LVIS Flight Checklists

PREFLIGHT REQUIRED ITEMS

- Bose Headset, Spare AA Batteries and Flight Suit
- Clean Applanix Cards x 2
- Clean Applanix USB Sticks x 2
- External Camera SSD x2 (100GB Free Each)
- External LVIS SSD x2 (1TB Free Each)
- GUI Flight Plan Michelle: LVIS USB and Tablet Downloaded
- Chiller Fluids
- GPS Puck Charged
- Tablet Charged & Downloaded Flight Plan
- Inflight Tool bag
- Personal Items: Camera, Lunch & Snacks

PREFLIGHT

- Instrument Aperture – CLEAR
- Instrument Windows – CLEAN
- NASA Tracker – ON
- GPS Puck – ON
- 610 USB Stick – INSERT
- 510 Memory Card – INSERT
- USB Plan USB Stick - INSERT
- LVIS SSD Drive Pair - INSERT
- LVIS CPU Power (EBox Back Switch) – OFF
- Camera Laptop – BOOT
- Laser Beam Block – IN/DOWN

- Camera Laptop – VERIFY FREE SPACE
- ***** HOLD Until Power Stable *****
- Aircraft Experimenter Power – ON
- UPS Power – ON (If Available)
- LVIS Power Box – BREAKERS IN
- LVIS Power Box – POWER SWITCH ON X 3
- LVIS Main Power – ON
- Chiller Power - ON (Flow of 0.70 to 0.85 gallons / min)
- Chiller – CHECK DISPLAY OPS NORMAL
- Applanix 610 – VERIFY ON (Auto Starts)
- Applanix 510 – VERIFY ON (Auto Starts)
- GUI Computer – ON
- DA Aware Software – LOAD and check for Camera Connection
  - Cycle camera power to connect to laptop
- Applanix Software – BEGIN MONITORING

510	129.100.0.231	Old Software
610i	192.168.0.48	POS Viewer
610p	192.168.0.63	POS Viewer

- Applanix Data Logging – VERIFY LOGGING x 3
- Applanix Free Space – VERIFY LESS THAN 50% FULL x 3
- Intervalometer – MANUAL MODE
- Intervalometer – ON
- GUI Computer – LOG ON (####8idl)
- Javad Netview – CLEAR FILES (Free 1GB on each of 5 Javad Receivers)
- GUI Computer – LAUNCH GUI

- GUI setup flightplan
- LVIS CPU Power – ON
- GUI Profile -> Control
- Laser Key – ON
- Laser PDU power – ON
- GUI Laser Power – ON
- GUI Laser – INIT
- Laser Beam Block – VERIFY IN/DOWN
- GUI Laser – FIRE START
- GUI Signals – VERIFY NOMINAL
- GUI PID – SYNC to Zone 1
- GUI TX / FR Attenuators – AUTO X 2 (Both Channels)
- GUI Signals – VERIFY NOMINAL TX / FR SIGNAL LEVELS
- GUI Laser - FIRE STOP
- ***** HOLD Until Airborne *****

AFTER TAKE-OFF

- Intervalometer – SET AS REQUIRED or use DA AWARE Software
- Camera – START CAPTURING IMAGES DA AWARE
- ***** HOLD Until Data Collection Altitude Reached *****

DATA COLLECTION

- Altitude – VERIFY SAFE ALTITUDE TO EMIT LASER (Ask Flight Crew)
- Window Covers/Doors – OPEN
- Laser Beam Block – OUT/UP
- GUI Profile -> Control
- Laser – SAFETY LOCKS DISABLED (By certified crew member)
- Laser – FIRE START

BEAM ALIGNMENT

- GUI Profile -> Alignment
- Click -> STANDARD ALIGNMENT SWEEP (Runs 2 Sweeps)
- ***** HOLD Until New Table Appears *****
- New Table – SET
- Energy Across RX Swath – APPEARS FLAT

DATA SYSTEM SHUTDOWN

- Laser - EMITTING
- GUI Profile -> Control
- COLLECTION: ON to OFF
- Are You Sure – YES
- ***** HOLD 10 Seconds *****
- HALT Data System

DURING FLIGHT CHECKS

(What can be automated here?)

- Applanix Lights – NOMINAL (Mostly Green)
- Applanix Software – LOGGING & NOMINAL MESSAGES
- Chiller Flow – 0.7 to 0.88 GPM
- Chiller Display – NORMAL (+27.0C)
- Javad GPS Status – GREEN LIGHTS
- LVIS Surface Topography – AS EXPECTED VERSUS DEM
- LVIS TX and FR Pulse Amplitude – COUNTS AROUND 2500
- Photo Gap – CREATE GAP EVERY TURN
- Photo QA – CHECK IMAGE QUALITY

BEFORE LANDING

- GUI – LAUNCH DESCENT SCRIPT
- GUI Profile -> Control
- GUI Laser Power – OFF
- Laser PDU Power – OFF
- LVIS CPU – HALT
- Laser Beam Block – IN/DOWN
- LVIS CPU – VERIFY HALTED (Blue Lights)
- LVIS CPU Power (EBox Back Switch) – OFF
- Intervalometer / Cameras – STOP

AFTER LANDING

- ***** HOLD Until Static GPS Requirements Completed *****
- ***** HOLD Until External Power Stable *****
- LVIS CPU Power (EBox Back Switch) – ON
- GUI – LAUNCH POST FLIGHT SCRIPT
- ***** HOLD Until FTP / IMU Transfers Complete *****
- Applanix PCS Unit Power– OFF x 3
- Camera Images – BACKUP
- Javad Netview – CLOSE
- GUI Profile -> Control
- Applanix Software – SAVE LOGS & CLOSE
- COPY Applanix Logs to Ancillary External Directory
- COPY Flight Notes from GUI computer to Ancillary External Directory
- COPY GUI Daily Files from GUI computer to Ancillary External
- COPY Camera directory from Camera Laptop to Externa
- Camera Laptop Power – OFF
- Javad GPS Power – OFF x 3
- Chiller Power – OFF
- GUI – HALT LVIS/CPU
- GUI – SHUTDOWN
- ***** HOLD Until All Systems Halted *****
- LVIS Main Power – OFF
- UPS Power – OFF
- Applanix Memory Card – REMOVE x 1
- Applanix USB Sticks – REMOVE x 2
- Camera SSD Drive – REMOVE x 1

- LVIS Data Drives – REMOVE x 2