**IS-1 Commissioning plan**

* Phase 1: IS-1 checkout
* Verify we can establish communication (No Hello-IS1 script required, since satellite beacons autonomously, receiving beacon is a proof of telemetry link)
* Check aliveness (PHOENIX or SAFE)
* Transition to safe (should be autonomous if power positive)
* Stop Solar Panel and Antenna Deployments
* Reset Launch Delay Threshold

* Phase 2: Spacecraft commissioning
  + Set s/c and ADCS time
  + Playback deployment data
  + Load ephemeris and test fine point

* Phase 3: Instrument commissioning
  + Instrument aliveness
  + Transition to science mode

**Note**: Contingency Management Plan to be worked out.

1. Scenarios for sending S/C Reset Command. (This is a reset of the complete spacecraft)
2. Scenarios for Turning ON/OF any particular subsystem. Following subsystems can be turned OFF via command:
   1. ADCS
   2. S-Band
   3. CIP
   4. DAXSS

**Phase 1**

**GOALS**

* Verify communication
* Bus is working and is power positive

Sequence of Post Launch Operations:

1. When beacons are received during the first pass, check the mode.
   1. If SAFE: Run Commissioning\_Aliveness\_SAFE
   2. If Phoenix: Run Commissioning\_Aliveness\_Phoenix
   3. If Neither : (Contingency mode, try putting S/C in SAFE mode)

Scripts

1. ~~Hello\_IS1~~
2. **Commission\_aliveness\_safe** script does the following:
   1. Set Beacon Packets to UHF with Rate = 3 Seconds
   2. Confirm if the satellite is in SAFE mode, If not set it to SAFE mode manually
   3. Perform Telemetry Checks
      1. commission\_cdh\_tlm\_check
      2. commission\_eps\_tlm\_check
      3. commission\_comm\_tlm\_check
      4. commission\_adcs\_tlm\_check
   4. Cancel Deployment Retries
      * 1. First Enable mode\_hk packet to verify status of deployments.
        2. UHF Deployment: Can be cancelled since deployments are being received
        3. Solar Panel Deployments: Check Panel Current (display the currents and operator can proceed accordingly), IF current are above (??), Cancel the deployments
        4. Verify deployment flags from the mode\_hk packet
   5. Set Launch Delay Counter
      * 1. Once the s/c has launched and the initial long delay has elapsed, ground should send a command to set the delay to zero to prevent another delay upon s/c reset.
        2. Disable mode\_hk packet
   6. Set Beacon Packets to UHF with Rate = 30 Seconds

1. **Commission\_aliveness\_phoenix** script does the following:
   1. Set Beacon Packets to UHF with Rate = 3 Seconds
   2. Confirm if the satellite is in Phoenix mode
   3. Perform Telemetry Checks
      1. commission\_cdh\_tlm\_check
      2. commission\_eps\_tlm\_check
      3. commission\_comm\_tlm\_check

1. Cancel Deployment Retries
   1. First Enable Mode\_HK packet to verify status of deployments.
   2. UHF Deployment: Can be cancelled since deployments are being received
   3. Solar Panel Deployments:
      1. Check Panel Voltages: IF voltages are above (??), Cancel the deployments
   4. Verify deployment flags from the mode\_hk packet
2. Set Launch Delay Counter
   1. Once the s/c has launched and the initial long delay has elapsed, ground should send a command to set the delay to zero to prevent another delay upon s/c reset.
   2. Disable mode\_hk packet
3. Set Beacon Packets to UHF with Rate = 30 Seconds

**Phase 2:**

1. Commission the s/c

1. ~~Cancel\_ant\_deploy\_retry~~
2. Commission\_set\_spacecraft\_time
3. Commission\_set\_adcs\_time
4. Playback deployment data

1. Playback\_deployment\_data

1. Commission ADCS

1. Commission\_set\_ephemeris
2. Commission\_test\_fine\_point

**Phase 3**

Checkout instruments

1. Commission\_instrument\_aliveness\_DAXSS
2. Commission\_science\_mode
3. Commission\_x123\_threshold

1. Commission\_instrument\_aliveness\_CIP