Process Document

Research
What is the behavior(s) you are trying to capture? What are your users physically doing?

Exploring
Piloting an OpenROV
Navigating through unknowns
Observing the underwater environment
Operating a underwater vehicle
Configuring an OpenROV
Using a keyboard and joystick
Existing UI interfaces for underwater ROVs (remotely operated vehicles) are designed around bare functionality and hardware constraints; thus they are often ugly, unintuitive and often just rudimentary on-screen overlays with text.

Existing UI interfaces are cluttered and confusing

Existing UI interfaces have a steep learning curve

The new OpenROV UI will be both inviting and attractive to new and old users. The UI will improving the experience of operating the OpenROV through a beautiful and logical interface that isn’t daunting.

The UI will keep up with the user, providing the desired functionality and experience for both novices and experienced ROV pilots alike.
Objectives

How will this be a successful user experience?
How will this be a successful design?

This will be successful if a novice user finds the interface engaging, inspiring and “easy to use”
This will be successful if an experienced user find the interface capable, beautiful and elegant and wants to keep on using it.
Who will use this? How will they use it? How if at all, will it change their behavior or the behavior of whomever is around them? What is the need for this? What do they currently do?

Underwater explorers, from aspiring to experienced, and even those who don’t know they are explorers and citizen scientists yet. They will use it to explore and document the underwater environment in any way they see fit. It is to open the exciting world of the underwater majority of our planet. It will hopefully excite and inspire those who use it, and also spark the curiosity of those around them (both physically and in the interwebs), and encourage them to also start exploring!

Our aquatic blue heart of the planet is so poorly understood, we’ve only mapped a small fraction of the ocean, and have caught only tiny glimpses of the biodiversity of the oceans. They are rapidly changing and being destroyed, through climate change and our commercial activities. We need to better understand and capture what are oceans and aquatic environments are like now, to hopefully preserve and save them for the future.

Currently most people don’t realize that they can participate in ocean/aquatic exploration and science, and we want to enable anybody and everybody to become citizen scientists and explorers. People can currently scuba dive, but is expensive and dangerous.
Where will you find this UI?

The UI is accessed through simply navigating to the URL for the robot. This is done by the robot hosting a webserver aboard itself (already how we do it).
The screen size will be a standard web browser window for an 1080p screen (1920x1080) – For which there is a safe usable area of (1885 x 860)

Source - http://www.websitedimensions.com/
## Persona 1

### Diving Dave

<table>
<thead>
<tr>
<th>AGE</th>
<th>Passion</th>
<th>Familiarity with Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Being in the water</td>
<td>Low</td>
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**Occupation**
Diver

Diving Dave loves the ocean and tries to get into the water whenever he has the chance. He used to be a contractor, but now owns a dive shop and dives for a living. For him the ocean has cast its spell on him, and he wants to explore it even more. He really wants to dive all the time everywhere, but many things limit how far he can go, mainly his body. He has heard much about ROVs and even piloted ROVs in the past for specific salvaging jobs, but they were really expensive (at least 2x times the cost of a good set of scuba gear!). He wants something that can let him dive, without him diving.

![Diving Dave](http://adventure.howstuffworks.com/outdoor-activities/water-sports/divers-alert-network.htm)
Persona 2

Maker Mark

AGE: 26
Hobby: Tinkering
Occupation: Software Developer
Familiarity with Technology: High

Mark loves to build and tinker with things, and always has a side project going. He loves the idea of getting out and exploring and travelling the world, but never really does because it seems too daunting. His full-time job is as an software engineer for the Widget Corporation, so he has his daily 9 to 5 grind. But on the weekends, he is either in the garage or at his desk, hacking away on his various hardware and software projects. He’s always learning new ways of fabricating things, and loves collecting tools to help him in his various projects. He has a 3D printer and a drone, among other things in his maker pile-o-stuff.
Curious Cindy

<table>
<thead>
<tr>
<th>AGE</th>
<th>Hobby</th>
<th>Familiarity with Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Tumbling</td>
<td>Medium</td>
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Future Occupation
Scientist

*Curious Cindy is interested in STEM but doesn’t know where to start. She is inspired by women scientists, and aspires to be like them. She is a digital native, and remembers using computers as far back as she can. She isn’t terribly familiar with robots and the underwater world, but finds it intriguing, but is also daunted and doesn’t know where to even start!*
Write a scenario that describes what a user would do with the app. This scenario will then be used to create user flow and app screens. Use simple directions.

Bob wants to explore a coral reef
1. He turns on the OpenROV
2. He enters the robot URL into a web browser
3. He does a system check of the robot through the UI to test everything
4. He changes some system settings of the robot
5. He deploys the robot
6. He pilots the robot around the reef
7. He finds something cool, and shares his dive to Youtube and OpenExplorer
OpenROV Cockpit Interface UI

Interface Aesthetics
Spring 2015
Elisabeth Prescott & Kimiko Ryokai
What type of experience do you want to provide for your user?

The interface will help uncover the curiosity and explorer in everybody. I hope to reinvigorate that child-like sense of wonder for the world. I want to users to feel invited and encouraged to make their own adventures. I want them to fall in love with the aquatic world and to also share them with others. I want it to be an exciting gateway into uncovering the unknown.
Formal Collage

Feeling – Explorative, curious
Contrast – Known, ordinary