OpsPilot

Value Stream Mapping — User Manual

Find Waste, Cut Lead Time · AI Engineering Co-Pilot

What this guide covers — what value stream mapping is, how the OpsPilot module builds the current and future state, the data you need (the real numbers, not the standard ones), and the report you receive.

1. What is value stream mapping?

Value Stream Mapping (VSM) draws the end-to-end flow of a product or service — every process step and, just as importantly, every wait and queue between them — to expose where lead time is actually lost. The usual revelation is uncomfortable: the value-adding work is a tiny fraction of the total time, and most of the lead time is the product sitting idle. VSM makes that visible so you attack the waits, not just the work.

Two numbers anchor it: **Takt time** (the rate customer demand sets), and the **value-add ratio** (value-adding time as a fraction of total lead time — often shockingly low).

2. What the OpsPilot module does

Role	Responsibility
🎯 **AI Coach (OpsPilot)**	Builds the current-state map, calculates Takt time and the value-add ratio, identifies the most impactful wastes, and designs a future state with an improvement roadmap.
👷 **Process Expert (you)**	Walk the process and know the real cycle times, wait times and work-in-progress — not the standard times off the routing sheet. Ground truth is everything in VSM.

3. How it works — the guided process

#	Stage	What happens
1	Scope & product family	What flow is being mapped, and its start and end points.
2	Customer demand & Takt	The demand rate, and the Takt time it implies.
3	Current state	Each step's cycle time, changeover and uptime.
4	Inventory & wait times	The queues and waits between steps — usually the biggest lever.

#	Stage	What happens
5	Information flow	How work is triggered — push or pull.
6	Waste identification	The wastes, quantified.
7	Future state & roadmap	The improved flow and the steps to get there.
8	Generate	Unlocks the Word report.

4. What you will be asked — have this ready

- The product, service or material flow to map, and where it starts and ends.
- Customer demand, so Takt time can be calculated.
- The real cycle time, changeover time and uptime at each step.
- The inventory and wait times between steps, and how each step is triggered (push or pull).

Tip — use observed times, not routing-sheet standards. The gap between the two is often where the waste is hiding.

5. What you receive — the output

A Value Stream Map Analysis report (Word) with the current-state map, Takt time and value-add ratio, the inventory and wait-time profile, the quantified wastes, and the future-state design with an improvement roadmap.

6. Worked example (illustrative)

Map an order-to-dispatch flow. The processing steps total perhaps two hours of actual work, but the order spends six days moving between them — waiting in queues, batched, waiting for approvals. The value-add ratio comes out near 2% — meaning 98% of the lead time adds no value. That instantly reframes the improvement: speeding up the two hours of work is almost pointless; the future state targets the queues and the batching. The roadmap might pull work through with a simple signal rather than pushing it in batches, and the lead time drops from days to hours without anyone working faster.

7. Getting the best result

- **Use real, observed times.** Standard times from the routing sheet will mislead the whole map.
- **Let demand set Takt.** The customer's rate, not the machine's, defines the target pace.
- **Attack the waits.** The lead time is mostly queue, not process — that's where the gains are.
- **Map current before future.** You can't design the future state honestly until the current one is on paper.