

The Next Productivity Breakthrough Is Not More Data. It Is Seeing What Data Cannot See.

Mature oil fields in the Gulf of San Jorge are already heavily instrumented. Most critical wells transmit operational data in real time.

Yet field teams still travel hundreds of kilometers to locate anomalies, verify events and identify issues that do not yet appear on any screen.

This document explains why, what the economic impact is, and how that equation begins to change.

The Structural Limit of SCADA

Telemetry and SCADA systems are designed to monitor equipment. They do it very well. They detect variations in current, pressure, flow and temperature with precision and in real time.

However, many of the issues that consume the most operational time do not occur inside instrumented systems. They occur across the remote operations where those systems are deployed.

This is a design limitation, not a configuration problem. No firmware upgrade or data integration project can eliminate it.

What SCADA Cannot Tell You: Situation by Situation

Operational Situation	SCADA / Telemetry	Cadvital
A pump draws more current	Detects the electrical anomaly. Cannot determine whether a visible leak is associated with it.	Correlates the electrical signal with visual inspection of the equipment and its immediate surroundings.
Production decline at a well	Records the decline. Cannot determine whether the problem is located at the well, the flowline or the battery.	Inspects the affected area and visually identifies the root cause before dispatching a field crew.
Spill on the ground or along a flowline	No alarm until the loss becomes significant and sustained. Small spills remain invisible.	Direct visual detection through routine inspections or correlation with process anomalies.
Incomplete contractor intervention	Generates no signal. The system has no knowledge of what should have occurred.	Before-and-after photographic evidence. Automated and verifiable records of the intervention.

Blocked access road or inaccessible location	Invisible. The issue is discovered only when a crew cannot reach the site.	Early detection with precise geolocation of the obstacle.
Thermal anomaly in a pumping unit	Electrical signals may take hours or days to reflect an emerging degradation.	Thermal inspection identifies the precursor before it becomes visible in process data.
Vehicle or personnel in a restricted area	No signal. The system does not monitor physical presence.	Visual detection with timestamped and geolocated records.

The industry is becoming increasingly effective at monitoring equipment. It remains far less effective at observing the remote operations where that equipment is deployed. That gap is the source of the cost Cadvital reduces.

The Real Cost of the Problem

In mature fields, a significant portion of daily work is devoted to answering an extraordinarily expensive question: **Where is the problem?** Not fixing it. Not intervening. Not producing. Simply locating it.

Every exploratory field trip consumes labor hours, fuel, vehicles, crew availability and risk exposure. That cost exists because locating anomalies still depends on physical presence.

A recent operation in Argentina's Neuquén Basin avoided approximately USD 250,000 in losses through early detection of a failure precursor in a pumping unit. The condition was identified before an unplanned shutdown occurred.

A Better Use of Technical Talent

In remote operations, a significant share of experienced personnel time is spent on verification rounds and anomaly hunting.

These activities are necessary, but they use only a fraction of the technical capabilities available. In mature organizations, technical expertise is typically a scarce resource.

Every hour spent locating problems is an hour not spent improving facilities, reducing failures, executing preventive maintenance or increasing asset availability.

Reducing repetitive inspection rounds does not only reduce OPEX. It also increases the organization's effective capacity to improve its assets. The objective is not to replace technical expertise. It is to free it for higher-value activities.

Reference Business Case

Five Nodes · Gulf of San Jorge · Three-Year Horizon¹

Coverage: 1,570 km² · 1,000–1,750 wells

Item	Estimated Value
Structural OPEX reduction (35 positions · USD 35K/year)	+ USD 3.68 M
Operational continuity (1 avoided failure every 6 months · USD 250K)	+ USD 1.50 M
Total estimated economic benefit (3 years)	USD 5.18 M
Total service cost (USD 7,000/node/month)	USD 1.26 M
Illustrative ROI	311%
Payback period	8.8 months

The model does not yet include fuel savings, fleet reduction, lower personnel exposure in the field, operational history for predictive maintenance, or automated evidence of contractor interventions. The business case presented is conservative.

What Cadvital Does

Cadvital integrates existing telemetry, non-intrusive sensors and automated aerial inspection to accelerate anomaly detection, localization and diagnosis across remote operations.

Telemetry indicates that an anomaly exists. Complementary sensors expand early detection capabilities across assets and flowlines not covered by SCADA. Automated aerial inspection provides visual context, evidence and precise field-level diagnosis.

The result is better information, enabling operators to make decisions faster and at lower cost, while field crews focus on intervention rather than search. The issues that consume the most time are not the ones that appear on a screen. They are the ones that have not yet been located.

Cadvital reduces the time required to find them.

¹ The figures presented correspond to illustrative assumptions for a reference scenario in the Gulf of San Jorge. ROI and payback must be validated with operational data during initial deployment phases.