

The Cost of Operating Far Away

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Argentina is making a long-term resource and infrastructure bet that changes the operating calculus. More than \$130 billion in investment is planned across energy, mining and associated infrastructure over the coming decade.

Those assets will be built and operated across some of the most geographically demanding terrain on the continent: the Patagonian steppe, the Neuquén Basin and the high-altitude corridors of the northwest.

The infrastructure will arrive before the operating model does.

That gap is where this document begins.

There is a moment that any remote infrastructure operator knows by heart. A signal arrives. The system logs an event; operations can continue. But something happened. And until someone goes to look, no one knows whether it is noise or the beginning of something expensive.

In northwest Argentina, verifying that signal can mean driving a switchback road at 3,500 meters to reach a substation supplying several municipalities. In Patagonia, it means crossing four hundred kilometers of steppe into a westerly wind to find, or not find, the cracked insulator that tripped the line protection.

In both cases, the response arrives hours after the signal. A significant share of those trips ends up discarding events that required no intervention at all. That cycle, repeated across thousands of kilometers of remote infrastructure, carries a cost that traditional operating models rarely capture. Not because it is difficult to measure. Because for decades there was no alternative, and the cost became normal.

That is starting to change.

Long-range inspection drones can verify the condition of that high-altitude substation or sweep that Patagonian corridor under conditions where a crewed deployment is no longer reasonable, identifying the exact location of the anomaly and transmitting thermal imagery to the control center before anyone decides whether to dispatch a crew. And when the intervention is necessary and the component to be replaced weighs three hundred kilograms, uncrewed cargo helicopters are already capable of delivering it directly to the intervention point, even under weather and access conditions where a ground convoy loses half a day getting there.

The unnecessary trip does not happen. The one that does happen arrives with precise information, arrives earlier, and the material arrives with it.

But there is something more important than the immediate operational saving. Every time that coverage runs, it accumulates history on the asset: the corridor, the structure, the degradation patterns under extreme conditions. That history practically does not exist today in any continuous form across Argentine infrastructure. The operator who begins building it first operates on information that regulators, insurers and financial counterparties do not have.

That is not an operational advantage. It is a structural one.

The industry learned to optimize plants. It never really learned to cover extensive territories continuously.

That is starting now.

Angel Talamona
Clymene · Cadvital

Three Capabilities. One Shared Problem.

Continuous coverage of remote infrastructure across extensive territories is no longer a problem without a technological solution. Autonomous aerial, ground, river and maritime inspection and logistics already operate internationally across energy assets and major infrastructure corridors. What does not yet exist in Argentina is the layer that makes those capabilities operationally viable: regulatory authorization, real field deployment capacity, and integration with operator procedures. That layer is what Cadvital builds.

Long-Range Aerial Inspection over Energy Corridors

ASSET: Extra-high-voltage transmission networks across Patagonia and northwestern Argentina.

PROBLEM: Verifying the condition of a corridor after a weather event can consume six to ten hours of ground operations with exposed personnel, even when no real anomaly exists. The cracked insulator, if it is there, waits for the next storm.

CAPABILITY: Fixed-wing uncrewed aircraft capable of sweeping hundreds of kilometers of linear infrastructure while transmitting thermal imagery in real time. Already operating over oil and gas infrastructure in the Middle East.

WHAT CADVITAL RESOLVES: Regulatory authorization of autonomous beyond-visual-line-of-sight flights over energy corridors and remote infrastructure, airspace coordination, and integration with operator procedures. The control center decides before mobilizing any resource.

Uncrewed Aerial Logistics in Remote Operations

ASSET: Energy production blocks, hard-to-reach hydroelectric facilities, and isolated mining operations.

PROBLEM: When a critical component fails, ground logistics consume four to eight hours before the intervention begins. The problem is not the part. It is the time between detection and arrival at the intervention point.

CAPABILITY: Uncrewed cargo helicopters of proven industrial reliability, capable of transporting three hundred to five hundred kilograms directly to the intervention point over several hundred kilometers, under conditions where crewed flight is not reasonable.

WHAT CADVITAL RESOLVES: Regulatory authorization of uncrewed aerial logistics over operational territory, coordination with basin air traffic, and integration with operator dispatch. The material arrives with the crew. The intervention starts without logistical delay.

Autonomous Off-Road Ground Coverage over Remote Assets

ASSET: Internal corridors of mining operations, patrol rounds over production blocks, and energy infrastructure perimeters.

PROBLEM: Supervision rounds and light transport between points within a single operation consume hours of qualified personnel over terrain that does not require permanent human presence. That cost rarely appears as a separate line in OPEX.

CAPABILITY: Autonomous ground vehicles capable of operating continuously over unpaved terrain, carrying tools or sensors, and accumulating operational data on assets and terrain. Already operating in the Persian Gulf under conditions comparable to Argentine basins.

WHAT CADVITAL RESOLVES: Adaptation to real terrain, integration with existing dispatch systems, and continuous field-support capacity. Lower personnel exposure, higher coverage frequency, and progressive accumulation of proprietary operational history.

How to Begin

No operation over remote infrastructure adopts new capabilities without prior validation on real territory. Cadvital works through three engagement formats designed to generate useful operational information before any decision to scale.

Operational Coverage Assessment

Analysis of specific remote infrastructure to map real verification times, dependence on crewed ground or aerial rounds, weather constraints, and points where operations lose time between signal, decision and intervention. The result is a concrete operational diagnosis based on real assets, not a *generic commercial proposal*.

Indicative duration: three to five weeks.

Regulatory and Territorial Qualification

Feasibility assessment for autonomous operations over a defined corridor or asset: applicable aeronautical requirements, operational weather constraints, and compatibility with existing operator procedures. Cadvital manages interaction with the regulatory authority. The operator does not need to build that capability internally or assume the regulatory risk of the process.

Indicative duration: four to six weeks.

Operational Pilot on a Specific Asset

Live deployment over an energy corridor, a remote operation, or an isolated asset under real terrain and weather conditions.

The pilot measures concrete impact on verification times, operational coverage and logistical dependence before any decision to scale.

Indicative duration: eight to twelve weeks.

About Clymene and Cadvital

Clymene develops systems for the continuous auditability of complex and progressively autonomous operations.

www.clymene.ai

Cadvital deploys and operates services for remote industrial operations in Argentina, combining regulatory qualification, territorial deployment and field operations.

www.cadvital.com