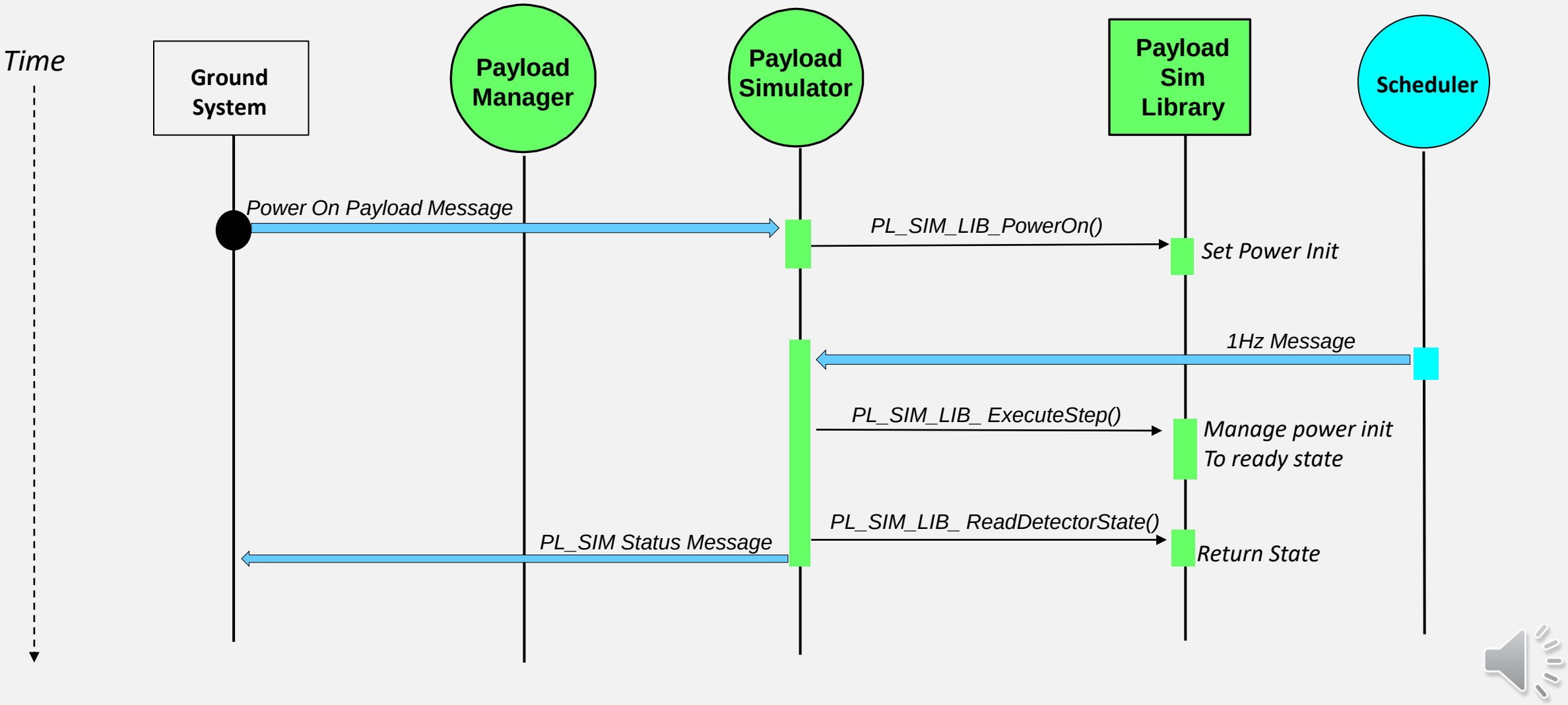
Library and Application Summary

PL_SIM_LIB
- Simulate payload power states, detector states, and detector science data
- Provides an interface to set and clear a detector fault. Science data is corrupted when the fault is present
- JSON initialization table defines number of 1Hz cycles for power initialization and detector reset

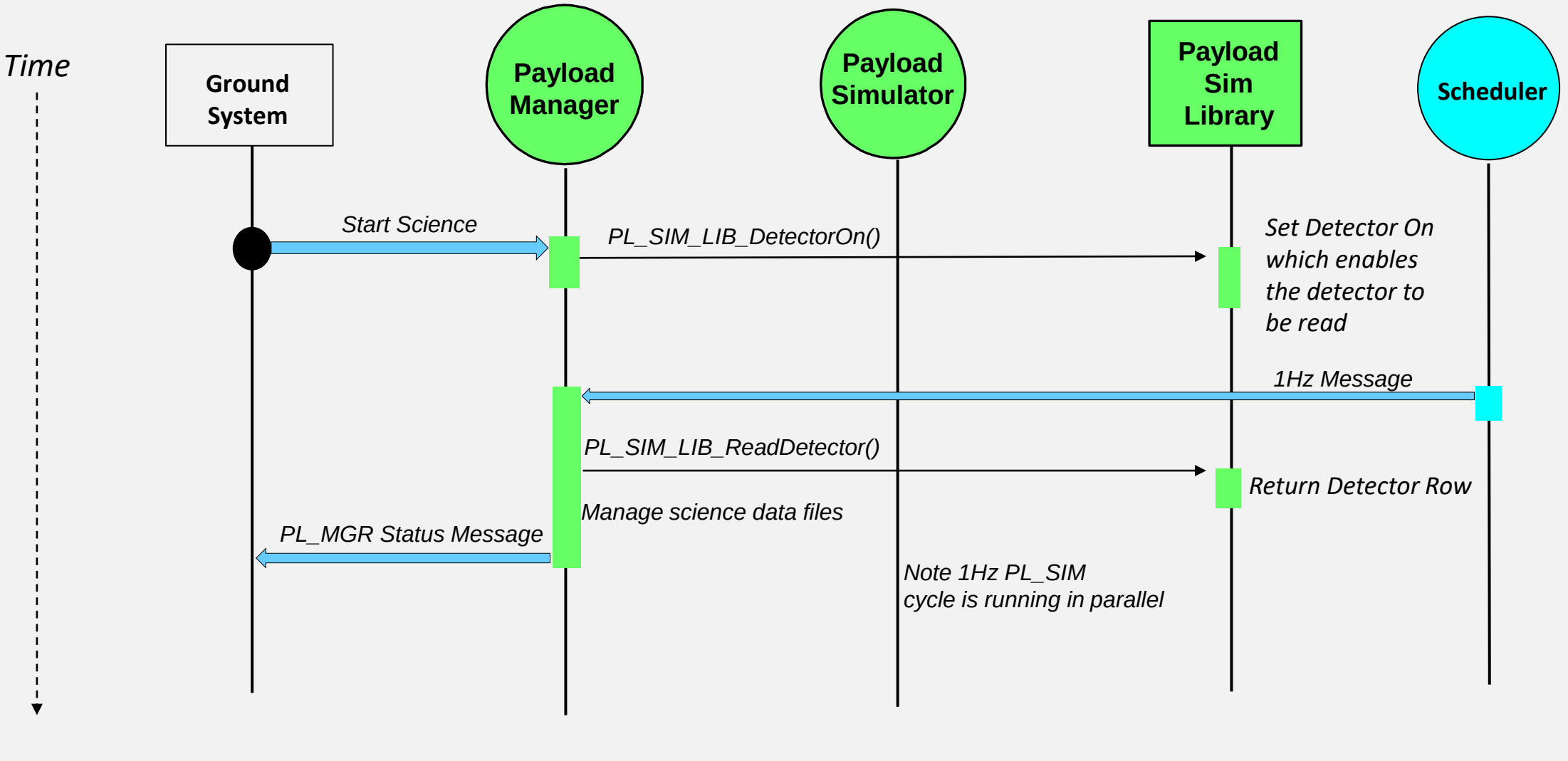
PL_SIM App
- Provides a ground command and telemetry interface to PL_SIM_LIB
- Command include: power on, power off, set fault, and clear fault

PL_MGR
- Manage the data interface to the payload and the creation of science data files
  - Reads detector data and writes images to files
- Commands to start and stop science data that turn on and off the detector, respectively
- JSON initialization table defines the science file path, base science filename and number of images per file

Power On Payload



Start Science

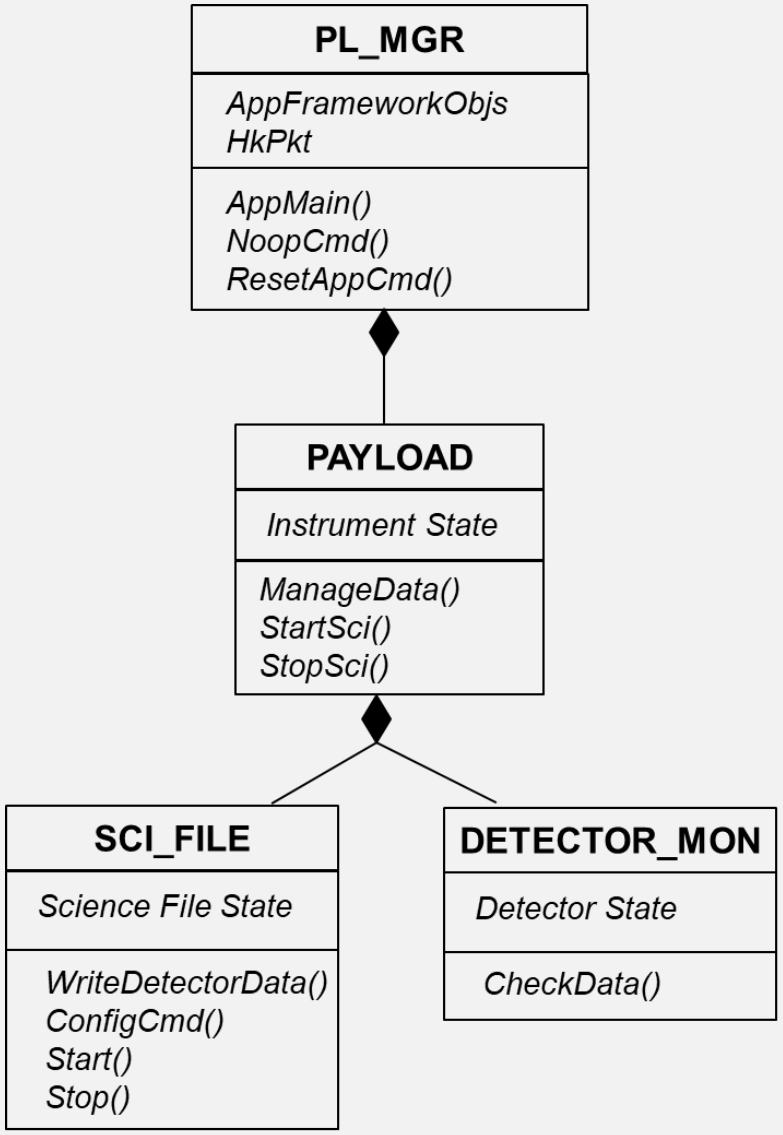


Start Event

Software Bus Message

Library Call

Payload Manager App Object Design



PL_MGR

- Manages app initialization, main runtime loop, and status telemetry
- Dispatches commands to objects

PAYLOAD

- Manage payload interface
- Has knowledge of the detector control and data interface
- Simulated vs actual payload conditional compilation flags should be limited to this object

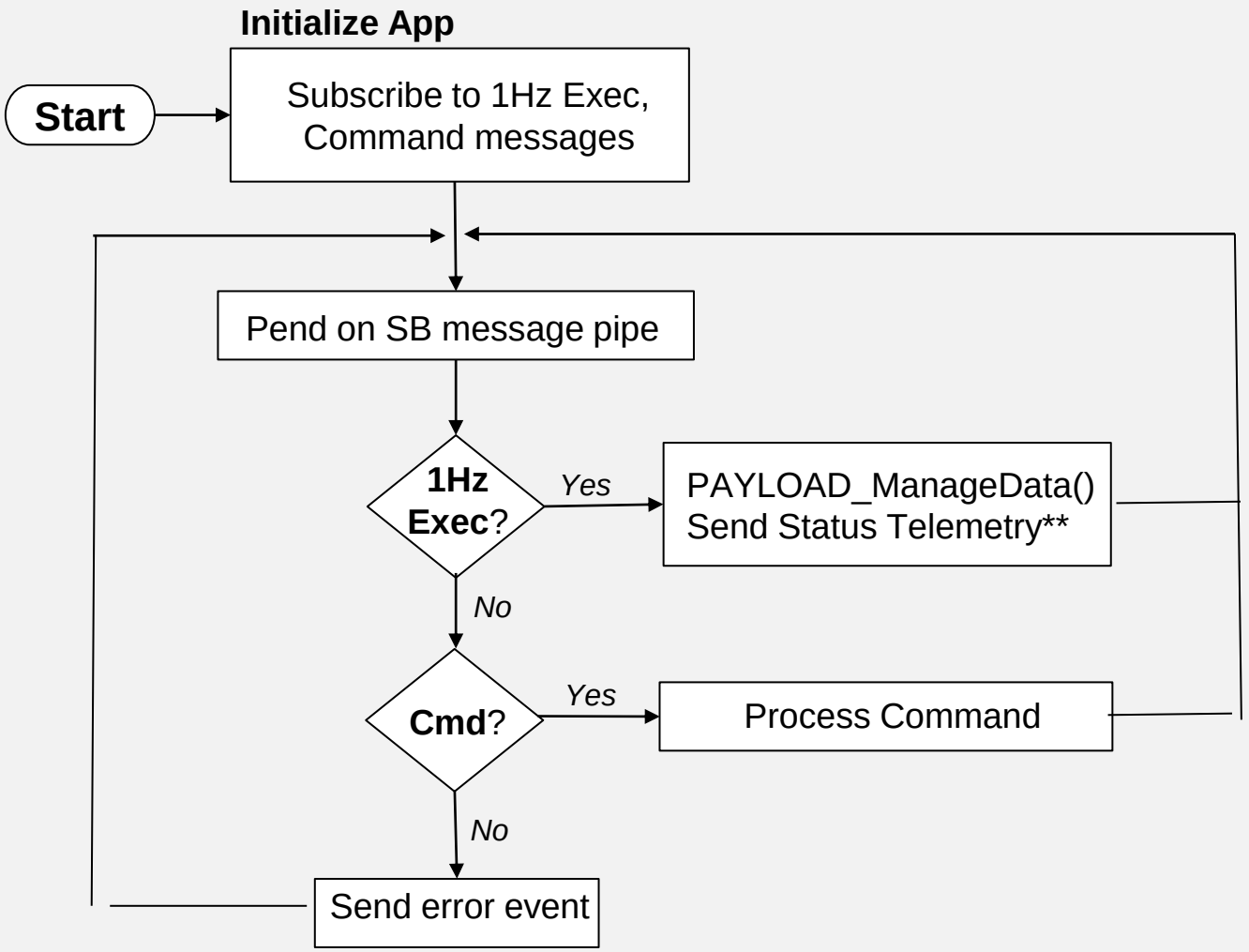
SCI_FILE

- Manage science data files
- Only needs to know detector science data format to minimize coupling

DETECTOR_MON

- Monitors detector status and data for faults

Payload Manager App Control Flow



** When instrument is on status telemetry is sent at the execution rate