

# INNOVATION = CONFIRMING THE IDEA THAT ATMOSPHERIC CONDITIONS CAN EXIST ON EARTH

## INNOVATION AT A GLANCE

**Client:**

Holloman High Speed Test (HHSTT),  
Holloman Air Force Base in New Mexico

**Industry:**

Aerospace

**Syncroness services:**

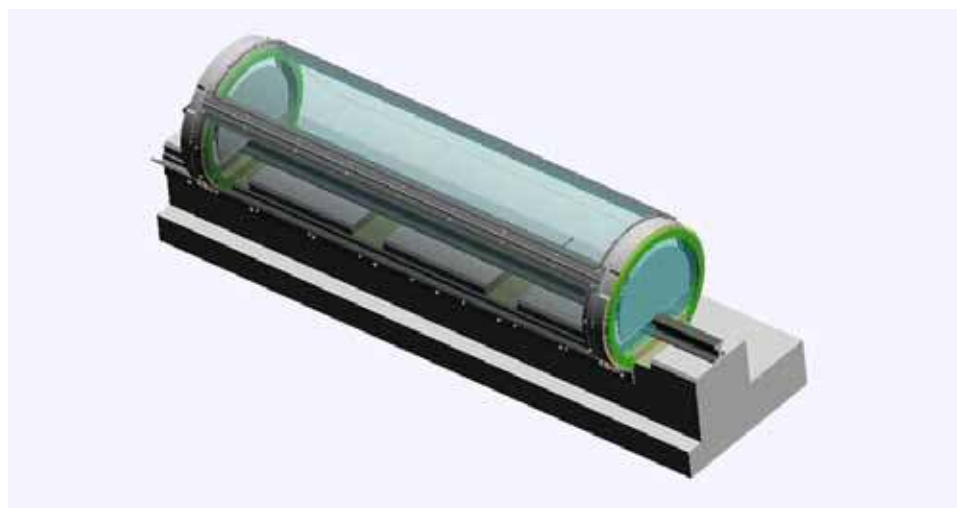
- » Engineering research
- » Proof of concept development

**Objectives:**

- » Identify feasibility of upgrades to the test track that fills the gap between laboratory investigations and full-scale flight tests
- » Verify that a very large pressure chamber (VLPC) could be successfully developed to enclose the HHSTT during testing of high-speed propulsion systems

## RESULTS

Proof of concept validated the design of the VLPC, paving the way for on-the-ground testing of high-speed propulsion systems



The Holloman High Speed Test Track provides the U.S. government with the ability to test high-speed propulsion systems, such as RAM, SCRAM, and pulse detonation engines, in a controlled, safe, and cost-effective environment. Under a SBIR phase I and II contract, Syncroness was challenged to prove the validity of the design for a very large pressure chamber (VLPC) that would enclose the 50,988-foot track.

## CONCEPT PROVED

Leveraging our expertise in aerospace and skills in mechanical analysis and electrical engineering, our team developed a system of barriers that would segment the VLPC to simulate different atmospheric conditions in various sections of the track.

The barriers, which are explosive, are detonated as the vehicle travels through the track. Detonation occurs by using high electrical current stored in capacitors that are rapidly discharged into the explosive barrier material.

**LET'S KEEP INNOVATING.**