

VULCAN V VENTILATOR PROJECT

TIMELINE INFOGRAPHIC

18
MARCH

HACK-A-VENT CHALLENGE INITIATED

THE PROBLEM



75,000

Ventilators were projected to be needed by mid-May.*



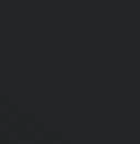
\$50,000

Max for each computerized, bedside machine.**



97

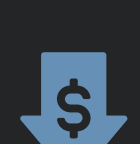
US COVID-19-related deaths as of March 18, 2020. **



LESS THAN 12

American companies make ventilators.**

CHALLENGE CRITERIA



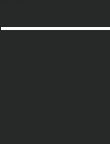
HIGHLY PRODUCIBLE

And easy to use.



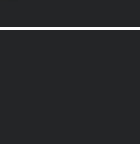
MEETS REQUIREMENTS

Established by HHS.



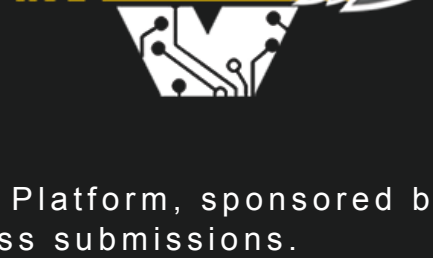
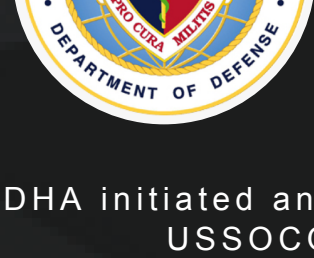
LOW COST

<\$300 per ventilator.



NON-DISRUPTIVE

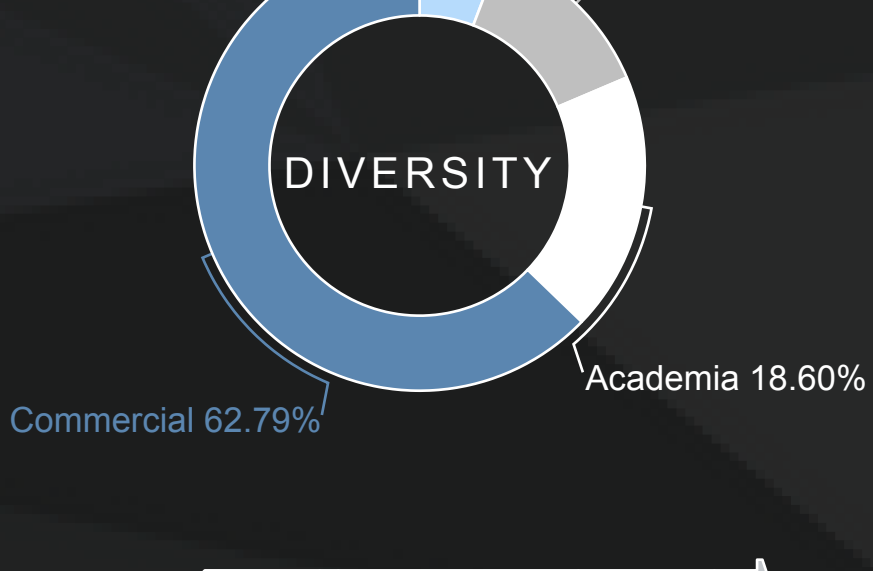
To traditional supply chain.



DHA initiated and leveraged the Vulcan Platform, sponsored by USSOCOM, to collect and assess submissions.

26
MARCH

SUBMISSION DEADLINE



1 WEEK

Timeframe



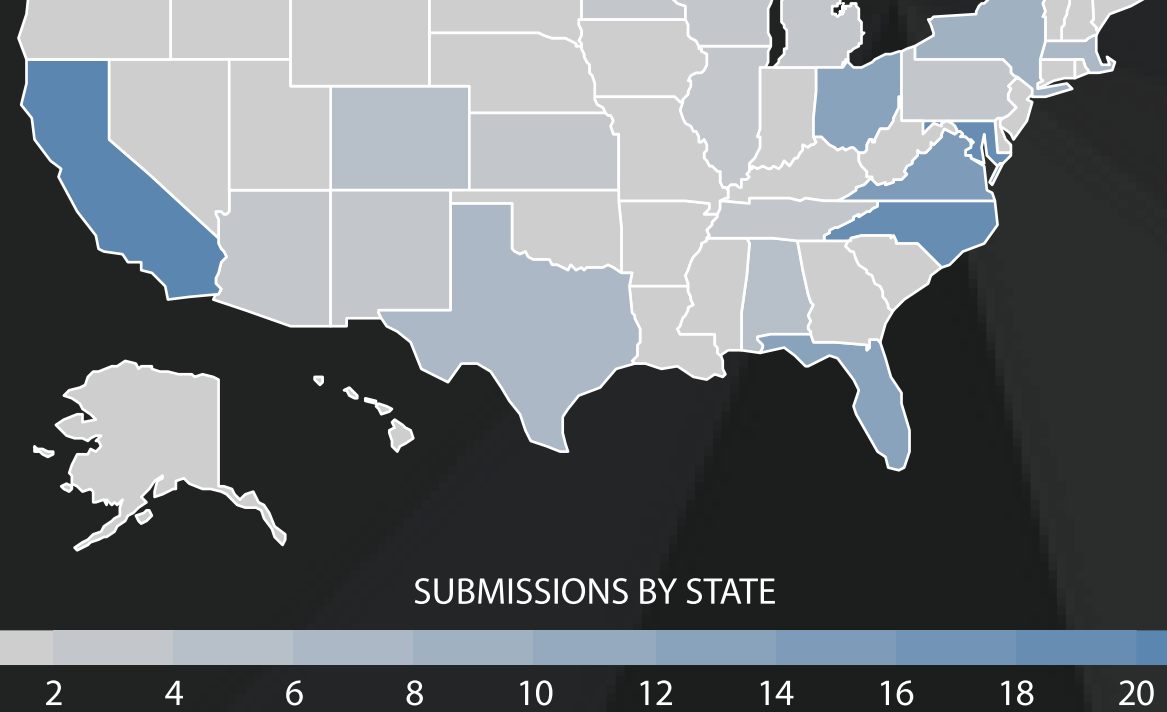
172

Total Submissions



2 Days

Clinically Assess & Down-Select Submissions



SUBMISSIONS BY STATE



CANADA: 1



FINLAND: 1



SPAIN: 1

INTERNATIONAL RESPONSE FROM 3 COUNTRIES

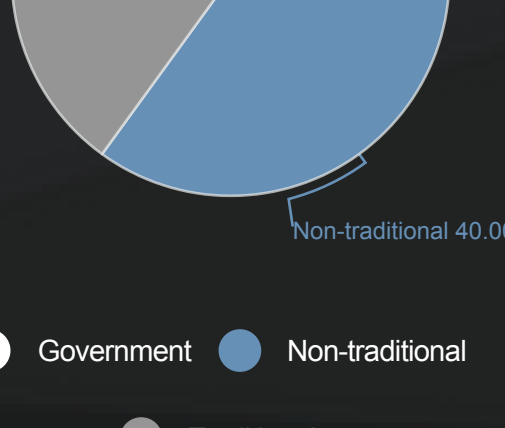
28
MARCH

TOP 5 DESIGNS SELECTED

Hack-a-Vent Transitions to Vulcan V Program

ORGANIZATIONS SELECTED

(SELECT COMPANY TO VIEW SPEC SHEET)



Traditional 40.00% Government 20.00% Non-traditional 40.00%

Government Non-traditional Traditional

● [Naval Surface Warfare Center](#)

● [Coridea](#)

● [BLU3](#)

● [L3Harris Technologies](#)

● [Northrop Grumman Corporation](#)



\$4.5M

OUTSIDE CAPITAL FUNDING SECURED



2

OPEN SOURCE DESIGNS provided to DoD

2
APRIL



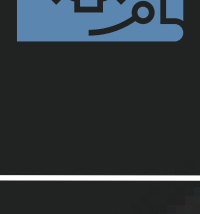
**JATF APPROVES
VULCAN V PROGRAM
ENGAGES WBI**

**DHA FUNDS
VULCAN V PROGRAM
WBI PROJECT LEAD**



6
APRIL

10
APRIL



**PROTOTYPES
ARRIVE AT TESTING
FACILITIES**

TESTING BEGINS



13
APRIL

13
APRIL

TESTING, EXPERTISE, & TEAMWORK



PROTOTYPE TESTING

LEVERAGING EXPERTS

13 APRIL

USU begins testing of prototypes

28 APRIL

USU testing concludes with 4 successful prototypes

27 APRIL - 8 MAY

Usability at Walter Reed evaluations

24 APRIL

Manufacturers are identified for all designs

28 APRIL

Production contracts are prepositioned

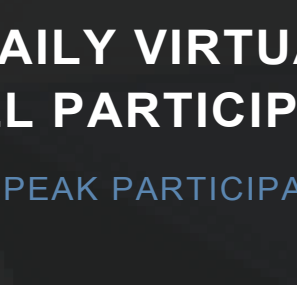
8 MAY

FDA Emergency Use Authorization (EUA) request submitted



100% VIRTUAL COLLABORATION

ACROSS STATES | TIME ZONES | TOOLS



**DAILY VIRTUAL
CALL PARTICIPANTS**

AT PEAK PARTICIPATION

600

TOTAL MAN HOURS

9 APRIL - 9 MAY 2020

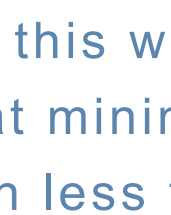


CALLS PER DAY

SCRUM | COLLABORATE | UPDATE

SLACK TRELO
EMAIL
TELECOM
ZOOM

VIRTUAL TOOLS USED



“Before Covid 19, this would have been a 3 year endeavor at minimum, and we are accomplishing it in less than 3 months”.

- Edward Ruppel, Coridea Director of Engineering

DATA SOURCES:

**“There Aren't Enough Ventilators to Cope With the Coronavirus.” The New York Times, www.nytimes.com/2020/03/18/business/coronavirus-ventilator-shortage.html.

***“Coronavirus Alert: March 18, 2020: Everyday Health.” EverydayHealth.com, www.everydayhealth.com/infectious-diseases/coronavirus-alert-march-18-2020/.