Smart Integrated Tile (S.I.T.)

Sam, Ivy, Tony

100 Island Challenge

- Based at Scripps Institute of Oceanography
- Investigating how oceanography, geography, and human activity shape the structure and growth of coral reef communities
- Large-area imaging of coral reef regions
- Data collection via remote sensors to model oceanographic conditions


2014

Vision

- Create sensor tiles that can be placed on the coral to collect information to be used in the environmental models and datasets
- Tiles will be distributed to partners of Scripps collaborating on the project
- Current version of the tile does not work
- Long-term teams working on the project over the summer
- Our Role:
  - Create multiple, basic versions of the tile
  - Pass them along to Scripps for field testing, gather their feedback about what works/doesn't work
  - Long term team will use feedback as guidance in their work

Core Requirements

- Create 2-3 different iterations of a minimum viable product
- Waterproof
- Depth sensor
- Display
- MCU
- Rechargeable battery
- Reprogrammable
- Ability to turn on/off
- Cheap (less than $100) in order to be widely distributable to collaborators

Iterations

1. Gather and display depth information
2. Average depth information over a long period to account for noise in the environment
3. Detect when picked up by diver and stop collecting depth information (more difficult, possibly a reach goal)

Resources

- Eric Lo (technical and logistical)
- BZ Zgliczynski at the Scripps Institute (use cases, feedback, ecological)

References

100islandchallenge.org