LABORATORY SOFTWARE

METHOD AND FEATURES

LeanLab
Service Optimizer

LeanLab Service Optimizer estimates the annual cost of different technical service strategies (pay per call, partial contract, Full Risk) from the repair and maintenance history of the instrument fleet. For each strategy the calculation covers the contract fee and the spending that remains with the laboratory.

HOW IT WORKS

1

History

Repairs, maintenance and calibrations recorded instrument by instrument.

2

Scenarios

The service strategies to compare, with their coverage, deductibles and caps.

3

Comparison

The expected annual cost of each strategy, with a breakdown of how it was calculated.

01

CONTEXT

Comparing service offers

A laboratory has new instruments and instruments near the end of their life, instruments that rarely fail and others that need frequent repairs. Service offers differ in coverage, exclusions and deductibles, and the contract fee alone is not enough to compare them.

Economic aspects
The cost of pay-per-call repairs, the costs that become fixed with a contract, and the spending that remains with the laboratory after deductibles and caps.

Operational aspects
How failure risk is spread across the instruments, the role of preventive maintenance, and the real scope of contract coverage.

Predictable cost	Contract fees, planned maintenance and any other fixed item known in advance.
Residual exposure	Uncovered repairs, deductibles and amounts above caps: the spending that depends on future failures.

02

THE DATA

Failure estimates use repairs only. Maintenance and calibrations are handled separately: counting them as failures would inflate the frequency.

Data required

The calculation uses five linked groups of data.

Organisation	Sites, laboratories and departments. Each contract is linked to a defined scope.
Instrument registry	Identifier, model, location and status, with installation and decommissioning dates.
Service events	Repairs, maintenance and calibrations, recorded as distinct types.
Contracts	Duration, price, coverage, exclusions, deductibles and caps.
Assessments	Observation period, scenarios, calculation parameters and saved results.

Installation and decommissioning dates are used to calculate how long each instrument was in service during the period analysed. An instrument installed six months ago and one observed for three years therefore count in proportion to their time in service.

03

THE CALCULATION

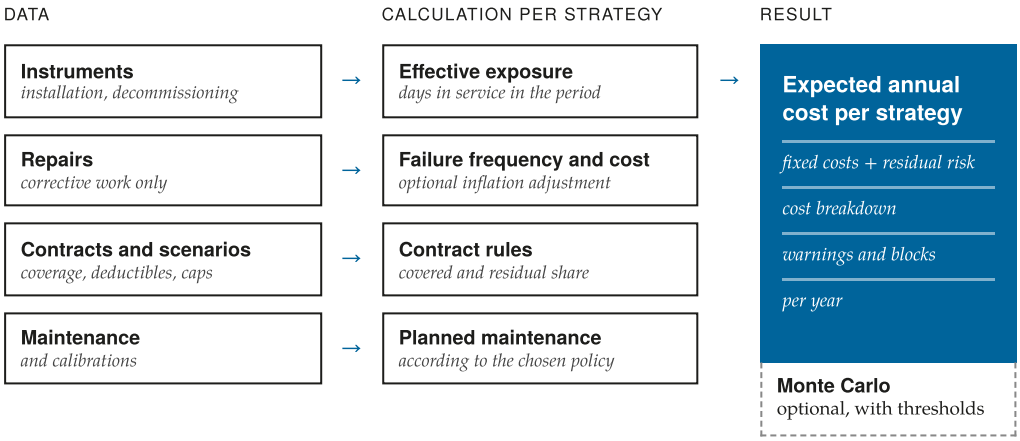
The expected cost is an estimate based on the history and on the assumptions set. The weight of the two components depends on coverage, the observation period, the available history and the contract parameters.

Calculating the expected annual cost

For each strategy LeanLab applies the contract conditions to the instruments' history and expresses the result per year.

Expected annual cost = **Fixed costs** + **Residual risk**

contract fees, planned maintenance — *uncovered failures, deductibles, amounts above caps*



How data flows through the calculation engine. Maintenance does not enter the failure estimate.

1 Effective exposure

For each instrument, the days in service during the period analysed count, taking installation and decommissioning dates into account when they are available. Failure frequency therefore stays comparable between instruments of different ages.

2 Failure frequency and cost

Recorded repairs, related to exposure, are the basis for estimating how often an instrument fails and what a repair costs. When the option is enabled, historical amounts are adjusted with the configured inflation indices.

3 Contract rules

For each scenario the software applies the covered cost categories, deductibles, annual caps and special conditions, and calculates what remains to be paid.

4 Planned maintenance

Preventive maintenance is calculated separately, according to the policy chosen for the scenario, and added to fixed costs.

04

CHECKS

Checks and presentation of results

Before calculating, the software checks that the data is consistent. In the results it shows how each cost is made up and flags cases where the data is not enough to support the conclusion.

Checks on economic conditions
The software checks that the economic parameters entered (deductibles, caps, coverage costs) are consistent and flags conditions that, under the model's rules, need attention or further checks.

Cost breakdown
For each strategy you can see how much of the spending is fixed, how much is covered by the contract and how much remains with the laboratory.

Cost advantage and strength of the result
LeanLab distinguishes the strategy with the lowest expected cost from the one whose advantage is sufficiently supported by the available data.

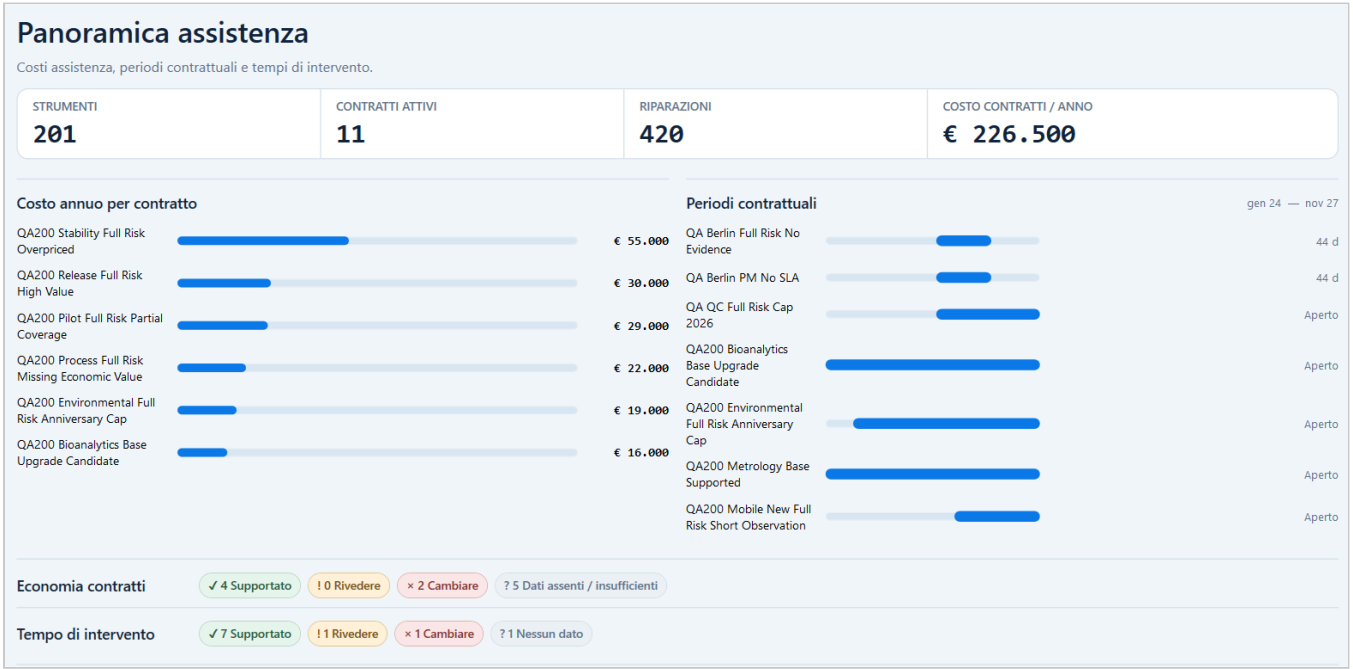
Warnings and blocks
Values are expressed per year, so strategies are compared on the same basis. If the data is inconsistent or insufficient, the software says so with a warning or blocks the calculation.

05

DASHBOARD

Instrument fleet and contract dashboard

The dashboard shows the number of instruments, active contracts, recorded repairs and the total annual cost of contracts. For each contract it shows the annual cost and validity period, and rates economic conditions and response times in four classes: supported, to review, to change, data missing or insufficient. A list of actions gives, for each contract, the estimated economic impact and the suggested action.



LeanLab dashboard with test data.

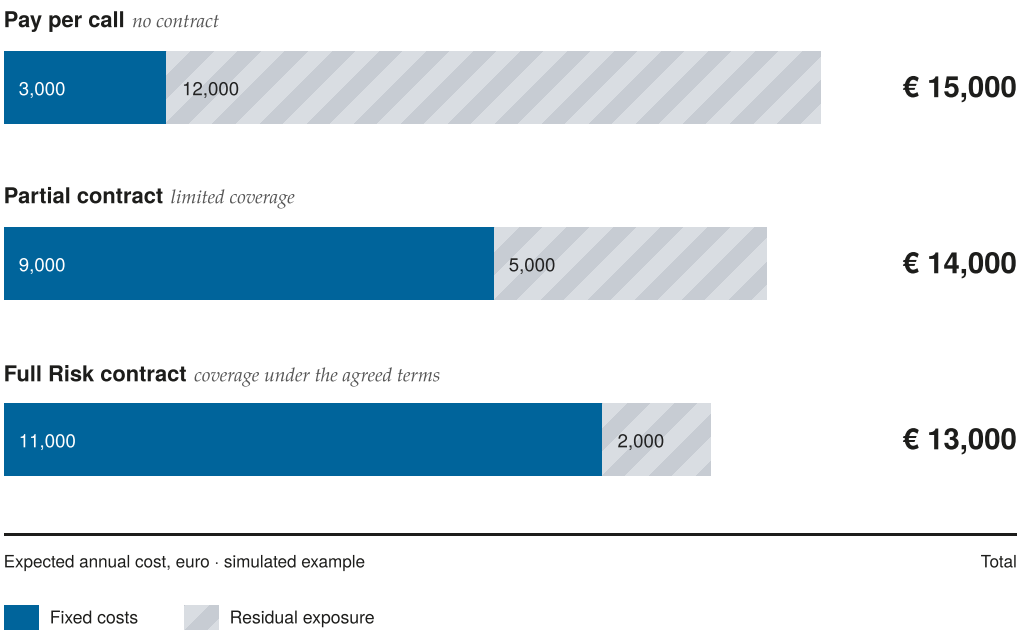
06

AN EXAMPLE

Example: three service strategies

The chart compares three strategies applied to the same group of instruments.

Invented, rounded values, chosen only to show how the result is read. They do not come from LeanLab or from a customer.



In the pay-per-call scenario, fixed costs are the planned preventive maintenance visits, not a contract fee.

READING

Reading the chart

With pay per call, fixed costs are low and most of the spending (€ 12,000 of 15,000) depends on failures. With the Full Risk contract the fee is higher and only a small share remains with the laboratory, corresponding to the costs excluded by the terms. In the example, Full Risk has an expected cost € 2,000 a year lower than pay per call.

Other evaluation criteria

Expected cost is one of the selection criteria. A difference of € 1,000–2,000 can be smaller than the uncertainty of the estimate. The comparison also does not quantify the value of guaranteed response times or the cost of instrument downtime, which must be assessed separately.

07

UNCERTAINTY

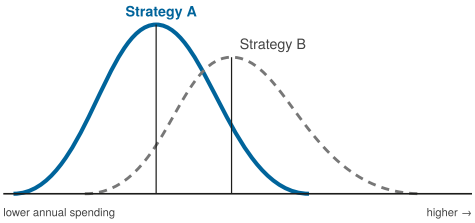
The Monte Carlo module is optional and available with Professional and Enterprise licences.

Monte Carlo analysis

The calculation described so far is deterministic: with the same inputs it always gives the same expected cost, and it is the main reference for the comparison.

The Monte Carlo module repeats the calculation over a large number of simulated failure scenarios. The result shows how much the annual spending of each strategy varies and the probability that each one turns out to be the cheapest.

When the differences between strategies are small, the analysis may not identify a clearly preferable strategy; in that case the choice depends on criteria other than cost.



Not to scale. A costs less than B on average, but the two distributions overlap widely: in many years B would cost less.

Activation conditions	The history must pass minimum thresholds: at least 24 months of observation, at least 20 repairs (not all service activities) and an adequate level of evidence. With less data the simulation would give an apparent precision that is not justified.

08

TRACEABILITY

Assessments saved before snapshots were introduced may contain partial information.

Traceability of assessments

Each saved assessment keeps the information needed to reconstruct it later:

Parameters	Period, scenarios, currency and calculation settings.
Evidence	Repairs, other service events and quality of the history.
Rules	Coverage, deductibles, caps and assumptions.
Results	Strategy comparison, warnings and any Monte Carlo analysis.
Runs	The history of the assessment's calculation runs.

Recent assessments also keep a snapshot of the data and settings used. A hash check makes it possible to detect changes to the stored content; the hash is not a digital signature and does not certify the results.

09

AUDIENCE

Who it is for

LeanLab brings together in one place data that is usually spread across spreadsheets, technical reports and contracts. The results document the decision, which remains with the people who run the laboratory, together with the technical and contractual review of the offers.

Laboratory manager
Compares service policies, plans the budget and supports requests with quantitative data.

Purchasing and management
Compares offers with different conditions, estimates the economic risk that remains with the company and assesses the level of service needed.

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GETTING STARTED

A trial on your laboratory's data

A first assessment only needs data the laboratory usually already has:

Instruments	The list of the instrument fleet, with location and installation and, where applicable, decommissioning dates.
Service events	The available history of repairs, maintenance and calibrations, with dates and costs.
Contracts and offers	Current contracts and the offers to compare, with coverage, deductibles and caps.

FOCUS ANALYTICS

For a presentation of LeanLab Service Optimizer, or to try it on your laboratory's data:

info@focus-analytics.com

Descriptive document on the features of LeanLab Service Optimizer, November 2026 edition. Numerical examples and charts are illustrative. Software developed within the Pixologix project; distributed by Focus Analytics.