

TEC-V

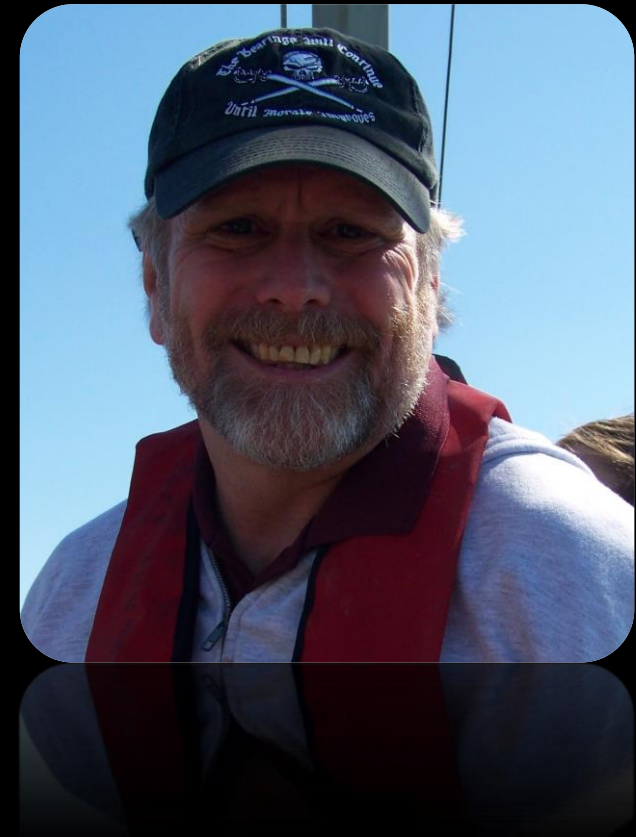
MILESTONE 1

By: Michael Dowling & Zealand Brennan



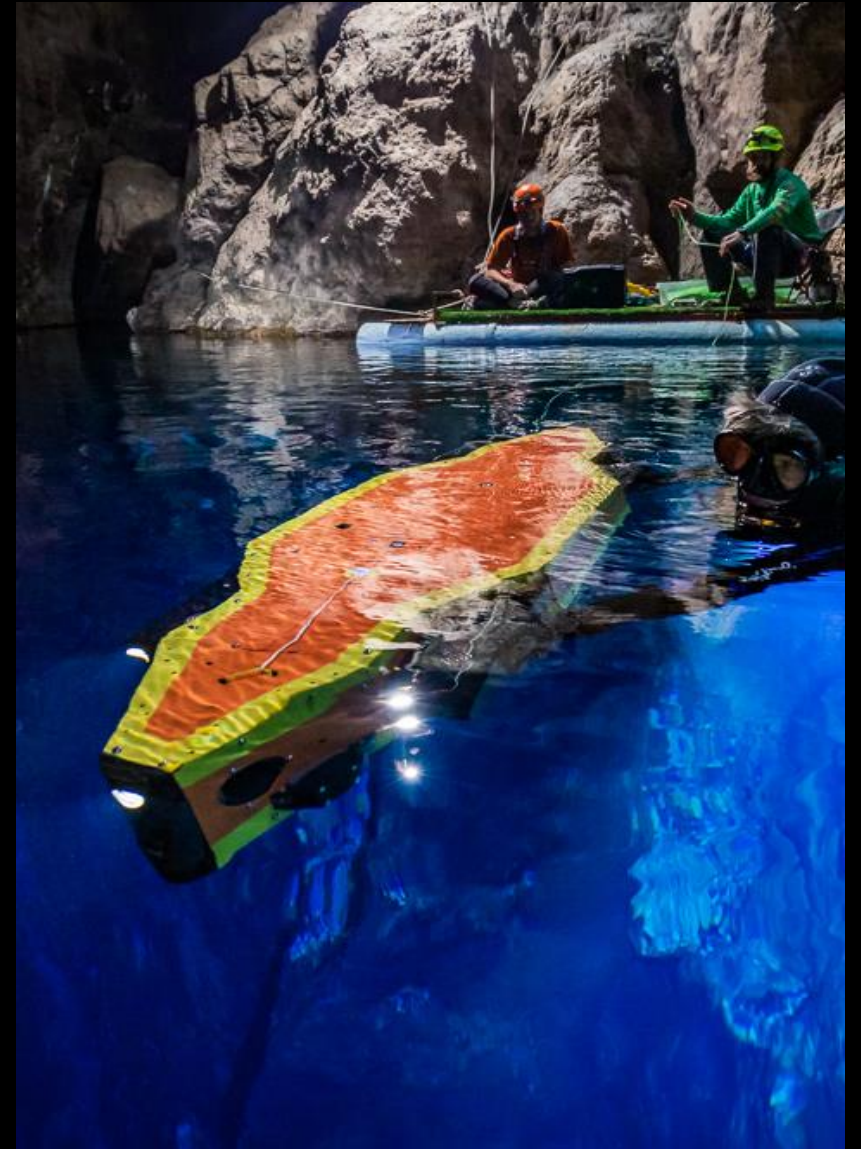
CLIENT

- DR. Wood
 - **Professor** | Ocean Engineering and Marine Sciences
 - **Program Chair for Ocean Engineering**



MILESTONE 1 OVERVIEW

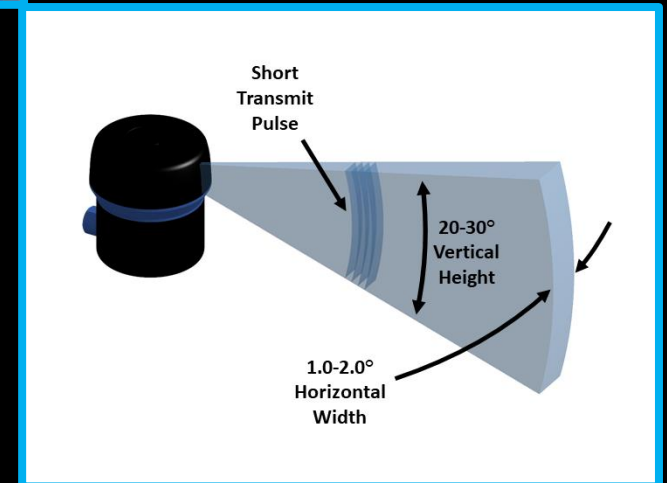
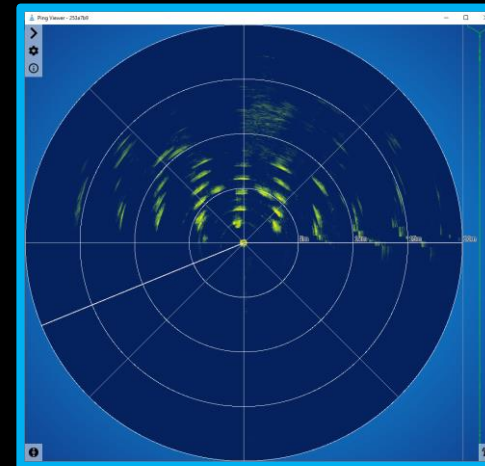
- ❖ Sonar Types
- ❖ Data Saving
- ❖ Scanning Sequence
- ❖ Cloud Plotting



SONAR DEVICES

Ping 360

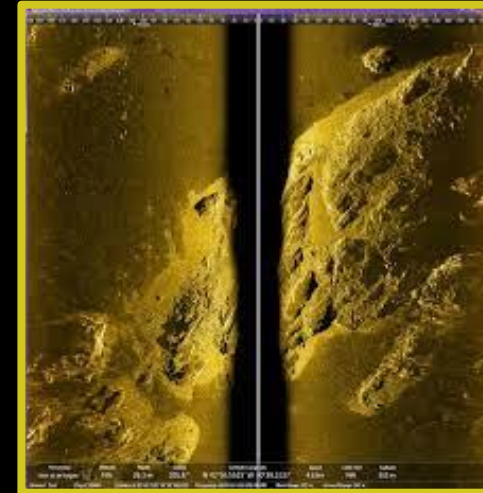
- Reliable imaging
- 360% degree
- 15% Cone
- Detailed Imaging – False
- Data Transcription - Unknown



SONAR DEVICES

Omniscan 450 SS

- Reliable imaging
- 5% degree (y movement)
- 70% Angle of scan
- Detailed Imaging – True
- Data Transcription - Possible



DATA SAVING

- Sonar data saving options:

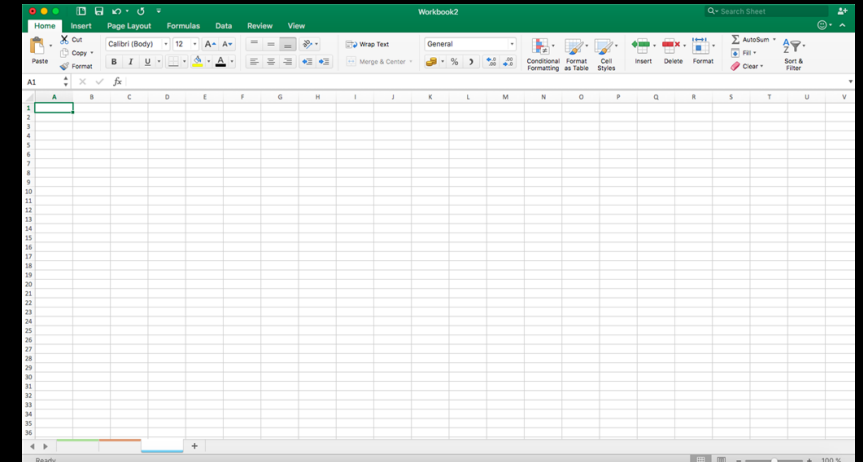
- On-board
- Topside Receiver

- Format:

- Excel spreadsheet

- Information Saved:

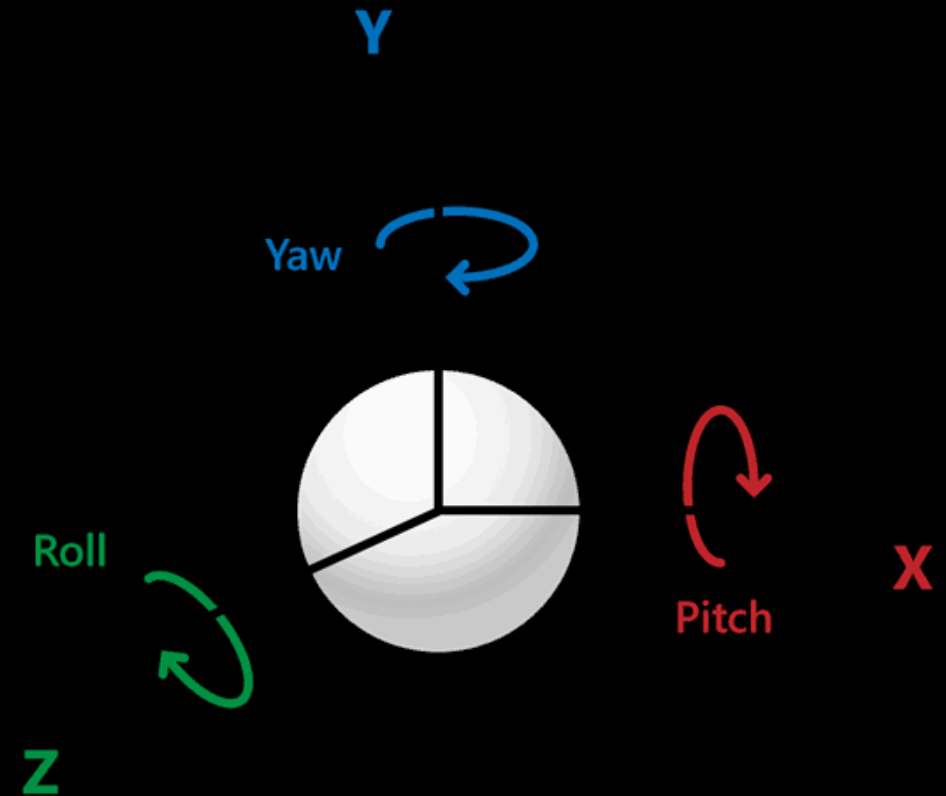
- X Y Z of contact point
- Telemetry data (UAVs XYZ pitch)
- Time and speed motors are active between points of scan



SCANNING SEQUENCE

Proposal

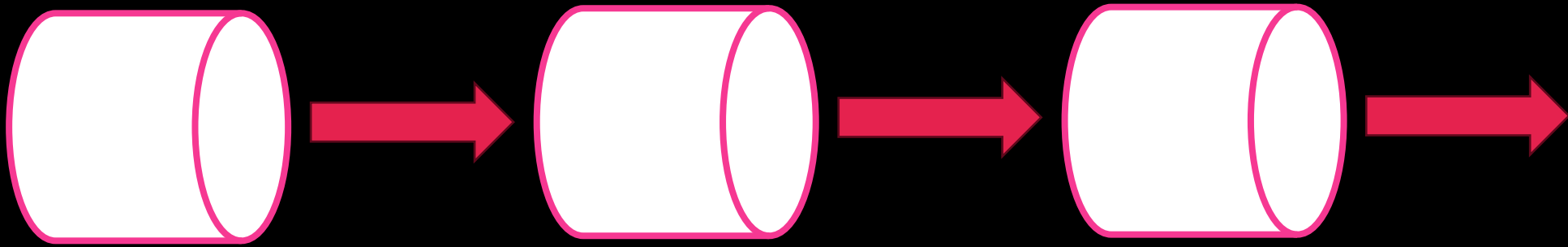
- Based on the sonar type selected:
 - Command/button through Adu Sub (operating system)
 - Rotate AUV in a specific pattern to scan that module of the cave.



SCANNING SEQUENCE

Collect Modules of Cave

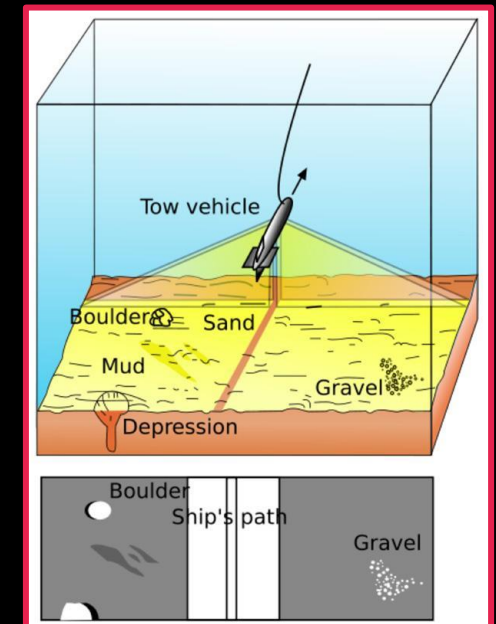
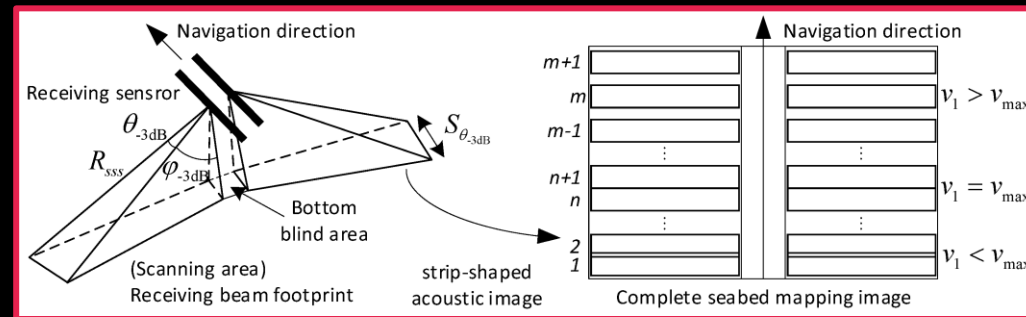
- After x Distance Scan and Collect data point



CLOUD PLOTTING

Data Returned

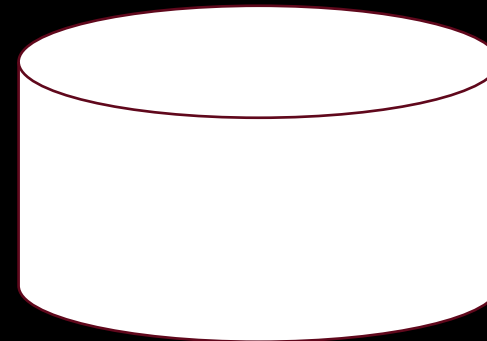
- Side Scan:
 - 3 Dimensional Plane



CLOUD PLOTTING

Data Returned

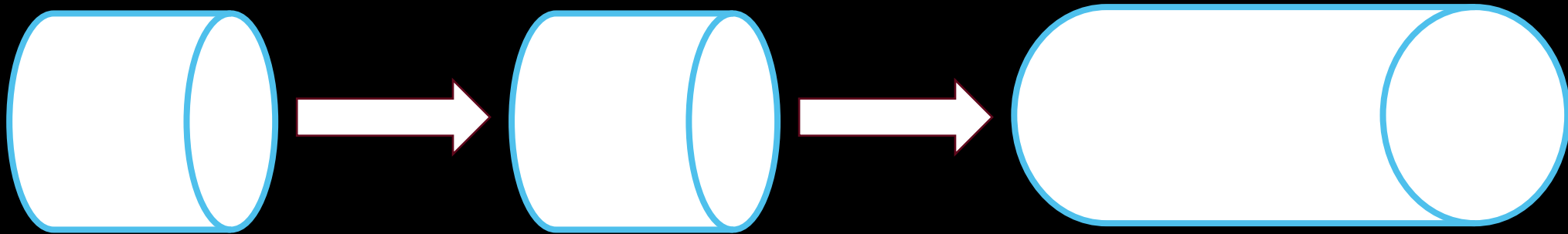
- Conform 3D plane to Cylinder



CLOUD PLOTTING

Module Combination

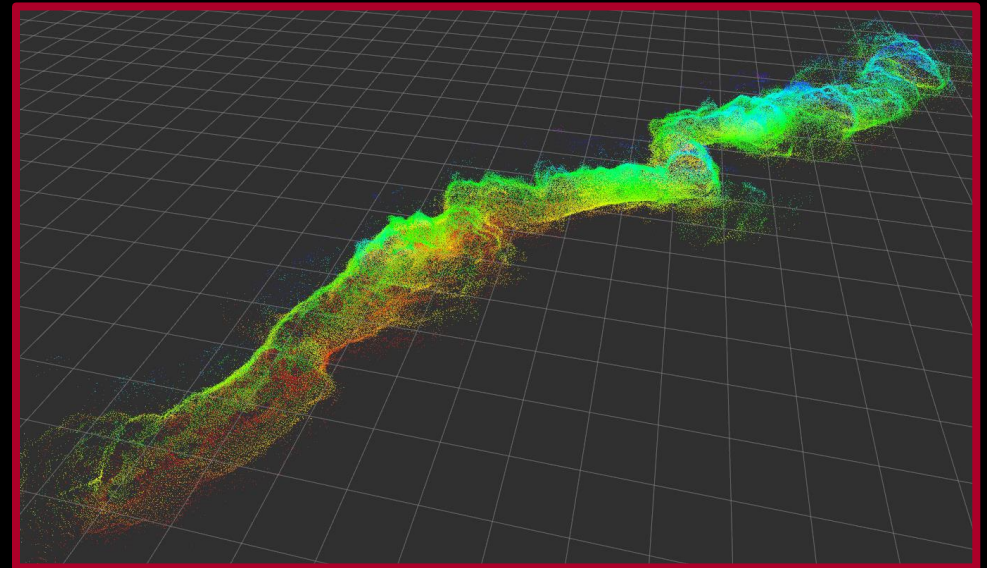
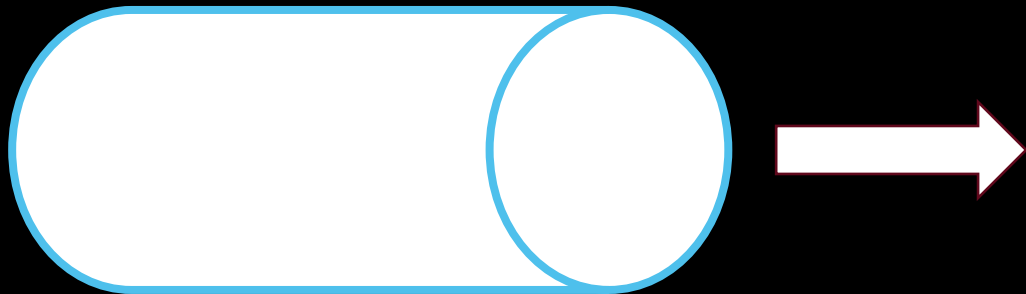
- Using Point Recognition to identify points of contact for connection



CLOUD PLOTTING

Goal

- User Interface to see and interact with the Cloud Plot



MILESTONE 2 : TASKS

1

❑ SSD DATA:

- ❑ Create a program to save Required Data to Excel

2

❑ Scanning Sequence:

- ❑ Using Ardu Sub create a sequence that maps close to 100% of a cave segment

3

❑ Cloud Plotting

- ❑ **Objective:** Get each module to be properly wrapped
- ❑ **Goal:** Work on combining sections

WEBPAGE LINK

TEC-V

https://bluecodehydra.github.io/FIT_Project-TEC_V/data.html

QUESTIONS?

