The Dolphin

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Concept - Diving helmet

- Overhead display: information is projected onto glass
- Full mask: mask covers the entire face not just eyes
- Echolocation: uses frequencies to create a sonar map
- Vital information: dive time remaining, dive depth, etc.

Sonar Map

- Rotational sonar
  - Small and lightweight
  - Diver is able to carry along with the rest of the equipment
- Body mounted (2 sonars)
  - One placed on the diver’s head
  - Another strapped onto the air tank housing (keeps the tank in place)

Diving Sensors

- Depth Gauge:
  - Mounted on the side of the diver
  - Calculates current depth the diver is at
- Air tank sensor:
  - Mounted on oxygen tank
  - Determines remaining air pressure(PSI/kPa)

What are the Sensors for?

- Calculates the current depth the diver is at
- Dive time elapsed
- Current time
- Amount of air remaining in tank
    - Calculated from current depth, air tank capacity/volume and air pressure in air tank

Alerts

- The Dolphin will alert divers by flashing the screen red where attention is needed
- This will happen when
  - Air tank is low
  - Dive time remaining is about to run out
  - There is a potentially hazardous object nearby

Stakeholders

- American Academy of Underwater Sciences (AAUS) as the client to ensure product is safe for diving use.
- Main customer are scuba divers.
- Scuba instructors should be prepared to instruct use of product.
- Possible Stakeholders:
    - Military (Navy, etc.)

Stakeholders Cont...

- Target Customers:
  - Archaeologist divers
  - Deep divers
- Recreational divers can see use in this product as well.
- Target customers expected to provide usability requirements and help with prototyping.

Difficulties - Does not exist

- An application capable of the following:
  - Combining images created by the sonar
  - Corrects the image when the diver moves.
  - All done in real time
- Sonars that are compact and lightweight (able to be mounted on a human body)