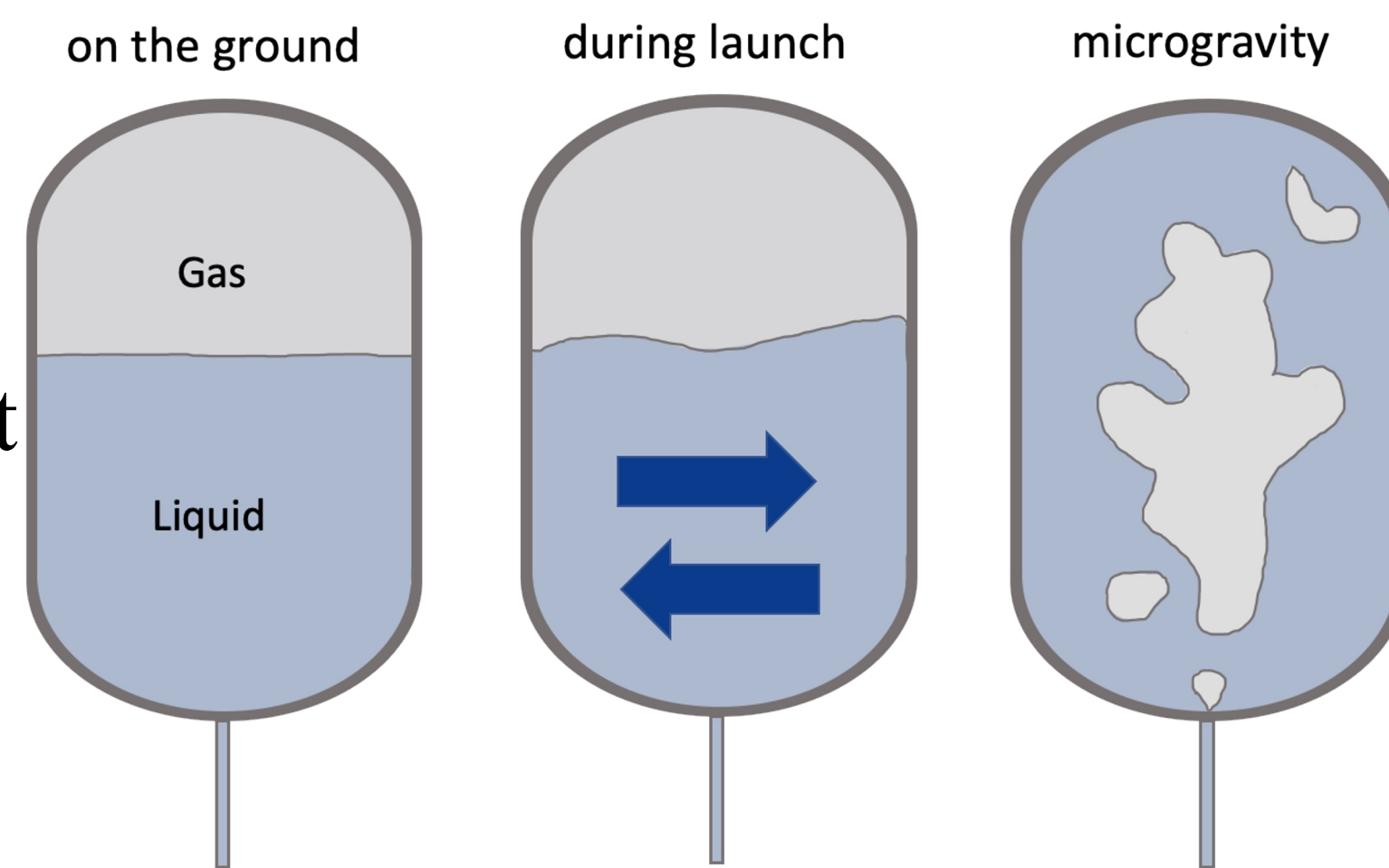


Objective

- Develop a device to accurately monitor and gauge cryogenic propellants situated in a microgravity environment

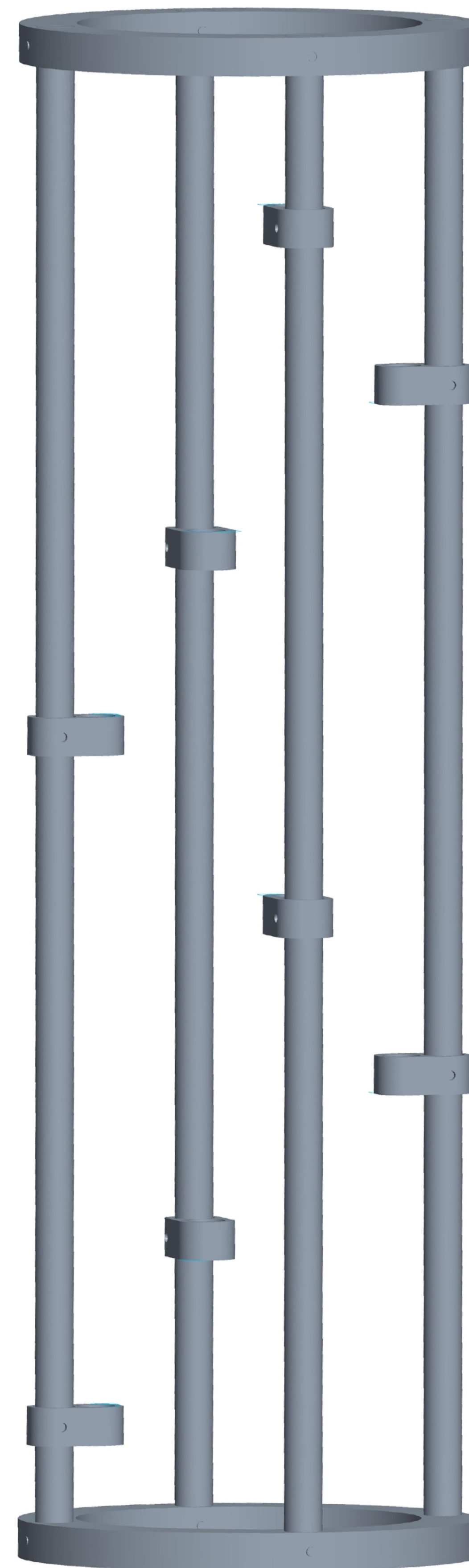
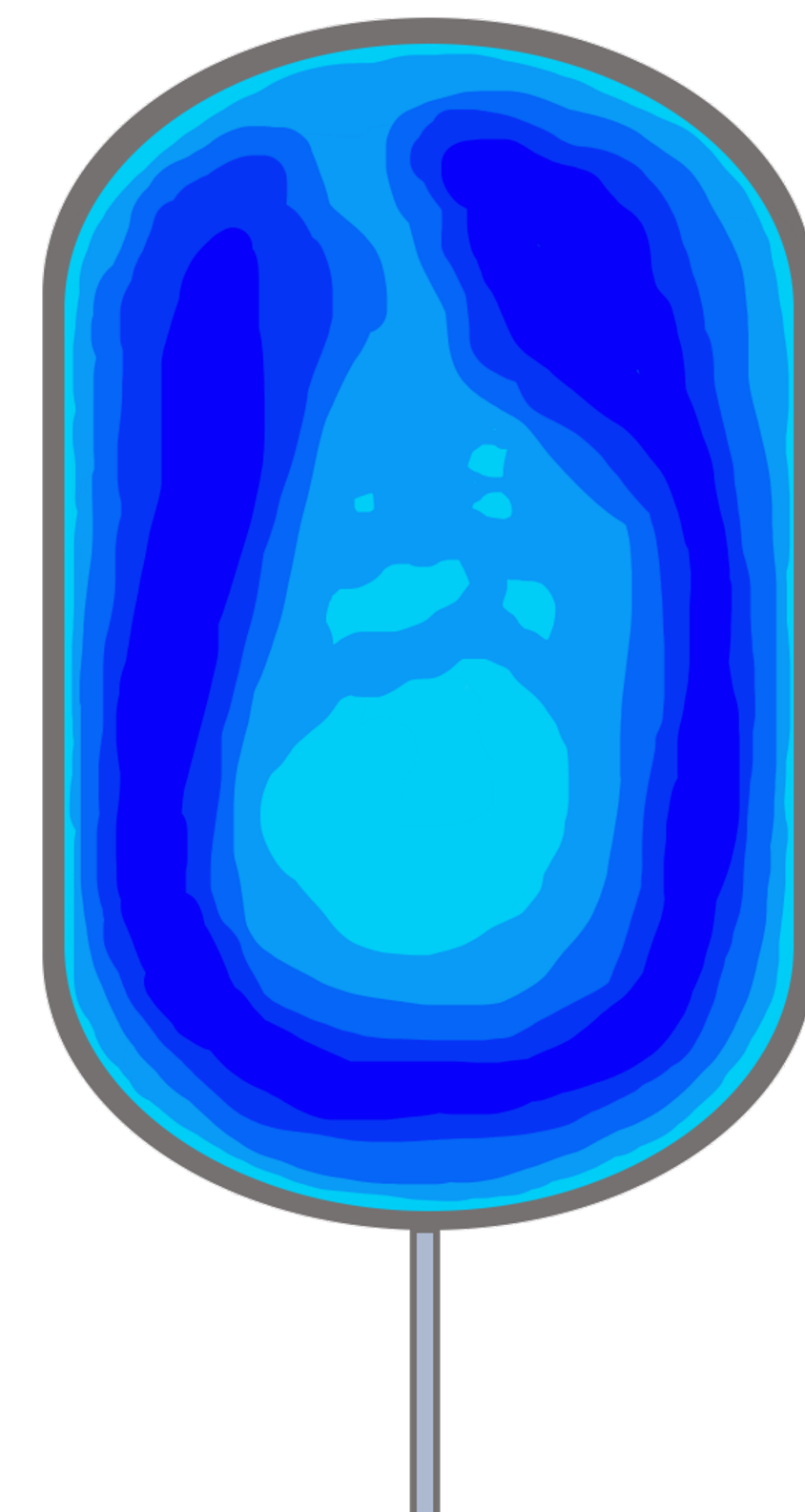


Challenges

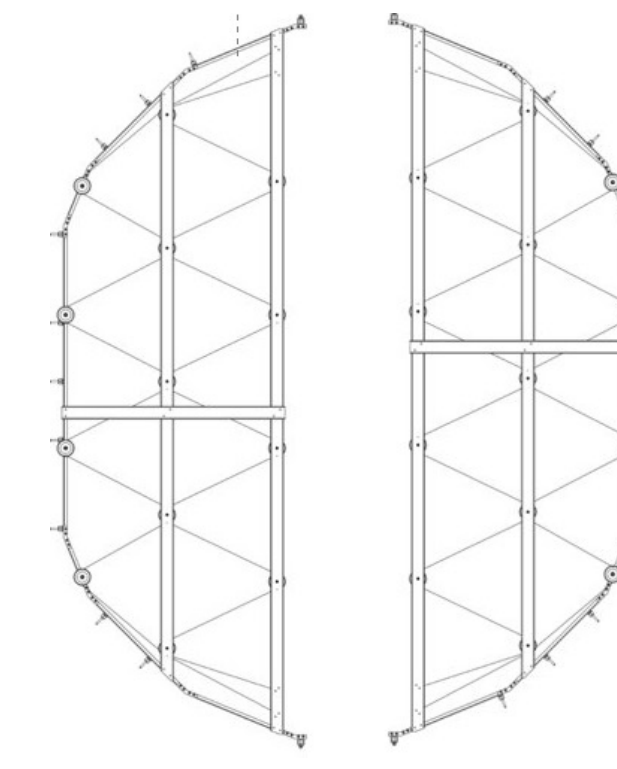
- Material selection, device must operate within a cryogenic environment
- Liquid to gas phase transition occurs during flight
- Heat leak from walls of the tank

Specifications

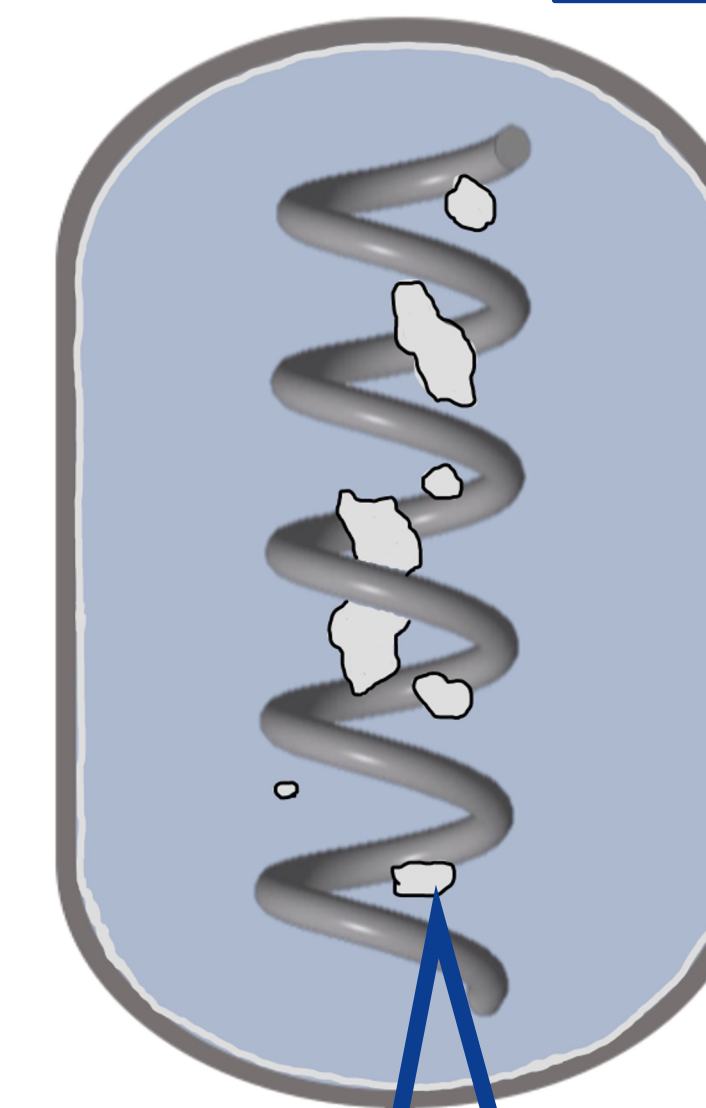
- Output mass and tomography of fluid in microgravity
- Withstand sloshing and vibrations during a launch
- Operate at cryogenic temperatures



Previous model



CryoMATI



Gas bubbles collect at the center of tank

Background

- There are no reliable methods to accurately measure the amount of liquid propellant in a tank in microgravity
- Tomography is a 3D measurement of a fluid that discerns the shape and state of the fluid

Description

- Show tomography by using FOSS system
- Mass is calculated using readings and density libraries
- Results of this reading shows where the gas bubbles are in the tank

