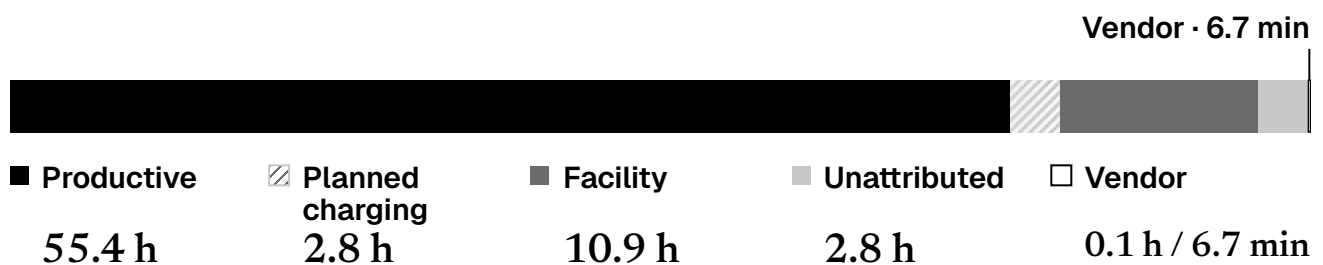


72 hours of real robot operations, independently reconstructed

One wheel.me AMR in a KTH laboratory, nine 8-hour shifts, generated demand. Mapped to VDA 5050. Not a production fleet and not a benchmark of the robot.

Scheduled time, independently reconstructed



Loss assignments use the human-reviewed laboratory profile. Category labels are rounded; bar lengths use exact durations.

What the data says

Robot-caused loss was about 7 minutes under the human-reviewed attribution rules.

Most lost time was idle with no work pending, assigned to the facility under those rules.

2.8 hours remain unexplained by the data, and we say so.

Technical availability

95.8–99.8%

The lower bound charges all unexplained time against the robot; the upper bound does not. Planned charging is excluded from both.

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Validation against the published paper

Figure 5: operation sequence and outline timing match within 1 s.

Table 7: 45/45 released record-count checks match.

Observed station process time: 17.5 h; expected: 16.0 h; support 11.1–21.7 h.

Expected time uses the same observed-operation cohort and the paper's processing distributions: support limits, not a confidence interval. Individual sampled budgets were not released.

Observations in the robot's own data

- The data contains an SSD-usage warning: "will stop at 90%".
- 93 "Safety Stop" episodes were reported at Ok level. No owner is assigned.
- The 30 July morning shift had the lowest lower-bound technical availability among the released shifts.

Method and assumptions

- Eligible reported idle time at production stations during active operations counts as process time by human assumption; sampled budgets are unavailable.
- Eligible navigating pauses during active operations under 10 s count as productive by retrospective assumption, with 1 Hz polling and changed-only storage.
- Eligible charging counts as planned, supported by scheduler-generated charging jobs and a decreasing charging ceiling.
- Specific obstruction takes facility precedence over overlapping errors; other eligible error/fatal diagnostics are assigned to the robot.
- Idle with no pending work is assigned to the facility; manual operation, records omitted from the cleaned data, unknown modes and all other unproved time remain unattributed.

Evidence

Evidence-chain verification passed for all nine complete shift chains.

49f42ae1b7967ceae532ca351e69812c492ef7c57699f22db0a9b95088368391

A deterministic re-run reproduced 153 analysis/report files and 179,367 recorded-data files byte for byte.

This is an aggregate of the shift-chain roots.

Source and licence

Klein, J.-F., Jeong, Y., "Autonomous mobile robot operations in production logistics: a dataset of jobs, dispatch events and robot states", arXiv:2610.02428, dataset DOI 10.71775/kth.vx0cq-w7h93, CC BY 4.0.

Paper · Dataset · CC BY 4.0

Data mapped and analysed by Honest Machines; changes were made.