OpsPilot

Capital Cost Estimate — User Manual

AACE-Classified Estimating · AI Engineering Co-Pilot

What this guide covers — what an AACE-classified estimate is, how the OpsPilot module builds one, what to have ready, and the estimate you receive.

> **Estimate basis.** The estimate is AI-assisted at the stated AACE class. For project sanction (FID), board approval or contract commitment, it requires validation by a competent cost engineer.

1. What is a classified capital cost estimate?

A capital cost estimate predicts what a project will cost to build — and its single most important property is honesty about its own accuracy. AACE International 18R-97 defines five estimate classes by the maturity of their inputs, from Class 5 (concept screening, roughly -50%/+100%) to Class 1 (bid-grade, roughly -5%/+10%). The most common — and most expensive — failure in estimating is claiming a tighter class than the inputs support: presenting a Class 4 estimate as Class 3 is among the most-cited causes of capital overrun, because the project is sanctioned against a number far less certain than everyone believed.

2. The AACE estimate classes

Class	Maturity / purpose	Typical accuracy range
Class 5	Concept screening	-50% / +100%
Class 4	Study / feasibility	-30% / +50%
Class 3	Budget authorisation / control	-20% / +30%
Class 2	Control / bid	-15% / +20%
Class 1	Bid / check estimate	-5% / +10%

3. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach — AACE-aligned (OpsPilot)**	Structures direct costs, indirects, owner's costs, contingency (per AACE 113R-20, three methods), escalation, currency and benchmark validation — and insists the class matches the inputs, flagging the Class-3-on-Class-4-inputs trap.

Role	Responsibility
👷 **Cost Engineer / Project Engineer (you)**	Provide equipment lists, bulk-material quantities, labour rates, vendor inputs and location factors — and validate the maturity matrix and confirm the class assignment is honest.

4. What you will be asked — have this ready

- The scope and the target estimate class (and the maturity of your inputs for it).
- Equipment lists, bulk-material quantities, labour rates and vendor inputs.
- Location factors, currency and the escalation basis.
- Any benchmark data for validation.

5. What you receive — the output

A complete Capital Cost Estimate (Word): direct costs, indirects and owner's costs, contingency, escalation and currency, the benchmark validation, and the honest AACE class with its accuracy range — ready for sanction, control or bid evaluation (subject to competent validation).

6. Worked example (illustrative)

An estimate is wanted at Class 3 for budget authorisation. OpsPilot checks the inputs against the AACE maturity matrix: the equipment list is firm and quotes are in, but the bulk quantities are still factored, not taken off drawings. That's Class 4 territory for part of the estimate. Rather than stamp it Class 3, OpsPilot flags the gap and either holds the class honest (Class 4, wider range) or identifies exactly what's needed to legitimately reach Class 3. Contingency is set by method (not a flat 10%) appropriate to the class, and the estimate carries its accuracy range openly — so the board sanctions against a number whose uncertainty is stated, not hidden.

7. Getting the best result

- **Let the inputs set the class.** Claiming a tighter class than the inputs support is the classic overrun trap.
- **State the accuracy range.** A single number without its range hides the real risk.
- **Set contingency by method.** A flat percentage isn't defensible — match the method to the class.
- **Benchmark it.** An estimate that's wildly off comparable projects deserves a second look.