Propulsion Systems

SNC’s ORBITEC is focused on the development and demonstration of innovative, low-cost, integrated full rocket engine solutions, components for liquid and hybrid propulsion systems, including the patented VORTEX™ Combustion Engines for boost, upper stage and in-space thrust control applications.

Core Products and Subsystems

- In-space propulsion (0.1 to 1,000 lbf thrust)
- Upper stage engines (to 100,000 lbf thrust)
- Boost stage engines (in development)
- Advanced propellants & thrusters
- O2 & H2 production from water
- O2 & H2O production from planetary resources

Environmental Systems for Human Spaceflight and Sciences

We offer a full complement of life support and thermal control systems that can be specifically tuned for shorter duration human and cargo transit missions to near-closed systems that recycle resources for longer duration habitation. These systems and components build on years of company experience and spaceflight heritage with closed human environments for space travel, including decades of experience perfecting plant growth systems for science and life support applications.

Environmental Control and Life Support Systems

- Air revitalization & CO2 removal
- Temperature & humidity control
- Water reclamation & processing
- Pressure/atmospheric composition control
- Food production
- Bioregenerative air & water systems
- Air/water quality monitoring & control
- Waste processing & management
- Environmental LED lighting

Bio Production Systems

- Controlled Bio Production systems (>BSL2)
- Specialty culture & root support systems
- Efficient food production systems
- Specialty Bio Production systems
- Full-sun & specialty LED lighting systems
- Spider silk & protein molecule production
- Rodent & biological science systems
Complete systems are available for environmental control, including air and water processing, thermal management, waste management, cabin instrumentation and science or payload systems. Our unique capabilities stem from 29 years of research in environmental control and life-support systems for NASA. This includes continued work on next-generation plant growth systems for long-duration space habitats.