FLSun S1 Pro — Governance & Agent Guide (Live Baseline)

Package: FLSun\_S1\_Pro\_Governance\_Package\_20250824\_223203 • Date: 20250824\_223203

# Purpose

This guide captures the current working baseline, governance rules, and agent prompts for safe, repeatable Klipper operations on the FLSun S1 Pro delta.

# Macro Inventory (auto-extracted)

CALIBRATE\_MOTOR, CALIBRATE\_MOTOR\_DATA, CANCEL, CANCEL\_PRINT, CLEAN\_CALIBRATE\_MOTOR, CLEAN\_FILAMENT, END\_PRINT, END\_PRINT\_GOV, FIRST\_LAYER\_STABLE\_RELEASE, GOV\_CANARY\_ADAPTIVE\_PREP, GOV\_ECHO, GOV\_FILAMENT\_UI, GOV\_FLS\_ARM, GOV\_FLS\_STATE, GOV\_FUI\_START, GOV\_FUI\_STOP, GOV\_HYDRATE\_NOW, GOV\_MESH\_FLAGS\_READ, GOV\_MESH\_SAVE\_AND\_COMMIT, GOV\_MESH\_SAVE\_CURRENT, GOV\_PROBE\_FLAGS\_READ, GOV\_PROBE\_OFFSET\_APPLY\_SUGGEST, GOV\_PROBE\_OFFSET\_SUGGEST, GOV\_PROBE\_READBACK\_VERBOSE, GOV\_PROBE\_RECORD\_RESULT, GOV\_PROBE\_TOUCH\_CENTER\_CAPTURE, GOV\_PROBE\_VALIDATE, GOV\_PURGE\_PRIME, GOV\_SET\_MESH\_PROFILE\_CODE, GOV\_Z\_OFFSET\_APPLY, GOV\_Z\_OFFSET\_COMMIT, LOAD\_FILAMENT, M106, M600, MEASURING\_RESONANCES, PAUSE, PAUSE\_AFTER\_D, PID\_BED, PID\_HOTEND, PRE\_RESUME, PRE\_RESUME\_INTERRUPTED, PRINT\_CANCEL, PRINT\_END, PRINT\_LAUNCHER, PROBE\_STATE\_GOV, RESTORE\_E\_CURRENT, RESUME, RESUME\_INTERRUPTED, SAVE\_POWER\_LOSS\_PARAMS, SET\_GCODE\_OFFSET, SHUTDOWN, START\_PRINT, START\_PRINT\_RESUME, START\_PRINT\_SEQUENCE\_GOV, STOP\_PRINT, TIMELAPSE, TMC, UNLOAD\_FILAMENT, ZDOWN, ZUP, \_RESUME\_PRE\_EXTRUDE, bed\_level\_1, bed\_level\_2, box\_led\_off, box\_led\_on, drying\_box\_1, drying\_box\_off, laser\_off, laser\_on, relay\_off, relay\_on, save\_time, screen\_led\_off, screen\_led\_on, set\_fan

# Delayed GCodes

GOV\_DELTA\_RISK\_NOTE, GOV\_FLS\_WATCH, GOV\_FUI\_LOOP, GOV\_MOTORS\_OFF\_WHEN\_COOL, GOV\_STARTUP\_HYDRATE, LOAD\_FUNCTION\_SWITCH\_DELAY, LOAD\_GCODE\_OFFSETS, PAUSE\_AT\_D, heatsink, setfan

# Governance Do's

- Precompute in Jinja; do not place double-curly expressions in RESPOND MSG.  
- Keep control structures on their own lines.  
- Clamp moves to delta radius and use safe Z before XY.  
- Gate extrusions by temperature; avoid min-extrude violations.  
- Prefer unique macro names and avoid redefining factory M-codes.

# First-Layer Stability

Capture original speed/fan → throttle to slicer values → arm gated release at RELEASE\_Z → audit returns to 100%.

# Pause / Runout Flow

Park away from the part using saved mesh bounds (gov\_last\_mesh\_\*), or fallback front-center; start FUI; RESUME stops FUI.

# Known Pitfalls

- Jinja in RESPOND MSG causing TemplateSyntaxError.  
- Fan/heater names mismatched with macros.  
- Missing runout\_gcode binding left head over part.  
- FUI spam without hard reset.