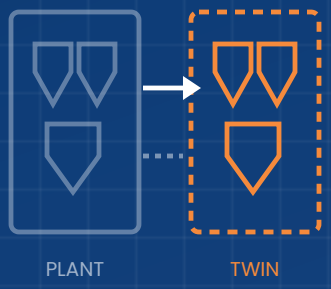
MACSIM

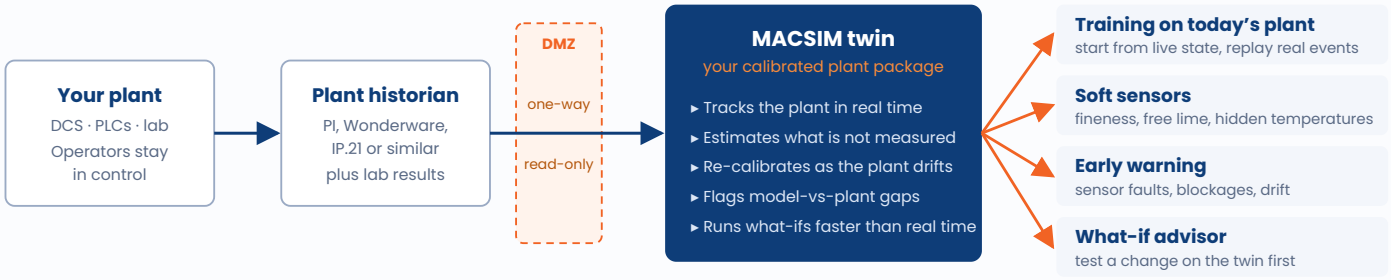
The simulator your operators train on is already your plant's digital twin.

MACSIM is built on your tags, screens and interlocks, with physics calibrated to your plant. Connect it, read-only, to your plant historian and the same model tracks your plant in real time.



BUILT ONCE, USED TWICE

A digital twin is only as good as its model. Most twin projects spend their first year building and calibrating one. With MACSIM that work is already done for training, and every value already carries your DCS tag, so connecting live data is a step, not a new project.



MACSIM only reads. It never writes to your DCS; every decision stays with your operators.

01 WHERE THE VALUE IS

TRAINING
Train on last night's upset
Start a session from the plant's real state, or replay a real event for review. Keeps training current, with no manual set-up.

QUALITY
See between lab samples
Model-based estimates of fineness and clinker quality every minute, so operators act before the next lab result, not after.

RELIABILITY
Catch problems early
When the plant stops behaving like its model, something has changed: a failing sensor, a building blockage, a worn mill charge.

ENERGY
Test before you change
Try a setpoint change on the twin before the kiln or mill sees it, to find fuel and power savings with less risk.

02 A STAGED PATH, EACH STEP PAYING ITS WAY

- **Stage 1 · Replay.** Load historian snapshots into MACSIM: training from real plant states and real events. No live connection needed.
- **Stage 2 · Live tracking.** Read-only feed through the DMZ; the twin follows the plant, keeps itself calibrated and runs the soft sensors and early warnings.
- **Stage 3 · Advisor.** What-if studies and setpoint suggestions for engineers and operators, always advisory.

03 DESIGNED FOR PLANT IT AND OT SECURITY

- **Read-only, one way**: data flows out of the historian, never back to control.
- **Your choice of hosting**: on a server at the plant or in your company's cloud.
- **Your data stays yours**: the twin runs on your own plant package, never shared.
- **Training stays offline**: the simulator still runs on its own when the link is off.

Start where you are. Every MACSIM plant package is twin-ready. We scope Stage 1 and Stage 2 with each plant against its own data, historian and security rules, and agree the value targets before any connection is made.

MACPROTEC ENGINEERING
Makers of MACSIM · Excellence in Process

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