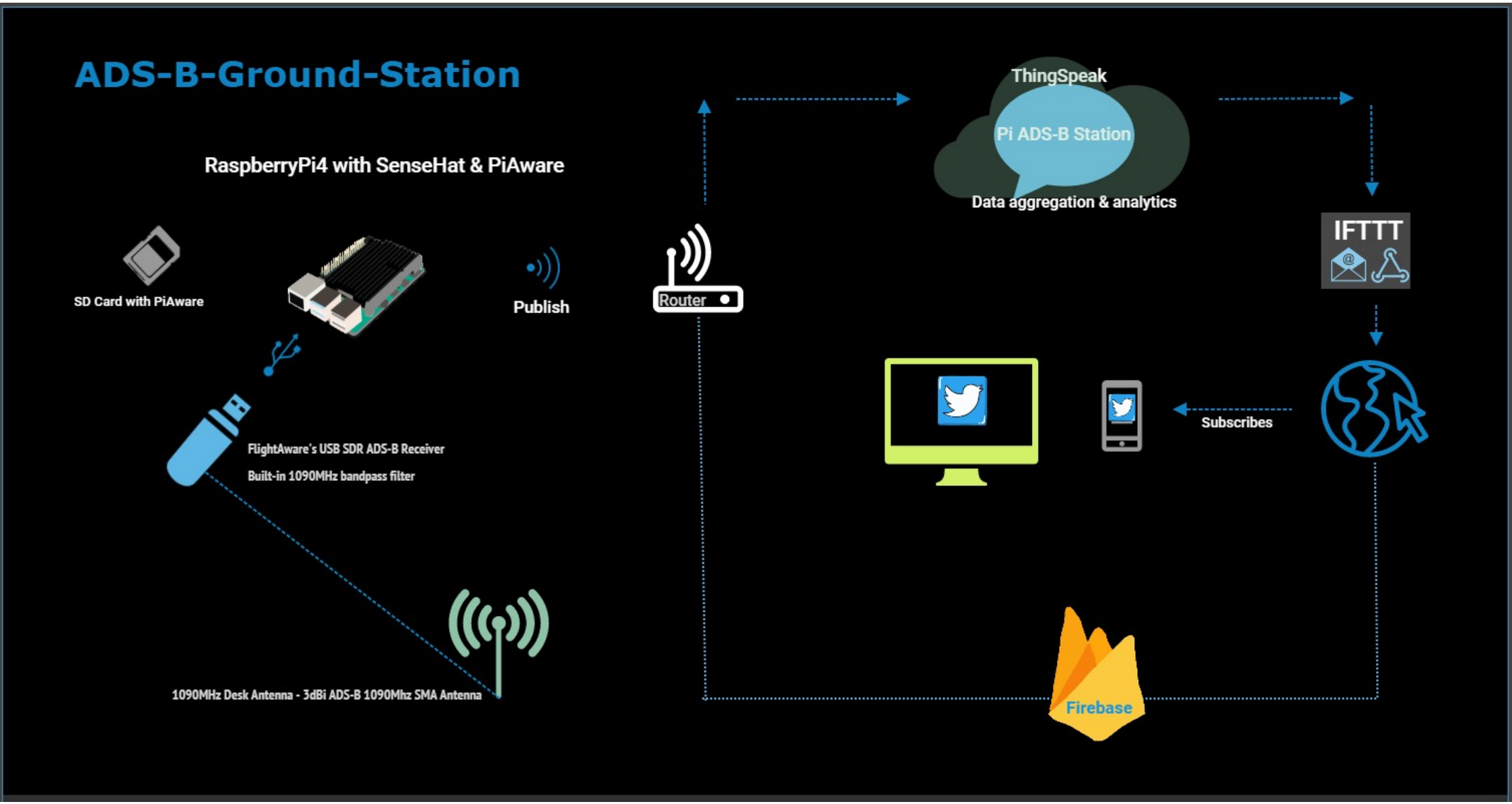
ADS-B-Ground-Station
RaspberryPi4 with SenseHat & PiAware
SD Card with PiAware
Publish
Router
ThingSpeak
Pi ADS-B Station
Data aggregation & analytics
IFTTT
Subscribes
FlightAware's USB SDR ADS-B Receiver
Built-in 1090MHz bandpass filter
1090MHz Desk Antenna - 3dBi ADS-B 1090Mhz SMA Antenna
Firebase

ADS-B-Ground-Station

RaspberryPi4 with SenseHat

The RaspberryPi will hold the PiAware software any Python programs.
The SenseHat will display a message when planes are in range.

SD Card with PiAware

ADS-B receivers are electronic devices that listen for radio signals from ADS-B aircraft transponders and decodes them to determine aircraft position. PiAware is an open source software solution, created by FlightAware, to make this data accessible to everyone.

FlightAware's USB SDR ADS-B Receiver

The USB SDR (Software Defined Radio) ADS-B (Automatic Dependent Surveillance-Broadcast) receiver translates the 1090 MHz radio signal into something the computer can understand.

1090MHz Desk Antenna

A 3dBi ADS-B 1090Mhz SMA Antenna to receive the radio signals.

ThingSpeak

ThingSpeak to send sensor data from the RaspberryPi.
Data is represented in a ThingSpeak channel.
PiAware React created for Data Detection/No data detection.

ThingHTTP/ThingTweet

React app to trigger ThingHTTP when data is detected.
ThingTweet posts to Twitter if data is detected or if no data is detected also.
IFTTT trigger to receive email and push notifications.

IFTTT & Webhooks

Automatic Email sent via IFTTT Applet if event occurs.
IFTTT New Tweet applet sends a push notification to my phone when data is detected.

Firebase

For storage of data received at regular intervals.

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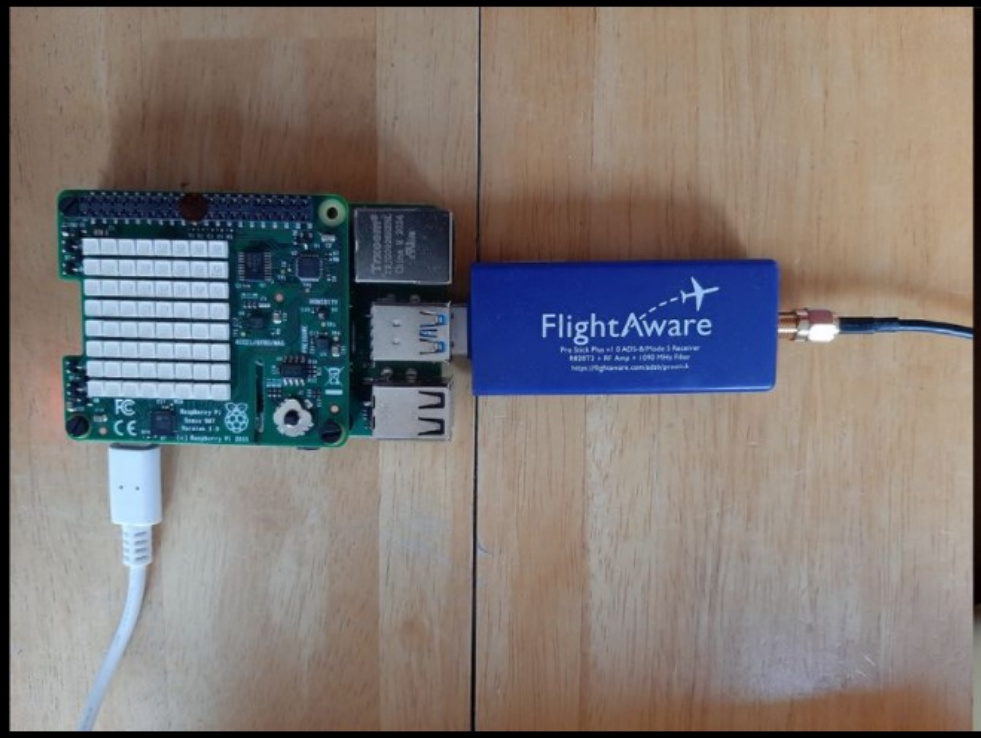
ADS-B-Ground-Station

This is the actual setup of the Ground Station I have at home.



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