

The decision test

A sensor is a claim about the future: that some decision, some day, will be made differently because this measurement exists. Four gates hold the claim, each with its own stop, and one sentence has to finish before any hardware is priced. Failing on paper is free; failing in a junction box is not.

RECORD Four gates and the completion sentence — each gate with its answer and the stop it triggers

- 01 Which decision?** A named, recurring decision — schedule the bearing renewal, adjust the setpoint, release the batch, dispatch the crew.
Stop: “visibility” and “insight” are not decisions; they are hopes with a subscription fee.
- 02 Whose decision?** A named role that will actually receive the data, with the authority to act on it.
Stop: if the answer is “the team”, the honest answer is nobody.
- 03 What threshold or comparison?** The value, trend or difference that would change the decision.
Stop: if no value would change it, the measurement is decoration.
- 04 What is it worth?** Roughly — in avoided cost, recovered capacity or reduced risk — because the chain that delivers the measurement has a cost, and the two numbers have to meet.
Stop: worth less than the chain costs.
- 05 The completion sentence.** Written out, in full, before pricing: **“When this value crosses ____, [role] will ____ instead of ____.”** If the sentence cannot be finished, the sensor is not an investment; it is a souvenir.

ASK Four questions that keep a sensing programme a queue rather than a catalogue

- **Is this candidate on the queue, or in front of it?**
A sensing programme is a portfolio of named decisions sorted by value, and the waiting list is public: anyone may promote a candidate by naming the decision, the owner and the value. Coverage is a portfolio, not a percentage.
- **Was it promoted because the sensor is cheap?**
Then it has passed no gate. Cheap sensors still buy engineering time, network capacity, storage and attention — and the expensive links are all downstream of the hardware.
- **Which physical effect carries the earliest useful evidence for *this* decision?**
Start at the decision and walk backwards to the physics. Walked machine-first with a catalogue open, every question defaults to “more, better, everywhere” and the economics quietly drown.
- **What accuracy does *this* decision actually need, and can the location be reached?**
A trend feeding a scheduling decision tolerates offset error that would ruin a custody-transfer measurement. The sensor must also live where the effect is visible, and be wired, powered and maintained there.

THE BOUNDARY THIS CARD CARRIES

A measurement can pass all four gates and still fail later — the sensor may not resolve the effect, the data may arrive too late, the threshold may prove wrong. Those are honest engineering failures. A measurement that fails the gates now has nowhere to fail later, because it was never going to change anything. This card selects no sensor, sets no threshold or accuracy class, and authorises no installation.