EOSS PRESENTATION

SDR-BASED APRS TRACKER

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INTRODUCTION

What

- APRS application to aid trackers in payload recovery

Primary Features

- Software based (no traditional radios)
- Simultaneous reception of APRS packets on multiple frequencies
- Offline maps
- Landing predictions
- Receive only, nothing is transmitted over the air or uploaded to the Internet
- Light weight user interface leverages a web browser

WHAT'S IN THE KIT

- Kansung Computer
- i5 Dual Core CPU
- 8GB RAM
- 500GB Hard Drive (mechanical)
- AC-to-DC power supply

- NooElec SDR (USB stick)

- GPS Puck

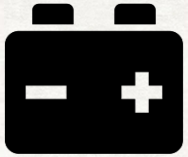
- 12v Pigtail Barrel Connector

- 2 x USB Extension Cables (long and short)

WHAT YOU NEED TO PROVIDE

IN THE VEHICLE*

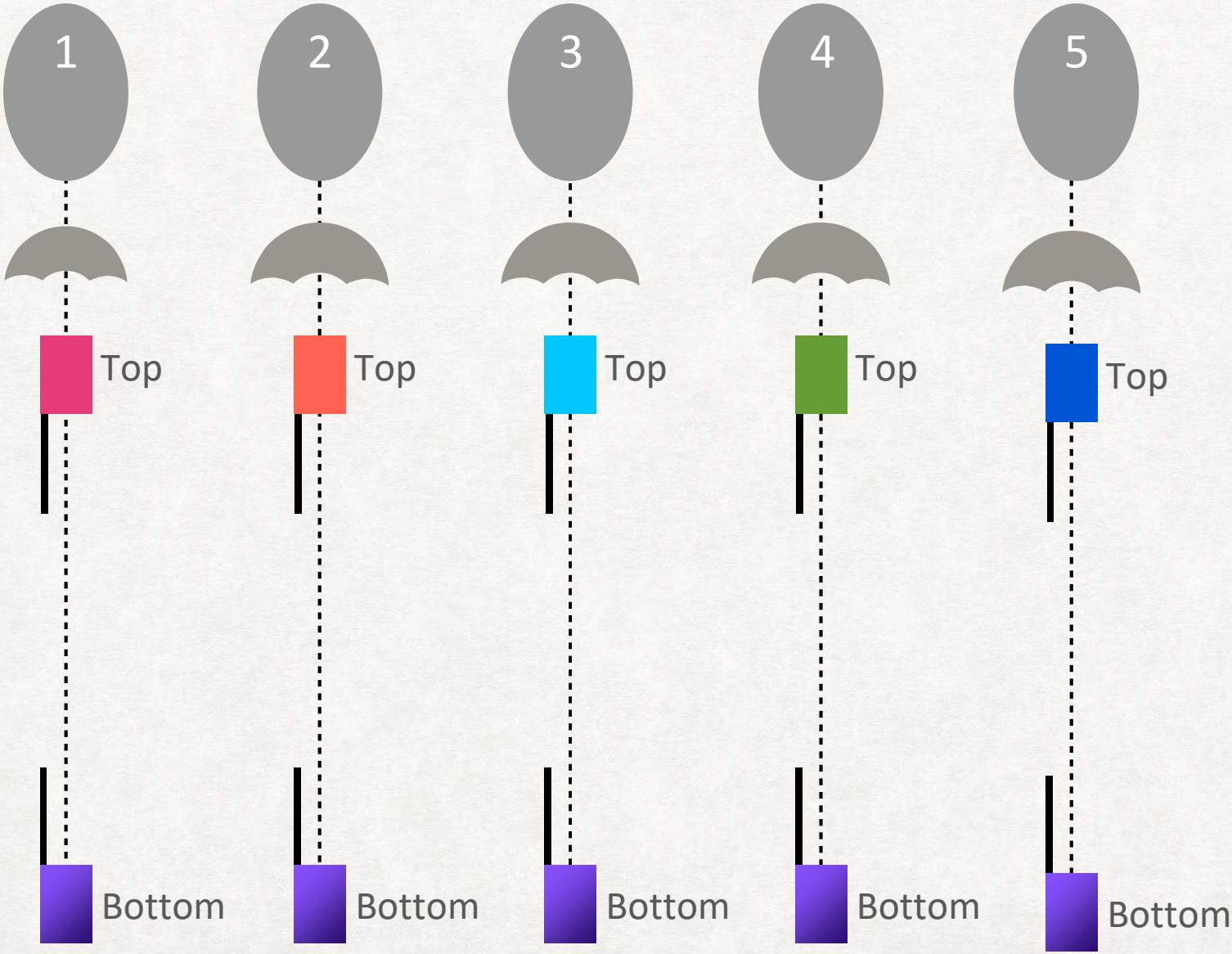
- 2m Antenna
- Coax
- Should terminate with SMA male



- 12v Power
- Power isolator/conditioner [optional]

* Note: Use the AC-to-DC power supply when at home.

THE SCALE PROBLEM



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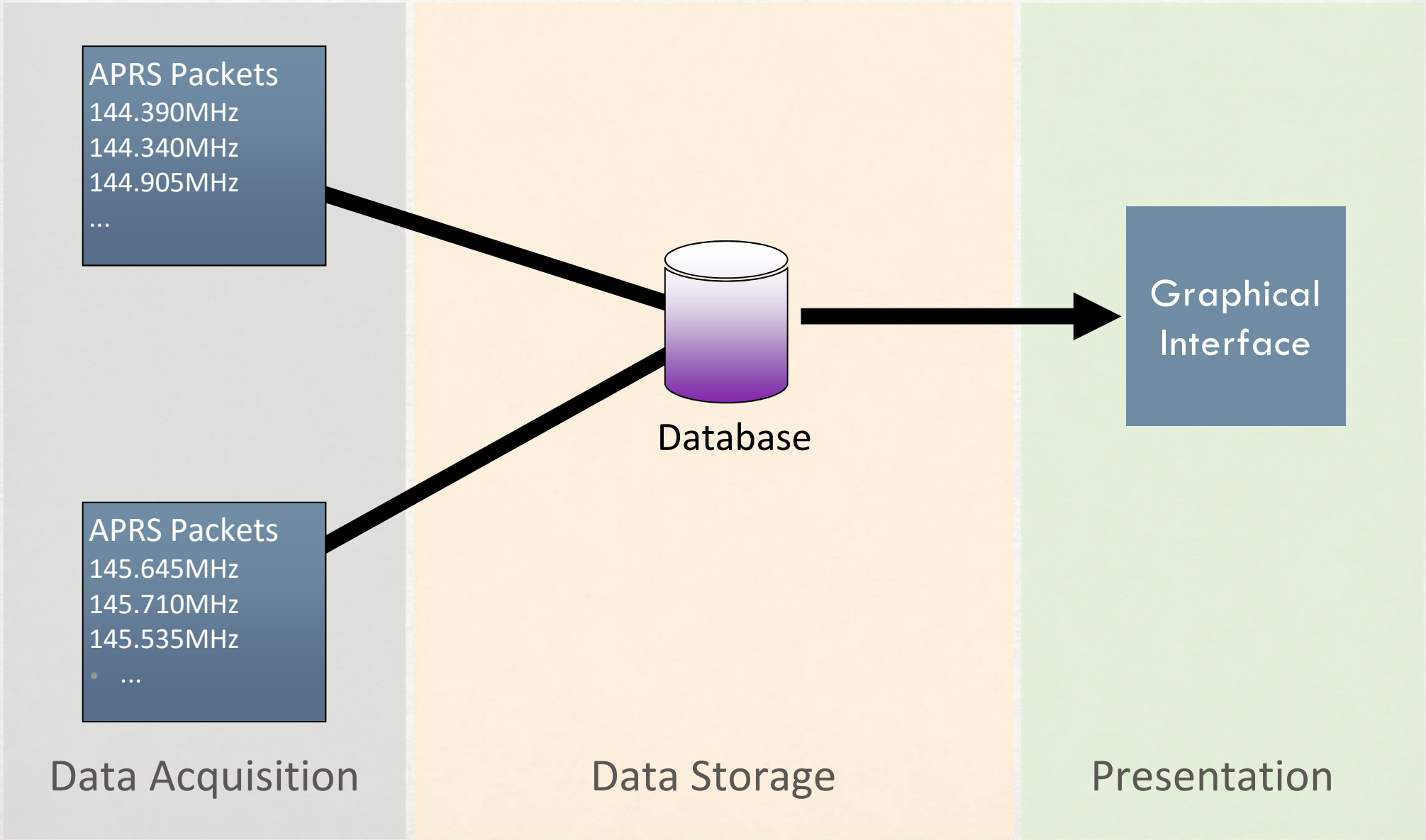
CORE CONCEPT



SDR-BASED APRS TRACKER

BLOCK DIAGRAM

2m Antenna

SDR

- USB stick
- 2MHz spectrum width

IQ Data

GnuRadio

- Channelize
- LP filter
- FM demod
- Downsample

Audio

Dire Wolf

- Software TNC
- 1200 baud
- AFSK demod

Packets

Aprsc

APR Advanced

Read Only

Clients:

- TrackPoint
- APRSISCE
- YAAC
- Xastir

APRS Packet Data

Database

OpenStreetMap database and tile server

Web Server

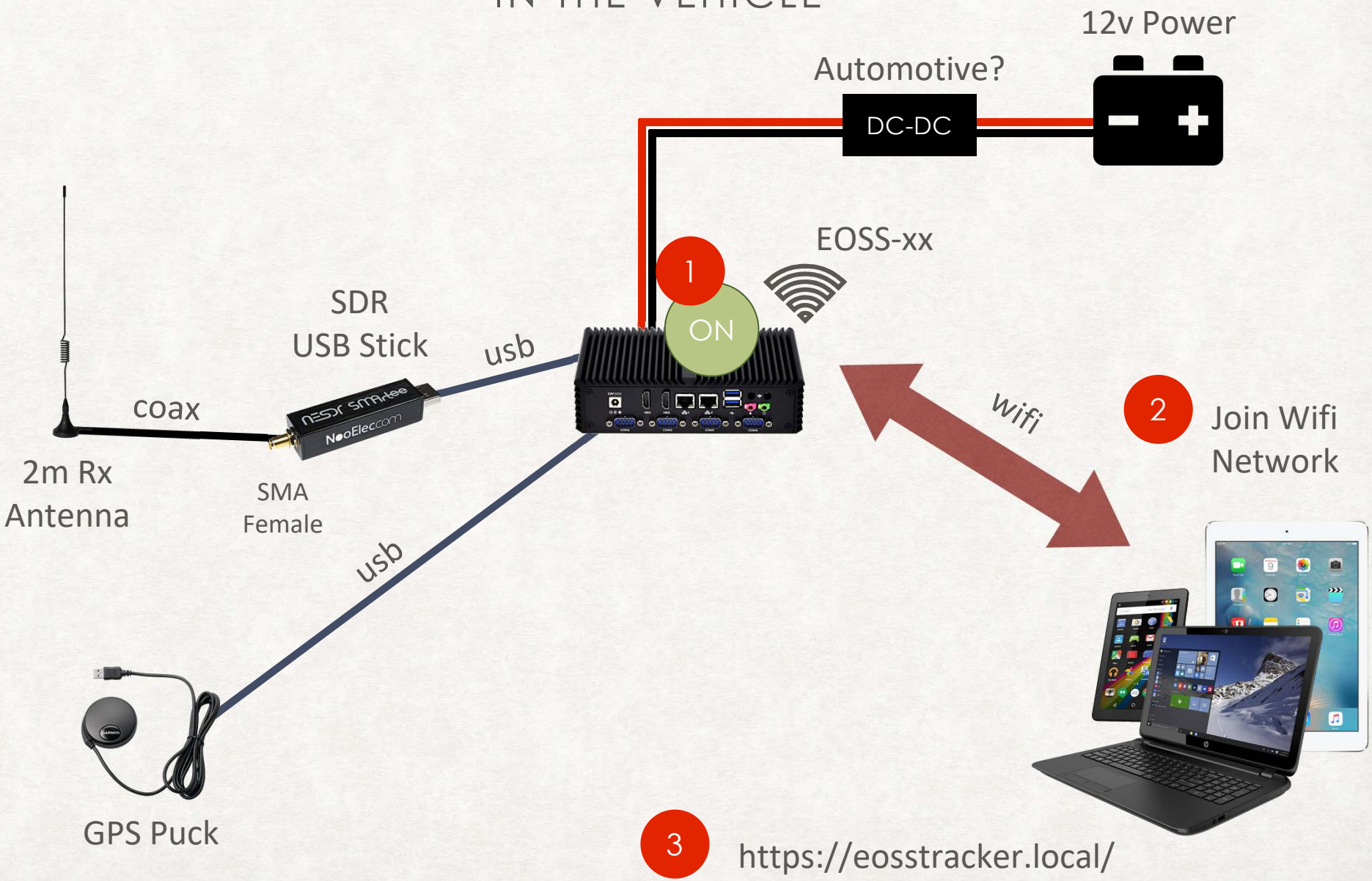
- Apache
- SSL (https)

Web Clients

Web browser on device of choice (ex. tablet, laptop, phone)

HOW TO CONNECT THINGS

IN THE VEHICLE



DEMO

BACKUP SLIDES

HOW TO CONNECT THINGS

AT HOME - GETTING PREDICT FILES