

## Actuators for the World's Most Extreme Environments

Our fluid powered actuators do not corrode, do not require servicing and are a fraction of the weight of the current state of the art.

### Business Summary

Actuation Lab will enable industries who operate in harsh environments to eliminate their actuator servicing costs, and drastically reduce handling costs by employing our revolutionary composite material Callimorph<sup>®</sup> actuator in place of their traditional ageing technology.

### Customer Problem

Piston actuators are not optimised for extreme environments:

- They contain components that must be serviced at least every 2 years.
- Their metal surfaces corrode in salty conditions requiring constant upkeep.
- Their excessive weight means handling is expensive and dangerous.

### Our Solution

Our Callimorph<sup>®</sup> actuator does not corrode, does not require servicing and is 1/3 the weight of the current state-of-the-art. The Callimorph<sup>®</sup> replaces piston actuators by retrofit. The Callimorph<sup>®</sup> will save £200,000 in lifetime servicing costs, for each actuator replaced in target applications in the Oil & Gas industry. Over 100,000 actuators are sold into our target applications in Oil & Gas/year.

### Target Market

The initial market is the on/off piston actuator market, a technology used extensively in the Oil and Gas industry. This market is currently valued at \$1.2B.

### Competition

The suppliers of pneumatic pistons into the industries that operate in extreme environments, including Rotork, Emerson and SMC. Our technology out performs their offerings by being lighter and costing nothing to maintain. These competitors are also Actuation Lab's target acquirers.

### Development plan

We are currently working with a committee of industry experts to develop our technology from demonstrators into minimum viable products for the Oil and Gas industry by 2022.

### Revenue Model

Actuation Lab has built relationships with the hardware integrators who supply the Oil & Gas and Energy industries who will supply our products. We predict sales of 1180 units in 2025, generating a revenue of £9.6m

### IP development

The plan to develop an extensive IP portfolio will allow us to rapidly add value to the business, with the knowledge that innovative component manufacturers with strong IP, are regularly acquired by multinational actuator manufacturers. The Callimorph<sup>®</sup> is patent pending and protected by extensive manufacturing knowhow.

### Funding requirements

Actuation lab is seeking £400,000 investment to compliment a £300,000 InnovateUK grant that we are confident will be secured in January 2020. This will enable 2 MVPs to be developed for industry trials and certification. We are partnering with the National Composites Centre, Bristol and 2 industry suppliers. Work will be carried out by a full-time team of 4 experienced composite material engineers, with commercialisation supported by a team of 3 business advisors as well as SETsquared and QTEC accelerators.

### Company Profile

**Industries:** O&G and Offshore Energy

**Employees:** 3

**Founded:** June 2018

**Origin:** University of Bristol spin-out

### Management

**CEO:** Dr Simon Bates

**CTO:** Dr Michael Dicker

**Exec Director:** Dr Tom Llewellyn-Jones

### Advisors

**Business:** Pete Stirling, STL-Tech

**Technical:** Vincent Duffy, ValvePro

**Technical:** Alun Hobbs, Hobbs Valve

### Metrics

**Registered IP:** Patent pending (June 2019)

**IP ownership:** Actuation Lab owns all IP

**Technology readiness:** TRL4

**Shareholders:** Co-founders (85%) UoB (15%)

### Funding and Awards:

**InnovateUK ICURE grant:** £50,000

**SETsquared membership:** Won Dec 2018

**2019 Prodrive Rapid Challenge:** Runner up

**Grant submission:** £300k (result Jan'20)

### Fundraising goals

**Seeking:** £400,000

**Purpose:** Develop TRL7 systems for in-service testing in Oil & Gas industry

### Contact

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