



Revolutionizing Data and Reality Capture

Cleo Robotics

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THE FUTURE OF WORK

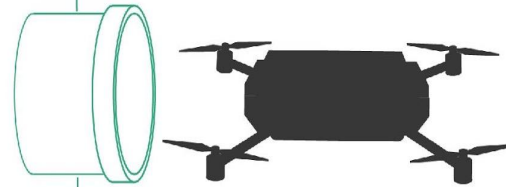
Automation and human-machine collaboration

- Elimination of dangerous jobs
- Automation of repetitive tasks
- Digitizing the physical world
- Utilizing AI and machine learning for decision making

Existing Robots are not Ideal because they Can't:

- Safely operate around people
- Navigate challenging environments
- Operate in difficult to reach areas

Existing Technologies



QUADCOPTERS

Can't safely operate in confined spaces and around people due to their large size and exposed propellers

STATIONARY CAMERAS

Restricted mobility and field of view; limited to visual data only



GROUND ROBOTS

Can't climb stairs or travel vertically; limited field of view



THE SOLUTION – Dronut™

Next Generation UAV



INTELLIGENT

A suite of sensors and an AI engine allow for autonomous operation



EFFICIENT

Operate twice as long as drones of similar size for extended missions



COMPACT

Collect data in places that no other robot or human can access



SAFE

Fly safely around people and sensitive equipment



PATENTED TECHNOLOGY

Controlled by Cleo's proprietary thrust vectoring technology

EVOLUTION OF DUCTED FANS



Hiller VZ-1
1953



Sikorsky Cypher
1988



Honeywell T-Hawk
2007



CyPhy Works
2014

All these and other attempts at commercializing these vehicles have failed due to significant challenges with control and maneuverability.

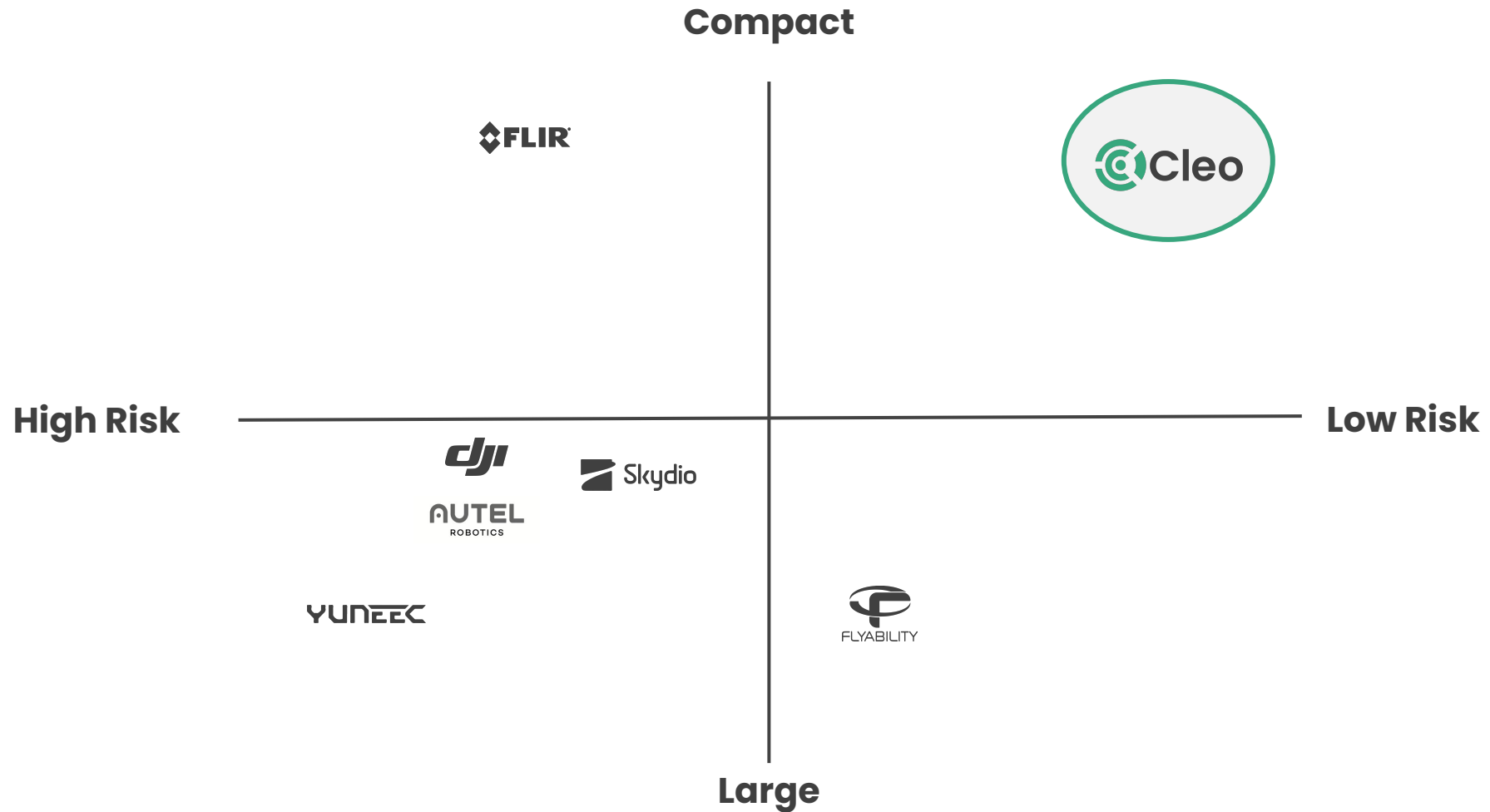
Dronut X1 2022

The world's first commercial
ducted fan aerial vehicle



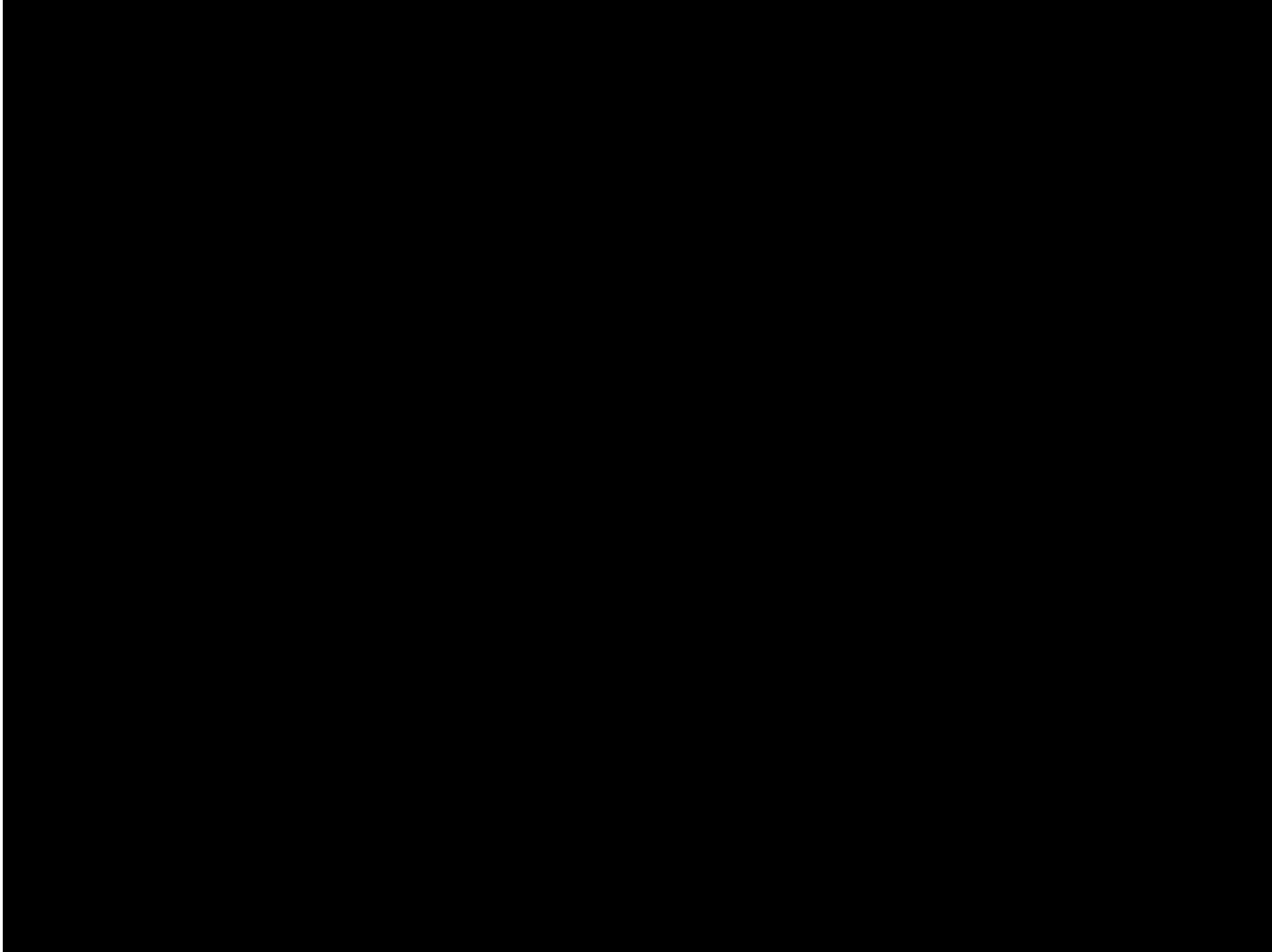
Cleo's patented technology
(13 patents and growing)

COMPETITIVE LANDSCAPE



More than 50 Customers

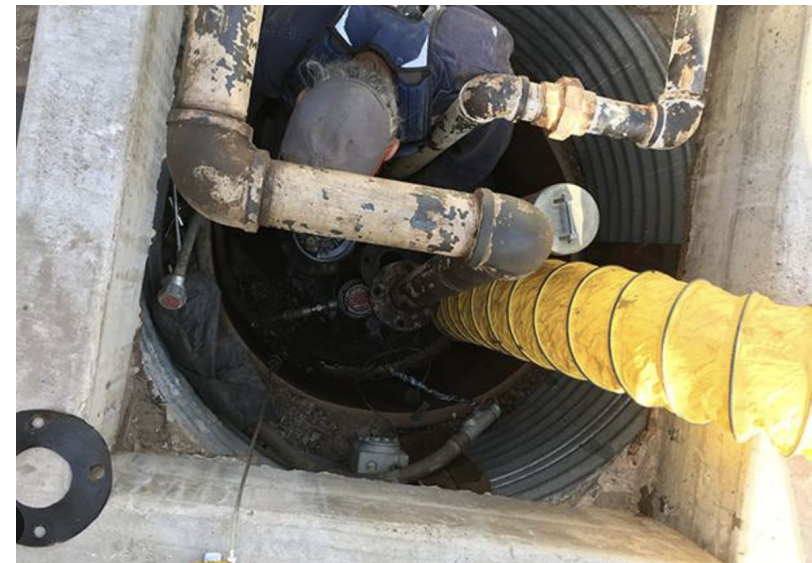




3D Mapping of Challenging Environments in Naval Vessels

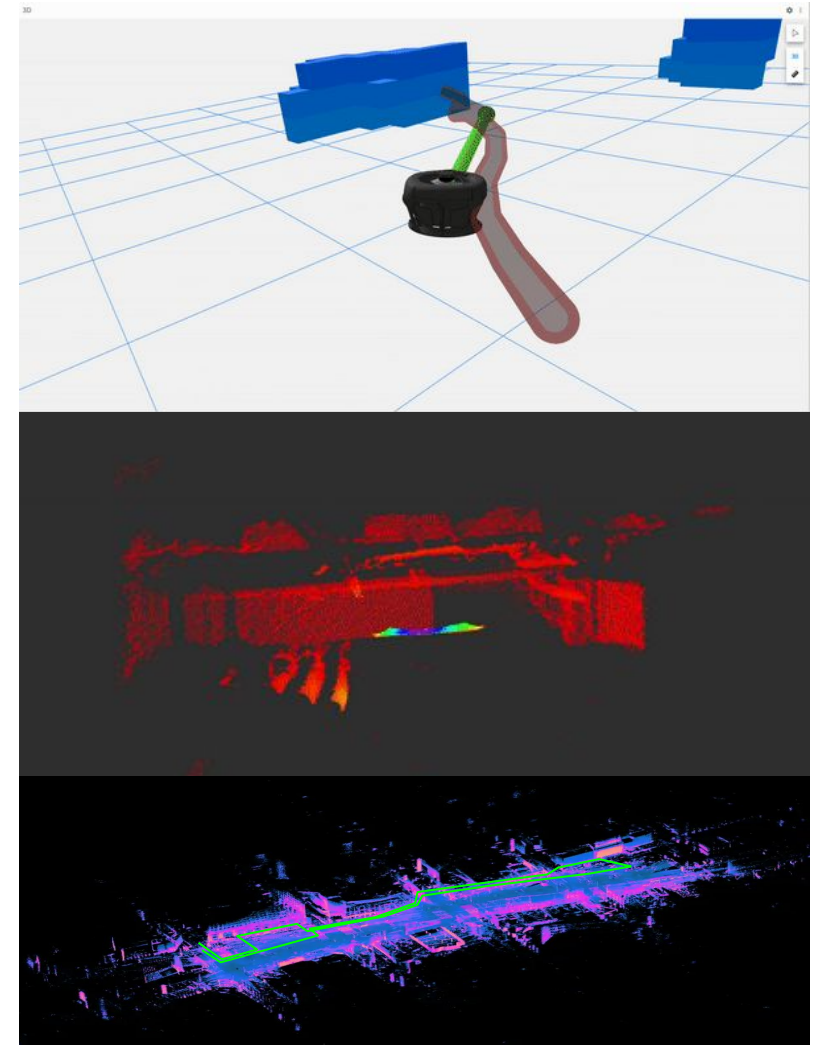
The Problem

1. Existing 3D mapping technologies used by the BIW and the shipbuilding industry are difficult to deploy in tight spaces typically encountered aboard navy vessels, and often cannot be used in confined or hard to access areas.
2. Due to line-of-sight limitations presented by fixed-point scanning, common scan techniques often leave “blind-spots”, resulting in incomplete compartment scans.



The Solution

1. The proposed solution will collect data in these challenging environment in minutes, significantly reducing the manpower and time needed to 3D map entire ships.
2. Data collection will be accomplished through Cleo's Dronut UAV platform and will include LiDAR point cloud data and high resolution imagery. Data will then be processed to generate high fidelity 3D maps
3. The process will be aided by Cleo's autonomous capabilities that enable safe and quick execution of these missions.



More About the Project

1. This project would provide platform training through user manual and video recording of flight examples to relevant operators.
2. Starting TRL is 4; project TRL at completion of project is 8.



We boldly go where **no robot**
has gone before

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