

connect

ORLANDO JUNE 1-3, 2026



SeeQ®

The smart middle



TOO EARLY

Time-Based Maintenance

Fixed schedule whether equipment needs it or not. Wastes resources and can introduce human error.



JUST RIGHT

Meter-Triggered Maintenance

Maintain exactly when the data says you need to. Let sensor readings drive the decision.



TOO LATE

Run-to-Failure

Wait until something breaks. Reactive and costly — especially in pharmaceutical manufacturing.

MTM puts the data in charge.



Caroline Orange Beimfohr

Eli Lilly & Company

What is Meter-Triggered Maintenance (MTM)?

A predictive maintenance approach that uses real-time sensor data to trigger maintenance actions only when equipment performance indicates a potential issue — not on a fixed schedule, not after failure.

METERS IN LILLY'S MAINTENANCE SYSTEM

Continuous

A cumulative counter — like a car's odometer. Triggers PM tasks based on the equipment manufacturer's recommendation.

Examples

- Flow valve diaphragm every 500,000 valve cycles
- Pump/gearbox overhaul every 4,000 run hours

Gauges

A fluctuating measurement that monitors an asset's condition. Triggers a work order when Upper or Lower Action Limits are breached.

Examples

- Temperature
- Pressure
- Battery voltage

Both trigger a maintenance system work order (PM or corrective)

The Challenge



A critical workflow being sunset

An existing automated system was being retired. We needed to replace that capability without losing it — and improve on it.



A regulated GMP environment

Every data change needs an audit trail, controlled access, and a defensible record. Not optional in pharma manufacturing.



Global scale, site-specific configs

Dozens of sites worldwide, each with different equipment and sensor setups. Must scale without rebuilding per site.

Why Seeq Data Lab?

Six capabilities. One platform. Everything MTM needed.



Python-native

Production-grade logic, no translation layer



Built-in scheduling

`spy.jobs.schedule` — runs every 6 hours automatically



Historian connectivity

Direct data historian access via SPy



REST API endpoint

Internal systems pull payloads and forward to the maintenance system



Enterprise data platform

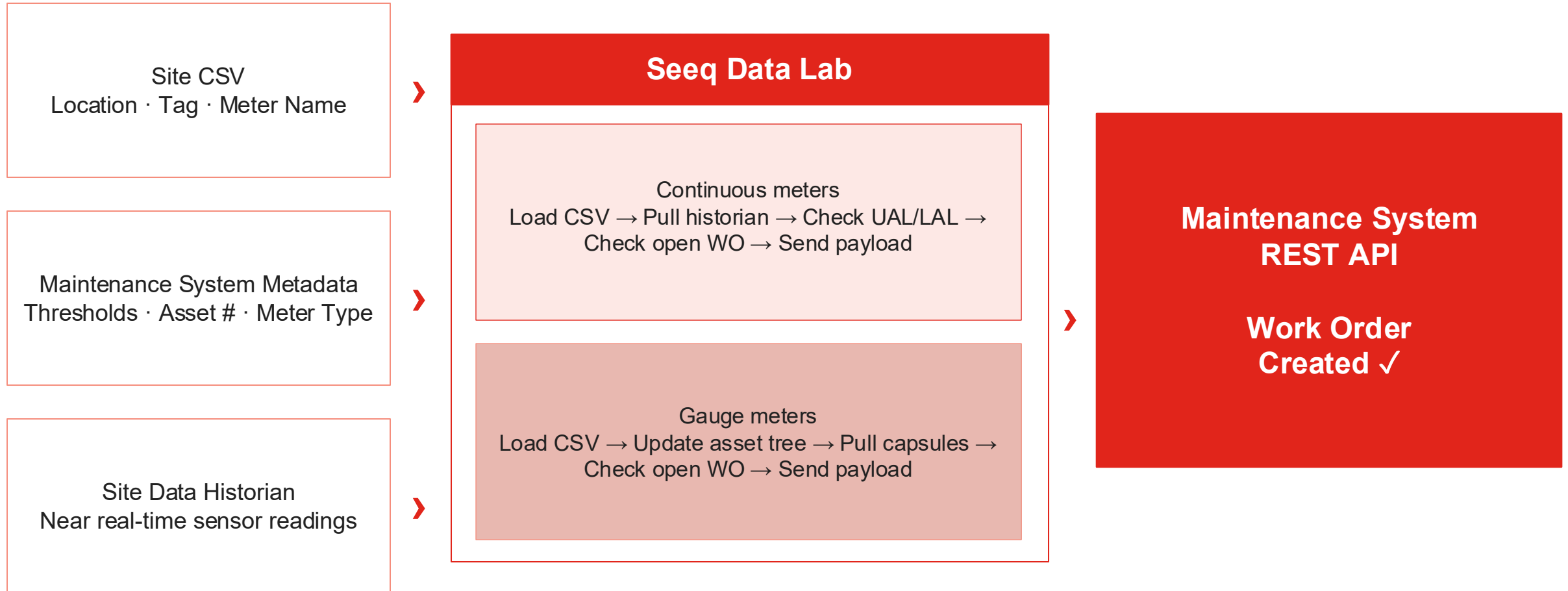
Maintenance metadata as time-series capsules



UI framework

Full management application inside the notebook

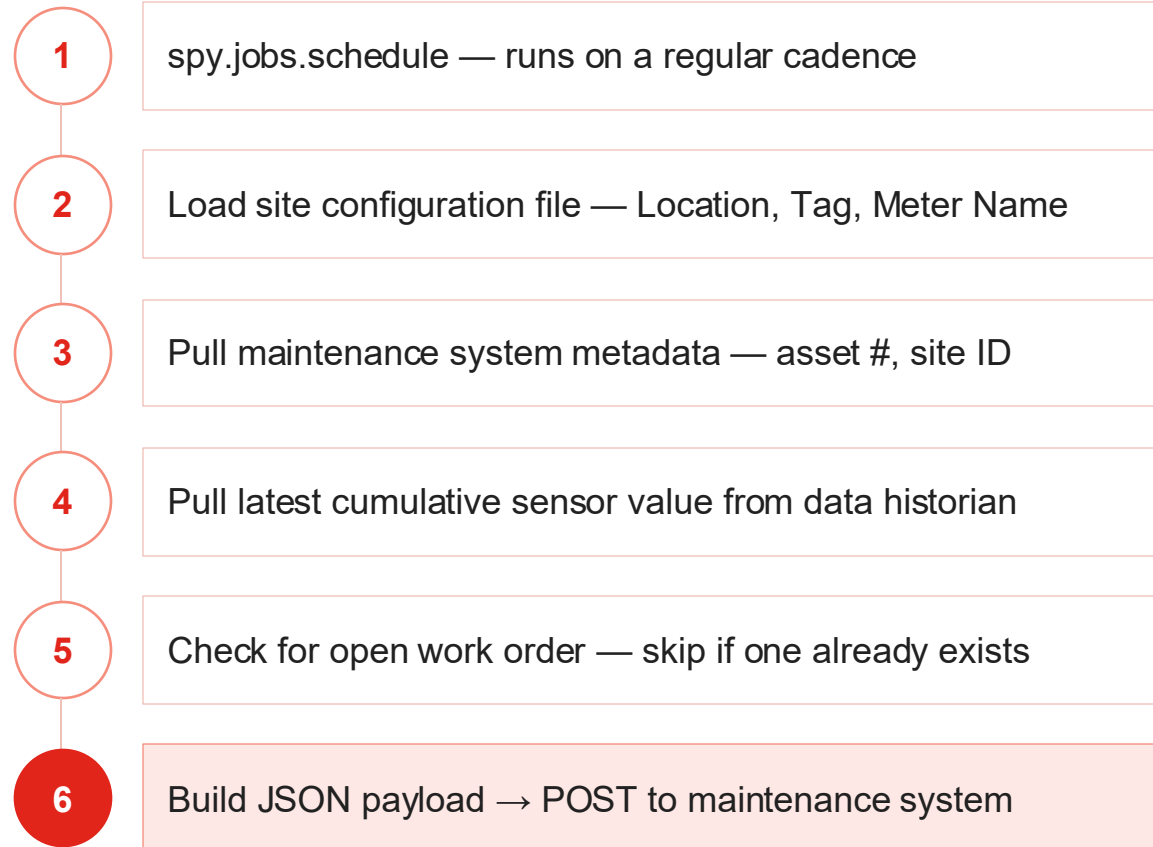
Architecture Overview



Onboarding a new site = uploading a 3-column spreadsheet. No code changes.

Continuous Meters

Cumulative counters — readings sent automatically on a scheduled cadence



Example payload

```
{
  "LOCATION":      "SITE001",
  "METERNAME":   "RUNHRS",
  "NEWREADING":  4002.5,
  "NEWREADINGDATE": "2026-04-07T12:00:00",
  "SITEID":      "XX",
  "ASSETNUM":    "ASSET001",
  "ID":          "ADMIN"
}
```

No threshold check needed — readings are sent on cadence and the maintenance system handles the PM trigger logic.

Gauge Meters

Zone-crossing detection — four thresholds, triggered when readings move between zones

- 1

spy.jobs.schedule — runs every 6 hours
- 2

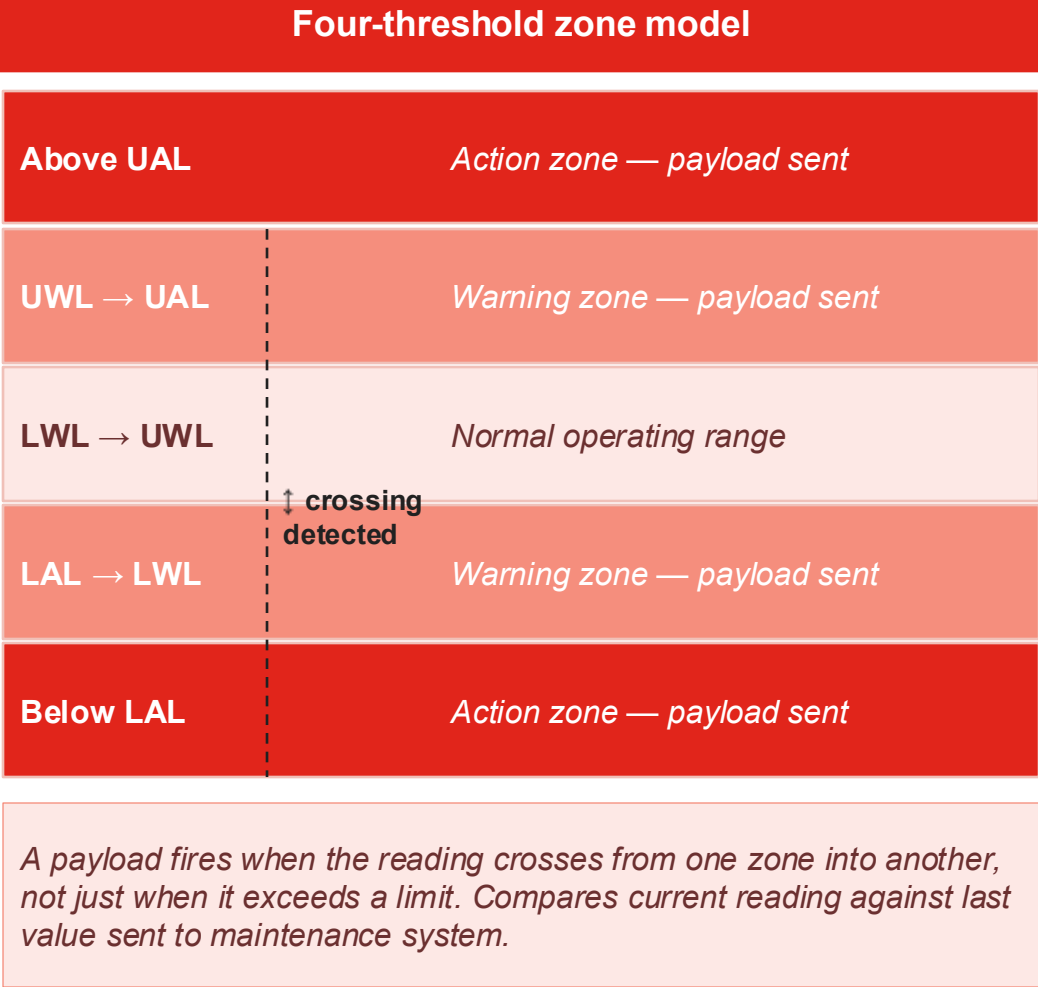
Load site configuration file — Location, Tag, Meter Name
- 3

Pull maintenance system metadata — UAL, UWL, LWL, LAL, asset #
- 4

Detect zone crossings — did the reading move between warning and action limit zones compared to the last reading sent?
- 5

Check for open work order — skip if one already exists
- 6

Build JSON payload → POST to maintenance system



The Templatized Approach

Onboarding a new site is a data task, not a technical task.

MTM Site Template		
Location	PI Tag	Meter Name
LOCATION_001	SITE.EQUIP.BATTERY	BATTERY
LOCATION_001	SITE.EQUIP.PRESSURE	PRESSURE
LOCATION_002	SITE.PUMP.RUNHRS	RUNHRS
LOCATION_003	SITE.VALVE.COUNTER	COUNTER
LOCATION_004	SITE.FILTER.BATTERY	BATTERY
This is all a site needs to provide.		

Before
X Custom configuration per site X Manual setup requiring technical knowledge X Dependent on legacy system X No standardized process
After
✓ 3-column spreadsheet — Location, Tag, Meter Name ✓ Enterprise data platform provides everything else ✓ Same notebook runs at every site globally ✓ Onboard a new site in hours, not weeks

Location. Tag. Meter Name. That's it.

The Asset Manager

A GMP-compliant management application built entirely inside Seeq Data Lab.

MTM Asset Manager Demo — Seeq Data Lab

MTM Asset Manager

Meter-Triggered Maintenance — Interactive Demo | Eli Lilly

Site admin view (site.admin)

Approver view (caroline.orange)

MTM Asset Manager

SITE ADMIN

Signed in as: site.admin | 2026-04-27T20:11:42Z UTC | Identity verified via Lilly SSO

select a site to manage

— select a site —

Open site

Upload new site spreadsheet

- 

Identity from Lilly SSO

Never self-reported — system knows who you are
- 

Review queue

Nothing goes live without a review and a change number
- 

Three columns only

Sites never touch thresholds or asset numbers
- 

Never touches historian or CMMS

Configuration list only

MTM Asset Manager

Meter-Triggered Maintenance — Interactive Demo | Eli Lilly

Site admin view (site.admin)

Reviewer view (caroline.orange)

MTM Asset Manager

SITE ADMIN

Signed in as: site.admin | 2026-04-27T20:59:23Z UTC | Identity verified via Lilly SSO

select a site to manage

— select a site —

Open site

Upload new site spreadsheet

Results & Scale

4

Sites onboarded by Q3 2026

276

Meters currently monitored
across all sites

3,800+

Payloads sent per week
to maintenance system

6 hrs

Maximum latency
breach to work order

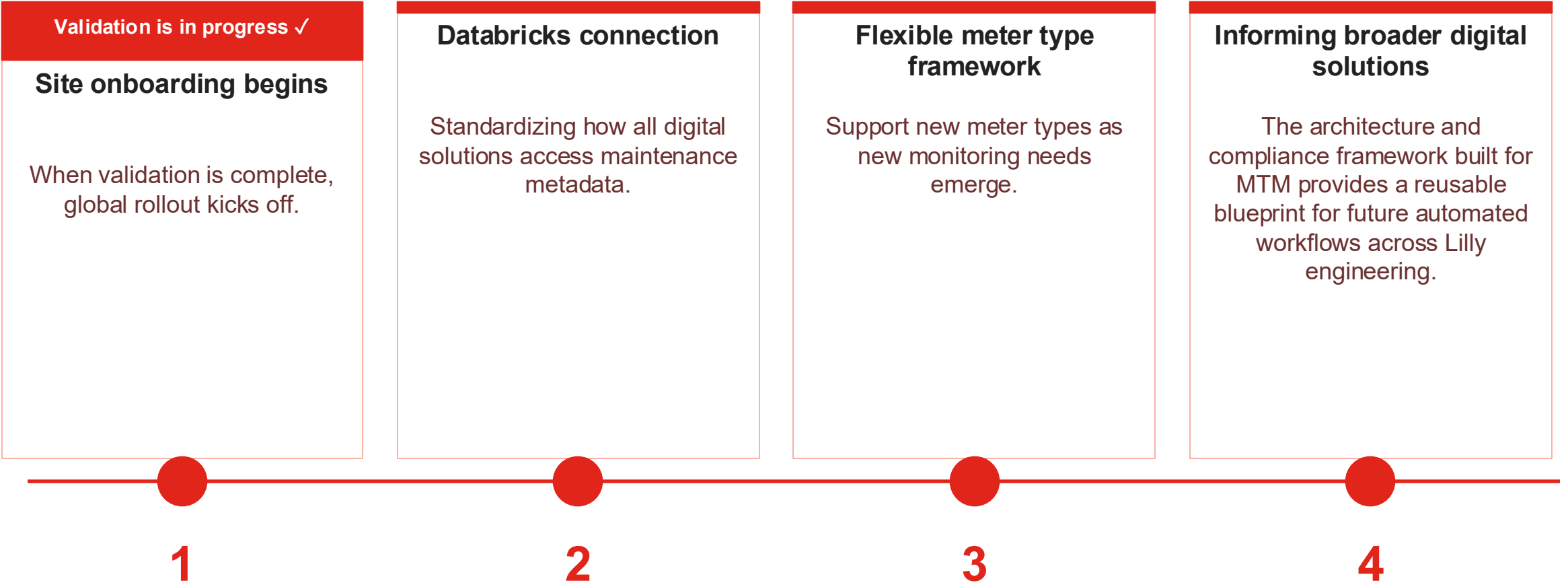
3

Columns a site needs
to onboard

Q4 2026

Onboard more sites interested in MTM

What's Next



Key Takeaways

01

End-to-end automation in a single platform

Seeq Data Lab handles everything — from reading sensor data through threshold detection all the way to outbound API calls to your maintenance system. If you've been treating Seeq as a visualization tool, you're leaving a lot on the table.

02

Scalability comes from design, not effort

A 3-column spreadsheet as the only site input means onboarding is a data task, not a technical task. That's an architectural decision that compounds in value every time you add a new site.

THANK YOU!

QUESTIONS?