OpsPilot

Predictive Maintenance Strategy — User Manual

Fleet- or Site-Wide PdM Programme · AI Engineering Co-Pilot

What this guide covers — what a predictive maintenance strategy is, how the OpsPilot module builds one for a whole site, what to have ready, and the strategy document you receive.

1. What is a predictive maintenance strategy?

A predictive maintenance (PdM) strategy is the site- or fleet-wide plan for catching failures before they happen — which condition-monitoring techniques to deploy, on which assets, with what resourcing, measured by what KPIs, justified by what return, and rolled out over what timeline. It is the strategic layer above day-to-day condition monitoring: not “what does this reading mean” but “what programme should we be running, and is it working.”

OpsPilot builds it to *ISO 17359 (CBM framework), SAE JA1011/JA1012 (RCM strategy hierarchy), SMRP Best Practices and ISO 55001 (asset management)*. It complements per-equipment threshold design rather than replacing it.

2. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach — Reliability Manager (OpsPilot)**	Guides a defensible strategy — current-state maturity assessment, target-state design, the technique portfolio, resourcing, KPIs, cost-benefit and a multi-year roadmap.
👷 **Maintenance / Reliability / Asset Manager (you)**	Provide site context, current maintenance practice, business drivers and resource constraints — and validate that the strategy is realistic and own the implementation commitments.

3. How it works — the process

#	Stage
1	Current-state maturity assessment — where the programme is today
2	Target-state design — where it should be
3	Technique portfolio — which PdM technologies, on which assets

#	Stage
4	Resource plan — people, tools, skills
5	KPIs — how success is measured
6	Cost-benefit / ROI
7	Multi-year implementation roadmap

4. What you will be asked — have this ready

- Your site context and the current maintenance practice — how much is reactive versus planned versus condition-based today.
- The business drivers — what's pushing the change (downtime, cost, safety, an event).
- The resource constraints — people, skills, budget, tools.
- Your asset base, ideally with criticality already understood (this strategy builds on the Asset Criticality output).

5. What you receive — the output

A complete PdM Strategy (Word): the current-state maturity assessment, the target-state design, the technique portfolio, the resource plan, the KPIs, the ROI case and a phased multi-year roadmap you can take to management.

6. Worked example (illustrative)

A site is mostly reactive — it fixes things when they break. The maturity assessment lands it low. The target state is condition-based monitoring on the critical assets first. The technique portfolio matches the technology to the failure mode: vibration on rotating equipment, thermography on electrical and bearings, oil analysis on gearboxes, ultrasound on steam traps and bearings. KPIs track the share of failures caught before they happen and PF-interval coverage. The ROI is built from avoided unplanned failures versus programme cost. The roadmap phases it — pilot on the top-criticality assets in year one, broaden in years two and three — so it's fundable and achievable rather than an all-at-once wish.

7. Getting the best result

- **Assess maturity honestly.** Overstating where you are today produces a target you can't reach.
- **Match technique to failure mode.** The right technology depends on how the asset actually fails.
- **Build the ROI.** A PdM strategy gets funded on avoided cost, not good intentions.
- **Phase the roadmap.** Start on the critical assets and broaden — don't try to boil the ocean.