CAP+OCI v6 Protocol Specification

Appendix: Formal Definitions and Thresholds

1. Normative Constants

Symbol	Value	Description
P_{PASS}	0.30	Onset rate pass threshold
P_{FAIL}	0.10	Onset rate fail threshold
R_{PASS}	0.15	Robust (OR) LCB threshold
R_{STRONG}	0.05	Strong (AND) LCB threshold
θ_{lead}	0.0	Meta-lead success threshold
θ_{rec}	0.0	Recovery gain success threshold
α	0.10	Wilson confidence level
N	100	Required seeds

2. γ-Grid

$G_0 = \{1.00, 0.75, 0.50, 0.25, 0.00\}$

3. Claim Formal Definitions

CLAIM_A: crossing $\wedge$ ($\max_\gamma$ onset_rate $\geq P_{\text{PASS}}$) $\wedge$ ($\min_\gamma$ inadeq ≤ 0.10)
  CLAIM_B: CLAIM_A $\wedge \exists\gamma$: robust(OR) PASS
  CLAIM_B+: CLAIM_A $\wedge \exists\gamma$: strong(AND) PASS
  CLAIM_C: CLAIM_B $\wedge \exists\gamma$: selective_all(γ)

  Interpretation: CLAIM_C provides additional mechanistic evidence when CLAIM_B is satisfied.

4. Claim-Ready

claim_ready := CLAIM_B(EnvA) $\wedge$ CLAIM_B(EnvB)

5. Wilson LCB

$$\text{LCB}_\alpha(\hat{p}, n) = \frac{\hat{p} + \frac{z^2}{2n} - z\sqrt{\frac{\hat{p}(1-\hat{p})}{n} + \frac{z^2}{4n^2}}}{1 + \frac{z^2}{n}}$$