CED-008 — CEDA DIAGNOSTIC REPORT

Run Validity Gate

RG status: PASSED (as declared on the Diagnostic Card).

CEDA DIAGNOSTIC CARD — CED-008

D1 — Horizon Reconfiguration Null

Result: SATISFIED (trivial by construction).
Reason: The model's mechanism is explicit action-level dynamics; horizons play no dynamical role per the Translation Card.

D2 — Coarse-Graining Stability

Result: CONDITIONAL PASS (framework-level only).

- **Pass basis (within what's actually claimed):** the paper is a *framework* asserting the existence of inflationary solutions in the Horndeski class under stability/EFT bounds, and equivalence-preserving field redefinitions don't negate the existence claim.
- **Why conditional:** robustness of *a specific inflationary behavior* under admissible parameter variation cannot be evaluated at framework level without fixing GiGi. The Diagnostic Card's failure criterion ("loss of inflation under admissible variation") becomes **undefined** unless a submodel is pinned.

So D2 clears the "this isn't bookkeeping" bar, but does **not** certify stability of any particular realization.

D3 — Exchange-Term Provenance

Result: PASS.
No exchange term QQ is introduced; effective density/pressure are action-derived and the system is closed under the declared translation.

C1 — Coupling Provenance & Redundancy

Result: FAIL (framework-level redundancy / compression not demonstrated).

Your C1 definition asks whether inflation is **generic across unrestricted GiGi** or requires **function-by-function tuning**, and whether small admissible perturbations can dial the behavior away. In framework mode, the cards themselves already bind the answer:

- The Model Card explicitly states the paper does **not** claim unique predictions or universality across all GiGi.
  CEDA MODEL CARD — CED-008
- Therefore "predictive compression" is **not paid** at the framework level: the class is wide enough that inflationary outcomes and signatures vary by construction, and continuous adjustment is available by changing GiGi.

This is not a moral judgment — it's exactly what "framework" means under your protocol.

S1 — Scheme / State Dependence Classification

Classification: S1-B (state-conditional but physical).

Stability depends on physical background state and explicit stability conditions (ghost/gradient bounds) within the EFT regime, not on regulator/counterterm/vacuum scheme issues.

D4 — Predictive Wedge

Result: NOT EVALUABLE (framework-level), per declared wedge definition.

The Diagnostic Card's wedge is **generic violation** of standard consistency relations in invariant observables. But your Model Card explicitly says universality of specific violations is **not claimed generic** across all GiGi.

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So, under your own rules: no fixed subfamily → no wedge adjudication.

Final Classification (CEDA)

FRAMEWORK-LEVEL: CONDITIONAL MECHANISM (REGIME-LIMITED)

- **Mechanism credit:** earned at the *structural* level (action-defined dynamics; no hidden QQ).
- **But: Mechanism-level verdict is blocked** by your branching rule: “Mechanism-level verdict requires submodel fixation.”
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This is the clean, referee-safe outcome:
CED-008 passes as a **legitimate mechanism *framework***, but fails as a **predictively compressed mechanism** until you choose a specific GiGi submodel.