*FLASHTALKS* BLUETECH

Blue Innovation Symposium | February 2022
WE EQUIP BOLD ENTREPRENEURS TO DISRUPT THE STATUS QUO AND CREATE MEANINGFUL GLOBAL CHANGE.
We are the global network for innovators who are working to solve massive challenges.
GLOBAL REACH

9 ACCELERATOR PROGRAMS*
7 MASSCHALLENGE OFFICES
14 BRIDGE TO MASSCHALLENGE (B2MC) PROGRAMS
50+ ACTIVE PARTNERS
54 COUNTRIES REPRESENTED

* Not including custom accelerator programs run on behalf of partners such as U.S Department of Health and Human Services, U.S Airforce, Kennedy Foundation

Copyright © 2021 MassChallenge, Inc. All Rights Reserved.
IMPACT

3,000 STARTUPS

$8.6B FUNDING RAISED

2.5X MORE LIKELY TO RAISE AT LEAST $500K

$3.6B REVENUE GENERATED

3X MORE LIKELY TO REACH AT LEAST 15 EMPLOYEES

186K JOBS CREATED
Blue Ring Imaging

Casey Sapp

XR for Unmanned Systems
Spatial Computing for ROVs and UUVs
Who We Are

www.BlueRingImaging.com

Blue Ring provides a value chain of hardware and software to enhance perception and autonomy

Blue Ring’s vision is to enhance operator performance through 3D visualization, AR/VR, and assisted autonomy through targeted synthetic training. Our core product offering is a 180 3D/360 3D camera, AR/VR HMI, and middleware for collecting *ALL* data off the vehicle for synthetic training. These tools integrate with the legacy control systems for plug-n-play installation (eg Greenssea, Saab, QGC, Tomahawk Robotics).
AR/VR HMI Approach

Blue Ring takes a device agnostic approach to 3D data visualization, ensuring the data can be streamed on any mobile phone, tablet, or AR/VR headset. Our software technology is hardware agnostic meaning that as new devices and headsets go to market we can easily integrate with them.

Image Examples: AR overlays able to seen using a mobile phone, tablet, or wearable.
Blue Ring designs and manufactures in-house multi-lens camera technology which provides stereo depth estimation and high quality 3D reconstruction. We have deep engineering knowledge and expertise especially related to underwater camera systems for ROVs, UUVs, and submersibles.
180 3D Camera

Project Name “Blue Eyes”

Technical Specs

- 5.5lbs in air; neutral in water
- Plug & Play
- Low latency VR Video Stream
- 2x 4K @ 60fps H.265 video streams
- Custom color correction pipeline for underwater visibility enhancement
- Compatible with Ethernet and Fiber
- 15 or 30 watts; 20V
- 30mb/sec for 2x high quality 4K streams
AR/VR HMI (Mobile VR Payload)

The system is ruggedized for harsh environments and specialized for mobility. Even in the smallest boats ROV VR can handle space constraints, and provide a better experience than any 2D screen.

The ROV VR kit plugs into the onboard computer through an ethernet port, and the data is then populated into the AR/VR headset.
Enhancements to the Operator

AR/VR HMI

- Simplifies complex tasks
- Decreases task completion times
- Decreases individual workload
- Decreases cognitive load
- Increases ROV usability
DoD ROV AR/VR Integrations

VideoRay Defender (using Greensea), SRS, BlueROV2, and Saab
Contact

Casey Sapp, Blue Ring Imaging CEO
casey@blueringimaging.com
407-718-9156

Offices
St. Petersburg, FL
San Diego, CA
Current Lab

Kevin Rosa, PhD

Forecasting ocean conditions with unmatched hyper-local detail.
The underwater weather forecast.
current-lab.com
My path to Current Lab

1. **Academia:**
   Building highly accurate ocean modeling tools, but nothing for end users.

2. **Defense:**
   Over-reliance on the Navy’s global ocean model. Too coarse for coastal regions and strategic choke points.

3. **Competitive sailing:**
   Contracts with world-class teams proves there is a demand for a better ocean forecasting service.
The Problem

Offshore energy

“Ocean of Things”

Environmental crises

There is an urgent need for ocean forecasting.
The Solution

Current Lab is building an accurate and easy-to-use ocean forecasting platform.
Regions Covered

San Francisco Bay  Gulf of Maine  Miami

Chesapeake Bay  Rhode Island  Gulf Stream

Mediterranean  Gulf of Mexico  Salish Sea

and growing...
Potential markets

Sailing  Offshore Wind  Defense  Aquaculture

Shipping  Ocean science  Search & Rescue  EPA  Weather
Case study: Route optimization
Route optimization has focused on large-scale offshore weather systems.

Current Lab can provide huge value in the coastal domain.
AUVs for offshore wind surveys

The AUV in this pilot study was deployed from a ship, but what if we could deploy directly from shore?

Source: https://www.whoi.edu/oceanus/feature/a-new-way-of-seeing-offshore-wind-power-cables/
AUV route optimization by Current Lab

Galilee to Block Island Wind Farm
AUV route optimization by Current Lab

Galilee to Block Island Wind Farm

Depart 08:50: 0.29 kWh
Depart 13:40: 0.17 kWh

→ 42% less battery drain
Jaia Robotics

Ian Estaphan Owen

JaiaRobotics' mission is to make the collection of ocean data affordable and available for all that need it.
High Speed, Micro-sized, Low-cost, Multi-vehicle Aquatic Data Collection Robots!
JAIA BOTS – HIGH SPEED DATA COLLECTION AT SCALE

Vertical Profile Dive
1 - 100 m depth

Surface And Sub Surface Transit

Microsized
Light weight
Speedy > 10 knots
Pods of 1 – 20 Vehicles
10 miles range at top speed
JAIABot - A Single Platform with Multiple Applications

JAIABot-Hydro
Conductivity / Temp / Pressure
Bathymetric Data

JAIABot-Bio
Dissolved Oxygen / Turbidity / Water Samples
Water Quality Testing

JAIABot-Prime
Payload Delivery

JAIABot-Echo
Acoustic Monitoring
Marine Mammal Monitoring
JAIABOT – PLUG AND PLAY SENSOR CONFIGURABLE

Quick disconnect sensor ports

Conductivity

Temperature & Depth
JaiaBots - Rapid Data Collection at Scale Over Wide Areas

JaiaBots
3 vehicles = 43 minutes

Full Water Column Data Collection
2.25 million sq meters
17 million cubic meters
JAIA ROBOTICS – THE TEAM

Ian Estaphan Owen
Co-founder | CEO

Jason Webster
Co-founder | CTO

Dr. Toby Schneider
Software

Dr. Ed Sanville
Software

Ray Catania
Mechanical

AQUABOTIX
A Rhode Island based business focused on changing the paradigm for aquatic data collection using micro-sized, low-cost, high-speed aquatic robots that work in pods of 1–20 delivering eyewatering savings in costs and data collection times.

MAKING AQUATIC DATA COLLECTION AFFORDABLE AND AVAILABLE