

# SeaLion Mission Concept of Operations (ConOps)

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## Stakeholder Needs

The SeaLion Mission Concept of Operations (ConOps) is guided by a series of stakeholder needs, listed below.

### **Stakeholder Need 1.1: Primary Mission Objective A1**

The SeaLion mission shall establish UHF communication link with Virginia ground station

### **Stakeholder Need 1.2: Primary Mission Objective A2**

The SeaLion mission shall establish S-Band communication link with MC3 ground station

### **Stakeholder Need 1.3: Primary Mission Objective A3**

The SeaLion mission shall successfully transmit “mission data” defined above to ground stations on the Earth.

### **Stakeholder Need 1.4: Primary Mission Objective A4**

The SeaLion mission shall adhere to CubeSat standards as per CDS Rev. 13

### **Stakeholder Need 2.1: Secondary Mission Objective B1**

The SeaLion mission shall provide a means to validate an impedance probe in-orbit

### **Stakeholder Need 2.2: Secondary Mission Objective B2**

The SeaLion mission shall provide a means to validate a V-Infrared Sensor (VIR-S) in-orbit

### **Stakeholder Need 2.3: Secondary Mission Objective B3**

The SeaLion mission shall provide a means to validate a deployable composite structure (DeCS) in-orbit

**Stakeholder Need 3.1: Tertiary Mission Objective C1**

The SeaLion mission shall qualify a newly developed antenna

**Stakeholder Need 3.2: Tertiary Mission Objective C2**

The SeaLion mission shall qualify a CubeSat bus architecture for very-low Earth orbit (VLEO)

**Stakeholder Need 3.3: Tertiary Mission Objective C3**

The SeaLion shall verify DeCS in-orbit behavior performance via accelerometer & temperature sensor data

## User Stories

The SeaLion Mission Concept of Operations (ConOps)'s stakeholder needs are then used to identify a series of user stories which then lead to design decisions captured in data structure and activity definitions.

**User Story 1: Ping Satellite**

As a **Ground Station Operator** I want to **Ping satellite** so that I can **Establish communication link with satellite**.

**Example:** Ping the satellite in order to establish UHF communication link with Virginia ground station