DRAPER

Visualizing UAV Data

Ananya Gopalan, Kelly Ly, Neel Bhalla
Task Lead: Alex Helderman
August 16, 2018

Background

Purpose:

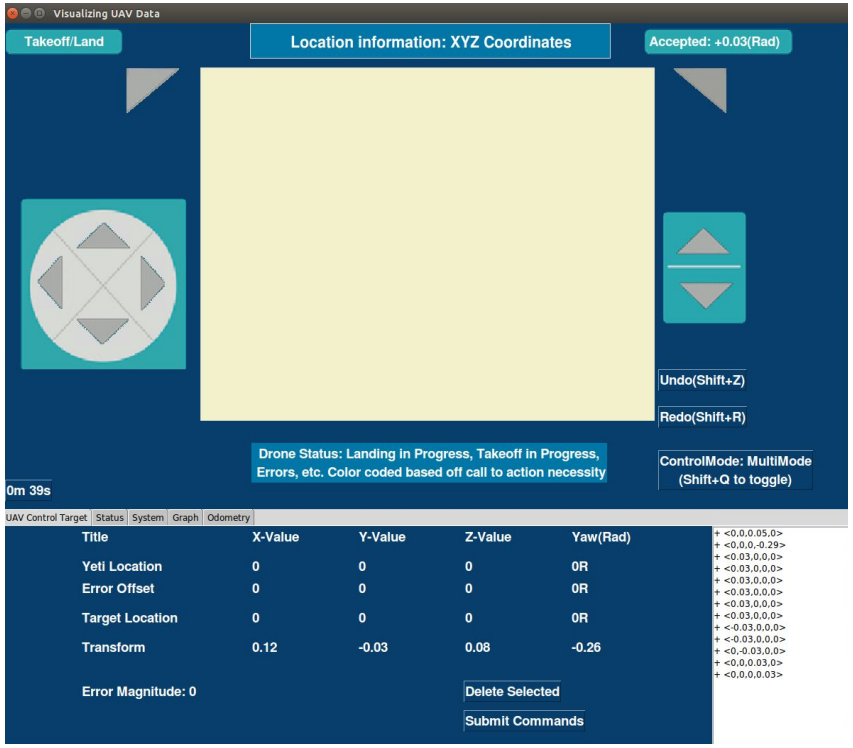
Create a front end for the SB-ISR ROS System

DRAPER

Developmental Stages

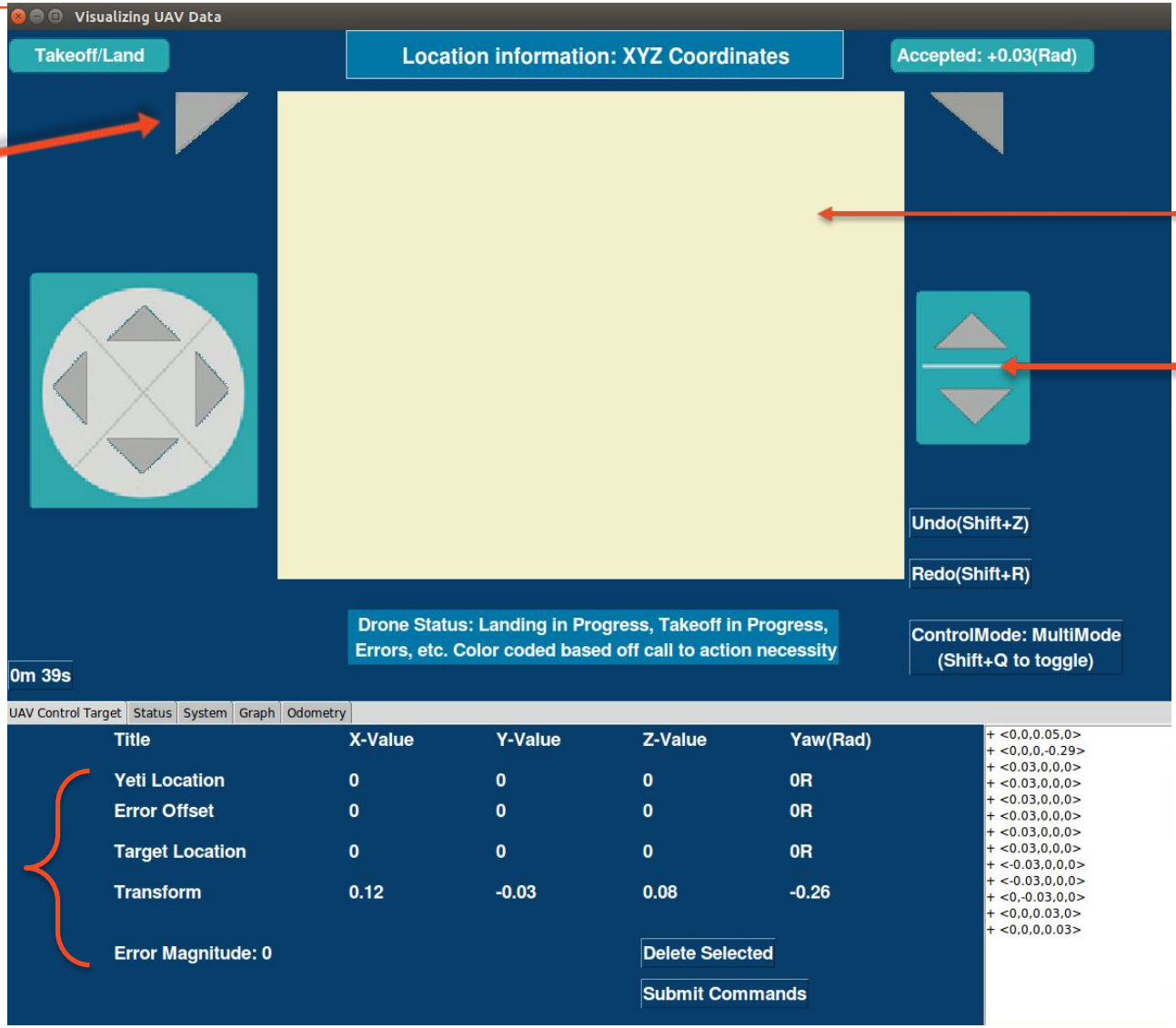
Before

After



DRAPER

Features



Control

Camera Feed

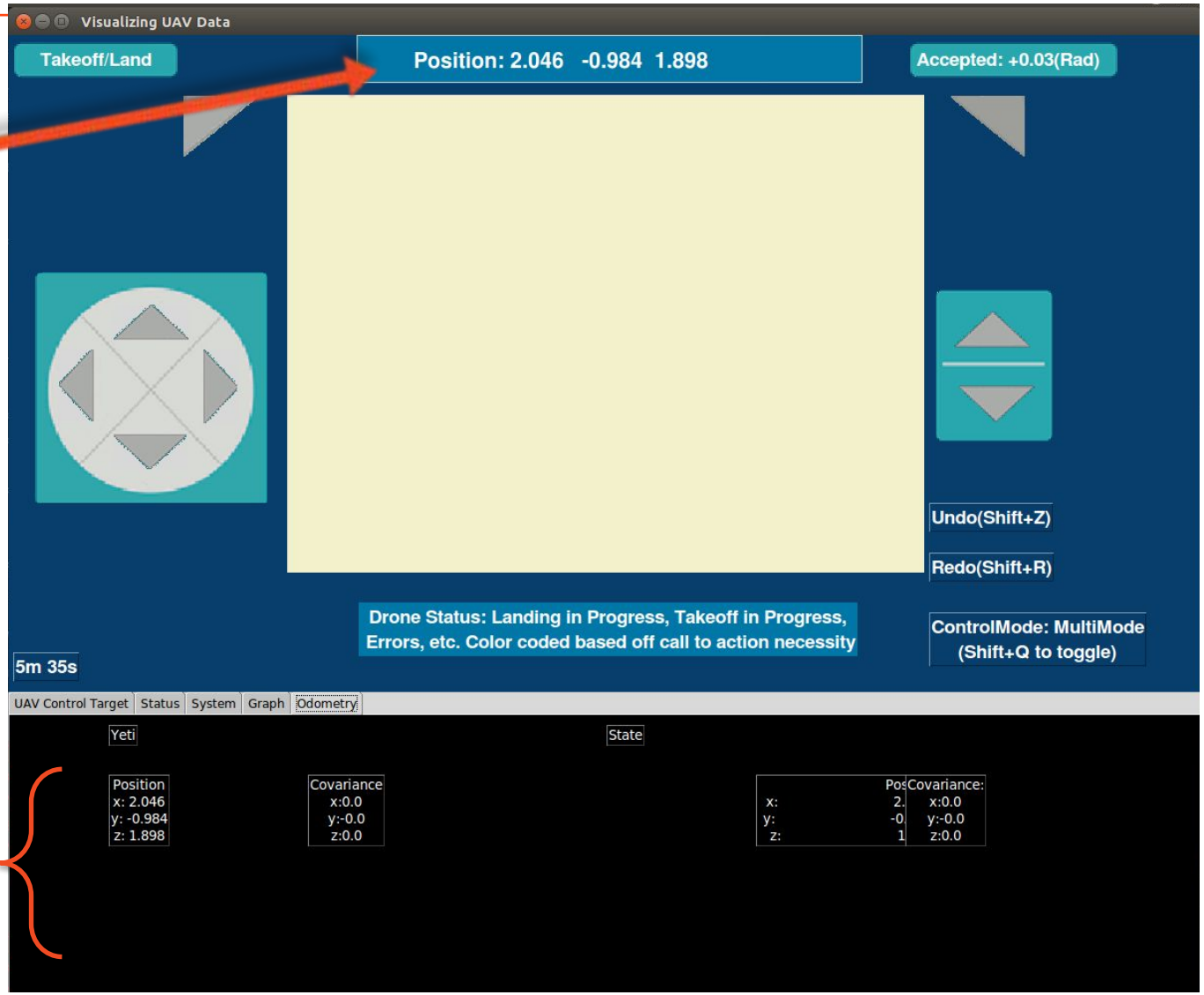
Control

Odometry

DRAPER

Features

Position

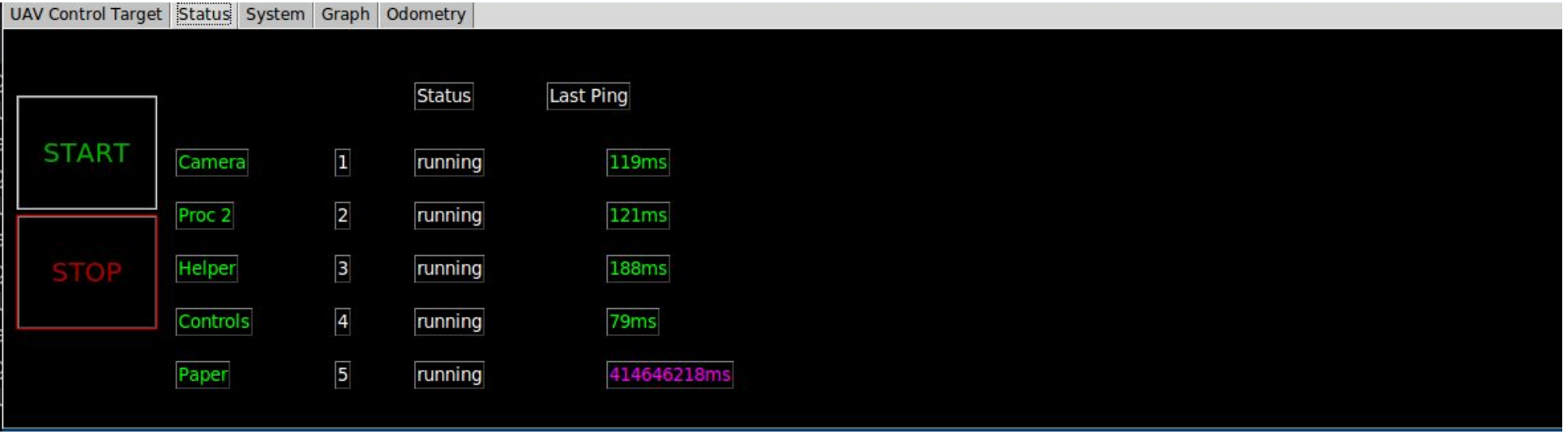


Odometry

DRAPER

Features

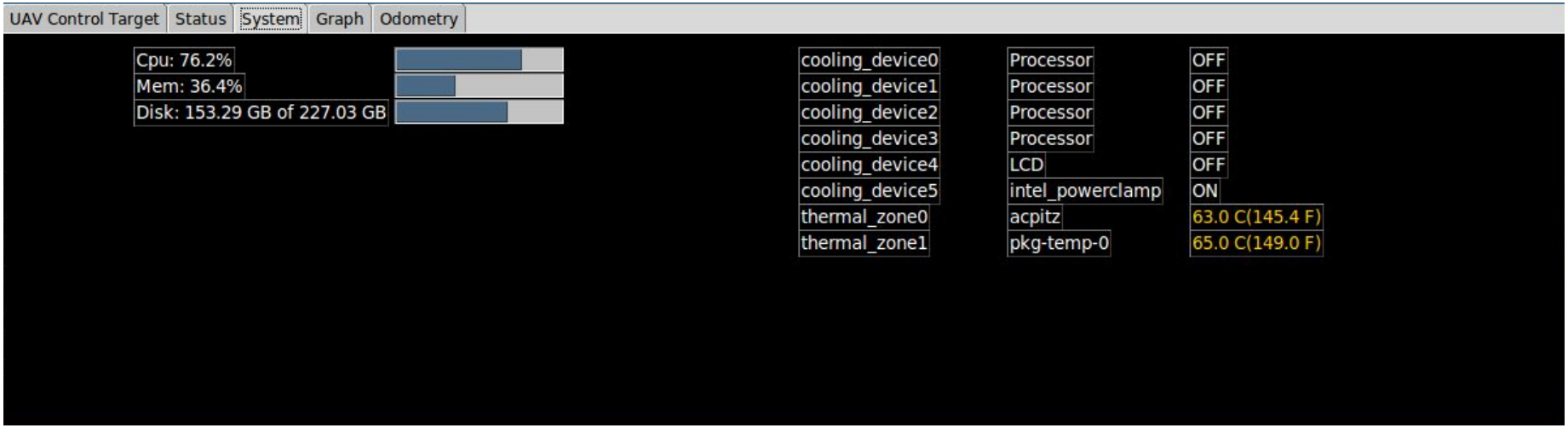
Processes and Status



DRAPER

Features

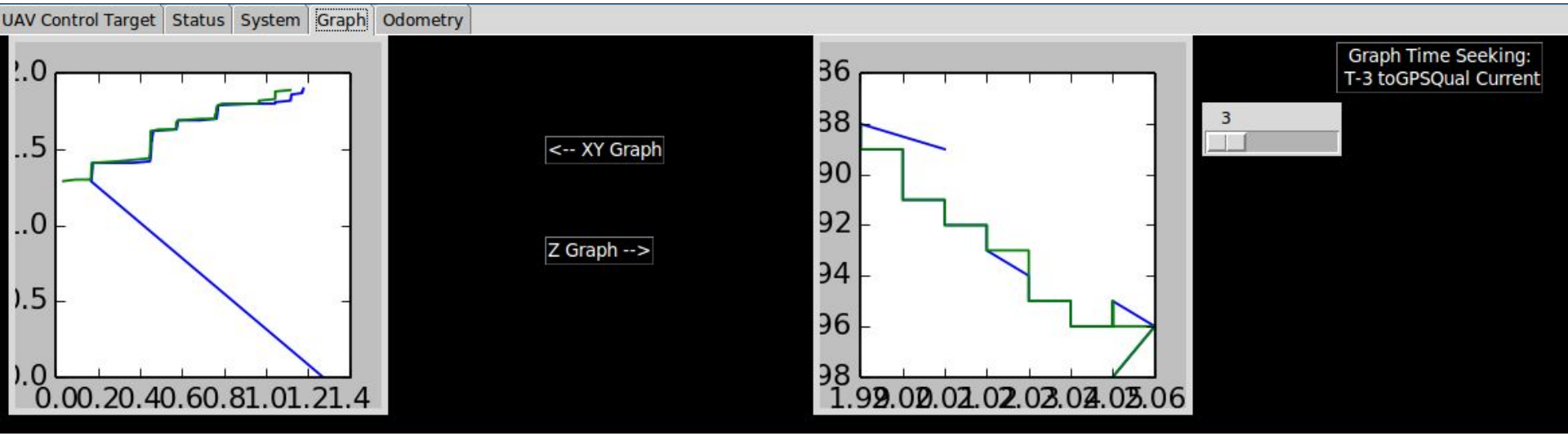
System



DRAPER

Features

Graphs



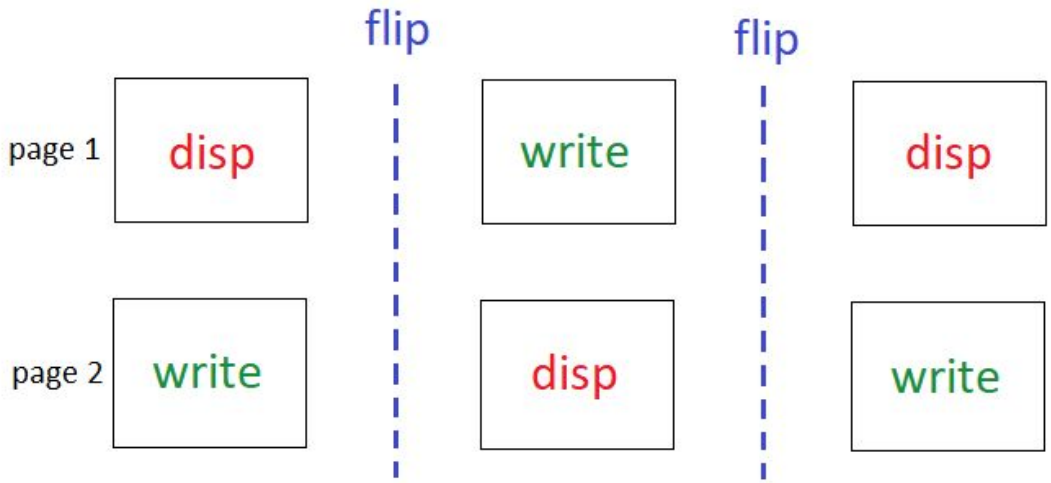
Challenges

- Lilac/groundstation
  - Understanding and adding to the preexisting code library by publishing to groundstation
- Transform and visualize collected data from UAV camera feed
- Synchronizing state control and yeti control
- Producing a lightweight control system

DRAPER

Challenges

- Camera:
  - Parsing the image in feasible time
    - Fix image feed flickering



DRAPER

Future Developments

- Integrate it into the SB-ISR procedure
  - Measuring performance of the GUI
- Generate 3D displays from the UAV cameras
- Use different methods of visualizing the odometry and processes

DRAPER

Acknowledgments

- We would like to thank…
  - Alex Helderman — Task Lead
  - Members of the SB-ISR project
  - Ashley Gard — High School Internship Program Coordinator
  - Elizabeth Marr — High School Internship Program Coordinator
  - Tina Lung — High School Internship Program Coordinator
  - Martha Porter — Education Program Administration
  - Sheila Hemami — Director of Educational Programs
  - Office of Education
  - William McFarland and Kevin Duda — Tour Guides
  - Alla Gimbel, Olive Rappoli, and Alejandro Miranda — Panelists