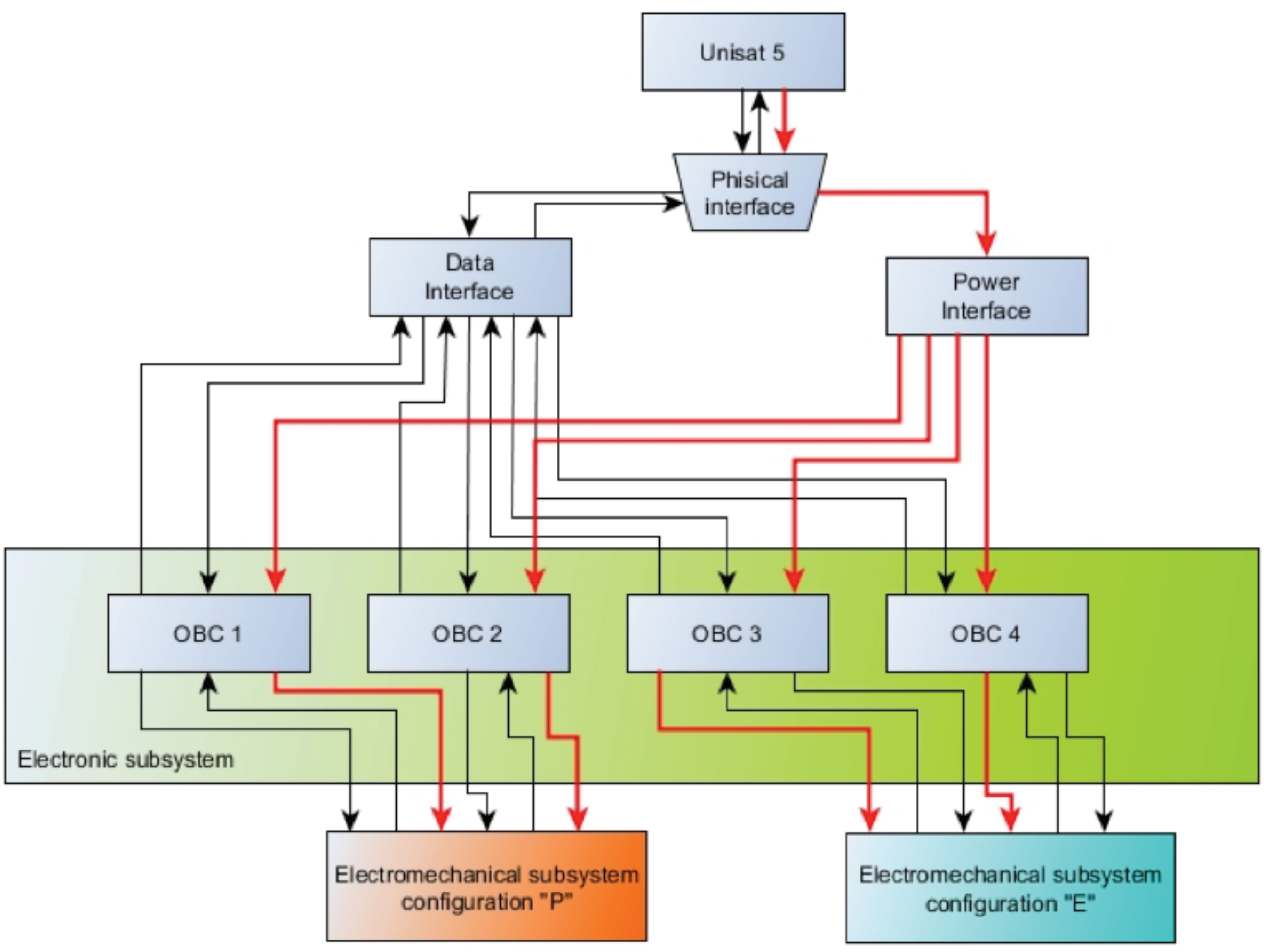
# ALICE-2
## Mission History

On 21 November 2013, ALICE-2 was integrated into UniSat-5 and launched in Low Earth Orbit to perform electronic and electromechanical tests validating the safe ignition of D-Orbit's solid propellant engine. Successfully passing the qualification and acceptance tests, this mission confirmed the ability of the D-Orbit Decommissioning Device to work in a critical space environment.

## System Overview

**Dimensions:** 170 cm x 150 cm x 130 cm
**Weight:** 1.577 kg

The system was composed by:
**Electronic subsystem**
**Electromechanical subsystem (E)**
**Electromechanical subsystem (P)**




## Model Units

**Engineering Model (EM)**
Designed as a fast prototype, the EM was used to verify the concept and compatibility between the electronic and the electromechanical subsystems. This unit was of relevant importance for internal use as it tested and verified the first conceptual design.

**Qualification Model (QM)**
Assembled after the EM design approval, the QM unit was developed to execute qualification tests relative to the mission features defined by the operating team at GAUSS Srl. The test levels are defined in order to simulate stress levels similar to those present during the mission phases. After several functional tests, the design was confirmed to be suitable to work in strict space environmental conditions. No structural or component changes were necessary, and the QM granted authorization for the final assembly, and was consequently stored, ready to be used as a backup system for the FM.

**Flight Model (FM)**
The FM unit was assembled shortly after the QM unit, and consequently integrated into the UniSat-5. The unit was verified after assembly through environment tests aimed to stress the system for minimum-level faults.
On 21 November 2013, the FM was successfully integrated into the satellite and launched into Low Earth Orbit.

## Qualification Tests

All tests were performed according to ECSS (RD-1), which are ESA standard practice for aerospace applications.

The following were performed:
**Functional tests**
**Vibration tests**
**Thermal vacuum tests**
**Electromagnetic Compatibility tests**