

Turn machine usage into recurring revenue.

Turn industrial equipment into recurring revenue with verifiable usage-based billing. Connect physical activity to a commercial record both parties can review.

INDUSTRIAL IOT / MACHINE-AS-A-SERVICE / VERIFIABLE USAGE

MACHINE ACTIVITY



Runtime, cycles, output, throughput or agreed signal.

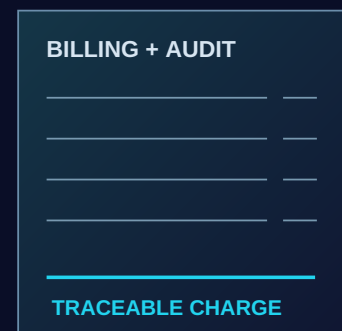
VERIFIED USAGE



AGREED BILLABLE METRIC

Protected processing.
Usage calculation + verification.

CONTRACT BILLING



Rates and exceptions applied to evidence.

PILOT TARGET AND BUSINESS OBJECTIVES · SEE SCOPE ON PAGE 05

95%

Target usage-tracking accuracy

Automated

Contract-based billing

Verifiable

Machine activity to audit evidence



THE BUSINESS CHALLENGE

An invoice is only as trustworthy as its evidence.

Industrial manufacturers are moving from selling machines once to selling measurable usage, availability and outcomes over time. Kaeser's SIGMA AIR UTILITY lets customers pay for compressed air instead of purchasing the entire system.²⁻³

Machine-as-a-Service changes what an invoice represents. Revenue depends on runtime, cycles, output, throughput or another agreed metric. **Telemetry becomes commercial evidence.**

The provider may operate the monitoring platform; the customer may hold its own meter or production record. Service partners can hold additional data. When those records diverge, every invoice becomes a reconciliation exercise.

Operational telemetry is also commercially sensitive. Verifying a bill should not require exposing the full production cadence or service history.

Agreed usage signals

Runtime · Cycles · Units produced · Throughput
Availability · Other contractually defined metrics

THE COMMERCIAL TRUST GAP

One activity. Different records.

? Which activity is billable?

? Whose record is authoritative?

? Which rules set the charge?

? Can the invoice be traced?

From operational records to shared evidence

Telemetry for operations

Monitoring, maintenance and analytics describe machine activity. A centralized database or monthly report does not, by itself, establish neutral commercial evidence.

Evidence for settlement

Capture and protect the signal, verify the agreed billable usage and retain the chain from physical activity to the amount charged.

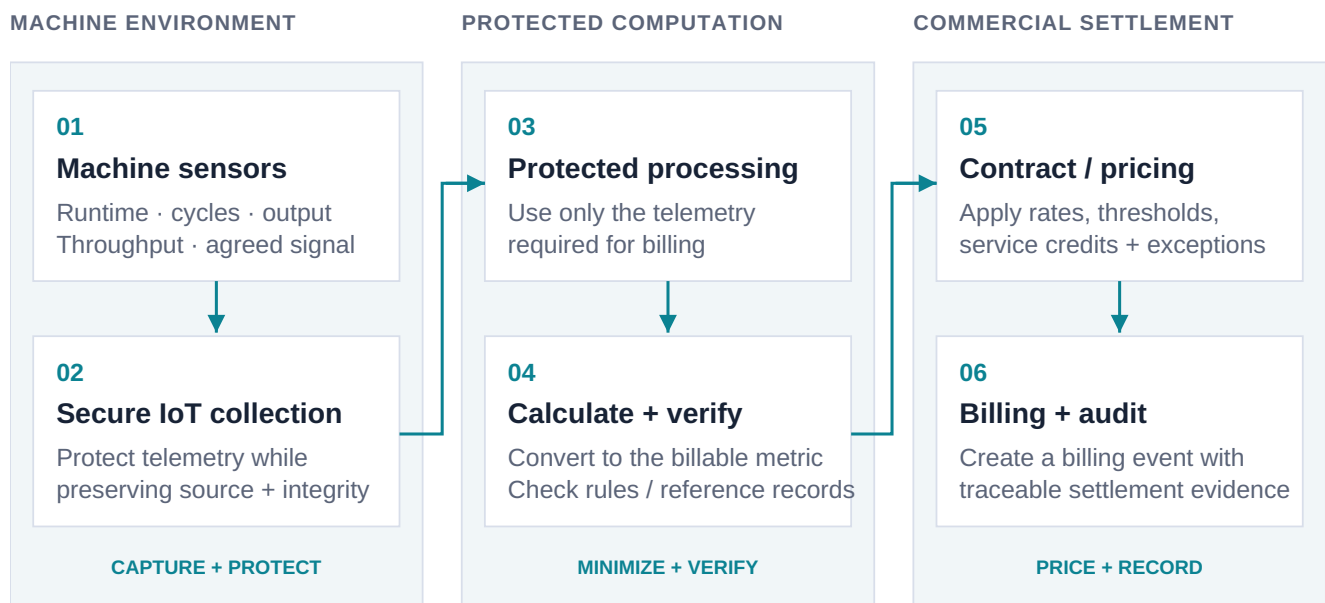
Automate only what both parties can verify.



THE AIDATACY APPROACH

Verify the usage. Then apply the price.

AIDATACY connects machine telemetry, protected processing, usage verification and contract-based pricing in a single evidence chain. Every billing event can be traced back to the activity and calculation that produced it.⁷

**TAMPER-EVIDENT EVIDENCE CHAIN**

Source measurements → usage calculation → contract rule → billing event

Conceptual workflow from the use-case source. The numbered flow links physical machine activity to usage verification, commercial execution and tamper-evident audit evidence.

Protected usage processing

Process only the telemetry required for billing. Convert raw events into the agreed metric and verify the result against defined rules or reference records.

Contract-driven execution

Apply rates, thresholds, service credits and exceptions to verified usage. Smart contracts can automate this where required; they are an implementation mechanism, not a prerequisite.

Measure the machine. Protect the evidence. Automate only what both parties can verify.



IMPLEMENTATION

From machine telemetry to trusted billing.

Six stages from MaaS readiness to recurring-revenue operations. Agree the billable activity and reference evidence before connecting verified usage to pricing and billing.

01	Diagnose Map machine usage metrics, available telemetry, current billing processes, and dispute points.	OUTPUT MaaS readiness assessment
02	Define Define billable usage, pricing logic, data ownership, audit requirements, and exceptions.	OUTPUT Usage and trust model
03	Deploy Deploy IoT collection and the secure data pipeline for protected usage processing.	OUTPUT Verifiable usage infrastructure
04	Pilot Run the usage calculation against agreed reference records and measure usage-tracking accuracy.	OUTPUT MaaS pilot accuracy baseline and validation report
05	Operationalize Connect verified usage events to contract-based pricing logic and automated billing.	OUTPUT Automated billing operations
06	Production Monitor, optimize, and scale across machines, sites, customers, and pricing plans.	OUTPUT Scalable recurring-revenue operations

Deployment roadmap

PHASE 1

Sensor + telemetry integration

PHASE 2

Data pipeline setup

PHASE 3

Smart contract layer

PHASE 4

Billing integration

PHASE 5

Optimization & scaling



BUSINESS IMPACT

Recurring revenue. Verifiable commercial evidence.

Usage evidence connects operational activity to the business model: less manual reconciliation, reliable billing and scalable pay-per-use contracts.

PILOT TARGET — TO BE VALIDATED

95%

Usage-tracking accuracy

Measured against agreed reference records. Validate the link between physical machine activity and the billable usage metric before scaling the commercial model.

Less reconciliation

Shared usage evidence reduces dependence on manual meter readings and conflicting records.

Automated billing

Verified events feed the agreed pricing logic, exceptions and finance workflow.

Recurring revenue

A repeatable evidence chain supports pay-per-use contracts across machines, sites and customers.

Pilot validation measures

Measure	How the pilot establishes evidence
Usage measurement accuracy	Compare calculated usage with an agreed reference meter or source.
Telemetry completeness	Percentage of expected machine events captured.
Event-to-bill latency	Time from machine event to approved billable record.
Manual reconciliation rate	Percentage of billing periods requiring human adjustment.
Audit traceability	Percentage of billable events traceable to source evidence.

Validation measures are retained from the linked UC 03 source. The workbook target is **95%**; it is not presented as a measured production result.

Verifiable usage evidence → Less manual reconciliation and fewer disputes → Reliable automated billing → Scalable pay-per-use contracts → Recurring service revenue



NEXT STEPS

Start with a metric both parties can verify.

FROM MACHINE ACTIVITY TO RECURRING REVENUE

Build Your Machine-as-a-Service Pilot

Bring machine telemetry, commercial rules and reference evidence into the same pilot scope.

- Map available usage signals, ownership boundaries and existing dispute points.
- Agree pricing logic, exceptions, audit requirements and reference records.
- Validate usage-tracking accuracy before connecting approved events to billing.

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References & sources

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- 05 Equipment as a Service: monitoring and billing using the Asset Administration Shell, Procedia CIRP (2025)
- 06 A pricing system for machine tools offered as result-oriented Product-Service System, Procedia CIRP (2022)
- 07 AIDATACY — secure data collaboration, protected data processing, devices and infrastructure capabilities
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Source basis: “USE Case AML.xlsx”, UC 03 EN narrative, original outline and linked UC 03 document. Reference descriptions and workbook URLs are retained verbatim. © AIDATACY.