UmbrellaDrone

Project Parts List:

1. Target Ironman 650 Folding Carbon Fiber: $99.00

a. This is the frame for the drone.

i. http://www.robotshop.com/en/tarot-iron-man-650-folding-carbon-fiber-quadcopter-frame.html

2. DJI E305 (4 Props/960KV/35) Convenience Pack: $79.00

a. This is the motors plus the blades.

i. http://www.helipal.com/dji-e305-4-props-800kv-4s-convenience-package.html

3. San-Disk 128GB MicroSD Card Quantity (2): $91.80

a. These are the memory cards for the two Raspberry Pis.

i. https://www.amazon.com/gp/product/B010Q57S62/ref=s9_acsd_simh_hd_bw_b3I4RsJ_c_x_w?pf_rd_m=ATVPDKIKX0DER&pf_rd_s=merchandised-search-3&pf_rd_r=WQ9RPYC8H161VVTT4FHV&pf_rd_t=101&pf_rd_p=4deb6fed-1027-542e-9972-8f77337666ef&pf_rd_i=3015433011

4. Raspberry Pi Camera V2 ﷺ 8 Megapixel, 1080: $29.89

a. This is the camera that will be pointing down and doing object detection.

i. https://www.amazon.com/Raspberry-Pi-Camera-Module-Megapixel/dp/B01ER2SKFS

5. Smallest Mini 50.0 Mega Pixel USB HD Video Camera Webcam Web Cam PC Laptop: $3.47

a. This camera will be attached to the mast of the umbrella for sun tracking.

i. https://www.amazon.com/Smallest-Pixel-Camera-Webcam-Laptop/dp/B00CL3JPPA

6. Hobbypower Pixhawk PX4 V2.4.8 32 Bit Flight Controller + NEO-M8N GPS + Power Module: $96.58

a. This will be the flight controller. It includes the power module. The GPS will not be used.

i. https://www.amazon.com/Hobbypower-Pixhawk-Controller-Multicopter-Quadcopter/dp/B01HME36HK

7. Quadcopter Power Distribution Board XT60 XT-60 20a Quad Multicopter 3.5mm: $12.99

a. This board will power and control the motor speeds.

i. https://www.amazon.com/Quadcopter-Power-Distribution-Board-Mutlicopter/dp/B00QGCILK2

8. 3.5mm Male Female Bullet Brushless Motor Extension Lead ESC by Motor Wires

Quantity (2): $20.38

a. These wires will be used to extend the motor wires.

i. https://www.amazon.com/Female-Brushless-Motor-Extension-Wires/dp/B01N7CDSBO

9. 14 Gauge Silicone Wire 6 feet: $5.98

a. This will be used to extend any wires. The motor wires still look to short.

i. https://www.amazon.com/BNTECHGO-electrical-resistance-efficient-connection/dp/B017U6PGLO

10. SB Components Clear Case For Raspberry Pi 3 Model B Quad Core Quantity (2): $11.94

a. These cases will be used to protect and house the Raspberry Pis.

i. https://www.amazon.com/SB-Components-Clear-Case-Raspberry/dp/B00MQLB1N6

11. Gikfun Assorted APM 2.6 2.52 Flight Control Cable(DF13 4/5/6 Position Connector) Pack of 8pcs AE1032: $10.68

a. These cables are going to connect the flight controller to the Raspberry Pis. They will also power the Pis.

i. https://www.amazon.com/Gikfun-Assorted-Control-Position-Connector/dp/B01DUAWIRY

12. Venom 20C 3S 2200mAh 11.1V LiPo Battery with Universal Plug: $19.19

a. This battery will power the drone. The PixHawk power module is universal and should handle the above voltage. It will also supply the Raspberry Pis with 5V.

i. https://www.amazon.com/Venom-2200mAh-Battery-Universal-RC/dp/B004UZD4Q8

13. Venom LiPo and NiMH AC Sport Balance Charger: $32.66

a. This will charge the LiPo 11.1V battery properly.

i. https://www.amazon.com/Venom-LiPo-Sport-Balance-Charger/dp/B00T05IBK2

14. Raspberry Pi 3 Model B 2016 Single Board Computer with High Performance Heatsink Set Quantity (2): $77.98

a. These two boards will run two separate operating systems. One will do object detection and track the user and give power and position data to the flight controller. The other will be the WiFi and browser sniffer. It will find user IP addresses and figure out who the hacker is based on its data.

i. https://www.amazon.com/Raspberry-Single-Computer-Performance-Heatsink/dp/B01CMC50S0

15. Sandisk 16GB MicroSDHC Memeory Card, Class 4: $7.97

a. This is the memory card for the PixHawk flight controller.

i. https://www.amazon.com/Sandisk-MicroSDHC-Memory-RETAIL-PACKAGE/dp/B001F7AJKI

16. Venom LiPo Battry Mount Strap Ties for RC Quad Airplane Boat or Car -3pcs: $8.12

a. These will be used to strap the battery to the drone.

i. https://www.amazon.com/Venom-Battery-Mount-RC-Airplane/dp/B00P4CEQZY

17. EvHenGo 500 pcs Premium Black Cable Ties 4+6+8+10+12 inch: $15.99

a. These tie raps will be used to strap wires and components to the drone.

i. https://www.amazon.com/EvHenGO-Single-Use-Self-Locking-Temperature-Resistant/dp/B01N4GOHZO

18. McConnor Automatic Travel Rain Umbrella Auto Open Close Compact Folding Windproof Strong Sturdy Canopy Heavy Duty Slim Lightweight: $14.90

a. The umbrella will be attached to the drone via a compound and mounting plate plus screws for detachment provided by Viking Yacht Company free of charge because this is for DARPA and I have an inside connection to the company.

i. https://www.amazon.com/McConnor-Automatic-Travel-Rain-Umbrella/dp/B01D5JALU6

19. Apple Watch Series 2: $269.00

a. The watch can be optional. I don't necessary need it to start the project. I can use simple laptop key board commands but to make it universal for real use the watch will be the interface to the actual user and will have commands such as take-off, low battery, land, etc

i. https://www.apple.com/shop/buy-watch/apple-watch/space-gray-aluminum-black-sport-band?afid=p238%7CsrJkxBYhh-dc_mtid_1870765e38482_pcrid_61973503810_&cid=aos-us-kwgo-pla-watch--slid--product-MP022LL/A&product=MP022LL/A&step=detail

20. Long Range WiFi USB with Antenna for Raspberry Pi Quantity (2): $37.98

a. The Raspberry Pi built in antenna is only good for a few meters. This will be used to communicate to the Apple watch and also be used to sniff WiFi.

i. https://www.amazon.com/Long-Range-WiFi-Antenna-Raspberry/dp/B00FADTN14

21. Program The Internet of Things with Swift for iOS: $39.49

a. This ebook will be necessary to get the correct code and libraries for connecting the Apple watch to the Raspberry Pi.

i. https://books.google.com/books?id=XqlPCwAAQBAJ&printsec=frontcover&dq=the+internet+of+things+with+swift+for+ios&hl=en&sa=X&ved=0ahUKEwijt4DG59HTAhVpsFQKHaZZDDgQ6AEIJzAA

22. The drone will be using OpenCV object detection and a neural network seen in this project video. I will also custom tailor the code in this project to do the required functions:

a. This site is called GitHub it is a source code sharing website made by Linus Torvalds. I will be modifying and running this code on one Raspberry Pi.

i. https://github.com/magnusja/WasIstDasFuer1Drone

ii. https://www.youtube.com/watch?v=_Fmuz2PZHvA

23. The second Raspberry Pi will be running Kali Linux:

a. This is an operating system used by security experts. It will be using a program called Sniffly which is a browser history sniffing program. I will be commanding Kali using Python Scripts. The user will be able to sit back and enjoy the hacker detection data while being protected from the sun by the umbrella

24. Elgoo 120pcs Multicolored Dupont Wire 40pin Male to Female: $8.86

a. This will be spliced to the PixHawk Rasberry Pi connection plug.

i. https://www.amazon.com/Elegoo-120pcs-Multicolored-Breadboard-arduino/dp/B01EV70C78/ref=lp_172544_1_18?s=audio-video-accessories&ie=UTF8&qid=1493829311&sr=1-18

25. Raspberry Pi Camera Case / Enclouser - Black assemble in 30 sec: $7.49

a. This case will protect and harness the pi camera.

i. https://www.amazon.com/Raspberry-Pi-Camera-Case-Enclouser/dp/B00IJZOT5A

Total Cost: $1001.34

Without Apple Watch: $732.34