

CONVERGENT  
**AERONAUTICS**  
SOLUTIONS

1  
00:00:01,800 --> 00:00:09,420

[Music]

2  
00:00:15,540 --> 00:00:17,420

>>Welcome to the CAS showcase.

3  
00:00:17,420 --> 00:00:21,440

>>CAS is new, we were created to help ARMD make wise decisions,

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00:00:21,440 --> 00:00:24,440

in what will be the next generation of investments that we are gonna do.

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00:00:24,440 --> 00:00:29,420

>>Our stakeholders have challenged us with developing cost-effective flight research vehicles

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00:00:29,420 --> 00:00:32,600

to demonstrate innovative aerospace technology in flight.

7  
00:00:32,600 --> 00:00:37,280

>>Can we bring 100 years of aeronautics knowledge to the new entrepreneur's desktop with a

8  
00:00:37,280 --> 00:00:40,060

Design Environment for Vertical Lift Vehicles?

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00:00:40,060 --> 00:00:44,120

>>Can we fly a new aircraft design, never having obtained any wind tunnel data at all?

10  
00:00:44,120 --> 00:00:47,060

Can you get to a flight? Can you design the control system?

11  
00:00:47,060 --> 00:00:50,220

Can you do everything just based purely on flight data?

12  
00:00:50,220 --> 00:00:56,220

>>Our basic concept is to combine super-capacitor and battery chemistries in one device

13  
00:00:56,220 --> 00:01:00,800

to create high power density and high specific energy.

14

00:01:00,800 --> 00:01:04,900

>>This will be the first manned x-plane with distributed electric propulsion technology.

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00:01:04,900 --> 00:01:07,900

It'll be fully electric with zero in-flight emissions.

16

00:01:07,900 --> 00:01:13,680

>>We believe that this novel air structure concept can potentially change how the future air vehicle

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00:01:13,680 --> 00:01:16,680

will be designed, and built, and flown.

18

00:01:16,680 --> 00:01:21,020

>>Can we merge a revolutionary concept in material manufacturing with long-standing aeronautics

19

00:01:21,020 --> 00:01:23,580

challenges for the next generation of air vehicles?

20

00:01:23,580 --> 00:01:28,420

>>The CAS world is a little bit different than things I've worked on in the past

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00:01:28,420 --> 00:01:34,660

>>The time has come and NASA's stakeholders have challenged NASA to push those technologies

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00:01:34,660 --> 00:01:42,380

out of the laboratory, off of the computer desktop, and out of the wind tunnel, and into vehicles

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00:01:42,380 --> 00:01:45,620

so those technologies can be validated.

24

00:01:45,620 --> 00:01:48,180

[Music/Truck driving by]

25

00:01:48,180 --> 00:01:52,400

>>CAS, it starts with an idea, a concept, that has to have five characteristics:

26

00:01:52,400 --> 00:01:54,120

One, that it's targeted.

27

00:01:54,120 --> 00:01:57,580

It's targeted. It's convergent. It's transformative. Rapid execution.