFFICIENT:** Maximizes the up-time of your system by perpetually *powering your devices!*

- **STREAMLINED:** Concealed in your floor or ceiling, the system power supply is virtually *maintenance free and unnoticeable*!

Tech Specs

Our product is based-off of the AR Parrot Drone. The Parrot is a small and very stable UAV. With its 4-motor design, this 'quadro-copter' is equipped with multiple sensors to keep it flying safely. If one of it's onboard sensors detects an out-of-bounds error, the drone is capable of landing itself to avoid damage from potential crashes.

The Parrot is very versatile. As such, it has been heavily modified to run with our system and the following specs reflect our changes.

- **Weight:** 480g[+]
- **Size:** 20.5in x 20.25in
- **Power dissipation:** 65W[*]
- **Back-up power:** 450mAh LiPo battery
- **Flight time:** continuous
- **Video:** 15fps *(standard)*

[+] This weight reflects the weight of the drone with prototype components. Actual product may be lighter.

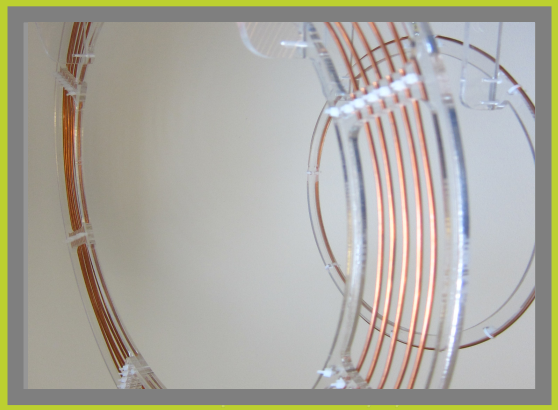
[*] Average power dissipation. Range is from 58-83W, depending on task.

> **"Just think, *NO MORE CORDS!*"**

How does it work?

The drones receive power from a wireless transmitter that can be mounted out of the way on a ceiling, or that can be concealed within the ceiling or floor. Each drone has been outfitted with a receive coil that is integrated into the indoor safety hull, completing the streamlined effect of the system.

Once the drone detects a low battery signal, it returns to the location of the transmitter where it hovers while recharging its battery. During this time, the drone can continue to monitor and run processes because it doesn't need to power down! Additionally, our power monitoring system provides fast charging, allowing the drone to dispatch again in under 15 min.



A *Dirty Bit* project