**CEG 4980 WHITE PAPER**

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**Death Star Plans Disseminator**

**I. Problem Statement**

The Empire has built a battle station (known as the Death Star) that is capable of wiping out entire planets with a single shot (“Death Star”). The rebels need to find a way to obtain plans for the Death Star in order to destroy the station. These plans, which indicate vulnerabilities for the battle station, are being held on a Raspberry Pi in an Empire server room. The plans themselves are contained in 10 PNG files along with 90 other unrelated images on the Pi.

These plans must be retrieved by a Rebel engineer with access to a Rebel server. He must be able to transmit the plans from the Raspberry Pi to the server without access to Wi-Fi, wired LAN, or Bluetooth. Transmission must taken 600 or fewer seconds in total, so as to not make any Empire guards suspicious. Additionally, any transmissions that do occur between the Raspberry Pi and the server need to be fully encrypted.

**II. Existing Solutions**

There are a variety of existing ways to transmit the plans. For instance, the Rebel engineer can use a specific model of Raspberry Pi that has Wi-Fi capabilities, such as a Raspberry Pi Zero W (*Buy A Raspberry Pi Zero W – Raspberry Pi).* With a device such as this, a service called PiTunnel can be installed onto the Pi. PiTunnel will then allow the Raspberry Pi to connect to the server with SSH. Once connected, SFTP (secure file transfer protocol) can be used to directly transfer the images via Wi-Fi from the Raspberry Pi to the server.

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**IV. References**

“Death Star.” *StarWars.Com*, www.starwars.com/databank/death-star. Accessed 5 Sept. 2025.

*Buy A Raspberry Pi Zero W – Raspberry Pi*, www.raspberrypi.com/products/raspberry-pi-zero-w/. Accessed 5 Sept. 2025.