🧱 Klipper Governance Framework – v1.6 (SAVE\_CONFIG + Mesh Profile Controls)

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# New/Updated Rules (v1.6)

• SAVE\_CONFIG Hygiene: Exactly one SAVE\_CONFIG block per file. Never place includes/macros below the marker `#\*# <---------------------- SAVE\_CONFIG ---------------------->`. Only Klipper writes there.

• Macro Placement: All `[gcode\_macro ...]` sections must live above the SAVE\_CONFIG marker or in separate include files.

• RESPOND Discipline: Use only `RESPOND MSG="..."`. Do not use semicolons (`;`) or square brackets (`[]`) inside the message. Indent RESPOND under `gcode:`.

• Global Edit Gate: No global/regex edits until a canary macro runs clean and operator types `promote`. Always show a tiny diff preview first.

• Multi‑Attempt Throttle: Max two automated attempts on the same error signature, then pause and request context lines for a surgical diff.

• Bed Mesh Profile: Some builds reserve `default`. Use named profiles like `governance`, `cal1`, `prod1`. Map numeric codes to names via macros.

• Hydration Flag: Auto‑loading a mesh profile at startup must be gated behind a restart‑safe flag (e.g., `gov\_default\_mesh=1`).

• Delta Baseline: For Delta printers, complete the factory calibration sequence (motor/endstop, resonance, DELTA\_CALIBRATE, BED\_MESH\_CALIBRATE) once before governance macros take over.

# Reference Snippets (Paste‑Ready)

Mesh profile code mapping and hydration flag:

[gcode\_macro GOV\_SET\_MESH\_PROFILE\_CODE]  
description: "Set mesh profile code (1=governance, 2=cal1, 3=prod1)"  
gcode:  
 {% set c = params.CODE|default(1)|int %}  
 SAVE\_VARIABLE VARIABLE=gov\_mesh\_profile\_code VALUE={c}  
 RESPOND MSG="GOV: mesh profile code set (CODE={c})"  
  
[gcode\_macro GOV\_MESH\_SAVE\_CURRENT]  
description: "Save current mesh to mapped profile and set hydration flag"  
gcode:  
 {% set code = printer.save\_variables.variables.gov\_mesh\_profile\_code|default(1)|int %}  
 {% if code == 1 %}  
 {% set prof = 'governance' %}  
 {% elif code == 2 %}  
 {% set prof = 'cal1' %}  
 {% elif code == 3 %}  
 {% set prof = 'prod1' %}  
 {% else %}  
 {% set prof = 'governance' %}  
 {% endif %}  
 RESPOND MSG="GOV: saving current mesh profile (name={prof})"  
 BED\_MESH\_PROFILE SAVE={prof}  
 SAVE\_VARIABLE VARIABLE=gov\_default\_mesh VALUE=1  
 RESPOND MSG="GOV: hydration flag set (gov\_default\_mesh=1)"

Startup hydration guarded by profile code and hydration flag:

[delayed\_gcode GOV\_STARTUP\_HYDRATE]  
initial\_duration: 1.0  
gcode:  
 RESPOND MSG="GOV: Startup hydration begin (MID=0)"  
 {% if printer.configfile.settings.bed\_mesh is defined %}  
 {% set has\_default = printer.save\_variables.variables.gov\_default\_mesh|default(0)|int %}  
 {% set code = printer.save\_variables.variables.gov\_mesh\_profile\_code|default(1)|int %}  
 {% if code == 1 %}  
 {% set prof = 'governance' %}  
 {% elif code == 2 %}  
 {% set prof = 'cal1' %}  
 {% elif code == 3 %}  
 {% set prof = 'prod1' %}  
 {% else %}  
 {% set prof = 'governance' %}  
 {% endif %}  
 {% if has\_default == 1 %}  
 RESPOND MSG="GOV: bed\_mesh detected - loading profile {prof}"  
 G4 P2000  
 BED\_MESH\_PROFILE LOAD={prof}  
 RESPOND MSG="GOV: mesh profile load requested ({prof})"  
 {% else %}  
 RESPOND MSG="GOV: bed\_mesh configured - no hydration flag; skipped"  
 {% endif %}  
 {% else %}  
 RESPOND MSG="GOV: bed\_mesh not configured - hydration skipped"  
 {% endif %}  
 RESPOND MSG="GOV: Startup hydration complete"